January 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027812

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N027812-016 (R-28-Q118LL) was not analyzed. Please refer to the attached correspondence.

Samples N027812 -017 (AB1-Q118LL) and N027812-018 (AB2-Q118LL) were not analyzed as per COC.

Analytical Comments for SM 4500-NO3F:

Matrix Spike Duplicate (MSD) is outside recovery criteria in QC sample N027789-002DMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-001A	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001B	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001C	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001D	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001E	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-002A	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002B	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002C	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002D	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002E	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-003A	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003B	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003C	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003D	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003E	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-004A	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004B	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004C	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004D	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004E	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-005A	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005B	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005C	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005D	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005E	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-006A	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006B	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006C	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006D	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-006E	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-007A	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007B	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007C	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007D	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007E	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-008A	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008B	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008C	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008D	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008E	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-009A	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009B	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009C	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009D	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009E	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-010A	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010B	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010C	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-011A	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011B	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011C	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011D	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011E	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-012A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012B	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012C	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012D	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012E	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-013A	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-013B	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013C	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013D	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013E	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-014A	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014B	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014C	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-015A	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015B	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015C	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-016A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-017A	AB1-Q118LL	Groundwater	1/3/2018 8:45:00 AM	1/4/2018	1/15/2018
N027812-018A	AB2-Q118LL	Groundwater	1/3/2018 1:40:00 PM	1/4/2018	1/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:40:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 3:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027812-010CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID:	**ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1011.000	0.10						1014	0.296	2	

Sample ID	**N027812-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID:	**ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1024.000	0.10						1028	0.390	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:40:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027812-001DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121232**
Client ID: **ZZZZZZ**	Batch ID: **R121232**	TestNo: **SM4500-H+B**		Analysis Date: **1/4/2018**	SeqNo: **2885872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.290	0.10						8.270	0.242	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027812-015CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121232**
Client ID: **ZZZZZZ**	Batch ID: **R121232**	TestNo: **SM4500-H+B**		Analysis Date: **1/4/2018**	SeqNo: **2885887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.210	0.10						7.190	0.278	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-66260**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/4/2018**	RunNo:	**121229**
Client ID:	**LCSW**	Batch ID:	**66260**	TestNo:	**SM2540D**			Analysis Date:	**1/4/2018**	SeqNo:	**2885808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID	**MB-66260**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/4/2018**	RunNo:	**121229**
Client ID:	**PBW**	Batch ID:	**66260**	TestNo:	**SM2540D**			Analysis Date:	**1/4/2018**	SeqNo:	**2885809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N027812-001DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/4/2018**	RunNo:	**121229**
Client ID:	**ZZZZZZ**	Batch ID:	**66260**	TestNo:	**SM2540D**			Analysis Date:	**1/4/2018**	SeqNo:	**2885811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66261	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	LCSW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	918.000	10	1000	0	91.8	80	120				

Sample ID	MB-66261	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	PBW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027812-012DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	ZZZZZZ	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885828

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:32 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:51 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:09 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:06 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:25 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A**	QC Batch: **R121248**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180105C**	QC Batch: **66251**			PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 03:39 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate		**1/4/2018**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:38 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-014

Client Sample ID: SW1-Q118LL
Collection Date: 1/3/2018 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 12:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 3:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 02:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121248**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **PBW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121248**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **LCSW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.195	0.20	5.000	0	104	90	110				

Sample ID **N027812-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N027812-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Sample ID **N027812-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0	110	90	110				

Sample ID	N027812-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N027812-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N027812-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID	N027812-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	106	90	110				

Sample ID	N027812-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N027812-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027812-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027812-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110	1.073	0.336	20	

Sample ID	N027812-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027812-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.093	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121296	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	PBW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121296	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	LCSW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID	N027812-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID	N027819-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID	N027819-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889188

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID	N027820-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N027819-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID	N027820-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID	N027820-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID **N027820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027820-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66251	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	PBW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66251	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	LCSW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.036	1.0	10.00	0	100	85	115				

Sample ID	N027812-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.240	1.0	10.00	0	102	75	125				

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.491	1.0	10.00	0	105	75	125	10.24	2.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121239	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	PBW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121239	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	LCSW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.522	0.050	0.5000	0	104	85	115				

Sample ID	N027789-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.202	0.25						3.245	1.33	20	

Sample ID	N027789-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.587	0.25	2.500	2.954	105	75	125				

Sample ID	N027789-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.170	0.25	2.500	2.954	129	75	125	5.587	9.92	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	25	1.8	20		ug/L	1	1/4/2018 07:23 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/4/2018 09:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 07:55 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/4/2018 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:01 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	1/4/2018 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:06 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	1/4/2018 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-011

Client Sample ID: C-TAZ-S-Q118LL
Collection Date: 1/3/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 11:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	1/4/2018 11:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 09:02 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	37	1.8	20		ug/L	1	1/4/2018 11:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66256**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **PBW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66256**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **LCSW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.918	20	100.0	0	104	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.753	20	100.0	24.72	96.0	75	125				

Sample ID **N027812-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.232	20	100.0	24.72	95.5	75	125	120.8	0.432	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66255	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	PBW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66255	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	LCSW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.193	20	100.0	0	106	85	115				

Sample ID	N027812-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.504	20	100.0	20.28	100	75	125				

Sample ID	N027812-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.635	20	100.0	20.28	99.4	75	125	120.5	0.723	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 09:41 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 09:41 PM
Manganese	3.0	0.056	0.50		µg/L	1	1/5/2018 09:41 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 09:41 PM
Selenium	1.8	0.028	0.50		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:43 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:43 PM
Manganese	1.2	0.056	0.50		µg/L	1	1/5/2018 10:43 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 10:43 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:54 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:54 PM
Manganese	2.8	0.056	0.50		µg/L	1	1/5/2018 10:54 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 10:54 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:05 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:05 PM
Manganese	1.3	0.056	0.50		µg/L	1	1/5/2018 11:05 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 11:05 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:16 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 11:16 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 11:16 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 11:16 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:28 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:28 PM
Manganese	3.7	0.056	0.50		µg/L	1	1/5/2018 11:28 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:28 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180105D** QC Batch: **66251** PrepDate **1/4/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:50 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:50 PM
Manganese	2.9	0.056	0.50		µg/L	1	1/5/2018 11:50 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:50 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 12:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:01 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:01 AM
Manganese	2.6	0.056	0.50		µg/L	1	1/6/2018 12:01 AM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 12:01 AM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 12:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**				PrepDate	**1/4/2018**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:12 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:12 AM
Manganese	1.9	0.056	0.50		µg/L	1	1/6/2018 12:12 AM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 12:12 AM
Selenium	1.9	0.028	0.50		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**				PrepDate	**1/4/2018**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:33 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:33 PM
Manganese	1.6	0.056	0.50		µg/L	1	1/5/2018 08:33 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 08:33 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 08:44 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:44 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 08:44 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:44 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:56 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:56 PM
Manganese	4.4	0.056	0.50		µg/L	1	1/5/2018 08:56 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:56 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66251**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **PBW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66251**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **LCSW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.756	0.10	10.00	0	97.6	85	115				
Barium	10.117	1.0	10.00	0	101	85	115				
Manganese	99.827	0.50	100.0	0	99.8	85	115				
Molybdenum	9.857	0.50	10.00	0	98.6	85	115				
Selenium	9.567	0.50	10.00	0	95.7	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.463	0.10	10.00	2.259	102	75	125				
Barium	141.826	1.0	10.00	129.4	124	75	125				
Manganese	103.441	0.50	100.0	3.007	100	75	125				
Molybdenum	16.612	0.50	10.00	5.016	116	75	125				
Selenium	12.937	0.50	10.00	1.769	112	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.796	0.10	10.00	2.259	105	75	125	12.46	2.64	20	
Barium	140.958	1.0	10.00	129.4	115	75	125	141.8	0.614	20	
Manganese	104.147	0.50	100.0	3.007	101	75	125	103.4	0.680	20	
Molybdenum	16.287	0.50	10.00	5.016	113	75	125	16.61	1.98	20	
Selenium	12.654	0.50	10.00	1.769	109	75	125	12.94	2.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Report to: Nara Tay	Bill to: Nara Tay	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: PGE	Excel EDD	PQL:		
Address: Roseville, CA 95661	Email:	Geotracker	RWQCB ✓	1. Chilled	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Labspec	CalTrans	2. Headspace	
Submitted By: Nara Tay	Email to: mbloes@pivox.com	Others ✓	LEVEL III	3. Container Intact	
Title: sample tech	P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present	
Signature: Date: 1/3/18	Phone: 949-727-1400, ext 200	Global ID:	Regulatory	5. IR number	3
I hereby authorize ASSET Labs to perform the tests indicated below.	Fax:		Specify State:	6. Method of Cooling: Ice	
Project Name: PG&E Topock - RMP	Phone: 916-786-3302 Fax:			Sample Temp: 2.1°C/3.2°C / 2-6°C	
Project Number: RC000753.0801	Sampled By: Nara Tay			Courier:	
	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Tracking No.:	
	Signature: Date: 1/3/18				

Matrix: Ground x | Sediment; Potable | Soil; NPDES | Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027812 -01	C-BNS-Q118LL	1/3/18	1155		X		X		X	X		X	X			X	X	E	7	P	BNS
2		~~C-CON-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
3		~~C-CON-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
4	-02	C-I-3-D-Q118LL	1/3/18	0930		X		X		X	X		X	X			X	X	E	7	P	BNS
5	-03	MW-921-Q118LL	1/3/18	1235		X		X		X	X		X	X			X	X	E	7	P	BNS
6	-04	C-I-3-S-Q118LL	1/3/18	0950		X		X		X	X		X	X			X	X	E	7	P	BNS
7		~~C-MAR-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
8		~~C-MAR-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
9		~~C-NR1-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
10		~~C-NR1-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
11		~~C-NR3-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
12		~~C-NR3-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
13		~~MW-920-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
14		~~C-NR4-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tay	1/3/18 1600	[illegible]	1/3/18 1630
[illegible]	1/3/18 1900	[illegible]	1/3/18 1900

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Sample tech	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 1/3/18	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number ✓
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State:	6. Method of Cooling: IR
Project Name: PG&E Topock - RMP	Signature: Date: 1/3/18				Sample Temp: 2.1°C / 3.0°C / 2-6°C
Project Number: RC000753.0801					Courier: Tracking No.:

Matrix: Ground x | Potable | NPDES | Surface | Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Oxygen and deuterium stable isotopes (CFIRM) (1 250 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
2	N027812 -05	C-R22A-D-Q118LL	1/3/18	1050		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
3	-06	C-R22A-S-Q118LL	1/3/18	1105		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
4	-07	C-R27-D-Q118LL	1/3/18	1225		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
5	-08	C-R27-S-Q118LL	1/3/18	1250		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
	-09	C-TAZ-D-Q118LL	1/3/18	0835		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
7	-10	MW-922-Q118LL	1/3/18	1450		X		X					X	X						E	5	P	BNS	
8	-11	C-TAZ-S-Q118LL	1/3/18	0855		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
9		~~R-19-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
10	-12	R-28-Q118LL	1/3/18	1325		X		X	~~X~~	X	X	~~X~~	X	X	~~X~~	~~X~~	X	X	~~X~~	E	7 6	P	BNS	
11	-13	R63-Q118LL	1/3/18	1015		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
12		~~RRB-Q118LL~~				X		X		X	X		X	X			X	X		E	7 8	P	BNS	M
13	-14	SW1-Q118LL	1/3/18	1440		X		X					X	X						E	5	P	BNS	
14	-15	SW2-Q118LL	1/3/18	1510		X		X					X	X						E	5	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	1/3/18 1600	Ping Wang	1/3/18 1630
Ping Wang	1/3/18 1905	Ping Wang	1/3/18 1905
Ping Wang		Ping Wang	

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Mary Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
			Geotracker	RWQCB ✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec	CalTrans	2. Headspace
			Others ✓	LEVEL III	3. Container Intact
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	Specify: RWQCB	LEVEL IV	4. Seal Present
				Regulatory	5. IR number 3
Submitted By: Nara Tan		Phone: 949-727-1400, ext 200 Fax:	Global ID:	Specify State:	6. Method of Cooling: ice
Title: sample tech	Phone: 916-786-3302 Fax:	P.O.#			Sample Temp: 2.1°C / 3.2°C / 2.6°C
Signature: Date: 1/3/18	Sampled By: Nara Tan				Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*				Tracking No.:
Project Name: PG&E Topock - RMP	Signature: Date: 1/3/18				
Project Number: RC000753.0801					

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N027812-16	R-28-Q118LL	1/3/18	1325		X																
	-17	AB1-Q118LL	1/3/18	0845			X													E	1	P	BN	Hold
	-18	AB2-Q118LL	1/3/18	1340			X													E	1	P	BN	Hold
		~~AB3-Q118LL~~					X													E	1	P	BN	Hold

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tan	1/3/18		
			1/3/18 1630
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/3/18 1900		1/3/18 1900
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/3/2018	Workorder:	N027812
Rep sample Temp (Deg C):	2.1/3.2/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See correspondence.

Checklist Completed By: YR 1/4/2018

Reviewed By: 01/05/2018

Dylan 1/4/2018

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 11:45 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "jmahn@blainetech.com" <jmahn@blainetech.com>

Hello Yoandra,
See my comments below.

Thanks,
Laura
-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC. There are 2 sets of dissolved metals on page 2 of the COC you sent. Please see the attached original COC file for the list of metals. It looks like when printed the specific metals were cut off.

- Sample R-28-Q118LL is listed twice (# 12 and # 16). I'm looking into this one and have a call into the field team.

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label. AB1-Q118LL is correct

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label. AB2-Q118LL is correct

- Please also confirm if the samples 17 and 18 should be on hold as per COC. Yes, please hold.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.

Attachments:

Topock COC RMP_ 01 2018.xlsx	118 KB

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 1:28 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>

Line # 16 is an error and was not submitted to the lab.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC.

- Sample R-28-Q118LL is listed twice (# 12 and # 16).

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label.

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label.

- Please also confirm if the samples 17 and 18 should be on hold as per COC.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-001A	C-BNS-Q118LL	1/3/2018 11:55:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-001C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-001D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-001E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-002A	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-002C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-002D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-002D	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-002E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-003A	MW-921-Q118LL	1/3/2018 12:35:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-003B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-003C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-003D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-003E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-004A	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-004B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-004B	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-004C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-004D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-004E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-005A	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-005B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-005C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-005D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-005E	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-006A	C-R22A-S-Q118LL	1/3/2018 11:05:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-006B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-006C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-006D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-006E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-007A	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-007B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-007C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-007C	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-007D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-007E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-008A	C-R27-S-Q118LL	1/3/2018 12:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-008B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-008C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-008D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-008E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-009A	C-TAZ-D-Q1188LL	1/3/2018 8:35:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-009B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-009B	C-TAZ-D-Q1188LL	1/3/2018 8:35:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-009C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-009D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-009E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-010A	MW-922-Q118LL	1/3/2018 2:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-010B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-010C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-011A	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-011B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-011C	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-011D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-011E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-012A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-012B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-012C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-012D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-012E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-013A	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-013B	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-013C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-013D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-013E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-014A	SW1-Q118LL	1/3/2018 2:40:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-014B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-014C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-015A	SW2-Q118LL	1/3/2018 3:10:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-015B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-015C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-016A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N027812-017A	AB1-Q118LL	1/3/2018 8:45:00 AM					☐	☐	☐	WW
N027812-018A	AB2-Q118LL	1/3/2018 1:40:00 PM					☐	☐	☐	WW
N027812-019A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N027812

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N027812

Item	Page
Cover Page	1-7
Analytical Result/QC Summary Reports	8-118
Sample Receiving Items	119-135
List of Analysts	136
Raw Data	
EPA 120.1	137-140
SM 4500-H+B	141-145
SM 2540D	146-160
EPA 218.6	161-385
SM 4500-NO3F	386-399
EPA 6010B_Dissolved	400-432
EPA 6010B	433-465
EPA 6020_Dissolved	466-548

January 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027812

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N027812-016 (R-28-Q118LL) was not analyzed. Please refer to the attached correspondence.

Samples N027812 -017 (AB1-Q118LL) and N027812-018 (AB2-Q118LL) were not analyzed as per COC.

Analytical Comments for SM 4500-NO3F:

Matrix Spike Duplicate (MSD) is outside recovery criteria in QC sample N027789-002DMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *15-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-001A	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001B	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001C	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001D	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001E	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-002A	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002B	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002C	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002D	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002E	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-003A	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003B	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003C	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003D	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003E	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-004A	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004B	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004C	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004D	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004E	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-005A	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005B	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005C	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005D	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005E	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-006A	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006B	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006C	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006D	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-006E	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-007A	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007B	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007C	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007D	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007E	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-008A	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008B	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008C	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008D	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008E	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-009A	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009B	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009C	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009D	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009E	C-TAZ-D-Q1188LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-010A	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010B	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010C	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-011A	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011B	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011C	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011D	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011E	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-012A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012B	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012C	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012D	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012E	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-013A	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-013B	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013C	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013D	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013E	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-014A	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014B	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014C	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-015A	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015B	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015C	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-016A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-017A	AB1-Q118LL	Groundwater	1/3/2018 8:45:00 AM	1/4/2018	1/15/2018
N027812-018A	AB2-Q118LL	Groundwater	1/3/2018 1:40:00 PM	1/4/2018	1/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:40:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027812-010CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID: **ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1011.000	0.10						1014	0.296	2	

Sample ID **N027812-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID: **ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1024.000	0.10						1028	0.390	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-010

Client Sample ID: MW-922-Q118LL
Collection Date: 1/3/2018 2:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-014

Client Sample ID: SW1-Q118LL
Collection Date: 1/3/2018 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027812-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121232**
Client ID: **ZZZZZZ** Batch ID: **R121232** TestNo: **SM4500-H+B** Analysis Date: **1/4/2018** SeqNo: **2885872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.290	0.10						8.270	0.242	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027812-015CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121232**
Client ID: **ZZZZZZ** Batch ID: **R121232** TestNo: **SM4500-H+B** Analysis Date: **1/4/2018** SeqNo: **2885887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.210	0.10						7.190	0.278	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**			PrepDate	**1/4/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**			PrepDate	**1/4/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**			PrepDate	**1/4/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66260	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121229
Client ID:	LCSW	Batch ID:	66260	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID	MB-66260	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121229
Client ID:	PBW	Batch ID:	66260	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027812-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121229
Client ID:	ZZZZZZ	Batch ID:	66260	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885811

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66261	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	LCSW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	918.000	10	1000	0	91.8	80	120				

Sample ID	MB-66261	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	PBW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027812-012DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	ZZZZZZ	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885828

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A**	QC Batch: **R121248**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:32 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C**	QC Batch: **66251**			PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:51 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:09 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:06 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:25 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 03:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:38 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-014

Client Sample ID: SW1-Q118LL
Collection Date: 1/3/2018 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 12:27 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 02:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R121248**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**PBW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	**LCS-R121248**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**LCSW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.195	0.20	5.000	0	104	90	110				

Sample ID	**N027812-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID	**N027812-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Sample ID	**N027812-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0	110	90	110				

Sample ID	N027812-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N027812-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N027812-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID	N027812-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	106	90	110				

Sample ID	N027812-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N027812-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027812-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027812-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110	1.073	0.336	20	

Sample ID	N027812-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027812-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.093	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121296**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **PBW**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121296**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **LCSW**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID **N027812-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID **N027819-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID **N027819-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N027820-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N027819-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N027820-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID **N027820-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID **N027820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027820-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66251	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	PBW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66251	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	LCSW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.036	1.0	10.00	0	100	85	115				

Sample ID	N027812-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.240	1.0	10.00	0	102	75	125				

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.491	1.0	10.00	0	105	75	125	10.24	2.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q1188LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121239	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	PBW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121239	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	LCSW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.522	0.050	0.5000	0	104	85	115				

Sample ID	N027789-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.202	0.25						3.245	1.33	20	

Sample ID	N027789-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.587	0.25	2.500	2.954	105	75	125				

Sample ID	N027789-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.170	0.25	2.500	2.954	129	75	125	5.587	9.92	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	25	1.8	20		ug/L	1	1/4/2018 07:23 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/4/2018 09:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 07:55 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/4/2018 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:01 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	1/4/2018 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:06 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	1/4/2018 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-011

Client Sample ID: C-TAZ-S-Q118LL
Collection Date: 1/3/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 11:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	1/4/2018 11:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 09:02 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	37	1.8	20		ug/L	1	1/4/2018 11:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66256**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **PBW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66256**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **LCSW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.918	20	100.0	0	104	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.753	20	100.0	24.72	96.0	75	125				

Sample ID **N027812-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.232	20	100.0	24.72	95.5	75	125	120.8	0.432	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66255	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	PBW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66255	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	LCSW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.193	20	100.0	0	106	85	115				

Sample ID	N027812-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.504	20	100.0	20.28	100	75	125				

Sample ID	N027812-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.635	20	100.0	20.28	99.4	75	125	120.5	0.723	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 09:41 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 09:41 PM
Manganese	3.0	0.056	0.50		µg/L	1	1/5/2018 09:41 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 09:41 PM
Selenium	1.8	0.028	0.50		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:43 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:43 PM
Manganese	1.2	0.056	0.50		µg/L	1	1/5/2018 10:43 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 10:43 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:54 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:54 PM
Manganese	2.8	0.056	0.50		µg/L	1	1/5/2018 10:54 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 10:54 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:05 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:05 PM
Manganese	1.3	0.056	0.50		µg/L	1	1/5/2018 11:05 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 11:05 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:16 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 11:16 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 11:16 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 11:16 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:28 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:28 PM
Manganese	3.7	0.056	0.50		µg/L	1	1/5/2018 11:28 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:28 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:50 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:50 PM
Manganese	2.9	0.056	0.50		µg/L	1	1/5/2018 11:50 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:50 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 12:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:01 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:01 AM
Manganese	2.6	0.056	0.50		µg/L	1	1/6/2018 12:01 AM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 12:01 AM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 12:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q1188LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:12 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:12 AM
Manganese	1.9	0.056	0.50		µg/L	1	1/6/2018 12:12 AM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 12:12 AM
Selenium	1.9	0.028	0.50		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-011

Client Sample ID: C-TAZ-S-Q118LL
Collection Date: 1/3/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:33 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:33 PM
Manganese	1.6	0.056	0.50		µg/L	1	1/5/2018 08:33 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 08:33 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 08:44 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:44 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 08:44 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:44 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:56 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:56 PM
Manganese	4.4	0.056	0.50		µg/L	1	1/5/2018 08:56 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:56 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66251**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **PBW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66251**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **LCSW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.756	0.10	10.00	0	97.6	85	115				
Barium	10.117	1.0	10.00	0	101	85	115				
Manganese	99.827	0.50	100.0	0	99.8	85	115				
Molybdenum	9.857	0.50	10.00	0	98.6	85	115				
Selenium	9.567	0.50	10.00	0	95.7	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.463	0.10	10.00	2.259	102	75	125				
Barium	141.826	1.0	10.00	129.4	124	75	125				
Manganese	103.441	0.50	100.0	3.007	100	75	125				
Molybdenum	16.612	0.50	10.00	5.016	116	75	125				
Selenium	12.937	0.50	10.00	1.769	112	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.796	0.10	10.00	2.259	105	75	125	12.46	2.64	20	
Barium	140.958	1.0	10.00	129.4	115	75	125	141.8	0.614	20	
Manganese	104.147	0.50	100.0	3.007	101	75	125	103.4	0.680	20	
Molybdenum	16.287	0.50	10.00	5.016	113	75	125	16.61	1.98	20	
Selenium	12.654	0.50	10.00	1.769	109	75	125	12.94	2.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Report to: Nara Tay	Bill to: Nara Tay	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: AECOM	Excel EDD	PQL:		
Address: Roseville, CA 95661	Email:	Geotracker	RWQCB ✓	1. Chilled	
	Address:	Labspec	CalTrans	2. Headspace	
Phone: 916-786-3302 Fax:	Email to: mbloes@pivox.com	Others ✓	LEVEL III	3. Container Intact	
Submitted By: Nara Tay	P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present	
Title: sample tech	Phone: 949-727-1400, ext 200 Fax:	Global ID:	Regulatory	5. IR number	3
Signature: Date: 1/3/18	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661		Specify State:	6. Method of Cooling: ice	
I hereby authorize ASSET Labs to perform the tests indicated below.	Phone: 916-786-3302 Fax:			Sample Temp: 2.1°C / 3.2°C / 2-6°C	
Project Name: PG&E Topock - RMP	Sampled By: Nara Tay			Courier:	
Project Number: RC000753.0801	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Tracking No.:	
	Signature: Date: 1/3/18				

Matrix: Ground x | Sediment; Potable | Soil; NPDES | Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba 3x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027812 -01	C-BNS-Q118LL	1/3/18	1155		X		X		X	X		X	X			X	X	E	7	P	BNS	
2		~~C-CON-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M7
3		~~C-CON-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
4	-02	C-I-3-D-Q118LL	1/3/18	0930		X		X		X	X		X	X			X	X	E	7	P	BNS	
5	-03	MW-921-Q118LL	1/3/18	1235		X		X		X	X		X	X			X	X	E	7	P	BNS	
6	-04	C-I-3-S-Q118LL	1/3/18	0950		X		X		X	X		X	X			X	X	E	7	P	BNS	
7		~~C-MAR-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M7
8		~~C-MAR-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M7
9		~~C-NR1-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
10		~~C-NR1-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
11		~~C-NR3-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
12		~~C-NR3-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
13		~~MW-920-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
14		~~C-NR4-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tay	1/3/18 1600	[illegible]	1/3/18 1630
[illegible]	1/3/18 1900	[illegible]	1/3/18 1900

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Sample tech	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 1/3/18	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State:	6. Method of Cooling: IR
Project Name: PG&E Topock - RMP	Signature: Date: 1/3/18				Sample Temp: 2.1°C / 3.0°C / 2.6°C
Project Number: RC000753.0801					Courier: Tracking No.:

Matrix: Ground x | Potable | NPDES | Surface; Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Oxygen and deuterium stable isotopes (CFIRM) (1 250 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
2	N027812 -05	C-R22A-D-Q118LL	1/3/18	1050		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
3	-06	C-R22A-S-Q118LL	1/3/18	1105		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
4	-07	C-R27-D-Q118LL	1/3/18	1225		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
5	-08	C-R27-S-Q118LL	1/3/18	1250		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
	-09	C-TAZ-D-Q118LL	1/3/18	0835		X		X		X	X		X	X			X	X		E	7 6	P	BNS	
7	-10	MW-922-Q118LL	1/3/18	1450		X		X					X	X						E	5	P	BNS	
8	-11	C-TAZ-S-Q118LL	1/3/18	0855		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
9		~~R-19-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
10	-12	R-28-Q118LL	1/3/18	1325		X		X	~~X~~	X	X	~~X~~	X	X	~~X~~	~~X~~	X	X	~~X~~	E	7 6	P	BNS	
11	-13	R63-Q118LL	1/3/18	1015		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
12		~~RRB-Q118LL~~				X		X		X	X		X	X			X	X		E	7 8	P	BNS	M
13	-14	SW1-Q118LL	1/3/18	1440		X		X					X	X						E	5	P	BNS	
14	-15	SW2-Q118LL	1/3/18	1510		X		X					X	X						E	5	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	1/3/18 1600	Ping Wang	1/3/18 1630
Ping Wang	1/3/18 1905	Ping Wang	1/3/18 1905
Ping Wang		Ping Wang	

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
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Contact us:
California: P: 702.307.2659 F: 702.307.2691
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Mary Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
			Geotracker	RWQCB ✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec	CalTrans	2. Headspace
			Others ✓	LEVEL III	3. Container Intact
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present
Submitted By: Nara Tan		Phone: 949-727-1400, ext 200 Fax:	Global ID:	Regulatory	5. IR number 3
Title: sample tech	Phone: 916-786-3302 Fax:			Specify State:	6. Method of Cooling: ice
Signature: Date: 1/3/18	Sampled By: Nara Tan				Sample Temp: 2.1°C / 3.2°C / 2.6°C

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - RMP
Project Number: RC000753.0801
Signature: Date: 1/3/18

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N027812-16	R-28-Q118LL	1/3/18	1325		X																
	-17	AB1-Q118LL	1/3/18	0845			X													E	1	P	BN	Hold
	-18	AB2-Q118LL	1/3/18	1340			X													E	1	P	BN	Hold
		~~AB3-Q118LL~~					X													E	1	P	BN	Hold

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tan	1/3/18		
			1/3/18 1630
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/3/18 1900		1/3/18 1900
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

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8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/3/2018	Workorder:	N027812
Rep sample Temp (Deg C):	2.1/3.2/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See correspondence.

Checklist Completed By: YR 1/4/2018

Reviewed By: 01/05/2018

Dylan 1/4/2018

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 11:45 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "jmahn@blainetech.com" <jmahn@blainetech.com>

Hello Yoandra,
See my comments below.

Thanks,
Laura
-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC. There are 2 sets of dissolved metals on page 2 of the COC you sent. Please see the attached original COC file for the list of metals. It looks like when printed the specific metals were cut off.

- Sample R-28-Q118LL is listed twice (# 12 and # 16). I'm looking into this one and have a call into the field team.

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label. AB1-Q118LL is correct

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label. AB2-Q118LL is correct

- Please also confirm if the samples 17 and 18 should be on hold as per COC. Yes, please hold.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.

Attachments:

Topock COC RMP_ 01 2018.xlsx	118 KB

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 1:28 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>

Line # 16 is an error and was not submitted to the lab.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC.

- Sample R-28-Q118LL is listed twice (# 12 and # 16).

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label.

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label.

- Please also confirm if the samples 17 and 18 should be on hold as per COC.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-001A	C-BNS-Q118LL	1/3/2018 11:55:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-001C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-001D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-001E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-002A	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-002C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-002D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-002D	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-002E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-003A	MW-921-Q118LL	1/3/2018 12:35:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-003B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-003C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-003D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-003E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-004A	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-004B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-004B	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-004C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-004D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-004E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-005A	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-005B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-005C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-005D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-005E	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-006A	C-R22A-S-Q118LL	1/3/2018 11:05:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-006B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-006C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-006D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-006E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-007A	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-007B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-007C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-007C	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-007D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-007E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-008A	C-R27-S-Q118LL	1/3/2018 12:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-008B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-008C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-008D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-008E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-009A	C-TAZ-D-Q1188LL	1/3/2018 8:35:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-009B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-009B	C-TAZ-D-Q1188LL	1/3/2018 8:35:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-009C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-009D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-009E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-010A	MW-922-Q118LL	1/3/2018 2:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-010B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-010C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-011A	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-011B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-011C	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-011D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-011E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-012A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-012B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-012C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-012D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-012E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-013A	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-013B	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-013C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-013D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-013E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-014A	SW1-Q118LL	1/3/2018 2:40:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-014B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-014C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-015A	SW2-Q118LL	1/3/2018 3:10:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-015B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-015C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-016A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N027812-017A	AB1-Q118LL	1/3/2018 8:45:00 AM					☐	☐	☐	WW
N027812-018A	AB2-Q118LL	1/3/2018 1:40:00 PM					☐	☐	☐	WW
N027812-019A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027812

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121231 **Analyst:** LSR

ASSET #: N027812 **Date Analyzed:** 1/4/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 1/8/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/4/18 1025

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 µS/cm	CIWV - 171015A	9.57 @ 20.7°C	% Rec: (90-110%)
1412	171121A	1412 @ 20.5°C	
9986	171018B	10040 @ 20.5°C	
99842	171121B	99400 @ 20.4°C	

	Sample ID	Matrix	Reading	Comments
1	N027812-001D	H2O	886 @ 21.3°C	
2	2D		893 @ 20.0°C	
3	3D		913 @ 19.5°C	
4	4D		911 @ 19.3°C	
5	5D		912 @ 19.1°C	
6	6D		924 @ 19.3°C	
7	7D		928 @ 19.8°C	
8	8D		918 @ 19.7°C	
9	9D		918 @ 19.5°C	
10	10C		1014 @ 19.8°C	
Dup	10C DUP		1011 @ 19.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: CONT'D

Analyst:

Standard	Std ID	Reading	Comments
1413 µS/cm	CIWV - 170615G	1457 @ 20.7°C	% Rec: (90-110%)
10000	170822F	10060 @ 20.6°C	
99672	170831B	98700 @ 20.3°C	

	Sample ID	Matrix	Reading	Comments
1	N027812-011D	H2O	911 @ 19.8°C	
2	012D		939 @ 19.7°C	
3	13D		941 @ 19.9°C	
4	14C		1028 @ 19.8°C	
5	14C DUP		1029 @ 19.4°C	
6	15C		993 @ 19.5°C	
7				
8				Julia Ramit 1/8/2018
9	1413 µS/cm	CIWV - 170615G	1463 @ 20.9°C	
10	10000	170822F	10010 @ 20.7°C	01/12/2018
Dup	99672	170831B	98900 @ 20.4°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

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SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121232 **Analyst:** LSR

ASSET #: N027812 **Date Analyzed:** 1/4/2018

Method: EPA 150.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X	X		X	X	
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

Samoles were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 1/8/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/3/18 1417
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170615F	7.01 @25.0 C	SLOPE: 95.3%
Buffer 4	170615E	3.99 @25.0 C	
Buffer 10	170838B	10.02 @25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27809-001D	H2O	7.92 @25.0C	
2	1P DUP		7.95 @25.0 C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-171023A	7.03 @25.0 C	Accept: +/-0.1 pH units from expected value

Date: 1/4/17 920
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170615F	7.00 @25.0°C	SLOPE: 98.2%.
Buffer 4	170615E	4.02 @25.0 C	
Buffer 10	170822B	10.02 @25.0°C	

	Sample ID	Matrix	pH	Comments
1	NO27812-001D	H2O	8.27 @25.0 C	
2	1D DUP		8.29 @25.0 C	
3	2D		8.24 @25.0°C	
4	3D		8.27 @25.0°C	
5	4D		8.27 @25.0 C	
6	5D		8.26 @25.0 C	
7	6D		8.25 @25.0 C	Julia Ramit 1/8/2018
8	7D		8.27 @25.0 C	
9	8D		8.30 @25.0°C	01/12/2018
10	9D		8.24 @25.0 C	
Dup	10RC HK 1/4		8.41 @25.0 C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-171023A	7.03 @25.1 C	Accept: +/-0.1 pH units from expected value

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pH Logbook

Date: 11/4/18 920

Analyst: LSR (cont'd)

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.00 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.02 @ 25.0 C	
Buffer 10	170822B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27812-011D	H_2O	8.20 @ 24.0 C	
2	12D		8.26 @ 24.0 C	
3	13D		8.19 @ 25.0 C	
4	14C		8.38 @ 25.0 C	
5	15C		7.19 @ 24.0 C	
6	15CDUP		7.21 @ 25.0 C	
7				
8				
9			Julia Ramit	1/8/2018
10			RLB	01/12/2018
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.02 @ 25.0 C	Accept: +/-0.1 pH units from expected value

Date: 11/5/18 1110

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.01 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.01 @ 25.0 C	
Buffer 10	170822B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27819-001C	H_2O	7.69 @ 25.0 C	
2	1CDUP		7.69 @ 25.0 C	
3	2C		7.32 @ 25.0 C	
4	NO27820-001D		8.32 @ 25.0 C	
5	2D		8.33 @ 25.0 C	
6	3D		8.15 @ 25.0 C	
7	4D		8.19 @ 25.0 C	
8	5D		8.35 @ 25.0 C	
9	6D		8.34 @ 25.0 C	
10	7D		8.34 @ 25.0 C	
Dup	8D		8.34 @ 25.0 C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.05 @ 25.0 C	Accept: +/-0.1 pH units from expected value

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SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66260/66261 **Analyst:** LSR

ASSET #: N027812 **Date Analyzed:** 1/4/2018

Method: EPA 160.2

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 1/9/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027812-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4127- 1.4124) *1000000}{100}$$

= 3 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 1/9/2018

RLB 01/12/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:16 A**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66260** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66260	Water	IWST171227A	100	☐	0	0	100	1.000		
MB-66260	Water		100	☐	0	0	100	1.000		
N027812-001D	Groundwater		100	☐	0	0	100	1.000		
N027812-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-002D	Groundwater		100	☐	0	0	100	1.000		
N027812-003D	Groundwater		100	☐	0	0	100	1.000		
N027812-004D	Groundwater		100	☐	0	0	100	1.000		
N027812-005D	Groundwater		100	☐	0	0	100	1.000		
N027812-006D	Groundwater		100	☐	0	0	100	1.000		
N027812-007D	Groundwater		100	☐	0	0	100	1.000		
N027812-008D	Groundwater		100	☐	0	0	100	1.000		
N027812-009D	Groundwater		100	☐	0	0	100	1.000		
N027812-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:19 A**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66261** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66261	Water	IWST171227A	100	☐	0	0	100	1.000		
MB-66261	Water		100	☐	0	0	100	1.000		
N027792-001A	Surface Water		100	☐	0	0	100	1.000		
N027792-002A	Surface Water		100	☐	0	0	100	1.000		
N027792-003A	Surface Water		100	☐	0	0	100	1.000		
N027792-004A	Surface Water		100	☐	0	0	100	1.000		
N027812-012D	Groundwater		100	☐	0	0	100	1.000		
N027812-012D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:16 A**
Prep End Date: **1/4/2018 4:40:00 P**

Reviewed/ Date: RLB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66260** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66260	Water		100	☐	0	0	100	1.000		
MB-66260	Water		100	☐	0	0	100	1.000		
N027812-001D	Groundwater		100	☐	0	0	100	1.000		
N027812-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-002D	Groundwater		100	☐	0	0	100	1.000		
N027812-003D	Groundwater		100	☐	0	0	100	1.000		
N027812-004D	Groundwater		100	☐	0	0	100	1.000		
N027812-005D	Groundwater		100	☐	0	0	100	1.000		
N027812-006D	Groundwater		100	☐	0	0	100	1.000		
N027812-007D	Groundwater		100	☐	0	0	100	1.000		
N027812-008D	Groundwater		100	☐	0	0	100	1.000		
N027812-009D	Groundwater		100	☐	0	0	100	1.000		
N027812-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171227A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:19 A**
Prep End Date: **1/4/2018 4:40:00 P**
Reviewed/ Date: RLB 01/12/2018
Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66261** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66261	Water		100	☐	0	0	100	1.000		
MB-66261	Water		100	☐	0	0	100	1.000		
N027792-001A	Surface Water		100	☐	0	0	100	1.000		
N027792-002A	Surface Water		100	☐	0	0	100	1.000		
N027792-003A	Surface Water		100	☐	0	0	100	1.000		
N027792-004A	Surface Water		100	☐	0	0	100	1.000		
N027812-012D	Groundwater		100	☐	0	0	100	1.000		
N027812-012D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171227A	1000 ppm Talc	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST : (TSS)/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt (g)	Comments
1/4/18 1037	MB 66260	100	1.4184 1.4181	1.4180 1.4180	
	LCS 66260	100	1.4161 1.4160	1.5089 1.5087	
1	K0278I2-001D	100	1.4126 1.4124	1.4125 1.4127	
D1	1D DUP	100	1.4260 1.4262	1.4262 1.4264	
2	2D	100	1.4130 1.4127	1.4126 1.4126	
3	3D	100	1.4207 1.4207	1.4208 1.4209	
4	4D	100	1.4207 1.4206	1.4207 1.4207	
5	5D	100	1.4228 1.4228	1.4228 1.4230	
6	6D	100	1.4253 1.4252	1.4251 1.4254	
7	7D	100	1.4152 1.4150	1.4151 1.4151	

Julia Ramit 1/9/2018

01/12/2018

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SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/4/18 8	NO27812-008D	100	1.4220 1.4221	1.4231 1.42.22	
9	9D	100	1.4232 1.4232	1.4235 1.4234	
10	11D	100	1.4160 1.4162	1.4162 1.4163	
Divia Ramit	1/9/2018				

RLB 01/12/2018 ASSET Laboratories Logbook#9

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/4/2018							
MB-66260	100	1.4181	1.4180	-1.0000	1.00	-1	MBLK
LCS-66260	100	1.4160	1.5087	927.0000	1.00	927	LCS
N027812-001D	100	1.4124	1.4127	3.0000	1.00	3	SAMP
N027812-001DDUP	100	1.4262	1.4264	2.0000	1.00	2	DUP
N027812-002D	100	1.4127	1.4126	-1.0000	1.00	-1	SAMP
N027812-003D	100	1.4207	1.4209	2.0000	1.00	2	SAMP
N027812-004D	100	1.4206	1.4207	1.0000	1.00	1	SAMP
N027812-005D	100	1.4228	1.423	2.0000	1.00	2	SAMP
N027812-006D	100	1.4252	1.4254	2.0000	1.00	2	SAMP
N027812-007D	100	1.415	1.4151	1.0000	1.00	1	SAMP
N027812-008D	100	1.4221	1.4222	1.0000	1.00	1	SAMP
N027812-009D	100	1.4232	1.4234	2.0000	1.00	2	SAMP
N027812-011D	100	1.4162	1.4163	1.0000	1.00	1	SAMP

Sivia Ramit 1/9/2018

RB 01/12/2018

SOLIDS RAW DATA

TEST : TSS\ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/4/18 1057 G	MB 66261	100	1.4157 1.4154	1.4164 1.4153	
	LCS 66261	100	1.4117 1.4116	1.5036 1.5034	
11	ND27792-001A	100	1.4226 1.4225	1.4237 1.4237	
12	2A	100	1.4194 1.4193	1.4212 1.4210	
13	3A	100	1.4207 1.4206	1.4219 1.4217	
14	4A	100	1.4118 1.4117	1.4133 1.4130	
15	ND27812-012D	100	1.4112 1.4112	1.4119 1.4117	
16	12D DUP	100	1.4274 1.4277	1.4283 1.4283	
16	13D	100	1.4157 1.4154	1.4161 1.4159	
	Cleaning wt	1.0001	1/4/18 @ 1640	KK	

Julia Ramit 1/9/2018

01/12/2018

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/4/2018							
MB-66261	100	1.4154	1.4153	-1.0000	1.00	-1	MBLK
LCS-66261	100	1.4116	1.5034	918.0000	1.00	918	LCS
N027792-001A	100	1.4225	1.4237	12.0000	1.00	12	SAMP
N027792-002A	100	1.4193	1.421	17.0000	1.00	17	SAMP
N027792-003A	100	1.4206	1.4217	11.0000	1.00	11	SAMP
N027792-004A	100	1.4117	1.413	13.0000	1.00	13	SAMP
N027812-012D	100	1.4112	1.4117	5.0000	1.00	5	SAMP
N027812-012DDUP	100	1.4277	1.4283	6.0000	1.00	6	DUP
N027812-013D	100	1.4154	1.4159	5.0000	1.00	5	SAMP

Silvia Ramit 1/9/2018

RB 01/12/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121248
ASSET #: N027812

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/5/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:
~~N027812-014A for rerun due to matrix interference.~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 1/10/2018

2nd Level Reviewer 01/12/2018 Date: ~~1/12/2018~~

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R121296
ASSET #: N027812

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X			X		
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 1/10/2018

2nd Level Reviewer 01/12/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027812-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

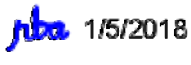
rba 1/10/2018

ANALYSIS RUN LOG

INJECTION LOG: 180102A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/02/18 1:22 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/02/18 1:34 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/02/18 1:43 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_180102A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Jan/18 14:25:10**
No. of Injections:	**15**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		01/02/2018 13:22	Finished	ICV @5ppb, IWST-171002B
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/02/2018 13:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/02/2018 13:43	Finished	ICB R180102C
13	SHUTDOWN	14	1000	Unknown		01/02/2018 14:02	Finished	
14	Eluent: R180102A	15	1000	Unknown		n.a.	Finished	Eluent
15	PCR: R180102B	16	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 1/5/2018

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:24 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:35 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/05/18 8:44 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/05/18 8:54 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/05/18 9:03 AM	Reported
15	MB-R121248	MBLK	1	Hexavalent Chromium	01/05/18 9:13 AM	Reported
16	LCS-R121248	LCS	1	Hexavalent Chromium	01/05/18 9:22 AM	Reported
17	N027812-001A	SAMP	1	Hexavalent Chromium	01/05/18 9:32 AM	Reported
18	N027812-001AMS	MS	1	Hexavalent Chromium	01/05/18 9:41 AM	Reported
19	N027812-002A	SAMP	1	Hexavalent Chromium	01/05/18 9:51 AM	Reported
20	N027812-002AMS	MS	1	Hexavalent Chromium	01/05/18 10:00 AM	Reported
21	N027812-003A	SAMP	1	Hexavalent Chromium	01/05/18 10:09 AM	Reported
22	N027812-003AMS	MS	1	Hexavalent Chromium	01/05/18 10:19 AM	Reported
23	N027812-004A	SAMP	1	Hexavalent Chromium	01/05/18 10:28 AM	Reported
24	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 10:38 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/05/18 10:47 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/05/18 10:57 AM	Reported
27	N027812-005A	SAMP	1	Hexavalent Chromium	01/05/18 11:06 AM	Reported
28	N027812-005AMS	MS	1	Hexavalent Chromium	01/05/18 11:16 AM	Reported
29	N027812-006A	SAMP	1	Hexavalent Chromium	01/05/18 11:25 AM	Reported
30	N027812-006AMS	MS	1	Hexavalent Chromium	01/05/18 11:35 AM	Reported
31	N027812-007A	SAMP	1	Hexavalent Chromium	01/05/18 11:44 AM	Reported
32	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 11:54 AM	Not Reported
33	N027812-008A	SAMP	1	Hexavalent Chromium	01/05/18 12:03 PM	Reported
34	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 12:12 PM	Not Reported
35	N027812-009A	SAMP	1	Hexavalent Chromium	01/05/18 12:22 PM	Reported
36	N027812-009AMS	MS	1	Hexavalent Chromium	01/05/18 12:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/05/18 12:41 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/05/18 12:50 PM	Reported
39	N027557-002A	SAMP	1	Hexavalent Chromium	01/05/18 1:00 PM	Not Reported
40	N027557-002AMS	MS	1	Hexavalent Chromium	01/05/18 1:09 PM	Not Reported
41	N027812-011A	SAMP	1	Hexavalent Chromium	01/05/18 1:19 PM	Reported
42	N027812-011AMS	MS	1	Hexavalent Chromium	01/05/18 1:28 PM	Reported

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027812-012A	SAMP	1	Hexavalent Chromium	01/05/18 1:38 PM	Reported
44	N027812-012AMS	MS	1	Hexavalent Chromium	01/05/18 1:47 PM	Reported
45	N027812-013A	SAMP	1	Hexavalent Chromium	01/05/18 1:57 PM	Reported
46	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 2:06 PM	Not Reported
47	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 2:16 PM	Not Reported
48	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 2:25 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/05/18 2:34 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/05/18 2:44 PM	Reported
51	N027812-015A	SAMP	1	Hexavalent Chromium	01/05/18 2:53 PM	Reported
52	N027812-015AMS	MS	1	Hexavalent Chromium	N.A.	Not Reported
53	N027812-010A	SAMP	1	Hexavalent Chromium	01/05/18 3:39 PM	Reported
54	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 3:50 PM	Not Reported
55	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 4:00 PM	Reported
56	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 4:12 PM	Reported
57	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 4:21 PM	Reported
58	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 4:31 PM	Reported
59	N027812-009ADUP	DUP	1	Hexavalent Chromium	01/05/18 4:40 PM	Reported
60	N027812-003AMSD	MSD	1	Hexavalent Chromium	01/05/18 4:50 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/05/18 5:29 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/05/18 5:40 PM	Reported
63	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 5:49 PM	Not Reported
64	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 5:58 PM	Not Reported
65	N027812-015AMS	MS	1	Hexavalent Chromium	01/05/18 6:08 PM	Reported
66	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 6:17 PM	Reported
67	CCV-6	CCV1	1	Hexavalent Chromium	01/05/18 6:27 PM	Reported
68	CCB-6	CCB	1	Hexavalent Chromium	01/05/18 6:36 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180105A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/Jan/18 19:07:08**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		01/05/2018 08:24	Finished	BLANK
11	BLANK	2	1000	Unknown		01/05/2018 08:35	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		01/05/2018 08:44	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/05/2018 08:54	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/05/2018 09:03	Finished	CCB R180102C
15	MB-H2O,MBLK,1,	6	1000	Unknown		01/05/2018 09:13	Finished	MB R171129A
16	LCS-H2O,LCS,1,	7	1000	Unknown		01/05/2018 09:22	Finished	LCS, IWST-171002B
17	N027812-001A,SAMP	8	1000	Unknown		01/05/2018 09:32	Finished	SAMP,10mL
18	N027812-001AMS,MS	9	1000	Unknown		01/05/2018 09:41	Finished	MS (1ppb), IWST-171002B,10
19	N027812-002A,SAMP	10	1000	Unknown		01/05/2018 09:51	Finished	SAMP,10mL
20	N027812-002AMS,MS	11	1000	Unknown		01/05/2018 10:00	Finished	MS (1ppb), IWST-171002B,10
21	N027812-003A,SAMP	12	1000	Unknown		01/05/2018 10:09	Finished	SAMP,10mL
22	N027812-003AMS,MS	13	1000	Unknown		01/05/2018 10:19	Finished	MS (1ppb), IWST-171002B,10
23	N027812-004A,SAMP	14	1000	Unknown		01/05/2018 10:28	Finished	SAMP,10mL
24	N027812-004AMS,MS	15	1000	Unknown		01/05/2018 10:38	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		01/05/2018 10:47	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		01/05/2018 10:57	Finished	CCB R180102C
27	N027812-005A,SAMP	18	1000	Unknown		01/05/2018 11:06	Finished	SAMP,10mL
28	N027812-005AMS,MS	19	1000	Unknown		01/05/2018 11:16	Finished	MS (1ppb), IWST-171002B,10
29	N027812-006A,SAMP	20	1000	Unknown		01/05/2018 11:25	Finished	SAMP,10mL
30	N027812-006AMS,MS	21	1000	Unknown		01/05/2018 11:35	Finished	MS (1ppb), IWST-171002B,10
31	N027812-007A,SAMP	22	1000	Unknown		01/05/2018 11:44	Finished	SAMP,10mL
32	N027812-007AMS,MS	23	1000	Unknown		01/05/2018 11:54	Finished	MS (1ppb), IWST-171002B,10
33	N027812-008A,SAMP	24	1000	Unknown		01/05/2018 12:03	Finished	SAMP,10mL
34	N027812-008AMS,MS	25	1000	Unknown		01/05/2018 12:12	Finished	MS (1ppb), IWST-171002B,10
35	N027812-009A,SAMP	26	1000	Unknown		01/05/2018 12:22	Finished	SAMP,10mL
36	N027812-009AMS,MS	27	1000	Unknown		01/05/2018 12:31	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	28	1000	Unknown		01/05/2018 12:41	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		01/05/2018 12:50	Finished	CCB R180102C
39	N027557-002A,SAMP	30	1000	Unknown		01/05/2018 13:00	Finished	SAMP,2>10mL
40	N027557-002AMS,MS	31	1000	Unknown		01/05/2018 13:09	Finished	MS (1ppb), IWST-171002B,2>1
41	N027812-011A,SAMP	32	1000	Unknown		01/05/2018 13:19	Finished	SAMP,10mL
42	N027812-011AMS,MS	33	1000	Unknown		01/05/2018 13:28	Finished	MS (1ppb), IWST-171002B,10
43	N027812-012A,SAMP	34	1000	Unknown		01/05/2018 13:38	Finished	SAMP,10mL
44	N027812-012AMS,MS	35	1000	Unknown		01/05/2018 13:47	Finished	MS (1ppb), IWST-171002B,10
45	N027812-013A,SAMP	36	1000	Unknown		01/05/2018 13:57	Finished	SAMP,10mL
46	N027812-013AMS,MS	37	1000	Unknown		01/05/2018 14:06	Finished	MS (1ppb), IWST-171002B,10
47	N027812-014A,SAMP	38	1000	Unknown		01/05/2018 14:16	Finished	SAMP,10mL
48	N027812-014AMS,MS	39	1000	Unknown		01/05/2018 14:25	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	40	1000	Unknown		01/05/2018 14:34	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		01/05/2018 14:44	Finished	CCB R180102C
51	N027812-015A,SAMP	42	1000	Unknown		01/05/2018 14:53	Finished	SAMP,10mL
52	N027812-015AMS,MS	43	1000	Unknown		n.a.	Interrupted	MS (1ppb), IWST-171002B,10
53	N027812-010A,SAMP	44	1000	Unknown		01/05/2018 15:39	Finished	SAMP,10mL
54	N027812-010AMS,MS	45	1000	Unknown		01/05/2018 15:50	Finished	MS (1ppb), IWST-171002B,10
55	N027812-004AMS,MS	1	1000	Unknown		01/05/2018 16:00	Finished	MS (1ppb), IWST-171002B,10
56	N027812-007AMS,MS	2	1000	Unknown		01/05/2018 16:12	Finished	MS (1ppb), IWST-171002B,10
57	N027812-008AMS,MS	3	1000	Unknown		01/05/2018 16:21	Finished	MS (1ppb), IWST-171002B,10
58	N027812-013AMS,MS	4	1000	Unknown		01/05/2018 16:31	Finished	MS (1ppb), IWST-171002B,10
59	N027812-009ADUP,D	5	1000	Unknown		01/05/2018 16:40	Finished	DUP,1>10mL
60	N027812-003AMSD,M	6	1000	Unknown		01/05/2018 16:50	Finished	MSD (1ppb), IWST-171002B,10

61	CCV-5,CCV,1,	7	1000	Unknown		01/05/2018 17:29	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	8	1000	Unknown		01/05/2018 17:40	Finished	CCB R180102C
63	N027812-014A,SAMP	9	1000	Unknown		01/05/2018 17:49	Finished	SAMP,10mL
64	N027812-014AMS,MS	10	1000	Unknown		01/05/2018 17:58	Finished	MS (1ppb), IWST-171002B,10
65	N027812-015AMS,MS	11	1000	Unknown		01/05/2018 18:08	Finished	MS (1ppb), IWST-171002B,10
66	N027812-010AMS,MS	12	1000	Unknown		01/05/2018 18:17	Finished	MS (1ppb), IWST-171002B,10
67	CCV-6,CCV1,1,	13	1000	Unknown		01/05/2018 18:27	Finished	CCV @10ppb, IWST-171002A
68	CCB-6,CCB,1,	14	1000	Unknown		01/05/2018 18:36	Finished	CCB R180102C
69	SHUTDOWN	15	1000	Unknown		01/05/2018 18:46	Finished	
70	Eluent: R180104B	16	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	17	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMF	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMF	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMF	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMF	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMF	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMF	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMF	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMF	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMF	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMF	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMF	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMF	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMF	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMF	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMF	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMF	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMF	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMF	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 1/3/18
Time Prepared: 1005H
Prepared By: NSA

slope: 95.3%
pH4: 3.99 @ 25.0°C
7: 7.01 @ 25.0°C
10: 10.02 @ 25.0°C
LVS: 7.05 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-1706 20A
NH4OH + NH4SO4 eluent: R180102A / R180104B
NH4OH + NH4SO4 buffer: R180102C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M027789-001C	7.57	9.52	~250mL	~250mL		R180102C
2)	2C	7.51	9.69				
3)	3B	7.88	9.42				
4)	M027812-001A	9.51	-				1/3
5)	001A	9.52	-				2/3
6)	001A	9.53	-				3/3
7)	002A	9.52	-				1/3
8)	002A	9.51	-				2/3
9)	002A	9.56	-				3/3
10)	003A	9.55	-				1/3
11)	003A	9.55	-				2/3
12)	003A	9.54	-				3/3
13)	004A	9.54	-				1/3
14)	004A	9.55	-				2/3
15)	004A	9.58	-				3/3
	005A	9.56	-				1/3

Sample Preparation

Date Prepared: 1/4/18
Time Prepared: 1005H
Prepared By: MG

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-1706 20A
NH4OH + NH4SO4 eluent: R180104B
NH4OH + NH4SO4 buffer: R180102C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M027812-005A	9.56	-	~250 mL	~250mL		2/3 R180102C
2)	005A	9.53	-				3/3
3)	006A	9.55	-				1/3
4)	006A	9.57	-				2/3
5)	006A	9.57	-				3/3
6)	007A	9.54	-				1/3
7)	007A	9.54	-				2/3
8)	007A	9.54	-				3/3
9)	008A	9.55	-				1/3
10)	008A	9.50	-				2/3
11)	008A	9.46	-				3/3
12)	009A	9.46	-				1/3
13)	009A	9.44	-				2/3
14)	009A	9.44	-				3/3
15)	010A	9.49	-				1/3
	010A	9.46	-				2/3

Logbook No. 13

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 11/4/15
Time Prepared: 1005H
Prepared By: MH

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CMV-170620A
NH4OH + NH4SO4 eluent: R1801048 / R1801080
NH4OH + NH4SO4 buffer: R1801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	W027812-010A	9.48	–	~250 ml	~250ml		R1801020
2)	011A	9.49	–				
3)	11A	9.45	–				
4)	11A	9.50	–				
5)	12A	9.49	–				
6)	12A	9.49	–				
7)	12A	9.49	–				
8)	13A	9.46	–				
9)	13A	9.49	–				
10)	17A	9.48	–				
11)	14A	9.49	–				
12)	14A	9.48	–				
13)	14A	9.46	–				
14)	15A	9.45	–				
15)	15A	9.45	–				
	15A	9.45	–				

Sample Preparation

Date Prepared: 11/4/15
Time Prepared: 1005H
Prepared By: MH

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CMV-170625A
NH4OH + NH4SO4 eluent: R1801048
NH4OH + NH4SO4 buffer: R1801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	W027812-17A	9.58	–	~250ml	~250		R1801020
2)	18A	9.54	–				1
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0505	0.2501	1.2761	2.5621	3.8523	5.1007	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/8/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0622	0.2487	1.2856	2.5688	3.8263	5.1131	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ICV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/2/2018**	SeqNo: **2887353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.059	0.20	5.000	0	101	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/2/2018**	SeqNo: **2887354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.193	0.20	0.2000	0	96.4	80	120				

Sample ID: **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.178	0.20	5.000	0	104	95	105				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID: **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.095	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.110	0.20	5.000	0	102	95	105				

Sample ID: **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.248	0.20	10.00	0	102	95	105				

Sample ID: **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.134	0.20	5.000	0	103	95	105				

Sample ID: **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.211	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.204	0.20	5.000	0	104	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.225	0.20	0.2000	0	113	80	120				

Sample ID: **CCV-1**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.253	0.20	10.00	0	103	95	105				

Sample ID: **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.233	0.20	5.000	0	105	95	105				

Sample ID: **CCV-3**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.161	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.117	0.20	5.000	0	102	95	105				

Sample ID: **CCV-5**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.174	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ICB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/2/2018**	SeqNo: **2887355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **CCB** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
Average	4.173	
Actual RT Window	4.093 - 4.253	
Applied RT Window	3.973 - 4.373	
MB-R121248	N.A.	N.A.
LCS-R121248	4.173	PASS
N027812-001A	N.A.	N.A.
N027812-001AMS	4.165	PASS
N027812-002A	N.A.	N.A.
N027812-002AMS	4.165	PASS
N027812-003A	N.A.	N.A.
N027812-003AMS	4.165	PASS
N027812-004A	N.A.	N.A.
N027812-004AMS	4.173	PASS
N027812-005A	N.A.	N.A.
N027812-005AMS	4.165	PASS
N027812-006A	N.A.	N.A.
N027812-006AMS	4.165	PASS
N027812-007A	N.A.	N.A.
N027812-007AMS	4.165	PASS
N027812-008A	N.A.	N.A.
N027812-008AMS	4.165	PASS
N027812-009A	N.A.	N.A.
N027812-009AMS	4.165	PASS
N027557-002A	4.131	PASS
N027557-002AMS	4.131	PASS
N027812-011A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
Average	4.173	
Actual RT Window	4.093 - 4.253	
Applied RT Window	3.973 - 4.373	
N027812-011AMS	4.165	PASS
N027812-012A	N.A.	N.A.
N027812-012AMS	4.165	PASS
N027812-013A	N.A.	N.A.
N027812-013AMS	4.165	PASS
N027812-014A	N.A.	N.A.
N027812-014AMS	4.173	PASS
N027812-015A	N.A.	N.A.
N027812-015AMS	N.A.	N.A.
N027812-010A	N.A.	N.A.
N027812-010AMS	4.165	PASS
N027812-004AMS	4.165	PASS
N027812-007AMS	4.165	PASS
N027812-008AMS	4.173	PASS
N027812-013AMS	4.173	PASS
N027812-009ADUP	N.A.	N.A.
N027812-003AMSD	4.165	PASS
N027812-014A	N.A.	N.A.
N027812-014AMS	4.165	PASS
N027812-015AMS	4.173	PASS
N027812-010AMS	4.165	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
MB-R121296	N.A.	N.A.
LCS-R121296	4.173	PASS
N027812-014A	4.156	PASS
N027812-014AMS	4.173	PASS
N027819-002A	4.173	PASS
N027819-002AMS	4.173	PASS
N027819-002AMSD	4.173	PASS
N027820-001A	N.A.	N.A.
N027820-001AMS	4.165	PASS
N027820-001ADUP	N.A.	N.A.
N027819-001A	N.A.	N.A.
N027819-001AMS	4.165	PASS
N027820-002A	N.A.	N.A.
N027820-002AMS	4.165	PASS
N027820-003A	N.A.	N.A.
N027820-003AMS	4.173	PASS
N027820-004A	4.148	PASS
N027820-004AMS	4.173	PASS
N027820-005A	N.A.	N.A.
N027820-005AMS	4.173	PASS
N027557-004A	4.098	PASS
N027557-004AMS	4.098	PASS
N027583-001A	4.056	PASS
N027583-001AMS	4.065	PASS
N027583-002A	4.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
N027583-002AMS	4.056	PASS
N027583-003A	4.048	PASS
N027583-003AMS	4.056	PASS
N027820-006A	N.A.	N.A.
N027820-006AMS	4.173	PASS
N027820-007A	N.A.	N.A.
N027820-007AMS	4.173	PASS
N027820-008A	N.A.	N.A.
N027820-008AMS	4.173	PASS
N027820-009A	4.106	PASS
N027820-009AMS	4.173	PASS
N027820-010A	N.A.	N.A.
N027820-010AMS	4.173	PASS
N027820-011A	N.A.	N.A.
N027820-011AMS	4.173	PASS
N027820-012A	N.A.	N.A.
N027820-012AMS	4.173	PASS
N027820-013A	N.A.	N.A.
N027820-013AMS	4.165	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 180102A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/02/18 1:22 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/02/18 1:34 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/02/18 1:43 PM	Reported

01/12/2018

rba 1/5/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180102A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Jan/18 14:25:10**
No. of Injections:	**15**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		01/02/2018 13:22	Finished	ICV @5ppb, IWST-171002B
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/02/2018 13:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/02/2018 13:43	Finished	ICB R180102C
13	SHUTDOWN	14	1000	Unknown		01/02/2018 14:02	Finished	
14	Eluent: R180102A	15	1000	Unknown		n.a.	Finished	Eluent
15	PCR: R180102B	16	1000	Unknown		n.a.	Finished	Post-Column Reagent

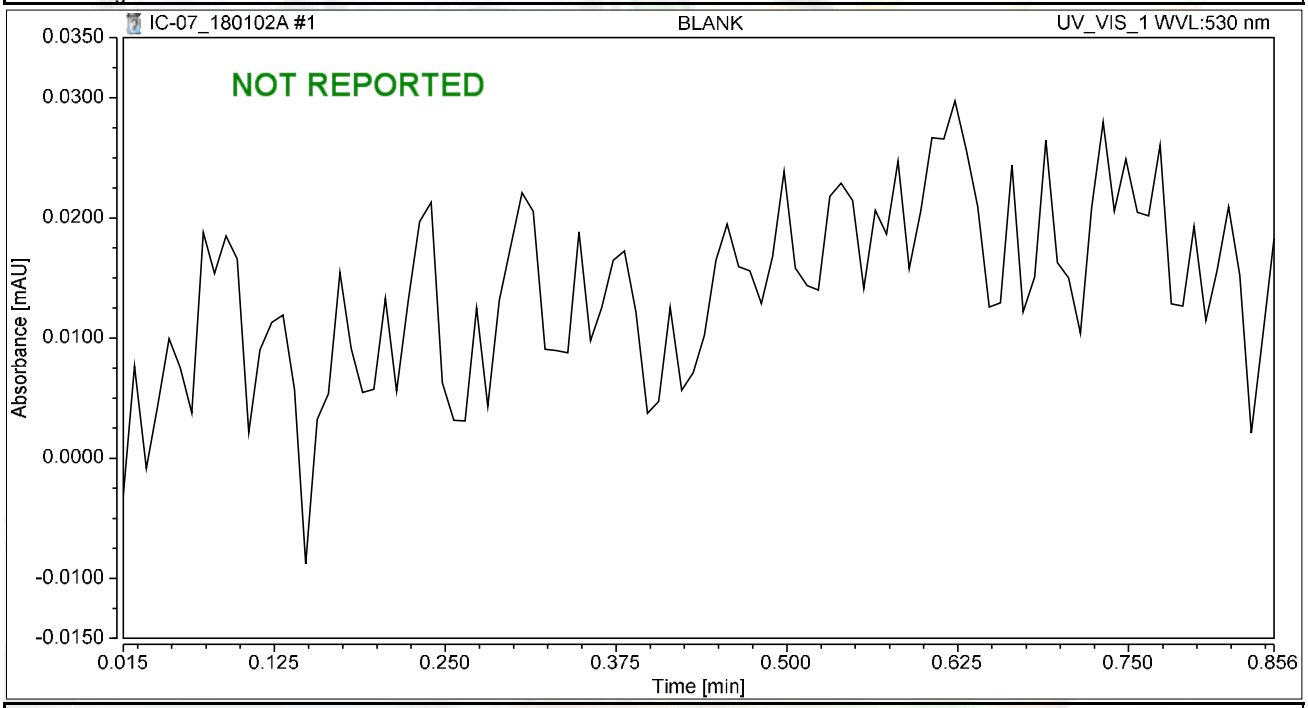
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.84**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

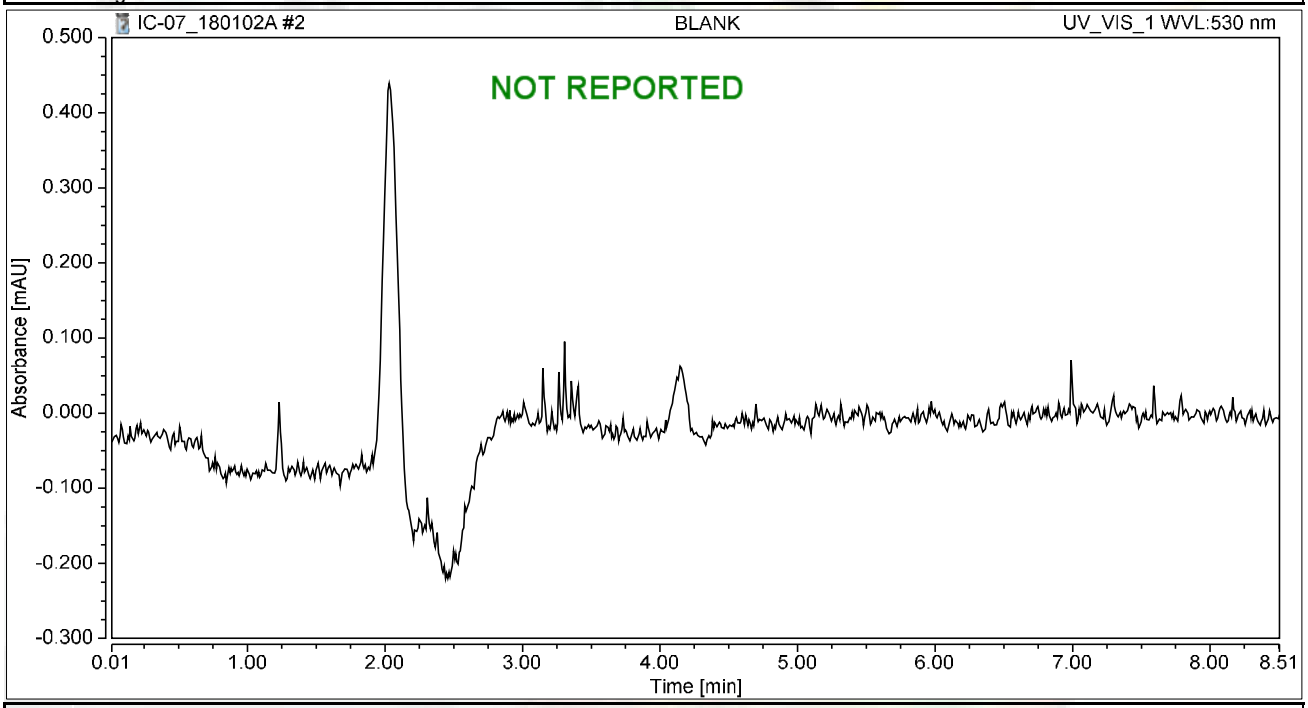
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

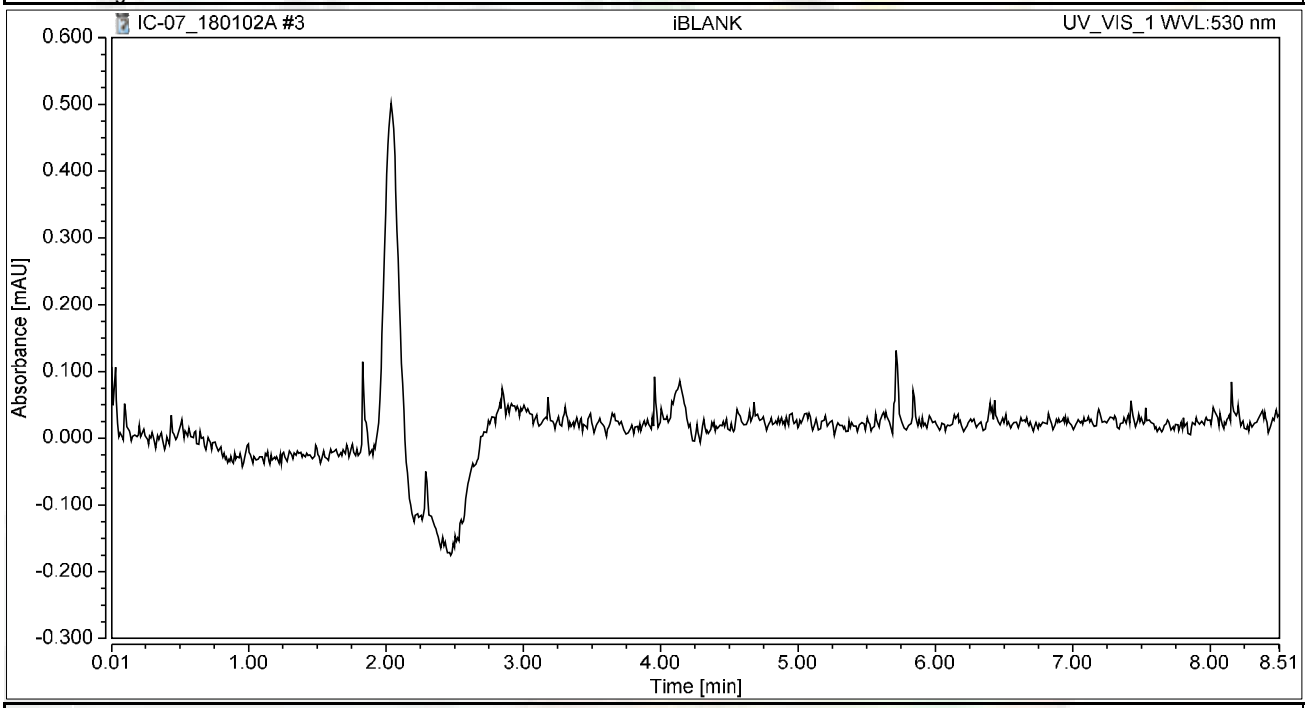
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

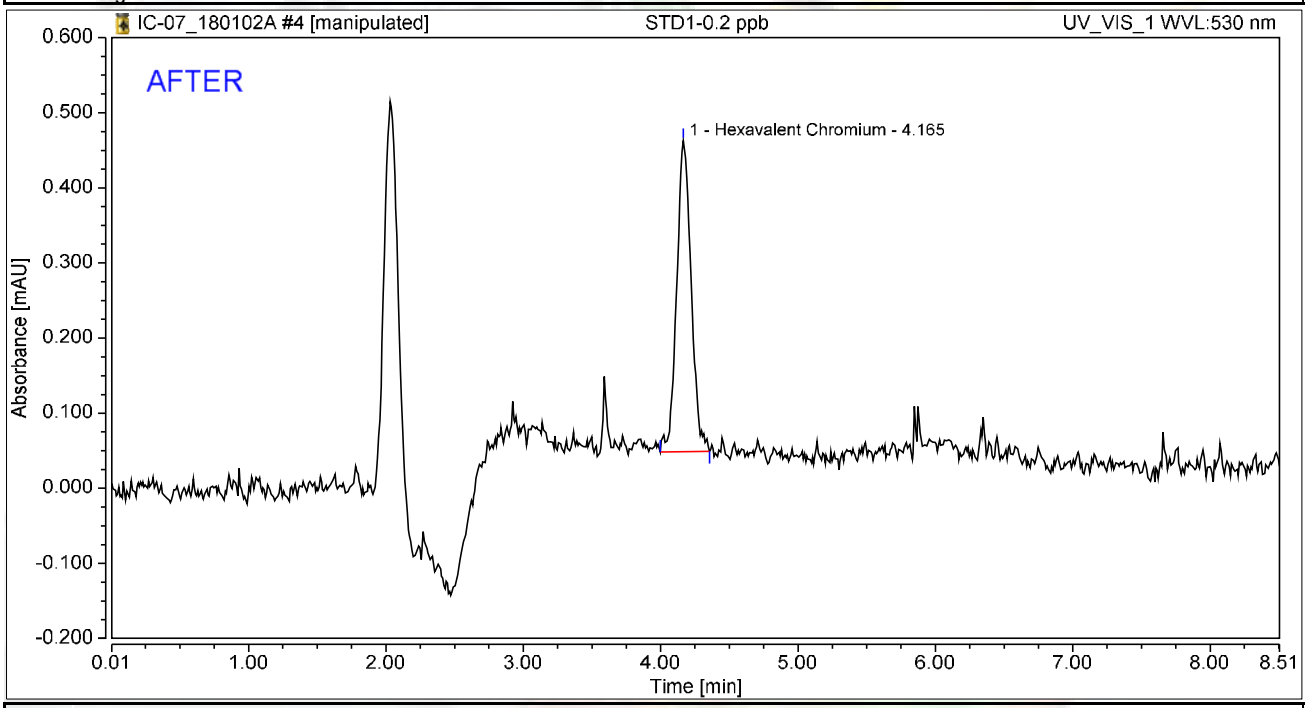
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.050	0.414	100.00	100.00	0.1973
Total:			**0.050**	**0.414**	**100.00**	**100.00**	

rba 1/5/2018

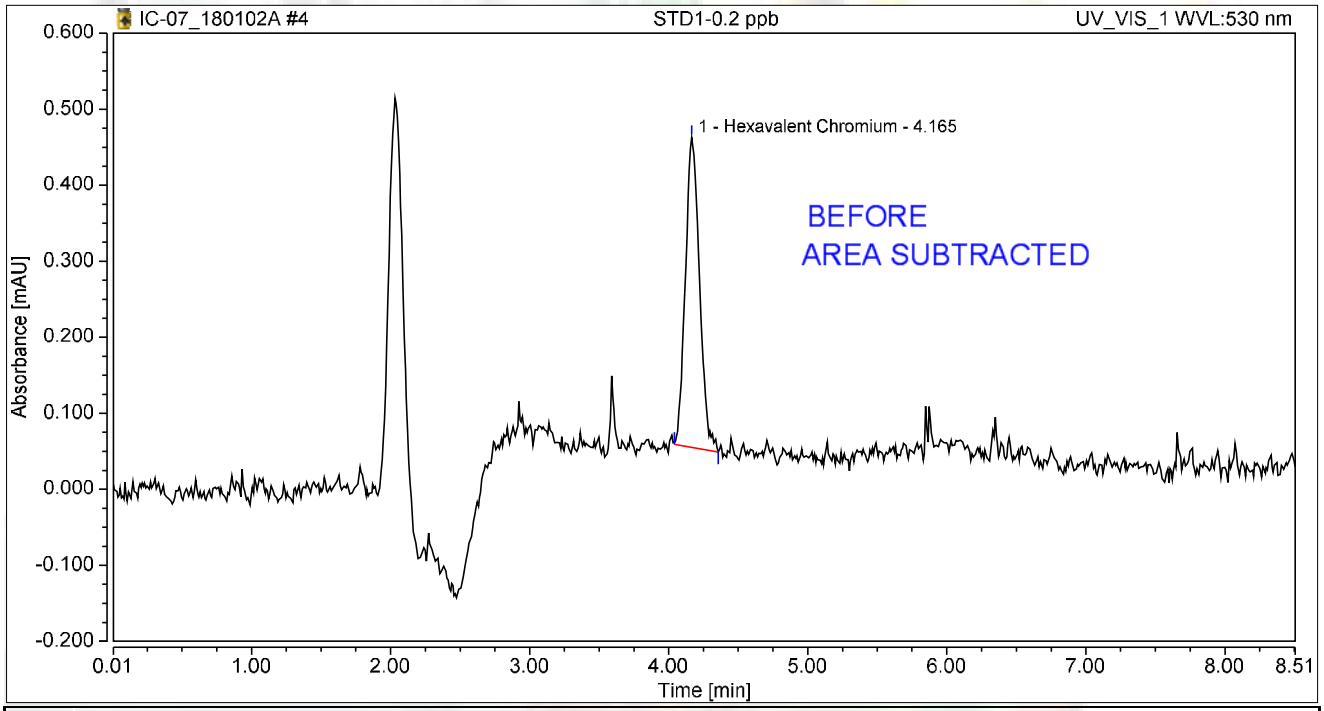
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.048	0.408	100.00	100.00	0.1874
Total:			**0.048**	**0.408**	**100.00**	**100.00**	

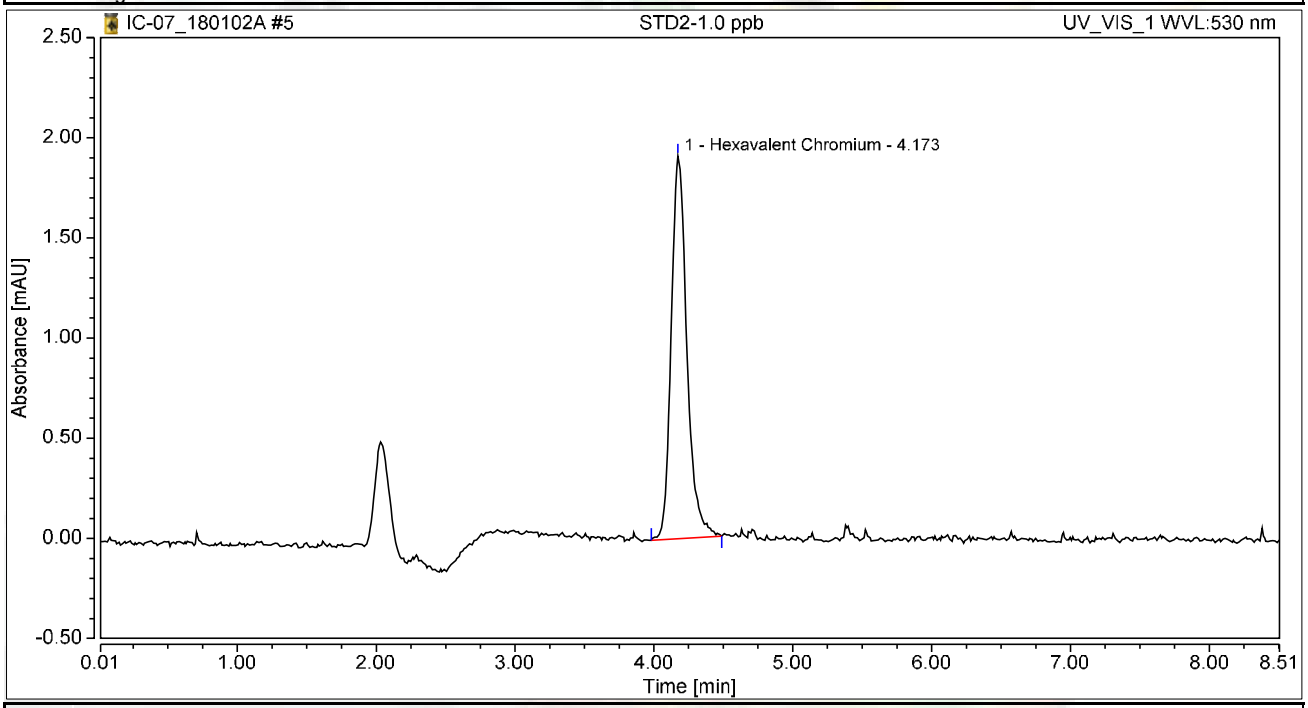
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

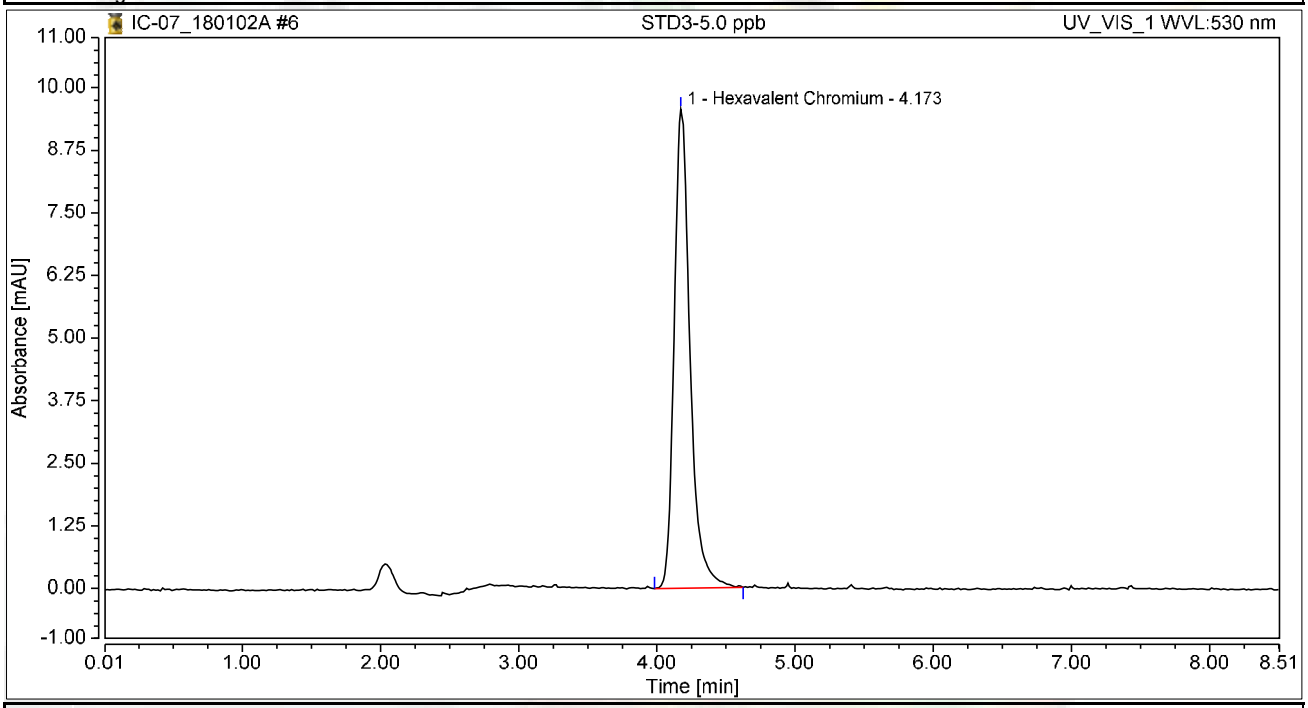
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.250	1.911	100.00	100.00	0.9781
Total:			**0.250**	**1.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

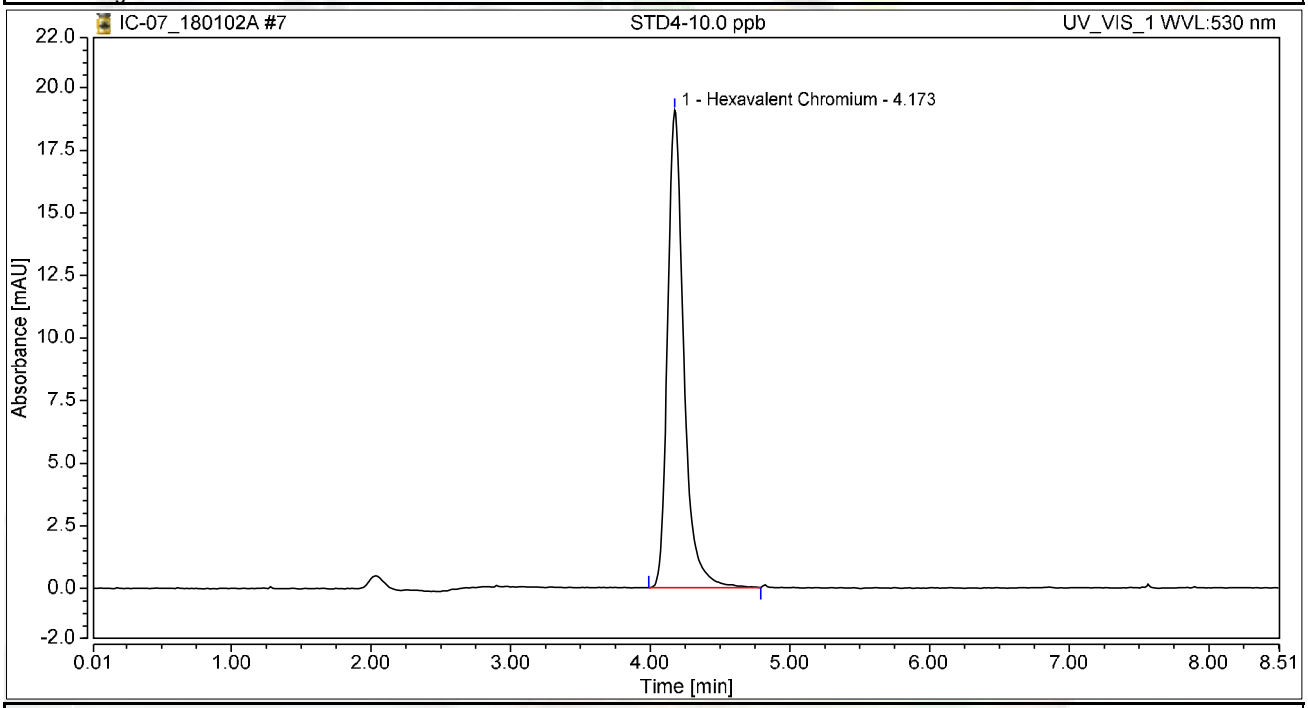
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.276	9.567	100.00	100.00	4.9902
Total:			**1.276**	**9.567**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

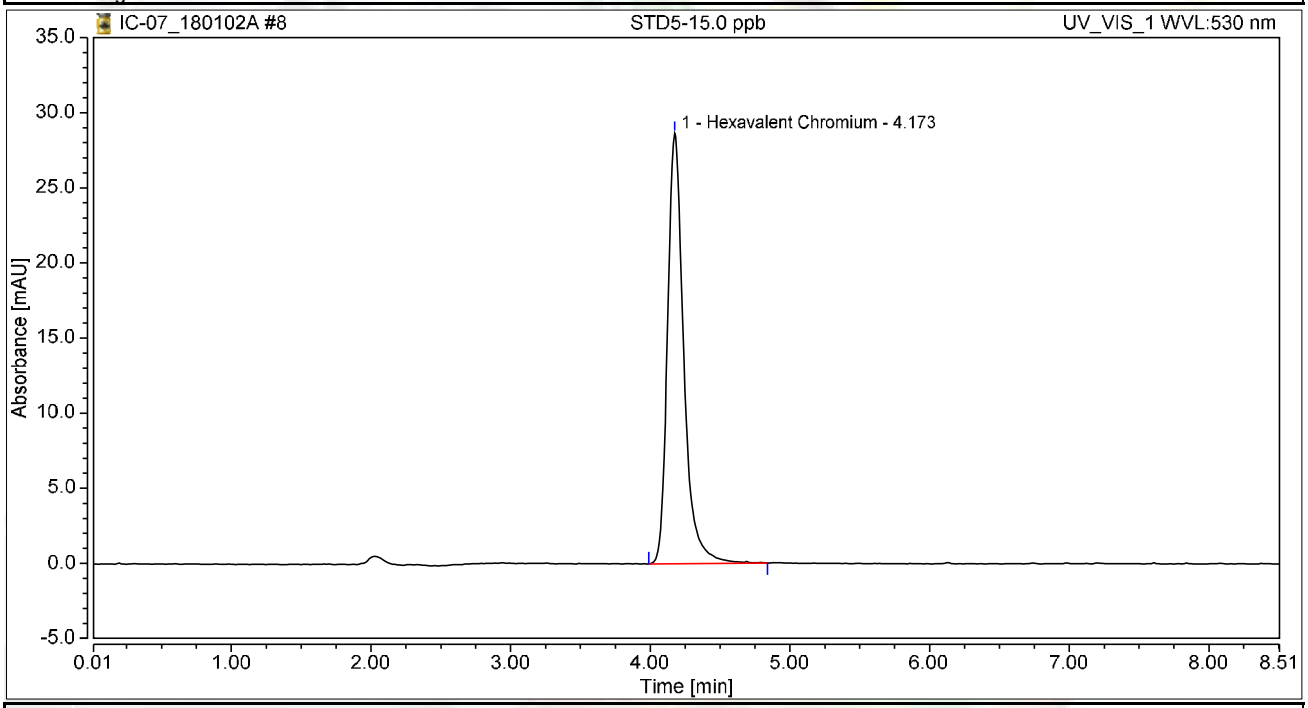
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.562	19.069	100.00	100.00	10.0190
Total:			**2.562**	**19.069**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

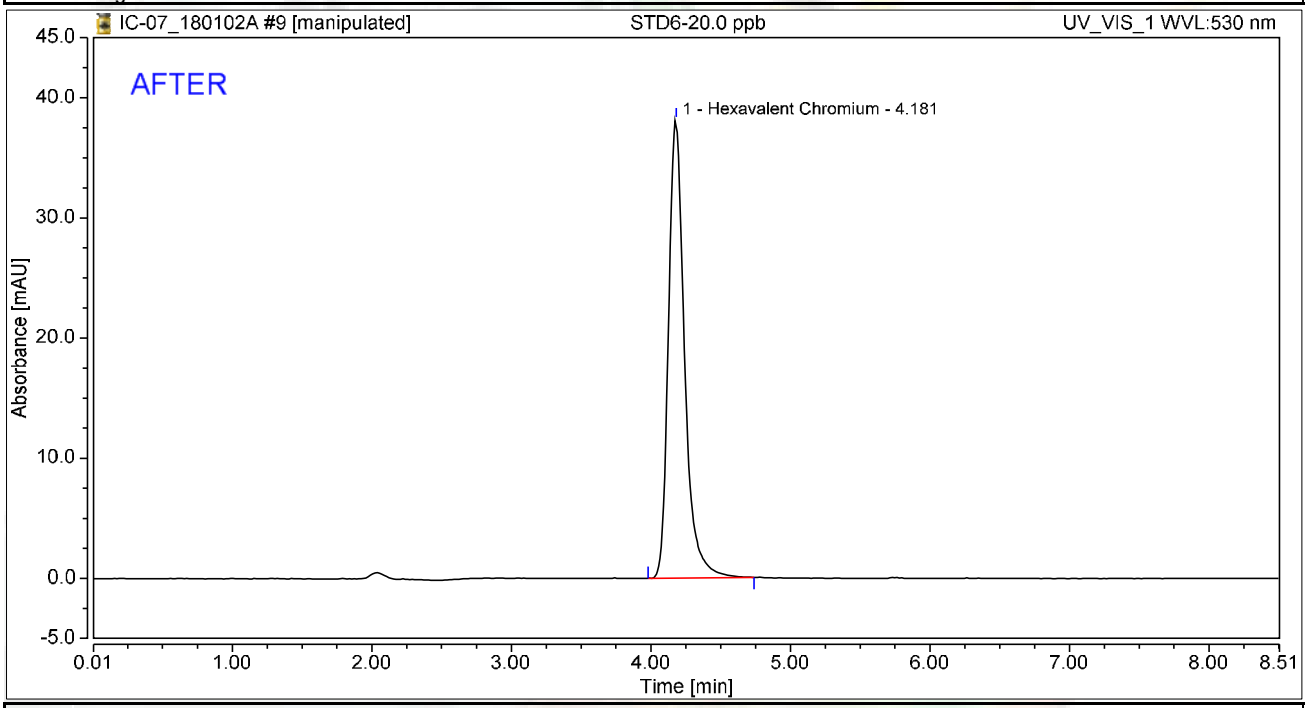
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.852	28.642	100.00	100.00	15.0640
Total:			**3.852**	**28.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	5.101	38.125	100.00	100.00	19.9461
Total:			**5.101**	**38.125**	**100.00**	**100.00**	

rba 1/5/2018

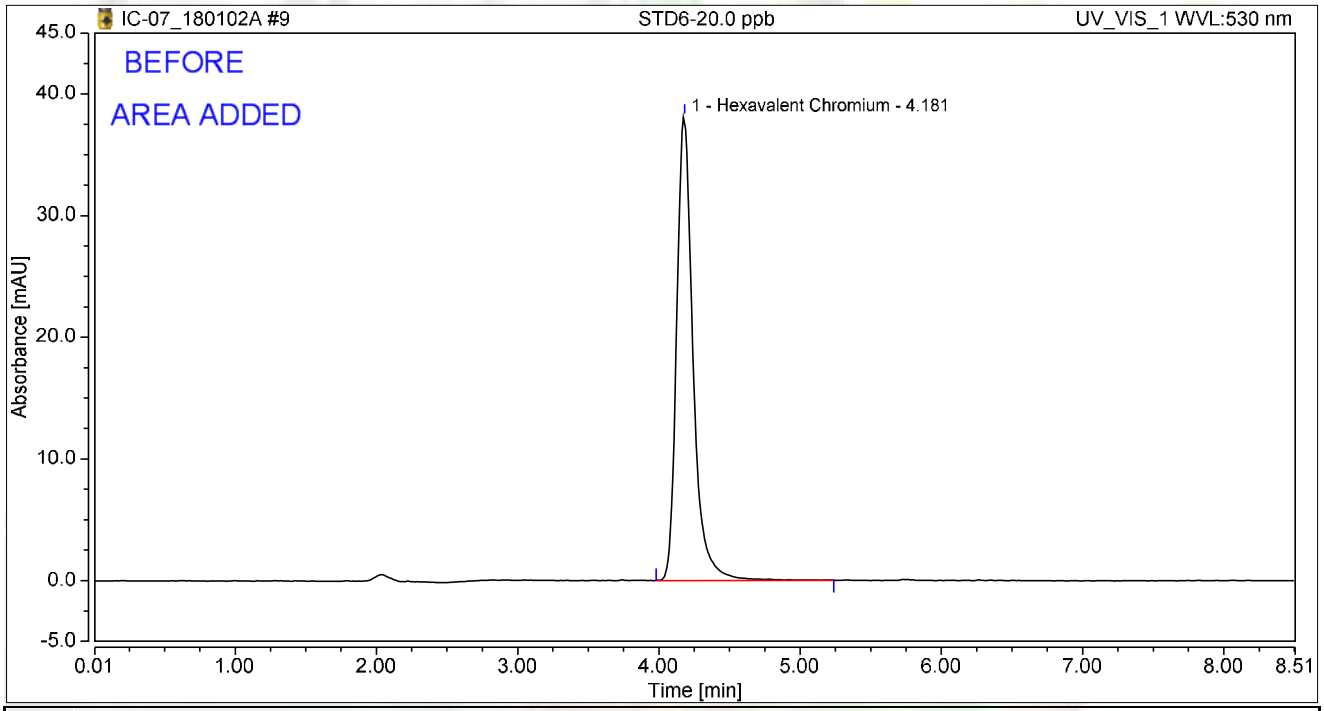
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

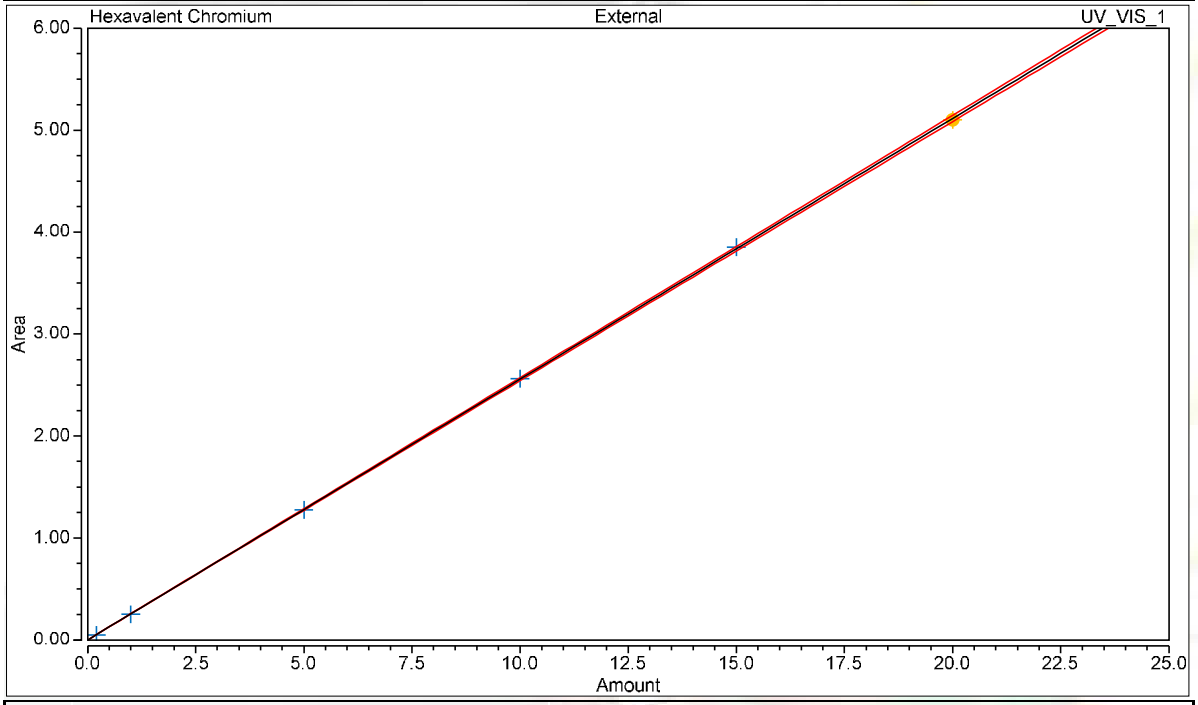
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	5.145	38.144	100.00	100.00	20.0261
Total:			**5.145**	**38.144**	**100.00**	**100.00**	

rba 1/5/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2557
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

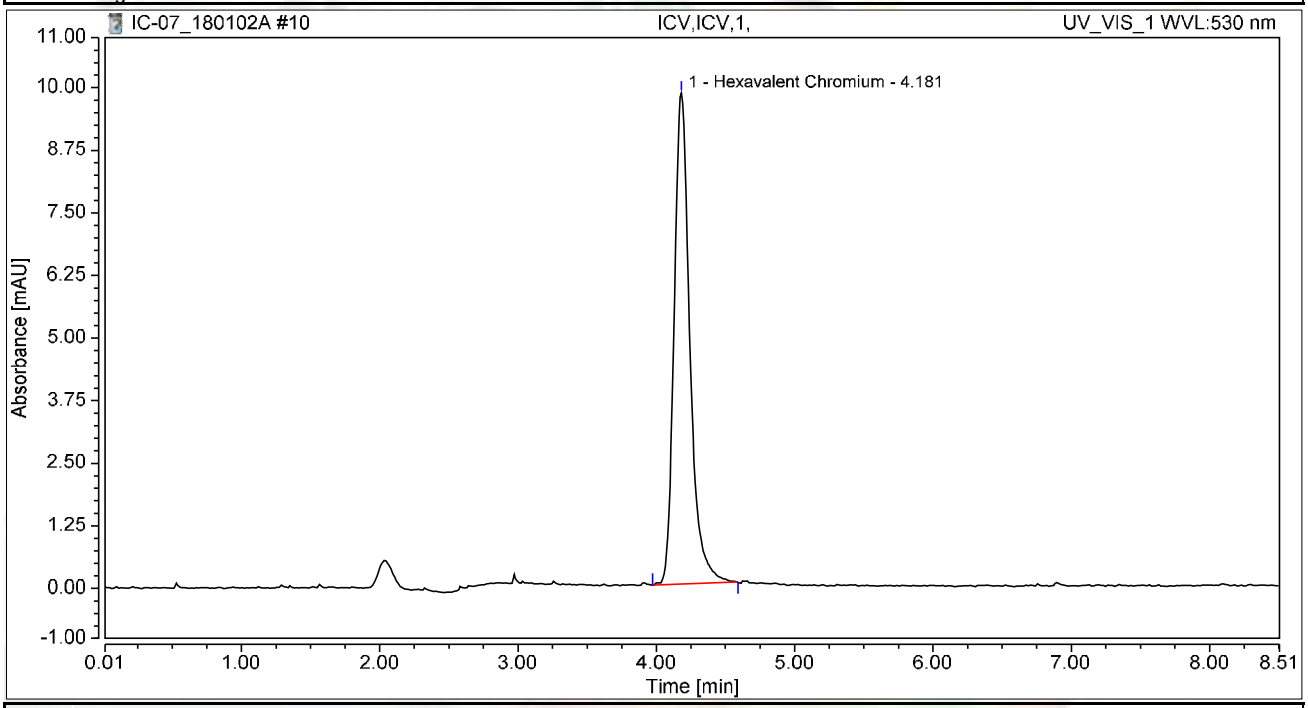
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0505	0.050	0.414
5	STD2-1.0 ppb	02	1.0000	0.2501	0.250	1.911
6	STD3-5.0 ppb	03	5.0000	1.2761	1.276	9.567
7	STD4-10.0 ppb	04	10.0000	2.5621	2.562	19.069
8	STD5-15.0 ppb	05	15.0000	3.8523	3.852	28.642
9	STD6-20.0 ppb	06	20.0000	5.1007	5.101	38.125

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

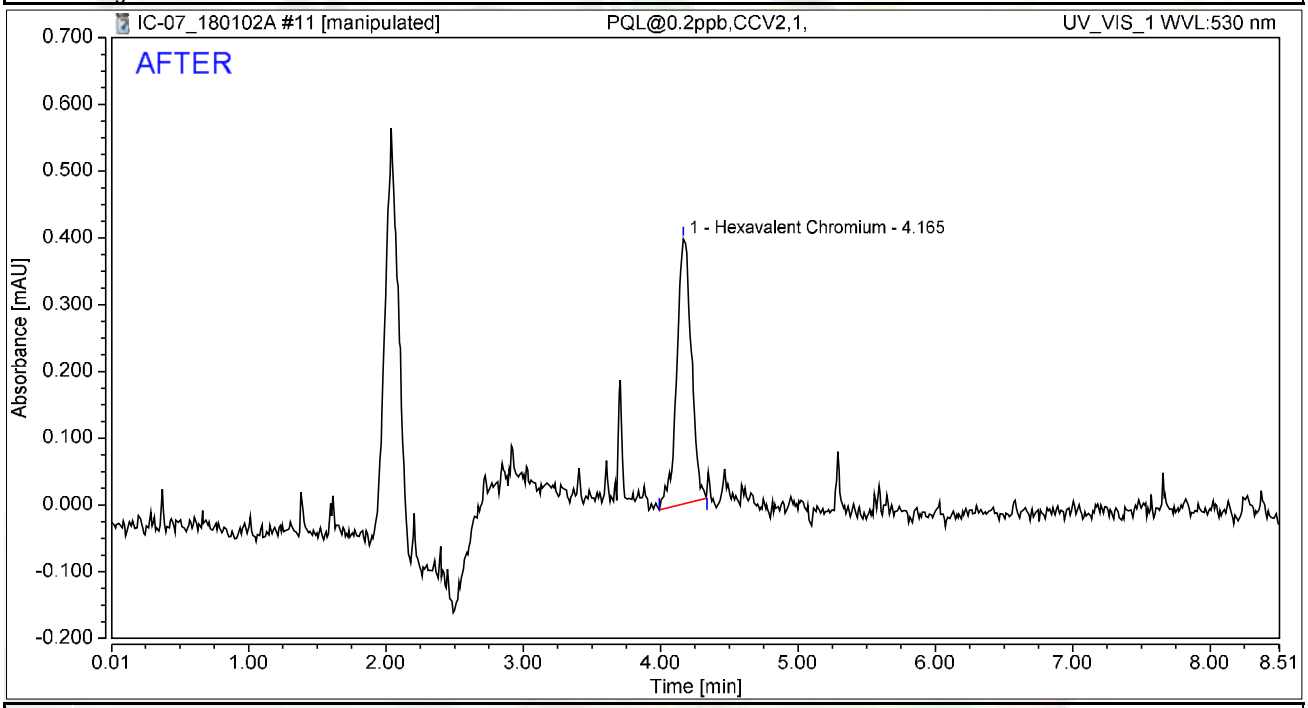
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.294	9.807	100.00	100.00	5.0592
Total:			**1.294**	**9.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.049	0.398	100.00	100.00	0.1928
Total:			**0.049**	**0.398**	**100.00**	**100.00**	

rba 1/5/2018

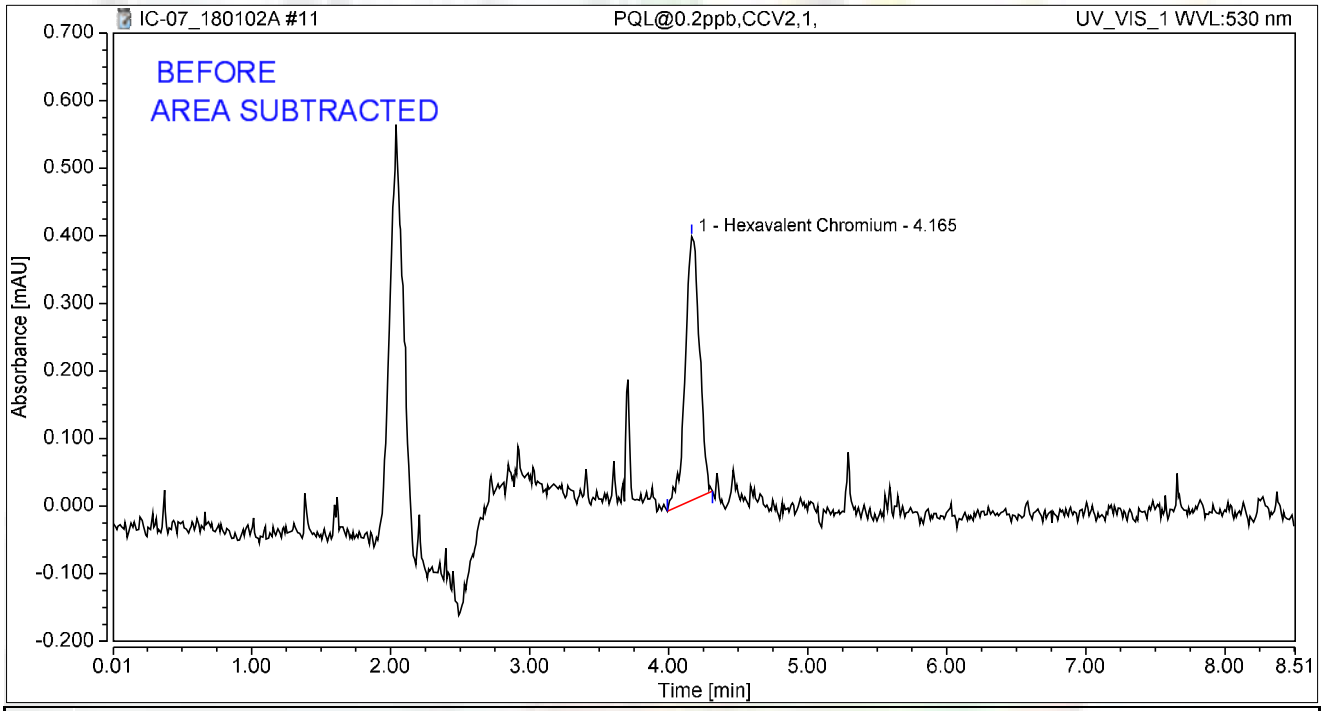
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.047	0.390	100.00	100.00	0.1830
Total:			**0.047**	**0.390**	**100.00**	**100.00**	

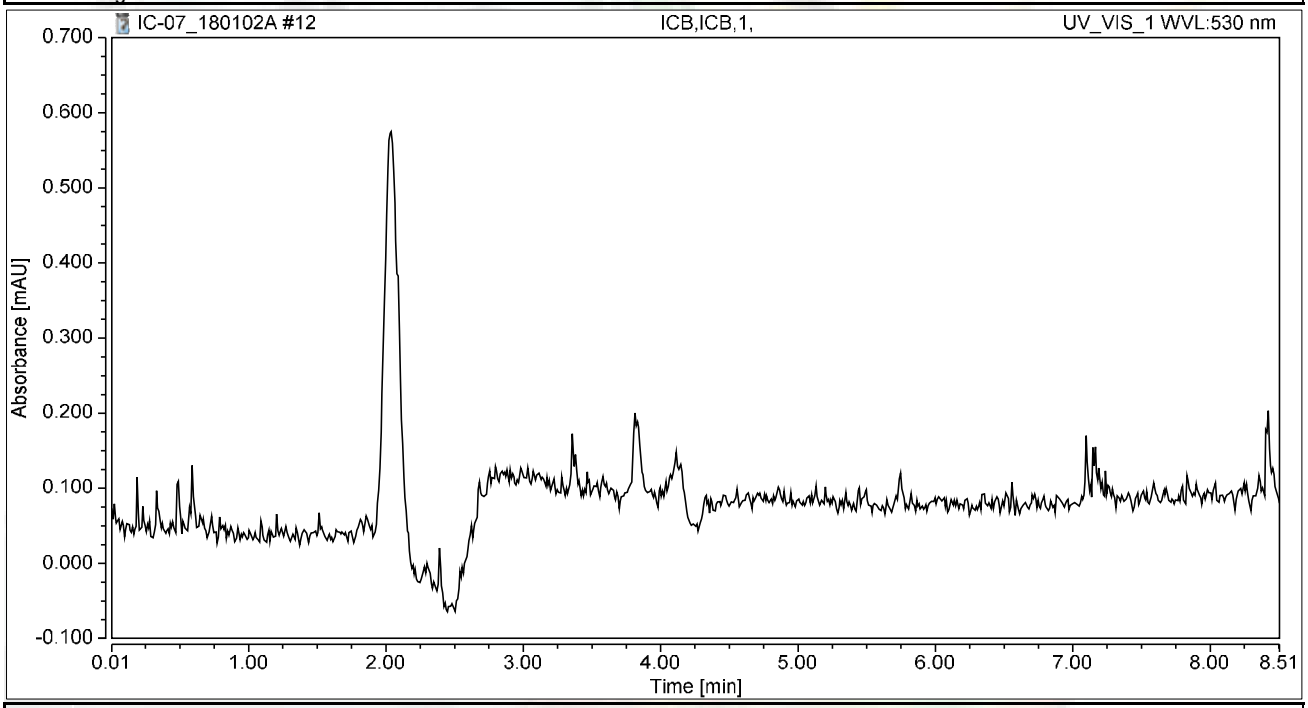
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:24 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:35 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/05/18 8:44 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/05/18 8:54 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/05/18 9:03 AM	Reported
15	MB-R121248	MBLK	1	Hexavalent Chromium	01/05/18 9:13 AM	Reported
16	LCS-R121248	LCS	1	Hexavalent Chromium	01/05/18 9:22 AM	Reported
17	N027812-001A	SAMP	1	Hexavalent Chromium	01/05/18 9:32 AM	Reported
18	N027812-001AMS	MS	1	Hexavalent Chromium	01/05/18 9:41 AM	Reported
19	N027812-002A	SAMP	1	Hexavalent Chromium	01/05/18 9:51 AM	Reported
20	N027812-002AMS	MS	1	Hexavalent Chromium	01/05/18 10:00 AM	Reported
21	N027812-003A	SAMP	1	Hexavalent Chromium	01/05/18 10:09 AM	Reported
22	N027812-003AMS	MS	1	Hexavalent Chromium	01/05/18 10:19 AM	Reported
23	N027812-004A	SAMP	1	Hexavalent Chromium	01/05/18 10:28 AM	Reported
24	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 10:38 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/05/18 10:47 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/05/18 10:57 AM	Reported
27	N027812-005A	SAMP	1	Hexavalent Chromium	01/05/18 11:06 AM	Reported
28	N027812-005AMS	MS	1	Hexavalent Chromium	01/05/18 11:16 AM	Reported
29	N027812-006A	SAMP	1	Hexavalent Chromium	01/05/18 11:25 AM	Reported
30	N027812-006AMS	MS	1	Hexavalent Chromium	01/05/18 11:35 AM	Reported
31	N027812-007A	SAMP	1	Hexavalent Chromium	01/05/18 11:44 AM	Reported
32	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 11:54 AM	Not Reported
33	N027812-008A	SAMP	1	Hexavalent Chromium	01/05/18 12:03 PM	Reported
34	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 12:12 PM	Not Reported
35	N027812-009A	SAMP	1	Hexavalent Chromium	01/05/18 12:22 PM	Reported
36	N027812-009AMS	MS	1	Hexavalent Chromium	01/05/18 12:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/05/18 12:41 PM	Reported
38	CCB-3	CCB 5	1	Hexavalent Chromium	01/05/18 12:50 PM	Reported
39	N027557-002A	SAMP 5	1	Hexavalent Chromium	01/05/18 1:00 PM	Not Reported
40	N027557-002AMS	MS 5	1	Hexavalent Chromium	01/05/18 1:09 PM	Not Reported
41	N027812-011A	SAMP	1	Hexavalent Chromium	01/05/18 1:19 PM	Reported
42	N027812-011AMS	MS	1	Hexavalent Chromium	01/05/18 1:28 PM	Reported

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027812-012A	SAMP	1	Hexavalent Chromium	01/05/18 1:38 PM	Reported
44	N027812-012AMS	MS	1	Hexavalent Chromium	01/05/18 1:47 PM	Reported
45	N027812-013A	SAMP	1	Hexavalent Chromium	01/05/18 1:57 PM	Reported
46	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 2:06 PM	Not Reported
47	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 2:16 PM	Not Reported
48	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 2:25 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/05/18 2:34 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/05/18 2:44 PM	Reported
51	N027812-015A	SAMP	1	Hexavalent Chromium	01/05/18 2:53 PM	Reported
52	N027812-015AMS	MS	1	Hexavalent Chromium	N.A.	Not Reported
53	N027812-010A	SAMP	1	Hexavalent Chromium	01/05/18 3:39 PM	Reported
54	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 3:50 PM	Not Reported
55	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 4:00 PM	Reported
56	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 4:12 PM	Reported
57	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 4:21 PM	Reported
58	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 4:31 PM	Reported
59	N027812-009ADUP	DUP	1	Hexavalent Chromium	01/05/18 4:40 PM	Reported
60	N027812-003AMSD	MSD	1	Hexavalent Chromium	01/05/18 4:50 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/05/18 5:29 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/05/18 5:40 PM	Reported
63	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 5:49 PM	Not Reported
64	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 5:58 PM	Not Reported
65	N027812-015AMS	MS	1	Hexavalent Chromium	01/05/18 6:08 PM	Reported
66	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 6:17 PM	Reported
67	CCV-6	CCV1	1	Hexavalent Chromium	01/05/18 6:27 PM	Reported
68	CCB-6	CCB	1	Hexavalent Chromium	01/05/18 6:36 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180105A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/Jan/18 19:07:08**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		01/05/2018 08:24	Finished	BLANK
11	BLANK	2	1000	Unknown		01/05/2018 08:35	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		01/05/2018 08:44	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/05/2018 08:54	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/05/2018 09:03	Finished	CCB R180102C
15	MB-H2O,MBLK,1,	6	1000	Unknown		01/05/2018 09:13	Finished	MB R171129A
16	LCS-H2O,LCS,1,	7	1000	Unknown		01/05/2018 09:22	Finished	LCS, IWST-171002B
17	N027812-001A,SAMF	8	1000	Unknown		01/05/2018 09:32	Finished	SAMP,10mL
18	N027812-001AMS,MS	9	1000	Unknown		01/05/2018 09:41	Finished	MS (1ppb), IWST-171002B,10
19	N027812-002A,SAMF	10	1000	Unknown		01/05/2018 09:51	Finished	SAMP,10mL
20	N027812-002AMS,MS	11	1000	Unknown		01/05/2018 10:00	Finished	MS (1ppb), IWST-171002B,10
21	N027812-003A,SAMF	12	1000	Unknown		01/05/2018 10:09	Finished	SAMP,10mL
22	N027812-003AMS,MS	13	1000	Unknown		01/05/2018 10:19	Finished	MS (1ppb), IWST-171002B,10
23	N027812-004A,SAMF	14	1000	Unknown		01/05/2018 10:28	Finished	SAMP,10mL
24	N027812-004AMS,MS	15	1000	Unknown		01/05/2018 10:38	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		01/05/2018 10:47	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		01/05/2018 10:57	Finished	CCB R180102C
27	N027812-005A,SAMF	18	1000	Unknown		01/05/2018 11:06	Finished	SAMP,10mL
28	N027812-005AMS,MS	19	1000	Unknown		01/05/2018 11:16	Finished	MS (1ppb), IWST-171002B,10
29	N027812-006A,SAMF	20	1000	Unknown		01/05/2018 11:25	Finished	SAMP,10mL
30	N027812-006AMS,MS	21	1000	Unknown		01/05/2018 11:35	Finished	MS (1ppb), IWST-171002B,10
31	N027812-007A,SAMF	22	1000	Unknown		01/05/2018 11:44	Finished	SAMP,10mL
32	N027812-007AMS,MS	23	1000	Unknown		01/05/2018 11:54	Finished	MS (1ppb), IWST-171002B,10
33	N027812-008A,SAMF	24	1000	Unknown		01/05/2018 12:03	Finished	SAMP,10mL
34	N027812-008AMS,MS	25	1000	Unknown		01/05/2018 12:12	Finished	MS (1ppb), IWST-171002B,10
35	N027812-009A,SAMF	26	1000	Unknown		01/05/2018 12:22	Finished	SAMP,10mL
36	N027812-009AMS,MS	27	1000	Unknown		01/05/2018 12:31	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	28	1000	Unknown		01/05/2018 12:41	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		01/05/2018 12:50	Finished	CCB R180102C
39	N027557-002A,SAMF	30	1000	Unknown		01/05/2018 13:00	Finished	SAMP,2>10mL
40	N027557-002AMS,MS	31	1000	Unknown		01/05/2018 13:09	Finished	MS (1ppb), IWST-171002B,2>1
41	N027812-011A,SAMF	32	1000	Unknown		01/05/2018 13:19	Finished	SAMP,10mL
42	N027812-011AMS,MS	33	1000	Unknown		01/05/2018 13:28	Finished	MS (1ppb), IWST-171002B,10
43	N027812-012A,SAMF	34	1000	Unknown		01/05/2018 13:38	Finished	SAMP,10mL
44	N027812-012AMS,MS	35	1000	Unknown		01/05/2018 13:47	Finished	MS (1ppb), IWST-171002B,10
45	N027812-013A,SAMF	36	1000	Unknown		01/05/2018 13:57	Finished	SAMP,10mL
46	N027812-013AMS,MS	37	1000	Unknown		01/05/2018 14:06	Finished	MS (1ppb), IWST-171002B,10
47	N027812-014A,SAMF	38	1000	Unknown		01/05/2018 14:16	Finished	SAMP,10mL
48	N027812-014AMS,MS	39	1000	Unknown		01/05/2018 14:25	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	40	1000	Unknown		01/05/2018 14:34	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		01/05/2018 14:44	Finished	CCB R180102C
51	N027812-015A,SAMF	42	1000	Unknown		01/05/2018 14:53	Finished	SAMP,10mL
52	N027812-015AMS,MS	43	1000	Unknown		n.a.	Interrupted	MS (1ppb), IWST-171002B,10
53	N027812-010A,SAMF	44	1000	Unknown		01/05/2018 15:39	Finished	SAMP,10mL
54	N027812-010AMS,MS	45	1000	Unknown		01/05/2018 15:50	Finished	MS (1ppb), IWST-171002B,10
55	N027812-004AMS,MS	1	1000	Unknown		01/05/2018 16:00	Finished	MS (1ppb), IWST-171002B,10
56	N027812-007AMS,MS	2	1000	Unknown		01/05/2018 16:12	Finished	MS (1ppb), IWST-171002B,10
57	N027812-008AMS,MS	3	1000	Unknown		01/05/2018 16:21	Finished	MS (1ppb), IWST-171002B,10
58	N027812-013AMS,MS	4	1000	Unknown		01/05/2018 16:31	Finished	MS (1ppb), IWST-171002B,10
59	N027812-009ADUP,D	5	1000	Unknown		01/05/2018 16:40	Finished	DUP,1>10mL
60	N027812-003AMSD,M	6	1000	Unknown		01/05/2018 16:50	Finished	MSD (1ppb), IWST-171002B,10

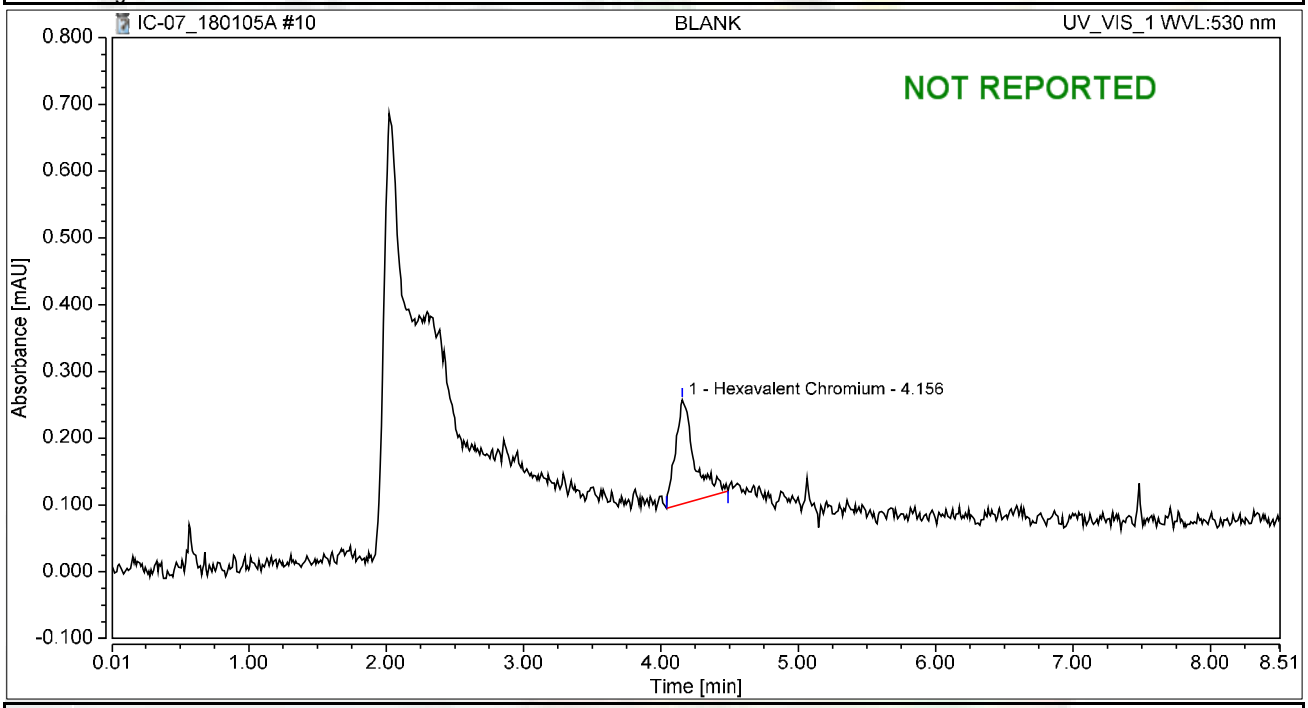
61	CCV-5,CCV,1,	7	1000	Unknown		01/05/2018 17:29	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	8	1000	Unknown		01/05/2018 17:40	Finished	CCB R180102C
63	N027812-014A,SAMP	9	1000	Unknown		01/05/2018 17:49	Finished	SAMP,10mL
64	N027812-014AMS,MS	10	1000	Unknown		01/05/2018 17:58	Finished	MS (1ppb), IWST-171002B,10
65	N027812-015AMS,MS	11	1000	Unknown		01/05/2018 18:08	Finished	MS (1ppb), IWST-171002B,10
66	N027812-010AMS,MS	12	1000	Unknown		01/05/2018 18:17	Finished	MS (1ppb), IWST-171002B,10
67	CCV-6,CCV1,1,	13	1000	Unknown		01/05/2018 18:27	Finished	CCV @10ppb, IWST-171002A
68	CCB-6,CCB,1,	14	1000	Unknown		01/05/2018 18:36	Finished	CCB R180102C
69	SHUTDOWN	15	1000	Unknown		01/05/2018 18:46	Finished	
70	Eluent: R180104B	16	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	17	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

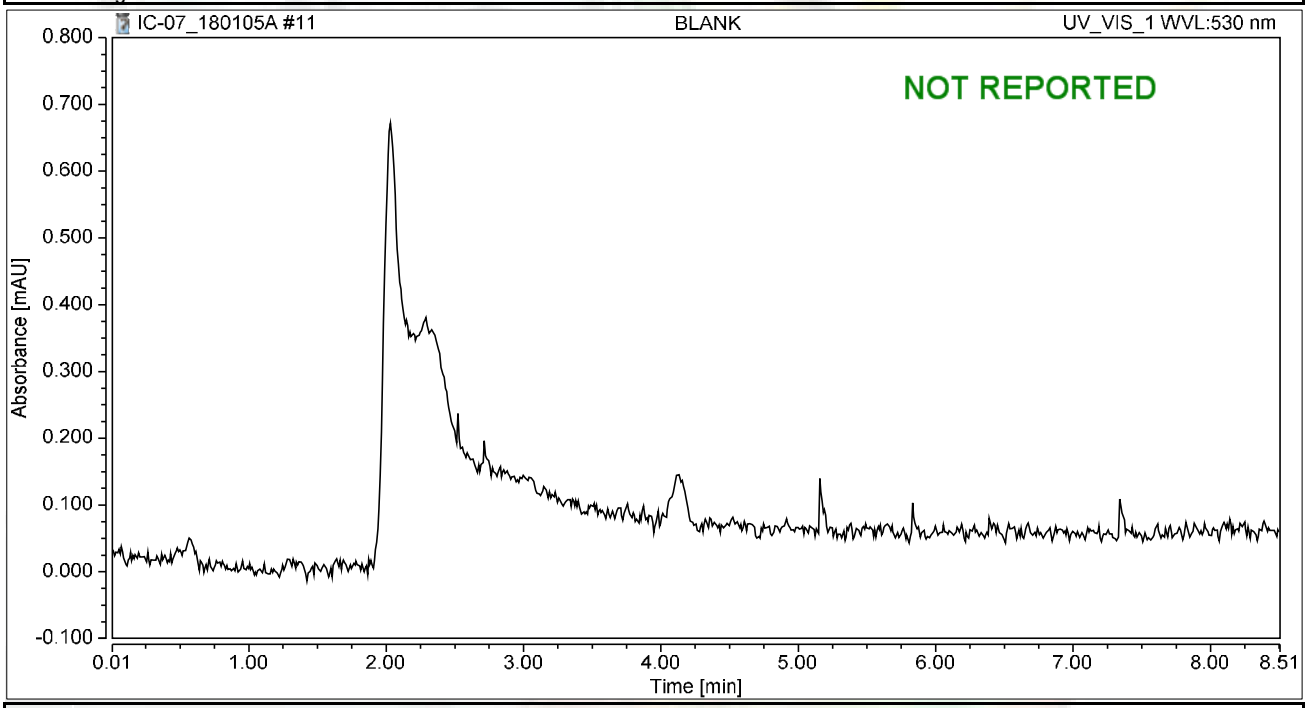
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.025	0.155	100.00	100.00	0.0980
Total:			**0.025**	**0.155**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

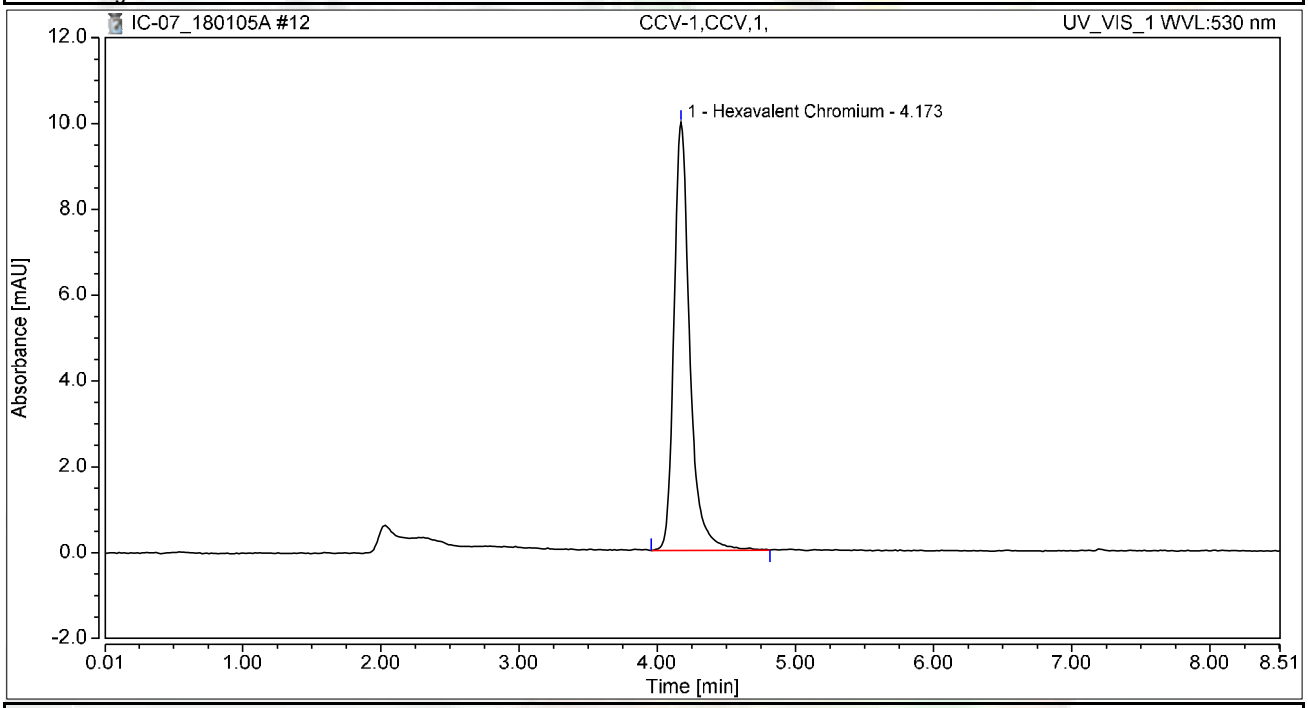
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

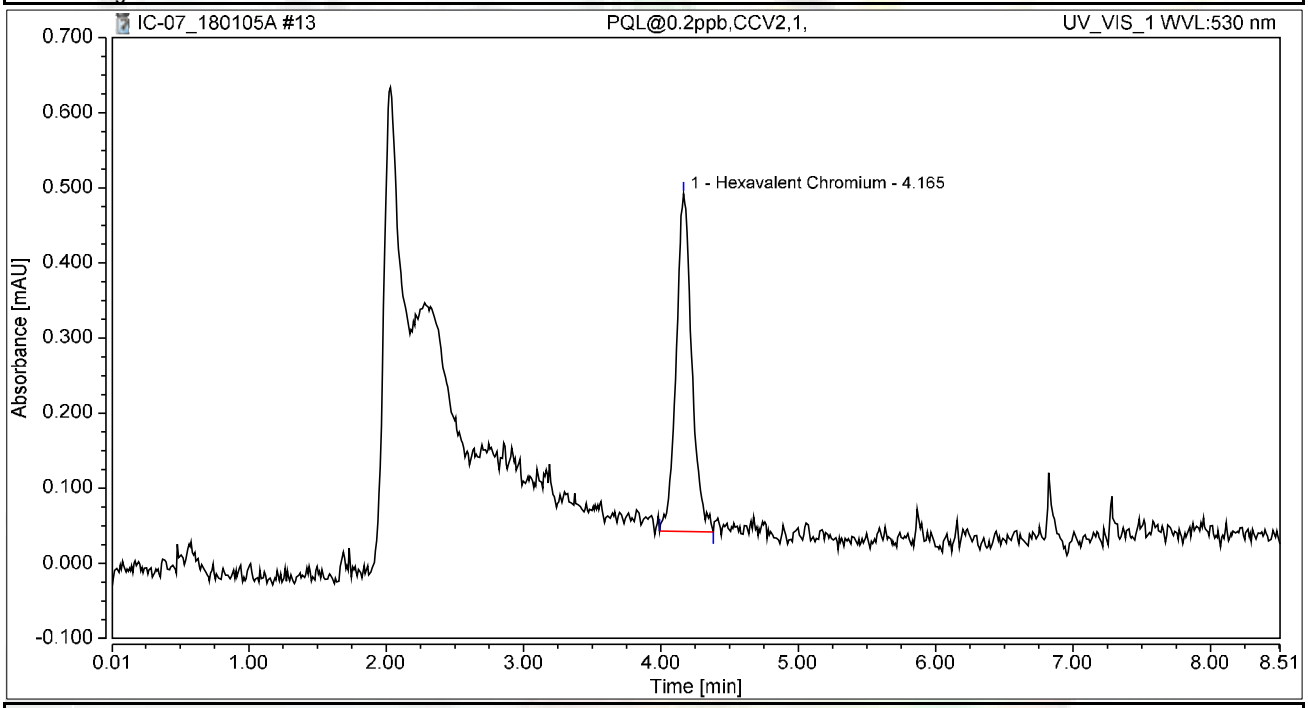
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.324	9.970	100.00	100.00	5.1779
Total:			**1.324**	**9.970**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

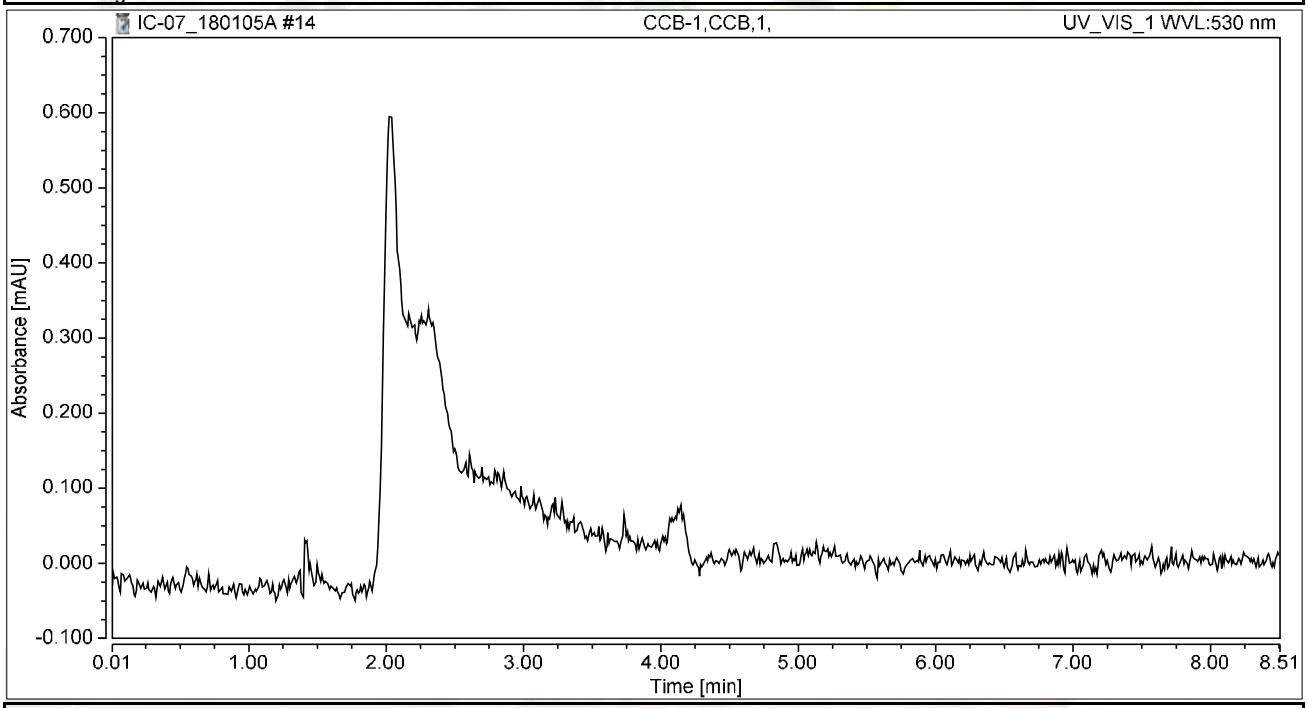
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.059	0.450	100.00	100.00	0.2314
Total:			**0.059**	**0.450**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

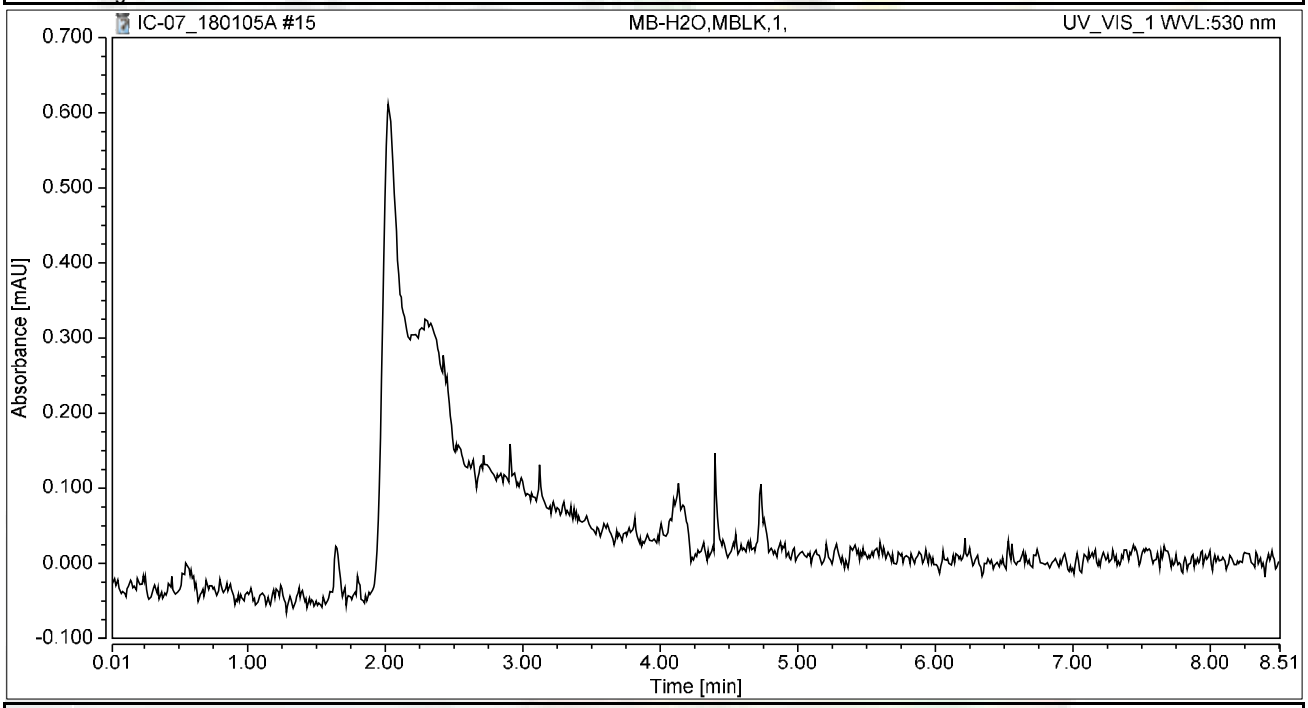
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

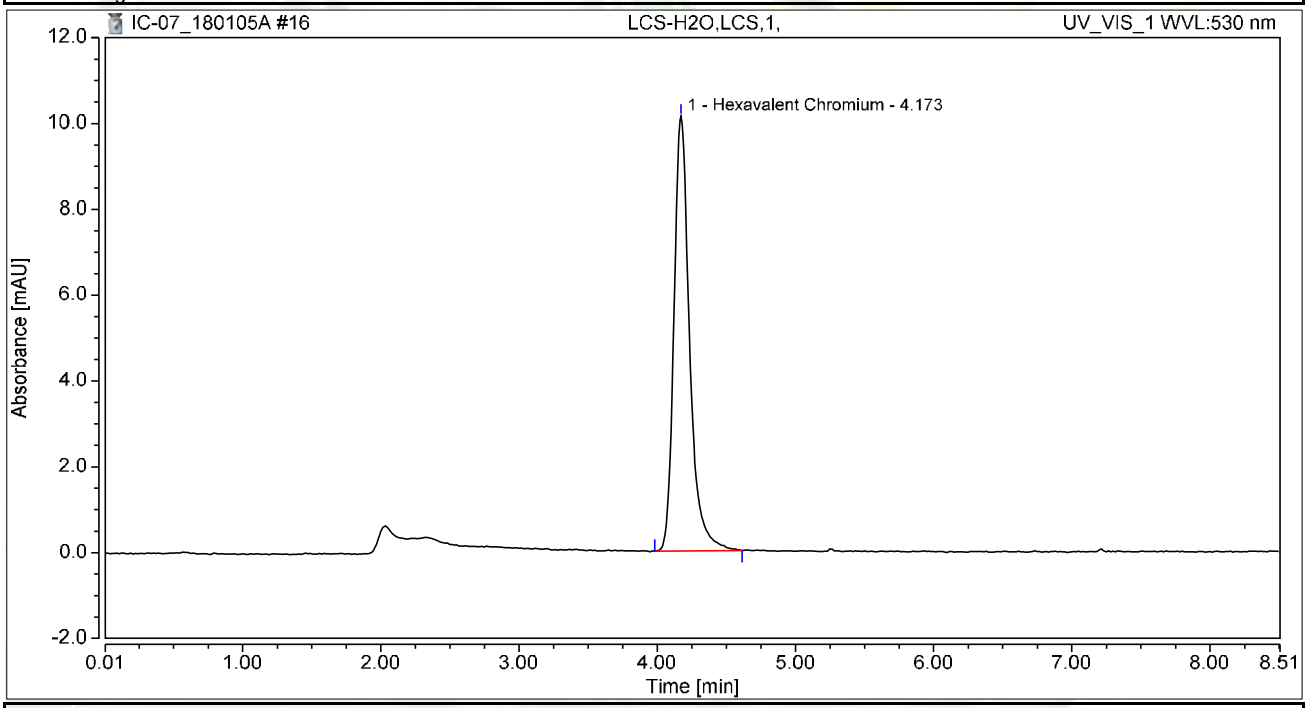
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

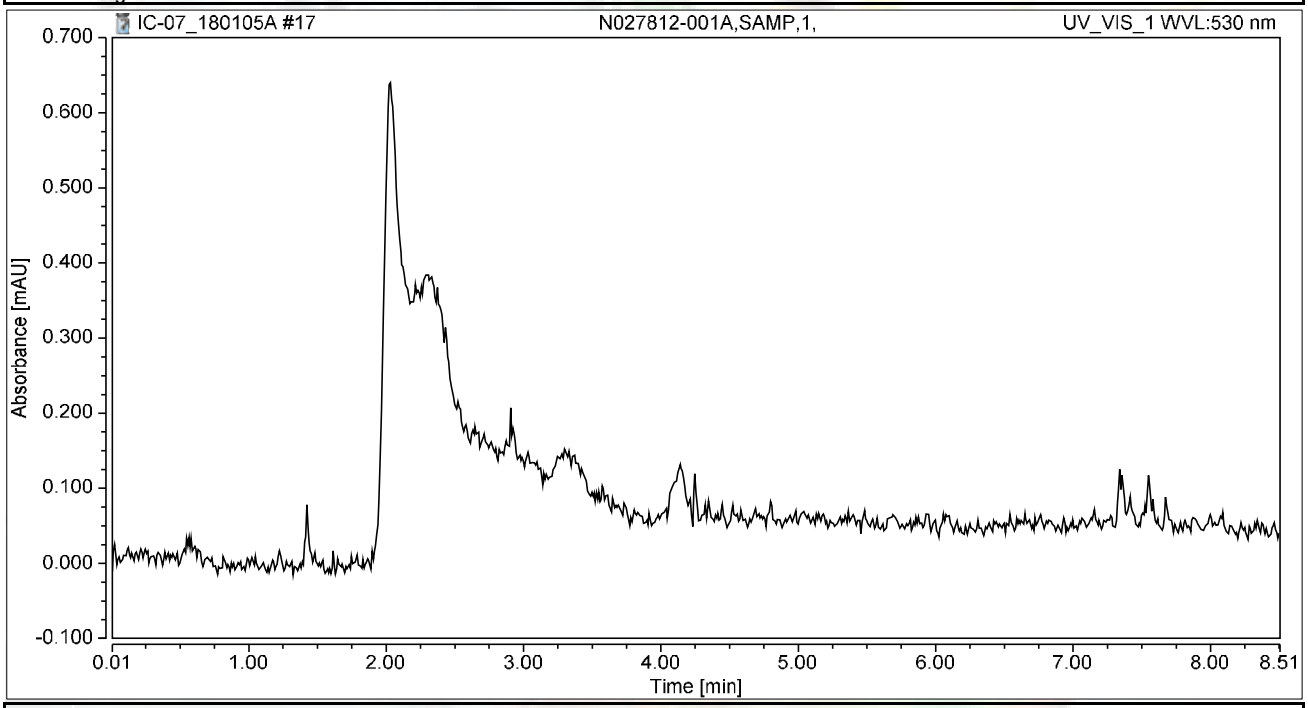
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.329	10.135	100.00	100.00	5.1953
Total:			**1.329**	**10.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

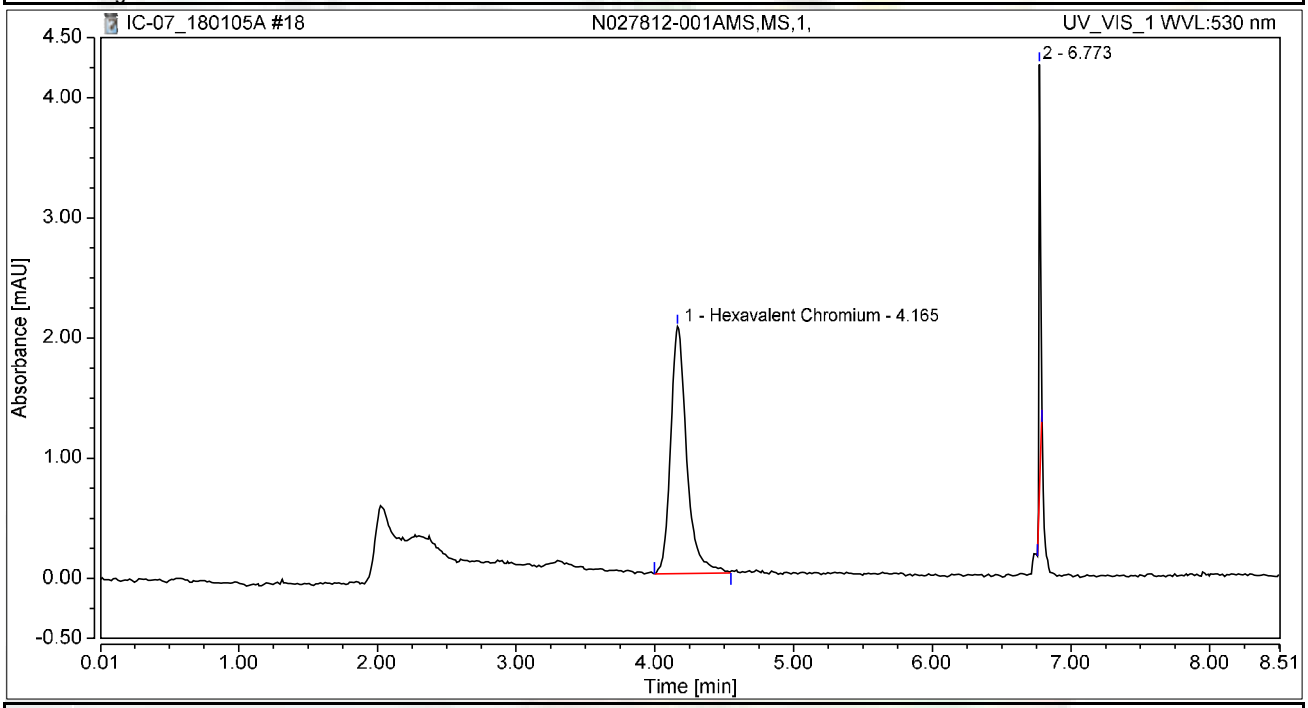
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

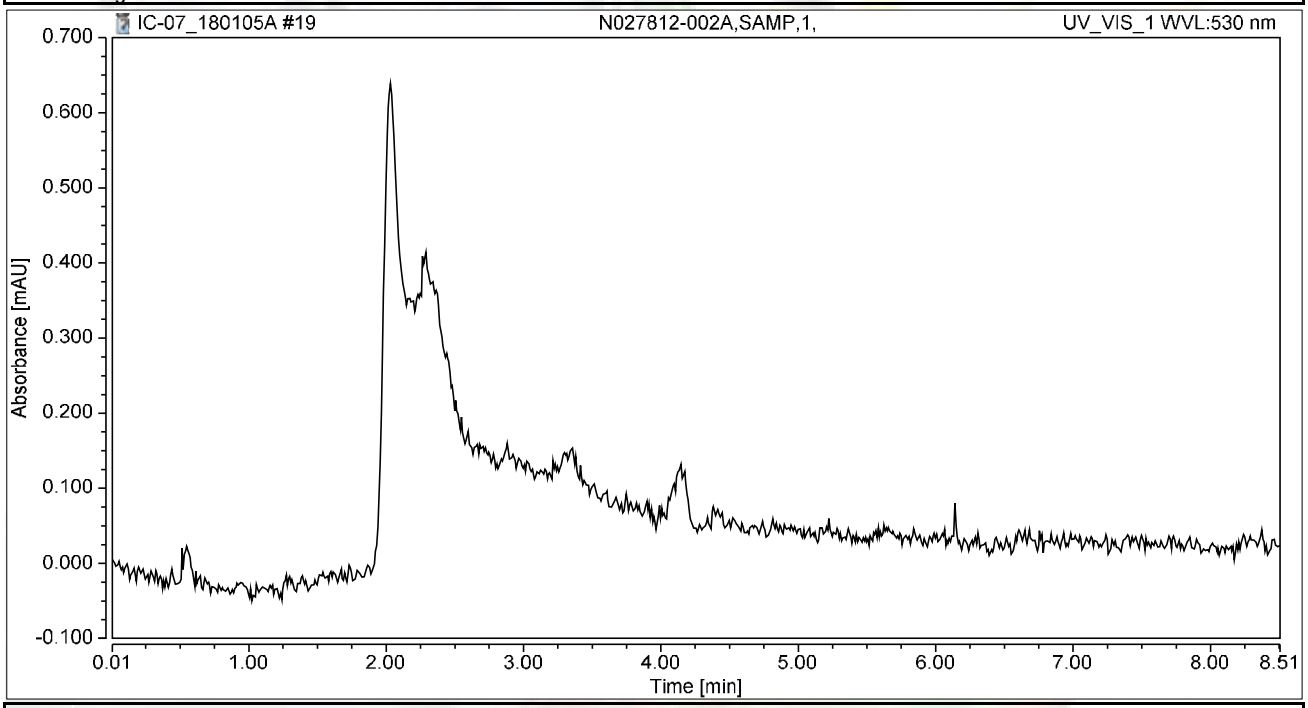
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.277	2.057	86.65	37.12	1.0839
2		6.773	0.043	3.484	13.35	62.88	n.a.
Total:			**0.320**	**5.541**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

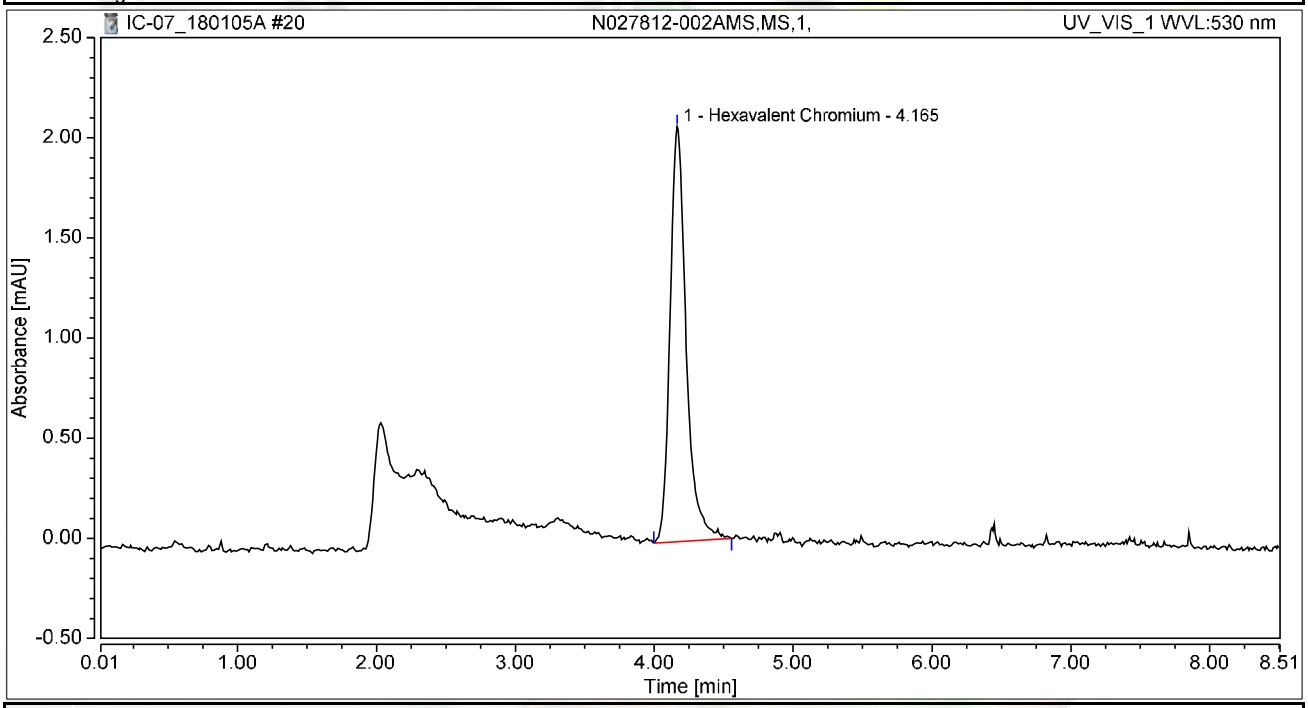
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

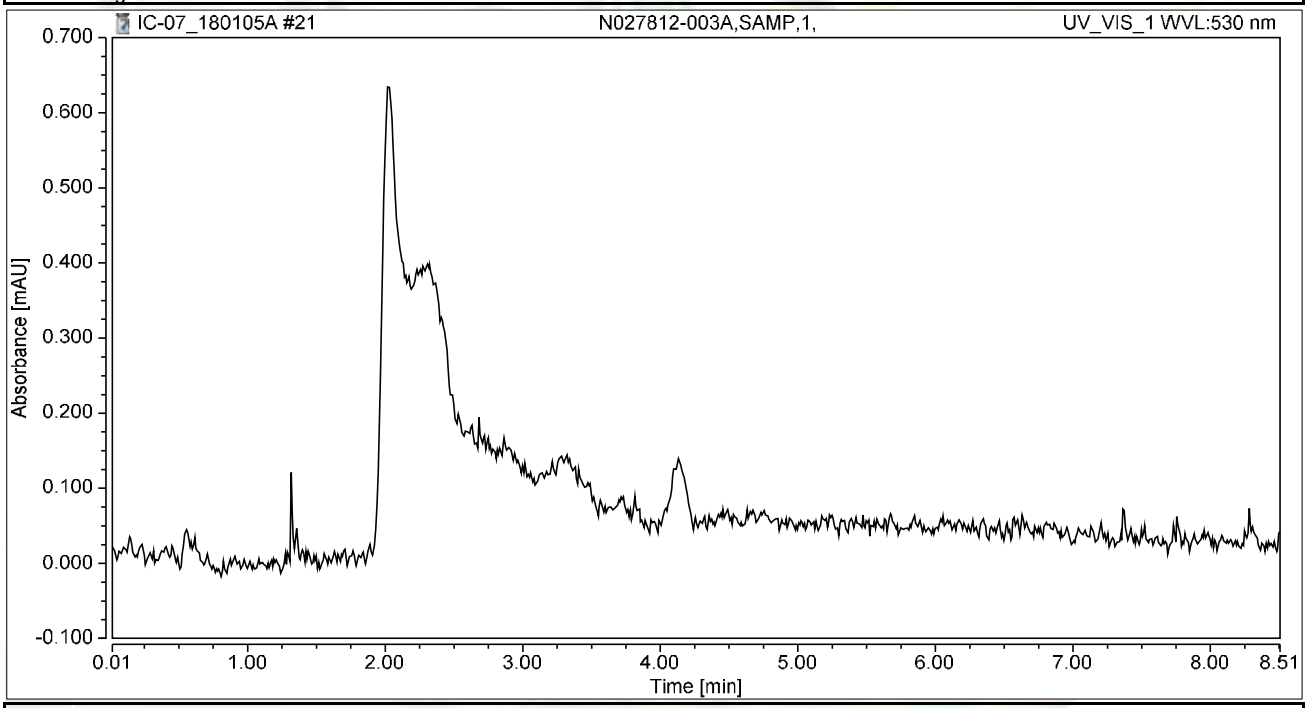
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.279	2.074	100.00	100.00	1.0911
Total:			**0.279**	**2.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

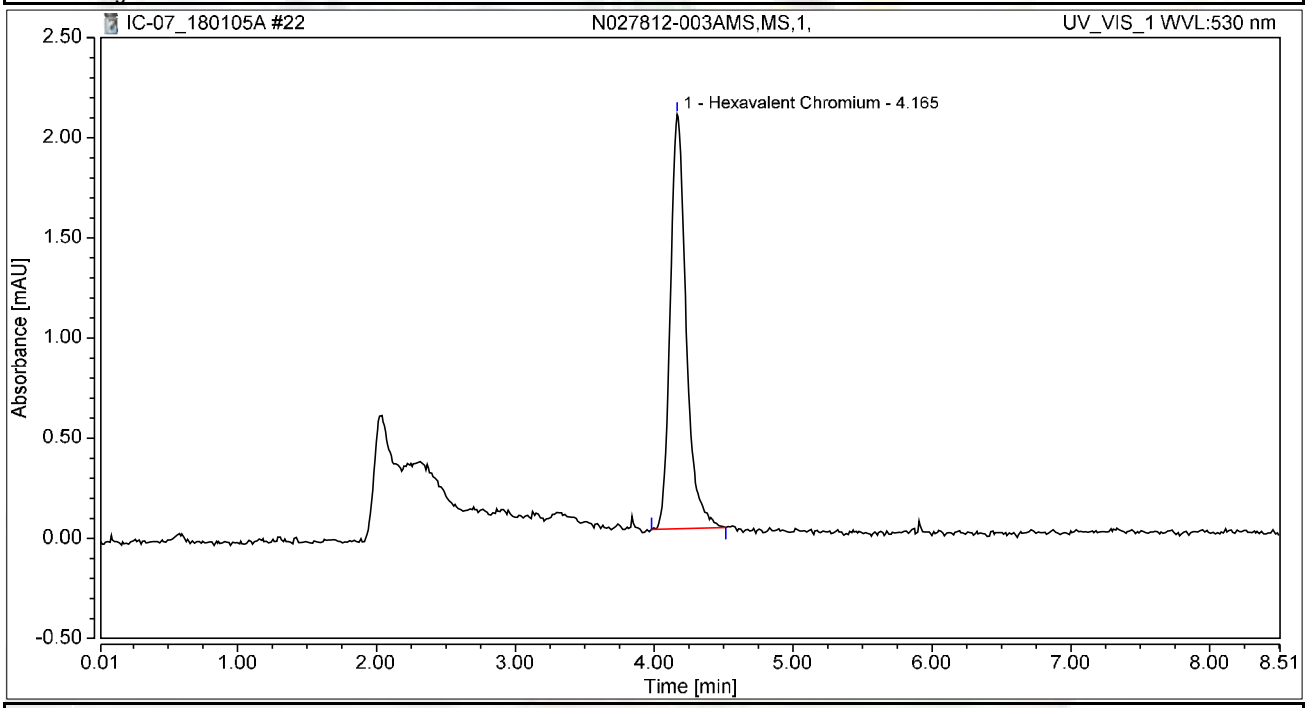
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

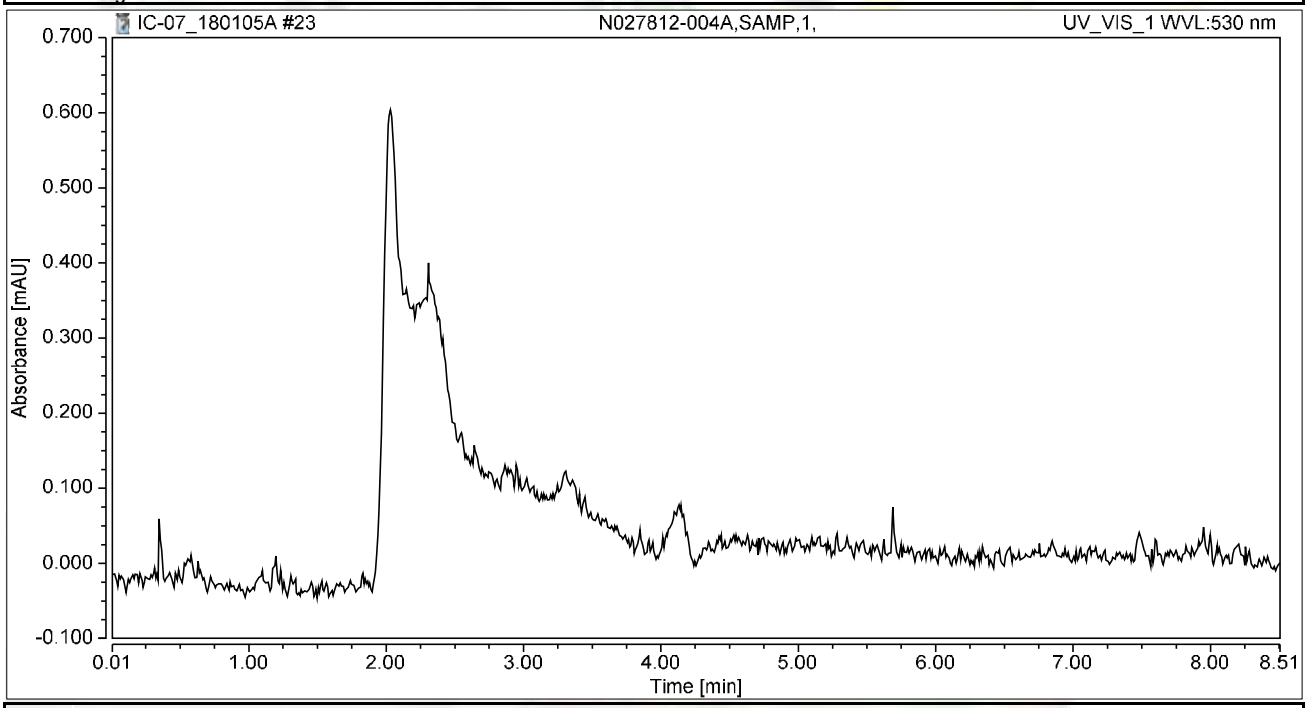
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	2.070	100.00	100.00	1.0734
Total:			**0.275**	**2.070**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

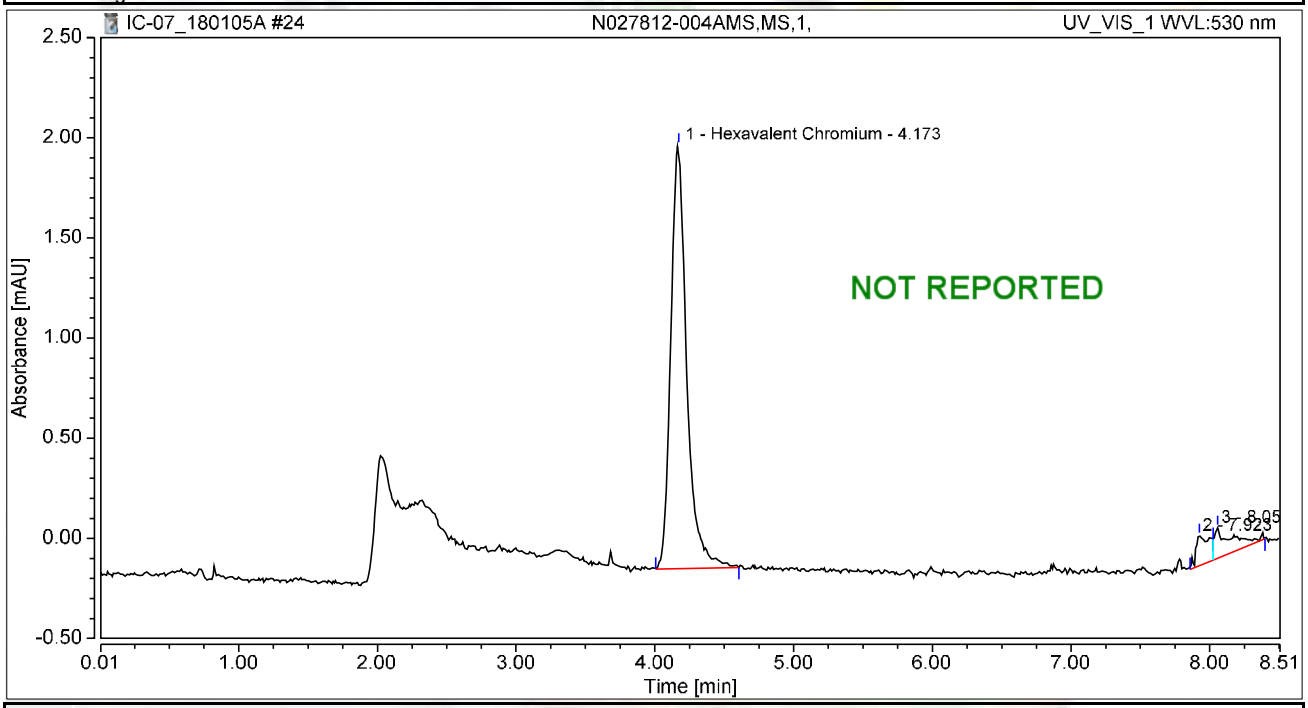
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

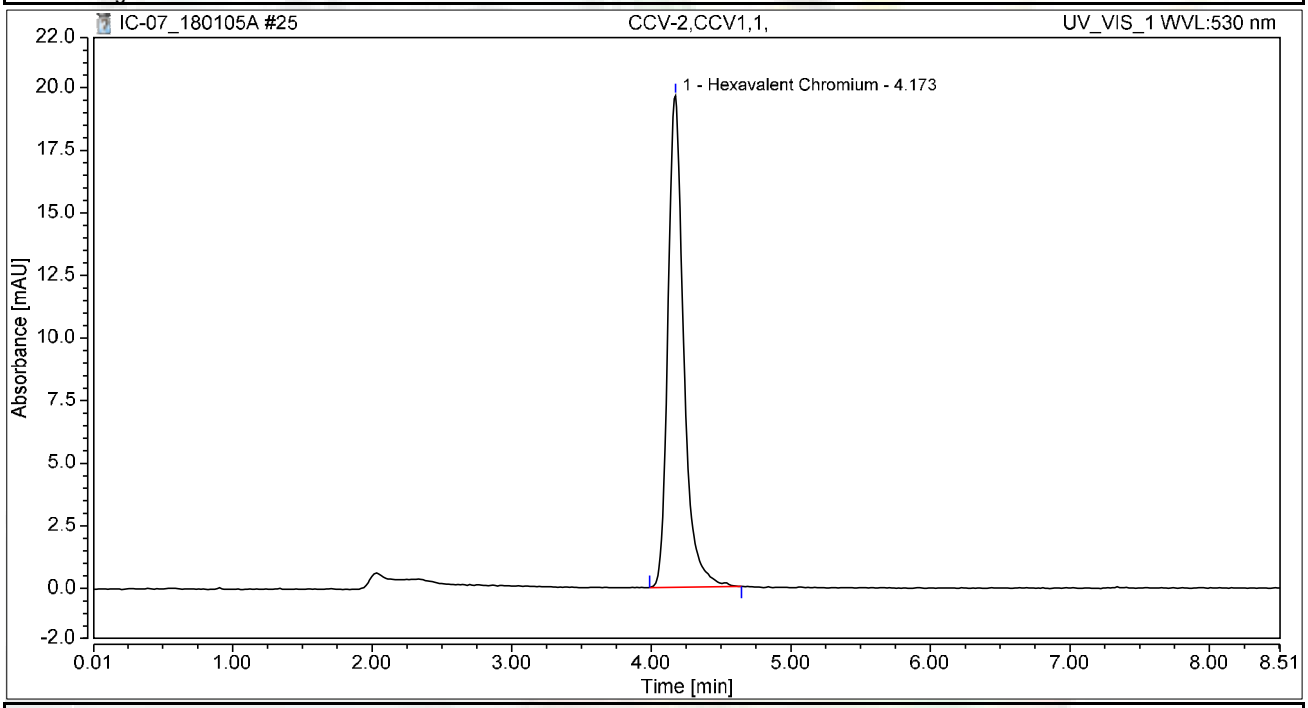
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.282	2.116	88.19	87.52	1.1033
2		7.923	0.016	0.150	5.08	6.21	n.a.
3		8.056	0.022	0.152	6.72	6.27	n.a.
Total:			**0.320**	**2.418**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

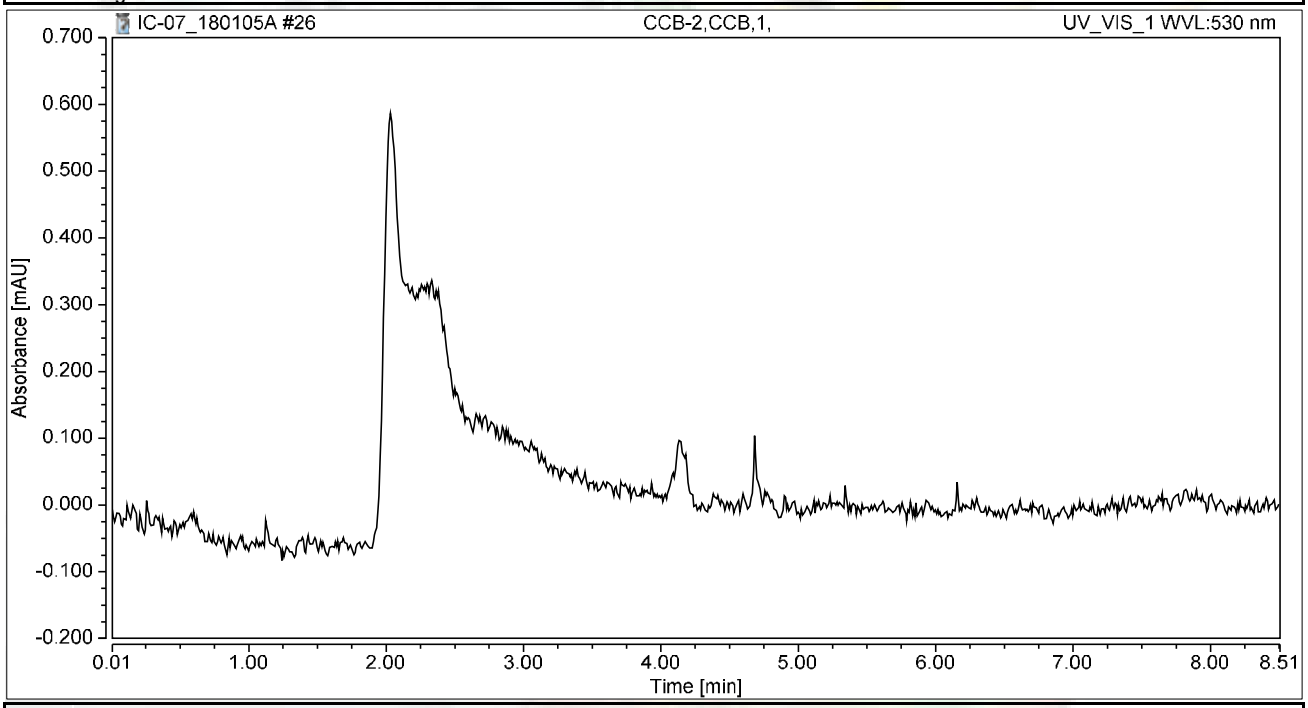
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.581	19.627	100.00	100.00	10.0947
Total:			**2.581**	**19.627**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

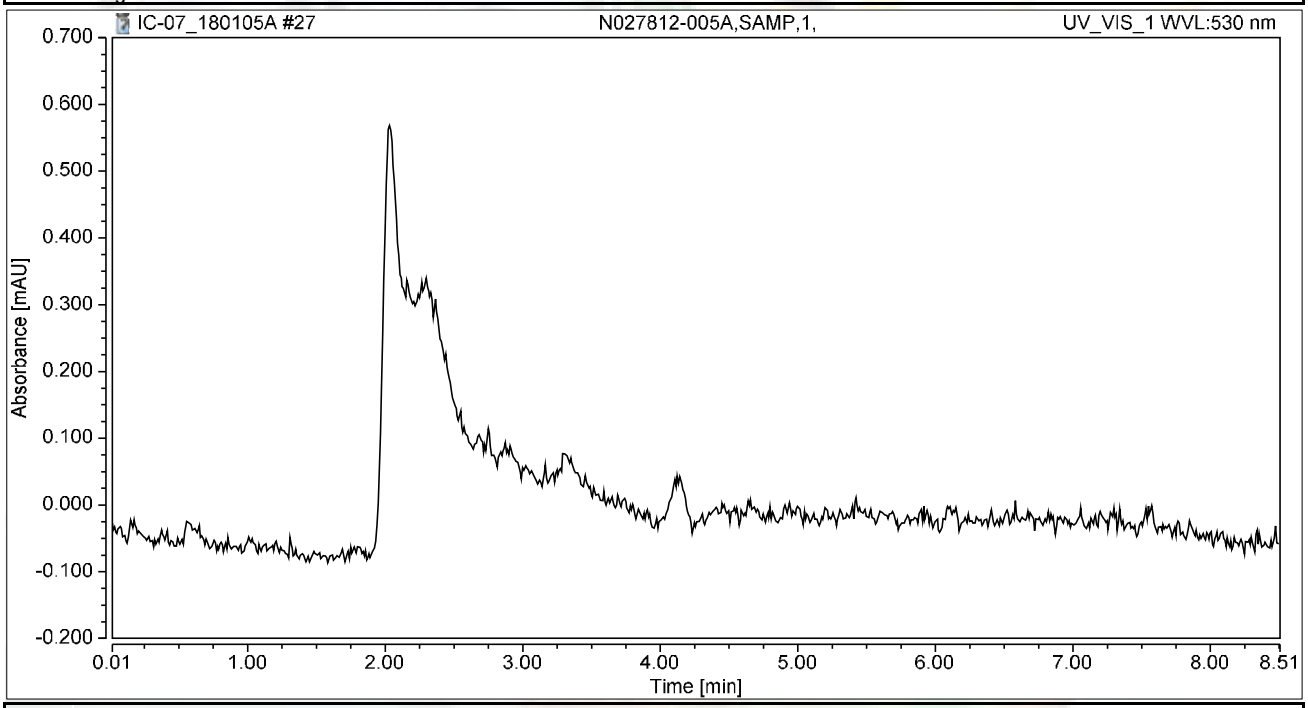
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

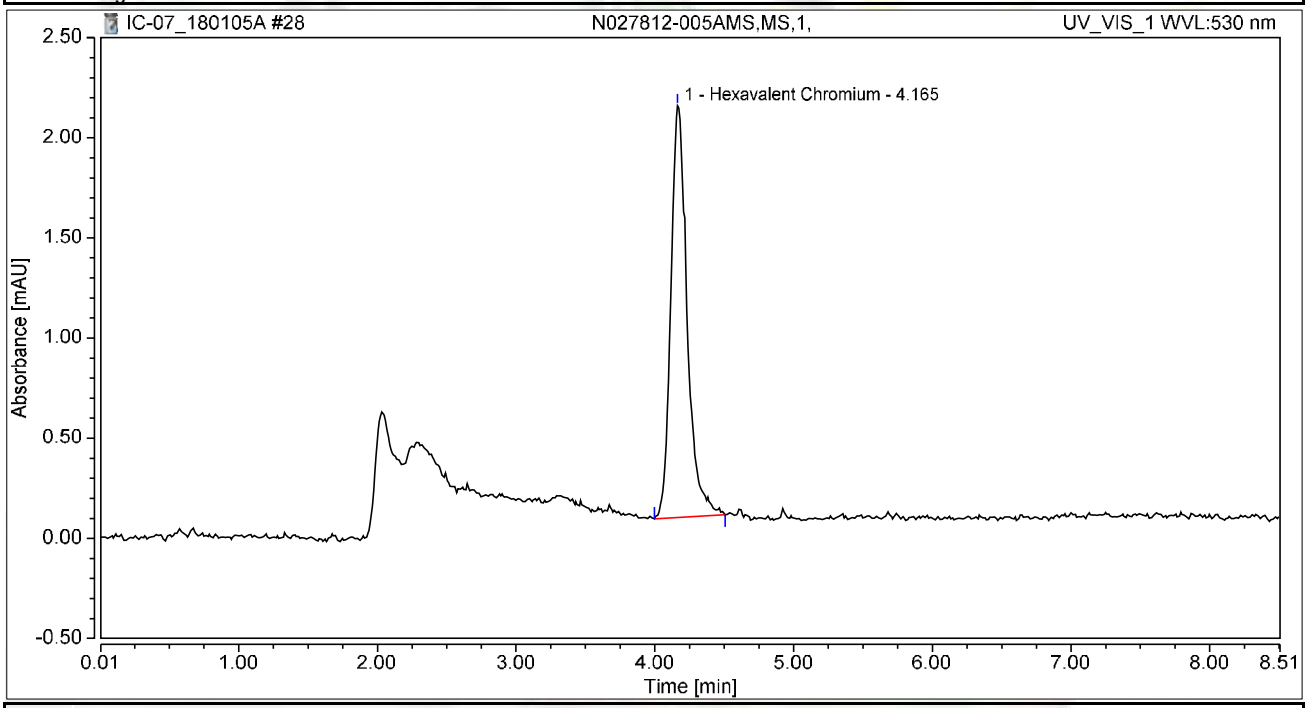
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

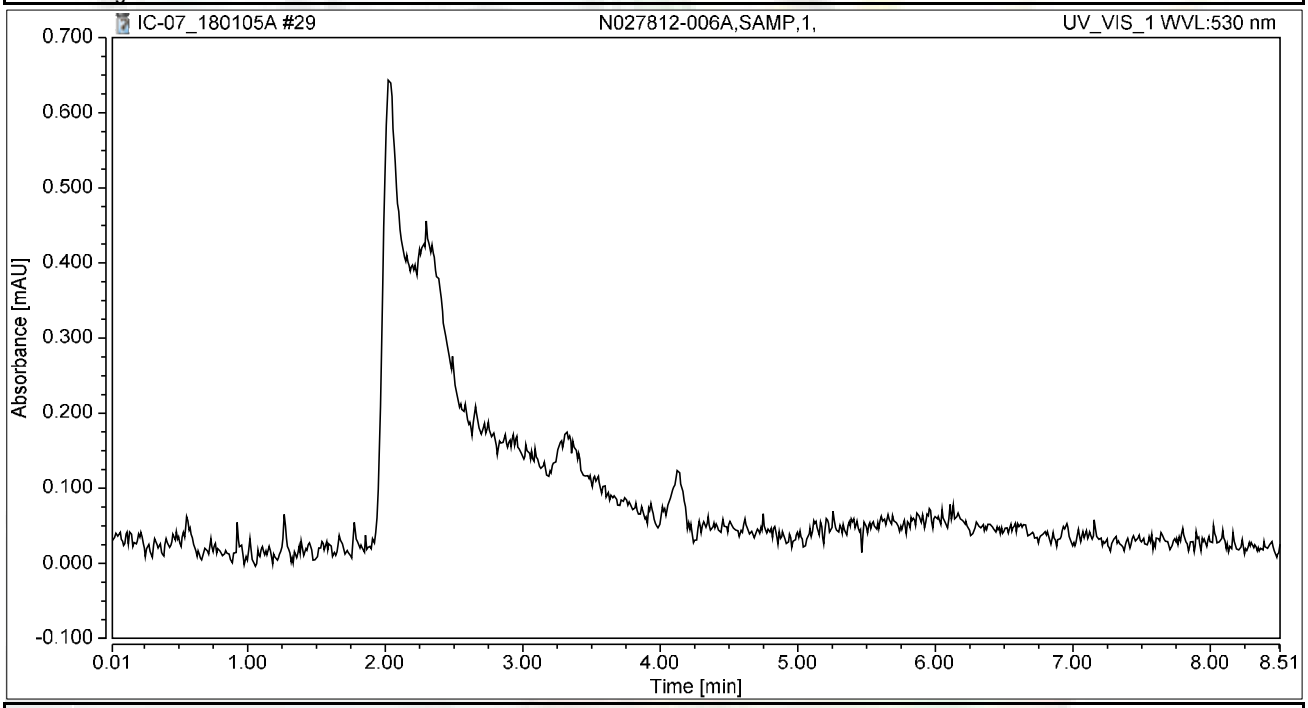
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.281	2.056	100.00	100.00	1.0998
Total:			**0.281**	**2.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

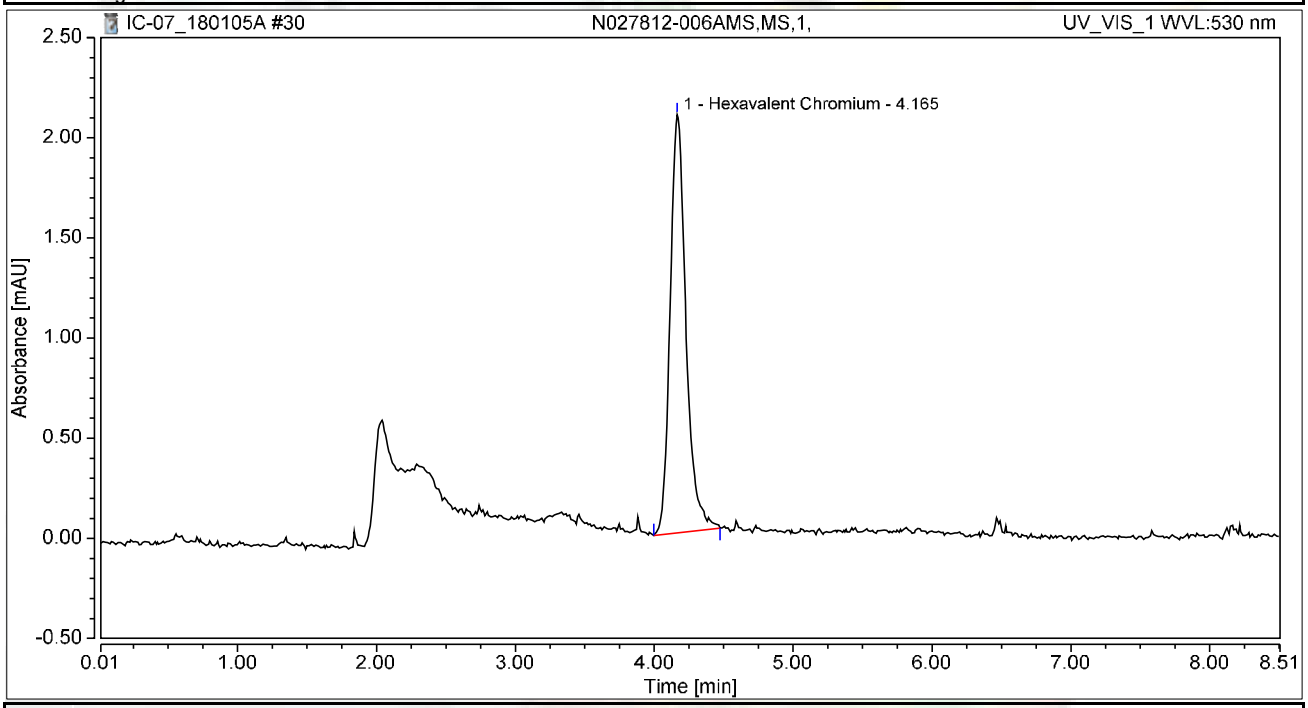
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

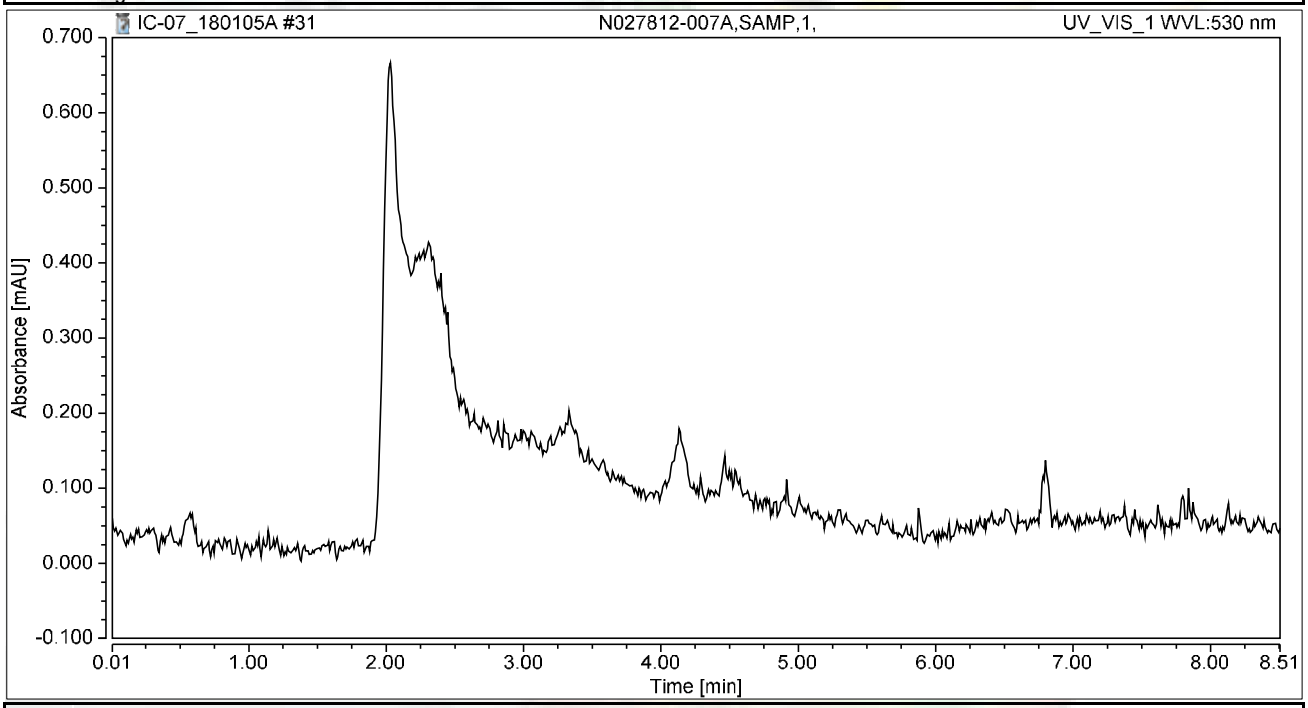
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.277	2.088	100.00	100.00	1.0819
Total:			**0.277**	**2.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

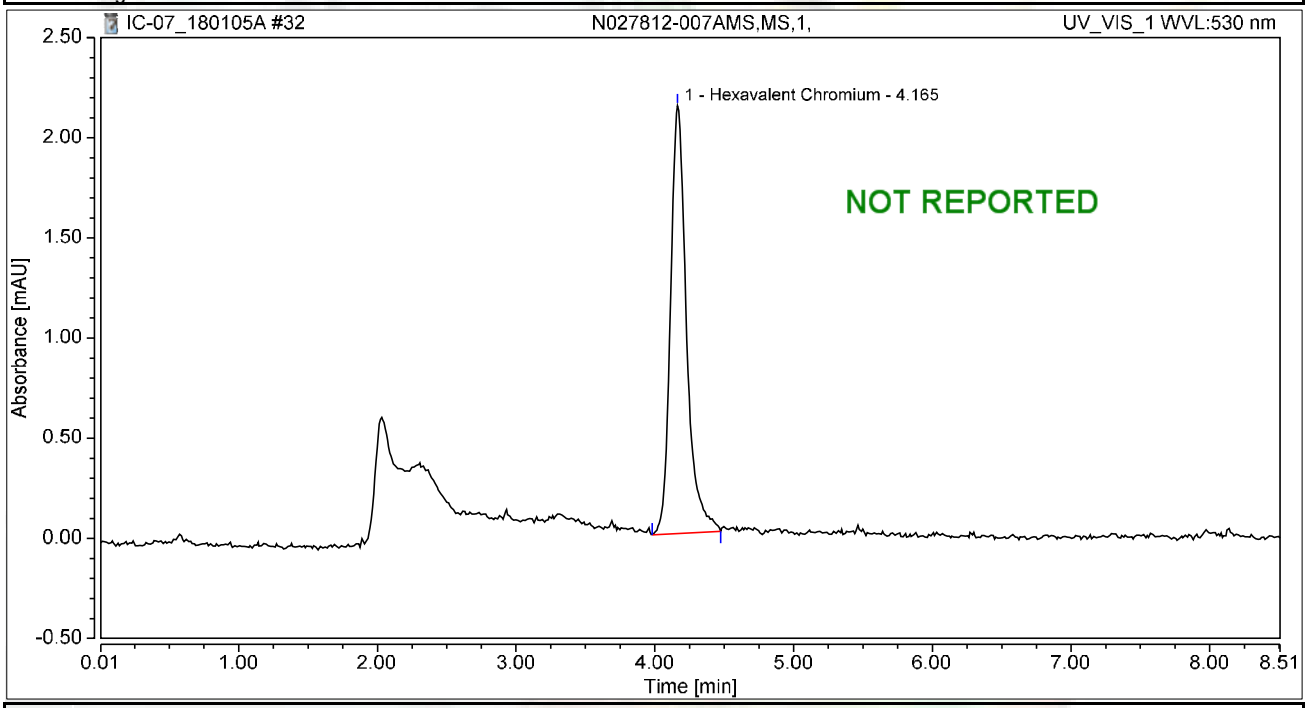
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

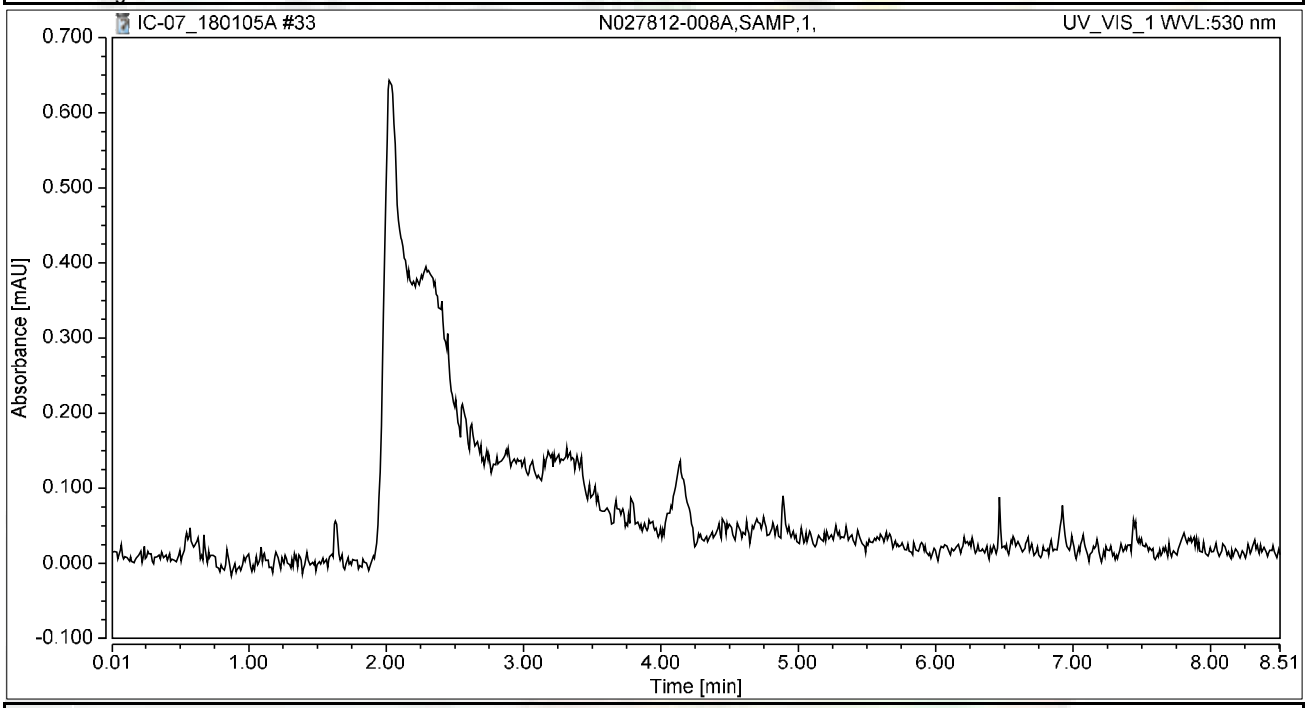
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.287	2.135	100.00	100.00	1.1211
Total:			**0.287**	**2.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

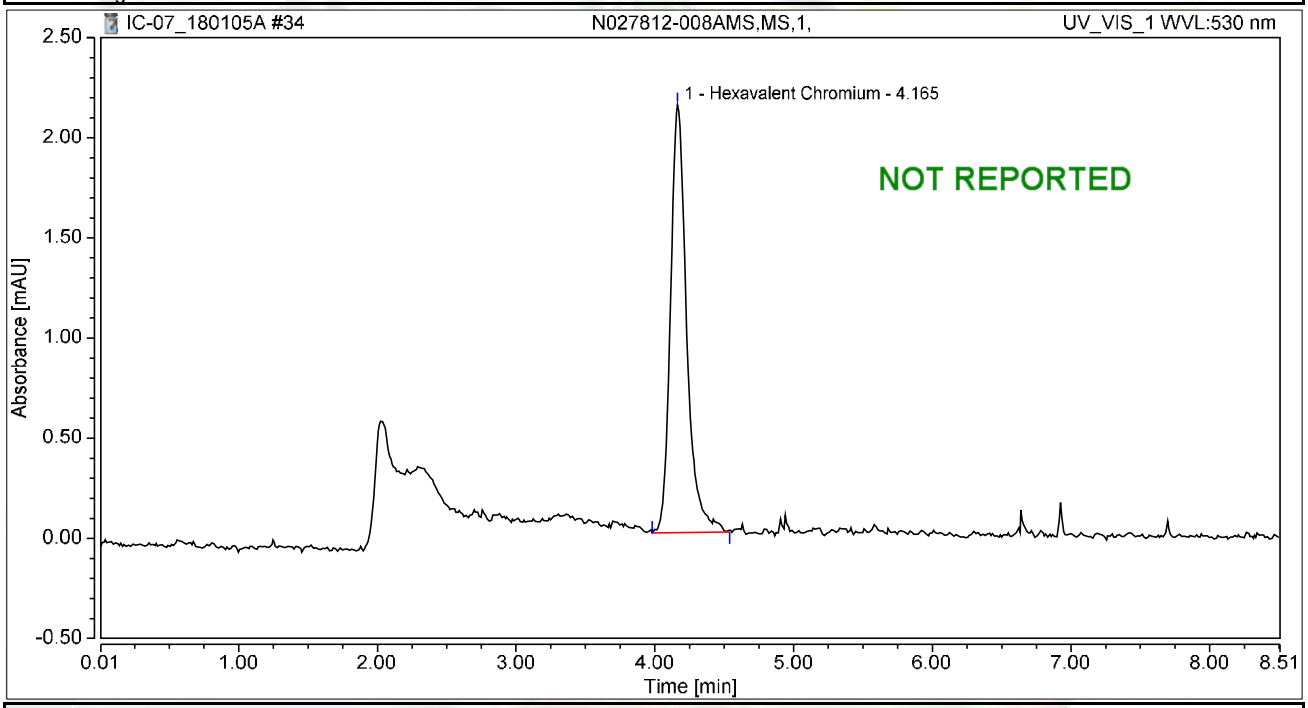
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

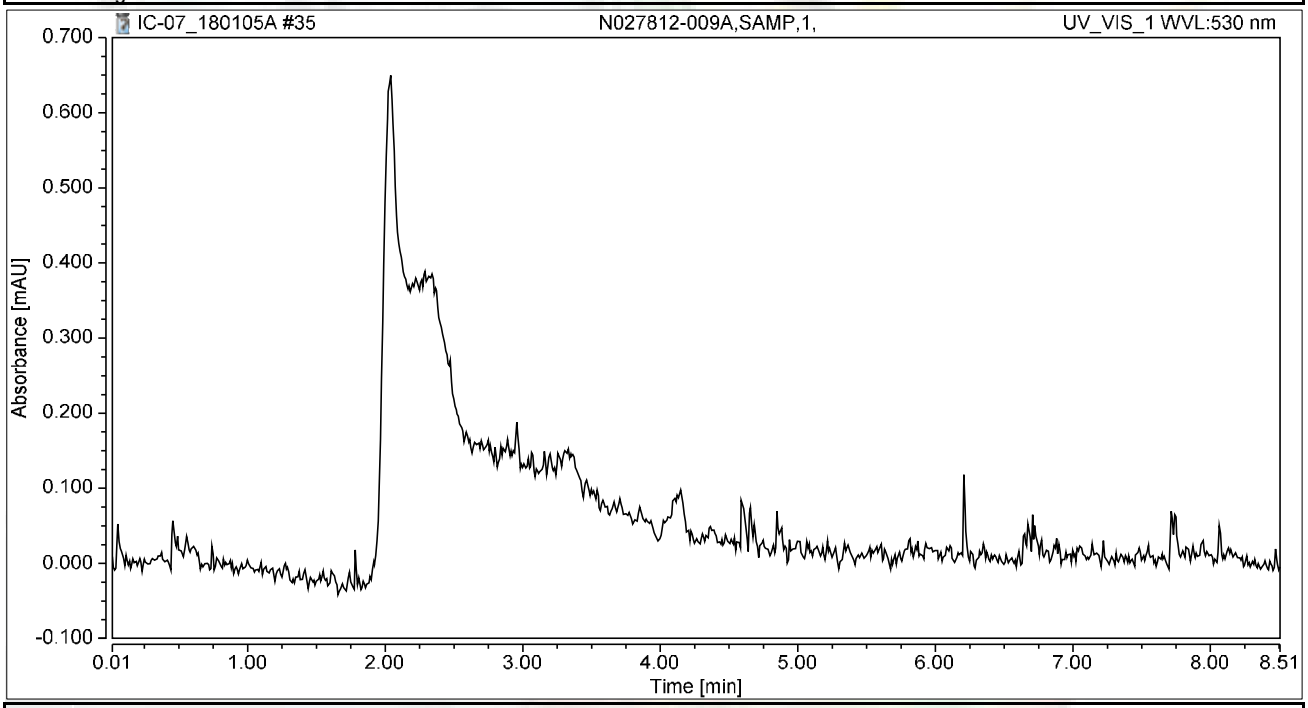
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.290	2.137	100.00	100.00	1.1323
Total:			**0.290**	**2.137**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

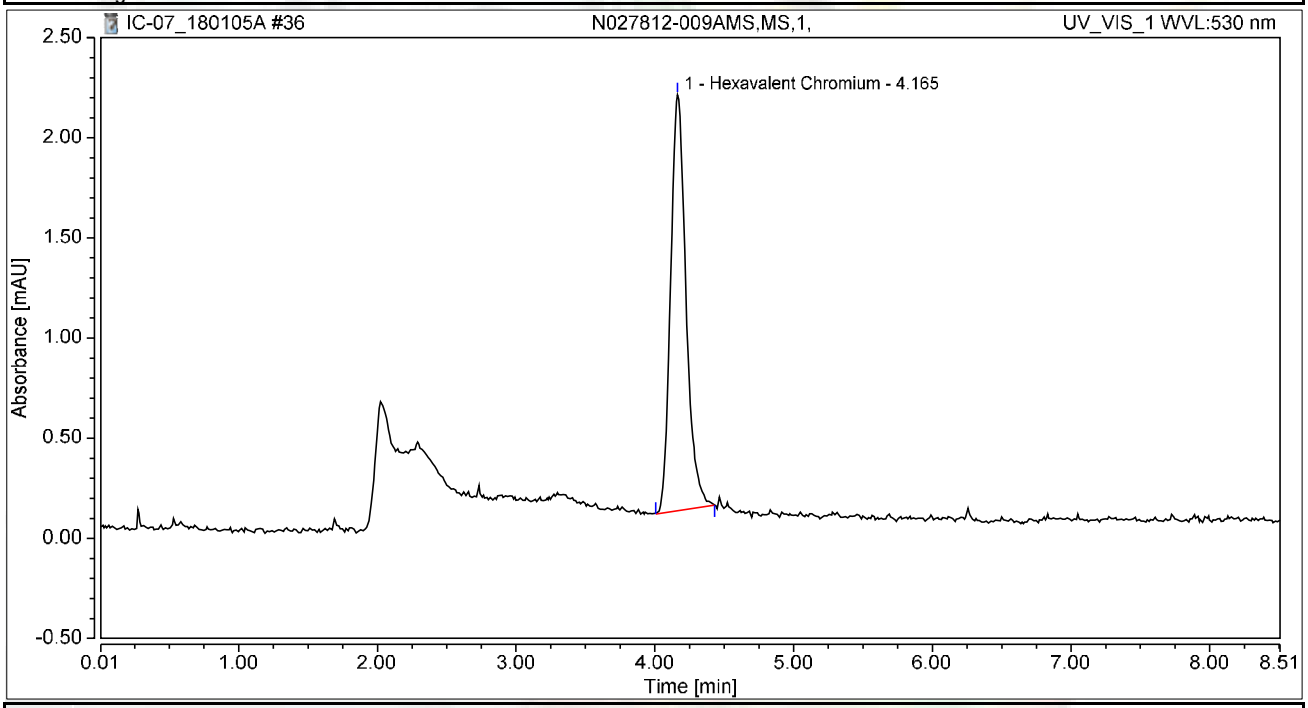
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

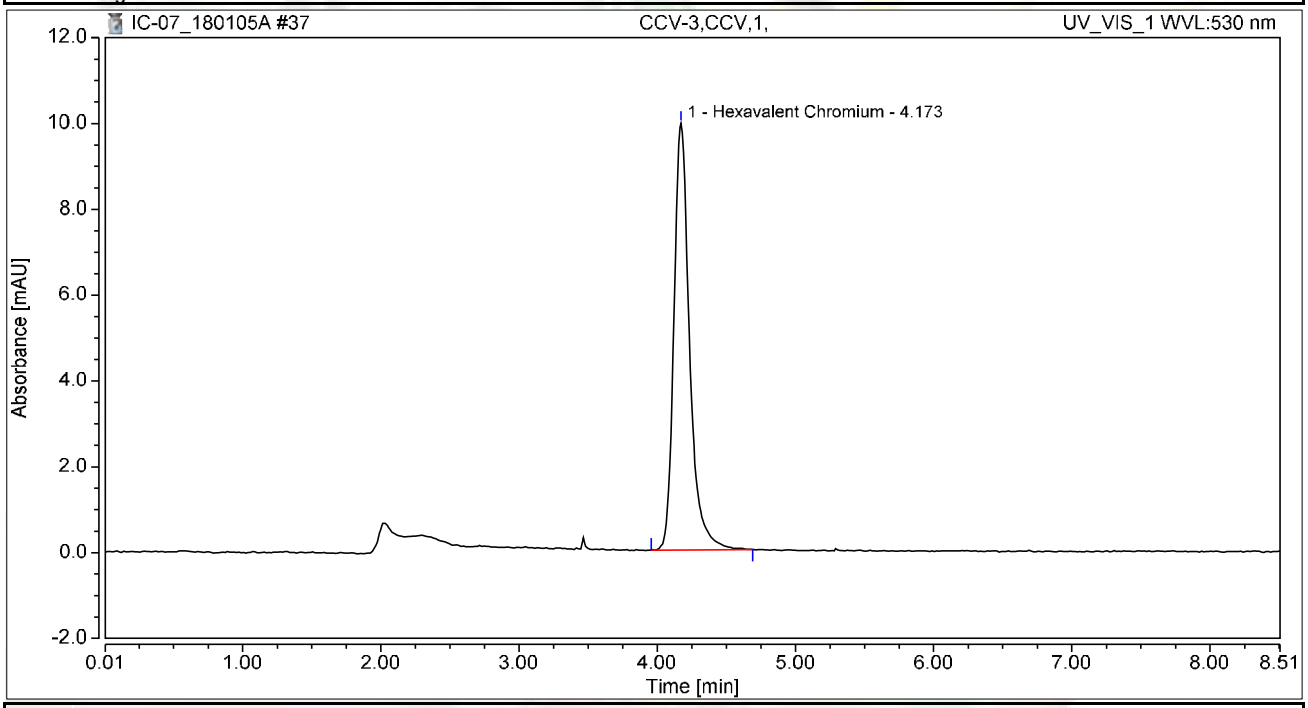
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.268	2.078	100.00	100.00	1.0487
Total:			**0.268**	**2.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

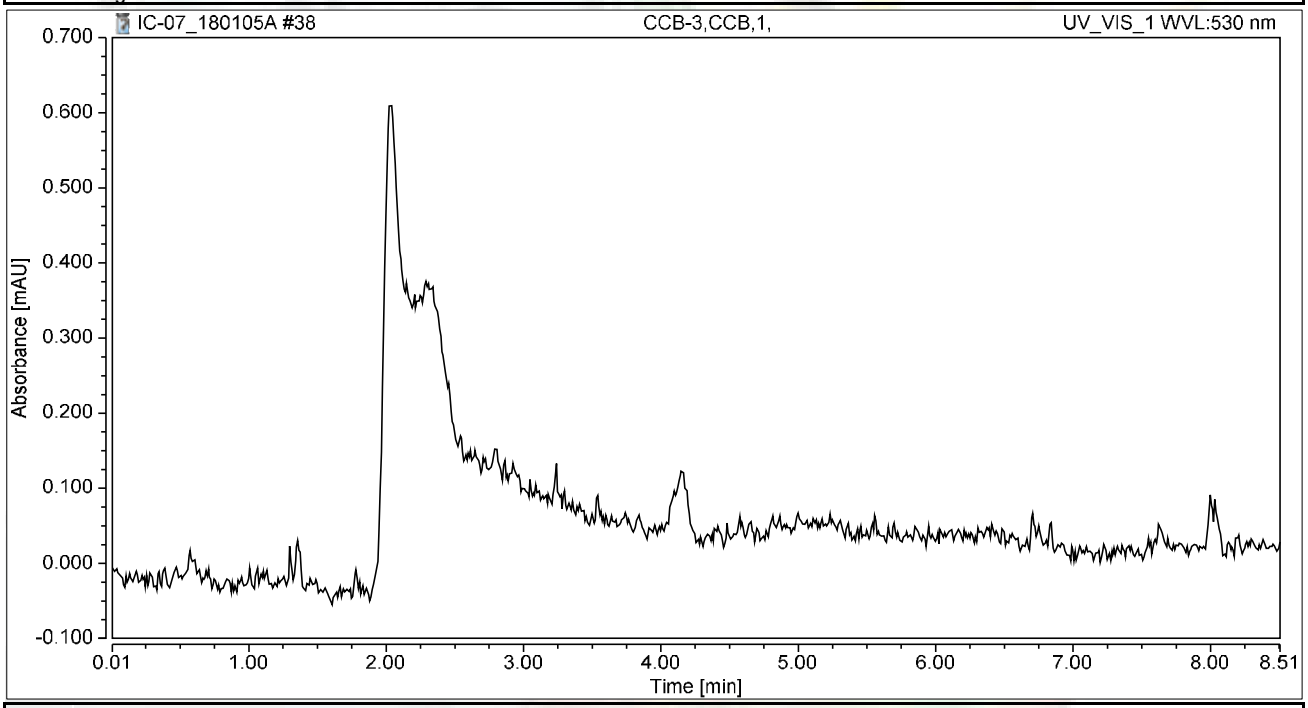
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.307	9.945	100.00	100.00	5.1104
Total:			**1.307**	**9.945**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

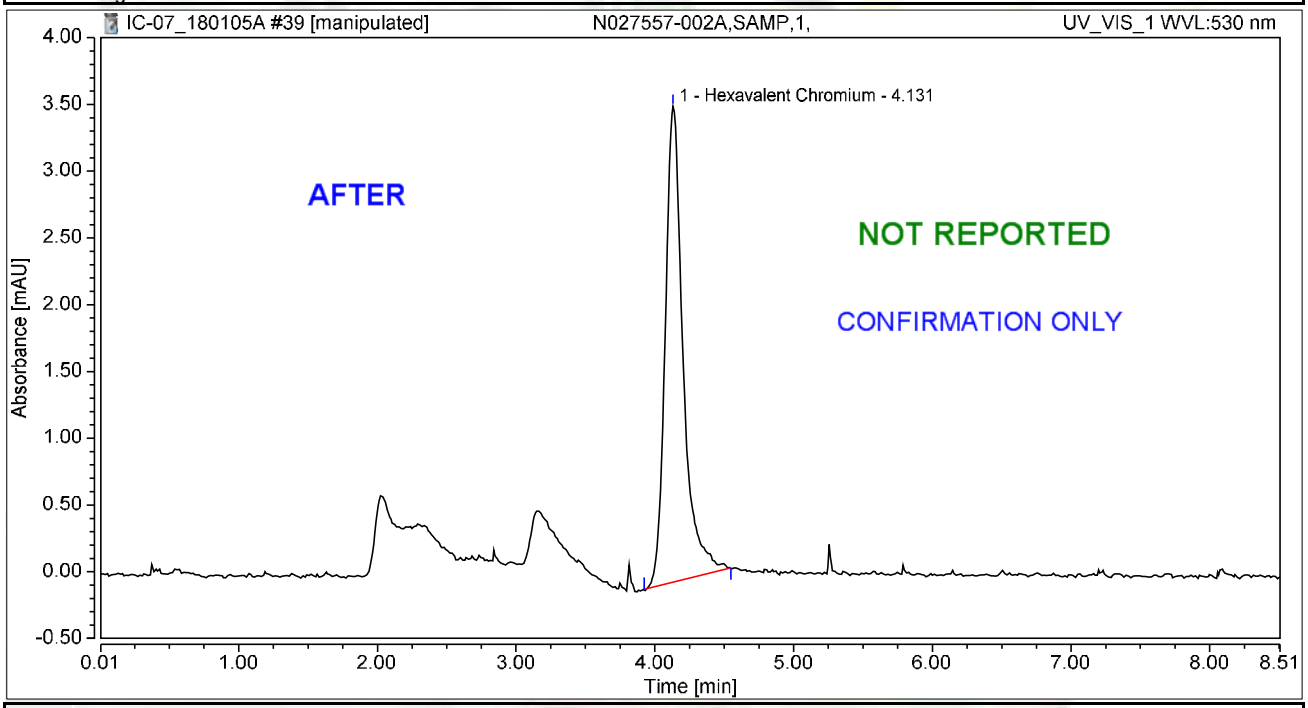
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.533	3.562	100.00	100.00	2.0832
Total:			**0.533**	**3.562**	**100.00**	**100.00**	

rba 1/8/2018

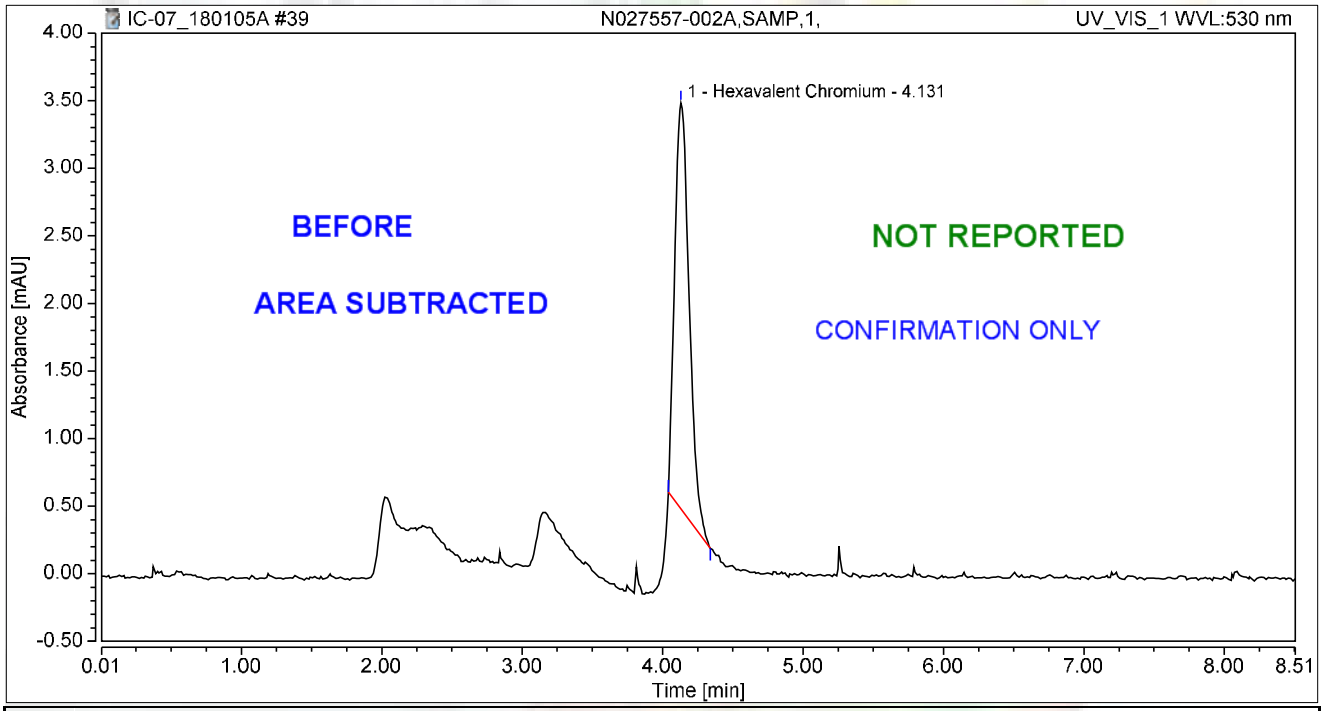
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002A,SAMP,~~1,~~**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.359	3.006	100.00	100.00	1.4038
Total:			**0.359**	**3.006**	**100.00**	**100.00**	

rba 1/8/2018

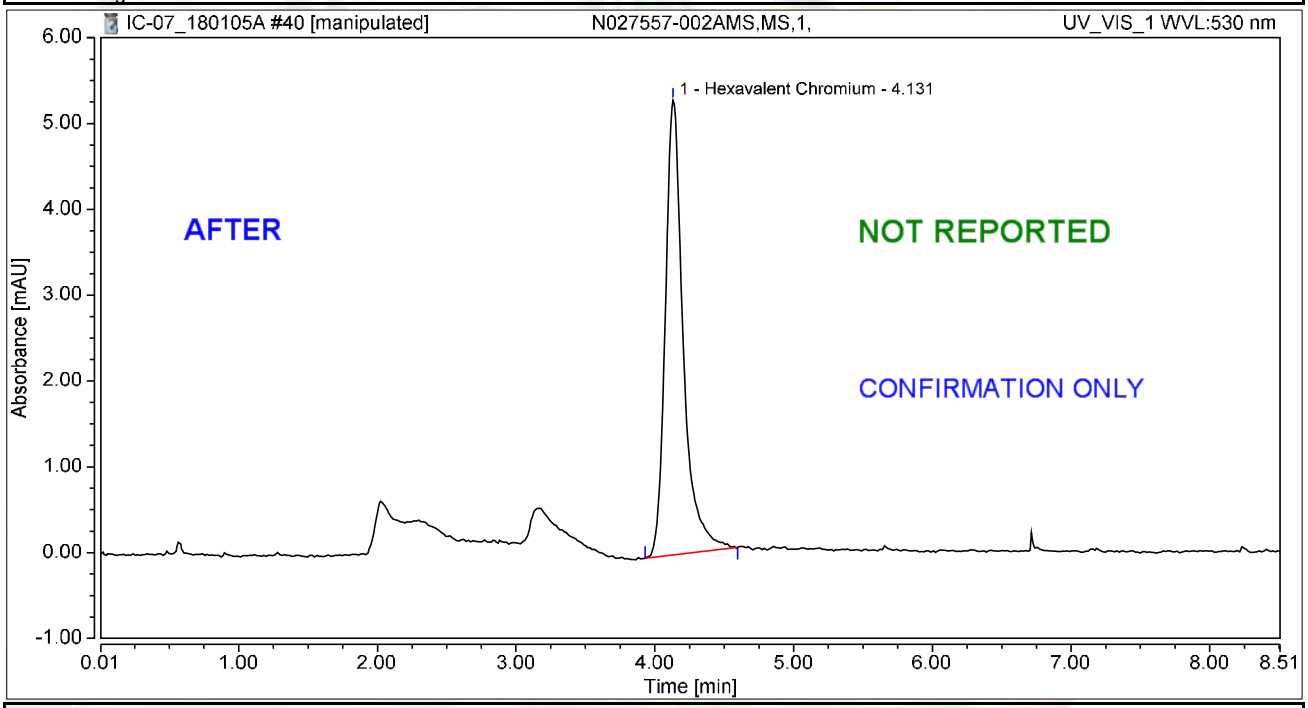
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.795	5.298	100.00	100.00	3.1084
Total:			**0.795**	**5.298**	**100.00**	**100.00**	

rba 1/8/2018

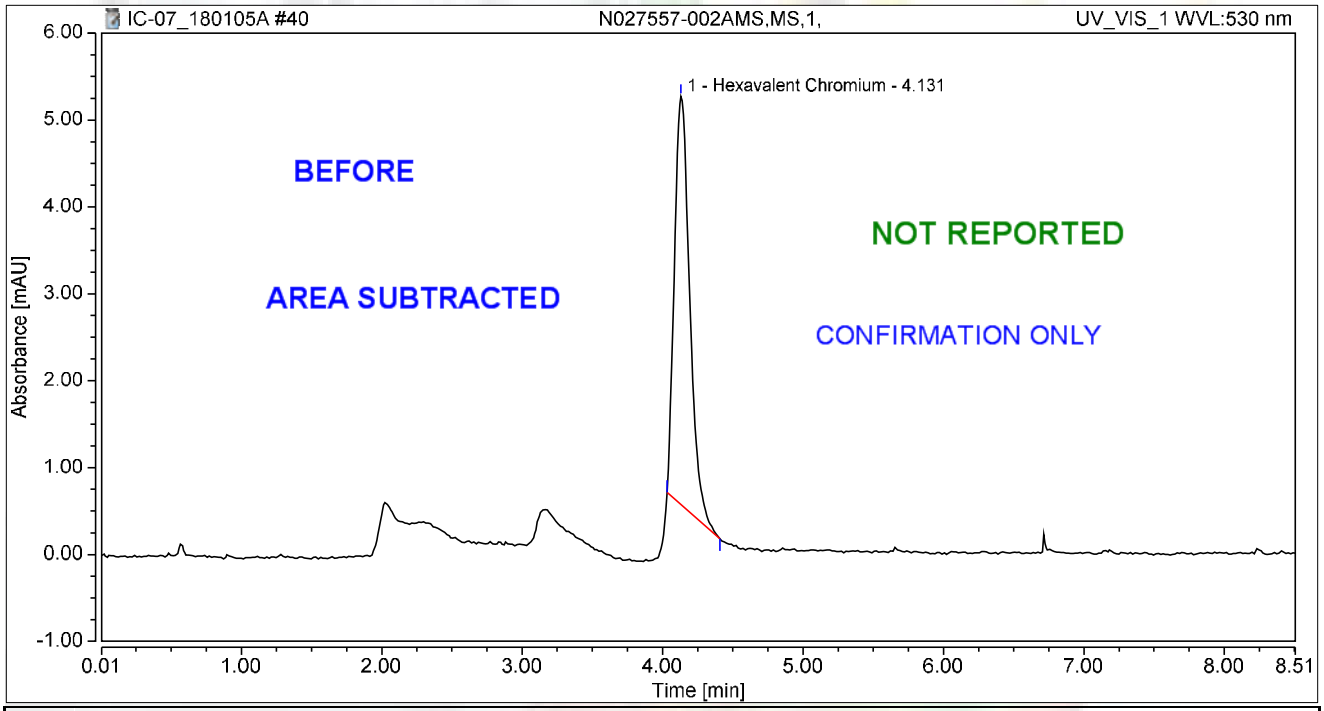
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002AMS,MS,~~1,~~**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.594	4.698	100.00	100.00	2.3239
Total:			**0.594**	**4.698**	**100.00**	**100.00**	

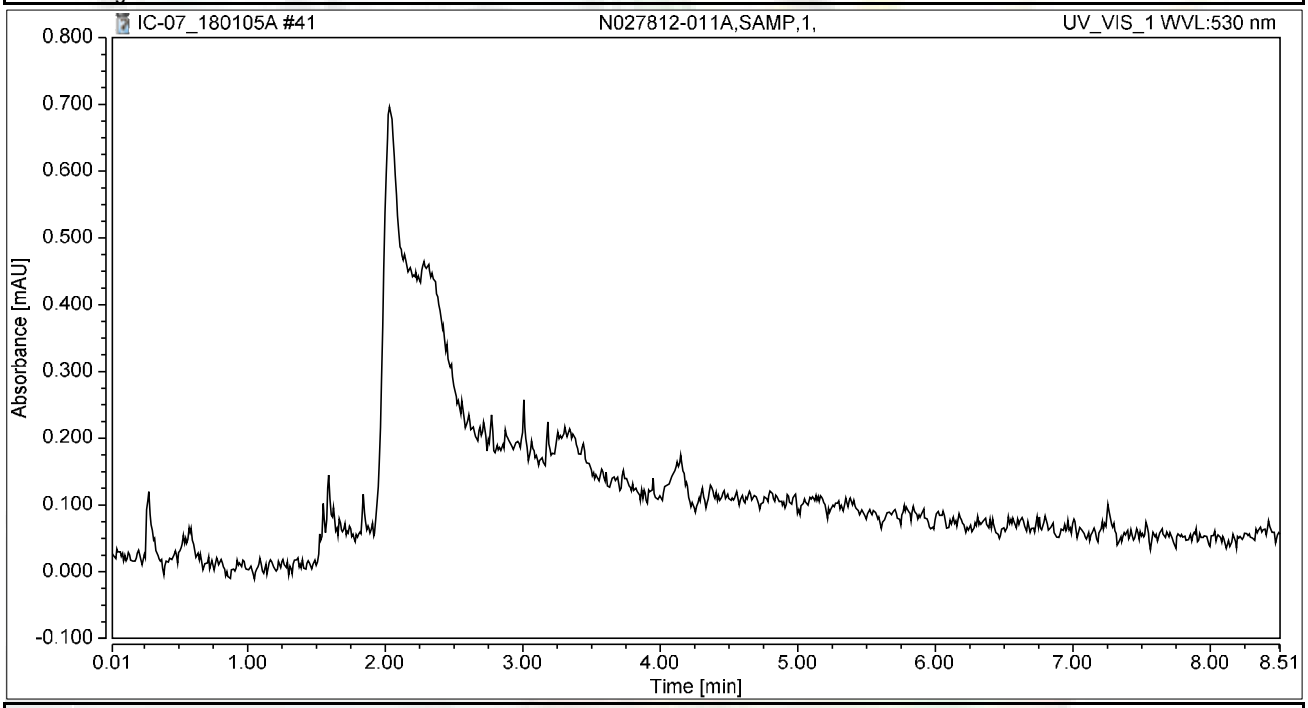
rba 1/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

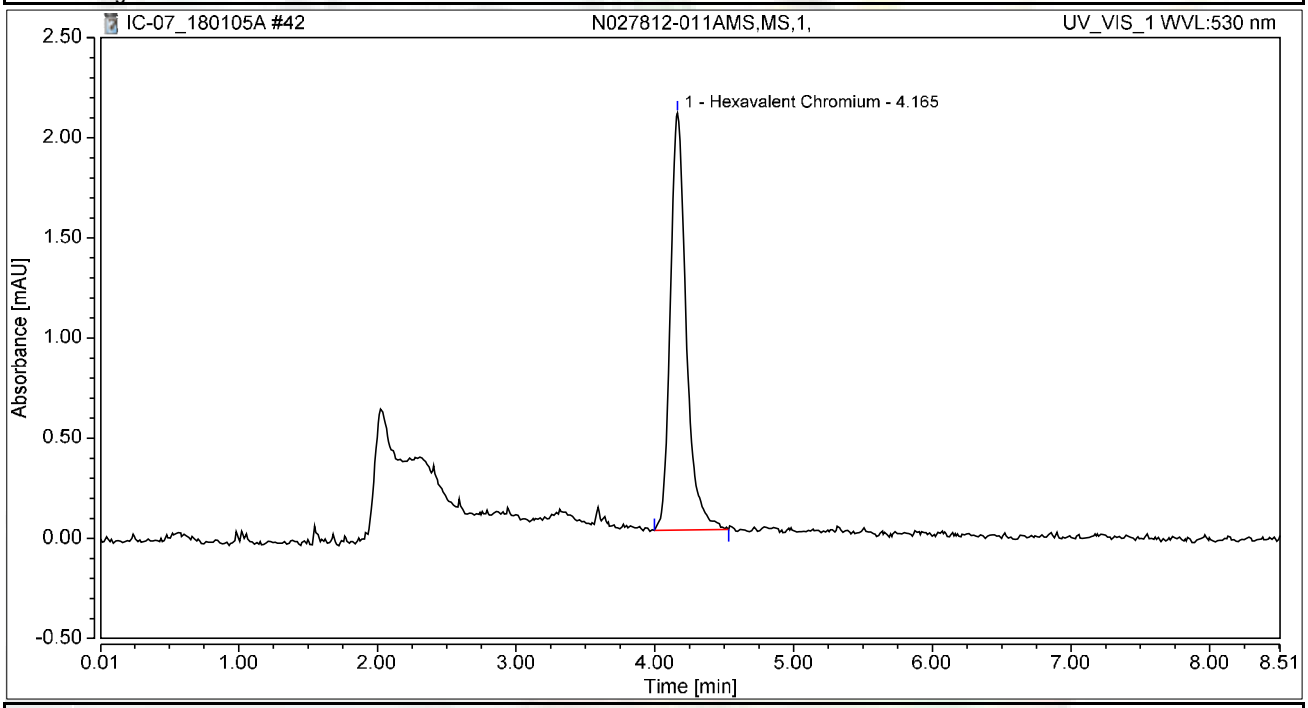
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

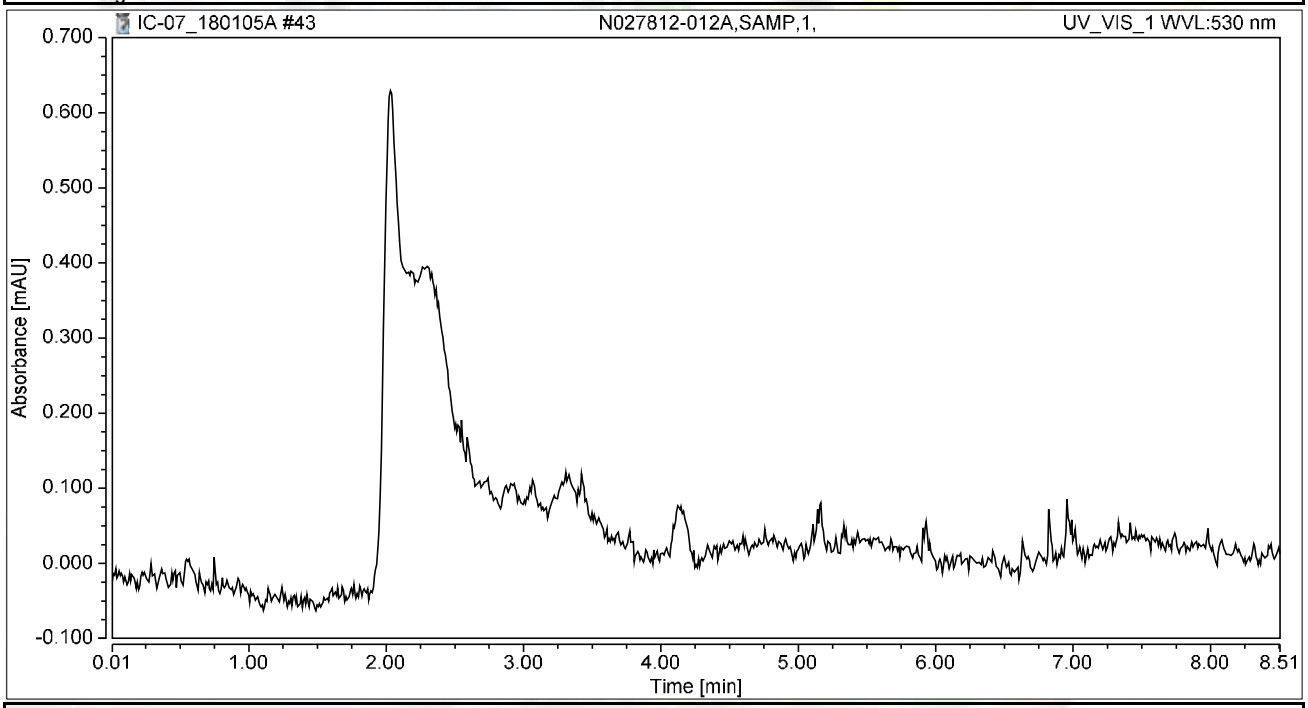
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.278	2.082	100.00	100.00	1.0868
Total:			**0.278**	**2.082**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

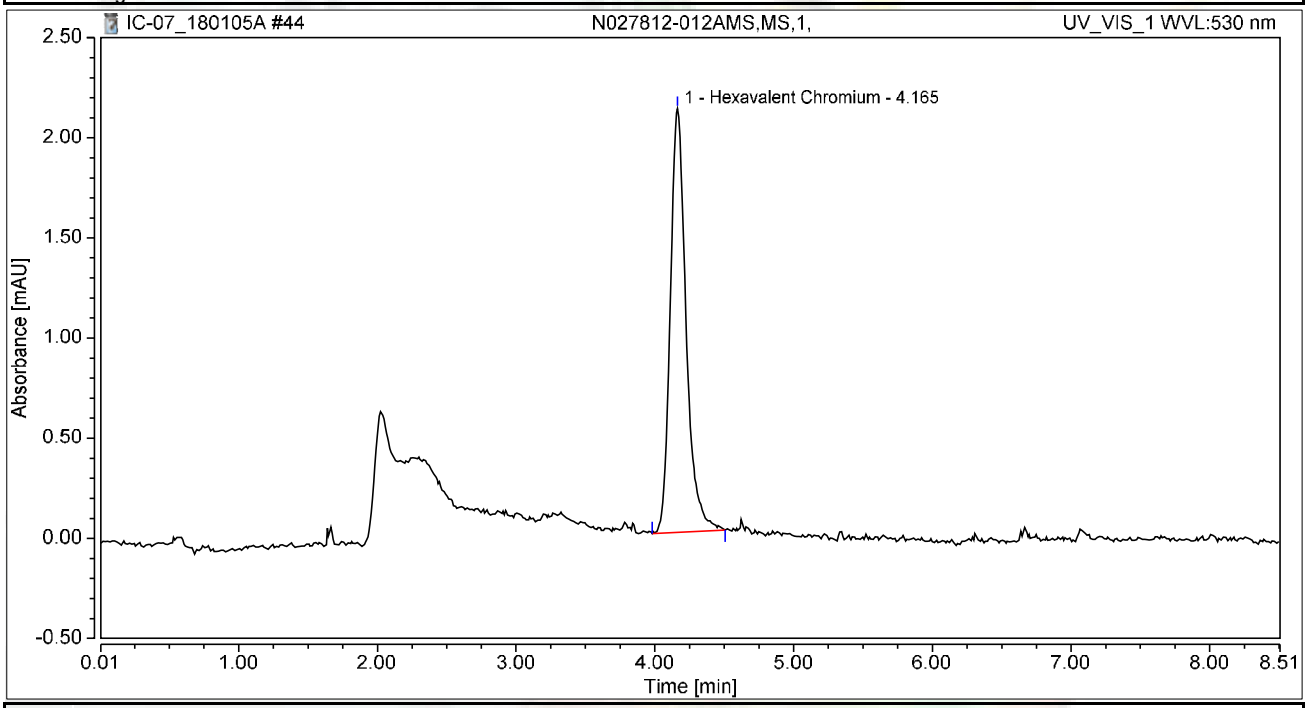
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

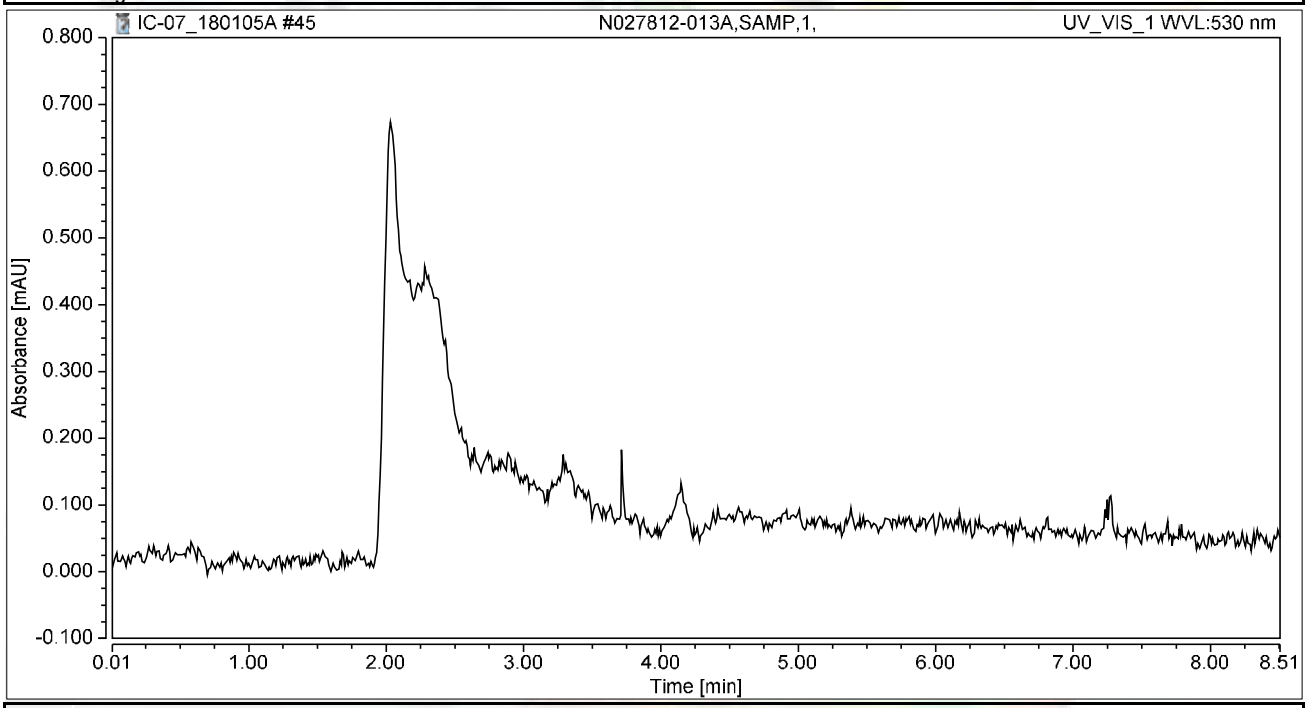
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.280	2.116	100.00	100.00	1.0955
Total:			**0.280**	**2.116**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

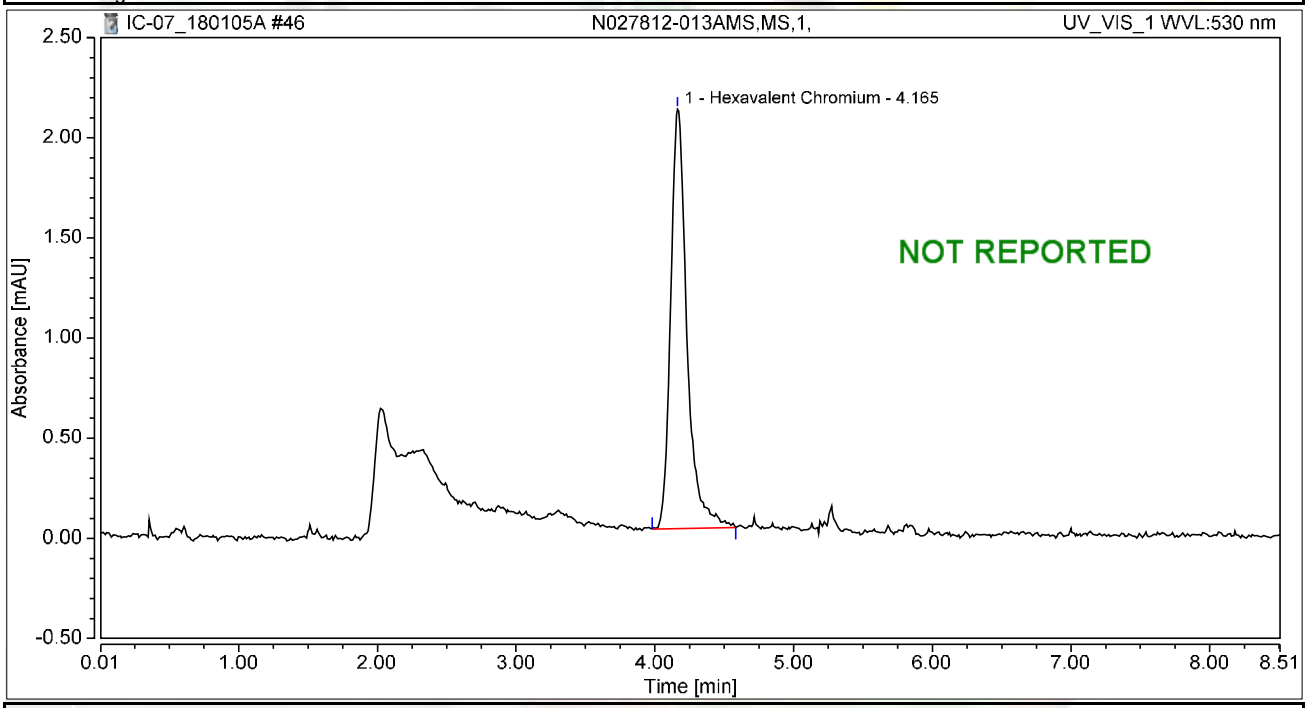
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

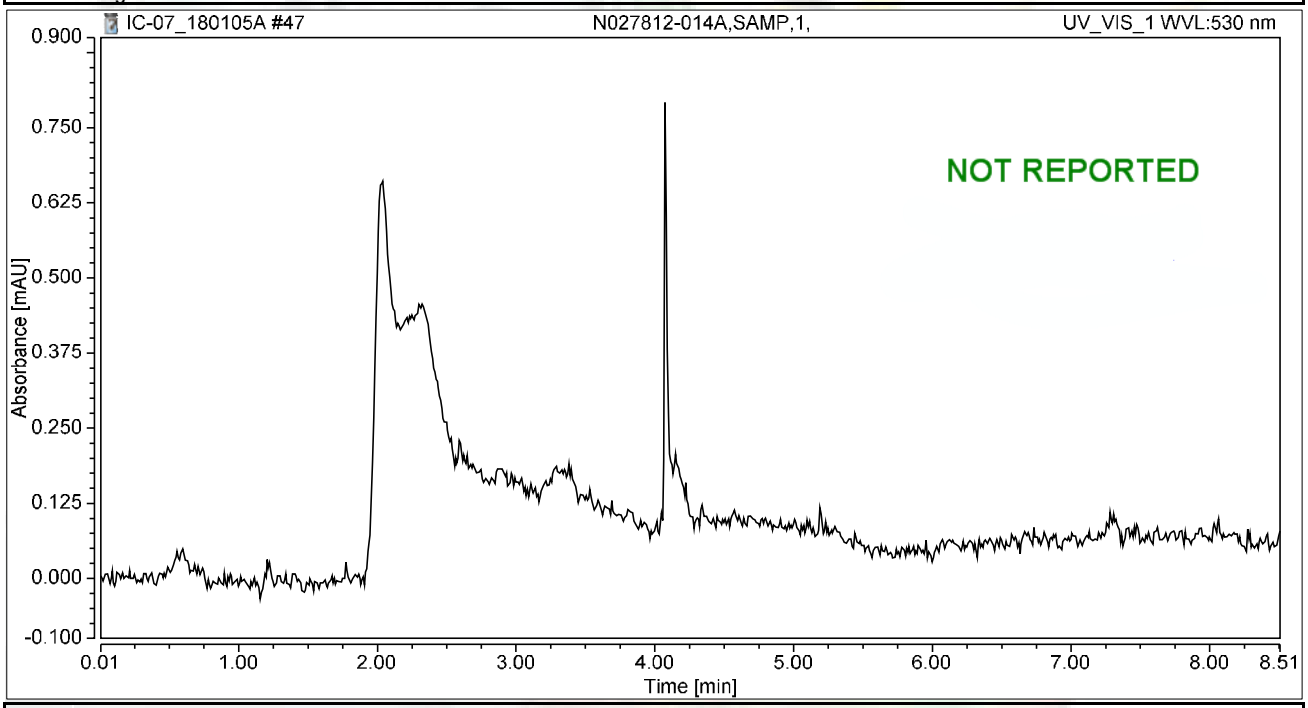
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.286	2.094	100.00	100.00	1.1176
Total:			**0.286**	**2.094**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

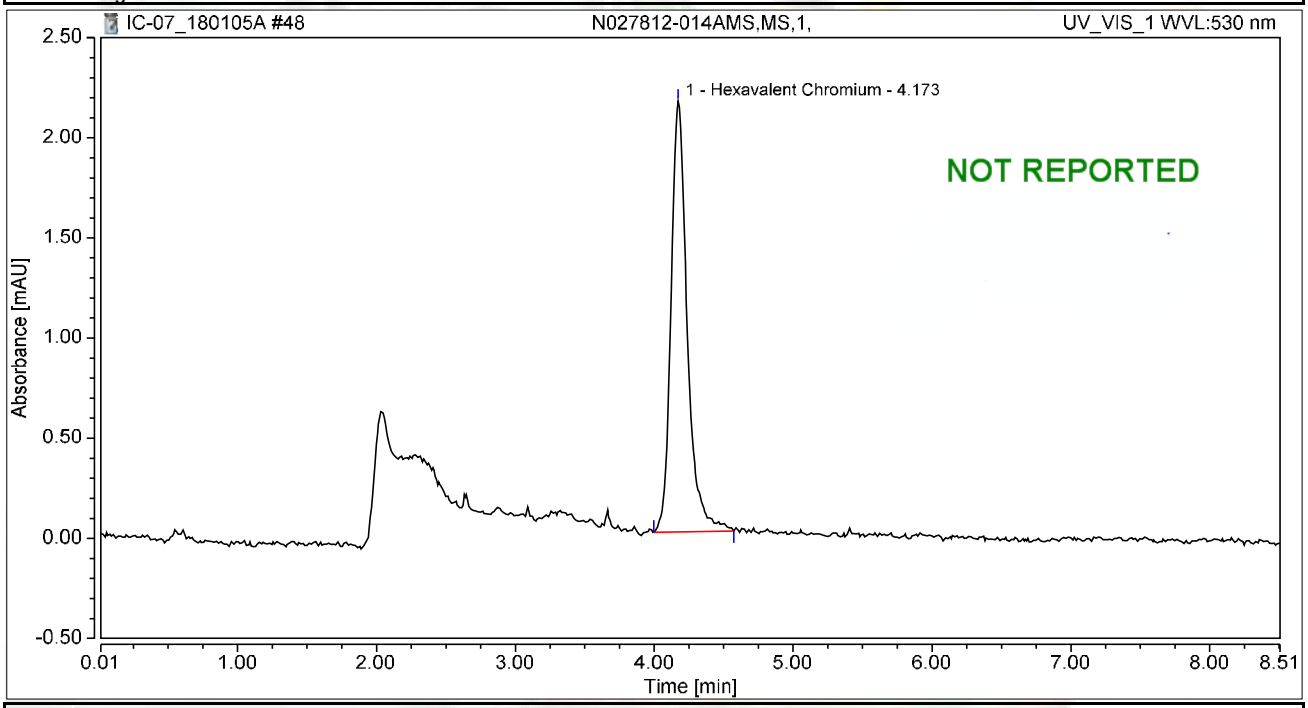
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

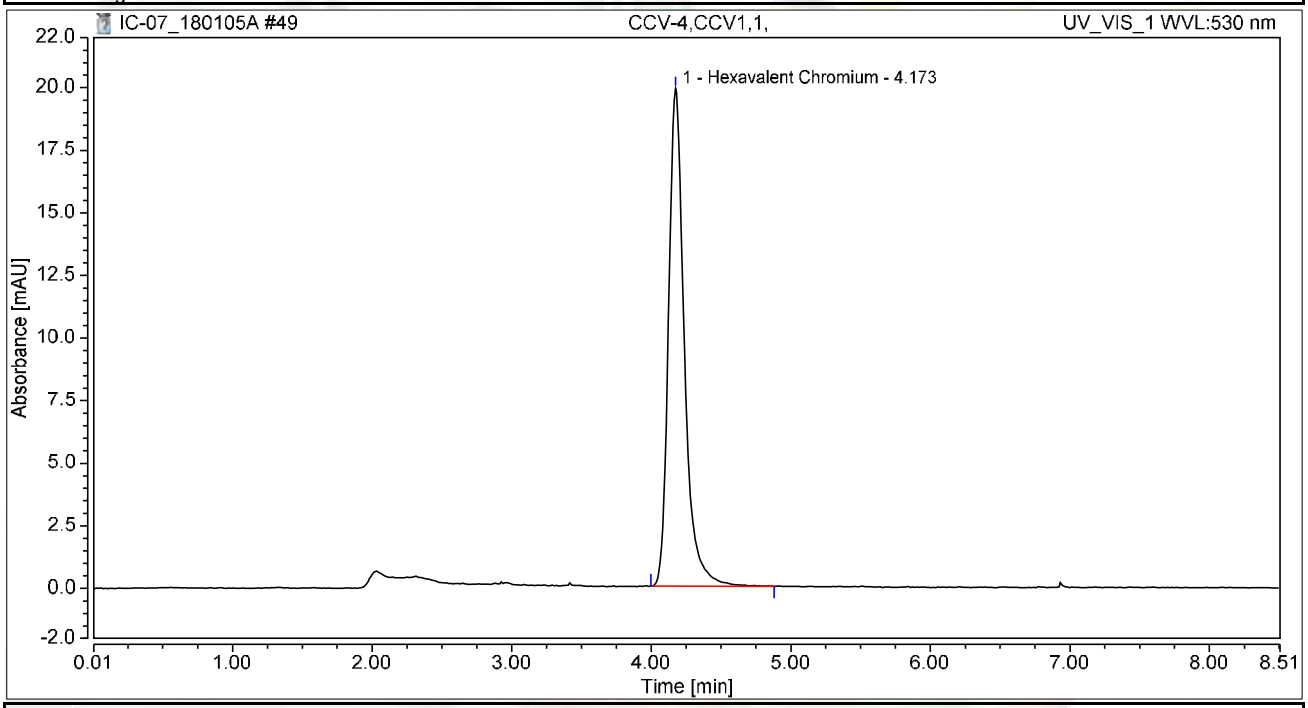
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.291	2.151	100.00	100.00	1.1382
Total:			**0.291**	**2.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

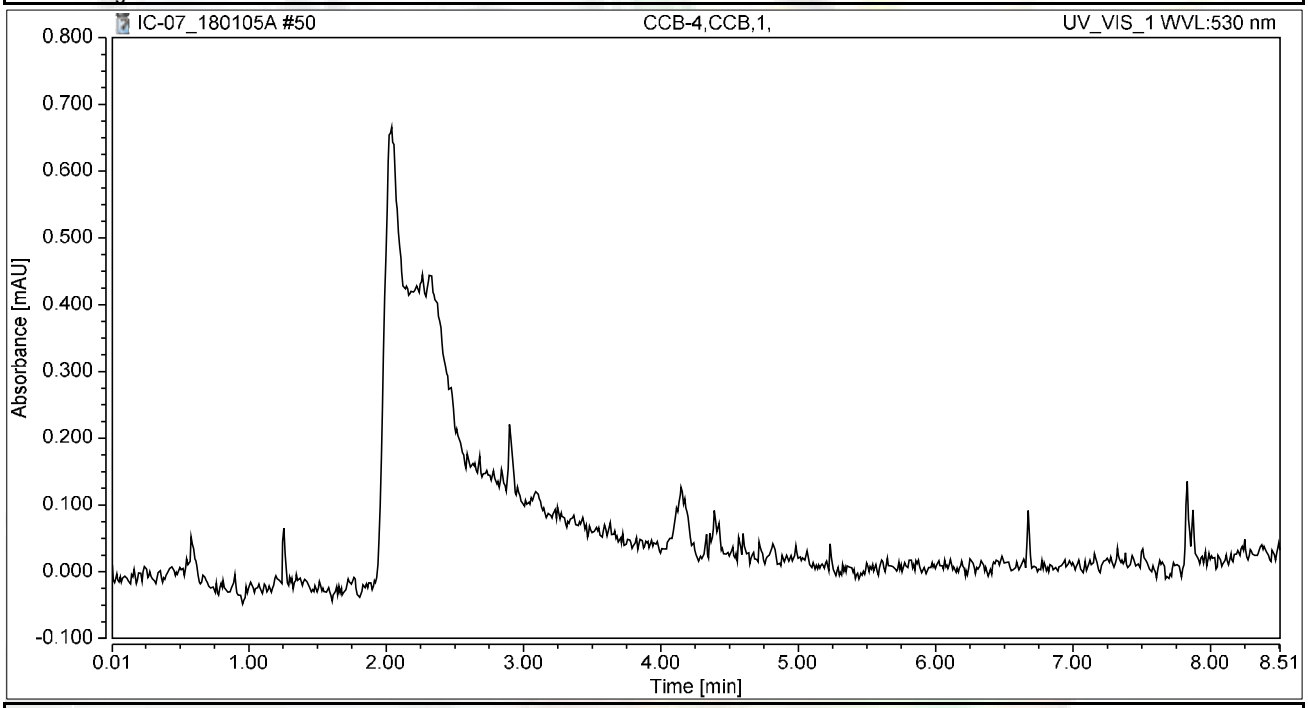
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.621	19.874	100.00	100.00	10.2477
Total:			**2.621**	**19.874**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

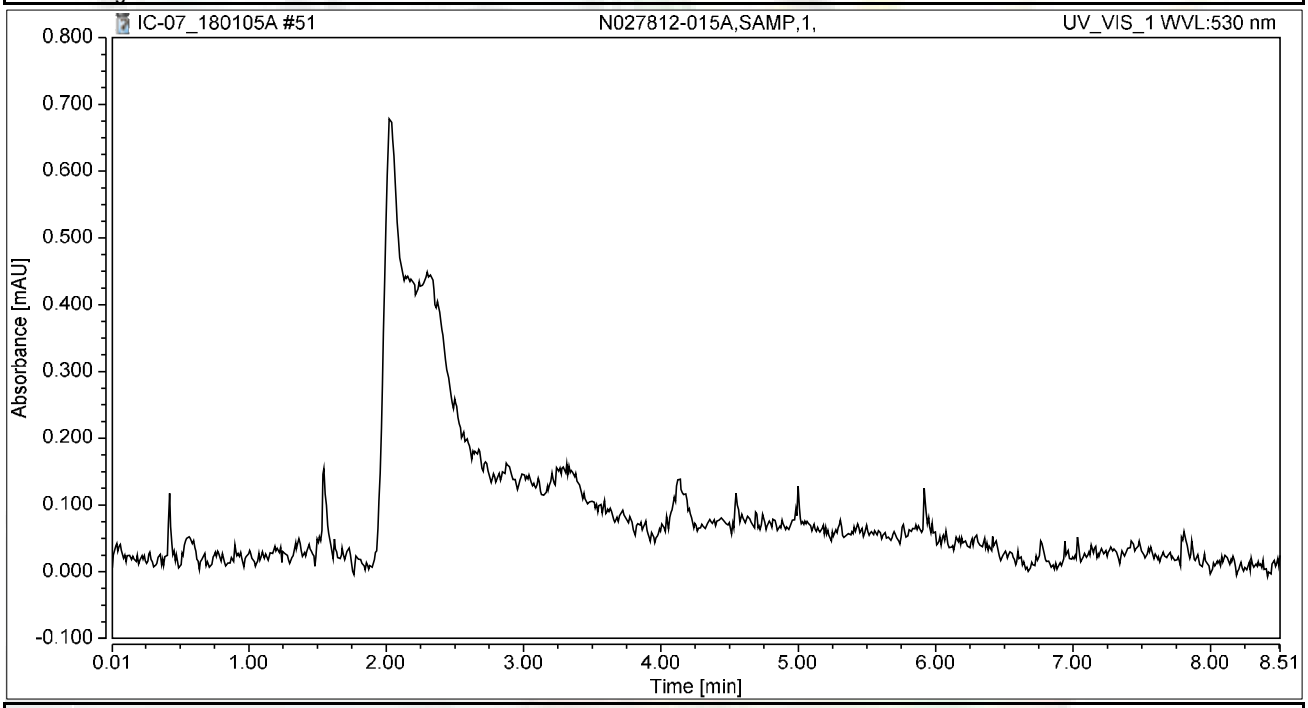
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-015AMS,MS,1,**	*Run Time (min):*	**n.a.**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**n.a.**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**n.a.**	*Sample Weight:*	**1.0000**

Chromatogram

Can't read channel UV_VIS_1 from injection #52 - N027812-015AMS,MS,1,.
Channel is not available.

NOT REPORTED

SKIPPED BY AUTOSAMPLER

Integration Results

No.	Peak Name	Retention Time min	Area n.a.	Height n.a.	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

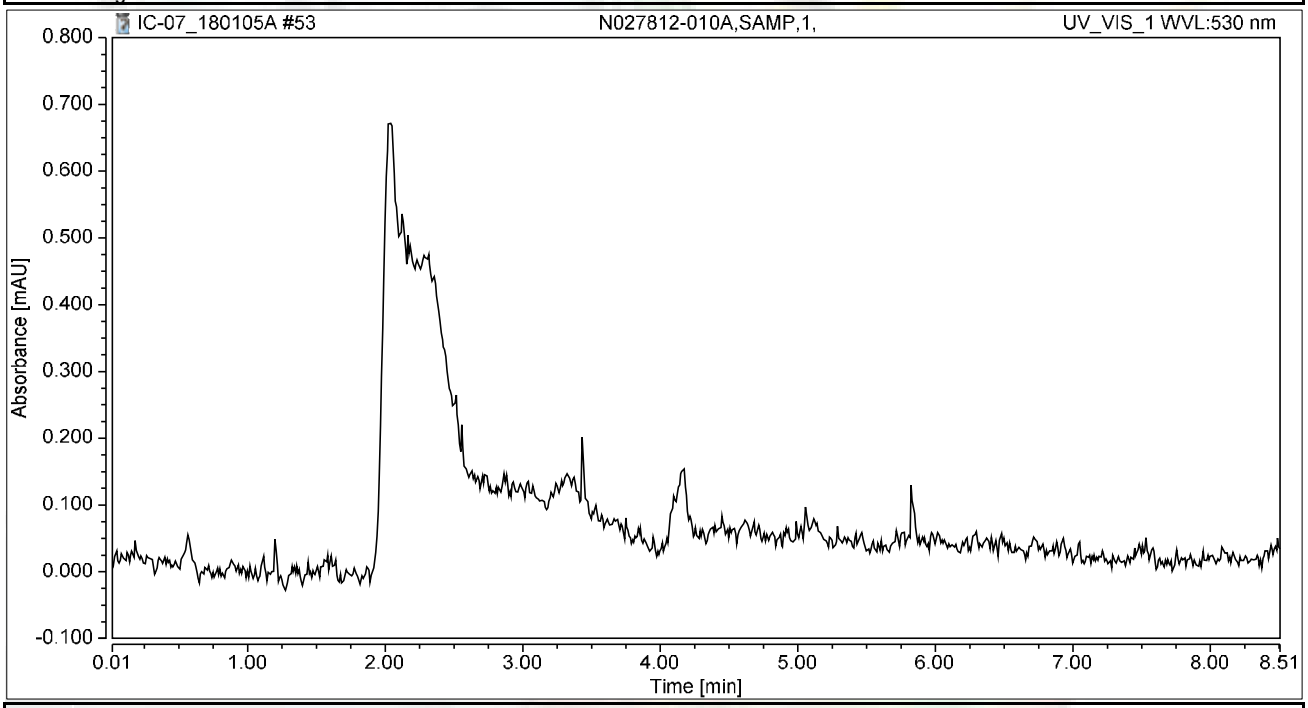
rba 1/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-010A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 15:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

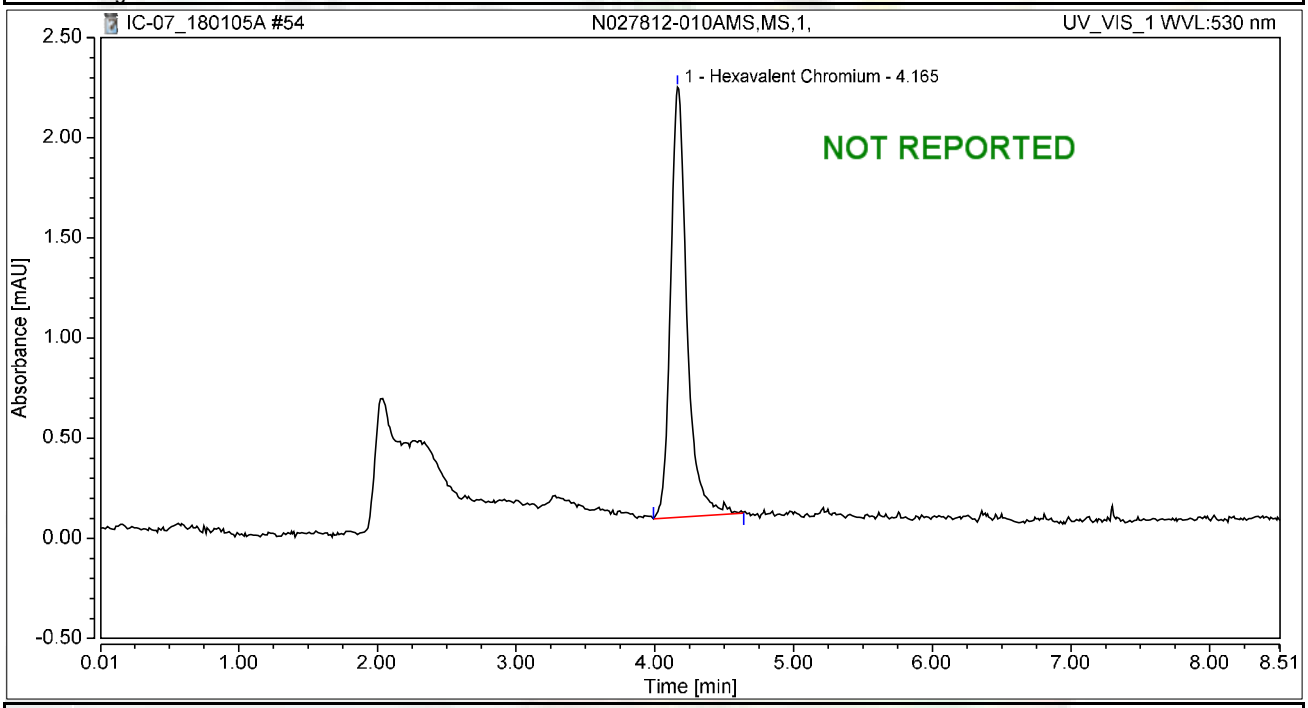
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 15:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

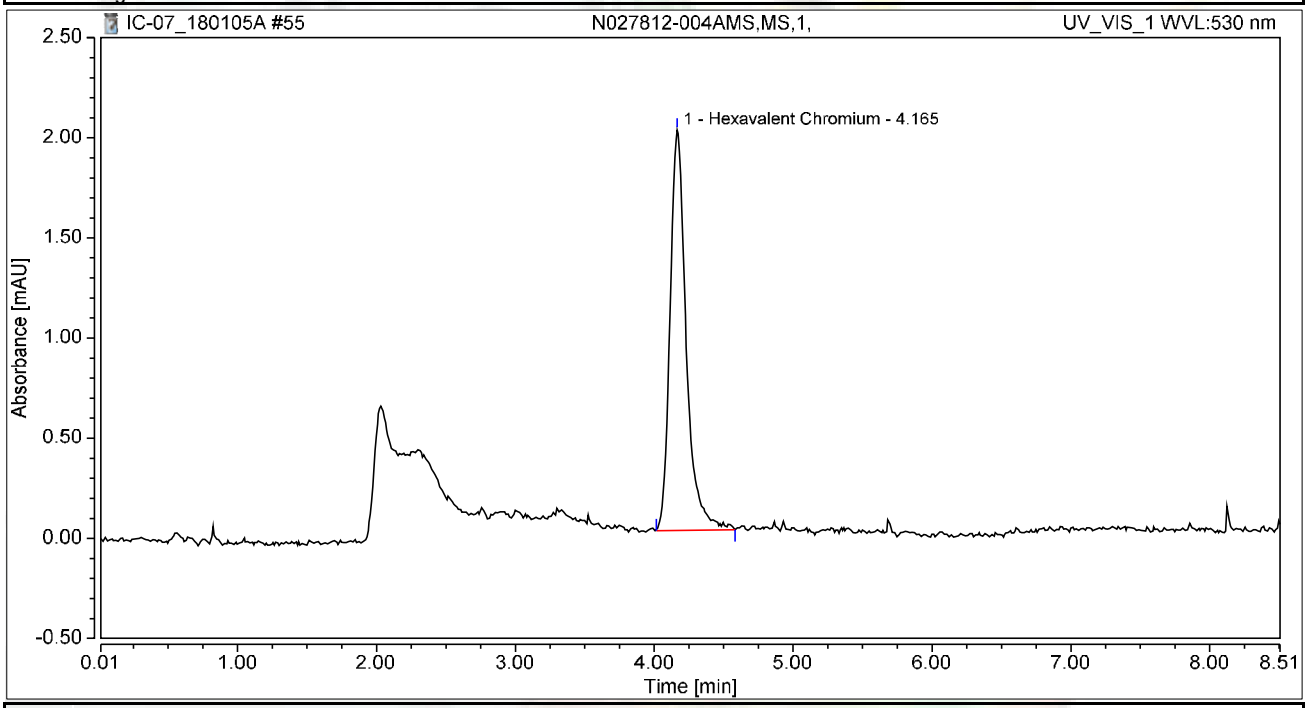
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.295	2.147	100.00	100.00	1.1522
Total:			**0.295**	**2.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

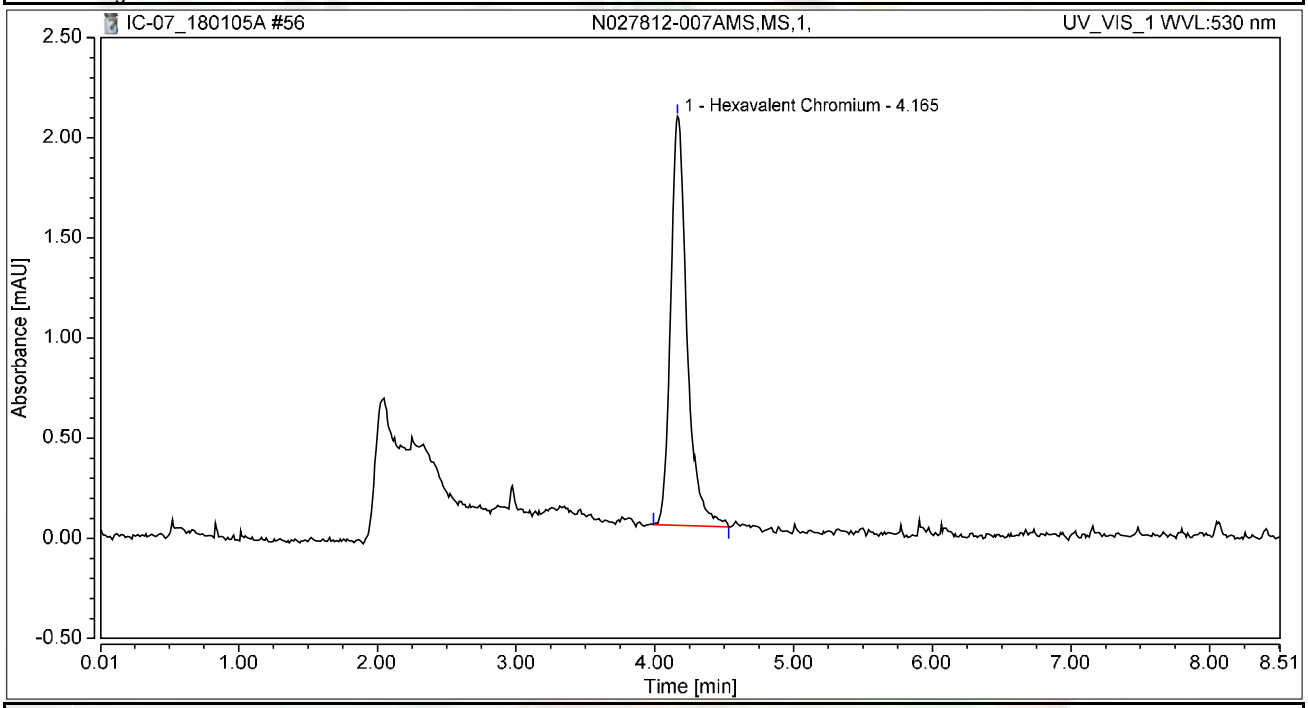
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.270	1.999	100.00	100.00	1.0552
Total:			**0.270**	**1.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

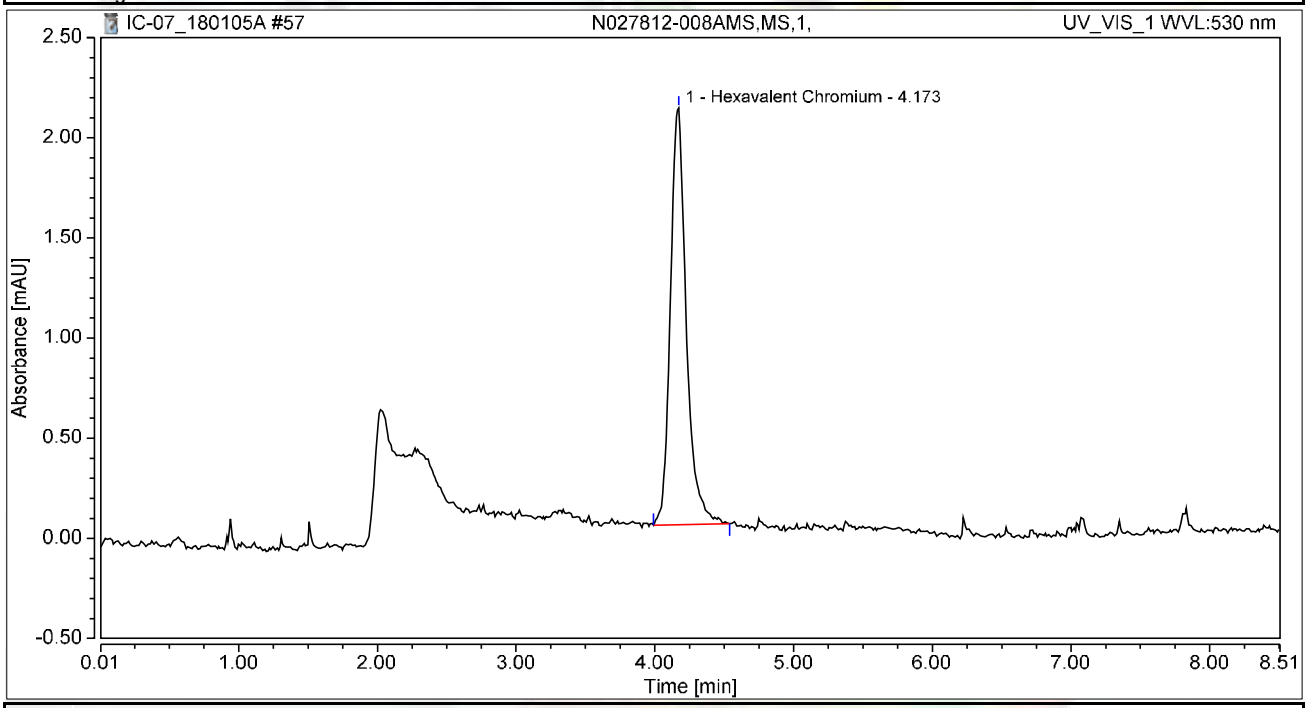
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.279	2.042	100.00	100.00	1.0904
Total:			**0.279**	**2.042**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

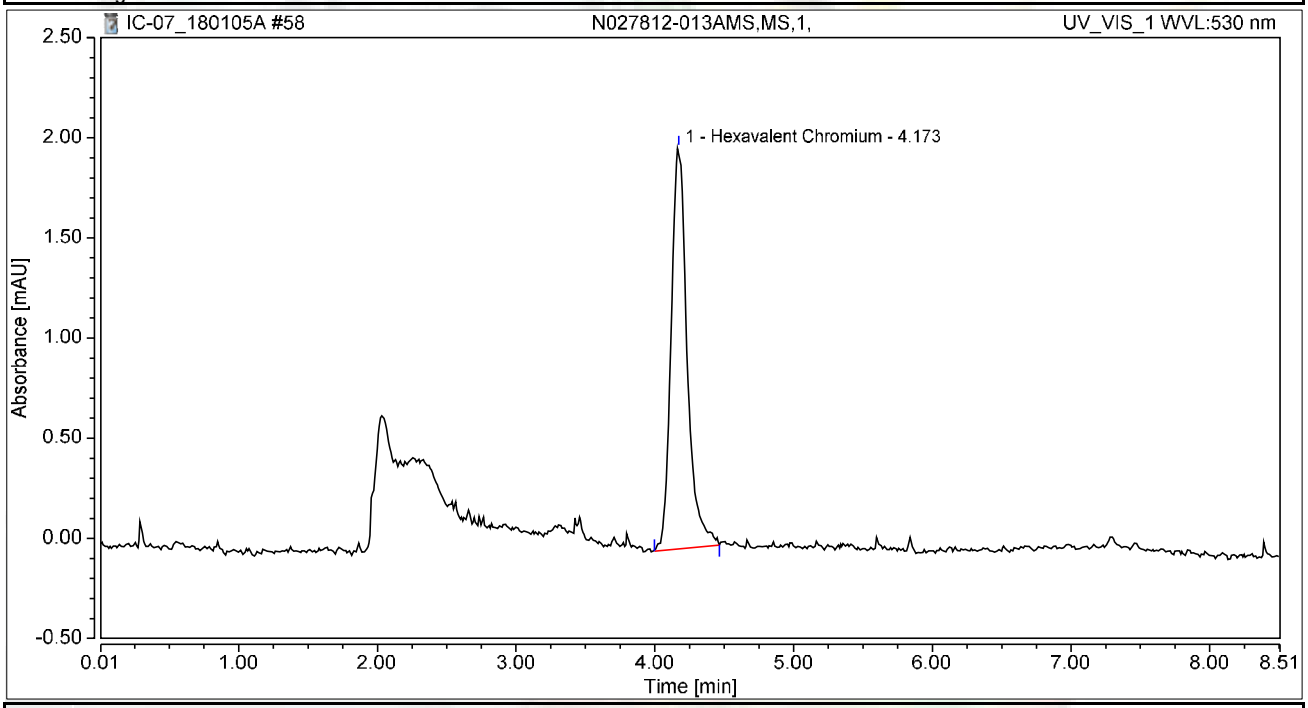
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.278	2.082	100.00	100.00	1.0863
Total:			**0.278**	**2.082**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

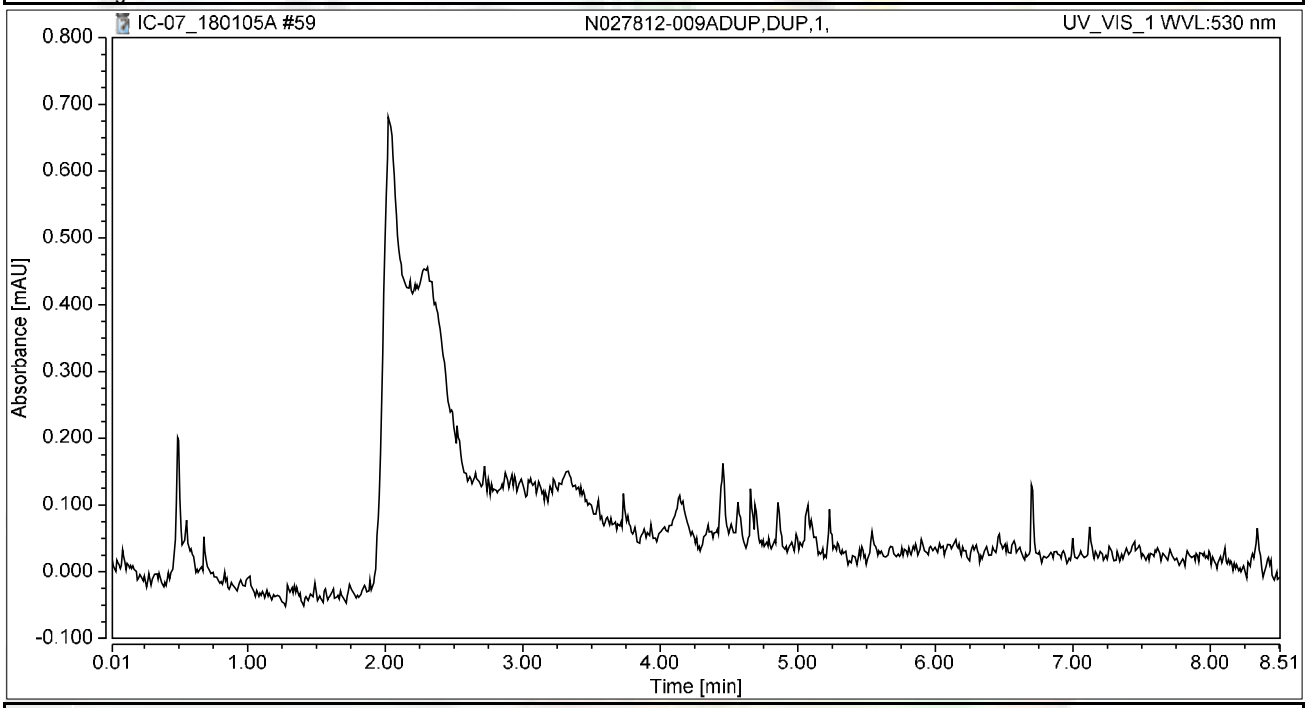
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.004	100.00	100.00	1.0557
Total:			**0.270**	**2.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-009ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

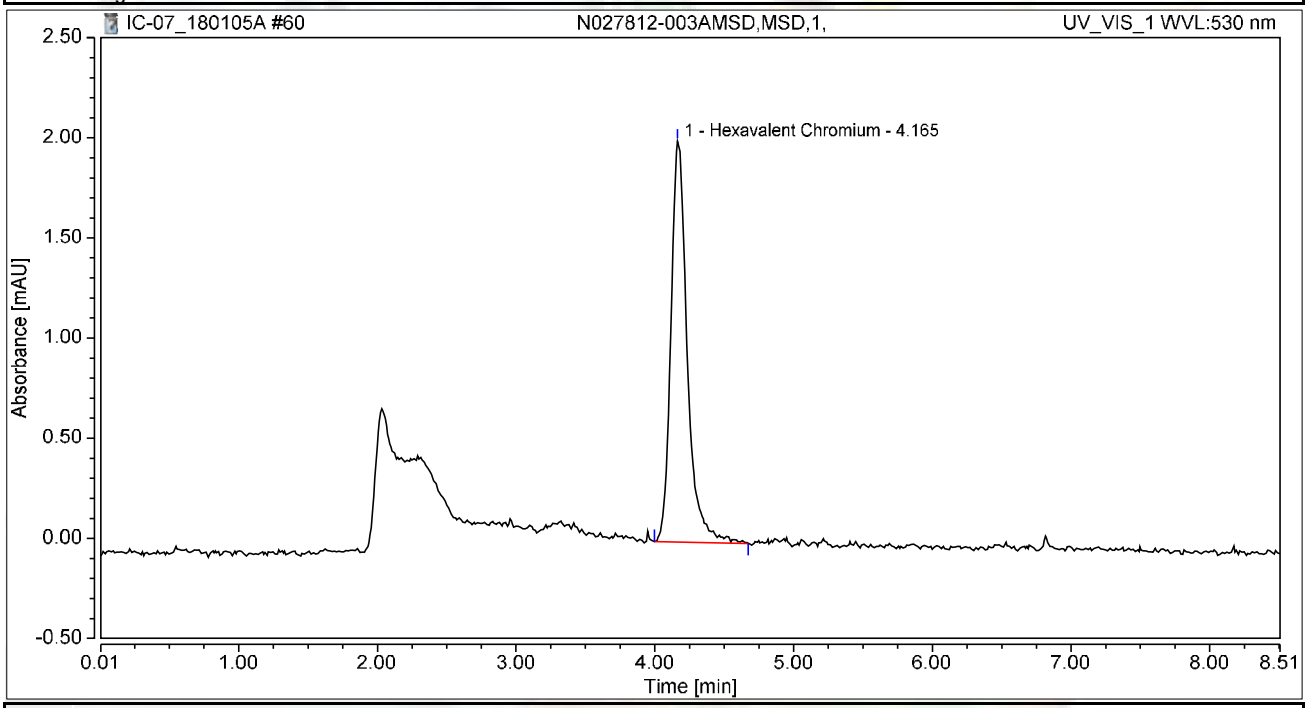
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-003AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

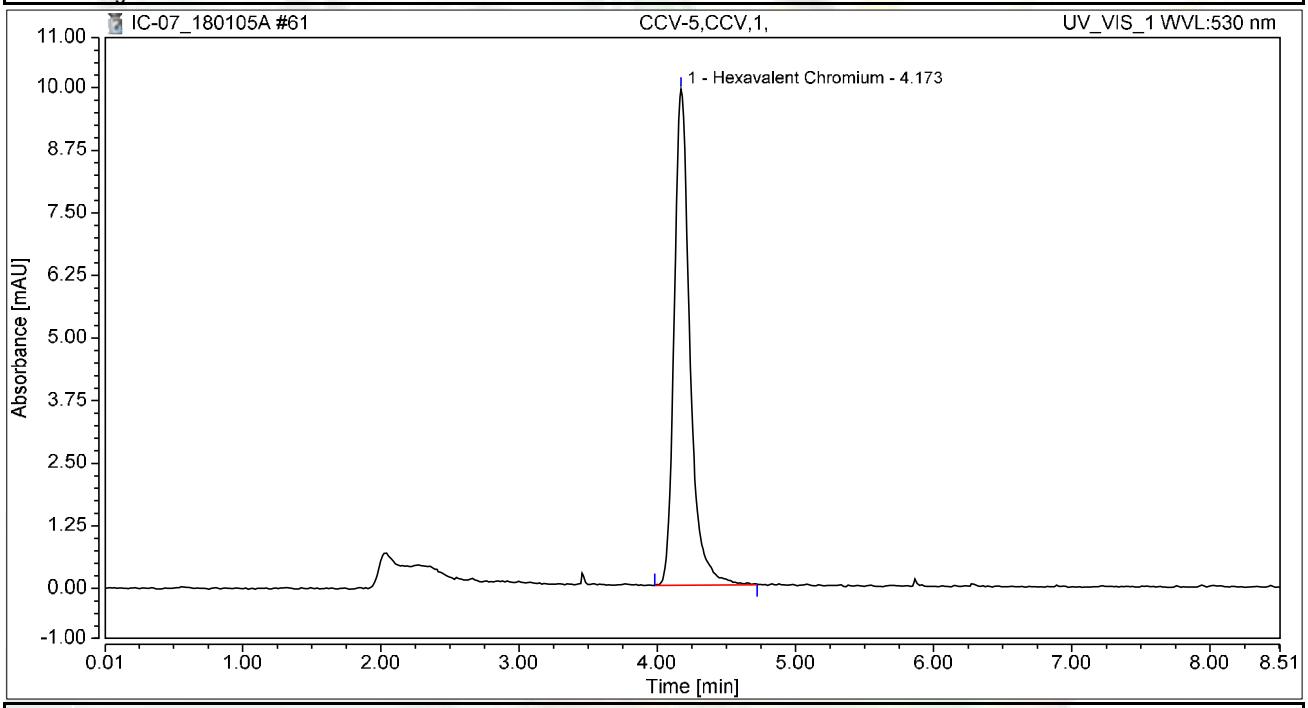
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.274	2.001	100.00	100.00	1.0698
Total:			**0.274**	**2.001**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

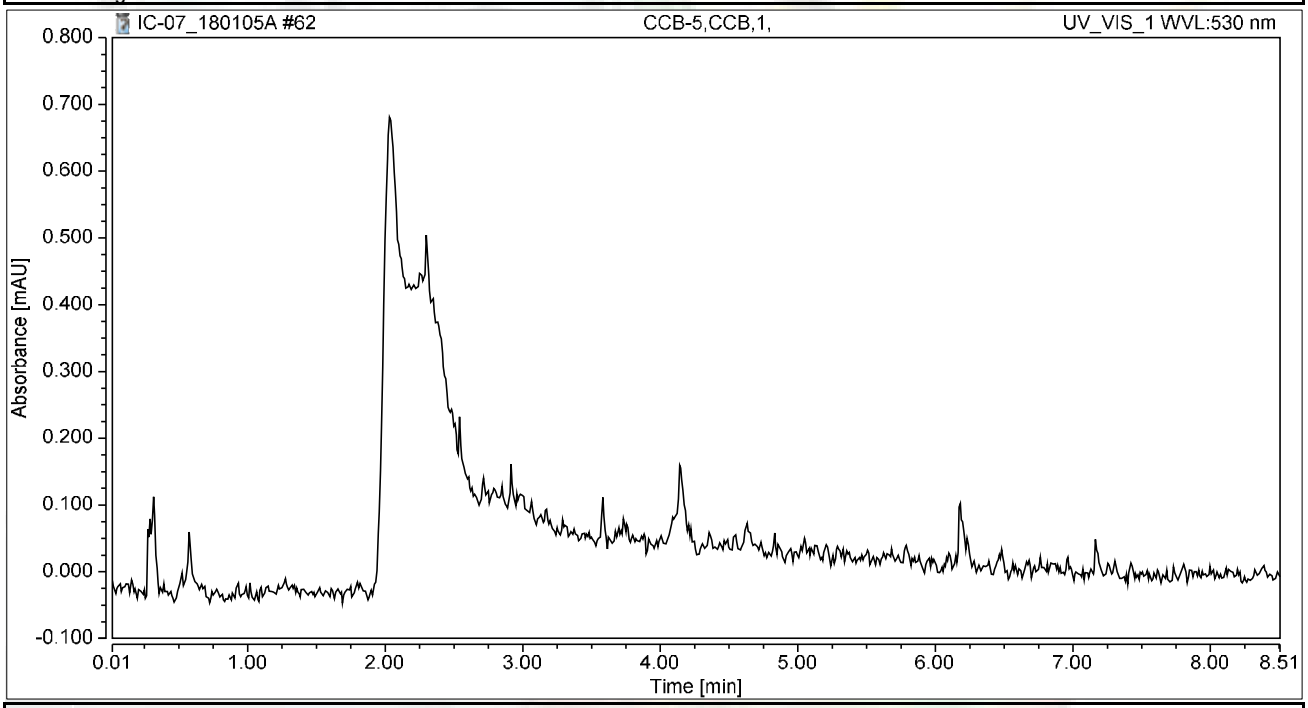
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.313	9.909	100.00	100.00	5.1339
Total:			**1.313**	**9.909**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

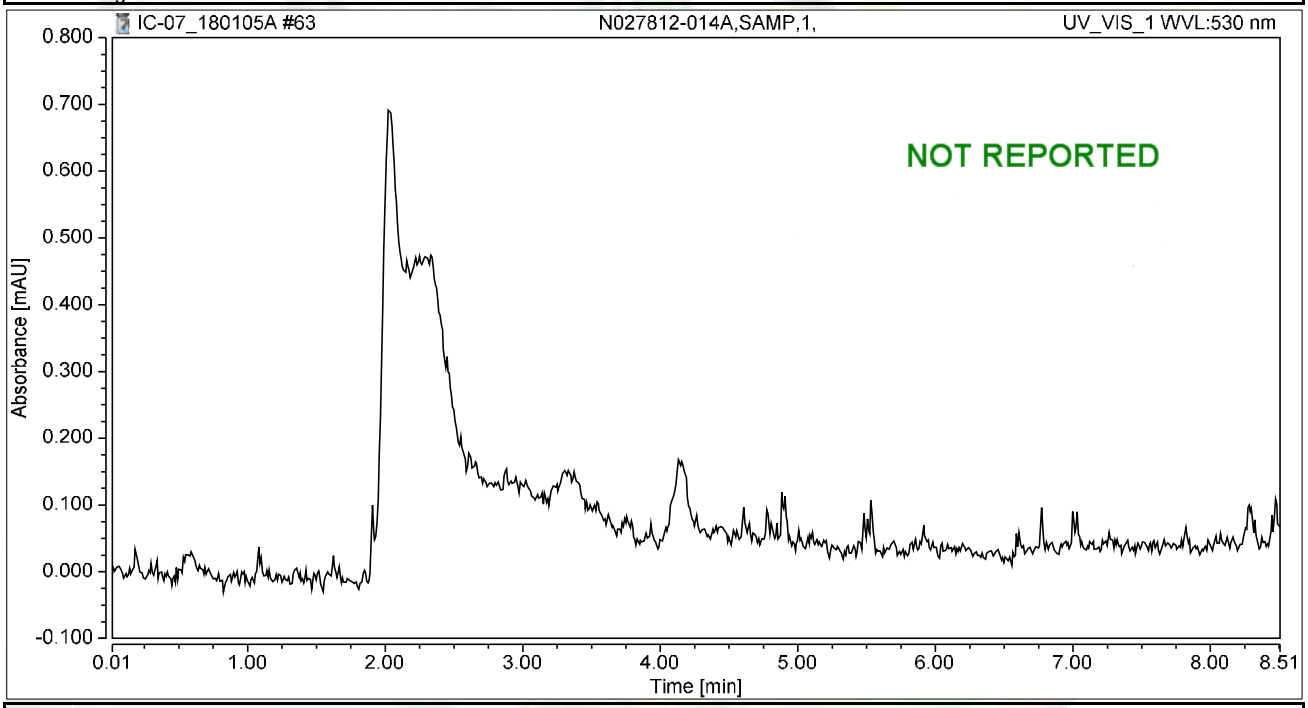
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

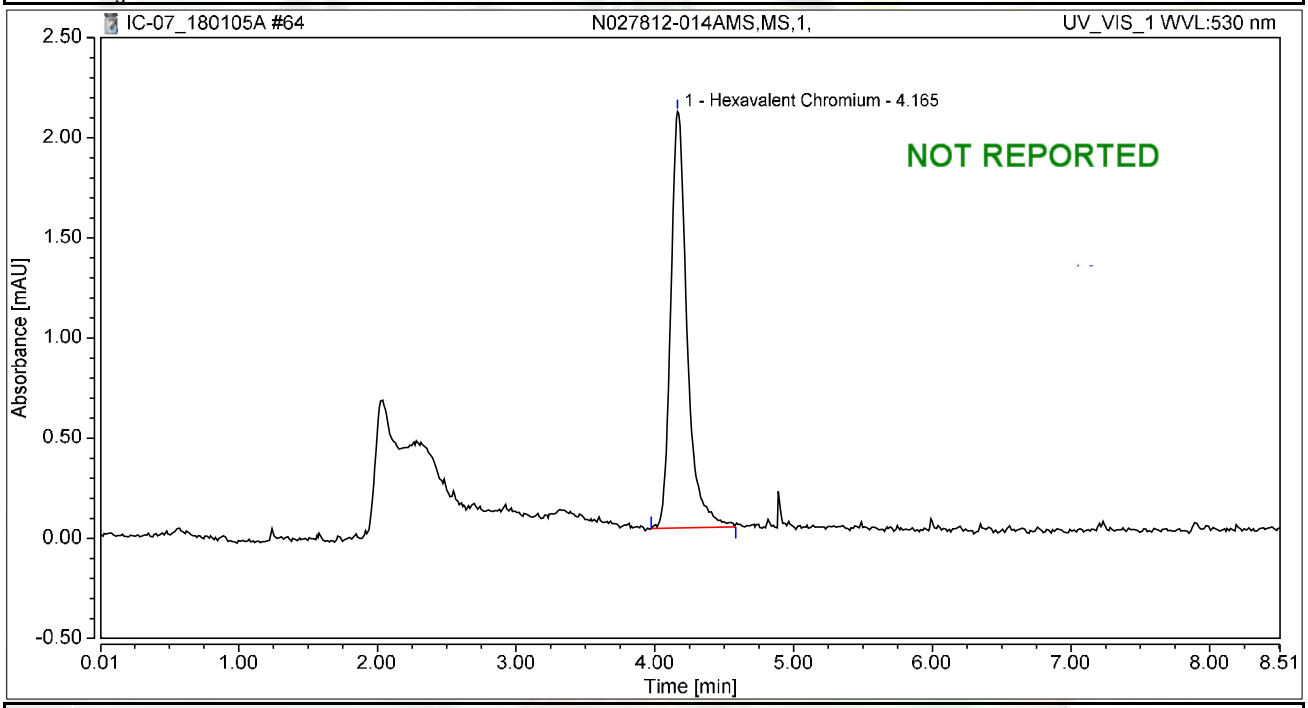
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

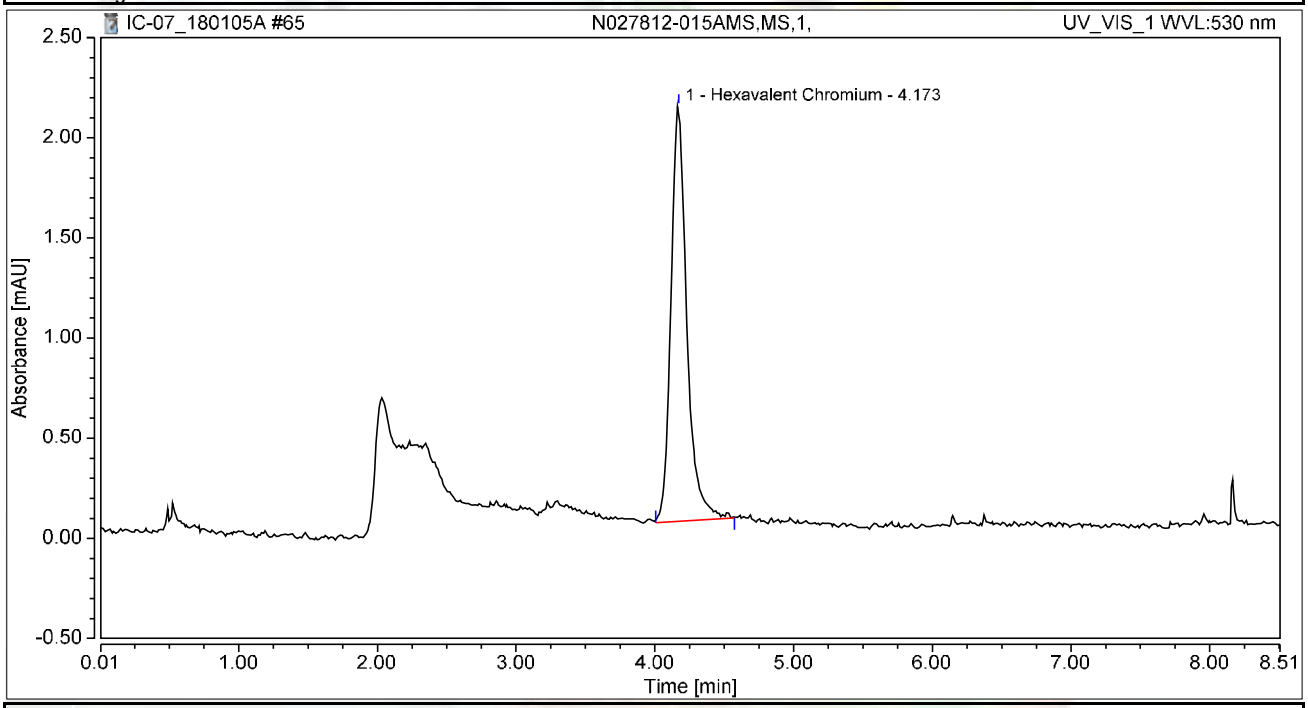
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.284	2.079	100.00	100.00	1.1108
Total:			**0.284**	**2.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

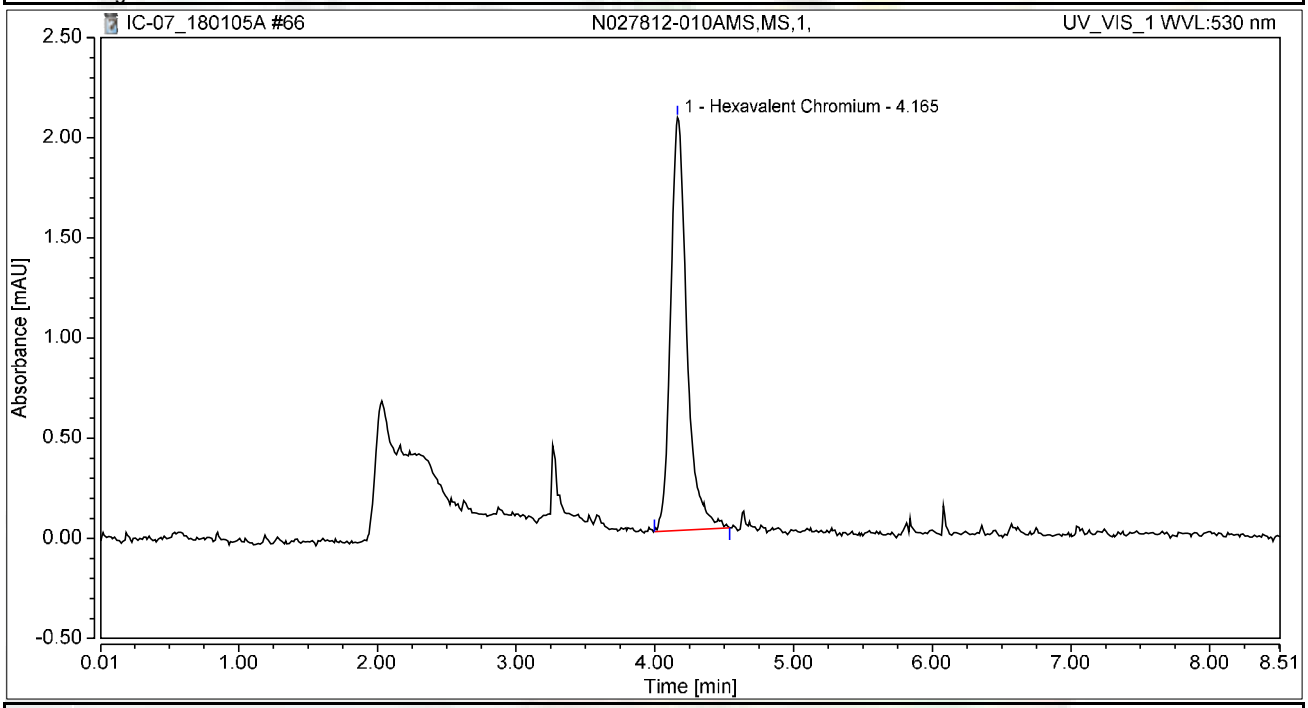
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.072	100.00	100.00	1.0777
Total:			**0.276**	**2.072**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

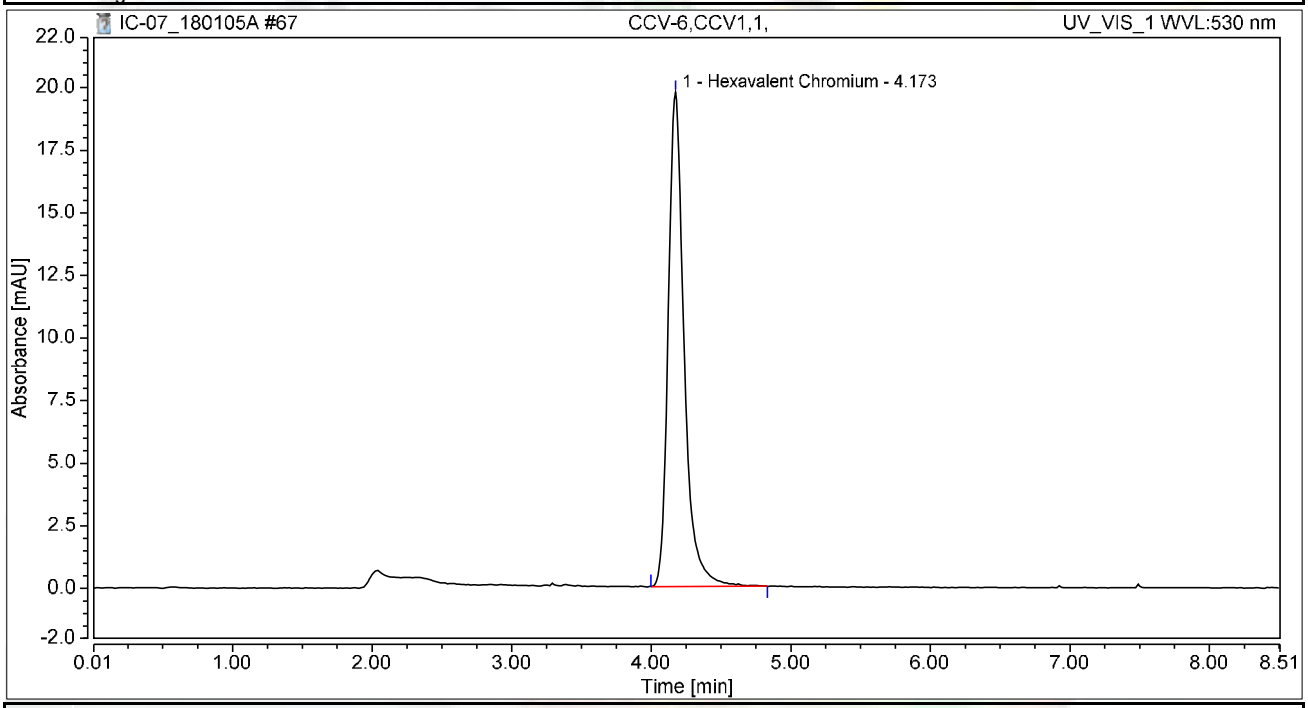
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.279	2.062	100.00	100.00	1.0927
Total:			**0.279**	**2.062**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

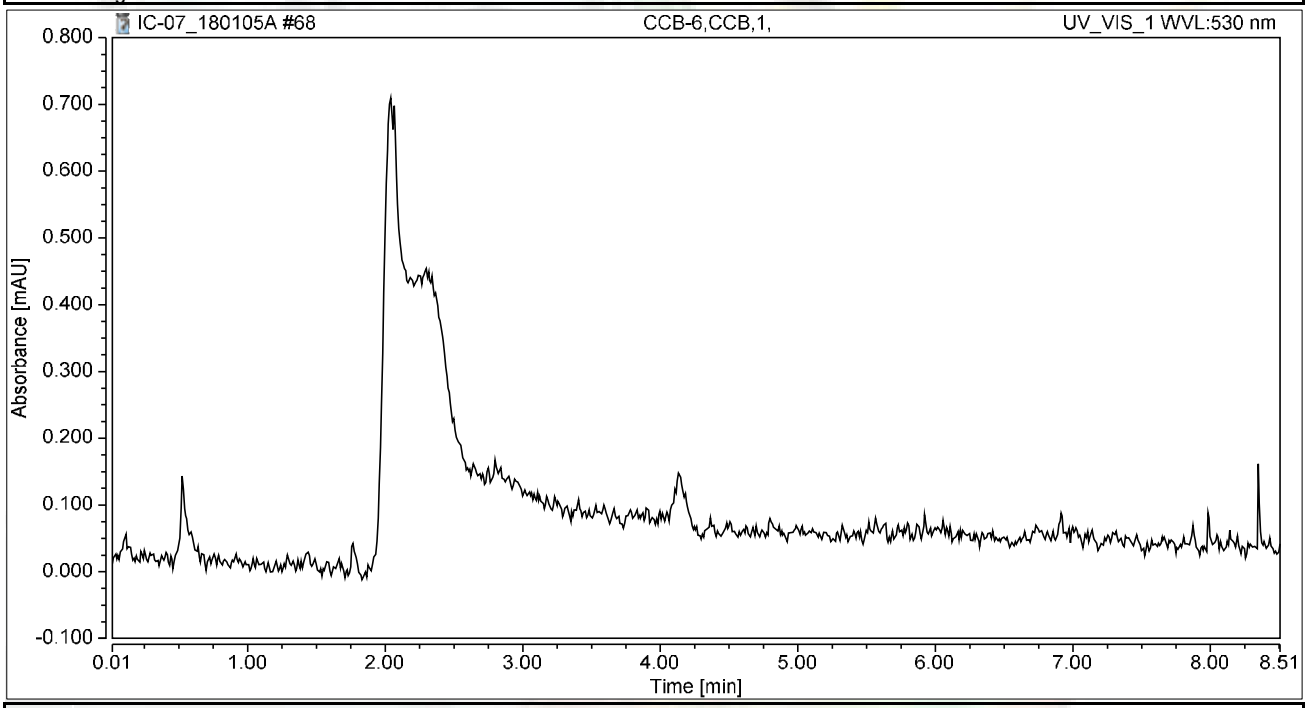
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.611	19.732	100.00	100.00	10.2107
Total:			**2.611**	**19.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

01/12/2018

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

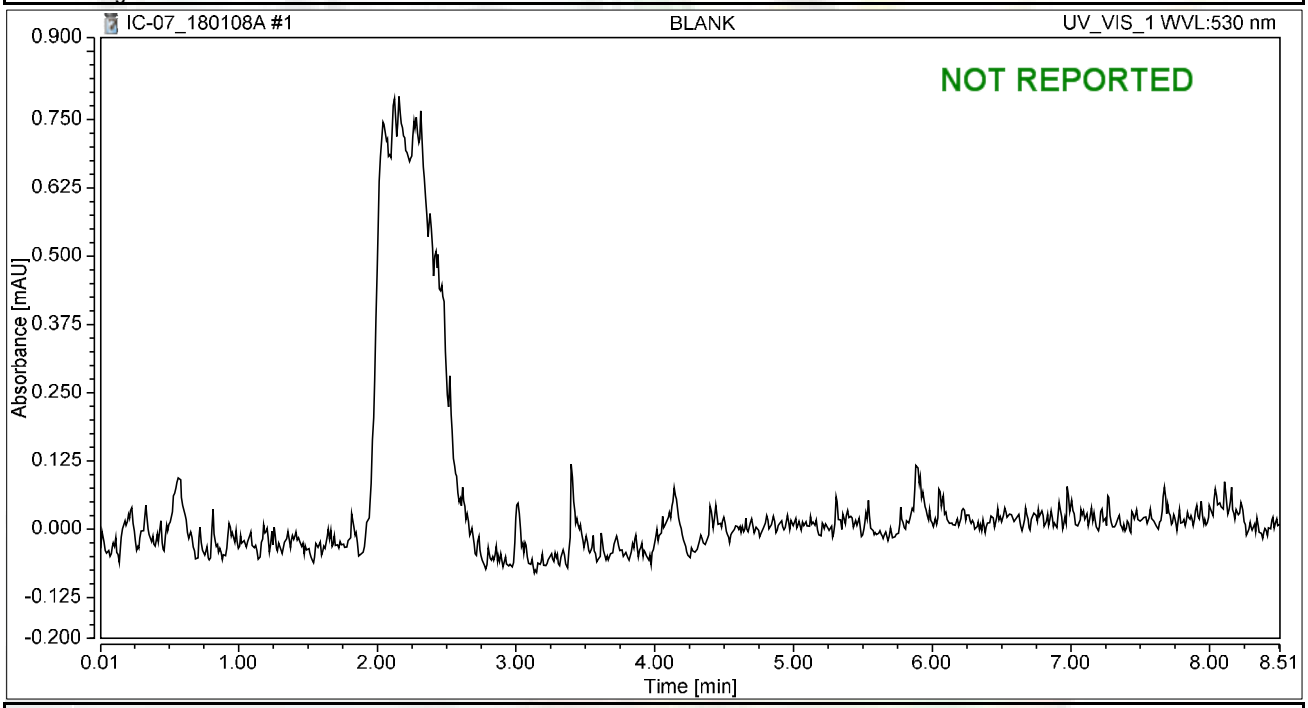
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

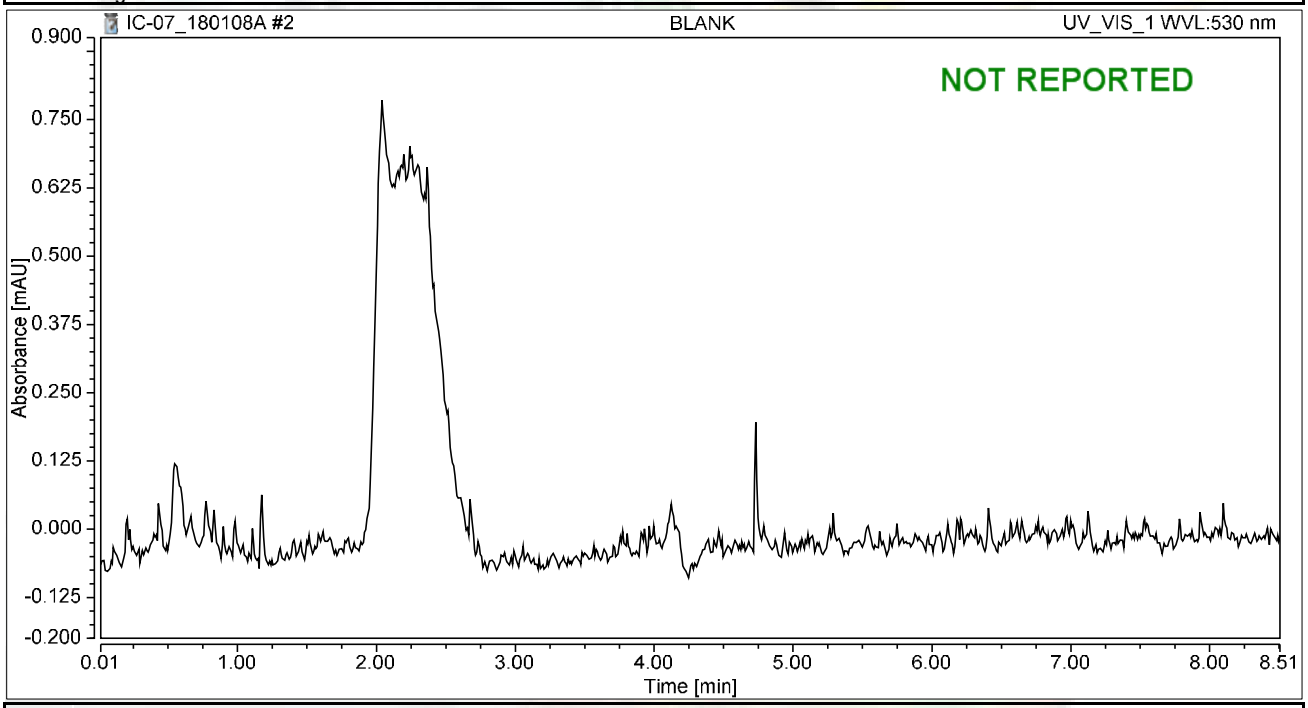
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

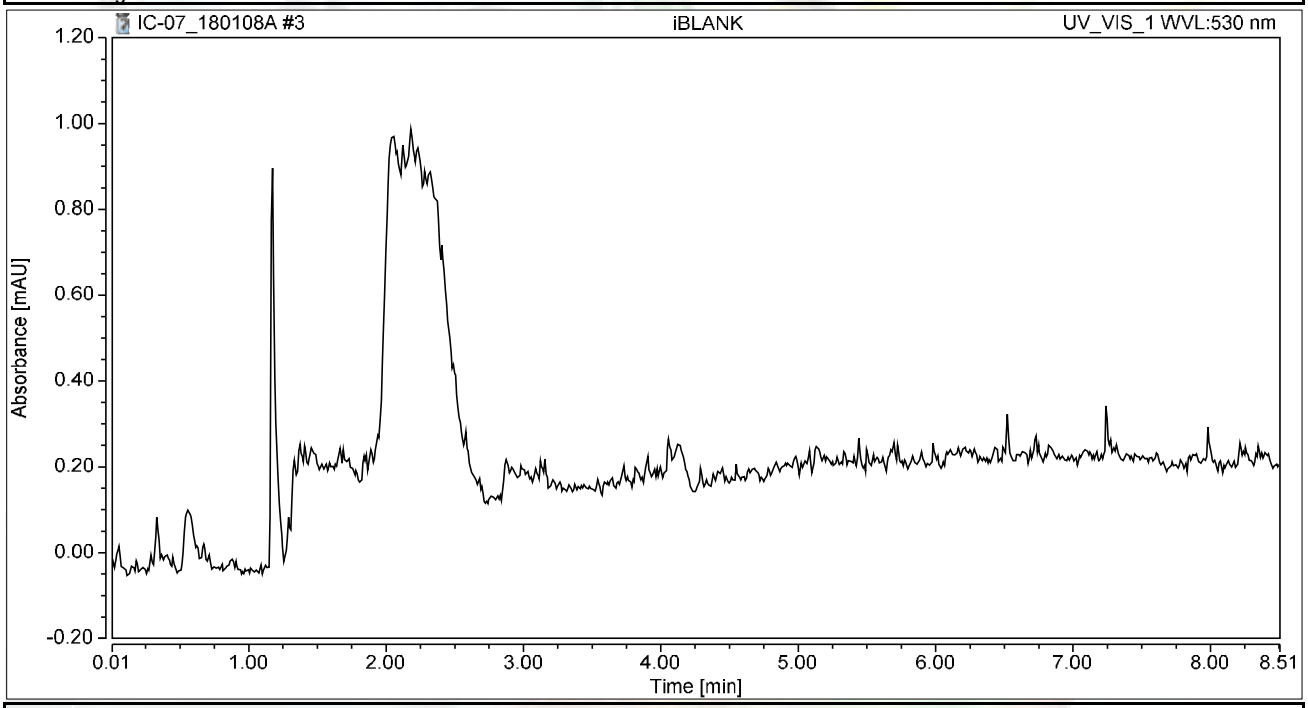
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

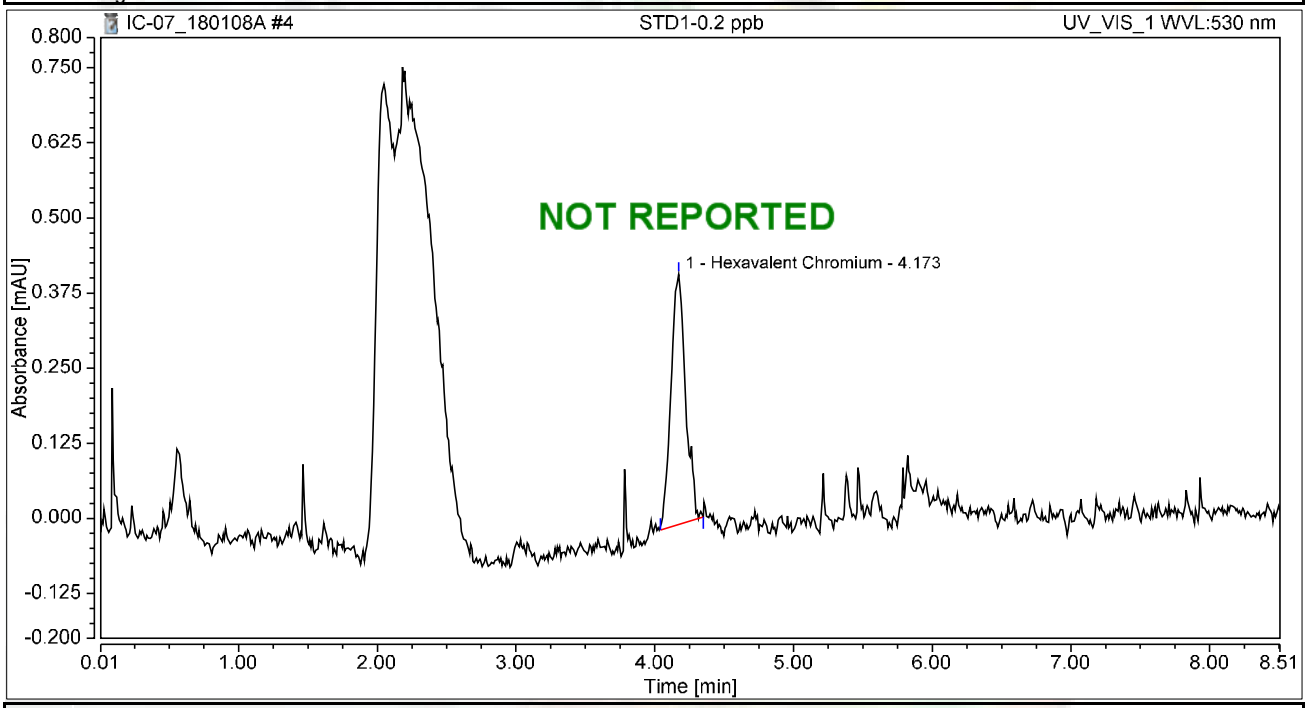
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

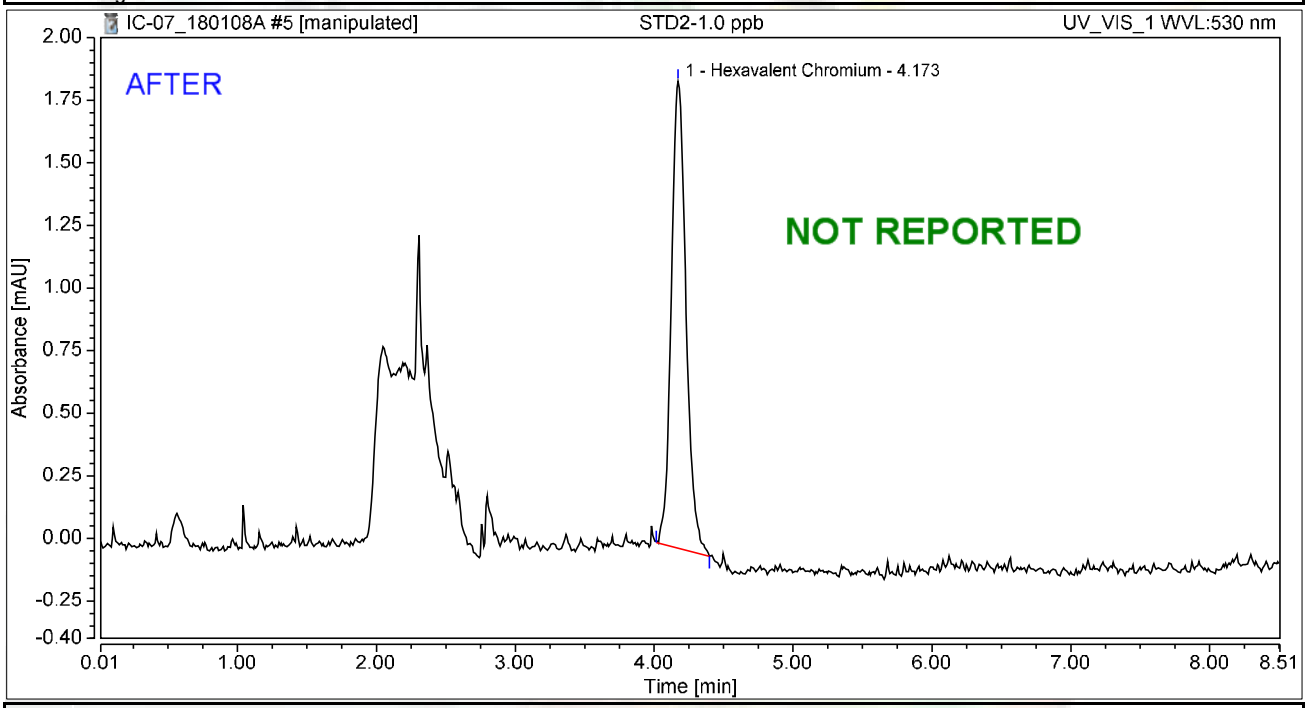
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.051	0.416	100.00	100.00	0.1983
Total:			**0.051**	**0.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.229	1.865	100.00	100.00	0.8962
Total:			**0.229**	**1.865**	**100.00**	**100.00**	

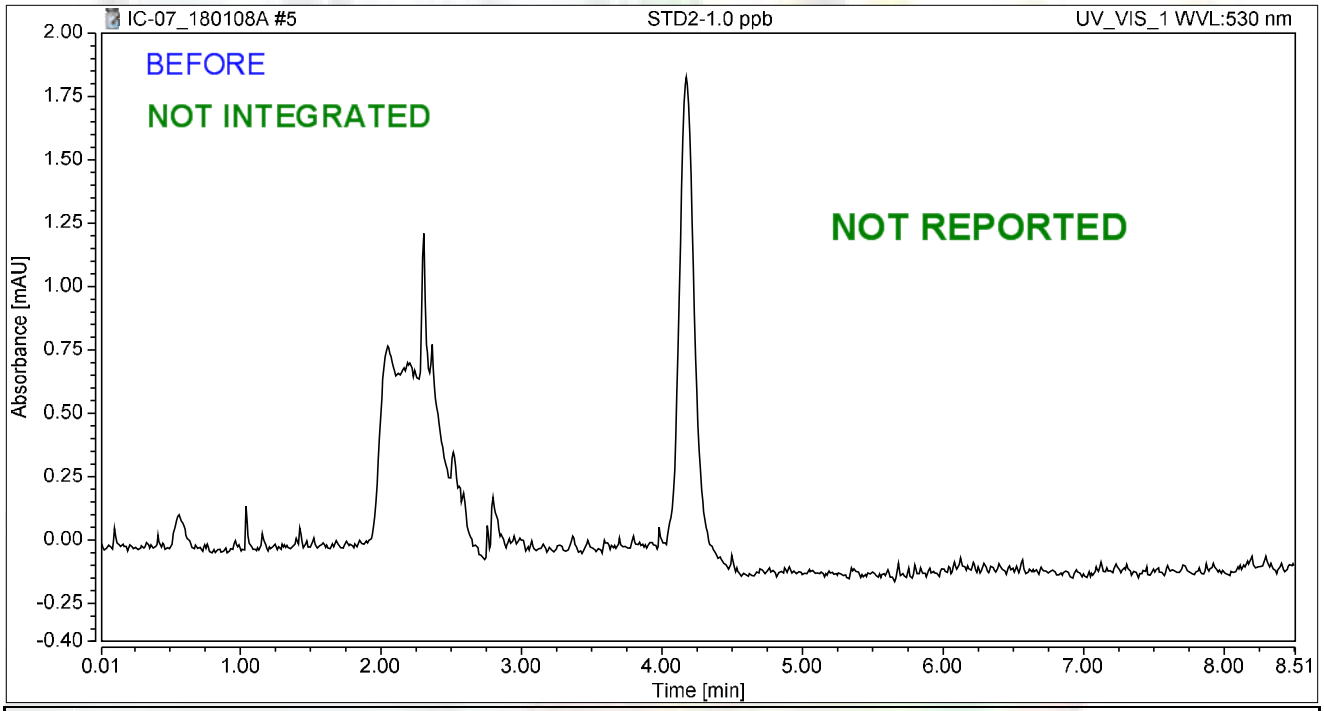
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

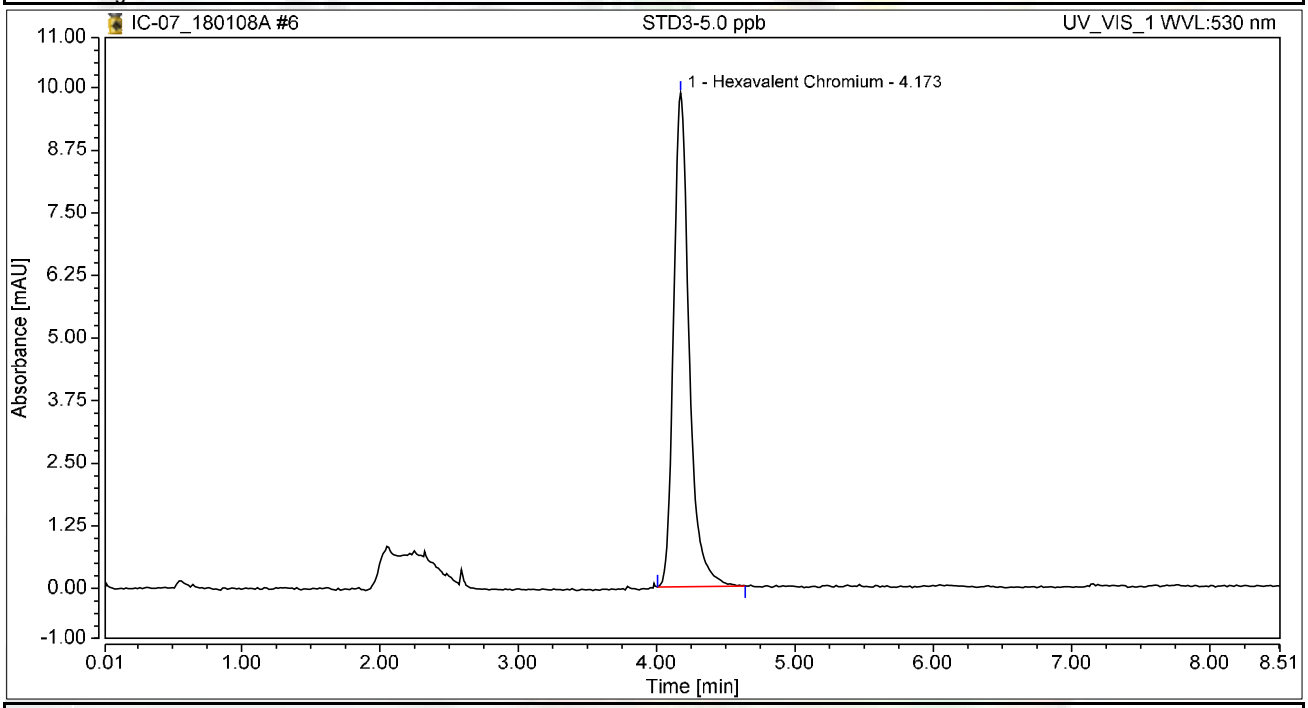
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

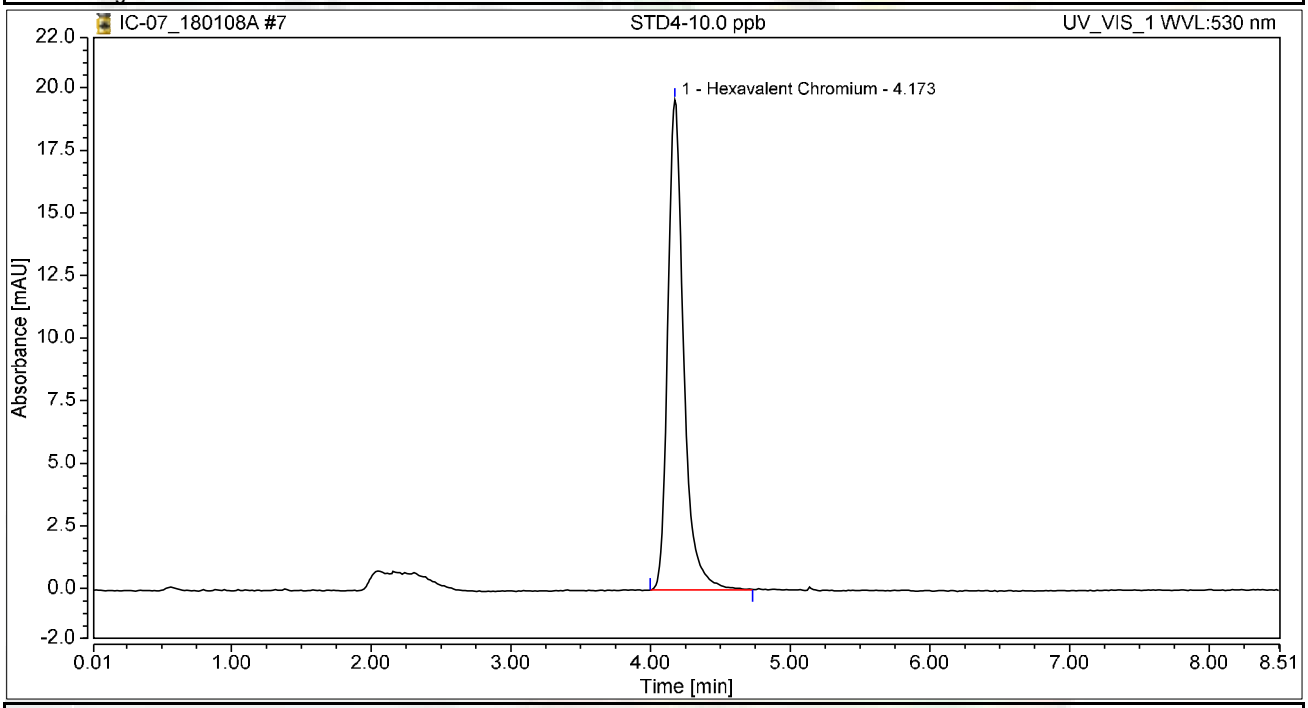
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.286	9.861	100.00	100.00	5.0280
Total:			**1.286**	**9.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

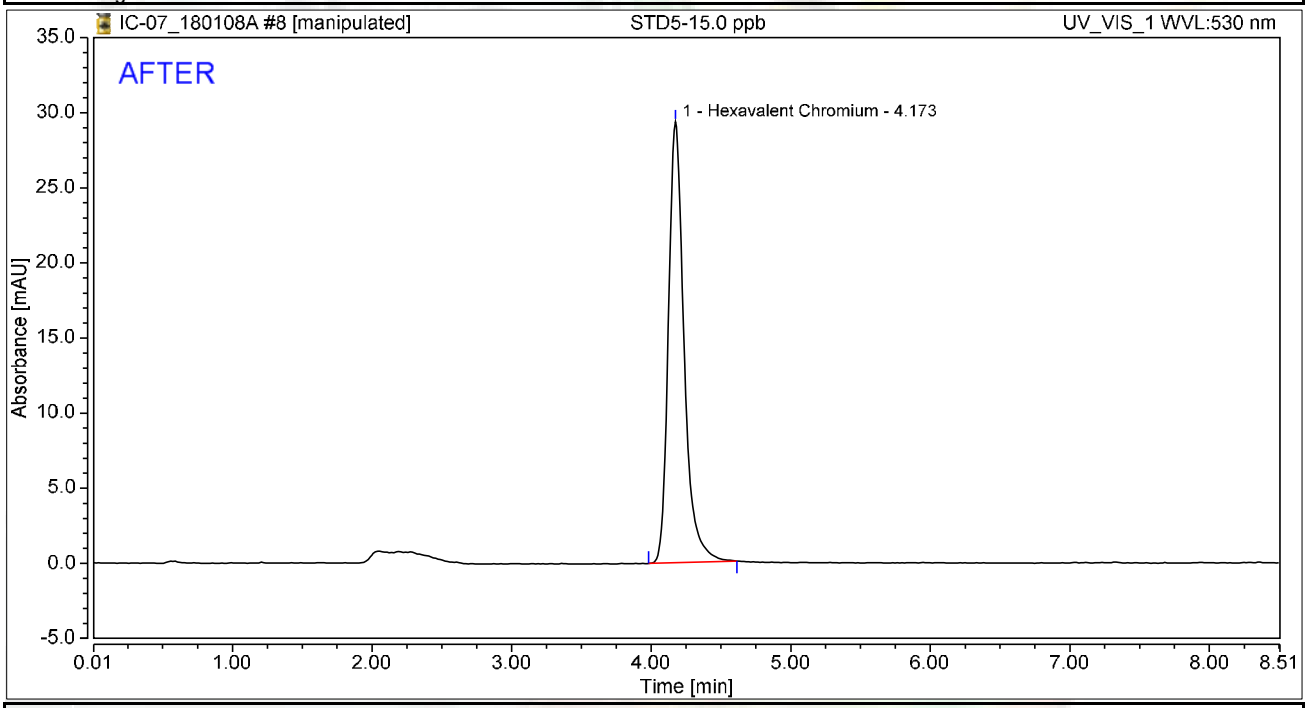
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.569	19.568	100.00	100.00	10.0465
Total:			**2.569**	**19.568**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.826	29.356	100.00	100.00	14.9645
Total:			**3.826**	**29.356**	**100.00**	**100.00**	

rba 1/10/2018

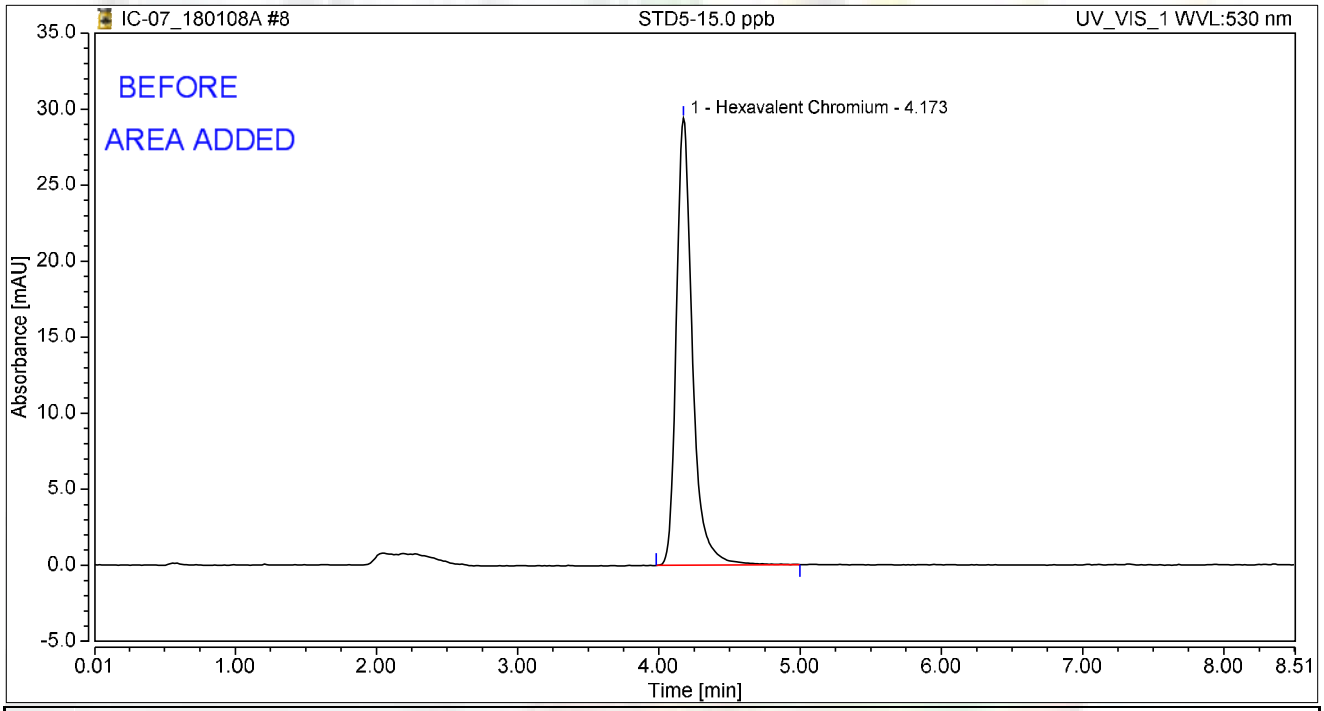
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.876	29.388	100.00	100.00	14.9767
Total:			**3.876**	**29.388**	**100.00**	**100.00**	

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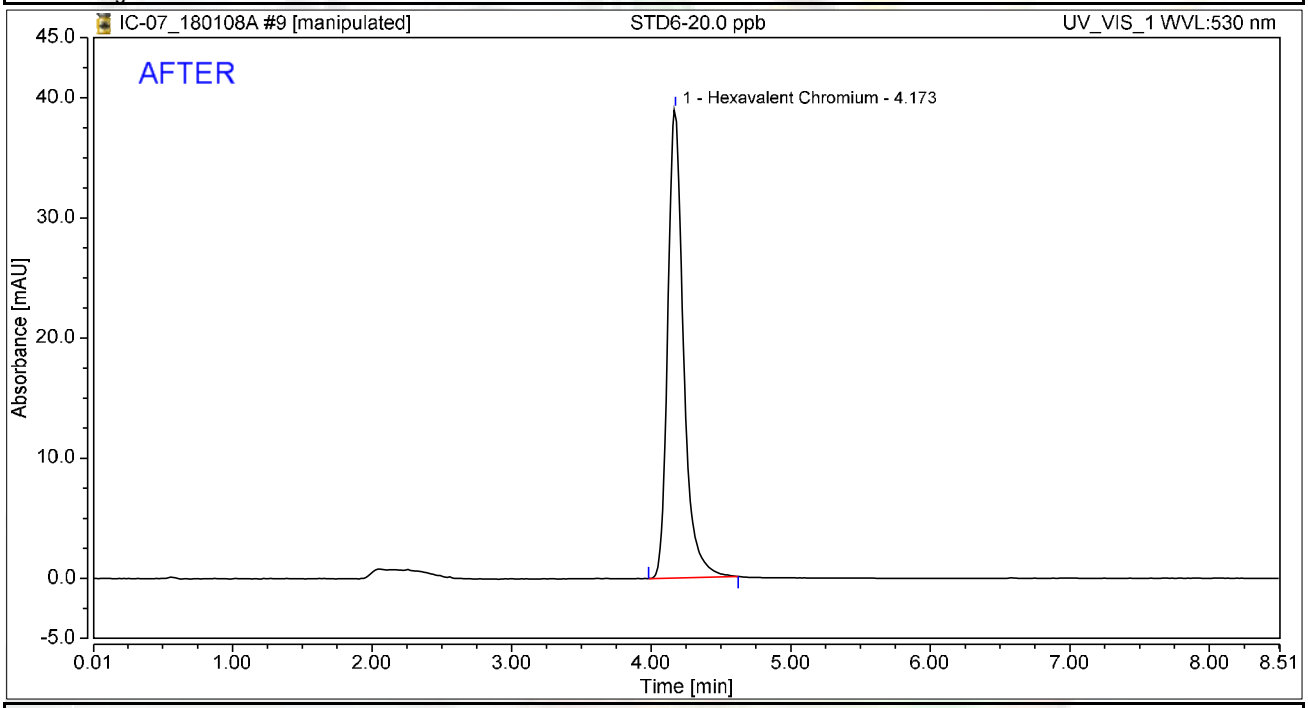
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.113	39.057	100.00	100.00	19.9973
Total:			**5.113**	**39.057**	**100.00**	**100.00**	

rba 1/10/2018

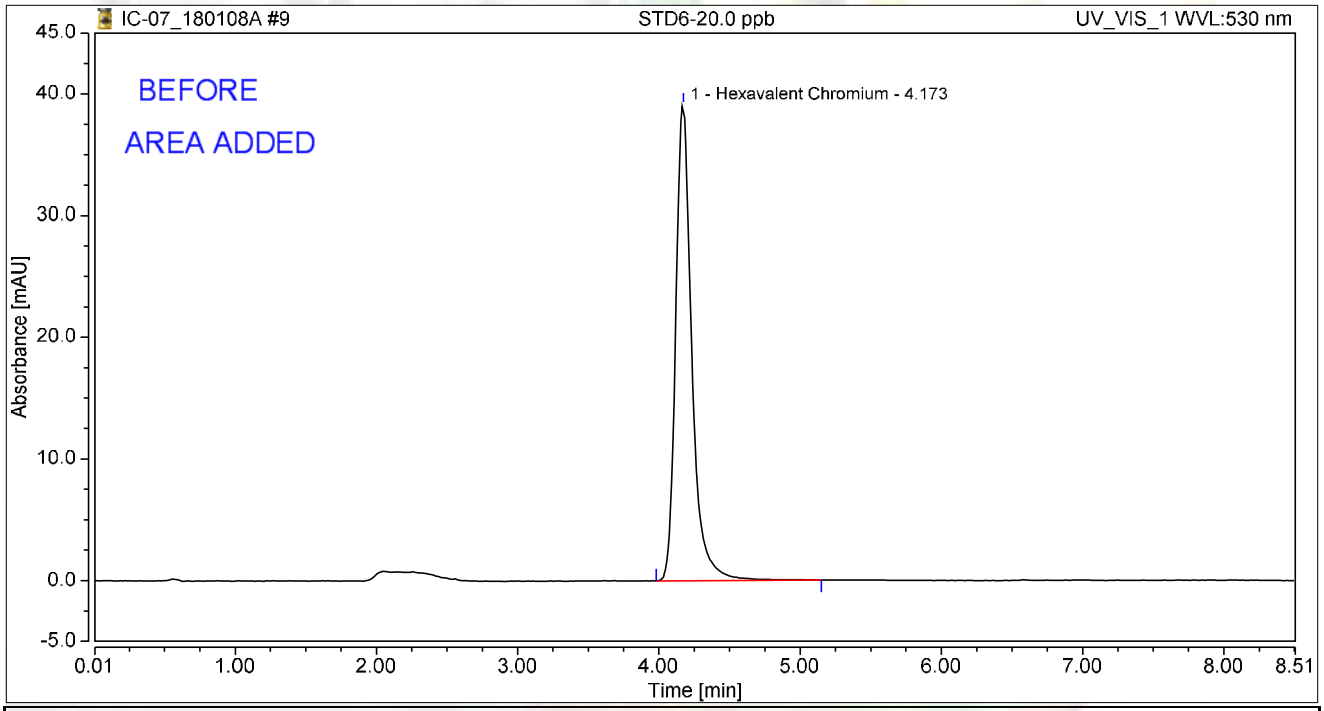
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.193	39.103	100.00	100.00	20.0648
Total:			**5.193**	**39.103**	**100.00**	**100.00**	

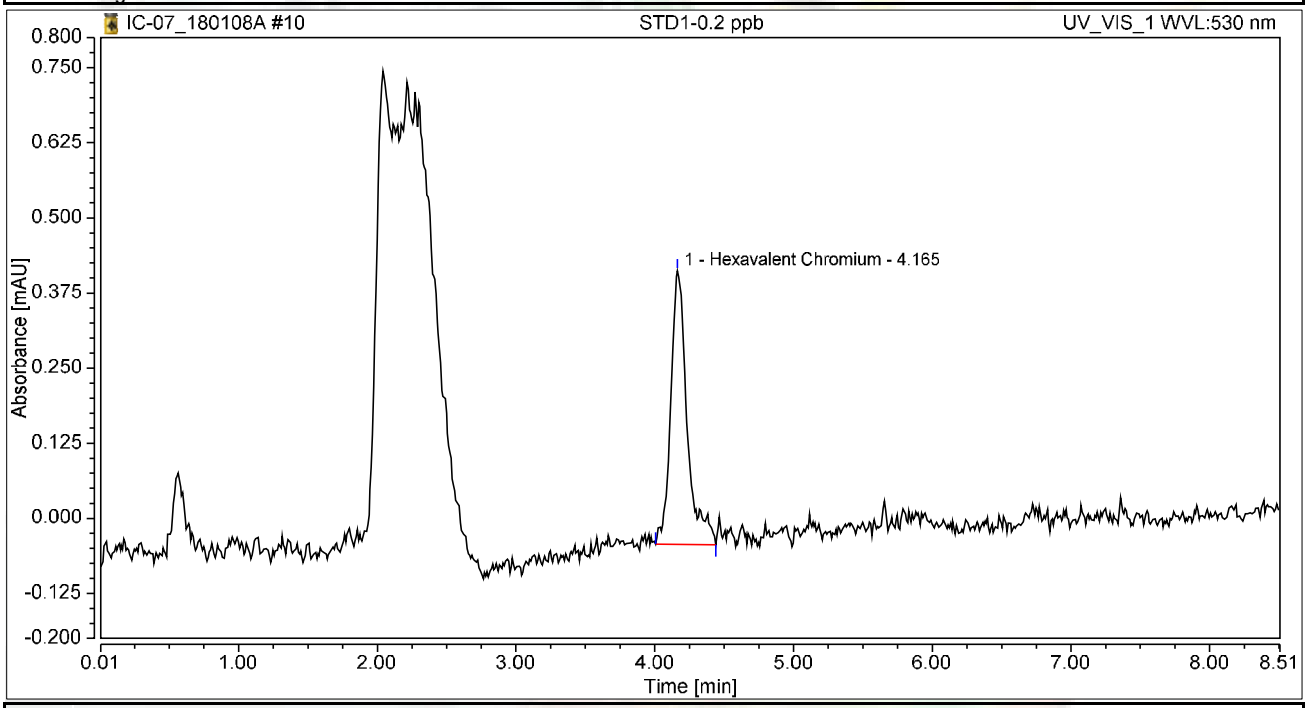
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

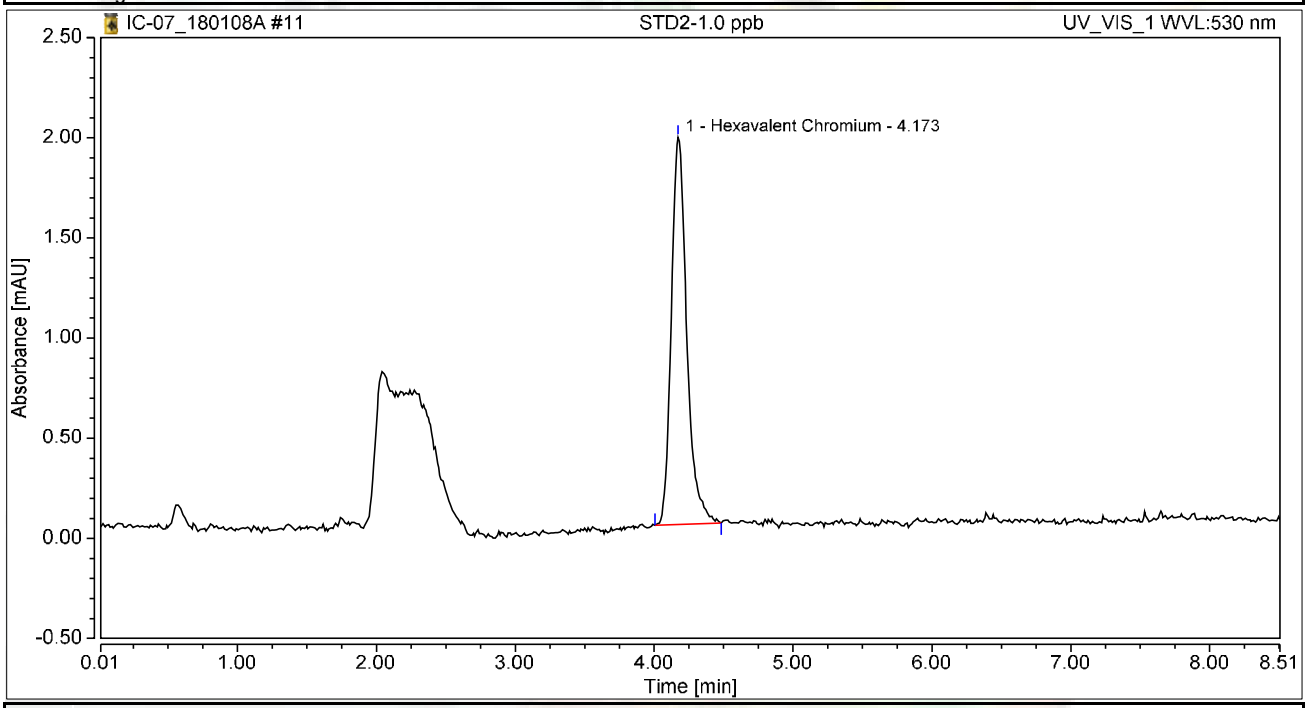
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.062	0.455	100.00	100.00	0.2434
Total:			**0.062**	**0.455**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



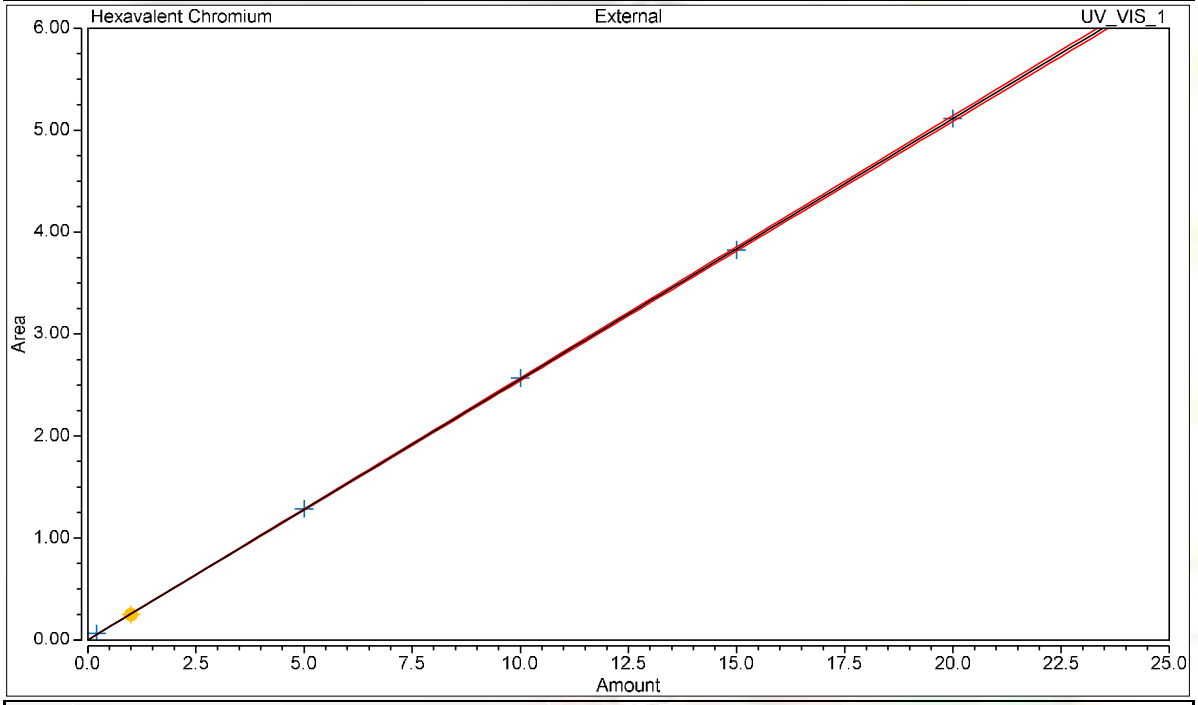
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.249	1.933	100.00	100.00	0.9728
Total:			**0.249**	**1.933**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2557
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

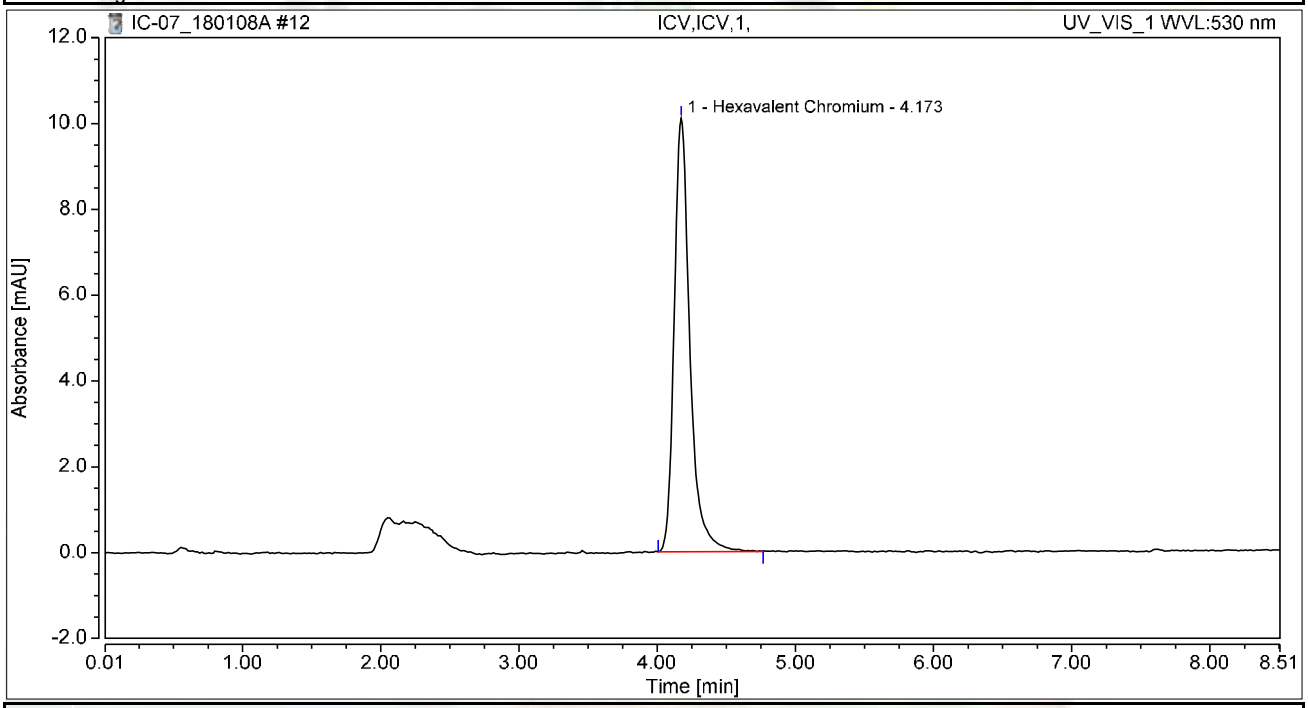
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD3-5.0 ppb	03	5.0000	1.2856	1.286	9.861
7	STD4-10.0 ppb	04	10.0000	2.5688	2.569	19.568
8	STD5-15.0 ppb	05	15.0000	3.8263	3.826	29.356
9	STD6-20.0 ppb	06	20.0000	5.1131	5.113	39.057
10	STD1-0.2 ppb	01	0.2000	0.0622	0.062	0.455
11	STD2-1.0 ppb	02	1.0000	0.2487	0.249	1.933

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

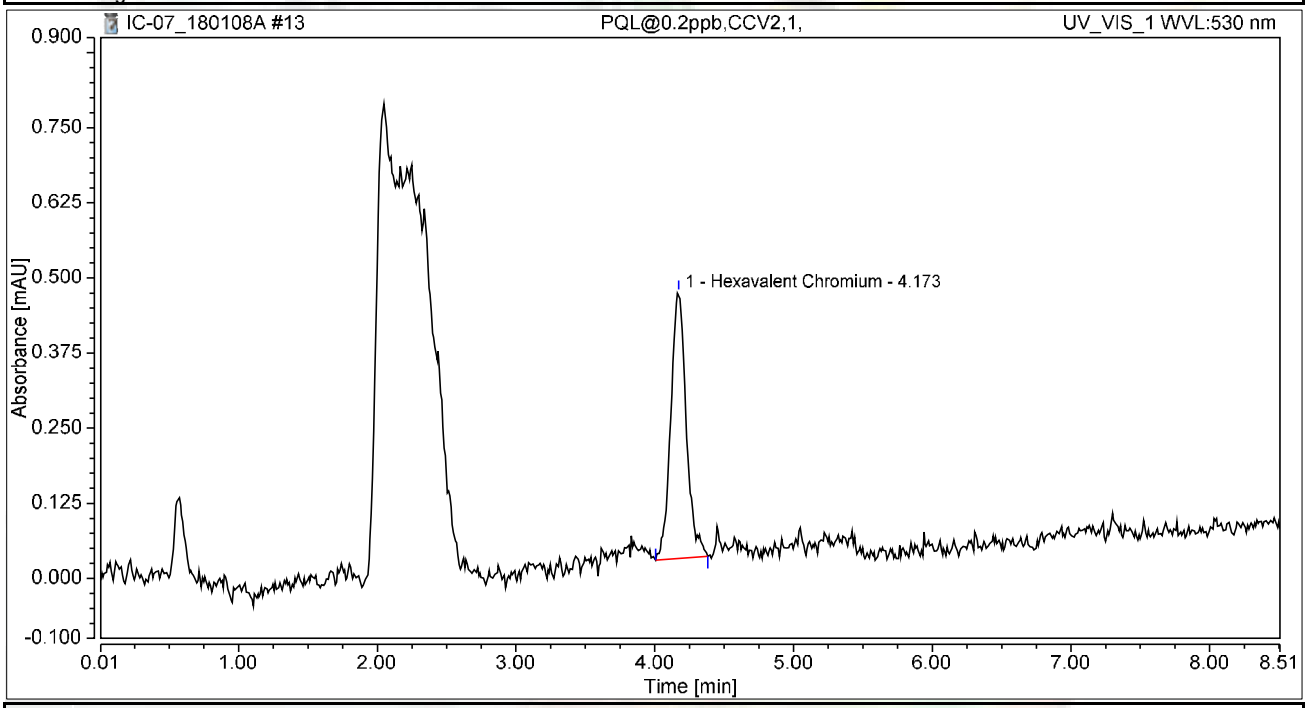
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

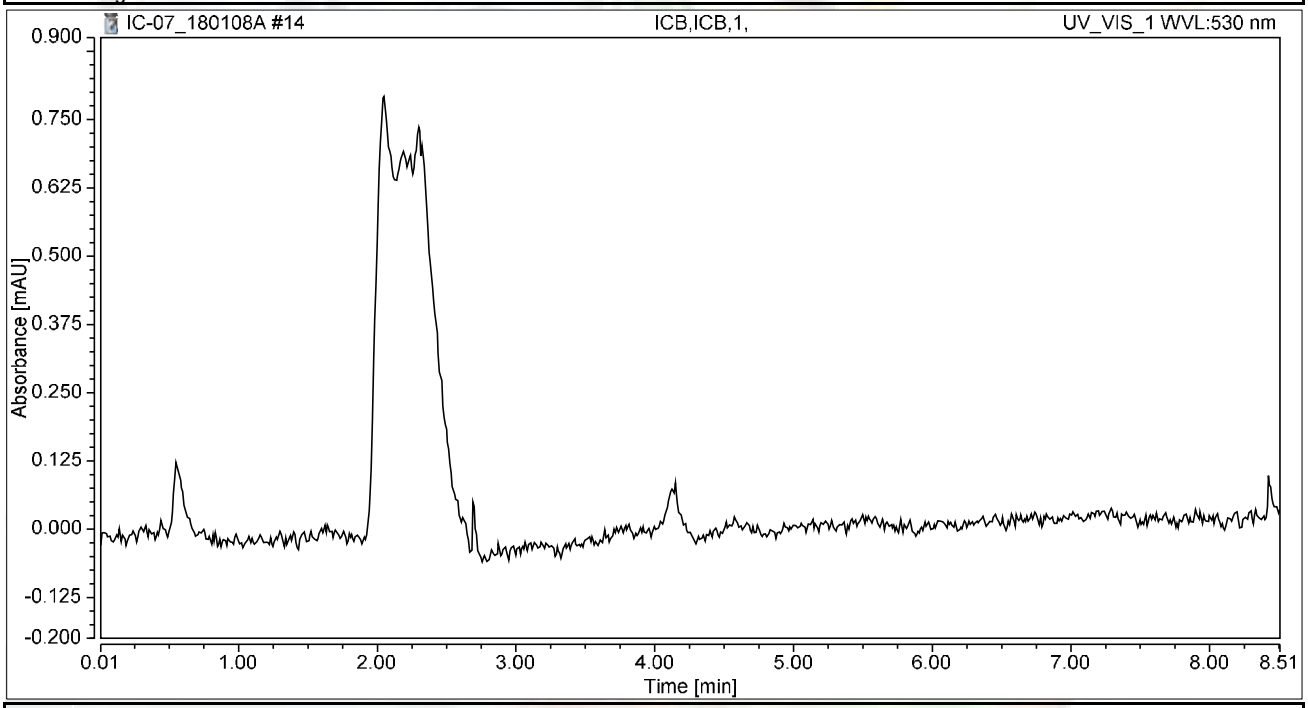
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

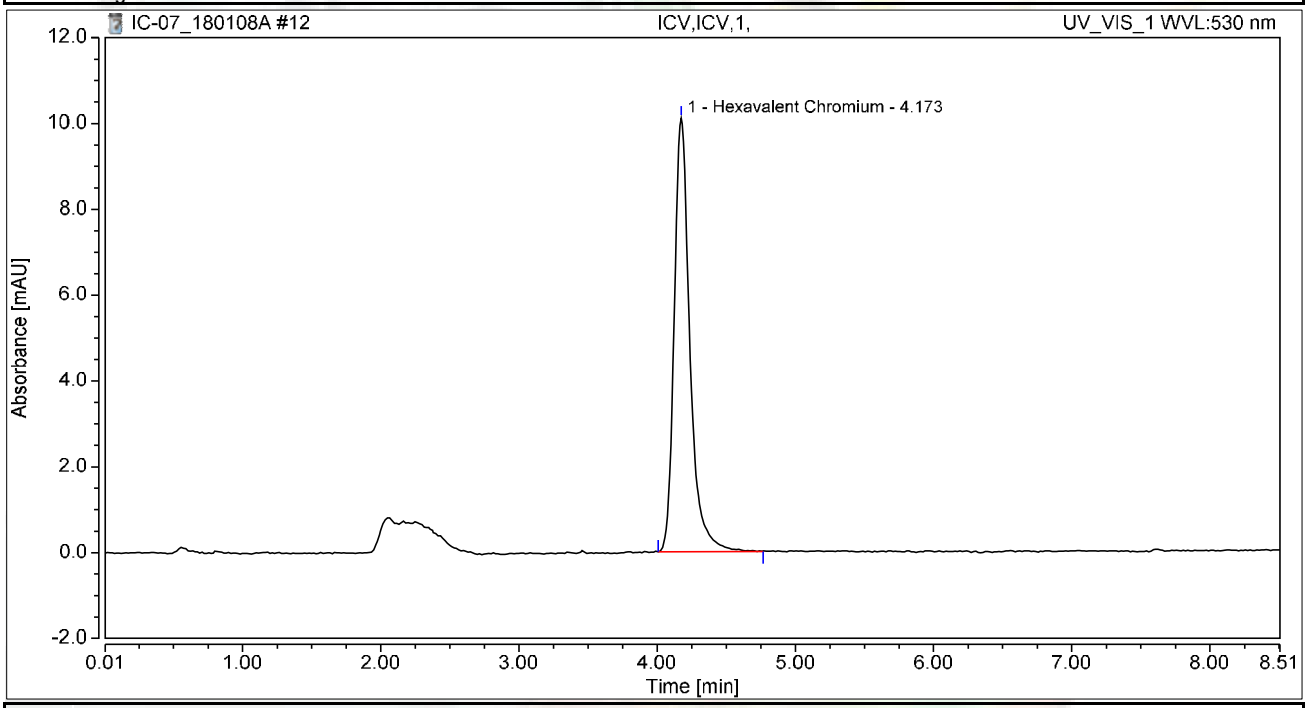
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

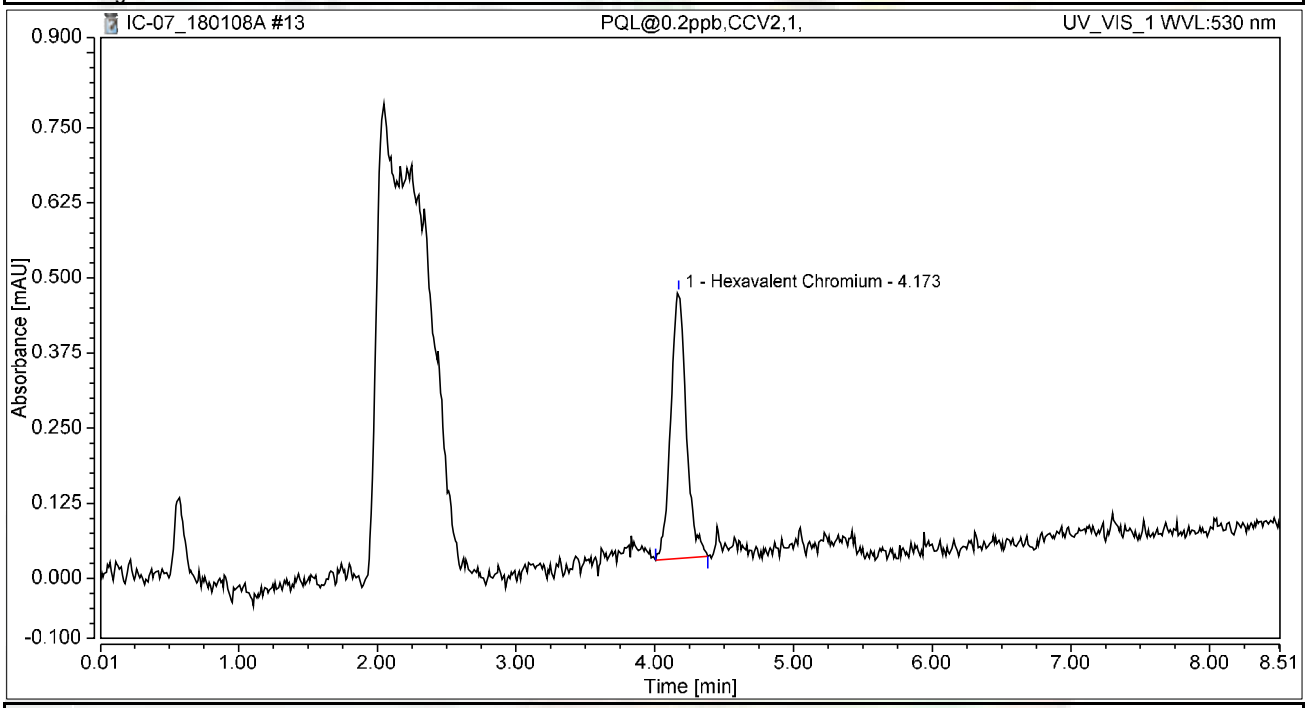
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

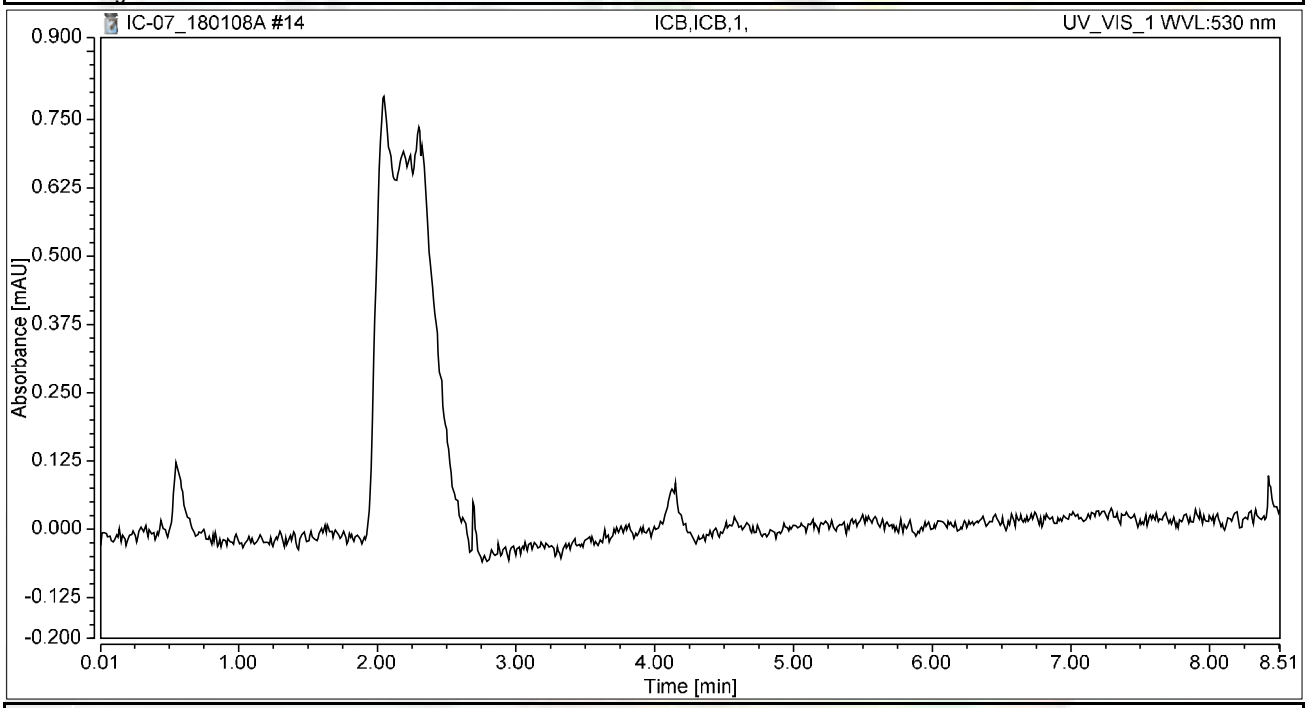
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

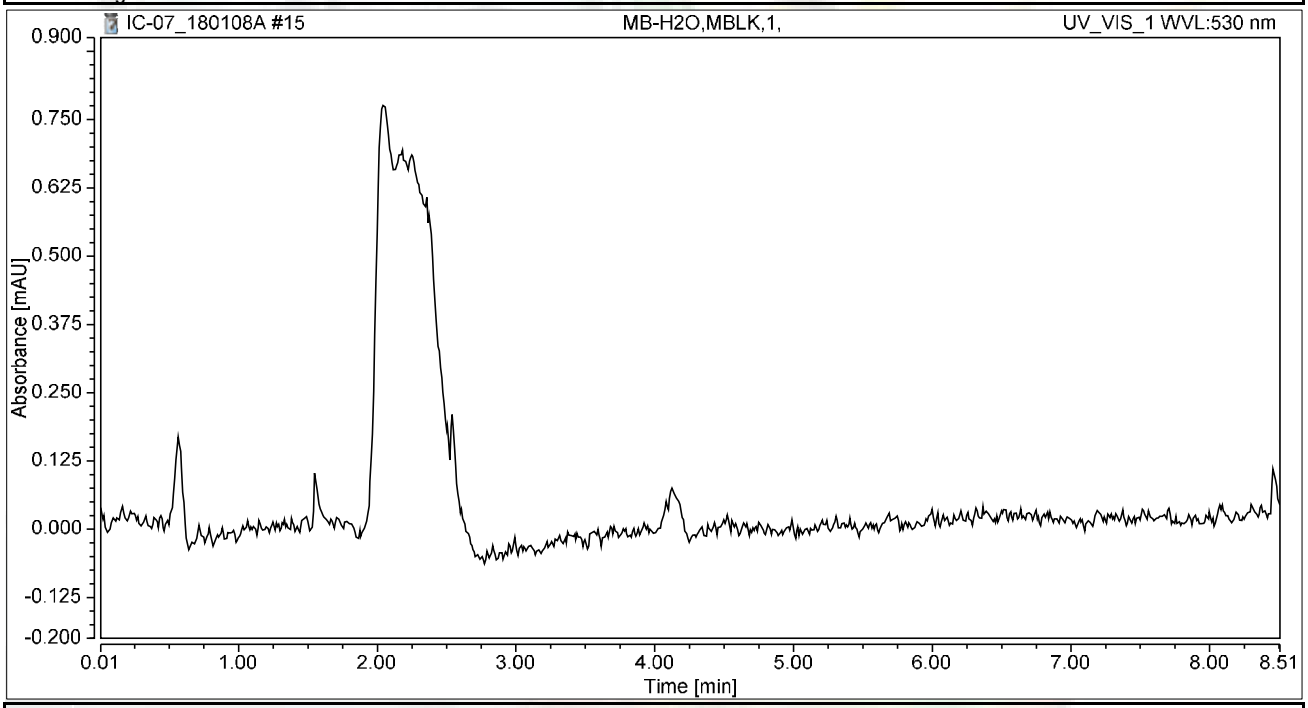
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

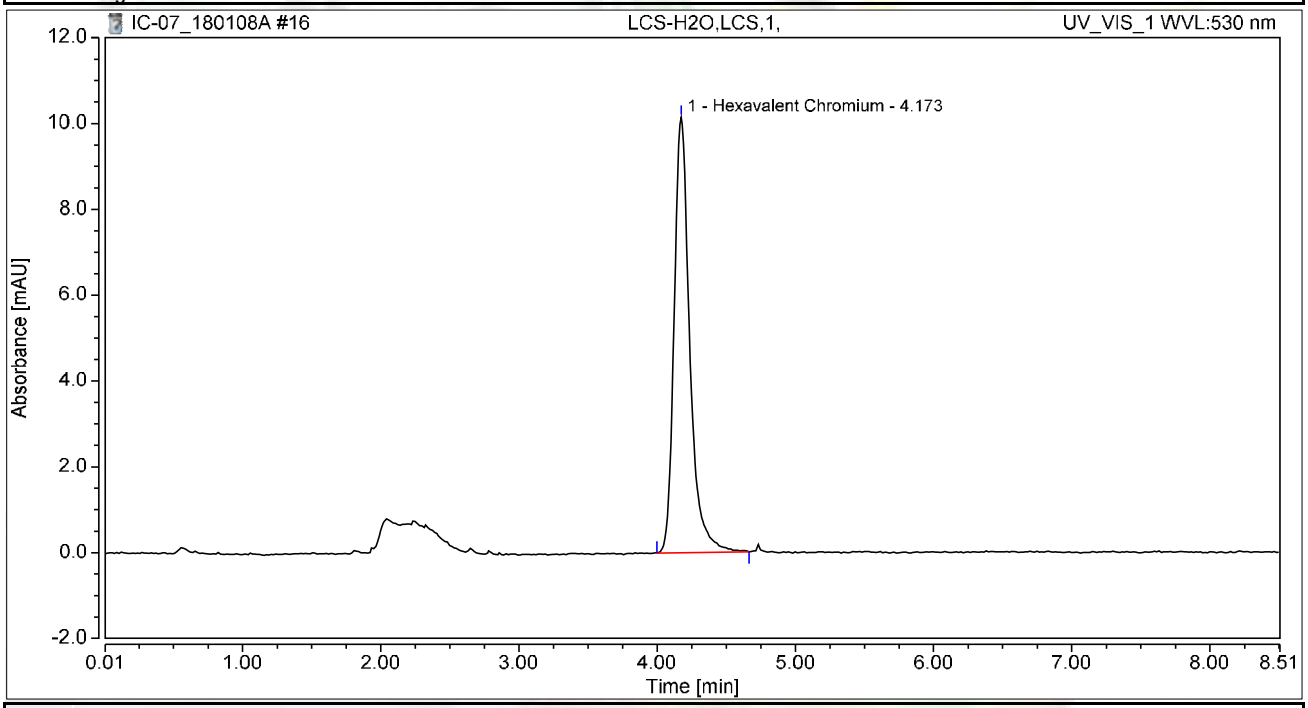
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

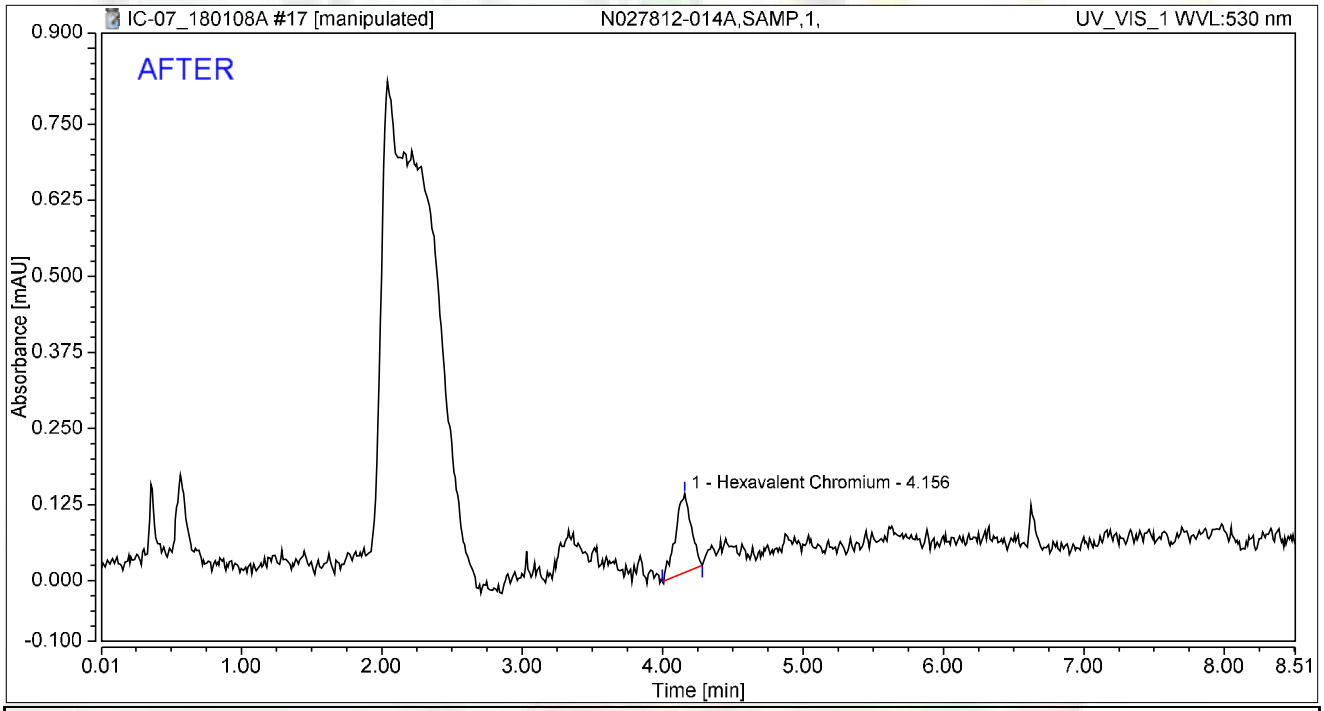
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.330	10.147	100.00	100.00	5.2014
Total:			**1.330**	**10.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.017	0.129	100.00	100.00	0.0660
Total:			**0.017**	**0.129**	**100.00**	**100.00**	

rba 1/10/2018

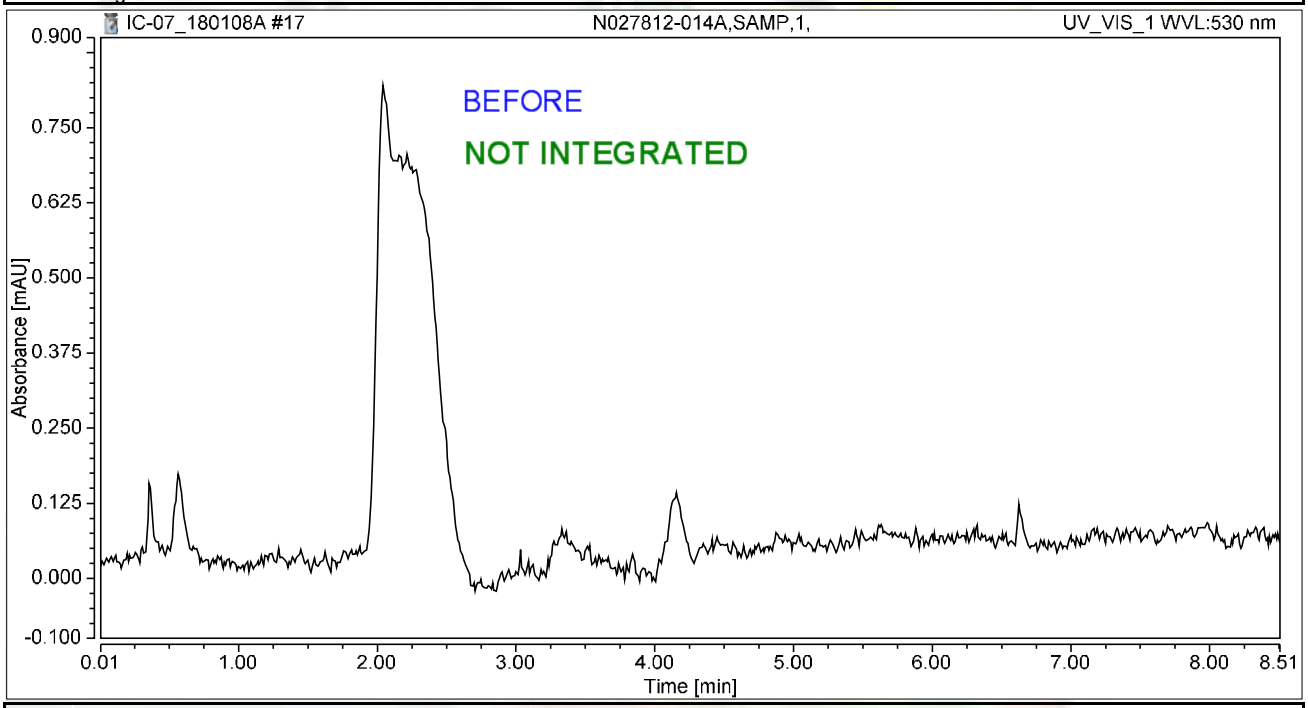
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

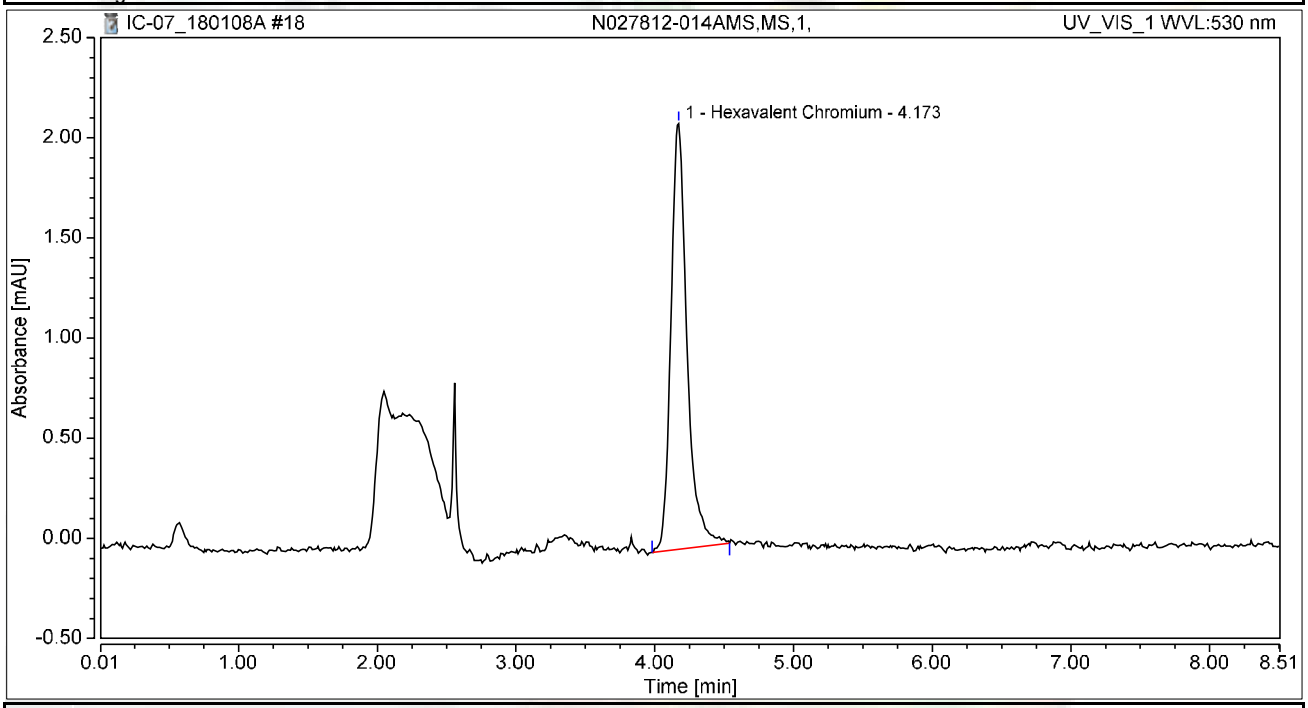
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

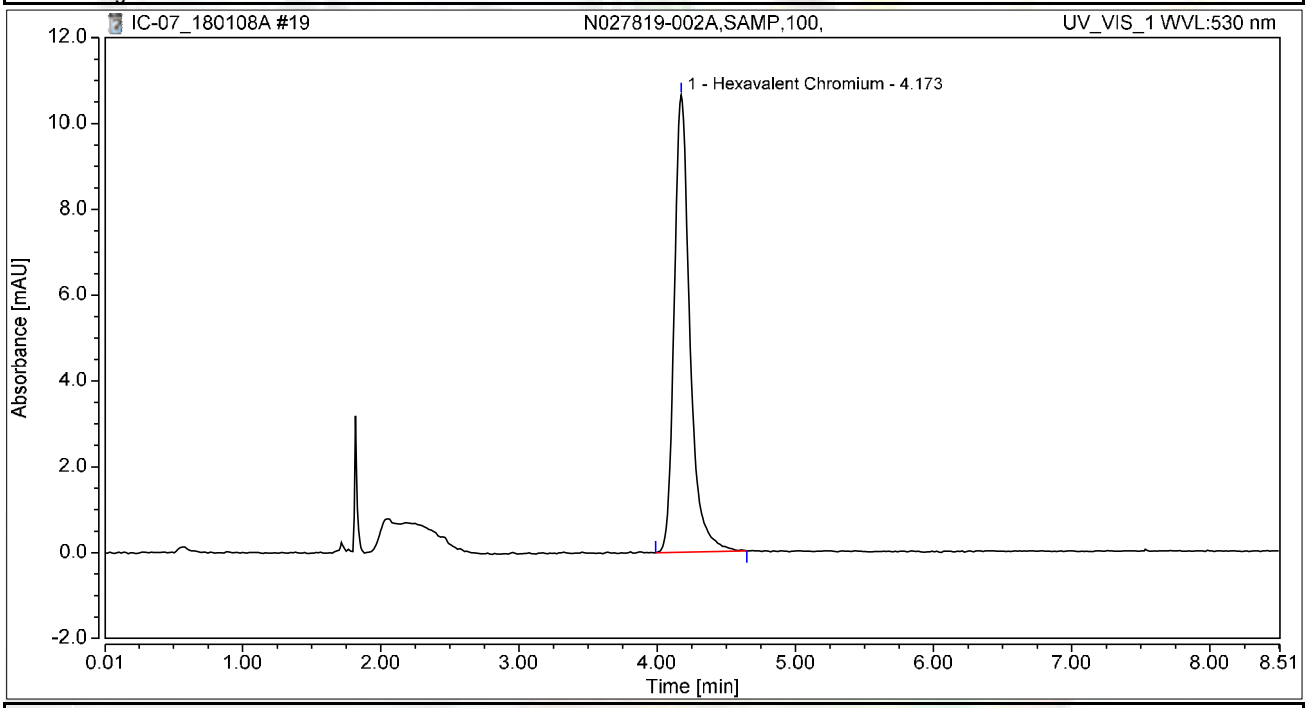
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.287	2.126	100.00	100.00	1.1207
Total:			**0.287**	**2.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

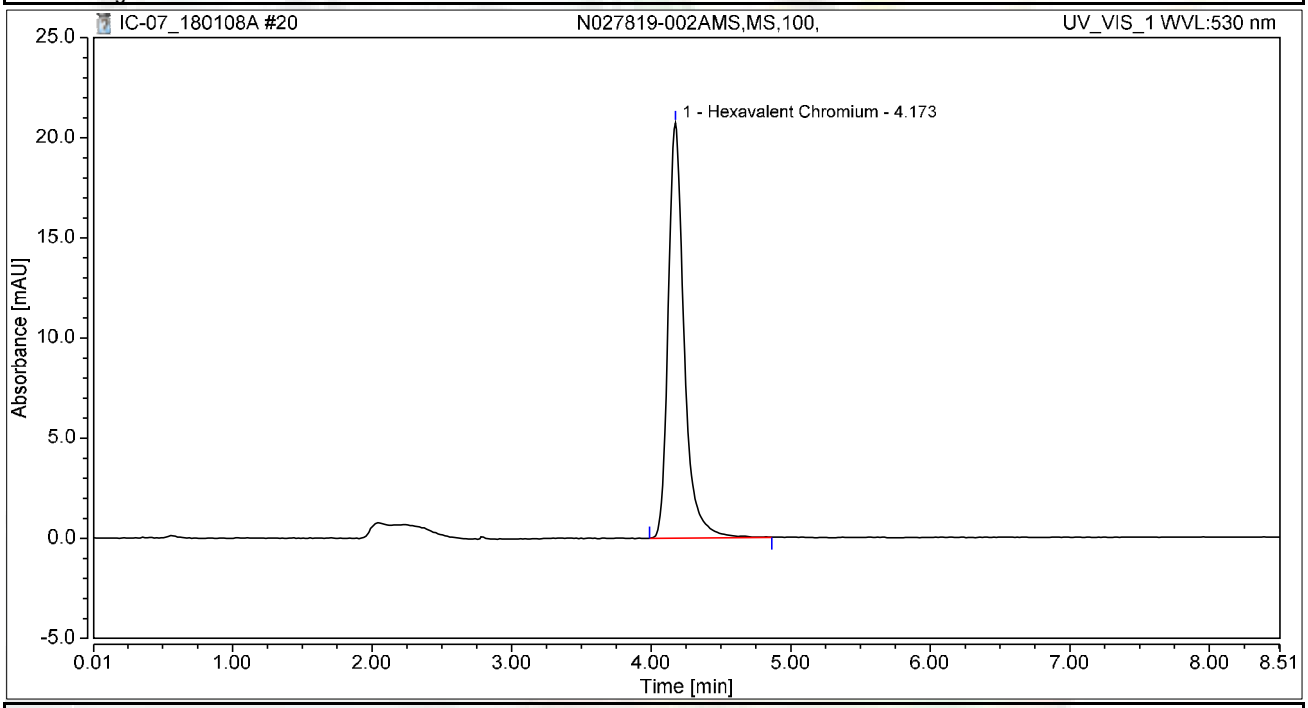
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.401	10.655	100.00	100.00	5.4805
Total:			**1.401**	**10.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

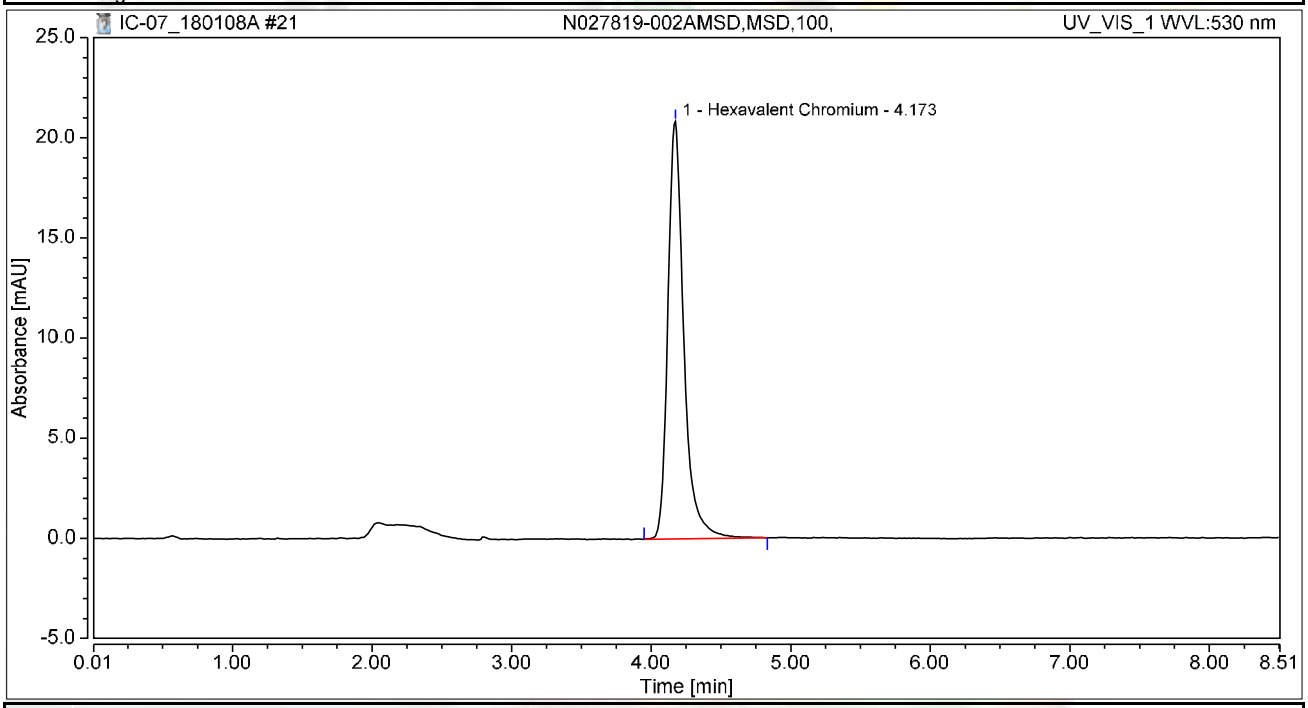
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.747	20.732	100.00	100.00	10.7445
Total:			**2.747**	**20.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

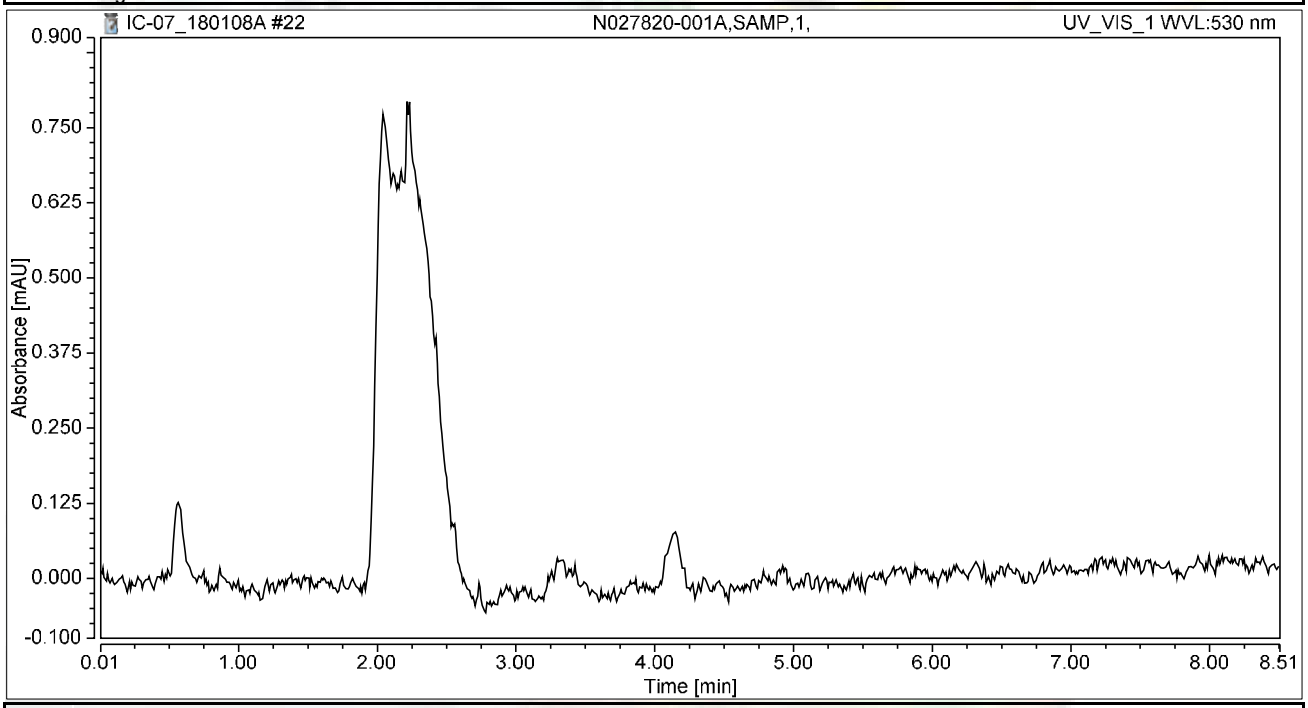
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.766	20.845	100.00	100.00	10.8163
Total:			**2.766**	**20.845**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

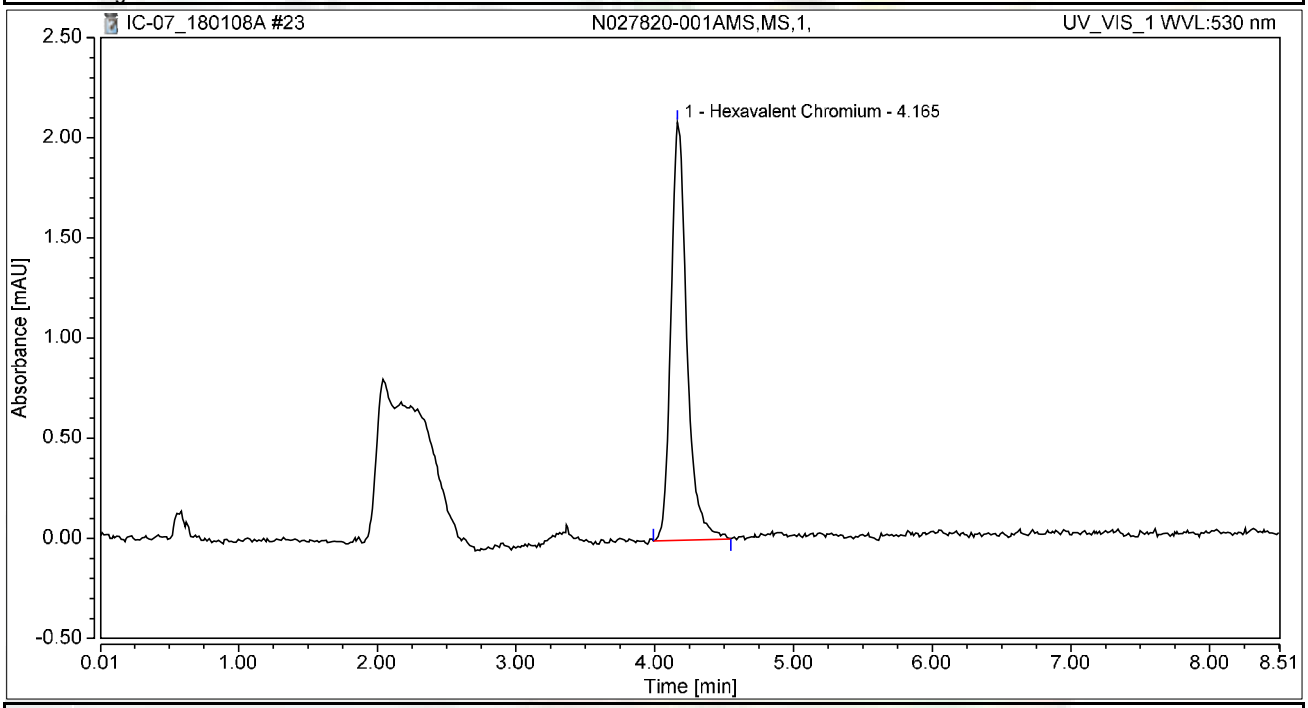
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

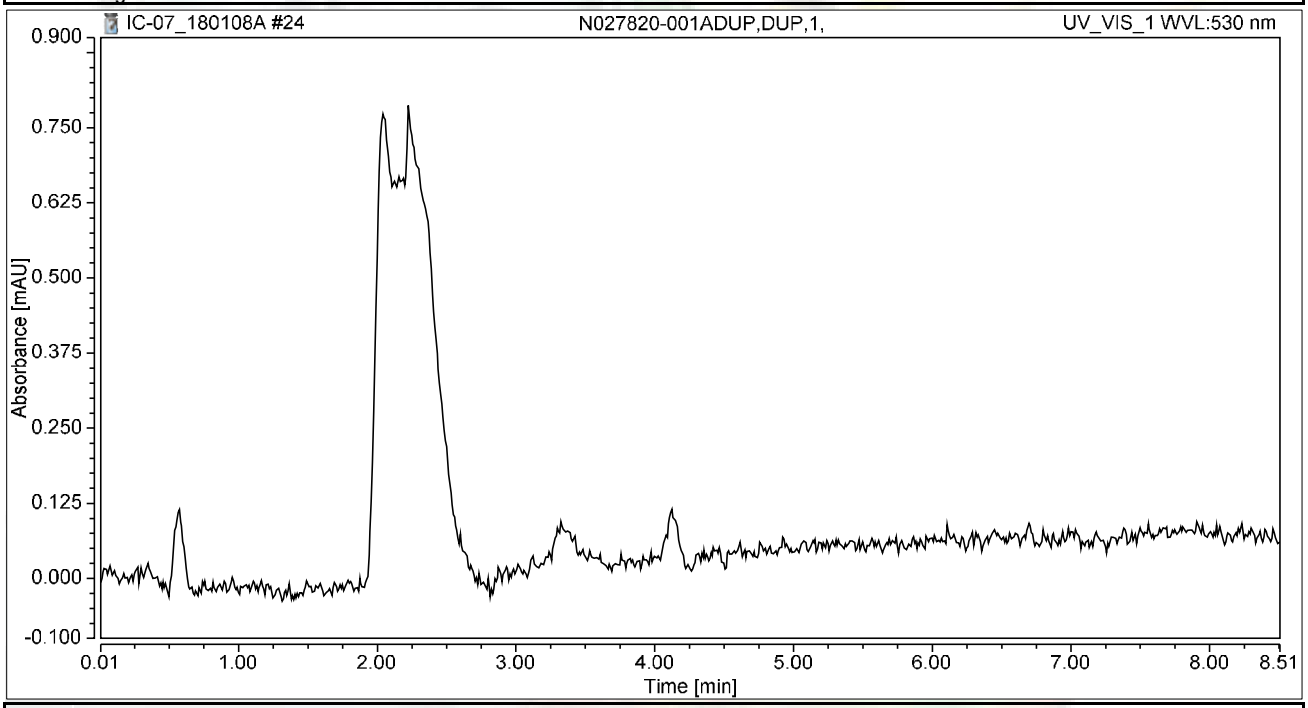
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.278	2.086	100.00	100.00	1.0876
Total:			**0.278**	**2.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

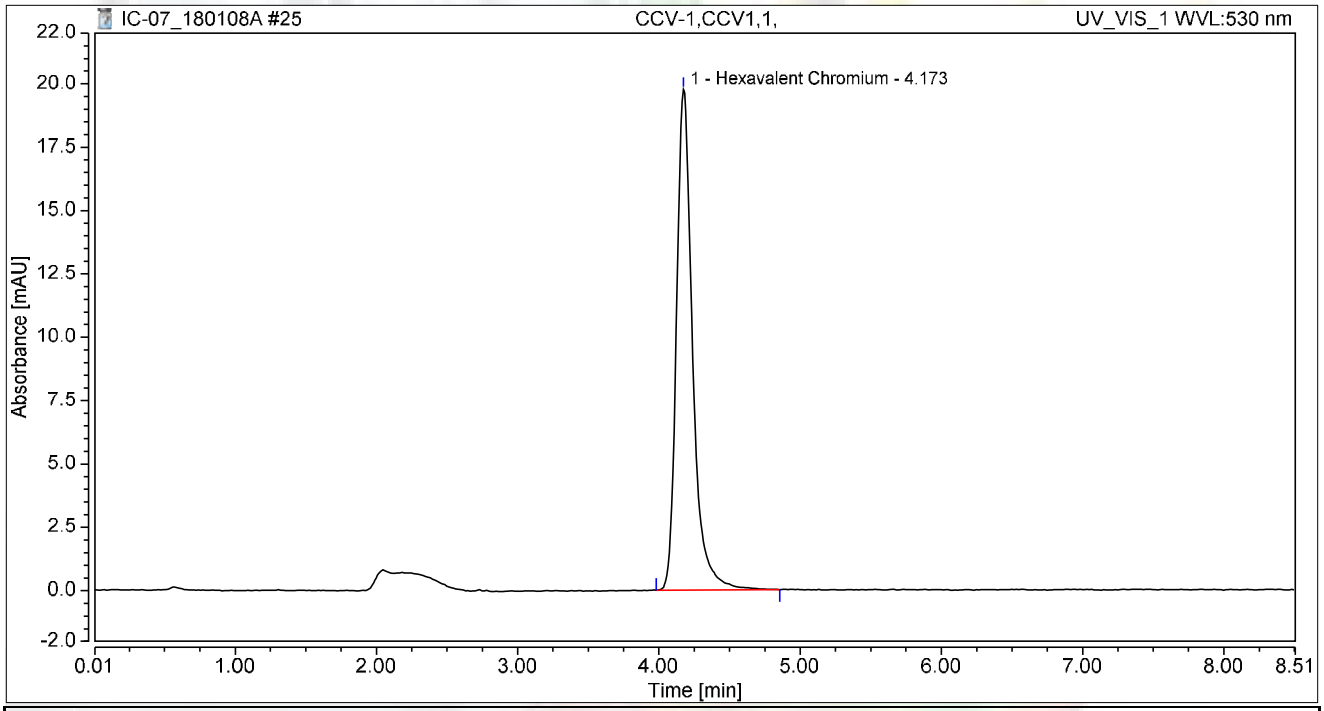
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

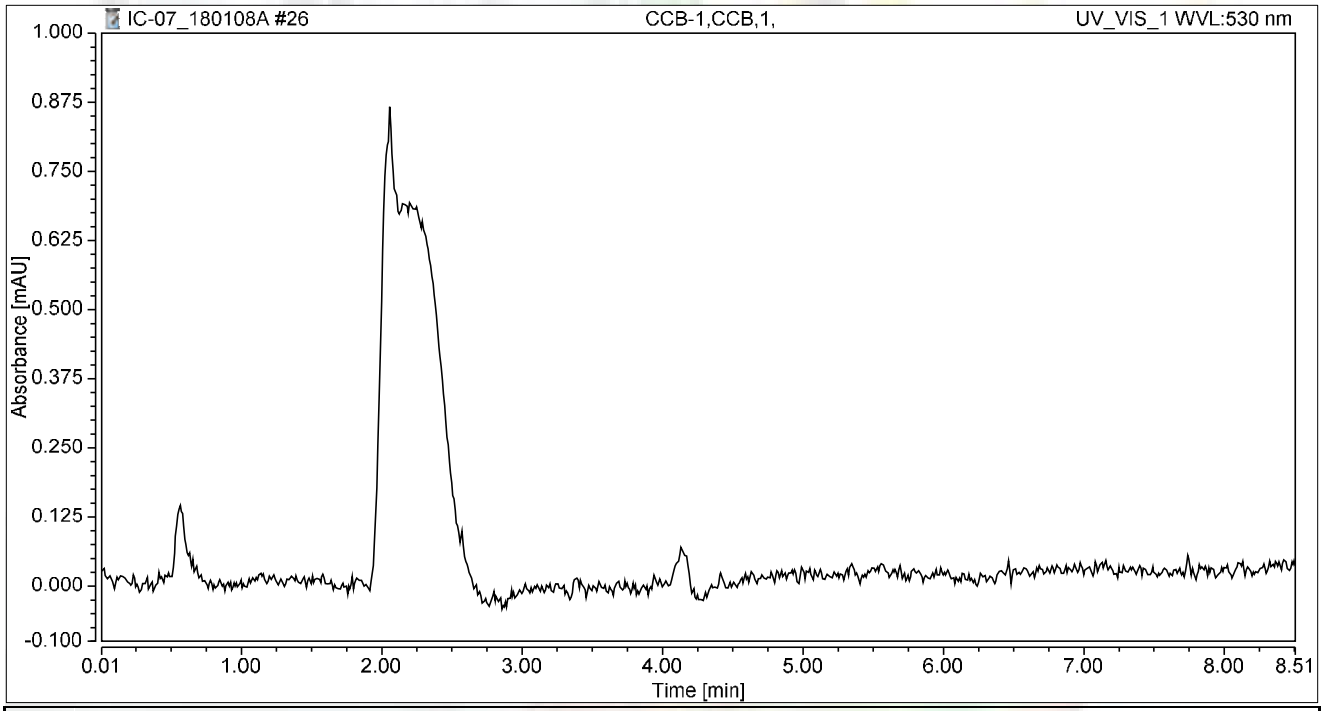
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.622	19.758	100.00	100.00	10.2530
Total:			**2.622**	**19.758**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

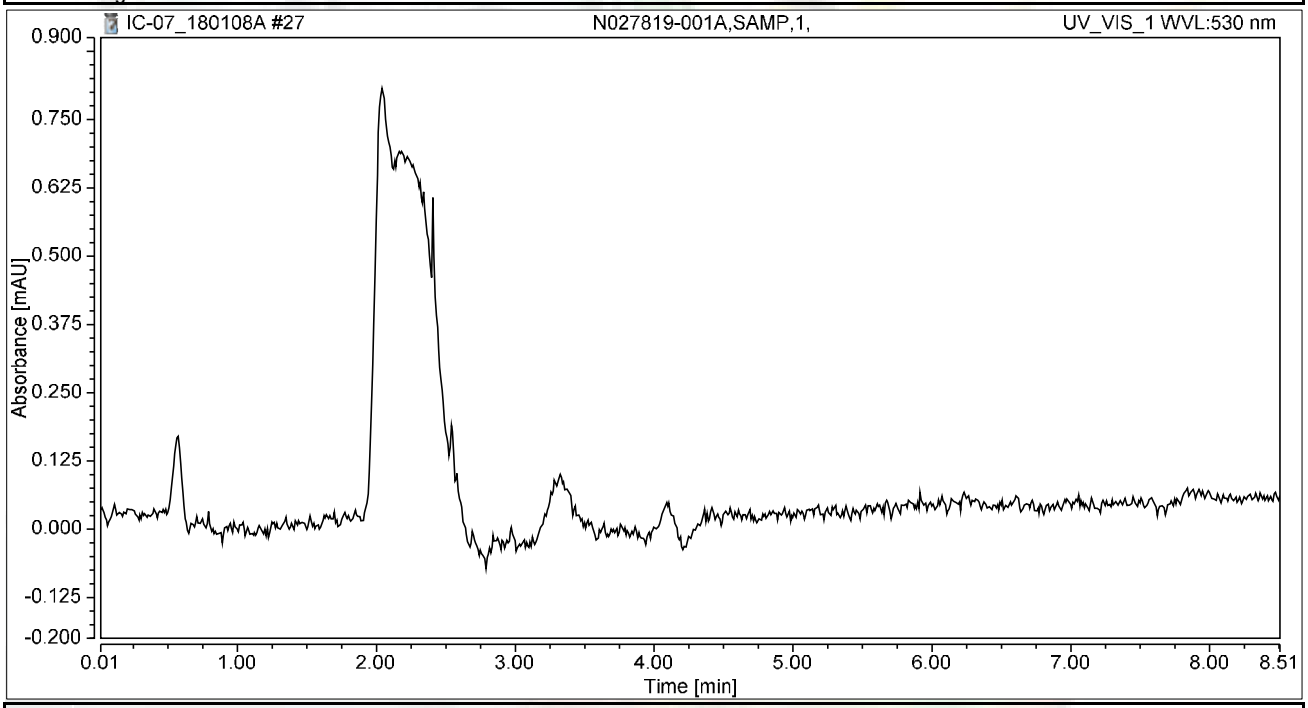
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

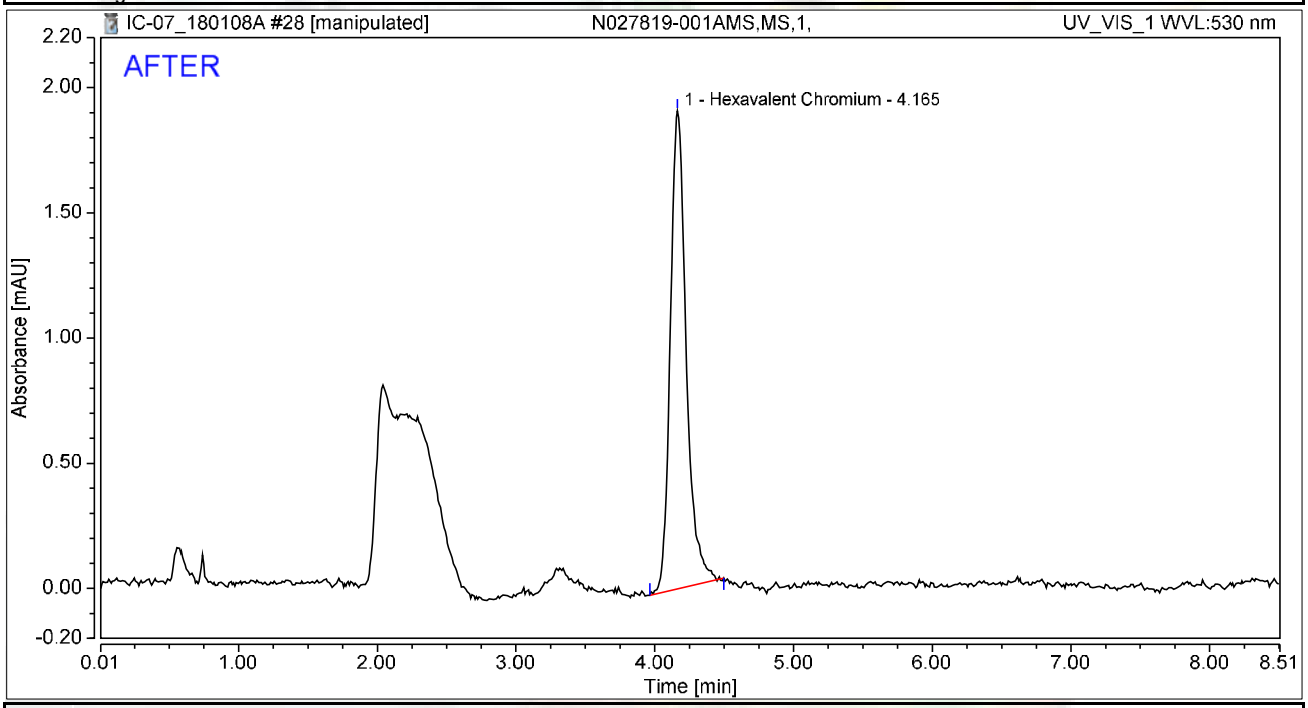
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.254	1.909	100.00	100.00	0.9940
Total:			**0.254**	**1.909**	**100.00**	**100.00**	

rba 1/10/2018

Reviewed by: Nancy 01/12/2018
MV first report/Integration

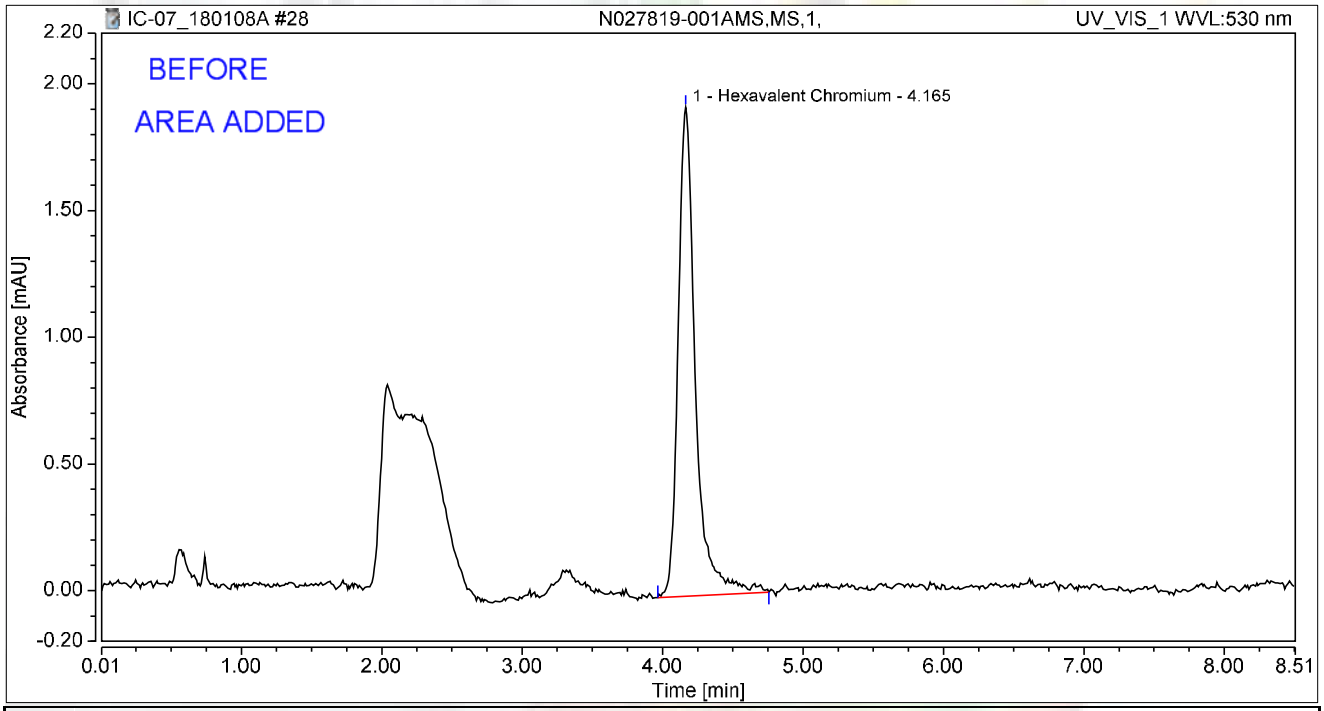
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	1.930	100.00	100.00	1.0637
Total:			**0.275**	**1.930**	**100.00**	**100.00**	

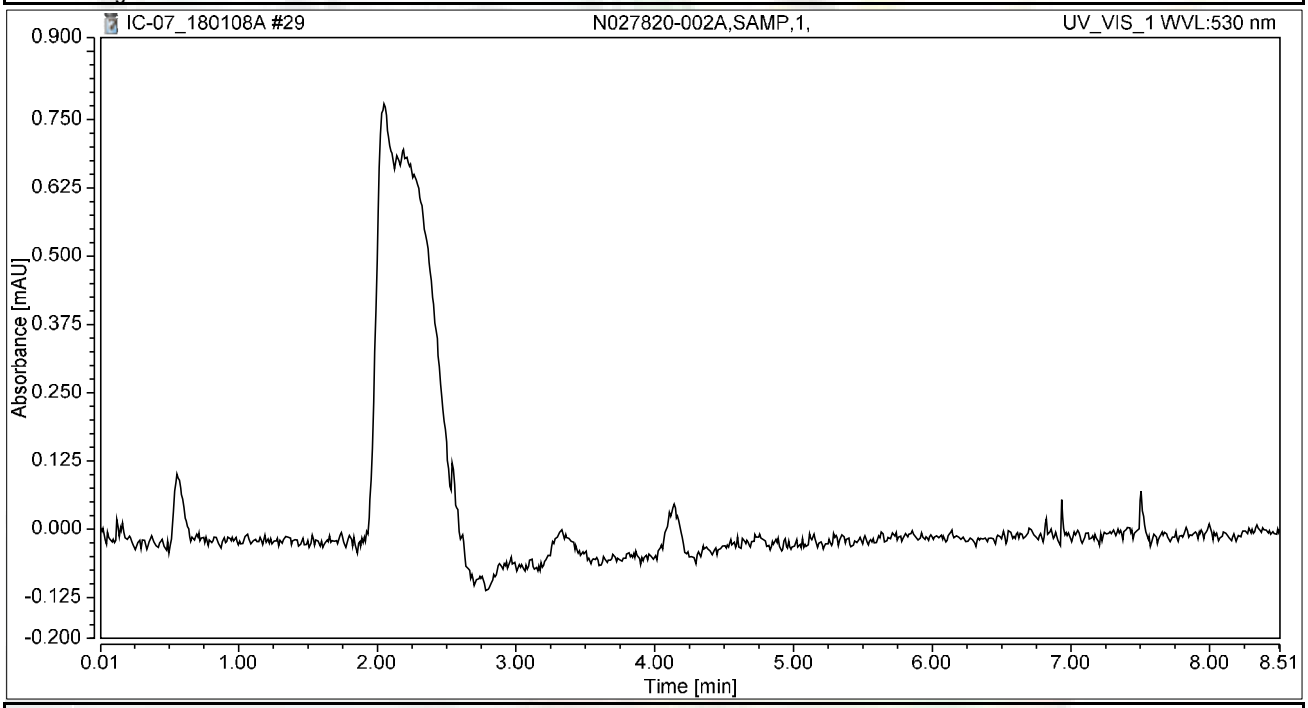
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

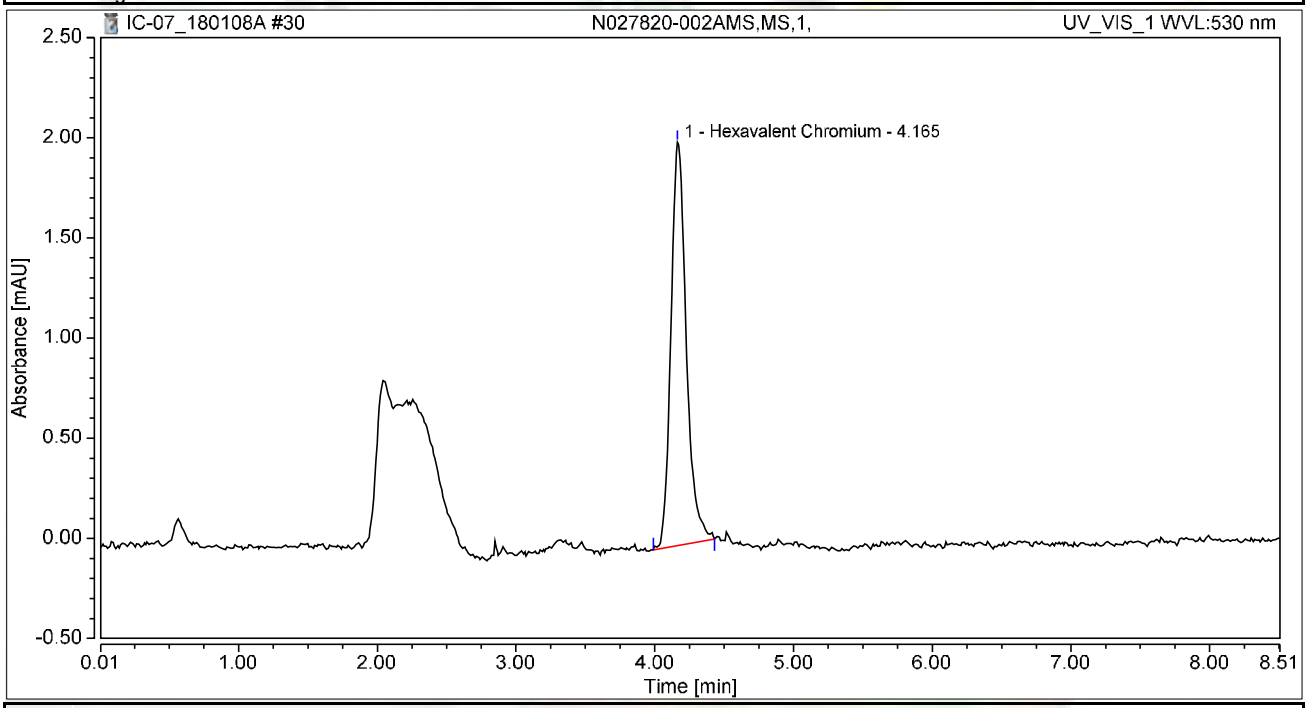
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

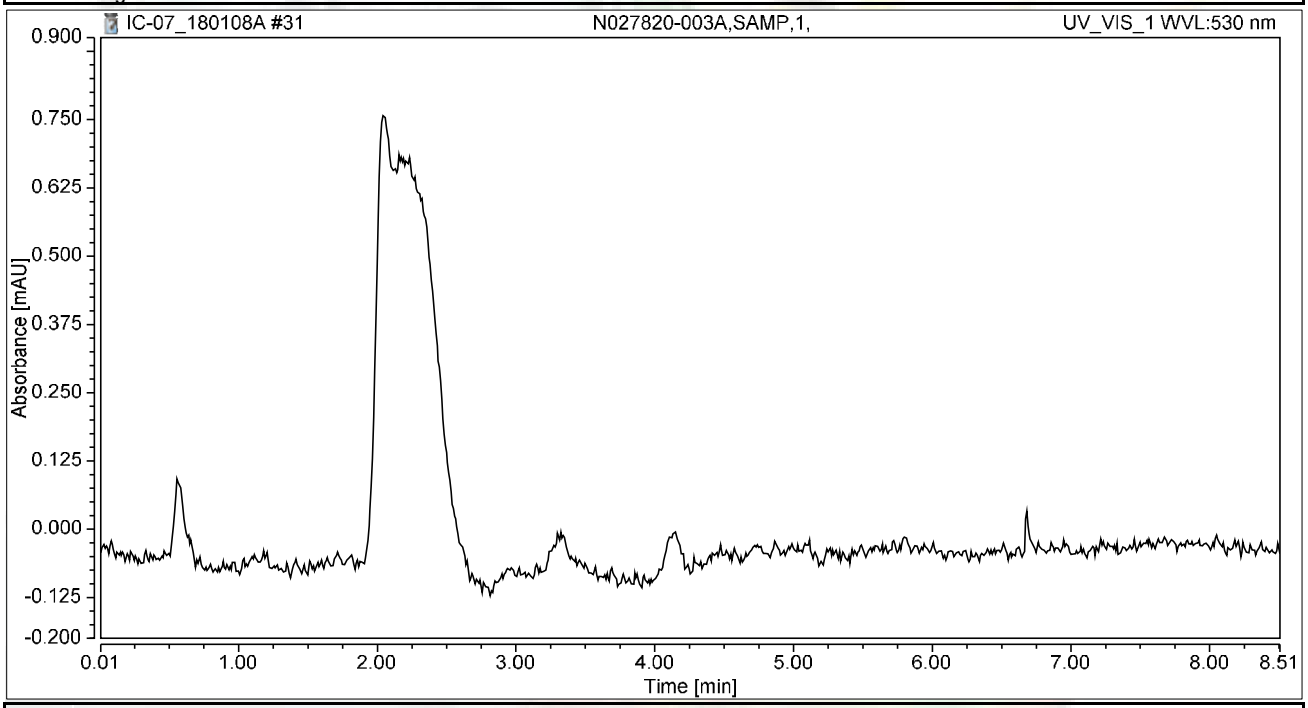
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.259	2.012	100.00	100.00	1.0115
Total:			**0.259**	**2.012**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

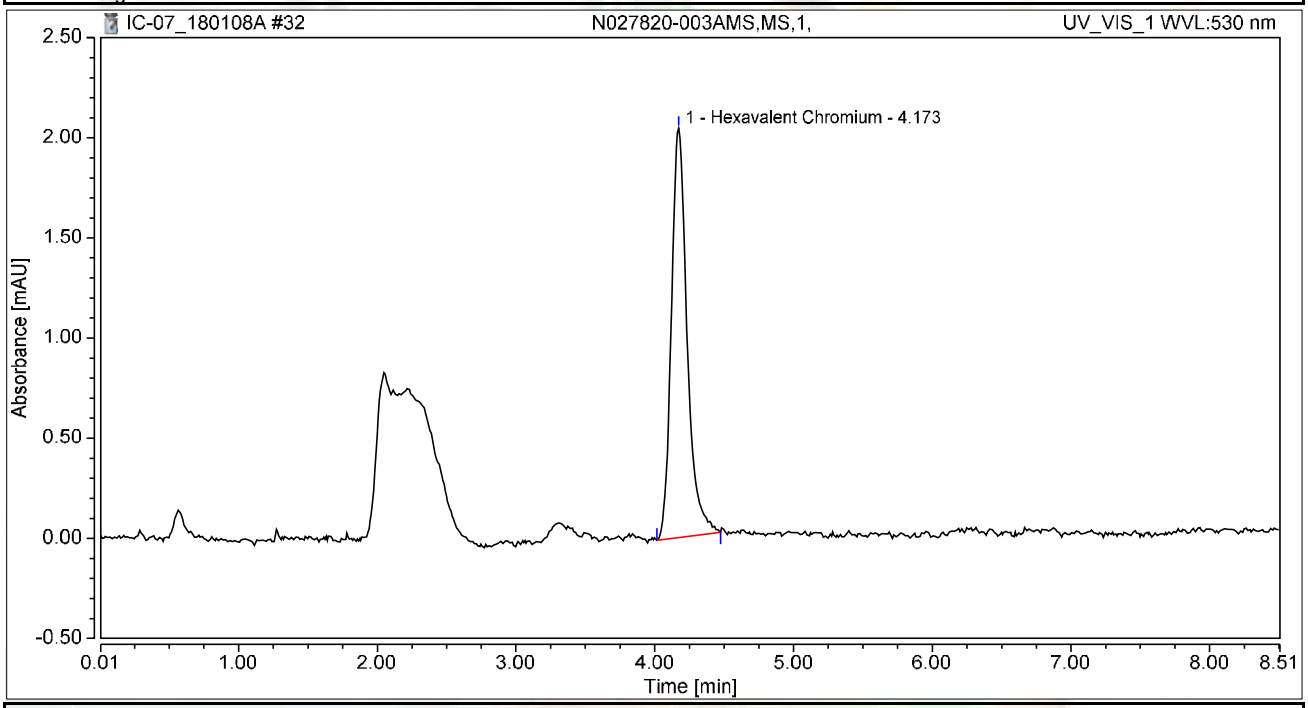
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

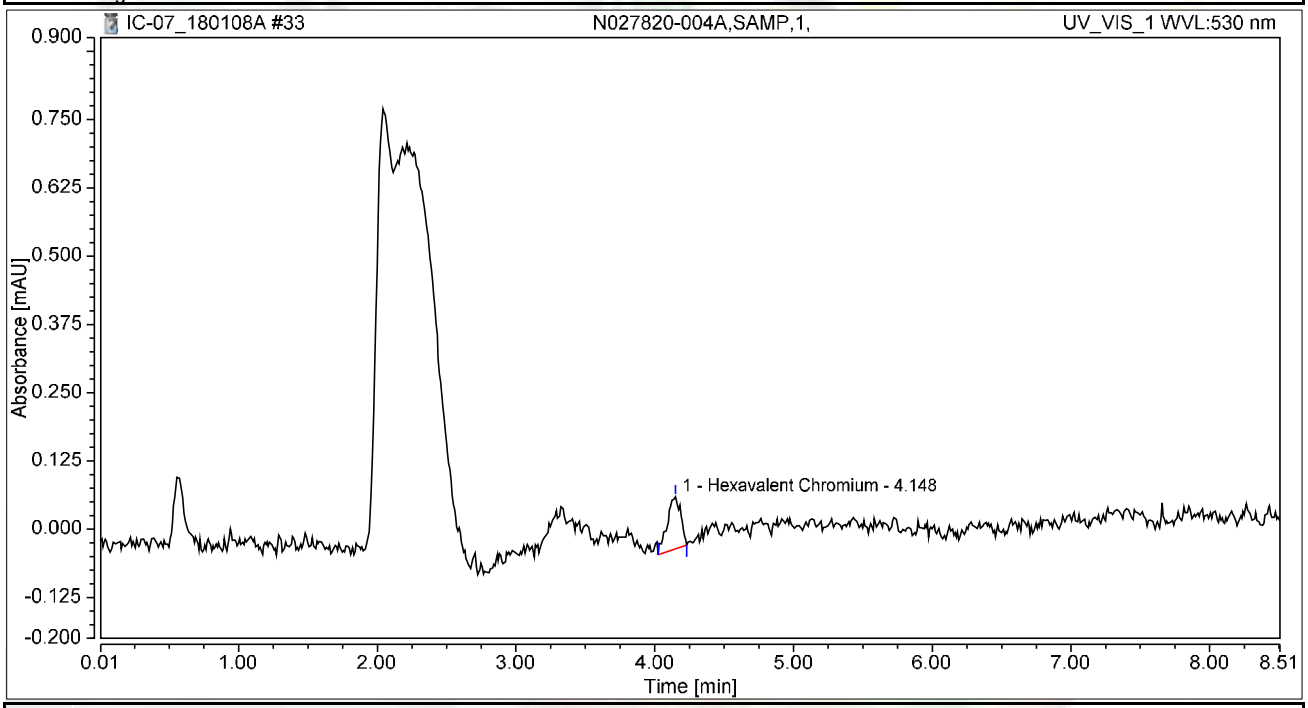
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.268	2.043	100.00	100.00	1.0498
Total:			**0.268**	**2.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

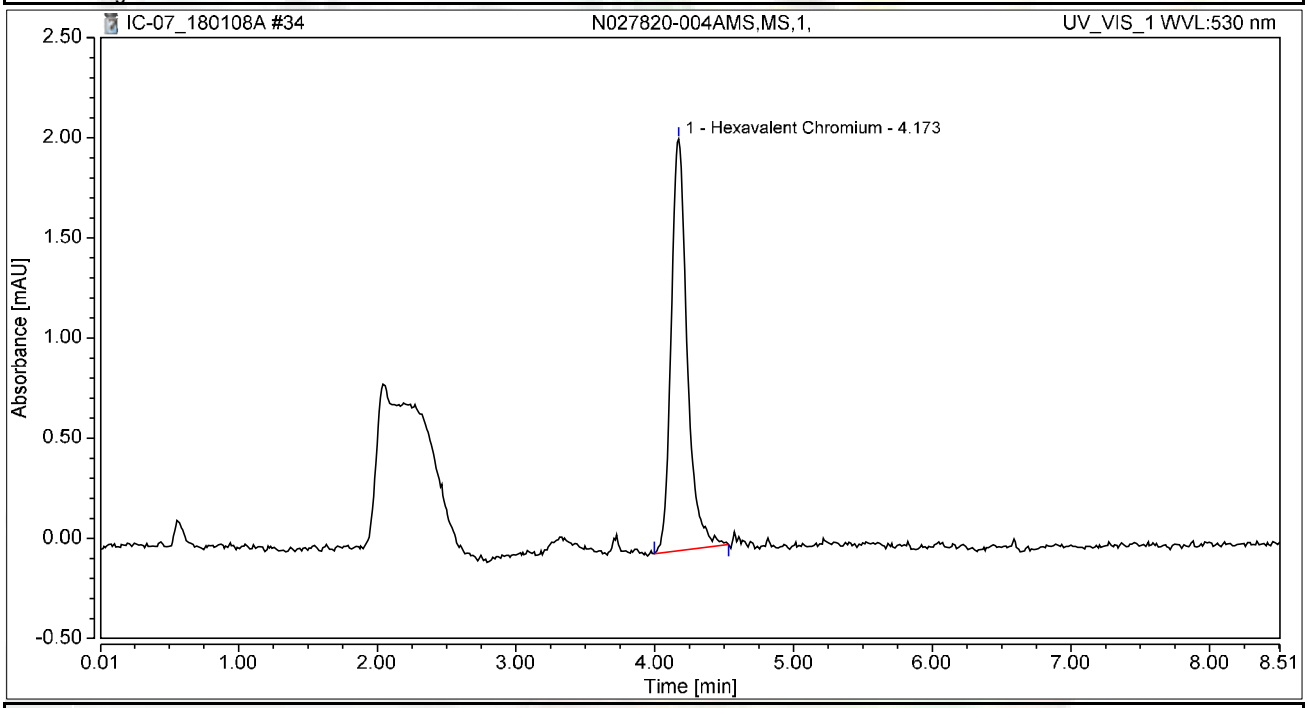
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.011	0.095	100.00	100.00	0.0418
Total:			**0.011**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

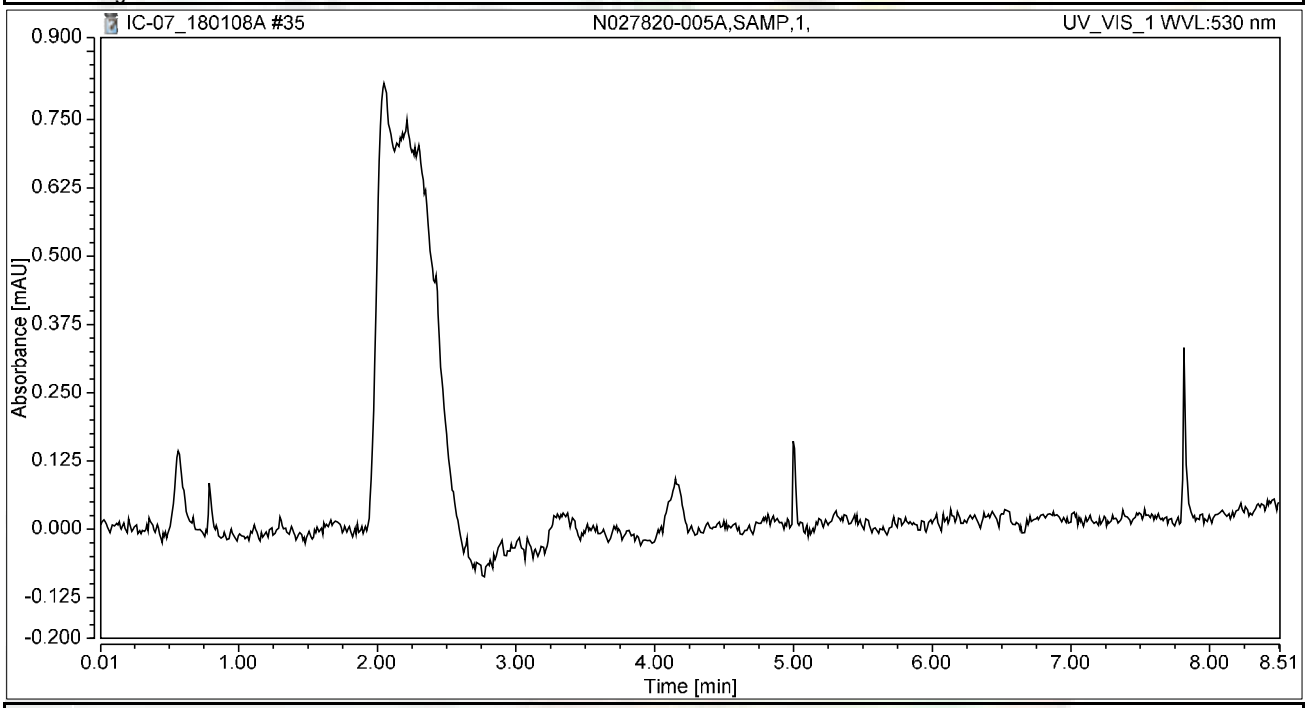
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.054	100.00	100.00	1.0786
Total:			**0.276**	**2.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

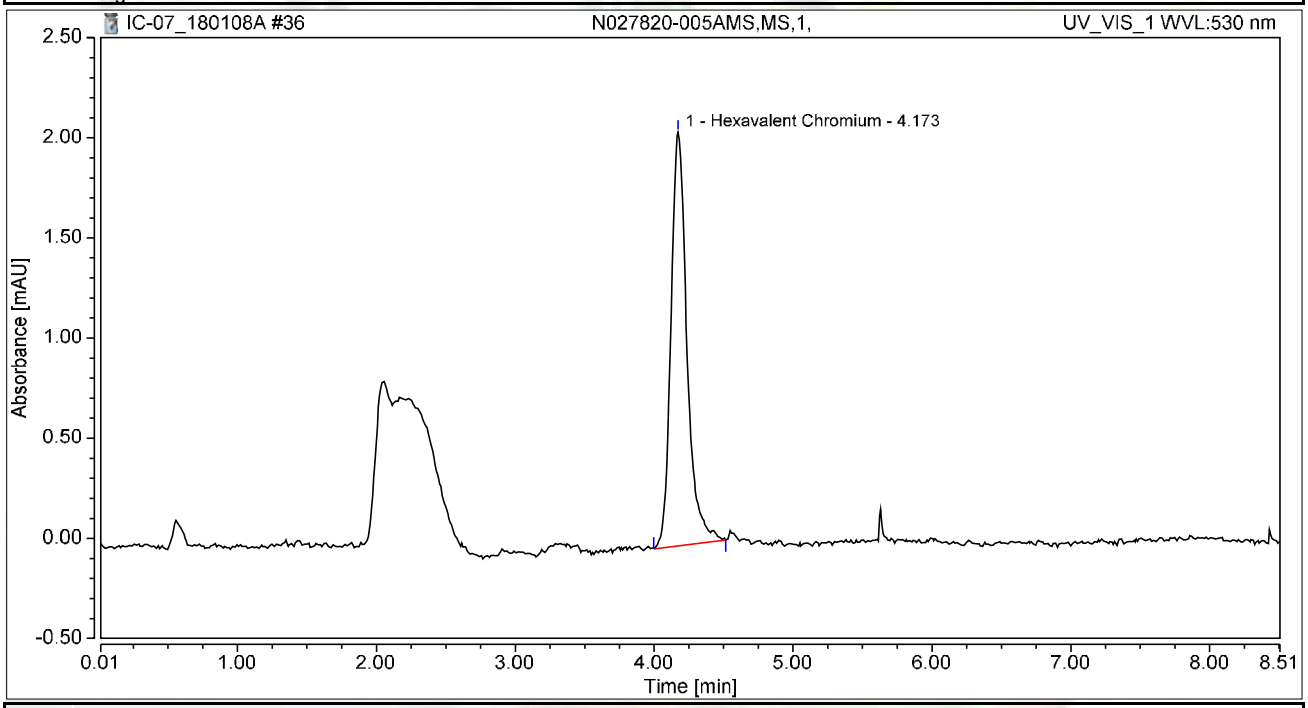
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

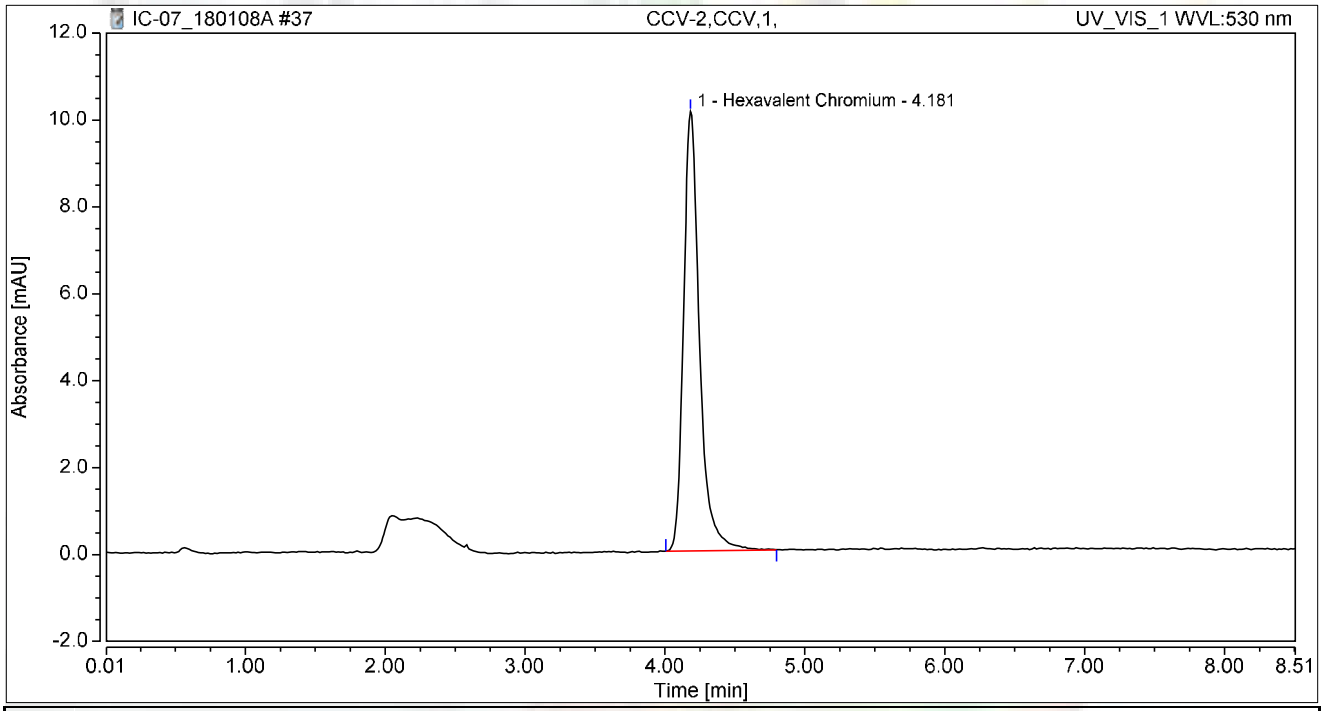
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.066	100.00	100.00	1.0782
Total:			**0.276**	**2.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

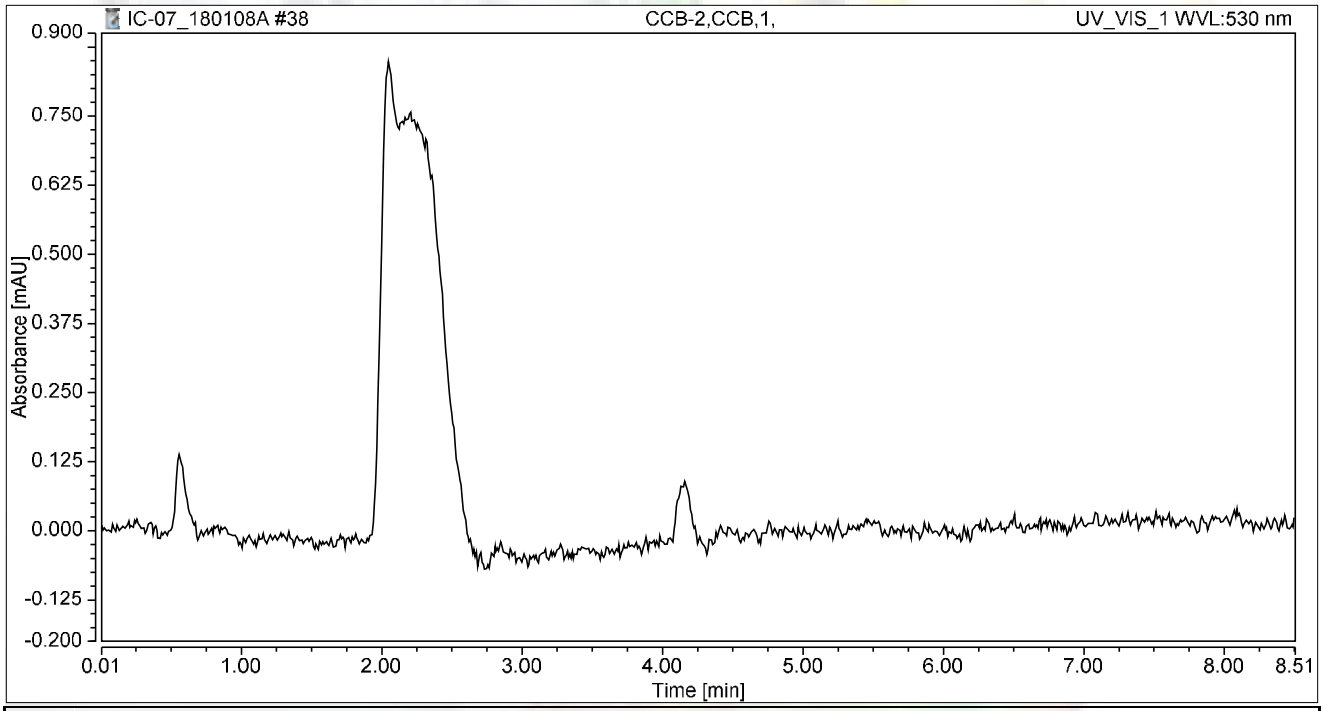
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.338	10.114	100.00	100.00	5.2328
Total:			**1.338**	**10.114**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

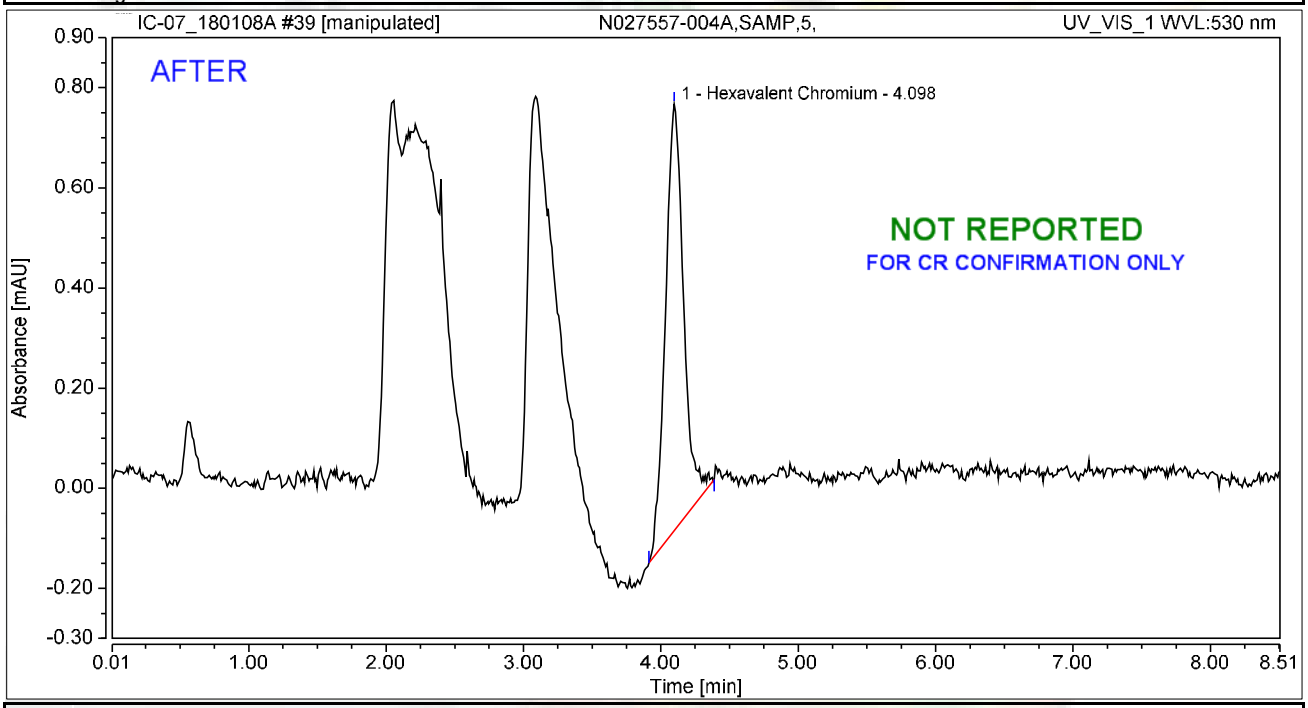
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.130	0.852	100.00	100.00	0.5084
Total:			**0.130**	**0.852**	**100.00**	**100.00**	

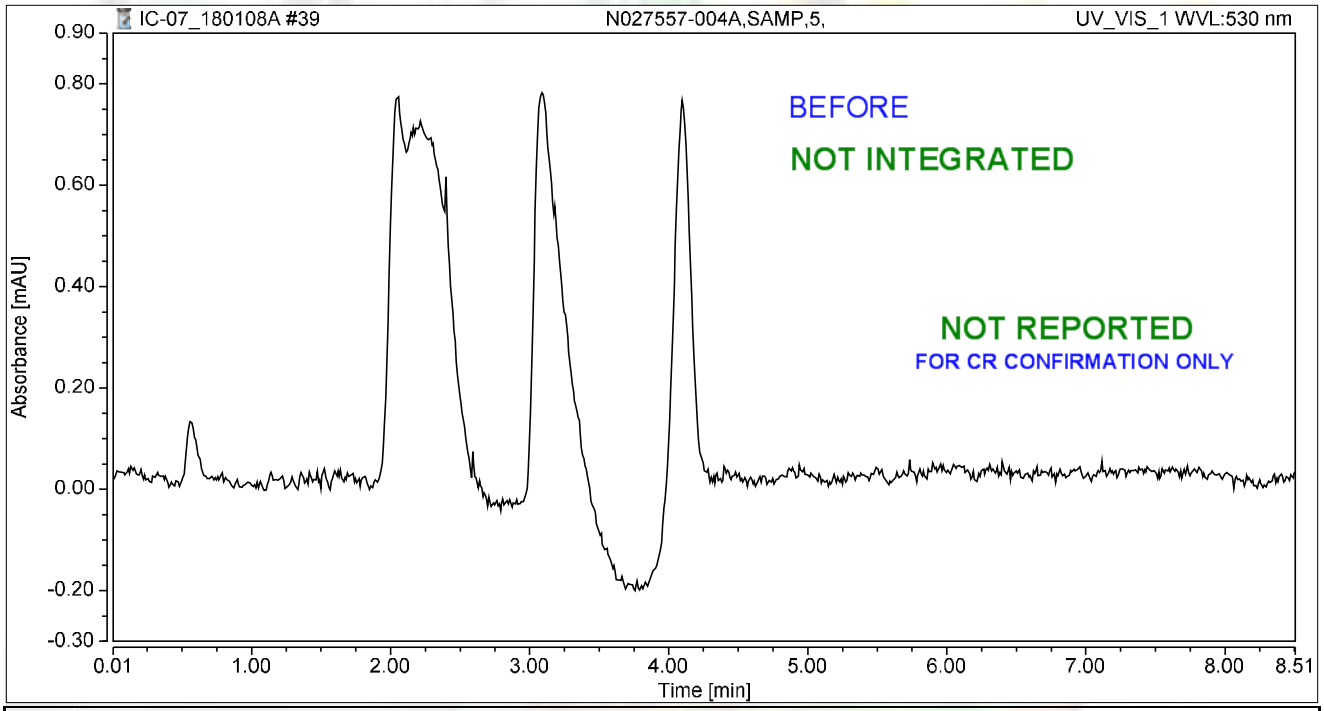
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

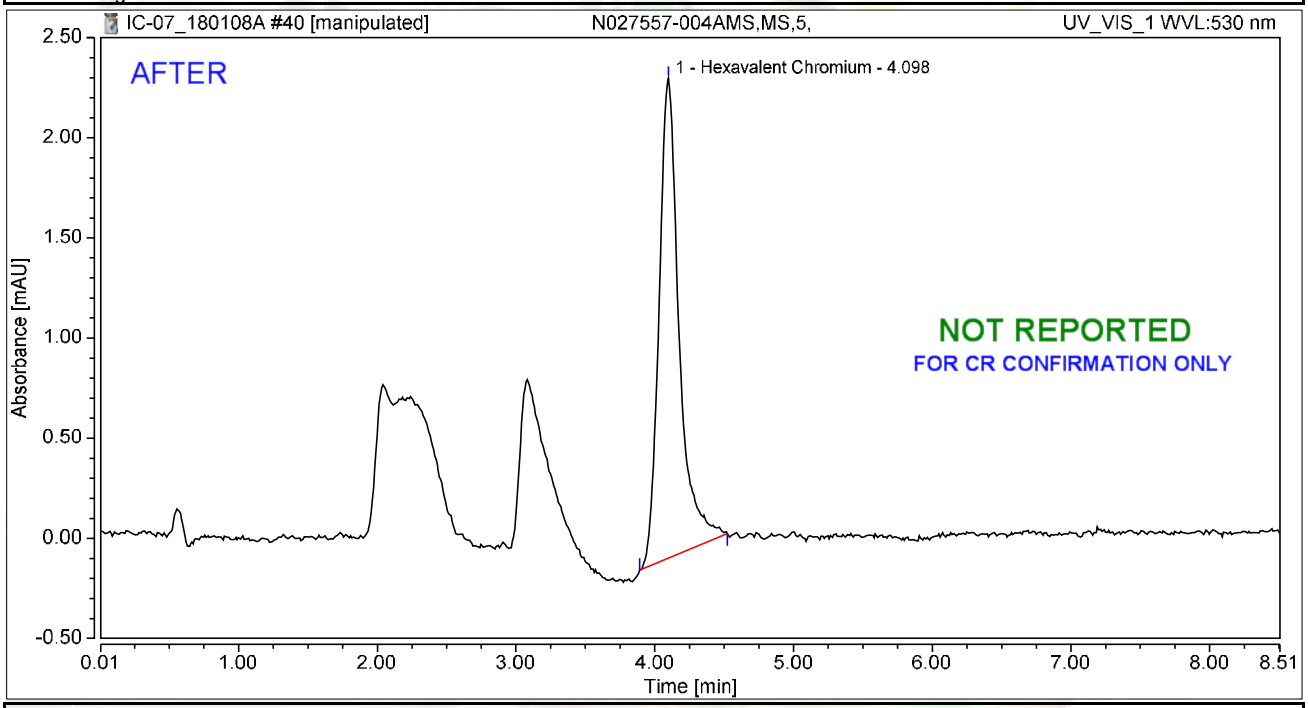
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.403	2.396	100.00	100.00	1.5776
Total:			**0.403**	**2.396**	**100.00**	**100.00**	

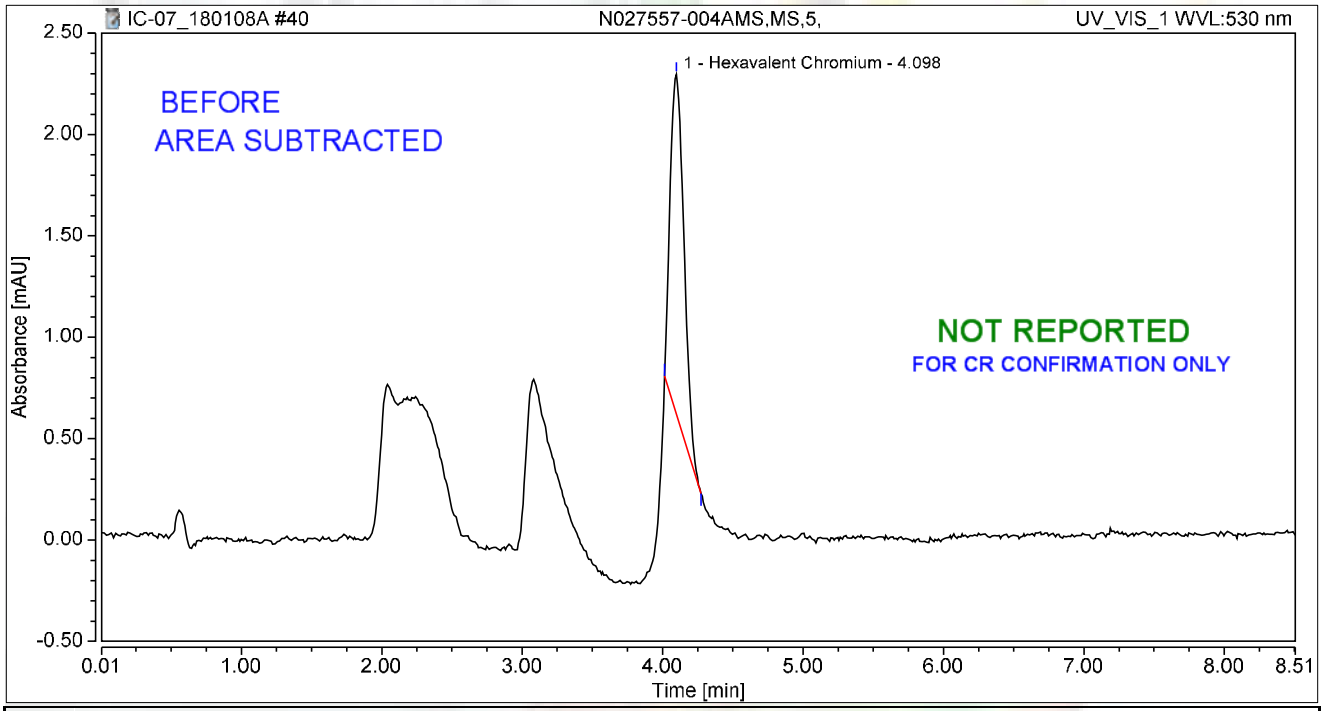
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.192	1.676	100.00	100.00	0.7404
Total:			**0.192**	**1.676**	**100.00**	**100.00**	

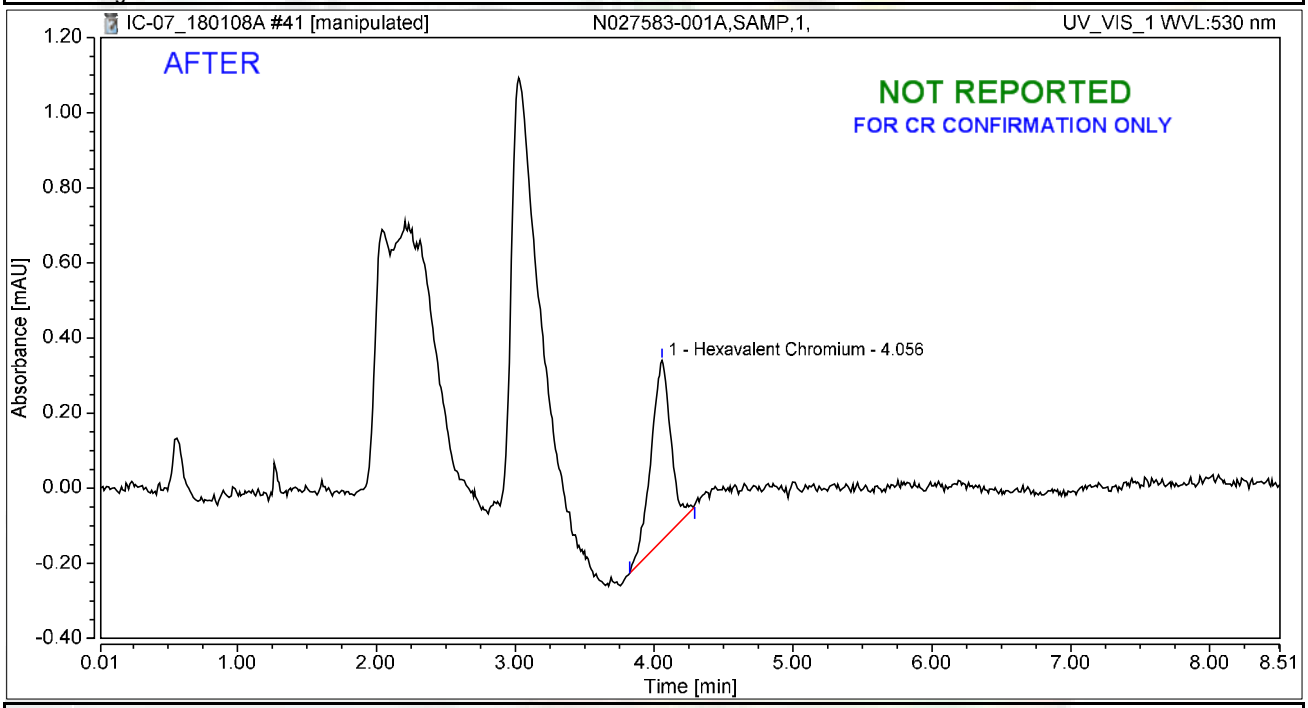
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.079	0.479	100.00	100.00	0.3088
Total:			**0.079**	**0.479**	**100.00**	**100.00**	

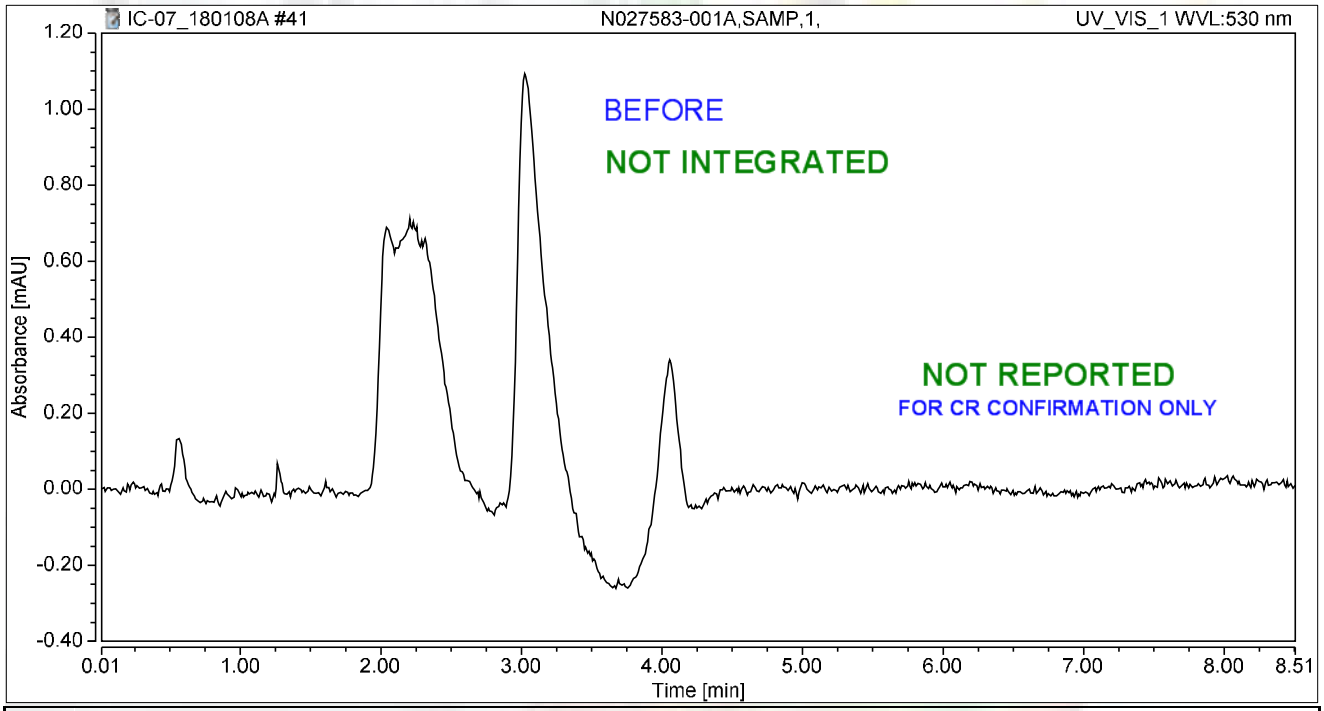
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

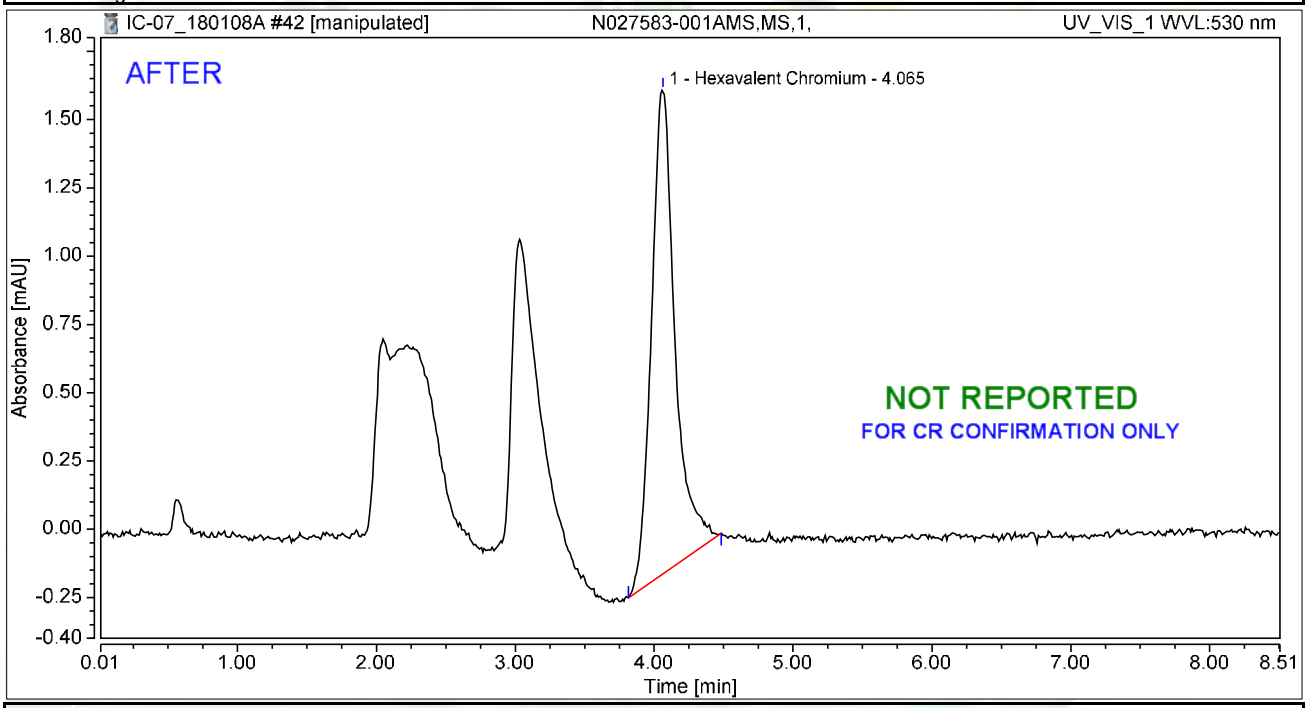
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.350	1.773	100.00	100.00	1.3670
Total:			**0.350**	**1.773**	**100.00**	**100.00**	

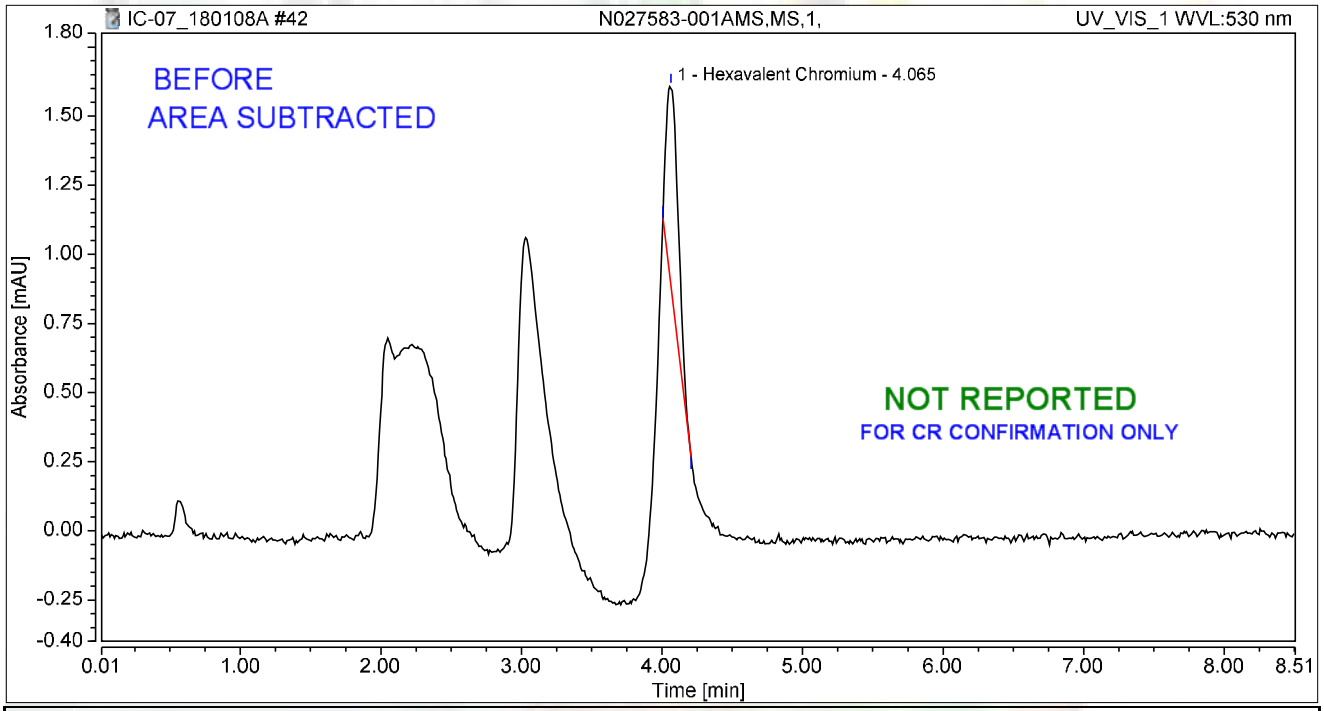
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.073	0.730	100.00	100.00	0.2831
Total:			**0.073**	**0.730**	**100.00**	**100.00**	

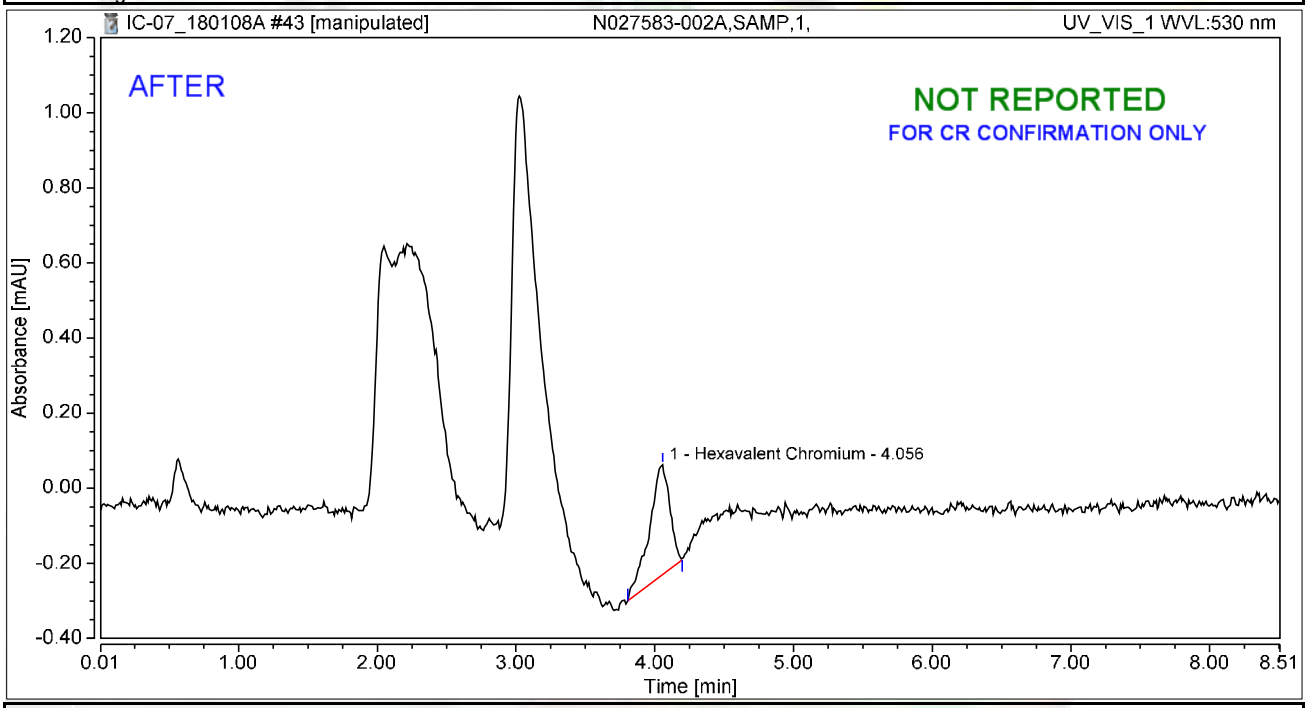
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.050	0.292	100.00	100.00	0.1973
Total:			**0.050**	**0.292**	**100.00**	**100.00**	

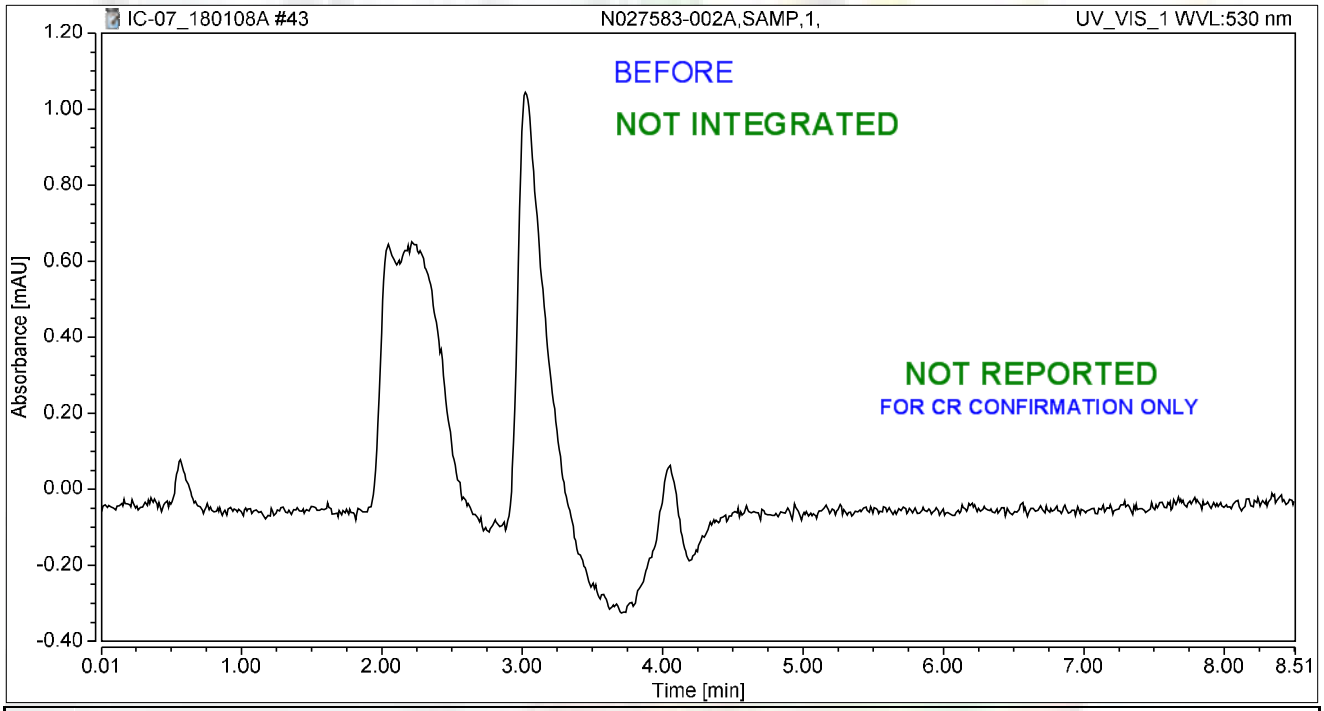
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

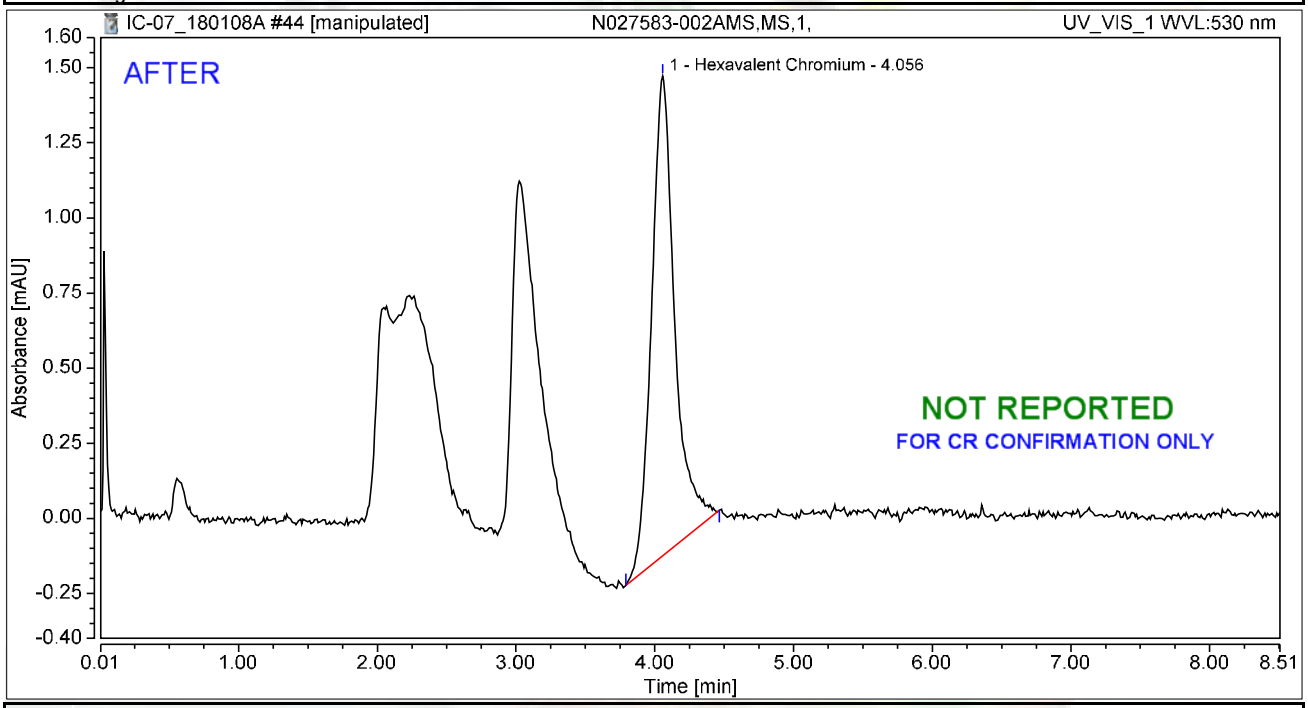
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.310	1.597	100.00	100.00	1.2138
Total:			**0.310**	**1.597**	**100.00**	**100.00**	

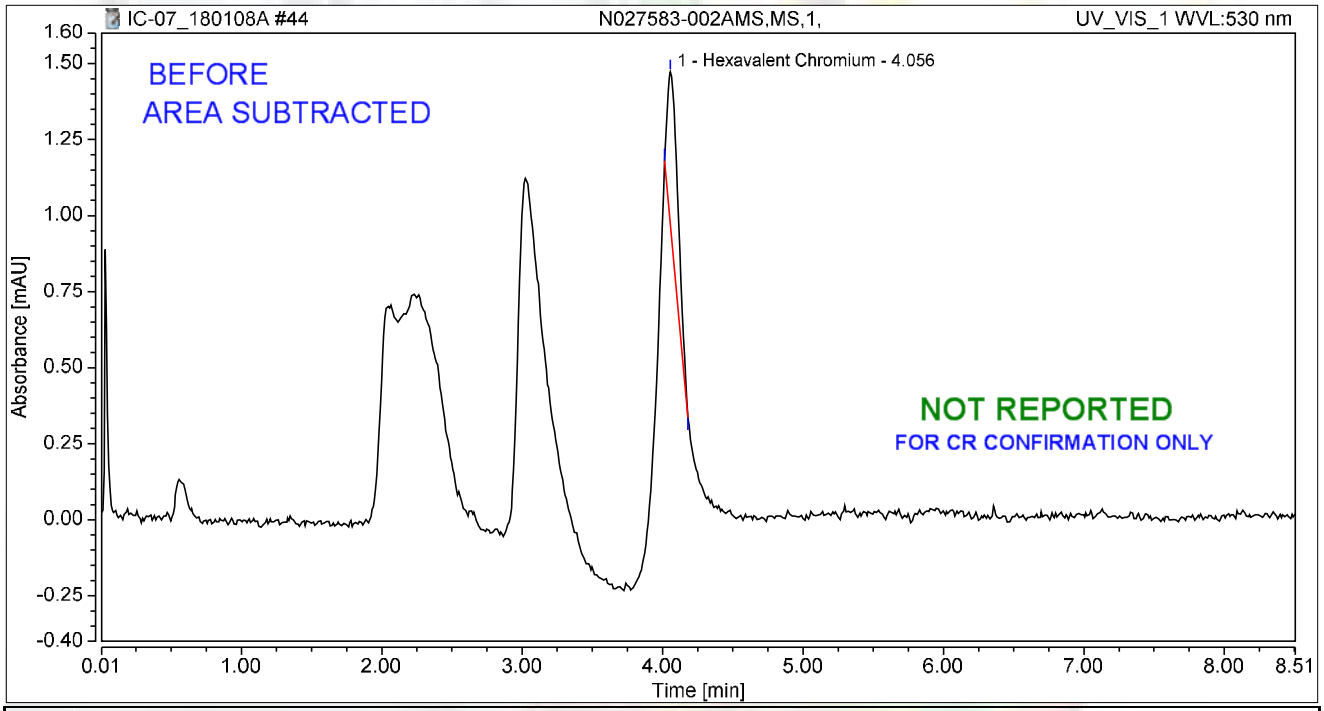
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.047	0.503	100.00	100.00	0.1810
Total:			**0.047**	**0.503**	**100.00**	**100.00**	

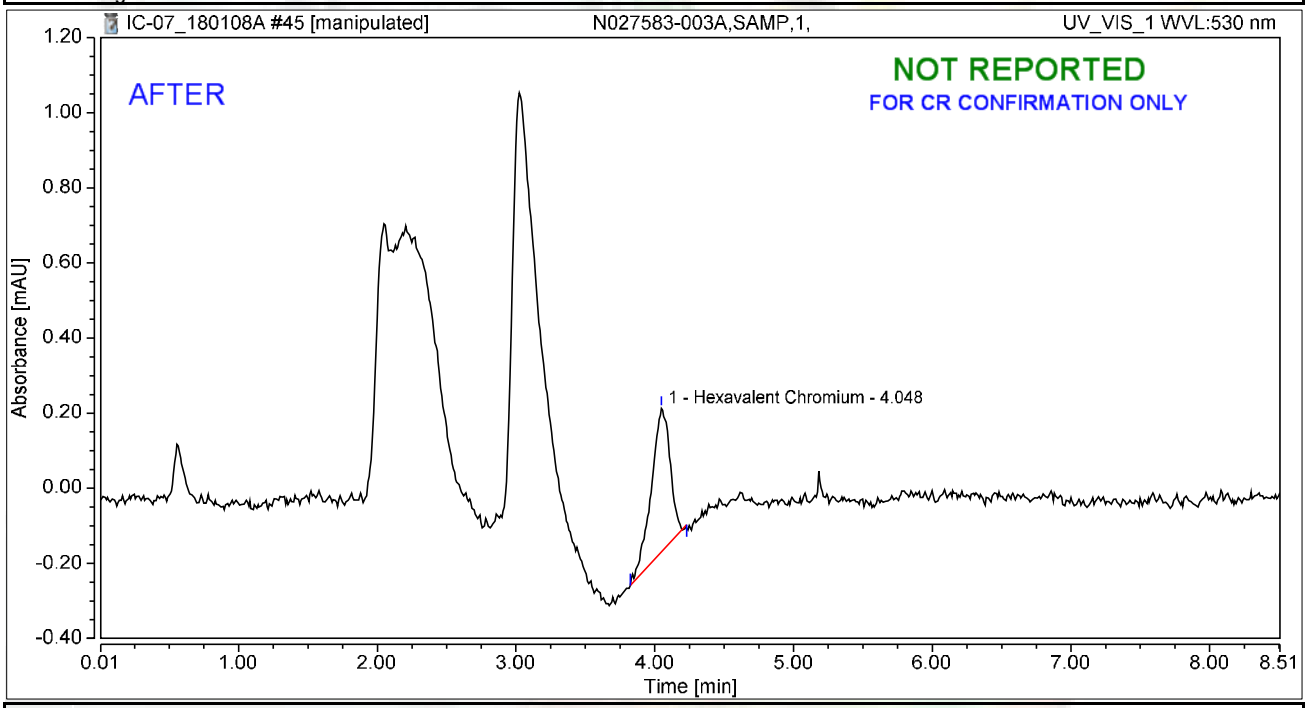
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.060	0.383	100.00	100.00	0.2344
Total:			**0.060**	**0.383**	**100.00**	**100.00**	

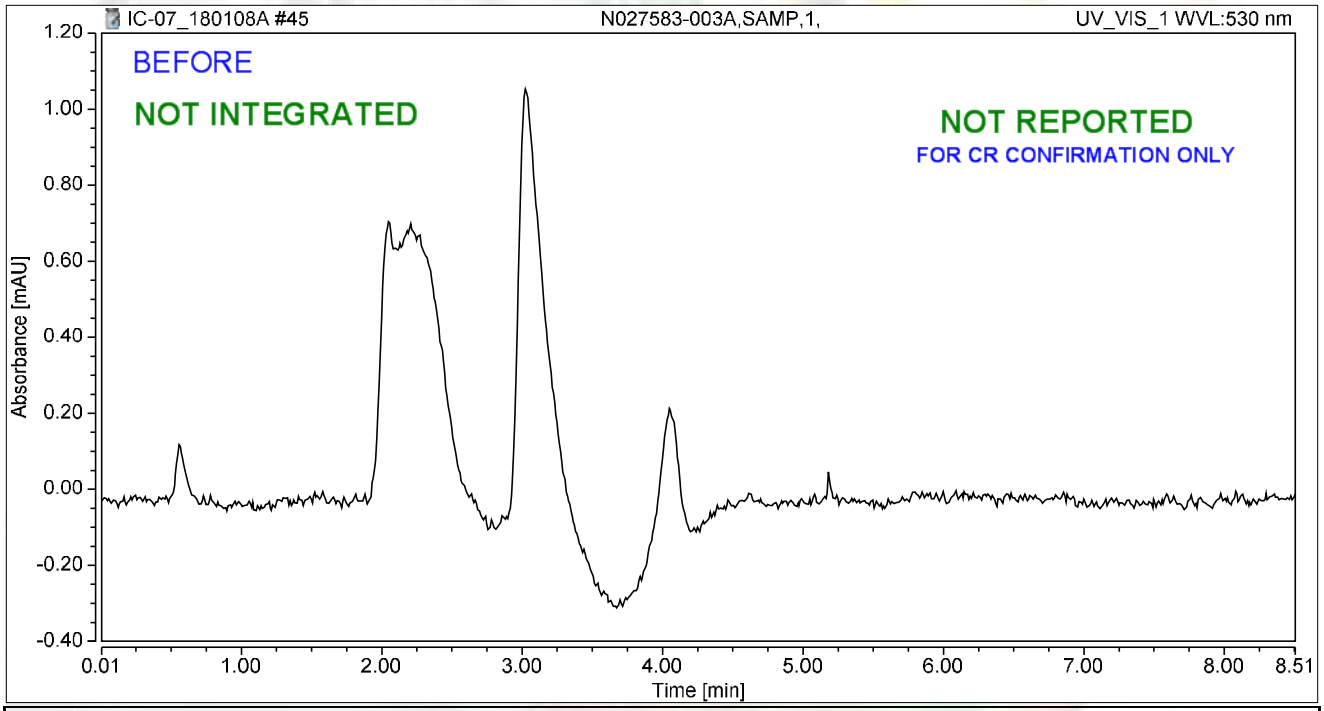
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

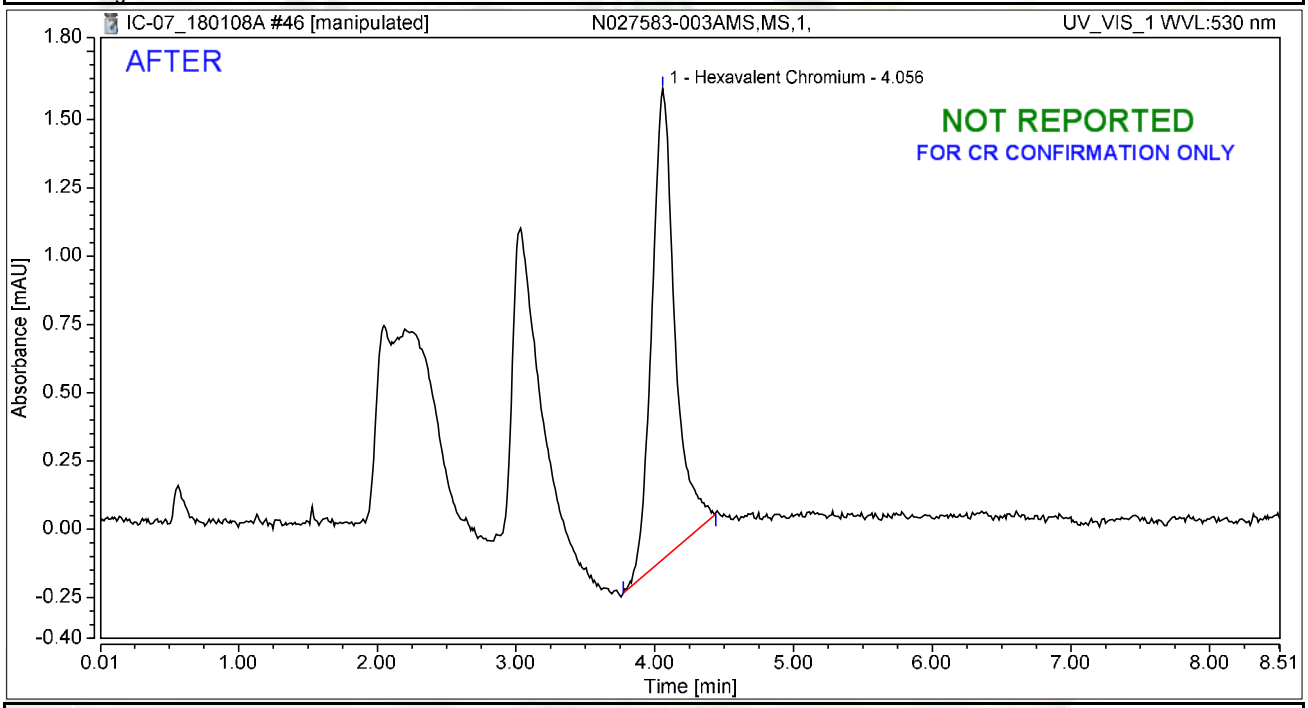
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.335	1.726	100.00	100.00	1.3100
Total:			**0.335**	**1.726**	**100.00**	**100.00**	

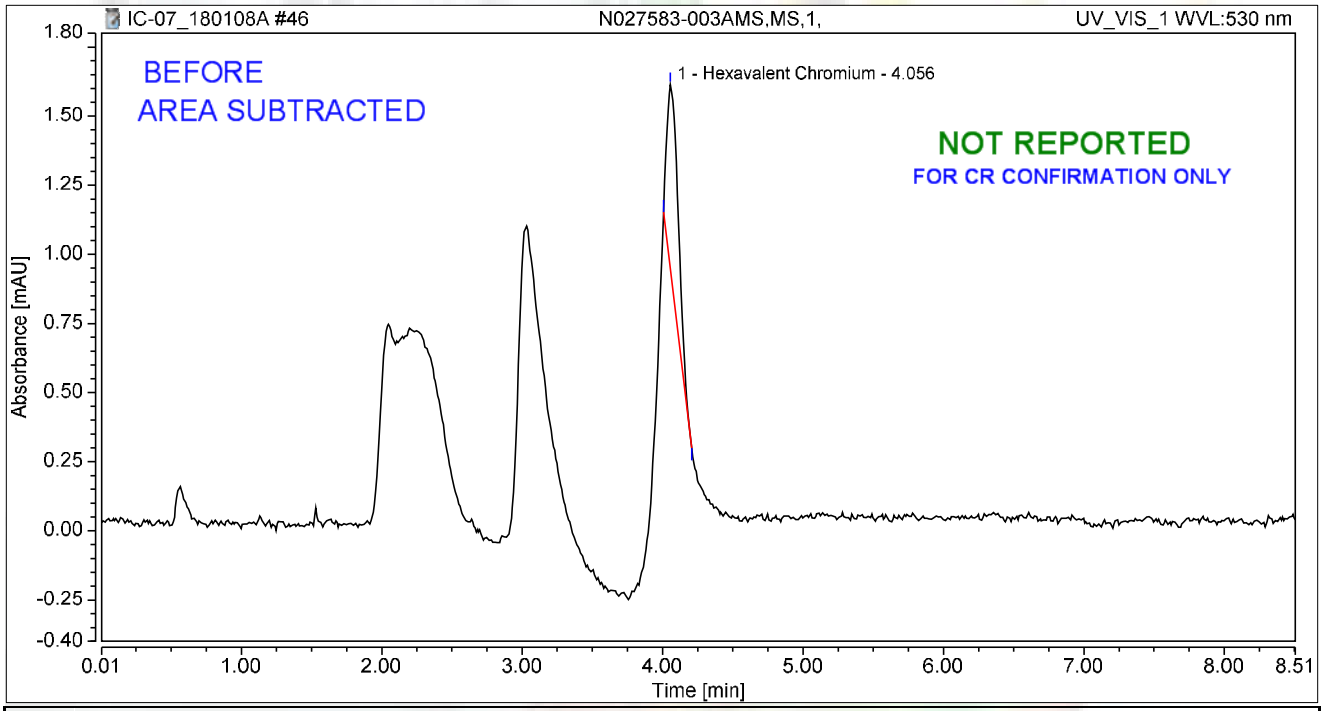
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.066	0.675	100.00	100.00	0.2558
Total:			**0.066**	**0.675**	**100.00**	**100.00**	

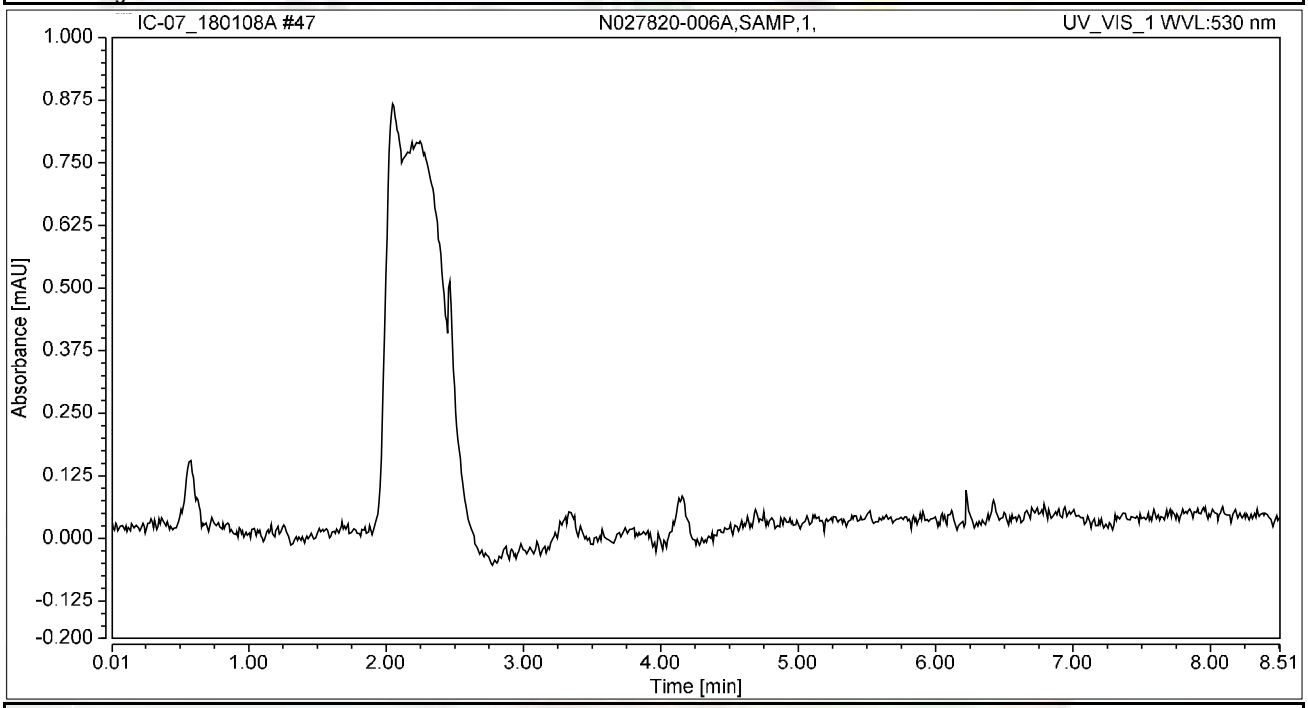
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

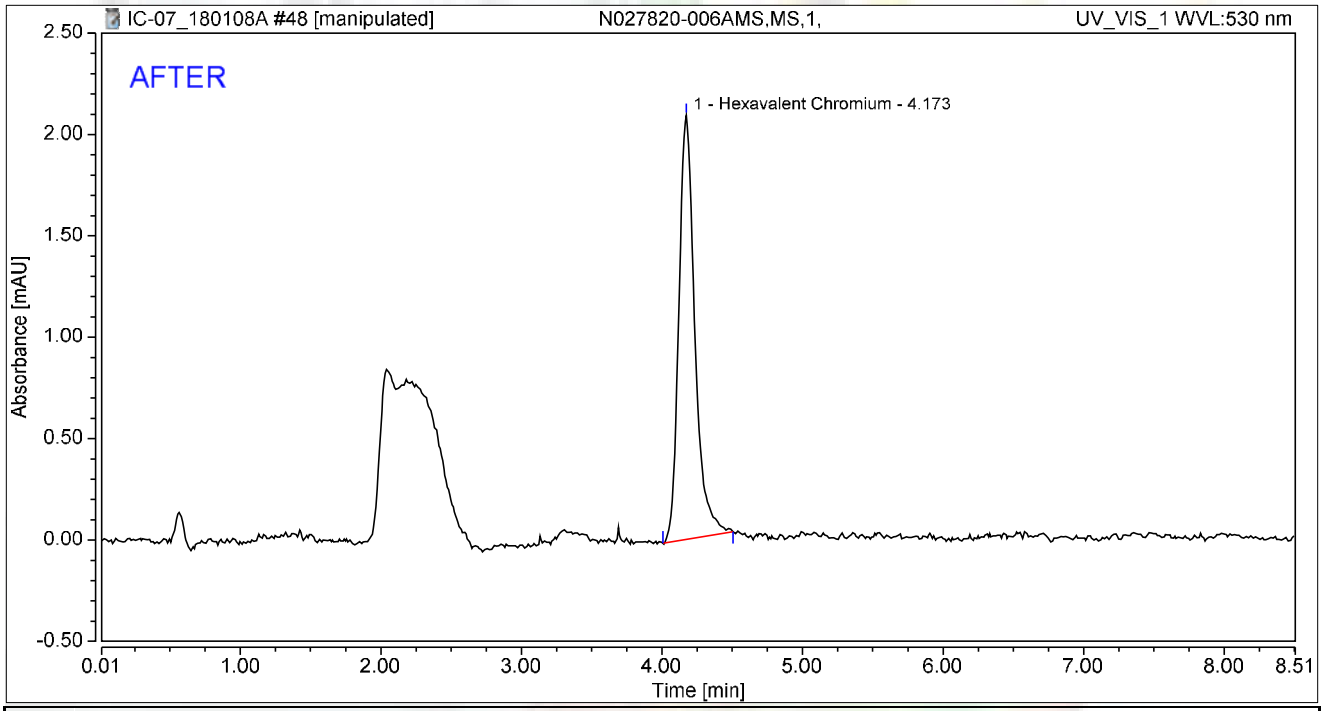
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.090	100.00	100.00	1.0786
Total:			**0.276**	**2.090**	**100.00**	**100.00**	

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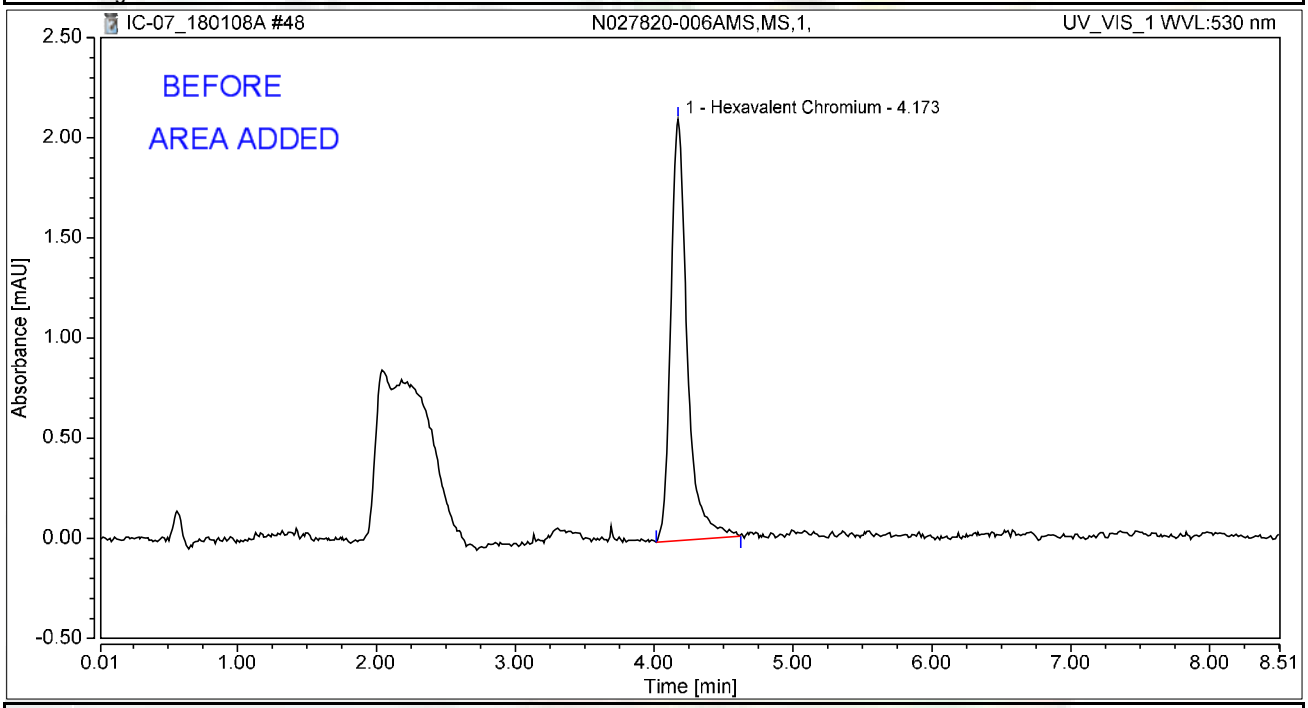
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.289	2.105	100.00	100.00	1.1287
Total:			**0.289**	**2.105**	**100.00**	**100.00**	

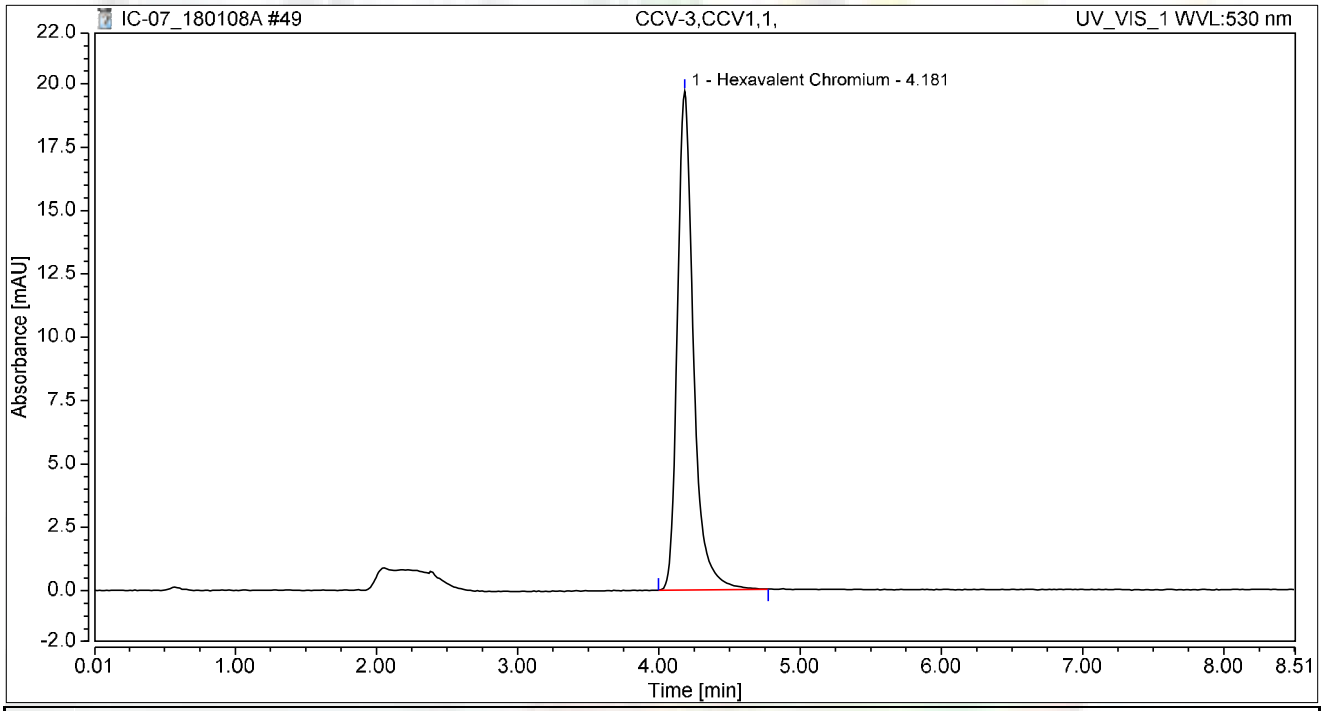
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

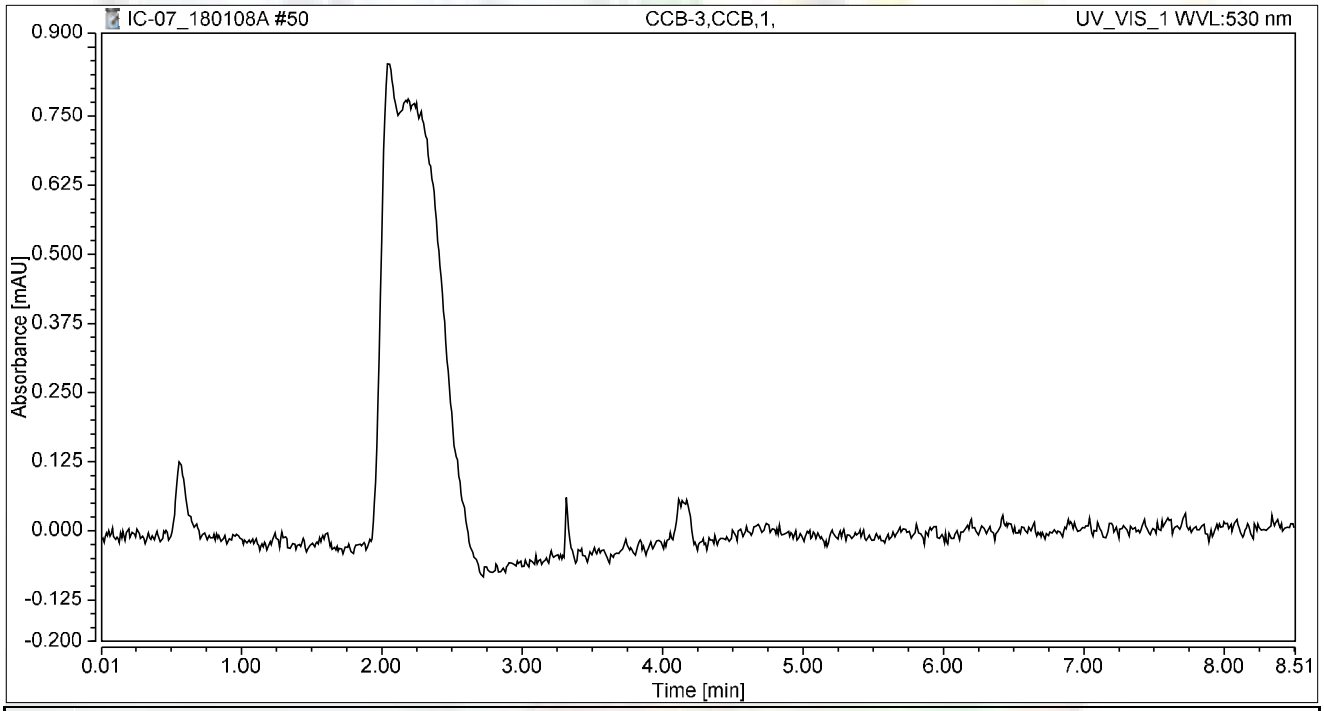
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.598	19.677	100.00	100.00	10.1608
Total:			**2.598**	**19.677**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

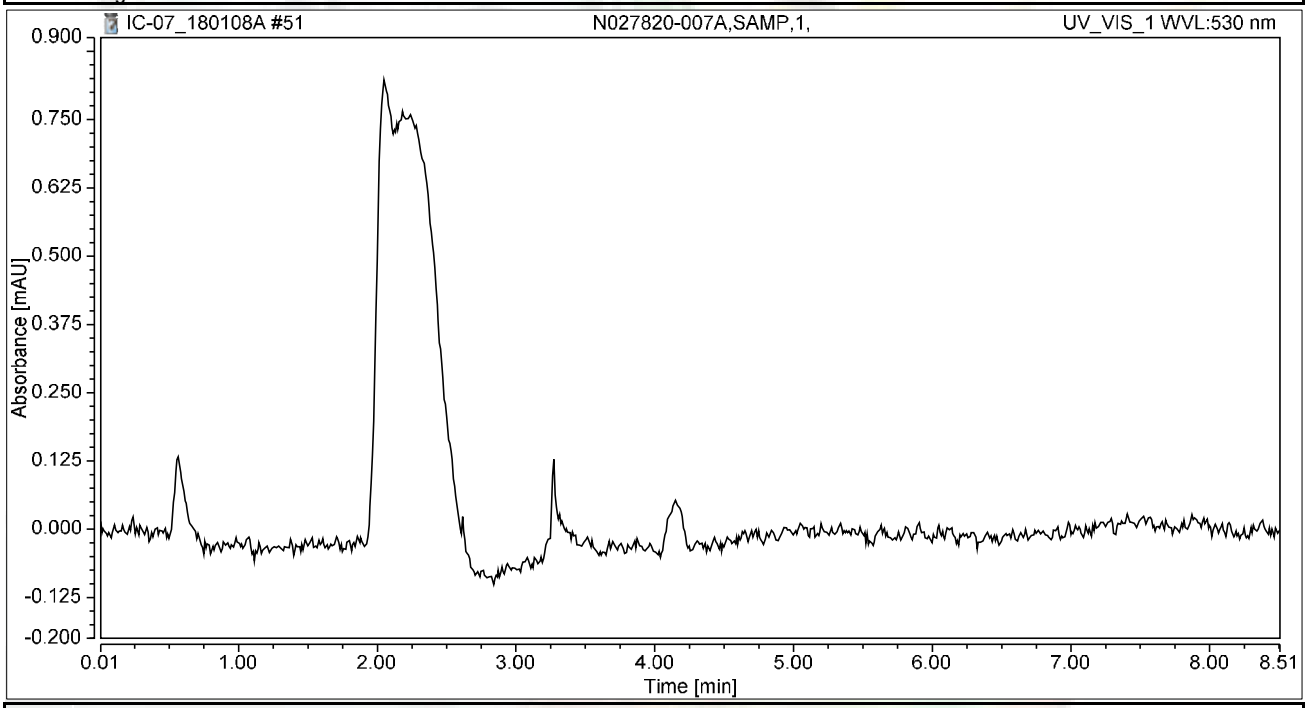
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

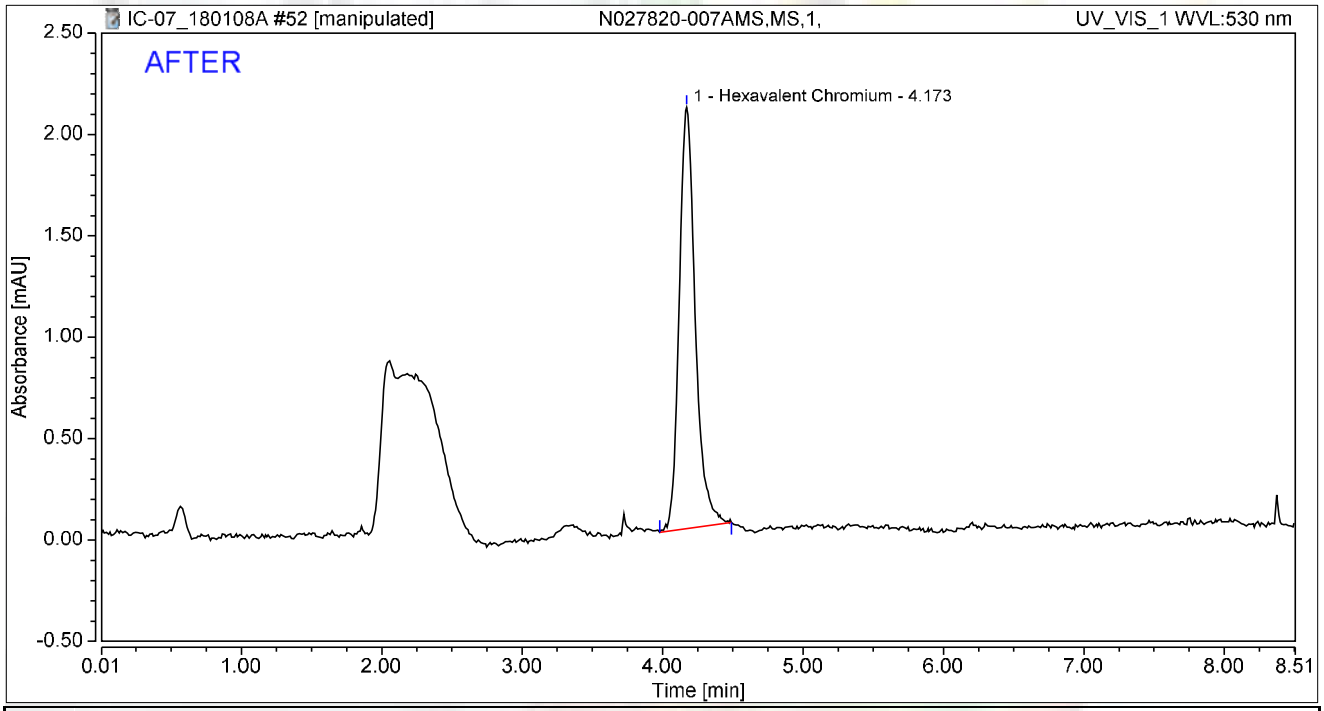
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.077	100.00	100.00	1.0767
Total:			**0.275**	**2.077**	**100.00**	**100.00**	

rba 1/10/2018

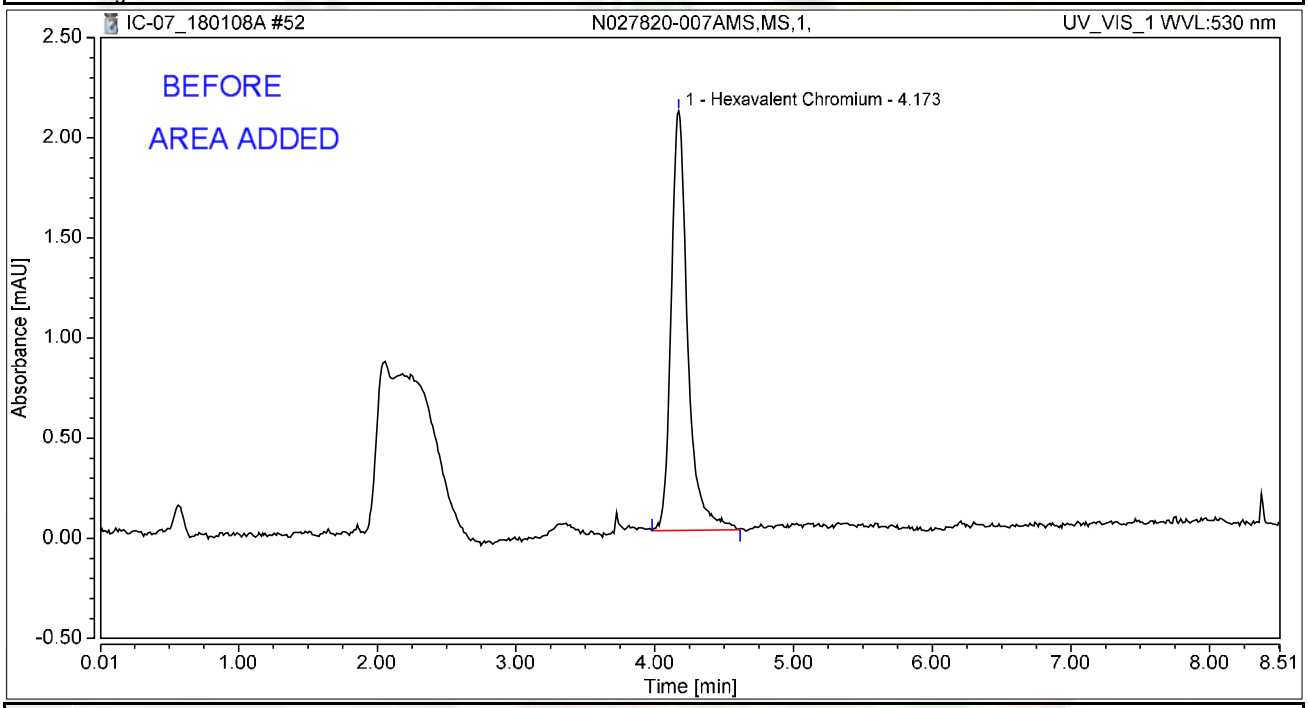
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.290	2.094	100.00	100.00	1.1336
Total:			**0.290**	**2.094**	**100.00**	**100.00**	

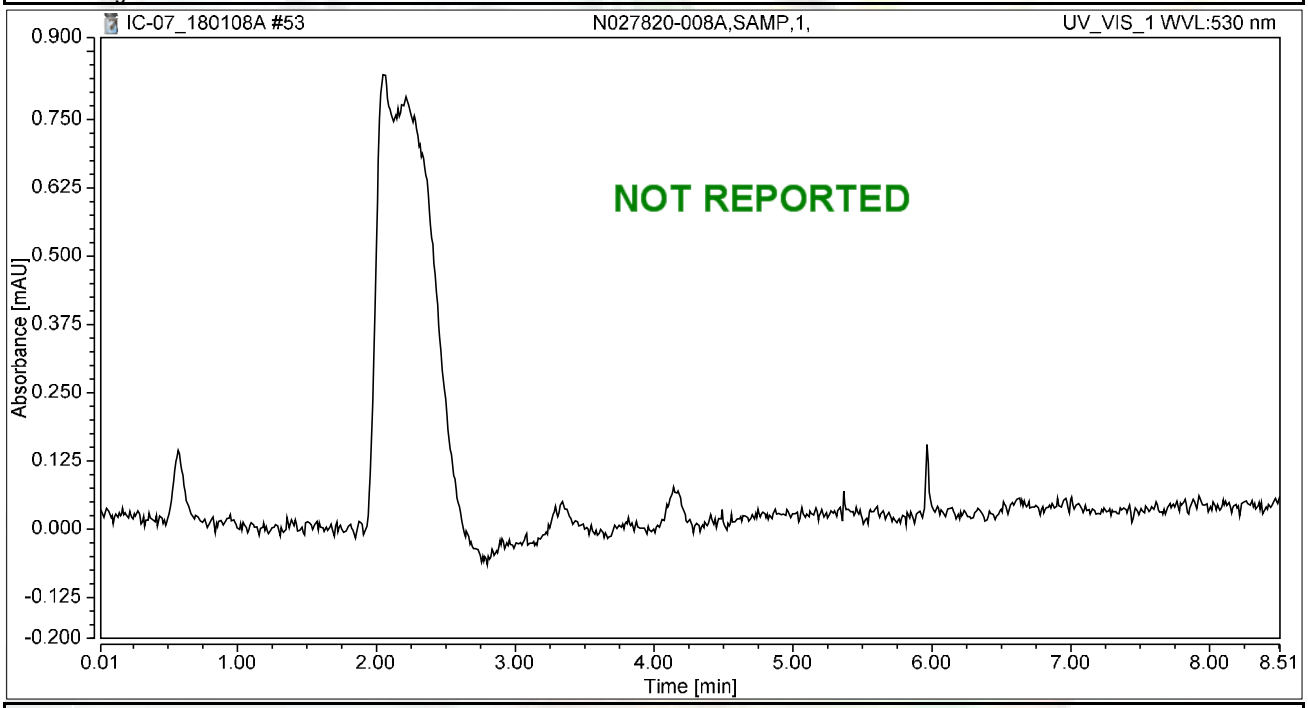
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

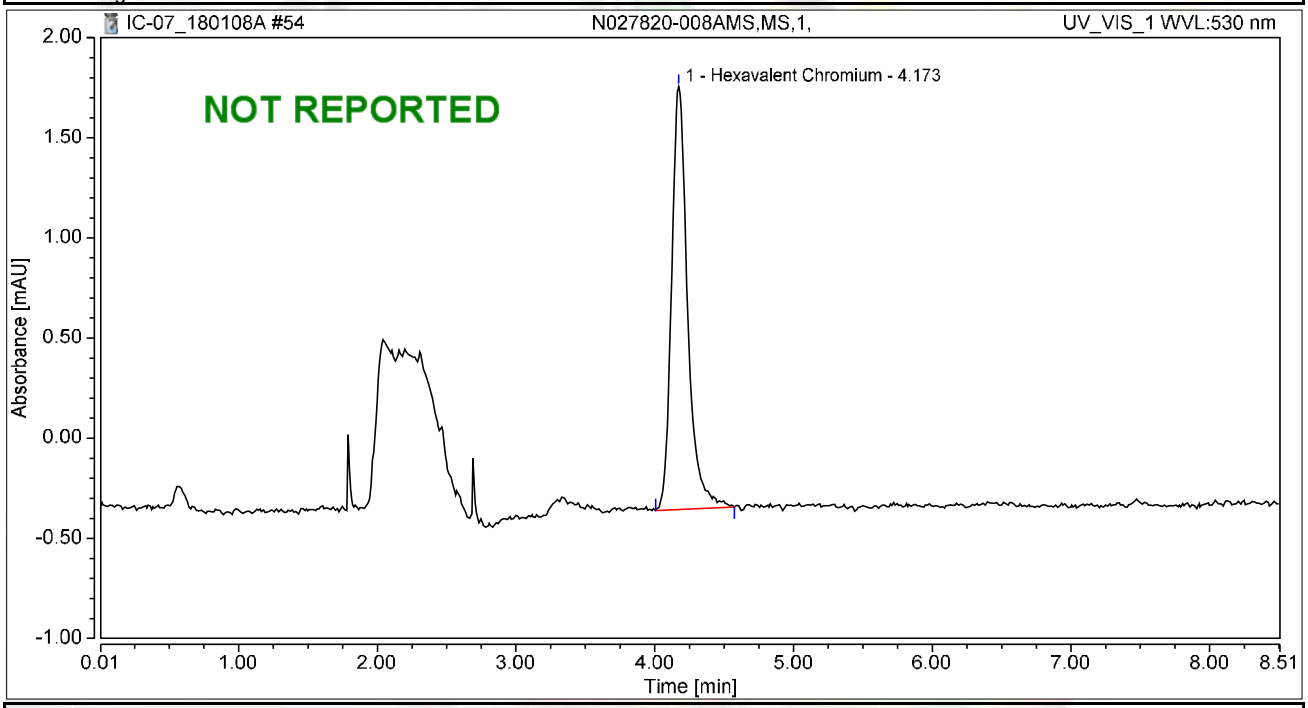
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

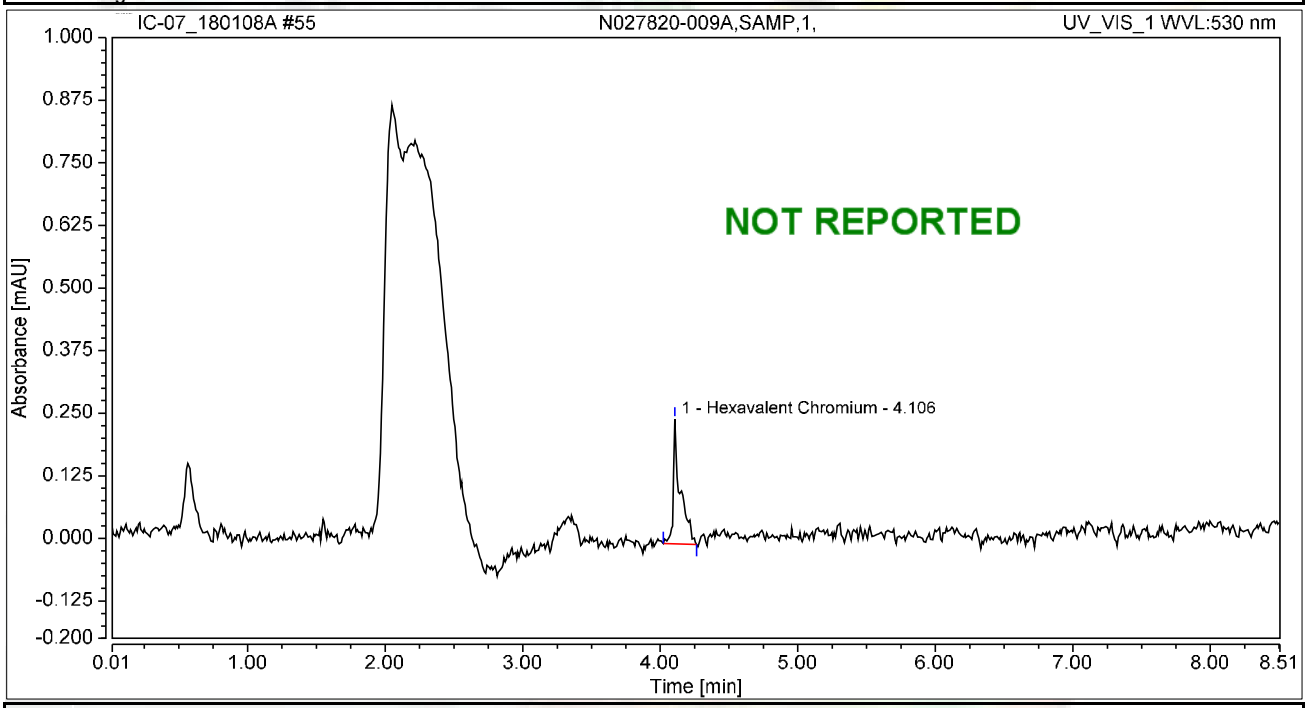
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.113	100.00	100.00	1.1081
Total:			**0.283**	**2.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

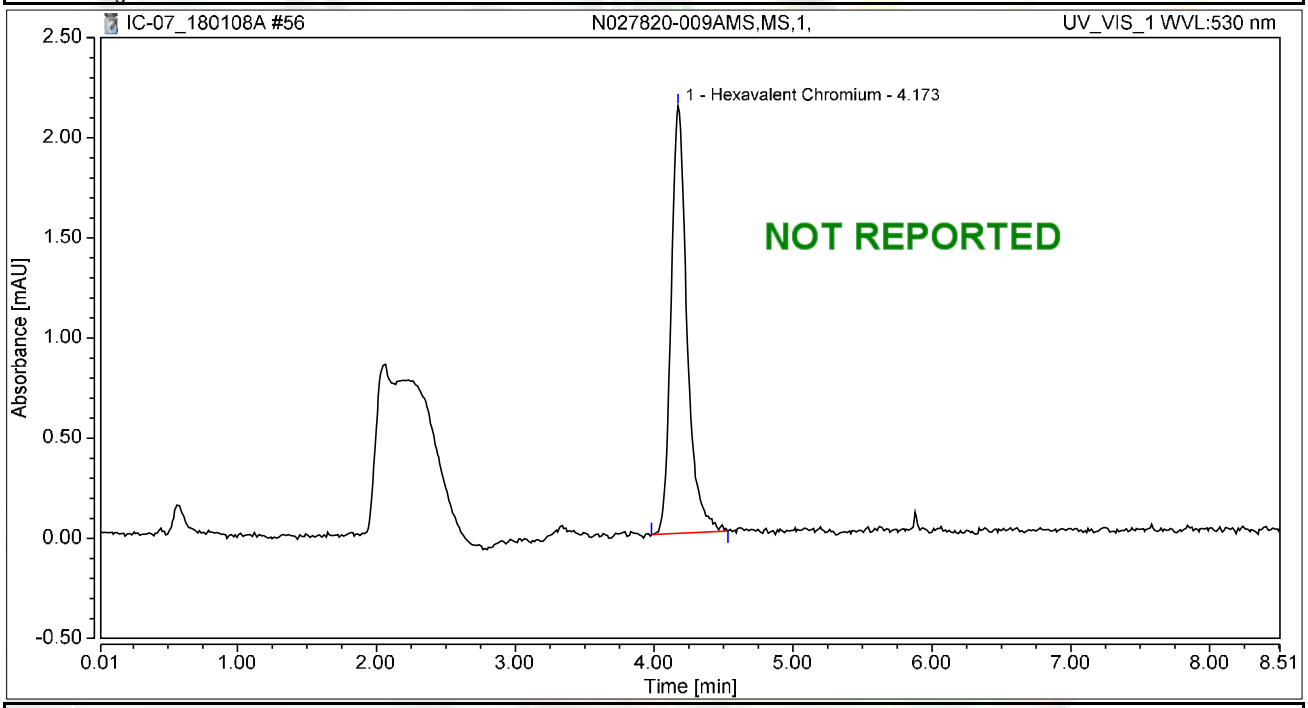
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.015	0.249	100.00	100.00	0.0568
Total:			**0.015**	**0.249**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

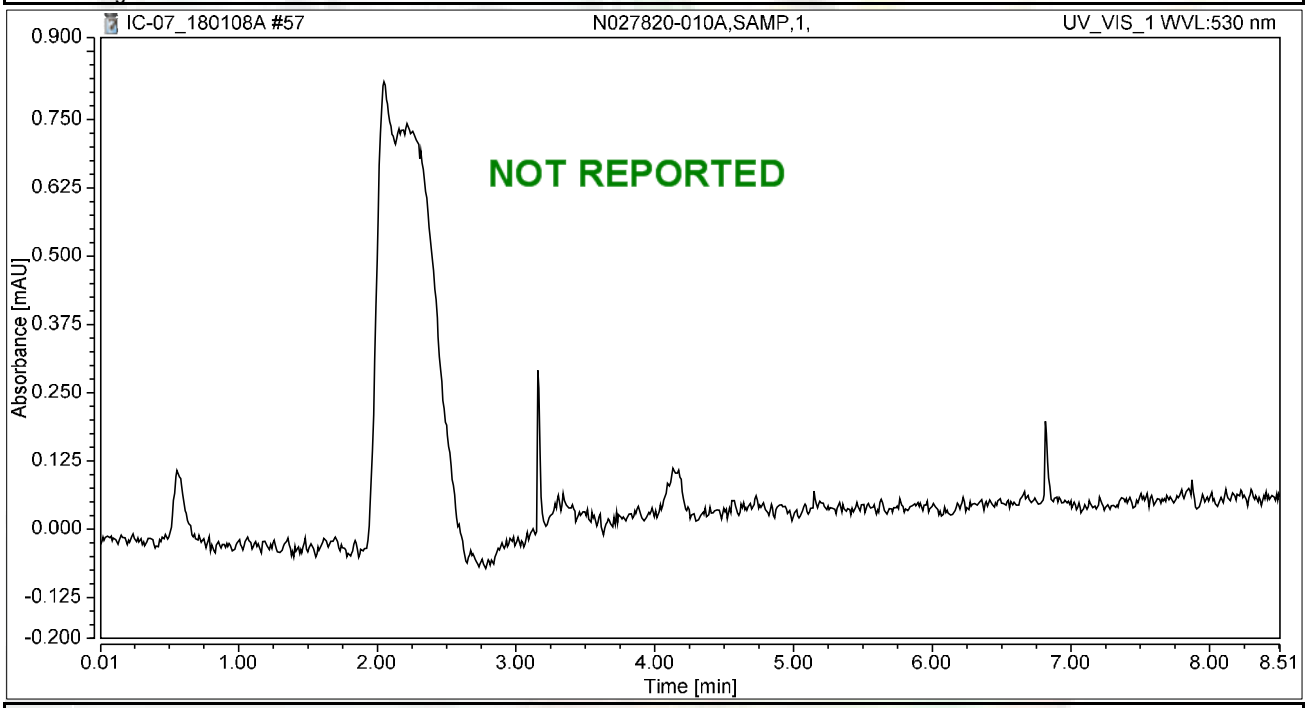
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.134	100.00	100.00	1.1118
Total:			**0.284**	**2.134**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

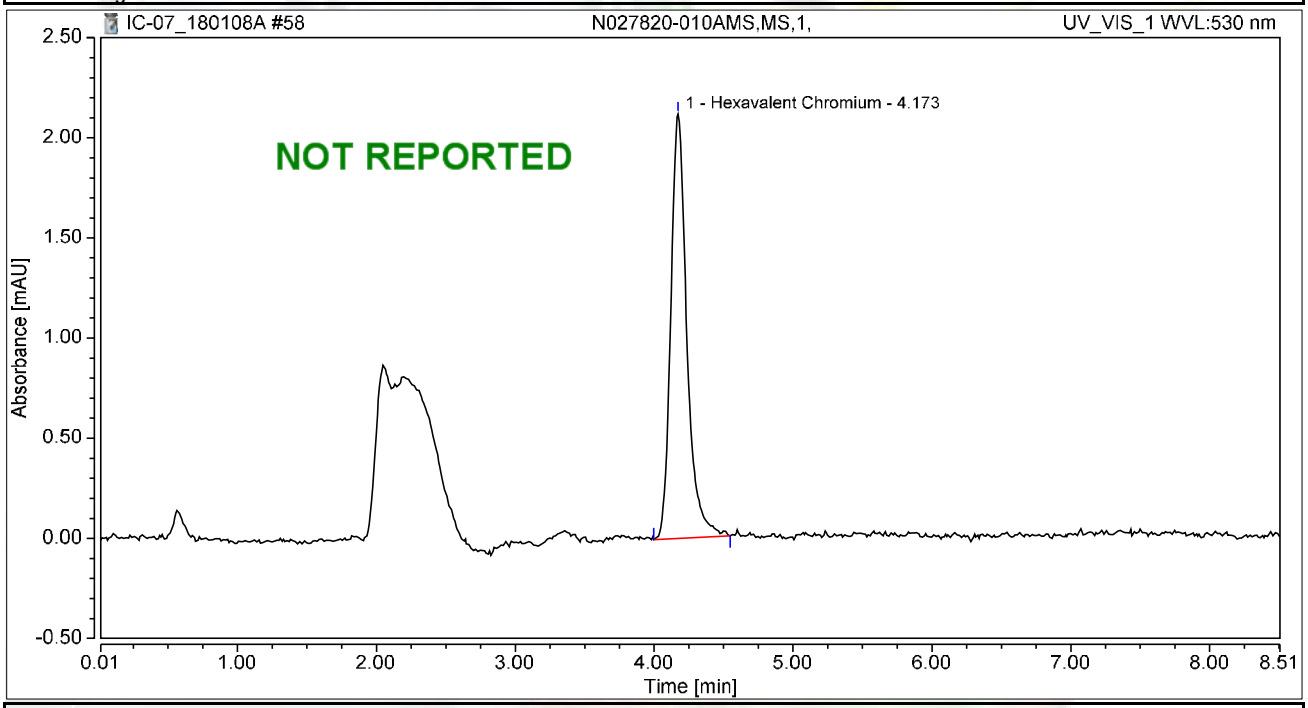
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

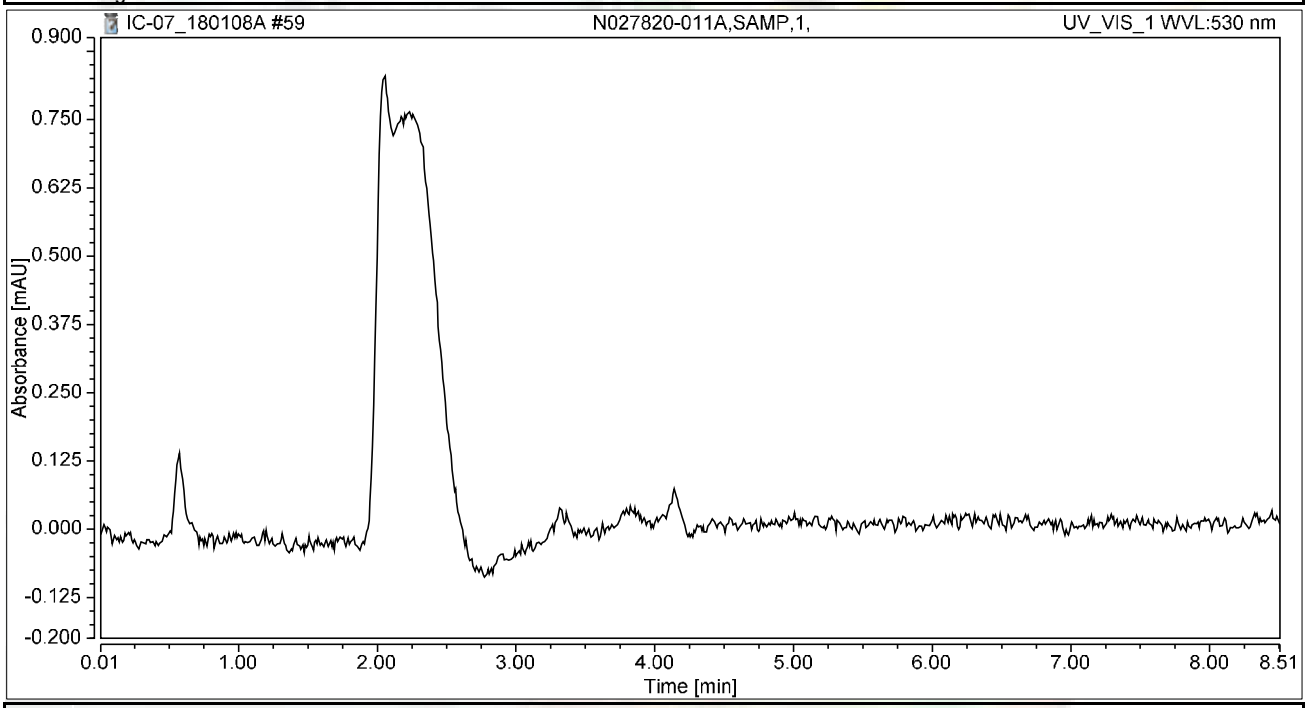
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.118	100.00	100.00	1.1083
Total:			**0.283**	**2.118**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

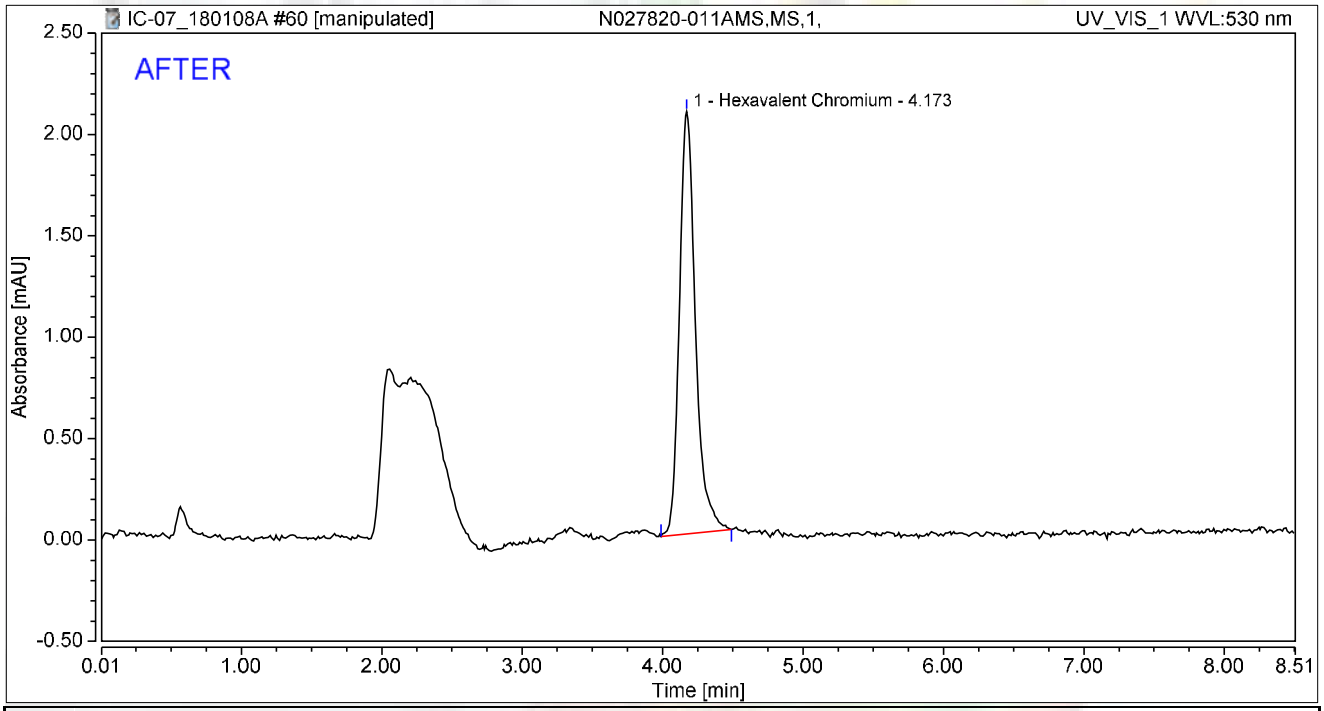
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.083	100.00	100.00	1.0774
Total:			**0.275**	**2.083**	**100.00**	**100.00**	

rba 1/10/2018

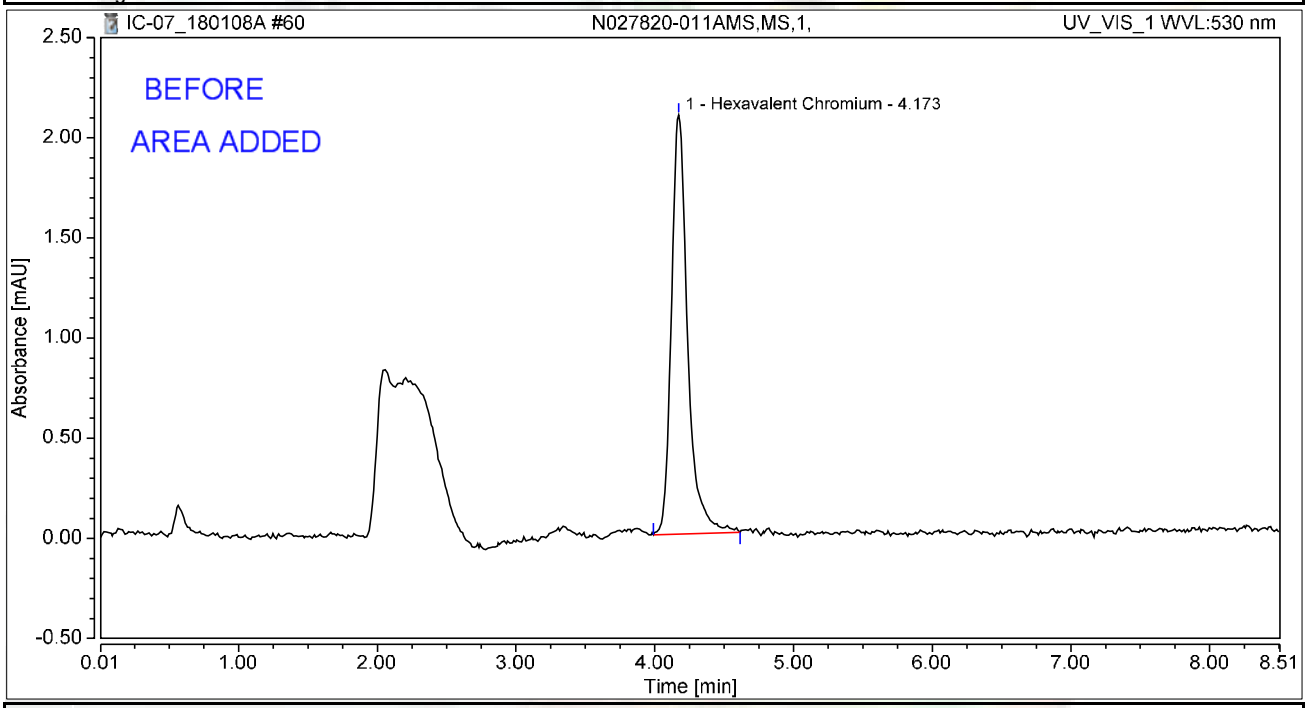
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.092	100.00	100.00	1.1105
Total:			**0.284**	**2.092**	**100.00**	**100.00**	

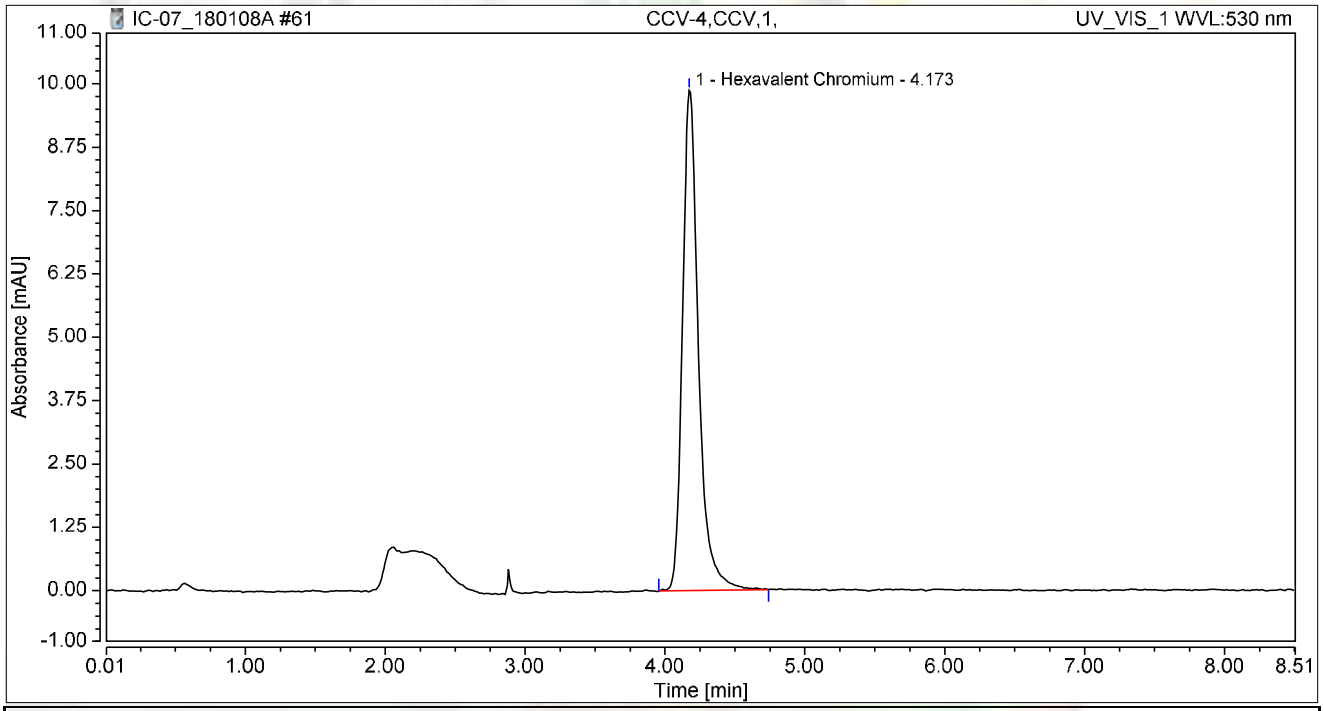
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

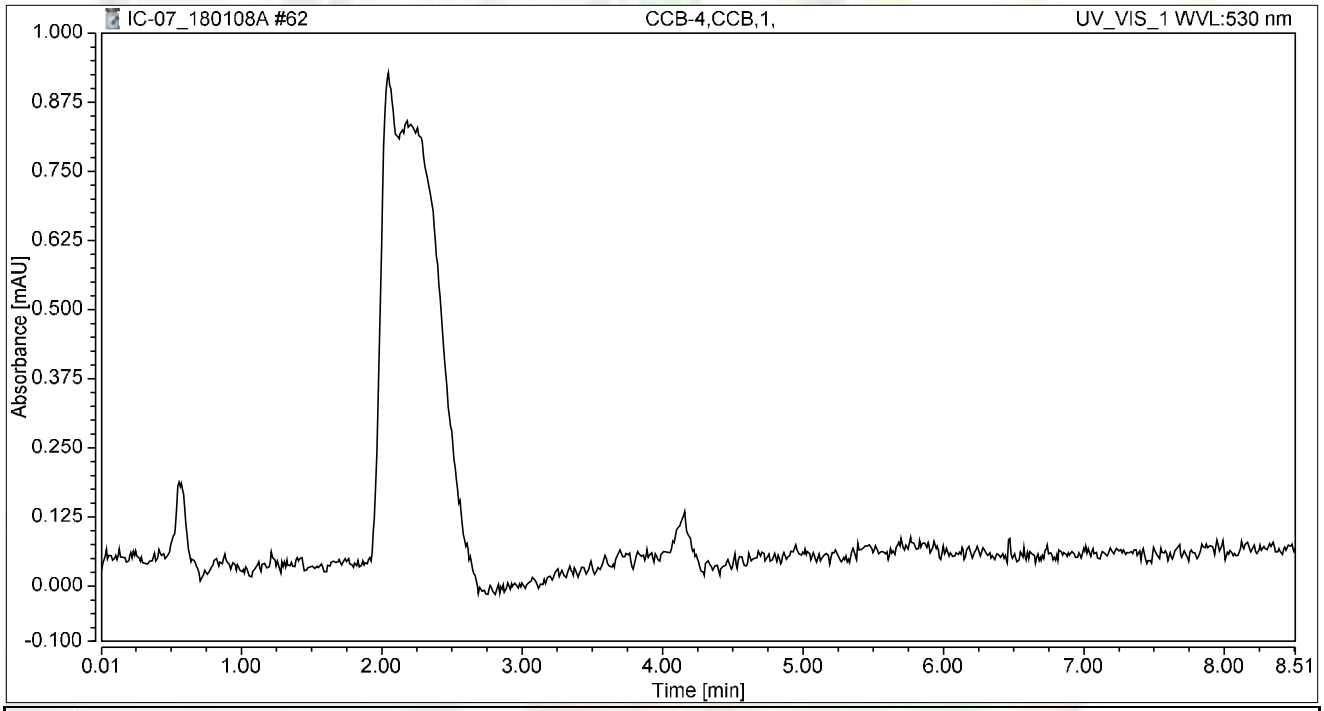
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.308	9.867	100.00	100.00	5.1168
Total:			**1.308**	**9.867**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

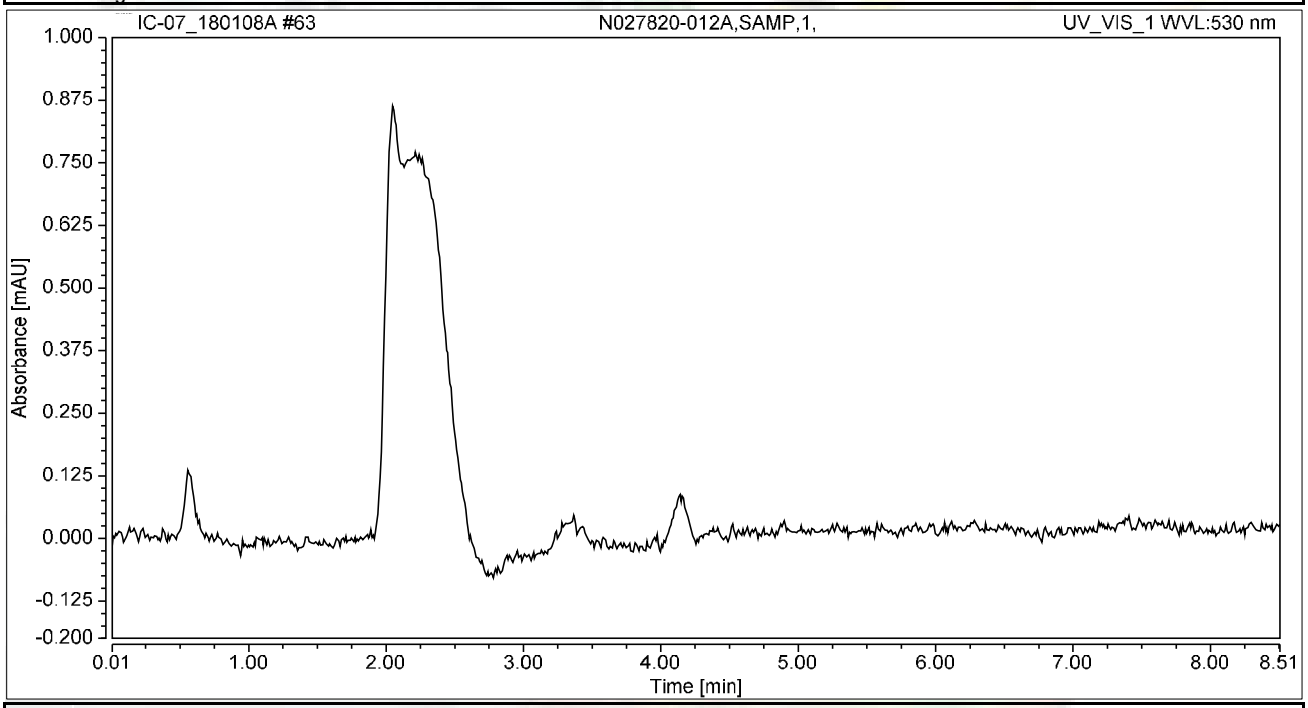
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

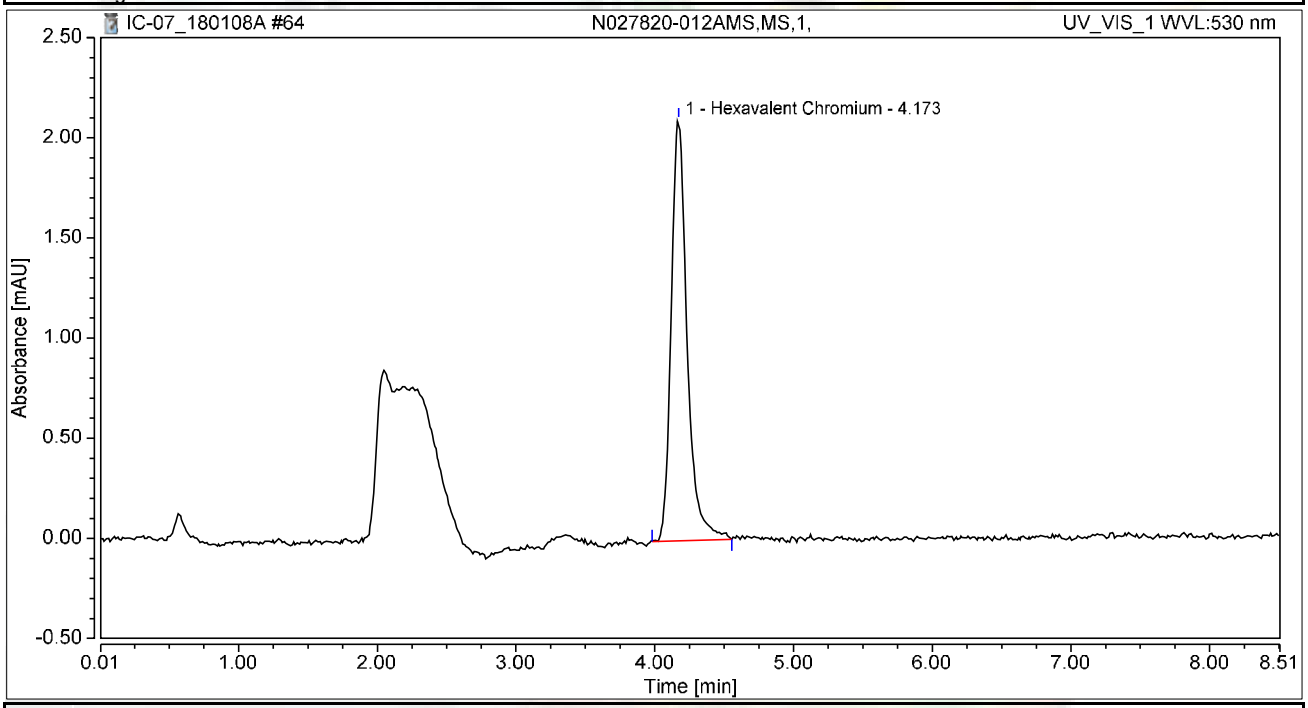
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

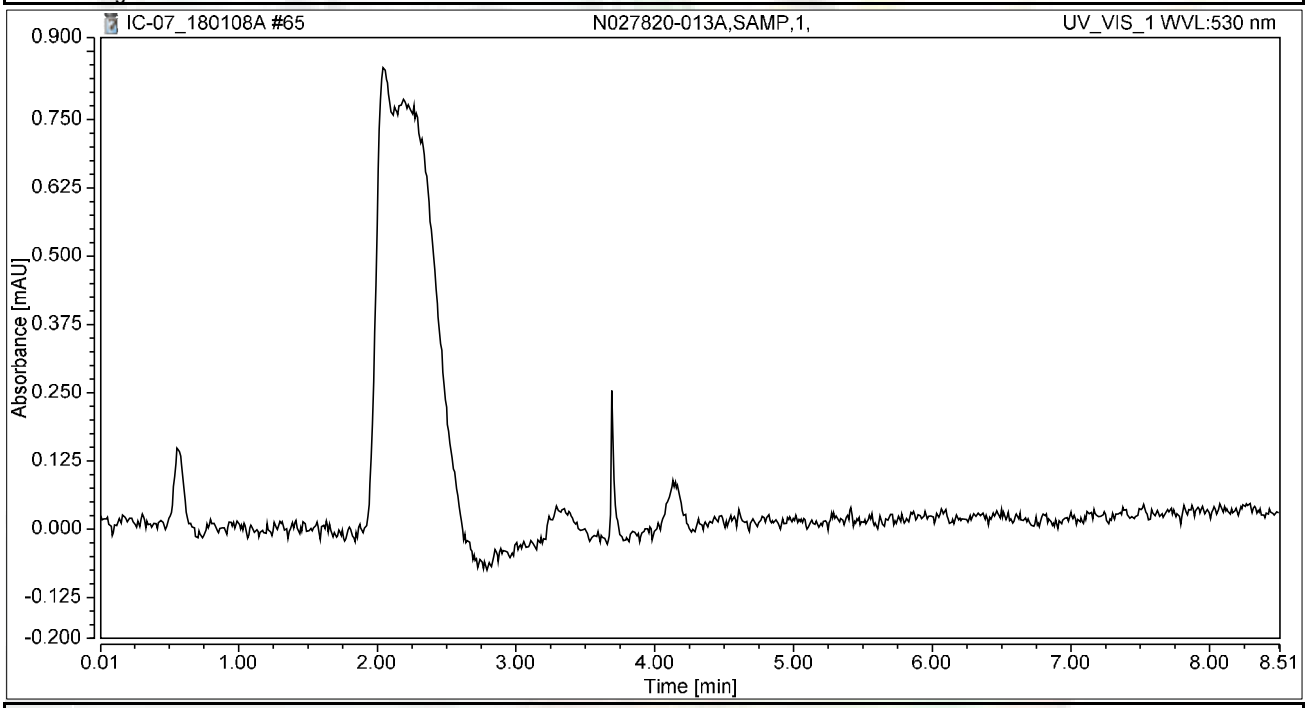
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.280	2.103	100.00	100.00	1.0962
Total:			**0.280**	**2.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

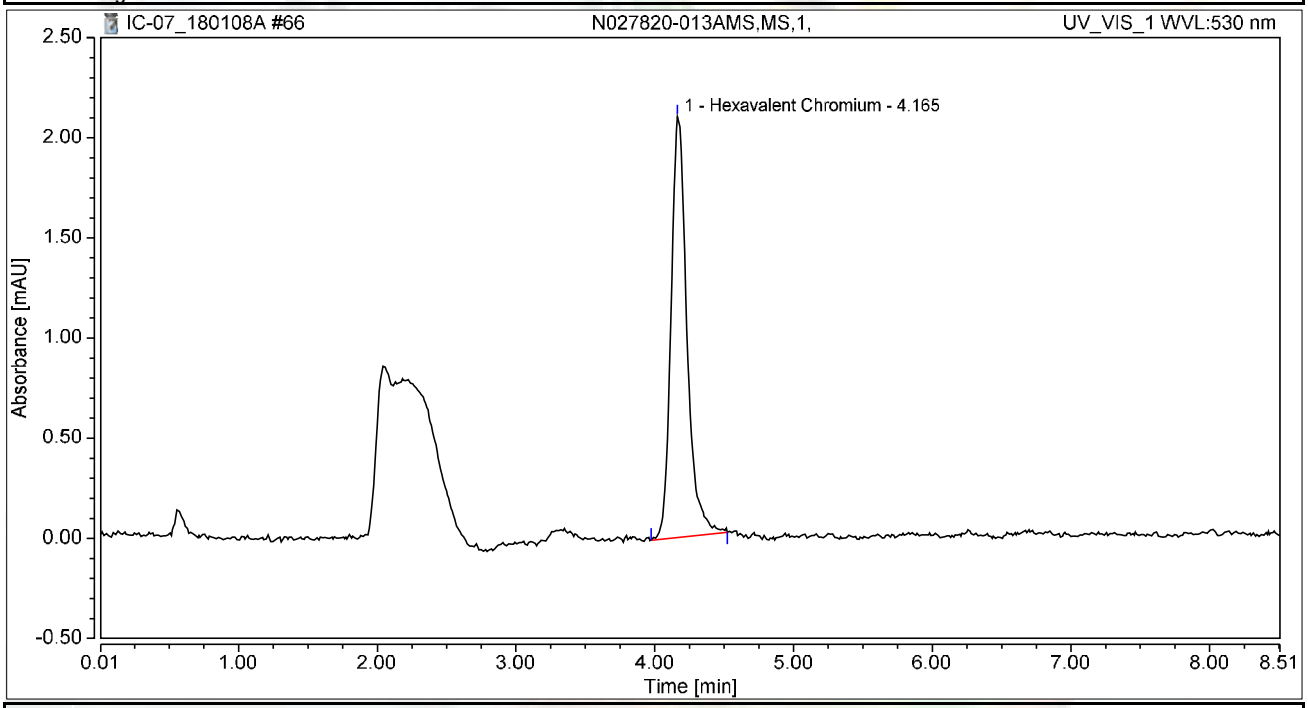
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

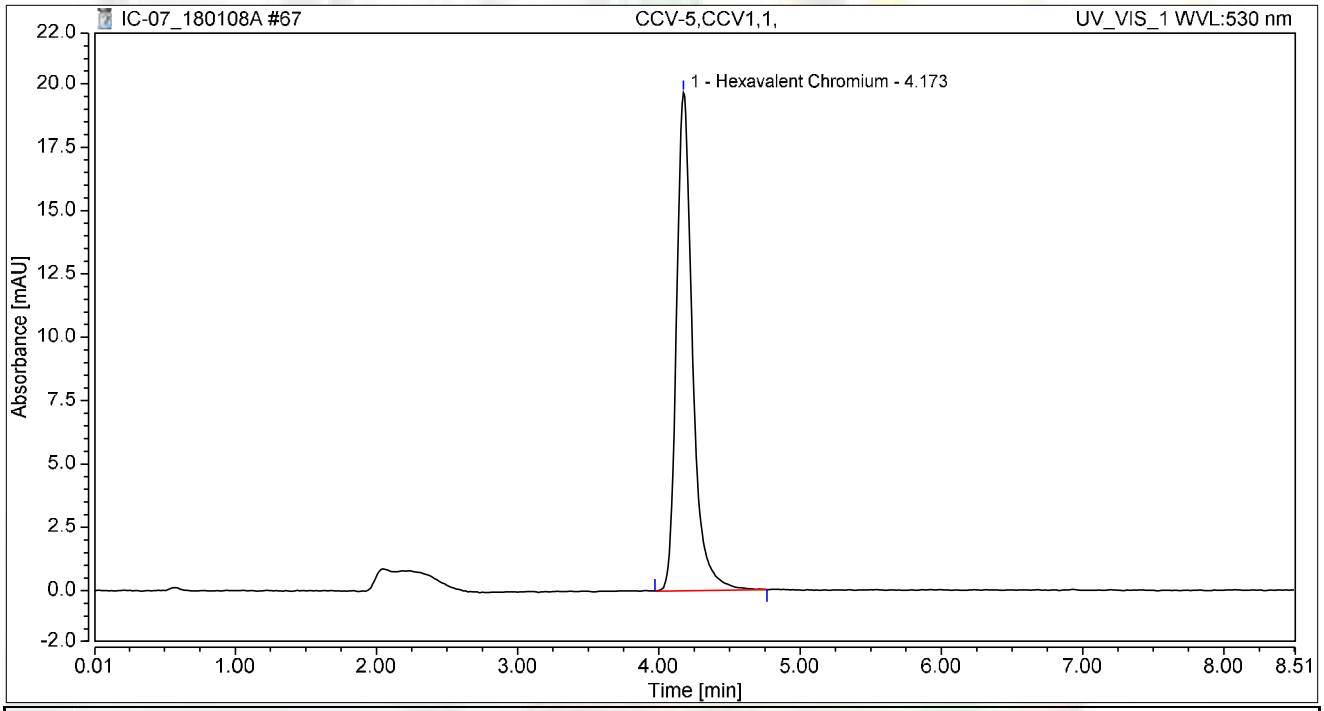
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.280	2.101	100.00	100.00	1.0947
Total:			**0.280**	**2.101**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

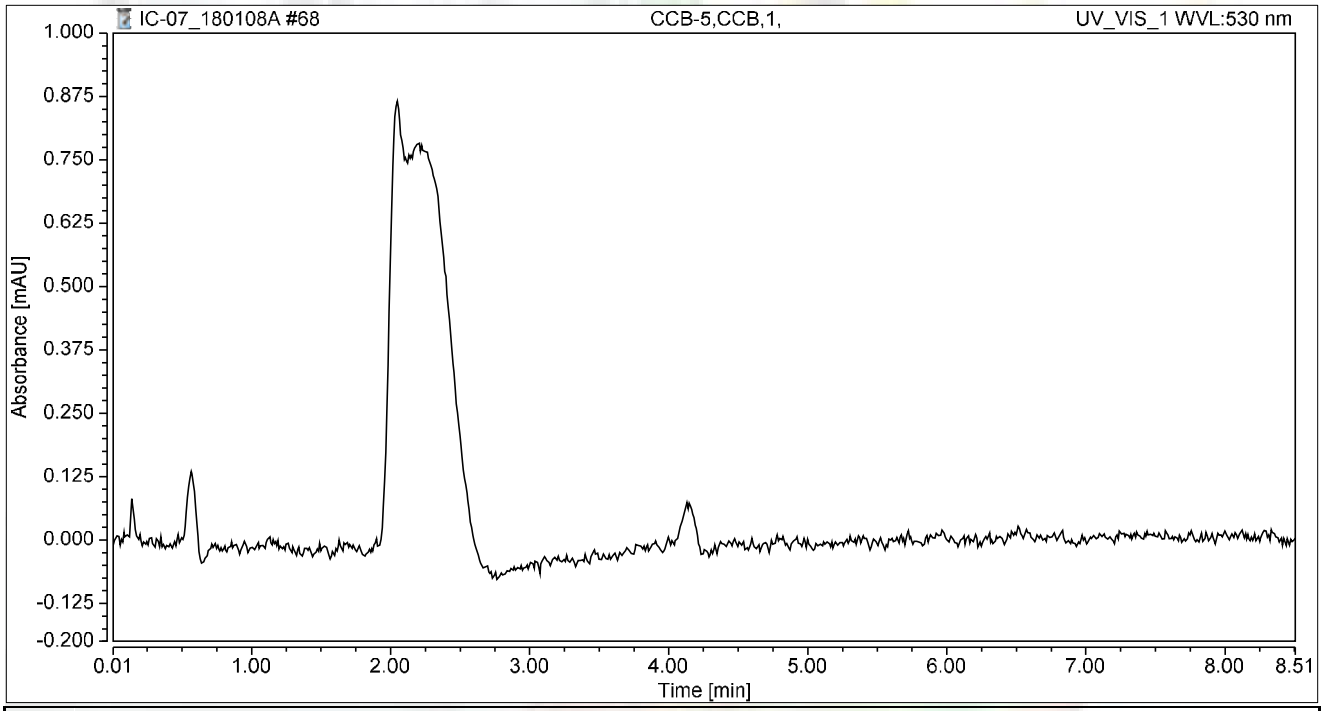
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.601	19.666	100.00	100.00	10.1741
Total:			**2.601**	**19.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121239 **Analyst:** QBM

ASSET #: N027812 **Date Analyzed:** 1/5/2018

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in MSD failed, high bias. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/15/2018

2nd Level Reviewer RJB 01/15/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027812-001E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.3864	*	1
	=	0.3864	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.39 mg/L

RLB 01/15/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

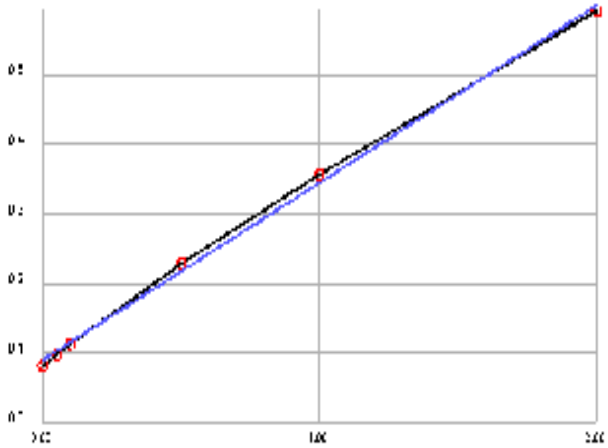
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2555x + 0.0897
Correlation	.998873

Calibrant	Energy	Set	Conc
1	0.0820	0.0000	-0.0300
2	0.0978	0.0500	0.0318
3	0.1126	0.1000	0.0898
4	0.2286	0.5000	0.5437
5	0.3578	1.0000	1.0493
6	0.5919	2.0000	1.9654

Notes:

01/15/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **ICV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.529	0.050	0.5000	0	106	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	99.0	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.472	0.050	0.5000	0	94.3	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.532	0.050	0.5000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **ICB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 01-05-2018 14:27
Time end: 01-05-2018 17:01

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:26:07	-0.0026		0.0890
2	<BLANK>	16:27:08	-0.0292		0.0822
3	<CAL1>	16:28:02	-0.0300	[0]	0.0820
4	<CAL2>	16:28:57	0.0318	[0.05]	0.0978
5	<CAL3>	16:29:53	0.0898	[0.1]	0.1126
6	<CAL4>	16:30:53	0.5437	[0.5]	0.2286
7	<CAL5>	16:31:49	1.0493	[1]	0.3578
8	<CAL6>	16:32:50	1.9654	[2]	0.5919
9	,BLANK,BLANK,1, NOT REPORTED	16:33:46	0.0291		0.0971
10	,ICV,ICV,1,	16:34:40	0.5292		0.2249
11	,ICB,ICB,1,	16:35:41	-0.0147		0.0859
12	,MB-H2O,MBLK,1,	16:36:37	-0.0288		0.0823
13	,LCS-H2O,LCS,1,	16:37:31	0.5218		0.2230
14	,N027789-001D,SAMP,5,	16:38:32	0.6490		0.2555
15	,N027789-001DDUP,DUP,5,	16:39:28	0.6404		0.2533
16	,N027789-002D,SAMP,5,	16:40:23	0.5907		0.2406
17	,N027789-002DMS,MS,5,	16:41:24	1.1174		0.3752
18	,N027789-002DMSD,MSD,5,	16:42:19	1.2340		0.4050
19	,N027793-001A,SAMP,10,	16:43:15	1.0094		0.3476
20	,N027812-001E,SAMP,1,	16:44:15	0.3864		0.1884
21	,BLANK, NOT REPORTED	16:45:11	-0.0237		0.0836
22	,CCV-1,CCV,1,	16:45:54	0.4948		0.2161
23	,CCB-1,CCB,1,	16:46:42	-0.0276		0.0826
24	,N027812-002E,SAMP,1,	16:47:26	0.3840		0.1878
25	,N027812-003E,SAMP,1,	16:48:14	0.3551		0.1804
26	,N027812-004E,SAMP,1,	16:48:57	0.3946		0.1905

RJB 01/15/2018 **397**

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027812-005E,SAMP,1,	16:49:40	0.3606		0.1818
28	,N027812-006E,SAMP,1,	16:50:28	0.3962		0.1909
29	,N027812-007E,SAMP,1,	16:51:12	0.3516		0.1795
30	,N027812-008E,SAMP,1,	16:52:00	0.3316		0.1744
31	,N027812-009E,SAMP,1,	16:52:43	0.3402		0.1766
32	,N027812-011E,SAMP,1,	16:53:25	0.3355		0.1754
33	,BLANK, NOT REPORTED	16:54:15	-0.0362		0.0804
34	,CCV-2,CCV,1,	16:54:58	0.4717		0.2102
35	,CCB-2,CCB,1,	16:55:40	-0.0433		0.0786
36	,N027812-012E,SAMP,1,	16:56:29	0.3379		0.1760
37	,N027812-013E,SAMP,1,	16:57:11	0.3218		0.1719
38	,BLANK, NOT REPORTED	16:57:55	-0.0523		0.0763
39	,CCV-3,CCV,1,	16:58:43	0.5324		0.2257
40	,CCB-3,CCB,1,	16:59:26	-0.0468		0.0777

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 1/5/2018
Time Analyzed: 2:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027789-001D		8.63							
N027789-002D		8.38							
N027793-001A		6.40							
N027812-001E		5.78							
N027812-002E		7.79							
N027812-003E		7.13							
N027812-004E		8.13							
N027812-005E		7.89							
N027812-006E		8.06							
N027812-007E		7.66							
N027812-008E		8.02							
N027812-009E		7.87							
N027812-011E		8.20							
N027812-012E		8.27							
N027812-013E		7.73							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66256
ASSET #: N027812

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[X] EPA 6010B / 200.7 DISS
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed	/		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/11/18

2nd Level Reviewer 01/11/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027812-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02472 * 1 * (25/25) * 1000

Iron , ug/L = 24.72

Reporting results in two significant figures,

Iron , ug/L = 25

% RSD SUMMARY

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	18.55	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.5	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.67	15	PASS
Standard4	ICAL	1	Fe	5	0.31	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.62	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.48	0.4	15	PASS
ICB	ICB	1	Fe	-0.0011	71.3	15	<PQL
LLICV	CCV1	1	Fe	0.02	0.6	20	PASS
ICSA1	ICSA	1	Fe	177.44	0.066	15	PASS
ICSAB1	ICSAB	1	Fe	180.15	0.52	15	PASS
CCV1	CCV	1	Fe	10.52	0.51	15	PASS
CCB1	CCB	1	Fe	-0.00061	39.43	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	1.78	20	PASS
ICSA2	ICSA	1	Fe	176.77	0.63	15	PASS
ICSAB2	ICSAB	1	Fe	181.34	0.47	15	PASS
MB-66256	MBLK	1	Fe	0.0014	33.98	15	<PQL
LCS-66256	LCS	1	Fe	0.1	0.71	15	PASS
N027812-001B	SAMP	1	Fe	0.025	3.87	15	PASS
N027812-001B	SAMP	5	Fe	0.005	11.63	15	PASS
N027812-001B-PS	PS	1	Fe	0.12	0.52	15	PASS
N027812-001B-MS	MS	1	Fe	0.12	1.16	15	PASS
N027812-001B-MSD	MSD	1	Fe	0.12	0.59	15	PASS
N027812-002B	SAMP	1	Fe	0.0089	8.15	15	PASS
N027812-003B	SAMP	1	Fe	0.0083	7.55	15	PASS
N027812-004B	SAMP	1	Fe	0.0071	9.61	15	PASS
CCV2	CCV	1	Fe	10.29	0.15	15	PASS
CCB2	CCB	1	Fe	-0.00023	153.15	15	<PQL
N027812-005B	SAMP	1	Fe	0.017	3.79	15	PASS
N027812-006B	SAMP	1	Fe	0.017	1.35	15	PASS
N027812-007B	SAMP	1	Fe	0.0092	1.9	15	PASS
N027812-008B	SAMP	1	Fe	0.0097	2.79	15	PASS
N027812-009B	SAMP	1	Fe	0.012	5.041	15	PASS
N027812-011B	SAMP	1	Fe	0.0072	7.15	15	PASS
N027812-012B	SAMP	1	Fe	0.0092	3.37	15	PASS
N027812-013B	SAMP	1	Fe	0.0068	15.59	15	<PQL
CCV3	CCV	1	Fe	10.22	0.55	15	PASS
CCB3	CCB	1	Fe	-0.0007	40.17	15	<PQL
CCV4	CCV	1	Fe	10.23	0.59	15	PASS
CCB4	CCB	1	Fe	0.00011	307.9	15	<PQL

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.2	0.39	15	PASS
CCB5	CCB	1	Fe	0.00013	385.93	15	<PQL
LLCCV2	CCV2	1	Fe	0.02	2.3	20	PASS
ICSA3	ICSA	1	Fe	174.06	0.21	15	PASS
ICSAB3	ICSAB	1	Fe	178.83	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180104C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/04/2018	03:47:58 PM
2	Standard1	ICAL	1	01/04/2018	03:52:47 PM
3	Standard2	ICAL	1	01/04/2018	03:58:07 PM
11	Standard3	ICAL	1	01/04/2018	04:03:28 PM
12	Standard4	ICAL	1	01/04/2018	04:08:50 PM
6	Standard5	ICAL	1	01/04/2018	04:16:12 PM
7	Standard6	ICAL	1	01/04/2018	04:23:31 PM
8	Standard7	ICAL	1	01/04/2018	04:30:53 PM
9	ICV	ICV	1	01/04/2018	04:34:44 PM
1	ICB	ICB	1	01/04/2018	05:04:46 PM
2	LLICV	CCV1	1	01/04/2018	05:10:05 PM
4	ICSA1	ICSA	1	01/04/2018	05:15:24 PM
5	ICSAB1	ICSAB	1	01/04/2018	05:22:57 PM
38	MB-66254	MBLK	1	01/04/2018	05:29:16 PM
39	LCS-66254	LCS	1	01/04/2018	05:34:06 PM
40	N027789-001E	SAMP	1	01/04/2018	05:41:29 PM
41	N027789-001E	SAMP	5	01/04/2018	05:48:50 PM
42	N027789-001E-PS	PS	1	01/04/2018	05:54:11 PM
43	N027789-001E-MS	MS	1	01/04/2018	06:01:34 PM
44	N027789-001E-MSD	MSD	1	01/04/2018	06:08:58 PM
45	N027789-002E	SAMP	1	01/04/2018	06:16:21 PM
7	CCV1	CCV	1	01/04/2018	06:23:41 PM
1	CCB1	CCB	1	01/04/2018	06:43:30 PM
2	LLCCV1	CCV2	1	01/04/2018	06:48:48 PM
4	ICSA2	ICSA	1	01/04/2018	06:54:15 PM
5	ICSAB2	ICSAB	1	01/04/2018	07:01:47 PM
46	MB-66256	MBLK	1	01/04/2018	07:10:55 PM
47	LCS-66256	LCS	1	01/04/2018	07:15:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N027812-001B	SAMP	1	01/04/2018	07:23:07 PM
49	N027812-001B	SAMP	5	01/04/2018	07:28:29 PM
50	N027812-001B-PS	PS	1	01/04/2018	07:33:51 PM
51	N027812-001B-MS	MS	1	01/04/2018	07:41:14 PM
52	N027812-001B-MSD	MSD	1	01/04/2018	07:48:36 PM
53	N027812-002B	SAMP	1	01/04/2018	07:55:58 PM
54	N027812-003B	SAMP	1	01/04/2018	08:01:20 PM
55	N027812-004B	SAMP	1	01/04/2018	08:06:41 PM
7	CCV2	CCV	1	01/04/2018	08:12:03 PM
1	CCB2	CCB	1	01/04/2018	08:19:25 PM
56	N027812-005B	SAMP	1	01/04/2018	08:24:44 PM
57	N027812-006B	SAMP	1	01/04/2018	08:30:04 PM
58	N027812-007B	SAMP	1	01/04/2018	08:35:26 PM
59	N027812-008B	SAMP	1	01/04/2018	08:40:48 PM
60	N027812-009B	SAMP	1	01/04/2018	08:46:10 PM
61	N027812-011B	SAMP	1	01/04/2018	08:51:32 PM
62	N027812-012B	SAMP	1	01/04/2018	08:56:55 PM
63	N027812-013B	SAMP	1	01/04/2018	09:02:17 PM
64	MB-66255	MBLK	1	01/04/2018	09:07:39 PM
65	LCS-66255	LCS	1	01/04/2018	09:12:30 PM
7	CCV3	CCV	1	01/04/2018	09:19:53 PM
1	CCB3	CCB	1	01/04/2018	09:27:15 PM
66	N027812-001C	SAMP	1	01/04/2018	09:32:33 PM
67	N027812-001C	SAMP	5	01/04/2018	09:37:55 PM
68	N027812-001C-PS	PS	1	01/04/2018	09:43:15 PM
69	N027812-001C-MS	MS	1	01/04/2018	09:50:39 PM
70	N027812-001C-MSD	MSD	1	01/04/2018	09:58:03 PM
71	N027812-002C	SAMP	1	01/04/2018	10:05:26 PM
72	N027812-003C	SAMP	1	01/04/2018	10:10:49 PM
73	N027812-004C	SAMP	1	01/04/2018	10:16:11 PM
74	N027812-005C	SAMP	1	01/04/2018	10:21:34 PM
75	N027812-006C	SAMP	1	01/04/2018	10:26:56 PM
7	CCV4	CCV	1	01/04/2018	10:32:18 PM
1	CCB4	CCB	1	01/04/2018	10:39:40 PM
76	N027812-007C	SAMP	1	01/04/2018	10:44:59 PM
77	N027812-008C	SAMP	1	01/04/2018	10:50:21 PM
78	N027812-009C	SAMP	1	01/04/2018	10:55:44 PM
79	N027812-011C	SAMP	1	01/04/2018	11:01:06 PM
80	N027812-012C	SAMP	1	01/04/2018	11:06:28 PM
81	N027812-013C	SAMP	1	01/04/2018	11:11:50 PM
7	CCV5	CCV	1	01/04/2018	11:17:12 PM
1	CCB5	CCB	1	01/04/2018	11:24:34 PM
2	LLCCV2	CCV2	1	01/04/2018	11:29:53 PM
4	ICSA3	ICSA	1	01/04/2018	11:35:12 PM
5	ICSAB3	ICSAB	1	01/04/2018	11:42:45 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**
Prep Batch **66256** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-13**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66256	Aqueous		25	☐	0	0	25	1.000		
MB-66256	Aqueous		25	☐	0	0	25	1.000		
N027812-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**

Reviewed/ Date: 01/11/2018

Initials/ Date: for

Prep Batch **66256** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-13**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027812-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180104C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/04/2018	03:47:58 PM	Fe	273.953	-109	0.00	mg/L	
Standard1	01/04/2018	03:52:47 PM	Fe	273.953	470	0.0200	mg/L	
Standard2	01/04/2018	03:58:07 PM	Fe	273.953	2119	0.050	mg/L	
Standard3	01/04/2018	04:03:28 PM	Fe	273.953	50127	2.000	mg/L	
Standard4	01/04/2018	04:08:50 PM	Fe	273.953	121061	5.000	mg/L	
Standard5	01/04/2018	04:16:12 PM	Fe	273.953	182374	7.500	mg/L	
Standard6	01/04/2018	04:23:31 PM	Fe	273.953	250286	10.000	mg/L	
Standard7	01/04/2018	04:30:53 PM	Fe	273.953	470832	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10485.234	20	10000	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.539	20	20.00	0	97.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10519.238	20	10000	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.292	20	20.00	0	96.5	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10286.443	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10225.161	20	10000	0	102	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10231.801	20	10000	0	102	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10201.479	20	10000	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.529	20	20.00	0	97.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.133477	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.613154	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.22904	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.702715	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.112	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.134	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492902.022	50	500000	0	98.6	80	120				
Calcium	489965.341	500	500000	0	98.0	80	120				
Iron	177444.108	20	200000	0	88.7	80	120				
Magnesium	446960.149	100	500000	0	89.4	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556798.175	50	500000	0	111	80	120				
Calcium	557365.832	500	500000	0	111	80	120				
Iron	180147.619	20	200000	0	90.1	80	120				
Magnesium	509336.647	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	493621.908	50	500000	0	98.7	80	120				
Calcium	492010.718	500	500000	0	98.4	80	120				
Iron	176767.469	20	200000	0	88.4	80	120				
Magnesium	446712.921	100	500000	0	89.3	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	555448.820	50	500000	0	111	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	558055.797	500	500000	0	112	80	120				
Iron	181338.126	20	200000	0	90.7	80	120				
Magnesium	512626.520	100	500000	0	103	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486023.627	50	500000	0	97.2	80	120				
Calcium	483294.827	500	500000	0	96.7	80	120				
Iron	174064.389	20	200000	0	87.0	80	120				
Magnesium	448996.705	100	500000	0	89.8	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	547524.753	50	500000	0	110	80	120				
Calcium	548809.367	500	500000	0	110	80	120				
Iron	178826.914	20	200000	0	89.4	80	120				
Magnesium	515102.835	100	500000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.8	65-125	PASS
Standard2	ICAL	1	1.051	105.08	65-125	PASS
Standard3	ICAL	1	1.0052	100.52	65-125	PASS
Standard4	ICAL	1	0.99	99.31	65-125	PASS
Standard5	ICAL	1	0.99	99.039	65-125	PASS
Standard6	ICAL	1	0.98	97.68	65-125	PASS
Standard7	ICAL	1	0.95	94.65	65-125	PASS
ICV	ICV	1	0.98	97.87	65-125	PASS
ICB	ICB	1	1.005	100.5	65-125	PASS
LLICV	CCV1	1	1.0052	100.52	65-125	PASS
ICSA1	ICSA	1	0.95	94.85	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.31	65-125	PASS
CCV1	CCV	1	0.98	98.088	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
LLCCV1	CCV2	1	1.0093	100.93	65-125	PASS
ICSA2	ICSA	1	0.96	95.73	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.31	65-125	PASS
MB-66256	MBLK	1	1.016	101.55	65-125	PASS
LCS-66256	LCS	1	0.92	92.39	65-125	PASS
N027812-001B	SAMP	1	0.97	96.65	65-125	PASS
N027812-001B	SAMP	5	0.99	99.16	65-125	PASS
N027812-001B-PS	PS	1	0.97	96.9	65-125	PASS
N027812-001B-MS	MS	1	0.95	95.15	65-125	PASS
N027812-001B-MSD	MSD	1	0.95	94.97	65-125	PASS
N027812-002B	SAMP	1	0.95	94.63	65-125	PASS
N027812-003B	SAMP	1	0.94	93.88	65-125	PASS
N027812-004B	SAMP	1	0.95	94.55	65-125	PASS
CCV2	CCV	1	0.98	98.33	65-125	PASS
CCB2	CCB	1	1.0002	100.02	65-125	PASS
N027812-005B	SAMP	1	0.95	94.69	65-125	PASS
N027812-006B	SAMP	1	0.93	93.47	65-125	PASS
N027812-007B	SAMP	1	0.94	94.36	65-125	PASS
N027812-008B	SAMP	1	0.96	95.89	65-125	PASS
N027812-009B	SAMP	1	0.94	93.99	65-125	PASS
N027812-011B	SAMP	1	0.96	95.5	65-125	PASS
N027812-012B	SAMP	1	0.94	94.23	65-125	PASS
N027812-013B	SAMP	1	0.95	94.7	65-125	PASS
CCV3	CCV	1	0.99	99.28	65-125	PASS
CCB3	CCB	1	1.016	101.58	65-125	PASS
CCV4	CCV	1	0.98	98.39	65-125	PASS

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1.0077	100.77	65-125	PASS
CCV5	CCV	1	0.99	98.71	65-125	PASS
CCB5	CCB	1	1.0097	100.97	65-125	PASS
LLCCV2	CCV2	1	1.012	101.18	65-125	PASS
ICSA3	ICSA	1	0.96	95.81	65-125	PASS
ICSAB3	ICSAB	1	0.79	79.028	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027812
Test Method: EPA 6010B
Analysis Date: 1/4/2018

Matrix: Groundwater
Batch No.: 66256

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027812-001B DT 5X	Iron	ug/L	25.07068	NA	24.72467	1.40%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027812-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID:	**ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.278	20	100.0	24.72	91.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66255
ASSET #: N027812

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?	/		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/11/18
2nd Level Reviewer 01/11/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027812-001C** , the concentration inug/L is calculated as follows:

Iron , ug/L = 0.02028 * 1 * (25/25) * 1000

Iron , ug/L = 20.28

Reporting results in two significant figures,

Iron , ug/L = 20

% RSD SUMMARY

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	18.55	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.5	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.67	15	PASS
Standard4	ICAL	1	Fe	5	0.31	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.62	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.48	0.4	15	PASS
ICB	ICB	1	Fe	-0.0011	71.3	15	<PQL
LLICV	CCV1	1	Fe	0.02	0.6	20	PASS
ICSA1	ICSA	1	Fe	177.44	0.066	15	PASS
ICSAB1	ICSAB	1	Fe	180.15	0.52	15	PASS
CCV1	CCV	1	Fe	10.52	0.51	15	PASS
CCB1	CCB	1	Fe	-0.00061	39.43	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	1.78	20	PASS
ICSA2	ICSA	1	Fe	176.77	0.63	15	PASS
ICSAB2	ICSAB	1	Fe	181.34	0.47	15	PASS
CCV2	CCV	1	Fe	10.29	0.15	15	PASS
CCB2	CCB	1	Fe	-0.00023	153.15	15	<PQL
MB-66255	MBLK	1	Fe	-0.00037	82.22	15	<PQL
LCS-66255	LCS	1	Fe	0.11	0.88	15	PASS
CCV3	CCV	1	Fe	10.22	0.55	15	PASS
CCB3	CCB	1	Fe	-0.0007	40.17	15	<PQL
N027812-001C	SAMP	1	Fe	0.02	5.87	15	PASS
N027812-001C	SAMP	5	Fe	0.0054	3.025	15	PASS
N027812-001C-PS	PS	1	Fe	0.13	0.42	15	PASS
N027812-001C-MS	MS	1	Fe	0.12	0.84	15	PASS
N027812-001C-MSD	MSD	1	Fe	0.12	0.75	15	PASS
N027812-002C	SAMP	1	Fe	0.022	1.36	15	PASS
N027812-003C	SAMP	1	Fe	0.027	1.53	15	PASS
N027812-004C	SAMP	1	Fe	0.021	2.48	15	PASS
N027812-005C	SAMP	1	Fe	0.031	1.99	15	PASS
N027812-006C	SAMP	1	Fe	0.021	0.98	15	PASS
CCV4	CCV	1	Fe	10.23	0.59	15	PASS
CCB4	CCB	1	Fe	0.00011	307.9	15	<PQL
N027812-007C	SAMP	1	Fe	0.02	1.7	15	PASS
N027812-008C	SAMP	1	Fe	0.021	2.96	15	PASS
N027812-009C	SAMP	1	Fe	0.02	3.8	15	PASS
N027812-011C	SAMP	1	Fe	0.019	2.74	15	PASS
N027812-012C	SAMP	1	Fe	0.049	0.74	15	PASS
N027812-013C	SAMP	1	Fe	0.037	1.75	15	PASS

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.2	0.39	15	PASS
CCB5	CCB	1	Fe	0.00013	385.93	15	<PQL
LLCCV2	CCV2	1	Fe	0.02	2.3	20	PASS
ICSA3	ICSA	1	Fe	174.06	0.21	15	PASS
ICSAB3	ICSAB	1	Fe	178.83	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180104C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/04/2018	03:47:58 PM
2	Standard1	ICAL	1	01/04/2018	03:52:47 PM
3	Standard2	ICAL	1	01/04/2018	03:58:07 PM
11	Standard3	ICAL	1	01/04/2018	04:03:28 PM
12	Standard4	ICAL	1	01/04/2018	04:08:50 PM
6	Standard5	ICAL	1	01/04/2018	04:16:12 PM
7	Standard6	ICAL	1	01/04/2018	04:23:31 PM
8	Standard7	ICAL	1	01/04/2018	04:30:53 PM
9	ICV	ICV	1	01/04/2018	04:34:44 PM
1	ICB	ICB	1	01/04/2018	05:04:46 PM
2	LLICV	CCV1	1	01/04/2018	05:10:05 PM
4	ICSA1	ICSA	1	01/04/2018	05:15:24 PM
5	ICSAB1	ICSAB	1	01/04/2018	05:22:57 PM
38	MB-66254	MBLK	1	01/04/2018	05:29:16 PM
39	LCS-66254	LCS	1	01/04/2018	05:34:06 PM
40	N027789-001E	SAMP	1	01/04/2018	05:41:29 PM
41	N027789-001E	SAMP	5	01/04/2018	05:48:50 PM
42	N027789-001E-PS	PS	1	01/04/2018	05:54:11 PM
43	N027789-001E-MS	MS	1	01/04/2018	06:01:34 PM
44	N027789-001E-MSD	MSD	1	01/04/2018	06:08:58 PM
45	N027789-002E	SAMP	1	01/04/2018	06:16:21 PM
7	CCV1	CCV	1	01/04/2018	06:23:41 PM
1	CCB1	CCB	1	01/04/2018	06:43:30 PM
2	LLCCV1	CCV2	1	01/04/2018	06:48:48 PM
4	ICSA2	ICSA	1	01/04/2018	06:54:15 PM
5	ICSAB2	ICSAB	1	01/04/2018	07:01:47 PM
46	MB-66256	MBLK	1	01/04/2018	07:10:55 PM
47	LCS-66256	LCS	1	01/04/2018	07:15:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N027812-001B	SAMP	1	01/04/2018	07:23:07 PM
49	N027812-001B	SAMP	5	01/04/2018	07:28:29 PM
50	N027812-001B-PS	PS	1	01/04/2018	07:33:51 PM
51	N027812-001B-MS	MS	1	01/04/2018	07:41:14 PM
52	N027812-001B-MSD	MSD	1	01/04/2018	07:48:36 PM
53	N027812-002B	SAMP	1	01/04/2018	07:55:58 PM
54	N027812-003B	SAMP	1	01/04/2018	08:01:20 PM
55	N027812-004B	SAMP	1	01/04/2018	08:06:41 PM
7	CCV2	CCV	1	01/04/2018	08:12:03 PM
1	CCB2	CCB	1	01/04/2018	08:19:25 PM
56	N027812-005B	SAMP	1	01/04/2018	08:24:44 PM
57	N027812-006B	SAMP	1	01/04/2018	08:30:04 PM
58	N027812-007B	SAMP	1	01/04/2018	08:35:26 PM
59	N027812-008B	SAMP	1	01/04/2018	08:40:48 PM
60	N027812-009B	SAMP	1	01/04/2018	08:46:10 PM
61	N027812-011B	SAMP	1	01/04/2018	08:51:32 PM
62	N027812-012B	SAMP	1	01/04/2018	08:56:55 PM
63	N027812-013B	SAMP	1	01/04/2018	09:02:17 PM
64	MB-66255	MBLK	1	01/04/2018	09:07:39 PM
65	LCS-66255	LCS	1	01/04/2018	09:12:30 PM
7	CCV3	CCV	1	01/04/2018	09:19:53 PM
1	CCB3	CCB	1	01/04/2018	09:27:15 PM
66	N027812-001C	SAMP	1	01/04/2018	09:32:33 PM
67	N027812-001C	SAMP	5	01/04/2018	09:37:55 PM
68	N027812-001C-PS	PS	1	01/04/2018	09:43:15 PM
69	N027812-001C-MS	MS	1	01/04/2018	09:50:39 PM
70	N027812-001C-MSD	MSD	1	01/04/2018	09:58:03 PM
71	N027812-002C	SAMP	1	01/04/2018	10:05:26 PM
72	N027812-003C	SAMP	1	01/04/2018	10:10:49 PM
73	N027812-004C	SAMP	1	01/04/2018	10:16:11 PM
74	N027812-005C	SAMP	1	01/04/2018	10:21:34 PM
75	N027812-006C	SAMP	1	01/04/2018	10:26:56 PM
7	CCV4	CCV	1	01/04/2018	10:32:18 PM
1	CCB4	CCB	1	01/04/2018	10:39:40 PM
76	N027812-007C	SAMP	1	01/04/2018	10:44:59 PM
77	N027812-008C	SAMP	1	01/04/2018	10:50:21 PM
78	N027812-009C	SAMP	1	01/04/2018	10:55:44 PM
79	N027812-011C	SAMP	1	01/04/2018	11:01:06 PM
80	N027812-012C	SAMP	1	01/04/2018	11:06:28 PM
81	N027812-013C	SAMP	1	01/04/2018	11:11:50 PM
7	CCV5	CCV	1	01/04/2018	11:17:12 PM
1	CCB5	CCB	1	01/04/2018	11:24:34 PM
2	LLCCV2	CCV2	1	01/04/2018	11:29:53 PM
4	ICSA3	ICSA	1	01/04/2018	11:35:12 PM
5	ICSAB3	ICSAB	1	01/04/2018	11:42:45 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**
Prep Batch **66255** Prep Code: **3010_W**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-12**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66255	Aqueous		25	☐	0	0	25	1.000		
MB-66255	Aqueous		25	☐	0	0	25	1.000		
N027812-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**
Prep Batch **66255** Prep Code: **3010_W**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-12**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027812-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180104C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/04/2018	03:47:58 PM	Fe	273.953	-109	0.00	mg/L	
Standard1	01/04/2018	03:52:47 PM	Fe	273.953	470	0.0200	mg/L	
Standard2	01/04/2018	03:58:07 PM	Fe	273.953	2119	0.050	mg/L	
Standard3	01/04/2018	04:03:28 PM	Fe	273.953	50127	2.000	mg/L	
Standard4	01/04/2018	04:08:50 PM	Fe	273.953	121061	5.000	mg/L	
Standard5	01/04/2018	04:16:12 PM	Fe	273.953	182374	7.500	mg/L	
Standard6	01/04/2018	04:23:31 PM	Fe	273.953	250286	10.000	mg/L	
Standard7	01/04/2018	04:30:53 PM	Fe	273.953	470832	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10485.234	20	10000	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.539	20	20.00	0	97.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10519.238	20	10000	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.292	20	20.00	0	96.5	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10286.443	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10225.161	20	10000	0	102	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10231.801	20	10000	0	102	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10201.479	20	10000	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.529	20	20.00	0	97.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.133477	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.613154	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.22904	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.702715	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.112	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.134	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492902.022	50	500000	0	98.6	80	120				
Calcium	489965.341	500	500000	0	98.0	80	120				
Iron	177444.108	20	200000	0	88.7	80	120				
Magnesium	446960.149	100	500000	0	89.4	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556798.175	50	500000	0	111	80	120				
Calcium	557365.832	500	500000	0	111	80	120				
Iron	180147.619	20	200000	0	90.1	80	120				
Magnesium	509336.647	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	493621.908	50	500000	0	98.7	80	120				
Calcium	492010.718	500	500000	0	98.4	80	120				
Iron	176767.469	20	200000	0	88.4	80	120				
Magnesium	446712.921	100	500000	0	89.3	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	555448.820	50	500000	0	111	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	558055.797	500	500000	0	112	80	120				
Iron	181338.126	20	200000	0	90.7	80	120				
Magnesium	512626.520	100	500000	0	103	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486023.627	50	500000	0	97.2	80	120				
Calcium	483294.827	500	500000	0	96.7	80	120				
Iron	174064.389	20	200000	0	87.0	80	120				
Magnesium	448996.705	100	500000	0	89.8	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	547524.753	50	500000	0	110	80	120				
Calcium	548809.367	500	500000	0	110	80	120				
Iron	178826.914	20	200000	0	89.4	80	120				
Magnesium	515102.835	100	500000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.8	65-125	PASS
Standard2	ICAL	1	1.051	105.08	65-125	PASS
Standard3	ICAL	1	1.0052	100.52	65-125	PASS
Standard4	ICAL	1	0.99	99.31	65-125	PASS
Standard5	ICAL	1	0.99	99.039	65-125	PASS
Standard6	ICAL	1	0.98	97.68	65-125	PASS
Standard7	ICAL	1	0.95	94.65	65-125	PASS
ICV	ICV	1	0.98	97.87	65-125	PASS
ICB	ICB	1	1.005	100.5	65-125	PASS
LLICV	CCV1	1	1.0052	100.52	65-125	PASS
ICSA1	ICSA	1	0.95	94.85	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.31	65-125	PASS
CCV1	CCV	1	0.98	98.088	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
LLCCV1	CCV2	1	1.0093	100.93	65-125	PASS
ICSA2	ICSA	1	0.96	95.73	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.31	65-125	PASS
CCV2	CCV	1	0.98	98.33	65-125	PASS
CCB2	CCB	1	1.0002	100.02	65-125	PASS
MB-66255	MBLK	1	1.013	101.3	65-125	PASS
LCS-66255	LCS	1	0.93	92.84	65-125	PASS
CCV3	CCV	1	0.99	99.28	65-125	PASS
CCB3	CCB	1	1.016	101.58	65-125	PASS
N027812-001C	SAMP	1	0.9	89.72	65-125	PASS
N027812-001C	SAMP	5	0.98	97.96	65-125	PASS
N027812-001C-PS	PS	1	0.93	92.8	65-125	PASS
N027812-001C-MS	MS	1	0.94	94.25	65-125	PASS
N027812-001C-MSD	MSD	1	0.94	93.97	65-125	PASS
N027812-002C	SAMP	1	0.96	95.65	65-125	PASS
N027812-003C	SAMP	1	0.95	94.64	65-125	PASS
N027812-004C	SAMP	1	0.95	95.22	65-125	PASS
N027812-005C	SAMP	1	0.97	96.65	65-125	PASS
N027812-006C	SAMP	1	0.94	94.11	65-125	PASS
CCV4	CCV	1	0.98	98.39	65-125	PASS
CCB4	CCB	1	1.0077	100.77	65-125	PASS
N027812-007C	SAMP	1	0.95	94.62	65-125	PASS
N027812-008C	SAMP	1	0.94	94.08	65-125	PASS
N027812-009C	SAMP	1	0.95	94.94	65-125	PASS
N027812-011C	SAMP	1	0.93	92.73	65-125	PASS
N027812-012C	SAMP	1	0.95	94.83	65-125	PASS

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027812-013C	SAMP	1	0.95	95.36	65-125	PASS
CCV5	CCV	1	0.99	98.71	65-125	PASS
CCB5	CCB	1	1.0097	100.97	65-125	PASS
LLCCV2	CCV2	1	1.012	101.18	65-125	PASS
ICSA3	ICSA	1	0.96	95.81	65-125	PASS
ICSAB3	ICSAB	1	0.79	79.028	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027812
Test Method: EPA 6010B
Analysis Date: 1/4/2018

Matrix: Groundwater
Batch No.: ~~66256~~ 66255

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027812-~~001B~~ -001C DT 5X	Iron	ug/L	26.95165	NA	20.2808	32.89%	10

Note: NA - Not applicable

Mary 01/11/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N027812-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID:	**ZZZZZZ**	Batch ID: **66255**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.765	20	100.0	20.28	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66251
ASSET #: N027812

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/5/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in LLCCV2 & 4 failed > 20%. However %Rec of LLCCV2 & 4 passed criteria.
%RSD of Se in N027812-002B, 005B, 007B & 008B failed > 15%. For rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/10/18

2nd Level Reviewer 01/10/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66251
ASSET #: N027812

Instrument ID: ICPMS-02
Analyst: CEI

Method:
[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Date Analyzed: ~~1/6/2018~~ 1/8/18

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X	X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se in N027812-002B, 005B, 007B & 008B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/10/18

2nd Level Reviewer 01/10/2018 Date: ____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027812-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.25879 * 1 * (25/25)

Arsenic , ug/L = 2.25879

Reporting results in two significant figures,

Arsenic , ug/L = 2.3

% RSD SUMMARY

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.16	5.57	15	PASS	0.1	8.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.6	4.11	15	PASS	0.52	4.41	15	PASS
Std3-5/50 ppb	ICAL	1	5.095	0.41	15	PASS	5.14	2.72	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	1.0072	15	PASS	10.26	0.94	15	PASS
Std5-20/200 ppb	ICAL	1	19.85	0.87	15	PASS	20.35	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	39.57	0.098	15	PASS	40.88	0.85	15	PASS
Std7-100/1000 ppb	ICAL	1	98.56	0.32	15	PASS	99.2	1.61	15	PASS
Std8-200/2000 ppb	ICAL	1	200.81	0.33	15	PASS	200.17	1.048	15	PASS
ICV	ICV	1	9.72	1.36	15	PASS	9.99	0.75	15	PASS
ICB	ICB	1	0.0000058	9647.94	15	<PQL	0.0011	473.23	15	<PQL
LLICV	CCV1	1	1.13	3.37	20	PASS	1.03	3.65	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.057	12.27	15	PASS
ICSAB1	ICSAB	1	22.23	0.91	15	PASS	19.91	1.63	15	PASS
CCV1	CCV	1	20.84	0.23	15	PASS	20.62	1.32	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.83	0.54	15	PASS	20.36	2.3	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.81	0.15	15	PASS	20.27	1.78	15	PASS
CCB3	CCB	1	0.0059	52.38	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.19	1.36	20	PASS	1.036	2.27	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.074	15.044	15	<PQL
ICSAB2	ICSAB	1	23.38	0.17	15	PASS	21.11	2.071	15	PASS
CCV5	CCV	1	21.021	0.92	15	PASS	20.14	2.31	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.16	0.53	15	PASS	20.29	1.27	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66251	MBLK	1	<0.000	N/A	15	<PQL	0.015	30.68	15	<PQL
LCS-66251	LCS	1	10.12	0.78	15	PASS	10.036	2.91	15	PASS
CCV7	CCV	1	20.96	0.054	15	PASS	20.53	0.94	15	PASS
CCB7	CCB	1	0.0043	41.96	15	<PQL	0.0014	413.9	15	<PQL
LLCCV2	CCV2	1	1.2	0.29	20	PASS	1.014	3.025	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.085	17.69	15	<PQL
ICSAB3	ICSAB	1	23.6	0.53	15	PASS	20.19	1.16	15	PASS
N027812-010B	SAMP	1	80.85	0.13	15	PASS	<0.000	N/A	15	<PQL
N027812-010B	SAMP	5	16.29	0.69	15	PASS	0.0016	473.3	15	<PQL
N027812-011B	SAMP	1	127.57	0.82	15	PASS	<0.000	N/A	15	<PQL
N027812-011B	SAMP	5	25.2	0.83	15	PASS	0.0037	108.59	15	<PQL
N027812-012B	SAMP	1	125.26	0.92	15	PASS	0.017	28.72	15	<PQL
N027812-012B	SAMP	5	24.93	0.63	15	PASS	0.0074	148.31	15	<PQL
N027812-013B	SAMP	1	126.69	0.98	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027812-013B	SAMP	5	25	0.59	15	PASS	<0.000	N/A	15	<PQL
N027812-014B	SAMP	1	82.95	1.6	15	PASS	<0.000	N/A	15	<PQL
N027812-014B	SAMP	5	16.81	0.49	15	PASS	0.069	5.19	15	PASS
CCV8	CCV	1	21.24	0.68	15	PASS	20.37	0.84	15	PASS
CCB8	CCB	1	0.026	206.93	15	<PQL	0.0085	19.015	15	<PQL
N027812-015B	SAMP	1	131.46	0.45	15	PASS	<0.000	N/A	15	<PQL
N027812-015B	SAMP	5	26.13	0.32	15	PASS	<0.000	N/A	15	<PQL
N027812-001B	SAMP	1	129.41	0.38	15	PASS	<0.000	N/A	15	<PQL
N027812-001B	SAMP	5	25.56	0.25	15	PASS	0.01	50.87	15	<PQL
N027812-001B	SAMP	25	5.1	0.51	15	PASS	0.0041	60.28	15	<PQL
N027812-001B-PS	PS	1	140.92	0.69	15	PASS	10.19	0.58	15	PASS
N027812-001B-PS	PS	5	28.1	0.83	15	PASS	2.2	1.88	15	PASS
N027812-001B-MS	MS	1	141.83	0.69	15	PASS	10.24	0.32	15	PASS
N027812-001B-MS	MS	5	28.48	0.43	15	PASS	2.17	2.97	15	PASS
N027812-001B-MSD	MSD	1	140.96	2.45	15	PASS	10.49	1.3	15	PASS
CCV9	CCV	1	20.59	0.71	15	PASS	21.3	1.012	15	PASS
CCB9	CCB	1	0.0051	17.22	15	<PQL	0.0029	255.45	15	<PQL
N027812-001B-MSD	MSD	5	27.88	1.19	15	PASS	2.24	1.49	15	PASS
N027812-002B	SAMP	1	126.23	0.8	15	PASS	0.014	37.68	15	<PQL
N027812-002B	SAMP	5	25.1	0.71	15	PASS	0.0098	102.12	15	<PQL
N027812-003B	SAMP	1	126.24	2.33	15	PASS	0.0012	729.11	15	<PQL
N027812-003B	SAMP	5	24.79	0.49	15	PASS	<0.000	N/A	15	<PQL
N027812-004B	SAMP	1	120.56	0.58	15	PASS	0.14	6.86	15	PASS
N027812-004B	SAMP	5	24.42	1.25	15	PASS	0.035	29.49	15	<PQL
N027812-005B	SAMP	1	129.91	0.81	15	PASS	<0.000	N/A	15	<PQL
N027812-005B	SAMP	5	25.39	1.0096	15	PASS	<0.000	N/A	15	<PQL
N027812-006B	SAMP	1	124.088	0.53	15	PASS	0.0022	502.62	15	<PQL
CCV10	CCV	1	20.55	0.18	15	PASS	21.1	1.41	15	PASS
CCB10	CCB	1	0.0083	22.81	15	<PQL	0.0023	198.32	15	<PQL
N027812-006B	SAMP	5	24.62	0.095	15	PASS	<0.000	N/A	15	<PQL
N027812-007B	SAMP	1	124.1	0.59	15	PASS	0.012	13.7	15	PASS
N027812-007B	SAMP	5	24.9	0.97	15	PASS	0.0016	473.26	15	<PQL
N027812-008B	SAMP	1	120.81	0.51	15	PASS	0.01	89.13	15	<PQL
N027812-008B	SAMP	5	24.41	1.21	15	PASS	0.0026	235.41	15	<PQL
N027812-009B	SAMP	1	122.98	1.79	15	PASS	0.0079	104.48	15	<PQL
N027812-009B	SAMP	5	24.6	0.26	15	PASS	<0.000	N/A	15	<PQL
CCV11	CCV	1	21.51	0.93	15	PASS	20.27	0.29	15	PASS
CCB11	CCB	1	0.013	20.72	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.23	1.91	20	PASS	1.036	1.2	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.071	15.61	15	<PQL
ICSAB4	ICSAB	1	23.96	0.61	15	PASS	20.31	0.52	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV12	CCV	1	21.31	1.22	15	PASS	20.42	1.42	15	PASS
CCB12	CCB	1	<0.000	N/A	15	<PQL	0.034	21.81	15	<PQL
CCV13	CCV	1	21.2	0.11	15	PASS	20.49	0.9	15	PASS
CCB13	CCB	1	0.0014	134.2	15	<PQL	0.0067	158.5	15	<PQL
LLCCV4	CCV2	1	1.19	1.064	20	PASS	1.047	2.31	20	PASS
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	0.095	14.8	15	PASS
ICSAB5	ICSAB	1	20.93	13.11	15	PASS	20.54	1.87	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	9.53	15	PASS	0.12	10.61	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	5.5	15	PASS	0.51	3.19	15	PASS
Std3-5/50 ppb	ICAL	1	5.38	2.38	15	PASS	5.072	1.65	15	PASS
Std4-10/100 ppb	ICAL	1	10.42	1.053	15	PASS	10.31	1.49	15	PASS
Std5-20/200 ppb	ICAL	1	20.73	1.28	15	PASS	20.32	2.091	15	PASS
Std6-40/400 ppb	ICAL	1	41.68	0.93	15	PASS	40.6	0.52	15	PASS
Std7-100/1000 ppb	ICAL	1	101.37	1.78	15	PASS	99.41	1.075	15	PASS
Std8-200/2000 ppb	ICAL	1	198.88	0.31	15	PASS	200.12	1.041	15	PASS
ICV	ICV	1	101.079	0.23	15	PASS	9.97	2.29	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.021	46.53	15	<PQL
LLICV	CCV1	1	0.52	5.79	20	PASS	0.11	4.013	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.61	0.96	15	PASS	20.9	0.27	15	PASS
CCV1	CCV	1	20.64	1.54	15	PASS	19.51	0.75	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0059	77.25	15	<PQL
CCV2	CCV	1	20.98	1.65	15	PASS	19.6	1.15	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.01	115.68	15	<PQL
CCV3	CCV	1	20.84	2.27	15	PASS	19.93	1.57	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0026	51.8	15	<PQL
LLCCV1	CCV2	1	0.55	10.19	20	PASS	0.11	14.68	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	16.92	1.17	15	PASS	20.15	1.86	15	PASS
CCV5	CCV	1	20.5	2.83	15	PASS	19.64	2.26	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0092	46.82	15	<PQL
CCV6	CCV	1	20.67	2.016	15	PASS	19.62	1.77	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.012	43.41	15	<PQL
MB-66251	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66251	LCS	1	99.83	2.58	15	PASS	9.76	3.27	15	PASS
CCV7	CCV	1	20.84	2.094	15	PASS	19.69	1.87	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0089	31.99	15	<PQL
LLCCV2	CCV2	1	0.52	1.97	20	PASS	0.095	15.25	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.57	1.76	15	PASS	20.67	0.64	15	PASS
N027812-010B	SAMP	1	3.8	2.24	15	PASS	2.23	1.97	15	PASS
N027812-010B	SAMP	5	0.83	4.58	15	PASS	0.41	5.54	15	PASS
N027812-011B	SAMP	1	1.58	7.084	15	PASS	2.2	2.92	15	PASS
N027812-011B	SAMP	5	0.3	16.24	15	<PQL	0.45	5.45	15	PASS
N027812-012B	SAMP	1	3.86	1.38	15	PASS	2.28	7.11	15	PASS
N027812-012B	SAMP	5	1.014	3.31	15	PASS	0.45	8.08	15	PASS
N027812-013B	SAMP	1	4.4	2.67	15	PASS	2.21	1.77	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027812-013B	SAMP	5	1.073	2.56	15	PASS	0.42	6.95	15	PASS
N027812-014B	SAMP	1	4.16	1.34	15	PASS	2.22	1.63	15	PASS
N027812-014B	SAMP	5	0.81	1.38	15	PASS	0.44	6.45	15	PASS
CCV8	CCV	1	20.59	1.14	15	PASS	19.24	0.86	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.0045	98.34	15	<PQL
N027812-015B	SAMP	1	9.6	1.85	15	PASS	1.79	2.073	15	PASS
N027812-015B	SAMP	5	2.0099	3.48	15	PASS	0.32	3.28	15	PASS
N027812-001B	SAMP	1	3.0075	1.96	15	PASS	2.26	3.046	15	PASS
N027812-001B	SAMP	5	0.73	6.92	15	PASS	0.5	1.49	15	PASS
N027812-001B	SAMP	25	0.41	6.34	15	PASS	0.093	2.92	15	PASS
N027812-001B-PS	PS	1	102.92	1.00027	15	PASS	12.55	1.91	15	PASS
N027812-001B-PS	PS	5	22.028	1.3	15	PASS	2.63	3.63	15	PASS
N027812-001B-MS	MS	1	103.44	0.86	15	PASS	12.46	0.42	15	PASS
N027812-001B-MS	MS	5	21.97	1.55	15	PASS	2.55	1.95	15	PASS
N027812-001B-MSD	MSD	1	104.15	0.76	15	PASS	12.8	0.76	15	PASS
CCV9	CCV	1	20.65	0.76	15	PASS	19.42	0.81	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.015	59.4	15	<PQL
N027812-001B-MSD	MSD	5	22.34	1.75	15	PASS	2.6	5.39	15	PASS
N027812-002B	SAMP	1	1.18	8.2	15	PASS	2.25	1.56	15	PASS
N027812-002B	SAMP	5	0.25	16.72	15	<PQL	0.46	6.061	15	PASS
N027812-003B	SAMP	1	2.78	4.24	15	PASS	2.22	0.79	15	PASS
N027812-003B	SAMP	5	0.53	9.16	15	PASS	0.45	8.67	15	PASS
N027812-004B	SAMP	1	1.26	4.93	15	PASS	2.2	3.19	15	PASS
N027812-004B	SAMP	5	0.24	11.32	15	PASS	0.44	3.59	15	PASS
N027812-005B	SAMP	1	3.92	1.46	15	PASS	2.34	5.022	15	PASS
N027812-005B	SAMP	5	0.84	2.3	15	PASS	0.46	6.72	15	PASS
N027812-006B	SAMP	1	3.71	1.52	15	PASS	2.22	3.51	15	PASS
CCV10	CCV	1	20.83	1.91	15	PASS	19.59	1.06	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	0.0065	157.076	15	<PQL
N027812-006B	SAMP	5	0.76	1.65	15	PASS	0.45	14.16	15	PASS
N027812-007B	SAMP	1	2.85	2.34	15	PASS	2.3	5.35	15	PASS
N027812-007B	SAMP	5	0.58	5.88	15	PASS	0.45	8.11	15	PASS
N027812-008B	SAMP	1	2.62	1.81	15	PASS	2.2	4.44	15	PASS
N027812-008B	SAMP	5	0.5	10.68	15	PASS	0.46	3.56	15	PASS
N027812-009B	SAMP	1	1.88	1.64	15	PASS	2.17	4.13	15	PASS
N027812-009B	SAMP	5	0.38	11.36	15	PASS	0.43	2.4	15	PASS
CCV11	CCV	1	20.1	0.69	15	PASS	19.34	0.68	15	PASS
CCB11	CCB	1	<0.000	N/A	15	<PQL	0.01	61.43	15	<PQL
LLCCV3	CCV2	1	0.51	7.43	20	PASS	0.11	12.21	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	17.63	1.84	15	PASS	20.22	1.061	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV12	CCV	1	20.38	0.52	15	PASS	19.48	1.36	15	PASS
CCB12	CCB	1	<0.000	N/A	15	<PQL	0.0066	112.3	15	<PQL
CCV13	CCV	1	20.4	0.53	15	PASS	19.43	0.32	15	PASS
CCB13	CCB	1	<0.000	N/A	15	<PQL	0.0027	186.057	15	<PQL
LLCCV4	CCV2	1	0.52	8.19	20	PASS	0.097	9.98	20	PASS
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB5	ICSAB	1	17.88	1.58	15	PASS	20.099	0.49	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	62.85	15	<PQL	0.11	14.69	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	23.2	15	<PQL	0.49	4.83	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	7.8	15	PASS	4.96	0.57	15	PASS
Std4-10/100 ppb	ICAL	1	10.076	4.94	15	PASS	9.89	2.31	15	PASS
Std5-20/200 ppb	ICAL	1	20.42	2.29	15	PASS	19.86	0.91	15	PASS
Std6-40/400 ppb	ICAL	1	40.71	0.52	15	PASS	39.61	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	100.49	1.12	15	PASS	100.094	1.3	15	PASS
Std8-200/2000 ppb	ICAL	1	199.56	2.038	15	PASS	200.051	0.81	15	PASS
ICV	ICV	1	9.85	2.6	15	PASS	10.53	1.54	15	PASS
ICB	ICB	1	0.023	85.95	15	<PQL	0.16	7.87	15	PASS
LLICV	CCV1	1	0.47	15.5	20	PASS	0.59	3.85	20	PASS
ICSA1	ICSA	1	0.011	99.87	15	<PQL	0.087	11.49	15	PASS
ICSAB1	ICSAB	1	20.13	1.2	15	PASS	22.054	1.21	15	PASS
CCV1	CCV	1	19.5	1.55	15	PASS	19.5	1.29	15	PASS
CCB1	CCB	1	0.01	100.041	15	<PQL	0.084	14.59	15	PASS
CCV2	CCV	1	20.19	0.67	15	PASS	19.77	0.95	15	PASS
CCB2	CCB	1	0.024	49.037	15	<PQL	0.08	4.2	15	PASS
CCV3	CCV	1	19.34	3.29	15	PASS	19.68	0.92	15	PASS
CCB3	CCB	1	0.014	113.79	15	<PQL	0.068	13.026	15	PASS
LLCCV1	CCV2	1	0.44	9.9	20	PASS	0.53	4.49	20	PASS
ICSA2	ICSA	1	0.0067	173.21	15	<PQL	0.057	12.84	15	PASS
ICSAB2	ICSAB	1	20.86	1.58	15	PASS	21.86	1.44	15	PASS
CCV5	CCV	1	20.034	0.51	15	PASS	19.85	0.51	15	PASS
CCB5	CCB	1	0.042	66.45	15	<PQL	0.091	12.4	15	PASS
CCV6	CCV	1	19.45	0.79	15	PASS	19.87	0.43	15	PASS
CCB6	CCB	1	0.018	91.86	15	<PQL	0.085	13.99	15	PASS
MB-66251	MBLK	1	0	N/A	15	<PQL	0.021	37.18	15	<PQL
LCS-66251	LCS	1	9.57	3.15	15	PASS	9.86	0.58	15	PASS
CCV7	CCV	1	19.97	0.95	15	PASS	19.7	1.052	15	PASS
CCB7	CCB	1	0.015	86.6	15	<PQL	0.07	10.15	15	PASS
LLCCV2	CCV2	1	0.56	23.51	20	NR!	0.54	4.76	20	PASS
ICSA3	ICSA	1	0.0038	173.21	15	<PQL	0.058	14.48	15	PASS
ICSAB3	ICSAB	1	19.89	0.8	15	PASS	22.36	1.12	15	PASS
N027812-010B	SAMP	1	0.99	10.57	15	PASS	5.38	1.47	15	PASS
N027812-010B	SAMP	5	0.22	45.62	15	<PQL	1.037	2.28	15	PASS
N027812-011B	SAMP	1	1.86	5.67	15	PASS	5.18	0.89	15	PASS
N027812-011B	SAMP	5	0.42	14.21	15	PASS	1	2.92	15	PASS
N027812-012B	SAMP	1	1.94	11.31	15	PASS	4.98	2.6	15	PASS
N027812-012B	SAMP	5	0.36	12.19	15	PASS	0.98	3.43	15	PASS
N027812-013B	SAMP	1	1.6	7.84	15	PASS	5.016	1.79	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027812-013B	SAMP	5	0.44	5.46	15	PASS	0.99	3.29	15	PASS
N027812-014B	SAMP	1	0.98	11.24	15	PASS	5.49	1.027	15	PASS
N027812-014B	SAMP	5	0.23	41.64	15	<PQL	1.038	2.014	15	PASS
CCV8	CCV	1	20.75	1.53	15	PASS	19.45	0.91	15	PASS
CCB8	CCB	1	0.019	91.54	15	<PQL	0.089	14.98	15	PASS
N027812-015B	SAMP	1	0.84	22.44	15	NR!	4.57	2.083	15	PASS
N027812-015B	SAMP	5	0.21	14.11	15	PASS	0.91	2.56	15	PASS
N027812-001B	SAMP	1	1.77	9.91	15	PASS	5.016	0.92	15	PASS
N027812-001B	SAMP	5	0.33	18.76	15	<PQL	1.029	0.17	15	PASS
N027812-001B	SAMP	25	0.091	59.093	15	<PQL	0.21	3.061	15	PASS
N027812-001B-PS	PS	1	12.31	0.75	15	PASS	16.25	0.88	15	PASS
N027812-001B-PS	PS	5	2.49	19.05	15	NR!	3.34	0.86	15	PASS
N027812-001B-MS	MS	1	12.94	2.96	15	PASS	16.61	0.91	15	PASS
N027812-001B-MS	MS	5	2.61	15.91	15	NR!	3.42	2.38	15	PASS
N027812-001B-MSD	MSD	1	12.65	5.01	15	PASS	16.29	0.76	15	PASS
CCV9	CCV	1	21.13	1.46	15	PASS	19.24	0.34	15	PASS
CCB9	CCB	1	0.0045	173.21	15	<PQL	0.093	16.3	15	<PQL
N027812-001B-MSD	MSD	5	2.62	3.55	15	PASS	3.25	1.35	15	PASS
N027812-002B	SAMP	1	1.67	15.28	15	NR!	5.037	1.86	15	PASS
N027812-002B	SAMP	5	0.28	3.36	15	PASS	1.02	1.19	15	PASS
N027812-003B	SAMP	1	1.69	11.13	15	PASS	5.078	1.88	15	PASS
N027812-003B	SAMP	5	0.48	20.31	15	<PQL	1	6.77	15	PASS
N027812-004B	SAMP	1	1.69	8.81	15	PASS	5.025	1.84	15	PASS
N027812-004B	SAMP	5	0.32	36.28	15	<PQL	0.98	1.71	15	PASS
N027812-005B	SAMP	1	1.69	17.63	15	NR!	5.23	1.86	15	PASS
N027812-005B	SAMP	5	0.33	21.45	15	<PQL	1.017	1.53	15	PASS
N027812-006B	SAMP	1	1.91	9.33	15	PASS	5.059	2.69	15	PASS
CCV10	CCV	1	20.93	0.73	15	PASS	19.52	0.38	15	PASS
CCB10	CCB	1	0.023	91.15	15	<PQL	0.078	16.34	15	<PQL
N027812-006B	SAMP	5	0.4	21.049	15	<PQL	0.98	3.33	15	PASS
N027812-007B	SAMP	1	1.99	28.51	15	NR!	5.073	0.91	15	PASS
N027812-007B	SAMP	5	0.49	23.96	15	<PQL	0.96	1.15	15	PASS
N027812-008B	SAMP	1	1.64	21.19	15	NR!	5.041	1.93	15	PASS
N027812-008B	SAMP	5	0.33	7.8	15	PASS	0.96	2.8	15	PASS
N027812-009B	SAMP	1	1.88	3.025	15	PASS	5.074	1.25	15	PASS
N027812-009B	SAMP	5	0.37	34.1	15	<PQL	0.97	1.78	15	PASS
CCV11	CCV	1	20.67	3.23	15	PASS	19.79	1.42	15	PASS
CCB11	CCB	1	0.014	115	15	<PQL	0.09	8.0034	15	PASS
LLCCV3	CCV2	1	0.5	21.62	20	<PQL	0.55	0.73	20	PASS
ICSA4	ICSA	1	0.015	173.21	15	<PQL	0.075	19.61	15	<PQL
ICSAB4	ICSAB	1	20.43	2.17	15	PASS	22.2	1.057	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV12	CCV	1	21.2	1.34	15	PASS	19.77	0.48	15	PASS
CCB12	CCB	1	0.019	34.87	15	<PQL	0.087	10.62	15	PASS
CCV13	CCV	1	21.73	5.21	15	PASS	19.9	0.75	15	PASS
CCB13	CCB	1	0.016	44.26	15	<PQL	0.083	6.14	15	PASS
LLCCV4	CCV2	1	0.55	38.98	20	NR!	0.53	2.58	20	PASS
ICSA5	ICSA	1	0.029	137.58	15	<PQL	0.053	20.31	15	<PQL
ICSAB5	ICSAB	1	20.96	1.67	15	PASS	22.2	1.15	15	PASS

PERCENT RSD SUMMARY: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	16.66	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	14.035	15	PASS
Std3-5/50 ppb	ICAL	1	5.31	0.83	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	3.25	15	PASS
Std5-20/200 ppb	ICAL	1	21.79	1.76	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	1.49	15	PASS
Std7-100/1000 ppb	ICAL	1	100.64	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	199.36	0.73	15	PASS
ICV	ICV	1	9.91	2.16	15	PASS
ICB	ICB	1	0.028	59.34	15	<PQL
LLICV	CCV1	1	0.63	4.47	20	PASS
ICSA1	ICSA	1	0.041	65.64	15	<PQL
ICSAB1	ICSAB	1	19.5	4.67	15	PASS
LLICV	CCV1	1	0.6	18.91	20	PASS
CCV1	CCV	1	18.97	0.68	15	PASS
CCB1	CCB	1	0.0092	154.42	15	<PQL
N027812-002B	SAMP	1	1.52	5.13	15	PASS
N027812-005B	SAMP	1	1.51	4.1	15	PASS
N027812-007B	SAMP	1	1.67	7.72	15	PASS
N027812-008B	SAMP	1	1.39	12.044	15	PASS
CCV2	CCV	1	19.64	3.14	15	PASS
CCB2	CCB	1	0.0072	290.86	15	<PQL
CCV3	CCV	1	19.63	2.78	15	PASS
CCB3	CCB	1	0.017	45.38	15	<PQL
CCV4	CCV	1	19.036	2.77	15	PASS
CCB4	CCB	1	0.036	19.15	15	<PQL
LLCCV1	CCV2	1	0.4	27.22	20	<PQL
ICSA2	ICSA	1	0.021	107.33	15	<PQL
ICSAB2	ICSAB	1	19.3	2.28	15	PASS
CCV5	CCV	1	18.97	4.5	15	PASS
CCB5	CCB	1	0.018	158.73	15	<PQL
LLCCV2	CCV2	1	0.51	21.32	20	NR!
ICSA3	ICSA	1	0.0082	159.17	15	<PQL
ICSAB3	ICSAB	1	19.31	3.15	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105001.D	RINSE	RINSE	1	01/05/18 11:43 AM
B0105002.D	Cal Blank	IBLK	1	01/05/18 11:49 AM
B0105003.D	Std1-0.1/1 ppb	ICAL	1	01/05/18 11:54 AM
B0105004.D	Std2-0.5/5 ppb	ICAL	1	01/05/18 12:00 PM
B0105005.D	Std3-5/50 ppb	ICAL	1	01/05/18 12:05 PM
B0105006.D	Std4-10/100 ppb	ICAL	1	01/05/18 12:11 PM
B0105007.D	Std5-20/200 ppb	ICAL	1	01/05/18 12:16 PM
B0105008.D	Std6-40/400 ppb	ICAL	1	01/05/18 12:22 PM
B0105009.D	Std7-100/1000 ppb	ICAL	1	01/05/18 12:27 PM
B0105010.D	Std8-200/2000 ppb	ICAL	1	01/05/18 12:33 PM
B0105011.D	ICV	ICV	1	01/05/18 12:38 PM
B0105012.D	ICB	ICB	1	01/05/18 12:44 PM
B0105013.D	LLICV	CCV1	1	01/05/18 12:49 PM
B0105014.D	ICSA1	ICSA	1	01/05/18 12:55 PM
B0105015.D	ICSAB1	ICSAB	1	01/05/18 1:00 PM
B0105016.D	N027546-010B	SAMP	1	01/05/18 1:06 PM
B0105017.D	N027546-010B	SAMP	1	01/05/18 1:12 PM
B0105018.D	MB-66269	MBLK	1	01/05/18 1:17 PM
B0105019.D	LCS-66269	LCS	1	01/05/18 1:23 PM
B0105020.D	N027817-006C	SAMP	1	01/05/18 1:28 PM
B0105021.D	N027817-006C	SAMP	5	01/05/18 1:34 PM
B0105022.D	N027817-006C-DUP	DUP	1	01/05/18 1:39 PM
B0105023.D	N027817-006C-PS	PS	1	01/05/18 1:45 PM
B0105024.D	N027817-006C-MS	MS	1	01/05/18 1:50 PM
B0105025.D	N027817-006C-MSD	MSD	1	01/05/18 1:56 PM
B0105026.D	CCV1	CCV	1	01/05/18 2:03 PM
B0105027.D	CCB1	CCB	1	01/05/18 2:08 PM
B0105028.D	MB-66130	MBLK	1	01/05/18 2:14 PM
B0105029.D	LCS-66130	LCS	1	01/05/18 2:20 PM
B0105030.D	N027583-001E	SAMP	1	01/05/18 2:25 PM
B0105031.D	N027583-001E	SAMP	5	01/05/18 2:31 PM
B0105032.D	N027583-002E	SAMP	1	01/05/18 2:36 PM
B0105033.D	N027583-002E	SAMP	5	01/05/18 2:42 PM
B0105034.D	N027583-003E	SAMP	1	01/05/18 2:47 PM
B0105035.D	N027583-003E	SAMP	5	01/05/18 2:53 PM
B0105036.D	N027557-008E	SAMP	1	01/05/18 2:59 PM
B0105037.D	N027557-008E	SAMP	5	01/05/18 3:04 PM
B0105038.D	CCV2	CCV	1	01/05/18 3:10 PM
B0105039.D	CCB2	CCB	1	01/05/18 3:15 PM
B0105040.D	N027557-008E	SAMP	25	01/05/18 3:21 PM
B0105041.D	N027557-008E-PS	PS	1	01/05/18 3:26 PM
B0105042.D	N027557-008E-PS	PS	5	01/05/18 3:32 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105043.D	N027557-008E-MS	MS	1	01/05/18 3:39 PM
B0105044.D	N027557-008E-MSD	MSD	1	01/05/18 3:45 PM
B0105045.D	N027557-009E	SAMP	1	01/05/18 3:50 PM
B0105046.D	N027557-009E	SAMP	5	01/05/18 3:56 PM
B0105047.D	N027557-010E	SAMP	1	01/05/18 4:02 PM
B0105048.D	N027557-010E	SAMP	5	01/05/18 4:07 PM
B0105049.D	MB-66129	MBLK	1	01/05/18 4:13 PM
B0105050.D	CCV3	CCV	1	01/05/18 4:18 PM
B0105051.D	CCB3	CCB	1	01/05/18 4:24 PM
B0105052.D	LLCCV1	CCV2	1	01/05/18 4:29 PM
B0105053.D	ICSA2	ICSA	1	01/05/18 4:35 PM
B0105054.D	ICSAB2	ICSAB	1	01/05/18 4:39 PM
B0105055.D	LCS-66129	LCS	1	01/05/18 4:45 PM
B0105056.D	N027557-001B	SAMP	1	01/05/18 4:51 PM
B0105057.D	N027557-001B	SAMP	5	01/05/18 4:57 PM
B0105058.D	N027557-001B	SAMP	25	01/05/18 5:02 PM
B0105059.D	N027557-001B-PS	PS	1	01/05/18 5:08 PM
B0105060.D	N027557-001B-PS	PS	5	01/05/18 5:13 PM
B0105061.D	N027557-001B-MS	MS	1	01/05/18 5:19 PM
B0105062.D	N027557-001B-MS	MS	5	01/05/18 5:25 PM
B0105063.D	N027557-001B-MSD	MSD	1	01/05/18 5:30 PM
B0105064.D	N027557-001B-MSD	MSD	5	01/05/18 5:36 PM
B0105065.D	CCV5	CCV	1	01/05/18 5:41 PM
B0105066.D	CCB5	CCB	1	01/05/18 5:47 PM
B0105067.D	N027557-002B	SAMP	1	01/05/18 5:52 PM
B0105068.D	N027557-002B	SAMP	5	01/05/18 5:58 PM
B0105069.D	N027557-003B	SAMP	1	01/05/18 6:03 PM
B0105070.D	N027557-003B	SAMP	5	01/05/18 6:09 PM
B0105071.D	N027557-004B	SAMP	1	01/05/18 6:14 PM
B0105072.D	N027557-004B	SAMP	5	01/05/18 6:20 PM
B0105073.D	N027557-005B	SAMP	1	01/05/18 6:26 PM
B0105074.D	N027557-005B	SAMP	5	01/05/18 6:31 PM
B0105075.D	N027557-006B	SAMP	1	01/05/18 6:37 PM
B0105076.D	N027557-006B	SAMP	5	01/05/18 6:42 PM
B0105077.D	CCV6	CCV	1	01/05/18 6:48 PM
B0105078.D	CCB6	CCB	1	01/05/18 6:53 PM
B0105079.D	N027557-007B	SAMP	1	01/05/18 6:59 PM
B0105080.D	N027557-007B	SAMP	5	01/05/18 7:05 PM
B0105081.D	N027557-008B	SAMP	1	01/05/18 7:10 PM
B0105082.D	N027557-008B	SAMP	5	01/05/18 7:16 PM
B0105083.D	N027557-009B	SAMP	1	01/05/18 7:21 PM
B0105084.D	N027557-009B	SAMP	5	01/05/18 7:27 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105085.D	N027557-010B	SAMP	1	01/05/18 7:32 PM
B0105086.D	N027557-010B	SAMP	5	01/05/18 7:38 PM
B0105087.D	MB-66251	MBLK	1	01/05/18 7:43 PM
B0105088.D	LCS-66251	LCS	1	01/05/18 7:49 PM
B0105089.D	CCV7	CCV	1	01/05/18 7:54 PM
B0105090.D	CCB7	CCB	1	01/05/18 8:00 PM
B0105091.D	LLCCV2	CCV2	1	01/05/18 8:05 PM
B0105092.D	ICSA3	ICSA	1	01/05/18 8:11 PM
B0105093.D	ICSAB3	ICSAB	1	01/05/18 8:17 PM
B0105094.D	N027812-010B	SAMP	1	01/05/18 8:22 PM
B0105095.D	N027812-010B	SAMP	5	01/05/18 8:28 PM
B0105096.D	N027812-011B	SAMP	1	01/05/18 8:33 PM
B0105097.D	N027812-011B	SAMP	5	01/05/18 8:39 PM
B0105098.D	N027812-012B	SAMP	1	01/05/18 8:44 PM
B0105099.D	N027812-012B	SAMP	5	01/05/18 8:50 PM
B0105100.D	N027812-013B	SAMP	1	01/05/18 8:56 PM
B0105101.D	N027812-013B	SAMP	5	01/05/18 9:01 PM
B0105102.D	N027812-014B	SAMP	1	01/05/18 9:07 PM
B0105103.D	N027812-014B	SAMP	5	01/05/18 9:12 PM
B0105104.D	CCV8	CCV	1	01/05/18 9:19 PM
B0105105.D	CCB8	CCB	1	01/05/18 9:25 PM
B0105106.D	N027812-015B	SAMP	1	01/05/18 9:31 PM
B0105107.D	N027812-015B	SAMP	5	01/05/18 9:36 PM
B0105108.D	N027812-001B	SAMP	1	01/05/18 9:41 PM
B0105109.D	N027812-001B	SAMP	5	01/05/18 9:47 PM
B0105110.D	N027812-001B	SAMP	25	01/05/18 9:52 PM
B0105111.D	N027812-001B-PS	PS	1	01/05/18 9:58 PM
B0105112.D	N027812-001B-PS	PS	5	01/05/18 10:04 PM
B0105113.D	N027812-001B-MS	MS	1	01/05/18 10:09 PM
B0105114.D	N027812-001B-MS	MS	5	01/05/18 10:15 PM
B0105115.D	N027812-001B-MSD	MSD	1	01/05/18 10:21 PM
B0105116.D	CCV9	CCV	1	01/05/18 10:27 PM
B0105117.D	CCB9	CCB	1	01/05/18 10:32 PM
B0105118.D	N027812-001B-MSD	MSD	5	01/05/18 10:38 PM
B0105119.D	N027812-002B	SAMP	1	01/05/18 10:43 PM
B0105120.D	N027812-002B	SAMP	5	01/05/18 10:49 PM
B0105121.D	N027812-003B	SAMP	1	01/05/18 10:54 PM
B0105122.D	N027812-003B	SAMP	5	01/05/18 11:00 PM
B0105123.D	N027812-004B	SAMP	1	01/05/18 11:05 PM
B0105124.D	N027812-004B	SAMP	5	01/05/18 11:11 PM
B0105125.D	N027812-005B	SAMP	1	01/05/18 11:16 PM
B0105126.D	N027812-005B	SAMP	5	01/05/18 11:22 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105127.D	N027812-006B	SAMP	1	01/05/18 11:28 PM
B0105128.D	CCV10	CCV	1	01/05/18 11:33 PM
B0105129.D	CCB10	CCB	1	01/05/18 11:39 PM
B0105130.D	N027812-006B	SAMP	5	01/05/18 11:44 PM
B0105131.D	N027812-007B	SAMP	1	01/05/18 11:50 PM
B0105132.D	N027812-007B	SAMP	5	01/05/18 11:55 PM
B0105133.D	N027812-008B	SAMP	1	01/06/18 12:01 AM
B0105134.D	N027812-008B	SAMP	5	01/06/18 12:06 AM
B0105135.D	N027812-009B	SAMP	1	01/06/18 12:12 AM
B0105136.D	N027812-009B	SAMP	5	01/06/18 12:18 AM
B0105137.D	MB-66250	MBLK	1	01/06/18 12:23 AM
B0105138.D	LCS-66250	LCS	1	01/06/18 12:29 AM
B0105139.D	N027789-003C	SAMP	1	01/06/18 12:34 AM
B0105140.D	CCV11	CCV	1	01/06/18 12:41 AM
B0105141.D	CCB11	CCB	1	01/06/18 12:47 AM
B0105142.D	LLCCV3	CCV2	1	01/06/18 12:52 AM
B0105143.D	ICSA4	ICSA	1	01/06/18 12:56 AM
B0105144.D	ICSAB4	ICSAB	1	01/06/18 1:02 AM
B0105145.D	N027789-003C	SAMP	5	01/06/18 1:08 AM
B0105146.D	N027789-003C	SAMP	25	01/06/18 1:13 AM
B0105147.D	N027789-001E	SAMP	1	01/06/18 1:19 AM
B0105148.D	N027789-001E	SAMP	5	01/06/18 1:24 AM
B0105149.D	N027789-001E	SAMP	25	01/06/18 1:30 AM
B0105150.D	N027789-001E-PS	PS	1	01/06/18 1:35 AM
B0105151.D	N027789-001E-PS	PS	5	01/06/18 1:41 AM
B0105152.D	N027789-001E-MS	MS	1	01/06/18 1:46 AM
B0105153.D	N027789-001E-MS	MS	5	01/06/18 1:52 AM
B0105154.D	N027789-001E-MSD	MSD	1	01/06/18 1:58 AM
B0105155.D	CCV12	CCV	1	01/06/18 2:03 AM
B0105156.D	CCB12	CCB	1	01/06/18 2:09 AM
B0105157.D	N027789-001E-MSD	MSD	5	01/06/18 2:14 AM
B0105158.D	N027789-002E	SAMP	1	01/06/18 2:20 AM
B0105159.D	N027789-002E	SAMP	5	01/06/18 2:25 AM
B0105160.D	CCV13	CCV	1	01/06/18 2:31 AM
B0105161.D	CCB13	CCB	1	01/06/18 2:36 AM
B0105162.D	LLCCV4	CCV2	1	01/06/18 2:42 AM
B0105163.D	ICSA5	ICSA	1	01/06/18 2:47 AM
B0105164.D	ICSAB5	ICSAB	1	01/06/18 2:53 AM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108001.D	RINSE	RINSE	1	01/08/18 9:11 AM
A0108002.D	Cal Blank	IBLK	1	01/08/18 9:16 AM
A0108003.D	Std1-0.1/1 ppb	ICAL	1	01/08/18 9:22 AM
A0108004.D	Std2-0.5/5 ppb	ICAL	1	01/08/18 9:27 AM
A0108005.D	Std3-5/50 ppb	ICAL	1	01/08/18 9:33 AM
A0108006.D	Std4-10/100 ppb	ICAL	1	01/08/18 9:39 AM
A0108007.D	Std5-20/200 ppb	ICAL	1	01/08/18 9:46 AM
A0108008.D	Std6-40/400 ppb	ICAL	1	01/08/18 9:52 AM
A0108009.D	Std7-100/1000 ppb	ICAL	1	01/08/18 9:58 AM
A0108010.D	Std8-200/2000 ppb	ICAL	1	01/08/18 10:04 AM
A0108011.D	ICV	ICV	1	01/08/18 10:09 AM
A0108012.D	ICB	ICB	1	01/08/18 10:15 AM
A0108013.D	LLICV	CCV1	1	01/08/18 10:20 AM
A0108014.D	ICSA1	ICSA	1	01/08/18 10:29 AM
A0108015.D	ICSAB1	ICSAB	1	01/08/18 10:34 AM
A0108016.D	LLICV	CCV1	1	01/08/18 10:40 AM
A0108017.D	N027557-001B	SAMP	1	01/08/18 10:45 AM
A0108018.D	N027557-002B	SAMP	1	01/08/18 10:51 AM
A0108019.D	N027557-003B	SAMP	1	01/08/18 10:56 AM
A0108020.D	N027557-004B	SAMP	1	01/08/18 11:02 AM
A0108021.D	N027557-006B	SAMP	1	01/08/18 11:08 AM
A0108022.D	N027557-010B	SAMP	1	01/08/18 11:15 AM
A0108023.D	N027557-001B	SAMP	1	01/08/18 11:20 AM
A0108024.D	N027557-003B	SAMP	1	01/08/18 11:26 AM
A0108025.D	N027557-004B	SAMP	1	01/08/18 11:31 AM
A0108026.D	N027557-003B	SAMP	1	01/08/18 11:37 AM
A0108027.D	CCV1	CCV	1	01/08/18 11:43 AM
A0108028.D	CCB1	CCB	1	01/08/18 11:48 AM
A0108029.D	N027812-002B	SAMP	1	01/08/18 11:54 AM
A0108030.D	N027812-005B	SAMP	1	01/08/18 11:59 AM
A0108031.D	N027812-007B	SAMP	1	01/08/18 12:05 PM
A0108032.D	N027812-008B	SAMP	1	01/08/18 12:10 PM
A0108033.D	MB-66270	MBLK	1	01/08/18 12:16 PM
A0108034.D	LCS-66270	LCS	1	01/08/18 12:21 PM
A0108035.D	N027820-001B	SAMP	1	01/08/18 12:27 PM
A0108036.D	N027820-001B	SAMP	5	01/08/18 12:32 PM
A0108037.D	N027820-001B-PS	PS	1	01/08/18 12:38 PM
A0108038.D	N027820-001B-MS	MS	1	01/08/18 12:44 PM
A0108039.D	CCV2	CCV	1	01/08/18 12:49 PM
A0108040.D	CCB2	CCB	1	01/08/18 12:55 PM
A0108041.D	N027820-001B-MSD	MSD	1	01/08/18 1:00 PM
A0108042.D	N027820-002B	SAMP	1	01/08/18 1:06 PM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108043.D	N027820-003B	SAMP	1	01/08/18 1:11 PM
A0108044.D	N027820-004B	SAMP	1	01/08/18 1:17 PM
A0108045.D	N027820-005B	SAMP	1	01/08/18 1:22 PM
A0108046.D	N027820-006B	SAMP	1	01/08/18 1:28 PM
A0108047.D	N027820-007B	SAMP	1	01/08/18 1:34 PM
A0108048.D	N027820-008B	SAMP	1	01/08/18 1:40 PM
A0108049.D	N027820-009B	SAMP	1	01/08/18 1:45 PM
A0108050.D	N027820-010B	SAMP	1	01/08/18 1:51 PM
A0108051.D	CCV3	CCV	1	01/08/18 1:56 PM
A0108052.D	CCB3	CCB	1	01/08/18 2:02 PM
A0108053.D	LCS-66270	LCS	1	01/08/18 2:08 PM
A0108054.D	N027820-011B	SAMP	1	01/08/18 2:13 PM
A0108055.D	N027820-012B	SAMP	1	01/08/18 2:19 PM
A0108056.D	N027820-013B	SAMP	1	01/08/18 2:25 PM
A0108057.D	N027820-003B	SAMP	1	01/08/18 2:30 PM
A0108058.D	N027557-002B	SAMP	1	01/08/18 2:38 PM
A0108059.D	N027557-002A	SAMP	1	01/08/18 2:44 PM
A0108060.D	N027557-004B	SAMP	1	01/08/18 2:51 PM
A0108061.D	N027557-004A	SAMP	1	01/08/18 2:56 PM
A0108062.D	N027583-001B	SAMP	1	01/08/18 3:03 PM
A0108063.D	CCV4	CCV	1	01/08/18 3:09 PM
A0108064.D	CCB4	CCB	1	01/08/18 3:15 PM
A0108065.D	LLCCV1	CCV2	1	01/08/18 3:20 PM
A0108066.D	ICSA2	ICSA	1	01/08/18 3:26 PM
A0108067.D	ICSAB2	ICSAB	1	01/08/18 3:31 PM
A0108068.D	N027583-001A	SAMP	1	01/08/18 3:37 PM
A0108069.D	N027583-002B	SAMP	1	01/08/18 3:42 PM
A0108070.D	N027583-002A	SAMP	1	01/08/18 3:48 PM
A0108071.D	N027583-003B	SAMP	1	01/08/18 3:53 PM
A0108072.D	N027583-003A	SAMP	1	01/08/18 3:59 PM
A0108073.D	N027820-012B	SAMP	1	01/08/18 4:05 PM
A0108074.D	CCV5	CCV	1	01/08/18 4:10 PM
A0108075.D	CCB5	CCB	1	01/08/18 4:15 PM
A0108076.D	LLCCV2	CCV2	1	01/08/18 4:21 PM
A0108077.D	ICSA3	ICSA	1	01/08/18 4:28 PM
A0108078.D	ICSAB3	ICSAB	1	01/08/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 2:00:00 P**
Prep End Date: **1/4/2018 6:30:00 P**
Prep Batch **66251** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/15/2018
Initials/ Date: 01/15/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66251	Aqueous		25	☐	0	0	25	1.000		
MB-66251	Aqueous		25	☐	0	0	25	1.000		
N027812-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 2:00:00 P**
Prep End Date: **1/4/2018 6:30:00 P**

Reviewed/ Date: 01/15/2018

Initials/ Date: 01/15/2018

Prep Batch **66251** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027812-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Jan 2018 09:19:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	271212.00	0.00	
24 Mg	1049440.00	0.00	
25 Mg	138898.00	0.00	
26 Mg	161197.00	0.00	
59 Co	1084180.00	0.00	
115 In	1544490.00	0.00	
206 Pb	403628.00	0.00	
207 Pb	351349.00	0.00	
208 Pb	869853.00	0.00	

RSD (%)

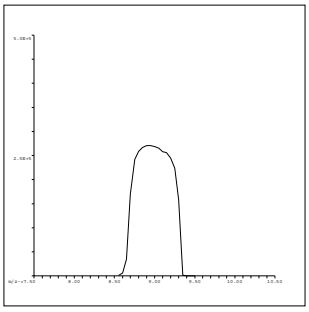
Element	Actual	Required	Flag
9 Be	0.37	5.00	
24 Mg	0.72	5.00	
25 Mg	0.49	5.00	
26 Mg	0.95	5.00	
59 Co	1.10	5.00	
115 In	0.56	5.00	
206 Pb	0.71	5.00	
207 Pb	0.92	5.00	
208 Pb	0.96	5.00	

Ion Ratio

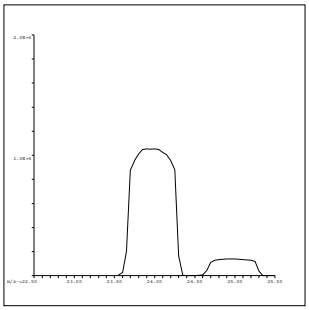
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

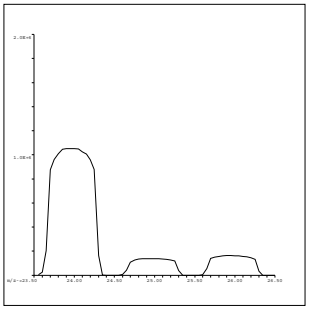
Element	Actual	Required	Flag



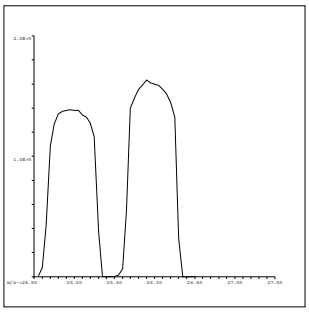
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



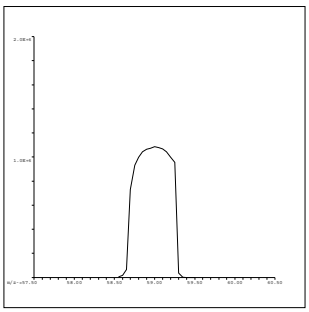
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



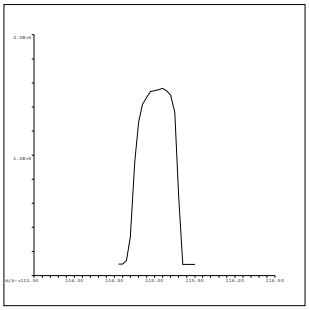
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



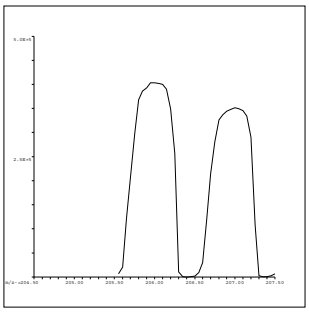
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



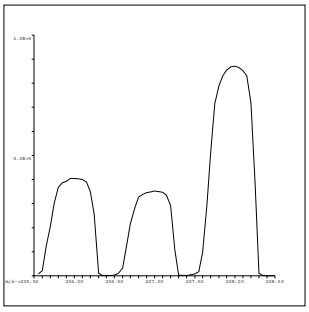
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



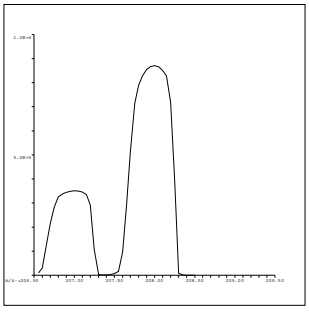
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Jan 2018 08:55:40 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	96941.10	0.00	
24	Mg	416281.00	0.00	
25	Mg	54933.90	0.00	
26	Mg	64371.70	0.00	
59	Co	524831.00	0.00	
115	In	934224.00	0.00	
206	Pb	243715.00	0.00	
207	Pb	211485.00	0.00	
208	Pb	521909.00	0.00	

RSD (%)

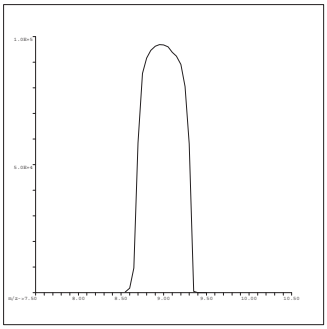
Element		Actual	Required	Flag
9	Be	1.32	5.00	
24	Mg	1.17	5.00	
25	Mg	1.12	5.00	
26	Mg	1.76	5.00	
59	Co	1.33	5.00	
115	In	1.01	5.00	
206	Pb	1.07	5.00	
207	Pb	0.57	5.00	
208	Pb	0.86	5.00	

Ion Ratio

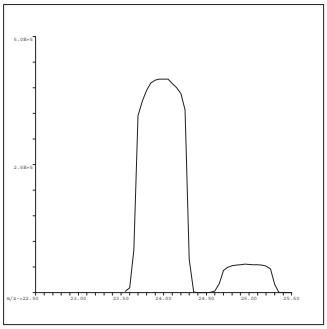
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

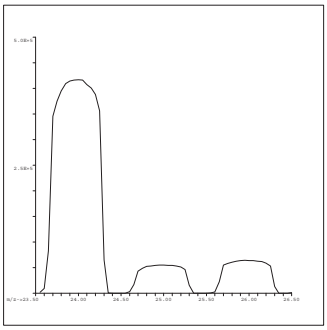
Element	Actual	Required	Flag



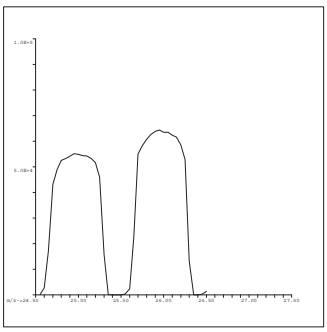
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



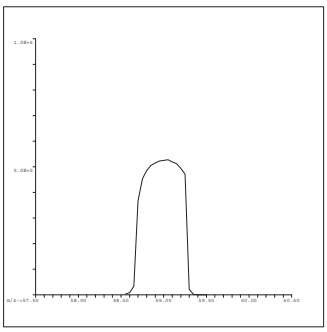
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



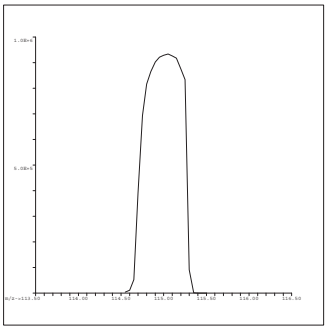
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



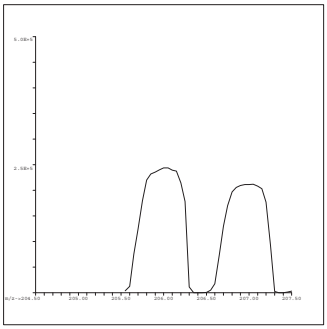
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



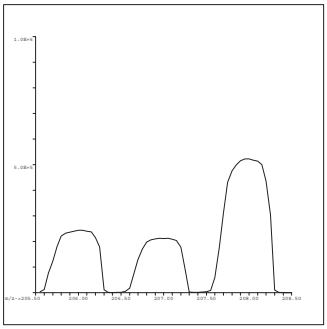
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



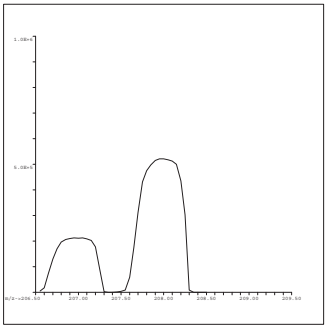
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180105B

Instrument ID: ICPMS-02

Analyte	Data File	B0105002.D	B0105003.D	B0105004.D	B0105005.D	B0105006.D	B0105007.D	B0105008.D	B0105009.D	B0105010.D	
	Acq. Date-Time	01/05/2018 11:49 AM	01/05/2018 11:54 AM	01/05/2018 12:00 PM	01/05/2018 12:05 PM	01/05/2018 12:11 PM	01/05/2018 12:16 PM	01/05/2018 12:22 PM	01/05/2018 12:27 PM	01/05/2018 12:33 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	98689.2		103014	103257.9	103971.1	104715.8	105546	106915	107843.3	
55 Mn [2]	CPS	337.9		2579.5	22159.5	42903.6	85590.8	173050.6	425701.3	842314.7	0.9999
52 Cr [2]	CPS	418.9		4875.2	44614.8	89300.4	177835	359660.9	883326.5	1797867.3	1.0000
72 Ge (ISTD) [1]	CPS	85800.3		87852.4	87543	88388.7	88069.4	88991.3	88217.8	90606.5	
78 Se [1]	CPS	0		128.9	1492.4	2952.6	5961.3	12010.4	29386.3	59937.9	1.0000
72 Ge (ISTD) [2]	CPS	69151.4	71094.1	71706.6	71535.9	70826.1	71065	71998.1	72904.2	71840.7	
75 As [2]	CPS	13.3	121.3	482.2	4645.2	9336.5	18445.7	37320	92510	183489.7	1.0000
103 Rh (ISTD) [2]	CPS	2266047.3		2354583.3	2338314.3	2314610	2315909.4	2339607.9	2318771.2	2318691.7	
95 Mo [2]	CPS	16.7		2633.7	26562.8	52431.1	105300.5	212144.5	531286.1	1061741.9	1.0000
159 Tb (ISTD) [3]	CPS	6077264.3		6306635.3	6254358	6228566.5	6214942.1	6309922.5	6207127.9	6292191.7	
137 Ba [3]	CPS	-13.3		6089.4	51542.6	101985.6	199571.8	404006	989855.9	2044511.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180108A

Instrument ID: ICPMS-02

Analyte	Data File	A0108002.D	A0108004.D	A0108005.D	A0108006.D	A0108007.D	A0108008.D	A0108009.D	A0108010.D	
	Acq. Date-Time	01/08/2018 09:16 AM	01/08/2018 09:27 AM	01/08/2018 09:33 AM	01/08/2018 09:39 AM	01/08/2018 09:46 AM	01/08/2018 09:52 AM	01/08/2018 09:58 AM	01/08/2018 10:04 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	62619.5	63563.5	63516.6	63395.8	52108.6	63322.2	61513.2	62853.8	
78 Se [1]	CPS	1.1	112.2	1202.3	2324.7	4042.9	9150.7	22034.5	44595.5	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.971	0.10	10.00	0	99.7	90	110				
Barium	9.718	1.0	10.00	0	97.2	90	110				
Manganese	101.079	0.50	100.0	0	101	90	110				
Molybdenum	10.533	0.50	10.00	0	105	90	110				
Selenium	9.846	0.50	10.00	0	98.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	80	120				
Barium	1.125	1.0	1.000	0	113	80	120				
Manganese	0.520	0.50	0.5000	0	104	80	120				
Molybdenum	0.593	0.50	0.5000	0	119	80	120				
Selenium	0.473	0.50	0.5000	0	94.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.510	0.10	20.00	0	97.6	90	110				
Barium	20.842	1.0	20.00	0	104	90	110				
Manganese	20.637	0.50	20.00	0	103	90	110				
Molybdenum	19.499	0.50	20.00	0	97.5	90	110				
Selenium	19.503	0.50	20.00	0	97.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.604	0.10	20.00	0	98.0	90	110				
Barium	20.825	1.0	20.00	0	104	90	110				
Manganese	20.976	0.50	20.00	0	105	90	110				
Molybdenum	19.769	0.50	20.00	0	98.8	90	110				
Selenium	20.189	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.934	0.10	20.00	0	99.7	90	110				
Barium	20.806	1.0	20.00	0	104	90	110				
Manganese	20.840	0.50	20.00	0	104	90	110				
Molybdenum	19.679	0.50	20.00	0	98.4	90	110				
Selenium	19.337	0.50	20.00	0	96.7	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.112	0.10	0.1000	0	112	70	130				
Barium	1.187	1.0	1.000	0	119	70	130				
Manganese	0.547	0.50	0.5000	0	109	70	130				
Molybdenum	0.527	0.50	0.5000	0	105	70	130				
Selenium	0.435	0.50	0.5000	0	87.0	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.642	0.10	20.00	0	98.2	90	110				
Barium	21.021	1.0	20.00	0	105	90	110				
Manganese	20.499	0.50	20.00	0	102	90	110				
Molybdenum	19.849	0.50	20.00	0	99.2	90	110				
Selenium	20.034	0.50	20.00	0	100	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.620	0.10	20.00	0	98.1	90	110				
Barium	21.160	1.0	20.00	0	106	90	110				
Manganese	20.667	0.50	20.00	0	103	90	110				
Molybdenum	19.866	0.50	20.00	0	99.3	90	110				
Selenium	19.446	0.50	20.00	0	97.2	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.689	0.10	20.00	0	98.4	90	110				
Barium	20.955	1.0	20.00	0	105	90	110				
Manganese	20.837	0.50	20.00	0	104	90	110				
Molybdenum	19.695	0.50	20.00	0	98.5	90	110				
Selenium	19.969	0.50	20.00	0	99.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.8	70	130				
Barium	1.204	1.0	1.000	0	120	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.555	0.50	0.5000	0	111	70	130				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.242	0.10	20.00	0	96.2	90	110				
Barium	21.237	1.0	20.00	0	106	90	110				
Manganese	20.585	0.50	20.00	0	103	90	110				
Molybdenum	19.450	0.50	20.00	0	97.3	90	110				
Selenium	20.754	0.50	20.00	0	104	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.420	0.10	20.00	0	97.1	90	110				
Barium	20.590	1.0	20.00	0	103	90	110				
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	19.242	0.50	20.00	0	96.2	90	110				
Selenium	21.126	0.50	20.00	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.587	0.10	20.00	0	97.9	90	110				
Barium	20.552	1.0	20.00	0	103	90	110				
Manganese	20.828	0.50	20.00	0	104	90	110				
Molybdenum	19.523	0.50	20.00	0	97.6	90	110				
Selenium	20.930	0.50	20.00	0	105	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.339	0.10	20.00	0	96.7	90	110				
Barium	21.509	1.0	20.00	0	108	90	110				
Manganese	20.105	0.50	20.00	0	101	90	110				
Molybdenum	19.790	0.50	20.00	0	99.0	90	110				
Selenium	20.672	0.50	20.00	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	70	130				
Barium	1.226	1.0	1.000	0	123	70	130				
Manganese	0.514	0.50	0.5000	0	103	70	130				
Molybdenum	0.549	0.50	0.5000	0	110	70	130				
Selenium	0.499	0.50	0.5000	0	99.8	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.906	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.596	0.50	0.5000	0	119	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.971	0.50	20.00	0	94.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.634	0.50	20.00	0	98.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.036	0.50	20.00	0	95.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.400	0.50	0.5000	0	80.1	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.968	0.50	20.00	0	94.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.989	1.0	10.00	0	99.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.615	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.358	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.272	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.139	1.0	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.288	1.0	20.00	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.531	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.014	1.0	1.000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.366	1.0	20.00	0	102	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.301	1.0	20.00	0	107	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.100	1.0	20.00	0	106	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.273	1.0	20.00	0	101	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.162	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.084	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.068	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.042	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.070	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.089	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.093	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.090	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICB	SampType:	ICB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888713

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888737

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.036	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886484

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**CCB10**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**121242**
Client ID:	**CCB**	Batch ID:	**R121242**	TestNo:	**EPA 6020**			Analysis Date:	**1/6/2018**	SeqNo:	**2886559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.087	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.901	0.10	20.00	0	105	80	120				
Barium	22.233	1.0	20.00	0	111	80	120				
Manganese	17.615	0.50	20.00	0	88.1	80	120				
Molybdenum	22.054	0.50	20.00	0	110	80	120				
Selenium	20.130	0.50	20.00	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.057	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSAB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.153	0.10	20.00	0	101	80	120				
Barium	23.376	1.0	20.00	0	117	80	120				
Manganese	16.923	0.50	20.00	0	84.6	80	120				
Molybdenum	21.858	0.50	20.00	0	109	80	120				
Selenium	20.860	0.50	20.00	0	104	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSA	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.058	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSAB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.675	0.10	20.00	0	103	80	120				
Barium	23.604	1.0	20.00	0	118	80	120				
Manganese	17.572	0.50	20.00	0	87.9	80	120				
Molybdenum	22.358	0.50	20.00	0	112	80	120				
Selenium	19.890	0.50	20.00	0	99.4	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.218	0.10	20.00	0	101	80	120				
Barium	23.964	1.0	20.00	0	120	80	120				
Manganese	17.635	0.50	20.00	0	88.2	80	120				
Molybdenum	22.201	0.50	20.00	0	111	80	120				
Selenium	20.435	0.50	20.00	0	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.041	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSAB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888688

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.499	0.50	20.00	0	97.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSAB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888740

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.304	0.50	20.00	0	96.5	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSAB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.315	0.50	20.00	0	96.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.057	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.074	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.112	1.0	20.00	0	106	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.085	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.193	1.0	20.00	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.071	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.310	1.0	20.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	6077264.3	6077264.3	100	PASS	70-125	98689.2	98689.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	6293236.6	6077264.3	103.55	PASS	70-125	103050.7	98689.2	104.42	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	6306635.3	6077264.3	103.77	PASS	70-125	103014	98689.2	104.38	PASS	70-125
Std3-5/50 ppb	ICAL	1	6254358	6077264.3	102.91	PASS	70-125	103257.9	98689.2	104.63	PASS	70-125
Std4-10/100 ppb	ICAL	1	6228566.5	6077264.3	102.49	PASS	70-125	103971.1	98689.2	105.35	PASS	70-125
Std5-20/200 ppb	ICAL	1	6214942.1	6077264.3	102.27	PASS	70-125	104715.8	98689.2	106.11	PASS	70-125
Std6-40/400 ppb	ICAL	1	6309922.5	6077264.3	103.83	PASS	70-125	105546	98689.2	106.95	PASS	70-125
Std7-100/1000 ppb	ICAL	1	6207127.9	6077264.3	102.14	PASS	70-125	106915	98689.2	108.34	PASS	70-125
Std8-200/2000 ppb	ICAL	1	6292191.7	6077264.3	103.54	PASS	70-125	107843.3	98689.2	109.28	PASS	70-125
ICV	ICV	1	6605865.9	6077264.3	108.7	PASS	70-125	110378.5	98689.2	111.84	PASS	70-125
ICB	ICB	1	6089414.6	6077264.3	100.2	PASS	70-125	100697.6	98689.2	102.04	PASS	70-125
LLICV	CCV1	1	6603710	6077264.3	108.66	PASS	70-125	110692.6	98689.2	112.16	PASS	70-125
ICSA1	ICSA	1	6264948.2	6077264.3	103.09	PASS	70-125	114002.4	98689.2	115.52	PASS	70-125
ICSAB1	ICSAB	1	6509221.8	6077264.3	107.11	PASS	70-125	123987.3	98689.2	125.63	NR!	70-125
CCV1	CCV	1	6763744.3	6077264.3	111.3	PASS	70-125	108740.1	98689.2	110.18	PASS	70-125
CCB1	CCB	1	6554244.9	6077264.3	107.85	PASS	70-125	111191.4	98689.2	112.67	PASS	70-125
CCV2	CCV	1	6991155.4	6077264.3	115.04	PASS	70-125	114371.9	98689.2	115.89	PASS	70-125
CCB2	CCB	1	6648390.7	6077264.3	109.4	PASS	70-125	108325.1	98689.2	109.76	PASS	70-125
CCV3	CCV	1	6956575	6077264.3	114.47	PASS	70-125	110649.1	98689.2	112.12	PASS	70-125
CCB3	CCB	1	6585499.6	6077264.3	108.36	PASS	70-125	104844	98689.2	106.24	PASS	70-125
LLCCV1	CCV2	1	7270966.6	6077264.3	119.64	PASS	70-125	113176.7	98689.2	114.68	PASS	70-125
ICSA2	ICSA	1	6930083	6077264.3	114.03	PASS	70-125	118402.6	98689.2	119.98	PASS	70-125
ICSAB2	ICSAB	1	6579995.5	6077264.3	108.27	PASS	70-125	99365.8	98689.2	100.69	PASS	70-125
CCV5	CCV	1	6983364.1	6077264.3	114.91	PASS	70-125	115953.5	98689.2	117.49	PASS	70-125
CCB5	CCB	1	6680134.6	6077264.3	109.92	PASS	70-125	107055	98689.2	108.48	PASS	70-125
CCV6	CCV	1	6960795.6	6077264.3	114.54	PASS	70-125	111272	98689.2	112.75	PASS	70-125
CCB6	CCB	1	6647302.5	6077264.3	109.38	PASS	70-125	104154.1	98689.2	105.54	PASS	70-125
MB-66251	MBLK	1	6649850.5	6077264.3	109.42	PASS	70-125	102278.7	98689.2	103.64	PASS	70-125
LCS-66251	LCS	1	7233701.7	6077264.3	119.03	PASS	70-125	108512.4	98689.2	109.95	PASS	70-125
CCV7	CCV	1	6823489.7	6077264.3	112.28	PASS	70-125	103721.2	98689.2	105.1	PASS	70-125
CCB7	CCB	1	6643876.9	6077264.3	109.32	PASS	70-125	97483.5	98689.2	98.78	PASS	70-125
LLCCV2	CCV2	1	7152978	6077264.3	117.7	PASS	70-125	105876.5	98689.2	107.28	PASS	70-125
ICSA3	ICSA	1	6722112.7	6077264.3	110.61	PASS	70-125	105668.4	98689.2	107.07	PASS	70-125
ICSAB3	ICSAB	1	6914763.5	6077264.3	113.78	PASS	70-125	116478.7	98689.2	118.03	PASS	70-125
N027812-010B	SAMP	1	6285443	6077264.3	103.43	PASS	70-125	82955.7	98689.2	84.058	PASS	70-125
N027812-010B	SAMP	5	6801027.3	6077264.3	111.91	PASS	70-125	93301.9	98689.2	94.54	PASS	70-125
N027812-011B	SAMP	1	6596679.3	6077264.3	108.55	PASS	70-125	88301.4	98689.2	89.47	PASS	70-125
N027812-011B	SAMP	5	6883434.4	6077264.3	113.27	PASS	70-125	93516.6	98689.2	94.76	PASS	70-125
N027812-012B	SAMP	1	6582759.2	6077264.3	108.32	PASS	70-125	90270.3	98689.2	91.47	PASS	70-125
N027812-012B	SAMP	5	6909447.3	6077264.3	113.69	PASS	70-125	93944.1	98689.2	95.19	PASS	70-125
N027812-013B	SAMP	1	6520260.4	6077264.3	107.29	PASS	70-125	88658.8	98689.2	89.84	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027812-013B	SAMP	5	6965969.8	6077264.3	114.62	PASS	70-125	94486.4	98689.2	95.74	PASS	70-125
N027812-014B	SAMP	1	6425147.1	6077264.3	105.72	PASS	70-125	85904.4	98689.2	87.045	PASS	70-125
N027812-014B	SAMP	5	6815862.4	6077264.3	112.15	PASS	70-125	92262.7	98689.2	93.49	PASS	70-125
CCV8	CCV	1	7164930.5	6077264.3	117.9	PASS	70-125	110760.7	98689.2	112.23	PASS	70-125
CCB8	CCB	1	6821884.1	6077264.3	112.25	PASS	70-125	104079.4	98689.2	105.46	PASS	70-125
N027812-015B	SAMP	1	6304424.8	6077264.3	103.74	PASS	70-125	81836.5	98689.2	82.92	PASS	70-125
N027812-015B	SAMP	5	6860901.1	6077264.3	112.89	PASS	70-125	92565.2	98689.2	93.79	PASS	70-125
N027812-001B	SAMP	1	6523755	6077264.3	107.35	PASS	70-125	99537.9	98689.2	100.86	PASS	70-125
N027812-001B	SAMP	5	6706771.6	6077264.3	110.36	PASS	70-125	102493.4	98689.2	103.85	PASS	70-125
N027812-001B	SAMP	25	6788149.5	6077264.3	111.7	PASS	70-125	101043.4	98689.2	102.39	PASS	70-125
N027812-001B-PS	PS	1	6694653	6077264.3	110.16	PASS	70-125	100917.8	98689.2	102.26	PASS	70-125
N027812-001B-PS	PS	5	6709032.6	6077264.3	110.4	PASS	70-125	102551.2	98689.2	103.91	PASS	70-125
N027812-001B-MS	MS	1	6515535	6077264.3	107.21	PASS	70-125	97282.4	98689.2	98.57	PASS	70-125
N027812-001B-MS	MS	5	6613936.5	6077264.3	108.83	PASS	70-125	102058.2	98689.2	103.41	PASS	70-125
N027812-001B-MSD	MSD	1	6506833.2	6077264.3	107.07	PASS	70-125	94651	98689.2	95.91	PASS	70-125
CCV9	CCV	1	6636714.7	6077264.3	109.21	PASS	70-125	92648.3	98689.2	93.88	PASS	70-125
CCB9	CCB	1	6395368.1	6077264.3	105.23	PASS	70-125	89859	98689.2	91.053	PASS	70-125
N027812-001B-MSD	MSD	5	6549047.6	6077264.3	107.76	PASS	70-125	90726.8	98689.2	91.93	PASS	70-125
N027812-002B	SAMP	1	6288721.6	6077264.3	103.48	PASS	70-125	88019.9	98689.2	89.19	PASS	70-125
N027812-002B	SAMP	5	6546101.8	6077264.3	107.71	PASS	70-125	92634.7	98689.2	93.87	PASS	70-125
N027812-003B	SAMP	1	6195002.3	6077264.3	101.94	PASS	70-125	87295.4	98689.2	88.45	PASS	70-125
N027812-003B	SAMP	5	6527834.2	6077264.3	107.41	PASS	70-125	92492	98689.2	93.72	PASS	70-125
N027812-004B	SAMP	1	6185930.5	6077264.3	101.79	PASS	70-125	86037.5	98689.2	87.18	PASS	70-125
N027812-004B	SAMP	5	6541017.8	6077264.3	107.63	PASS	70-125	92157.6	98689.2	93.38	PASS	70-125
N027812-005B	SAMP	1	6139520.7	6077264.3	101.02	PASS	70-125	85612.4	98689.2	86.75	PASS	70-125
N027812-005B	SAMP	5	6520405.1	6077264.3	107.29	PASS	70-125	92211.8	98689.2	93.44	PASS	70-125
N027812-006B	SAMP	1	6110666.7	6077264.3	100.55	PASS	70-125	86768.2	98689.2	87.92	PASS	70-125
CCV10	CCV	1	6625127.3	6077264.3	109.02	PASS	70-125	93102.8	98689.2	94.34	PASS	70-125
CCB10	CCB	1	6379086.5	6077264.3	104.97	PASS	70-125	87502.7	98689.2	88.66	PASS	70-125
N027812-006B	SAMP	5	6509776	6077264.3	107.12	PASS	70-125	88936.1	98689.2	90.12	PASS	70-125
N027812-007B	SAMP	1	6176920.1	6077264.3	101.64	PASS	70-125	86232.3	98689.2	87.38	PASS	70-125
N027812-007B	SAMP	5	6542564.6	6077264.3	107.66	PASS	70-125	91078.3	98689.2	92.29	PASS	70-125
N027812-008B	SAMP	1	6123629.4	6077264.3	100.76	PASS	70-125	86443.2	98689.2	87.59	PASS	70-125
N027812-008B	SAMP	5	6539479.3	6077264.3	107.61	PASS	70-125	92308.7	98689.2	93.53	PASS	70-125
N027812-009B	SAMP	1	6147084.5	6077264.3	101.15	PASS	70-125	86003	98689.2	87.15	PASS	70-125
N027812-009B	SAMP	5	6532397.1	6077264.3	107.49	PASS	70-125	91617.1	98689.2	92.83	PASS	70-125
CCV11	CCV	1	7532157.6	6077264.3	123.94	PASS	70-125	113424.7	98689.2	114.93	PASS	70-125
CCB11	CCB	1	7249604.3	6077264.3	119.29	PASS	70-125	107836.2	98689.2	109.27	PASS	70-125
LLCCV3	CCV2	1	7754898	6077264.3	127.61	NR!	70-125	115378.3	98689.2	116.91	PASS	70-125
ICSA4	ICSA	1	7011548.6	6077264.3	115.37	PASS	70-125	111428.3	98689.2	112.91	PASS	70-125
ICSAB4	ICSAB	1	7049760.2	6077264.3	116	PASS	70-125	118794.2	98689.2	120.37	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV12	CCV	1	7232867.6	6077264.3	119.02	PASS	70-125	116248.9	98689.2	117.79	PASS	70-125
CCB12	CCB	1	6775160.6	6077264.3	111.48	PASS	70-125	104478.4	98689.2	105.87	PASS	70-125
CCV13	CCV	1	7222445.3	6077264.3	118.84	PASS	70-125	114451.4	98689.2	115.97	PASS	70-125
CCB13	CCB	1	6799732.5	6077264.3	111.89	PASS	70-125	103837	98689.2	105.22	PASS	70-125
LLCCV4	CCV2	1	7351968.1	6077264.3	120.97	PASS	70-125	109195.9	98689.2	110.65	PASS	70-125
ICSA5	ICSA	1	6842592.3	6077264.3	112.59	PASS	70-125	104675.6	98689.2	106.07	PASS	70-125
ICSAB5	ICSAB	1	6962539.5	6077264.3	114.57	PASS	70-125	112996.2	98689.2	114.5	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	69151.4	69151.4	100	PASS	70-125	85800.3	85800.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	71094.1	69151.4	102.81	PASS	70-125	88563	85800.3	103.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	71706.6	69151.4	103.7	PASS	70-125	87852.4	85800.3	102.39	PASS	70-125
Std3-5/50 ppb	ICAL	1	71535.9	69151.4	103.45	PASS	70-125	87543	85800.3	102.03	PASS	70-125
Std4-10/100 ppb	ICAL	1	70826.1	69151.4	102.42	PASS	70-125	88388.7	85800.3	103.02	PASS	70-125
Std5-20/200 ppb	ICAL	1	71065	69151.4	102.77	PASS	70-125	88069.4	85800.3	102.64	PASS	70-125
Std6-40/400 ppb	ICAL	1	71998.1	69151.4	104.12	PASS	70-125	88991.3	85800.3	103.72	PASS	70-125
Std7-100/1000 ppb	ICAL	1	72904.2	69151.4	105.43	PASS	70-125	88217.8	85800.3	102.82	PASS	70-125
Std8-200/2000 ppb	ICAL	1	71840.7	69151.4	103.89	PASS	70-125	90606.5	85800.3	105.6	PASS	70-125
ICV	ICV	1	75846.3	69151.4	109.68	PASS	70-125	94889.9	85800.3	110.59	PASS	70-125
ICB	ICB	1	70033.9	69151.4	101.28	PASS	70-125	88646.8	85800.3	103.32	PASS	70-125
LLICV	CCV1	1	76495	69151.4	110.62	PASS	70-125	95674	85800.3	111.51	PASS	70-125
ICSA1	ICSA	1	76105.4	69151.4	110.06	PASS	70-125	95132.7	85800.3	110.88	PASS	70-125
ICSAB1	ICSAB	1	81802.8	69151.4	118.3	PASS	70-125	102558.6	85800.3	119.53	PASS	70-125
CCV1	CCV	1	77358.1	69151.4	111.87	PASS	70-125	89281.5	85800.3	104.06	PASS	70-125
CCB1	CCB	1	79434.2	69151.4	114.87	PASS	70-125	96172.1	85800.3	112.09	PASS	70-125
CCV2	CCV	1	83285.7	69151.4	120.44	PASS	70-125	102059.8	85800.3	118.95	PASS	70-125
CCB2	CCB	1	78904.3	69151.4	114.1	PASS	70-125	98424.6	85800.3	114.71	PASS	70-125
CCV3	CCV	1	80170.3	69151.4	115.93	PASS	70-125	101738.4	85800.3	118.58	PASS	70-125
CCB3	CCB	1	76781.7	69151.4	111.03	PASS	70-125	97514.6	85800.3	113.65	PASS	70-125
LLCCV1	CCV2	1	83467.5	69151.4	120.7	PASS	70-125	105588.8	85800.3	123.06	PASS	70-125
ICSA2	ICSA	1	83859.9	69151.4	121.27	PASS	70-125	100313.3	85800.3	116.91	PASS	70-125
ICSAB2	ICSAB	1	71146.5	69151.4	102.89	PASS	70-125	69571.9	85800.3	81.086	PASS	70-125
CCV5	CCV	1	83906.5	69151.4	121.34	PASS	70-125	103304.4	85800.3	120.4	PASS	70-125
CCB5	CCB	1	78630.6	69151.4	113.71	PASS	70-125	96884.5	85800.3	112.92	PASS	70-125
CCV6	CCV	1	81560.6	69151.4	117.94	PASS	70-125	98339.7	85800.3	114.61	PASS	70-125
CCB6	CCB	1	77234.8	69151.4	111.69	PASS	70-125	92389.6	85800.3	107.68	PASS	70-125
MB-66251	MBLK	1	76487	69151.4	110.61	PASS	70-125	91086.8	85800.3	106.16	PASS	70-125
LCS-66251	LCS	1	80238.3	69151.4	116.03	PASS	70-125	97887.1	85800.3	114.09	PASS	70-125
CCV7	CCV	1	76352.2	69151.4	110.41	PASS	70-125	92386.4	85800.3	107.68	PASS	70-125
CCB7	CCB	1	72572.8	69151.4	104.95	PASS	70-125	88619	85800.3	103.29	PASS	70-125
LLCCV2	CCV2	1	79029.1	69151.4	114.28	PASS	70-125	95427.5	85800.3	111.22	PASS	70-125
ICSA3	ICSA	1	76893.5	69151.4	111.2	PASS	70-125	88680.3	85800.3	103.36	PASS	70-125
ICSAB3	ICSAB	1	82413.4	69151.4	119.18	PASS	70-125	97458.4	85800.3	113.59	PASS	70-125
N027812-010B	SAMP	1	62150.2	69151.4	89.88	PASS	70-125	61048.1	85800.3	71.15	PASS	70-125
N027812-010B	SAMP	5	70051.5	69151.4	101.3	PASS	70-125	74911.1	85800.3	87.31	PASS	70-125
N027812-011B	SAMP	1	66569.9	69151.4	96.27	PASS	70-125	70837.2	85800.3	82.56	PASS	70-125
N027812-011B	SAMP	5	71295	69151.4	103.1	PASS	70-125	75880	85800.3	88.44	PASS	70-125
N027812-012B	SAMP	1	67792.3	69151.4	98.035	PASS	70-125	72813.8	85800.3	84.86	PASS	70-125
N027812-012B	SAMP	5	71817	69151.4	103.85	PASS	70-125	77964	85800.3	90.87	PASS	70-125
N027812-013B	SAMP	1	67391.9	69151.4	97.46	PASS	70-125	72198.9	85800.3	84.15	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027812-013B	SAMP	5	72527.8	69151.4	104.88	PASS	70-125	77495.4	85800.3	90.32	PASS	70-125
N027812-014B	SAMP	1	65806.6	69151.4	95.16	PASS	70-125	71519.2	85800.3	83.36	PASS	70-125
N027812-014B	SAMP	5	71154.4	69151.4	102.9	PASS	70-125	77331.4	85800.3	90.13	PASS	70-125
CCV8	CCV	1	82495	69151.4	119.3	PASS	70-125	94187.9	85800.3	109.78	PASS	70-125
CCB8	CCB	1	78104.8	69151.4	112.95	PASS	70-125	88458.3	85800.3	103.1	PASS	70-125
N027812-015B	SAMP	1	61360.5	69151.4	88.73	PASS	70-125	62385.3	85800.3	72.71	PASS	70-125
N027812-015B	SAMP	5	71071.7	69151.4	102.78	PASS	70-125	76598.7	85800.3	89.28	PASS	70-125
N027812-001B	SAMP	1	73094.9	69151.4	105.7	PASS	70-125	83943.4	85800.3	97.84	PASS	70-125
N027812-001B	SAMP	5	76718.3	69151.4	110.94	PASS	70-125	86472.1	85800.3	100.78	PASS	70-125
N027812-001B	SAMP	25	76692.9	69151.4	110.91	PASS	70-125	84605.8	85800.3	98.61	PASS	70-125
N027812-001B-PS	PS	1	73423	69151.4	106.18	PASS	70-125	81606.3	85800.3	95.11	PASS	70-125
N027812-001B-PS	PS	5	75902.1	69151.4	109.76	PASS	70-125	84835.7	85800.3	98.88	PASS	70-125
N027812-001B-MS	MS	1	72075.7	69151.4	104.23	PASS	70-125	80165.9	85800.3	93.43	PASS	70-125
N027812-001B-MS	MS	5	76000.6	69151.4	109.9	PASS	70-125	83933.5	85800.3	97.82	PASS	70-125
N027812-001B-MSD	MSD	1	69898.9	69151.4	101.08	PASS	70-125	77835.9	85800.3	90.72	PASS	70-125
CCV9	CCV	1	69267.6	69151.4	100.17	PASS	70-125	70488.1	85800.3	82.15	PASS	70-125
CCB9	CCB	1	68202.2	69151.4	98.63	PASS	70-125	74042.6	85800.3	86.3	PASS	70-125
N027812-001B-MSD	MSD	5	69112.7	69151.4	99.94	PASS	70-125	75995	85800.3	88.57	PASS	70-125
N027812-002B	SAMP	1	66366.7	69151.4	95.97	PASS	70-125	72453.5	85800.3	84.44	PASS	70-125
N027812-002B	SAMP	5	69735.9	69151.4	100.85	PASS	70-125	75937.9	85800.3	88.51	PASS	70-125
N027812-003B	SAMP	1	65204	69151.4	94.29	PASS	70-125	72701.9	85800.3	84.73	PASS	70-125
N027812-003B	SAMP	5	69616.6	69151.4	100.67	PASS	70-125	76405.6	85800.3	89.051	PASS	70-125
N027812-004B	SAMP	1	64695.4	69151.4	93.56	PASS	70-125	71782.7	85800.3	83.66	PASS	70-125
N027812-004B	SAMP	5	69709.4	69151.4	100.81	PASS	70-125	76923.5	85800.3	89.65	PASS	70-125
N027812-005B	SAMP	1	64420	69151.4	93.16	PASS	70-125	71614.1	85800.3	83.47	PASS	70-125
N027812-005B	SAMP	5	69571	69151.4	100.61	PASS	70-125	77397.8	85800.3	90.21	PASS	70-125
N027812-006B	SAMP	1	65172.8	69151.4	94.25	PASS	70-125	71357.5	85800.3	83.17	PASS	70-125
CCV10	CCV	1	70310.9	69151.4	101.68	PASS	70-125	78288.9	85800.3	91.25	PASS	70-125
CCB10	CCB	1	67746.2	69151.4	97.97	PASS	70-125	73219.1	85800.3	85.34	PASS	70-125
N027812-006B	SAMP	5	67899.5	69151.4	98.19	PASS	70-125	74636.9	85800.3	86.99	PASS	70-125
N027812-007B	SAMP	1	65486.4	69151.4	94.7	PASS	70-125	70695.8	85800.3	82.4	PASS	70-125
N027812-007B	SAMP	5	69582	69151.4	100.62	PASS	70-125	76865.5	85800.3	89.59	PASS	70-125
N027812-008B	SAMP	1	65495.6	69151.4	94.71	PASS	70-125	70716.9	85800.3	82.42	PASS	70-125
N027812-008B	SAMP	5	69293.1	69151.4	100.2	PASS	70-125	77644.1	85800.3	90.49	PASS	70-125
N027812-009B	SAMP	1	64762.5	69151.4	93.65	PASS	70-125	72343	85800.3	84.32	PASS	70-125
N027812-009B	SAMP	5	69025.3	69151.4	99.82	PASS	70-125	76910.1	85800.3	89.64	PASS	70-125
CCV11	CCV	1	81841.8	69151.4	118.35	PASS	70-125	88289.7	85800.3	102.9	PASS	70-125
CCB11	CCB	1	80231.6	69151.4	116.02	PASS	70-125	93399.6	85800.3	108.86	PASS	70-125
LLCCV3	CCV2	1	85608.6	69151.4	123.8	PASS	70-125	96745.6	85800.3	112.76	PASS	70-125
ICSA4	ICSA	1	81672	69151.4	118.11	PASS	70-125	90769.3	85800.3	105.79	PASS	70-125
ICSAB4	ICSAB	1	84601.1	69151.4	122.34	PASS	70-125	92153.7	85800.3	107.4	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV12	CCV	1	84112.2	69151.4	121.63	PASS	70-125	95503.3	85800.3	111.31	PASS	70-125
CCB12	CCB	1	78744.5	69151.4	113.87	PASS	70-125	88653.8	85800.3	103.33	PASS	70-125
CCV13	CCV	1	84158	69151.4	121.7	PASS	70-125	93373.1	85800.3	108.83	PASS	70-125
CCB13	CCB	1	78071.3	69151.4	112.9	PASS	70-125	86339.3	85800.3	100.63	PASS	70-125
LLCCV4	CCV2	1	80695	69151.4	116.69	PASS	70-125	88921.8	85800.3	103.64	PASS	70-125
ICSA5	ICSA	1	77635.7	69151.4	112.27	PASS	70-125	81087.1	85800.3	94.51	PASS	70-125
ICSAB5	ICSAB	1	82518.2	69151.4	119.33	PASS	70-125	89051.6	85800.3	103.79	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2266047.3	2266047.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2356418.7	2266047.3	103.99	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2354583.3	2266047.3	103.91	PASS	70-125
Std3-5/50 ppb	ICAL	1	2338314.3	2266047.3	103.19	PASS	70-125
Std4-10/100 ppb	ICAL	1	2314610	2266047.3	102.14	PASS	70-125
Std5-20/200 ppb	ICAL	1	2315909.4	2266047.3	102.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	2339607.9	2266047.3	103.25	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2318771.2	2266047.3	102.33	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2318691.7	2266047.3	102.32	PASS	70-125
ICV	ICV	1	2429288.5	2266047.3	107.2	PASS	70-125
ICB	ICB	1	2277136.3	2266047.3	100.49	PASS	70-125
LLICV	CCV1	1	2476349.8	2266047.3	109.28	PASS	70-125
ICSA1	ICSA	1	2228839	2266047.3	98.36	PASS	70-125
ICSAB1	ICSAB	1	2398520.7	2266047.3	105.85	PASS	70-125
CCV1	CCV	1	2451986.8	2266047.3	108.21	PASS	70-125
CCB1	CCB	1	2458066.8	2266047.3	108.47	PASS	70-125
CCV2	CCV	1	2580842.4	2266047.3	113.89	PASS	70-125
CCB2	CCB	1	2472755.3	2266047.3	109.12	PASS	70-125
CCV3	CCV	1	2506826.9	2266047.3	110.63	PASS	70-125
CCB3	CCB	1	2392061.7	2266047.3	105.56	PASS	70-125
LLCCV1	CCV2	1	2612894.2	2266047.3	115.31	PASS	70-125
ICSA2	ICSA	1	2383562.2	2266047.3	105.19	PASS	70-125
ICSAB2	ICSAB	1	2106431.4	2266047.3	92.96	PASS	70-125
CCV5	CCV	1	2565999	2266047.3	113.24	PASS	70-125
CCB5	CCB	1	2436101.4	2266047.3	107.5	PASS	70-125
CCV6	CCV	1	2535829.2	2266047.3	111.91	PASS	70-125
CCB6	CCB	1	2395777.1	2266047.3	105.72	PASS	70-125
MB-66251	MBLK	1	2355173.3	2266047.3	103.93	PASS	70-125
LCS-66251	LCS	1	2523730.8	2266047.3	111.37	PASS	70-125
CCV7	CCV	1	2413024.1	2266047.3	106.49	PASS	70-125
CCB7	CCB	1	2311369.5	2266047.3	102	PASS	70-125
LLCCV2	CCV2	1	2497701.8	2266047.3	110.22	PASS	70-125
ICSA3	ICSA	1	2215131.8	2266047.3	97.75	PASS	70-125
ICSAB3	ICSAB	1	2356727.5	2266047.3	104	PASS	70-125
N027812-010B	SAMP	1	1900709.7	2266047.3	83.88	PASS	70-125
N027812-010B	SAMP	5	2183957.6	2266047.3	96.38	PASS	70-125
N027812-011B	SAMP	1	2009331.2	2266047.3	88.67	PASS	70-125
N027812-011B	SAMP	5	2215144.4	2266047.3	97.75	PASS	70-125
N027812-012B	SAMP	1	2037947.3	2266047.3	89.93	PASS	70-125
N027812-012B	SAMP	5	2227630.9	2266047.3	98.3	PASS	70-125
N027812-013B	SAMP	1	2036145.6	2266047.3	89.85	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027812-013B	SAMP	5	2229488.1	2266047.3	98.39	PASS	70-125
N027812-014B	SAMP	1	1982979.2	2266047.3	87.51	PASS	70-125
N027812-014B	SAMP	5	2207788	2266047.3	97.43	PASS	70-125
CCV8	CCV	1	2564739.7	2266047.3	113.18	PASS	70-125
CCB8	CCB	1	2437447.6	2266047.3	107.56	PASS	70-125
N027812-015B	SAMP	1	1897351.8	2266047.3	83.73	PASS	70-125
N027812-015B	SAMP	5	2194980.1	2266047.3	96.86	PASS	70-125
N027812-001B	SAMP	1	2148490.1	2266047.3	94.81	PASS	70-125
N027812-001B	SAMP	5	2285803.3	2266047.3	100.87	PASS	70-125
N027812-001B	SAMP	25	2359365.6	2266047.3	104.12	PASS	70-125
N027812-001B-PS	PS	1	2173445.8	2266047.3	95.91	PASS	70-125
N027812-001B-PS	PS	5	2279488.7	2266047.3	100.59	PASS	70-125
N027812-001B-MS	MS	1	2102521.8	2266047.3	92.78	PASS	70-125
N027812-001B-MS	MS	5	2282645.1	2266047.3	100.73	PASS	70-125
N027812-001B-MSD	MSD	1	2097646.6	2266047.3	92.57	PASS	70-125
CCV9	CCV	1	2248494.5	2266047.3	99.23	PASS	70-125
CCB9	CCB	1	2210410.4	2266047.3	97.54	PASS	70-125
N027812-001B-MSD	MSD	5	2165035.1	2266047.3	95.54	PASS	70-125
N027812-002B	SAMP	1	2013900.9	2266047.3	88.87	PASS	70-125
N027812-002B	SAMP	5	2155927.3	2266047.3	95.14	PASS	70-125
N027812-003B	SAMP	1	1958595.5	2266047.3	86.43	PASS	70-125
N027812-003B	SAMP	5	2143376.8	2266047.3	94.59	PASS	70-125
N027812-004B	SAMP	1	1952832.2	2266047.3	86.18	PASS	70-125
N027812-004B	SAMP	5	2155711.5	2266047.3	95.13	PASS	70-125
N027812-005B	SAMP	1	1925416.8	2266047.3	84.97	PASS	70-125
N027812-005B	SAMP	5	2147862.8	2266047.3	94.78	PASS	70-125
N027812-006B	SAMP	1	1953333.3	2266047.3	86.2	PASS	70-125
CCV10	CCV	1	2271253.3	2266047.3	100.23	PASS	70-125
CCB10	CCB	1	2193079	2266047.3	96.78	PASS	70-125
N027812-006B	SAMP	5	2113430.8	2266047.3	93.27	PASS	70-125
N027812-007B	SAMP	1	1960884.5	2266047.3	86.53	PASS	70-125
N027812-007B	SAMP	5	2158582	2266047.3	95.26	PASS	70-125
N027812-008B	SAMP	1	1937281.7	2266047.3	85.49	PASS	70-125
N027812-008B	SAMP	5	2154222.7	2266047.3	95.065	PASS	70-125
N027812-009B	SAMP	1	1933385.7	2266047.3	85.32	PASS	70-125
N027812-009B	SAMP	5	2152384.3	2266047.3	94.98	PASS	70-125
CCV11	CCV	1	2579473.3	2266047.3	113.83	PASS	70-125
CCB11	CCB	1	2518397.4	2266047.3	111.14	PASS	70-125
LLCCV3	CCV2	1	2668964	2266047.3	117.78	PASS	70-125
ICSA4	ICSA	1	2344851.2	2266047.3	103.48	PASS	70-125
ICSAB4	ICSAB	1	2421483	2266047.3	106.86	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCV12	CCV	1	2602634.3	2266047.3	114.85	PASS	70-125
CCB12	CCB	1	2458113.7	2266047.3	108.48	PASS	70-125
CCV13	CCV	1	2592648.8	2266047.3	114.41	PASS	70-125
CCB13	CCB	1	2446745.1	2266047.3	107.97	PASS	70-125
LLCCV4	CCV2	1	2570650.7	2266047.3	113.44	PASS	70-125
ICSA5	ICSA	1	2239398.9	2266047.3	98.82	PASS	70-125
ICSAB5	ICSAB	1	2370124.8	2266047.3	104.59	PASS	70-125

INTERNAL STANDARD: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	62619.5	62619.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	65940.2	62619.5	105.3	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	63563.5	62619.5	101.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	63516.6	62619.5	101.43	PASS	70-125
Std4-10/100 ppb	ICAL	1	63395.8	62619.5	101.24	PASS	70-125
Std5-20/200 ppb	ICAL	1	52108.6	62619.5	83.21	PASS	70-125
Std6-40/400 ppb	ICAL	1	63322.2	62619.5	101.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61513.2	62619.5	98.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	62853.8	62619.5	100.37	PASS	70-125
ICV	ICV	1	68295.6	62619.5	109.06	PASS	70-125
ICB	ICB	1	57903.4	62619.5	92.47	PASS	70-125
LLICV	CCV1	1	57110.5	62619.5	91.2	PASS	70-125
ICSA1	ICSA	1	55013.5	62619.5	87.85	PASS	70-125
ICSAB1	ICSAB	1	69228.5	62619.5	110.55	PASS	70-125
LLICV	CCV1	1	69055.2	62619.5	110.28	PASS	70-125
CCV1	CCV	1	61540.9	62619.5	98.28	PASS	70-125
CCB1	CCB	1	66459	62619.5	106.13	PASS	70-125
N027812-002B	SAMP	1	73176.5	62619.5	116.86	PASS	70-125
N027812-005B	SAMP	1	73437.8	62619.5	117.28	PASS	70-125
N027812-007B	SAMP	1	73647.6	62619.5	117.61	PASS	70-125
N027812-008B	SAMP	1	72268.2	62619.5	115.41	PASS	70-125
CCV2	CCV	1	77852.2	62619.5	124.33	PASS	70-125
CCB2	CCB	1	75901	62619.5	121.21	PASS	70-125
CCV3	CCV	1	74193	62619.5	118.48	PASS	70-125
CCB3	CCB	1	71460	62619.5	114.12	PASS	70-125
CCV4	CCV	1	62815.9	62619.5	100.31	PASS	70-125
CCB4	CCB	1	76461.3	62619.5	122.1	PASS	70-125
LLCCV1	CCV2	1	73233.4	62619.5	116.95	PASS	70-125
ICSA2	ICSA	1	73354.5	62619.5	117.14	PASS	70-125
ICSAB2	ICSAB	1	74704	62619.5	119.3	PASS	70-125
CCV5	CCV	1	61305.7	62619.5	97.9	PASS	70-125
CCB5	CCB	1	68273.1	62619.5	109.03	PASS	70-125
LLCCV2	CCV2	1	67471.9	62619.5	107.75	PASS	70-125
ICSA3	ICSA	1	70782.4	62619.5	113.04	PASS	70-125
ICSAB3	ICSAB	1	67964.9	62619.5	108.54	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027812
Test Method: EPA 6020
Analysis Date: 1/5/2018

Matrix: Groundwater
Batch No.: 66251

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027812-001B DT 5X	Arsenic	ug/L	2.503918	NA	2.258794	10.85%	10
N027812-001B DT 5X	Barium	ug/L	127.7784	PASS	129.4095	1.26%	10
N027812-001B DT 5X	Chromium	ug/L	0	NA	0		10
N027812-001B DT 5X	Manganese	ug/L	3.672157	NA	3.007488	22.10%	10
N027812-001B DT 5X	Molybdenum	ug/L	5.14346	NA	5.015577	2.55%	10
N027812-001B DT 5X	Selenium	ug/L	5.14346	NA	1.769109	190.74%	10
			1.67			5.6%	

Note: NA - Not applicable

Mary 01/10/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N027812-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID:	**ZZZZZZ**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.552	0.10	10.00	2.259	103	80	120				
Barium	140.916	1.0	10.00	129.4	115	80	120				
Manganese	102.921	0.50	100.0	3.007	99.9	80	120				
Molybdenum	16.253	0.50	10.00	5.016	112	80	120				
Selenium	12.311	0.50	10.00	1.769	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027812-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.191	1.0	10.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N027812_Amended

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N027812_Amended

Item	Page
Cover Page	1-7
Analytical Result/QC Summary Reports	8-118
Sample Receiving Items	119-135
List of Analysts	137
Raw Data	
EPA 120.1	138-141
SM 4500-H+B	142-146
SM 2540D	147-161
EPA 218.6	162-386
SM 4500-NO3F	387-400
EPA 6010B_Dissolved	401-433
EPA 6010B	434-466
EPA 6020_Dissolved	467-549

January 19, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027812

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucan for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N027812-016 (R-28-Q118LL) was not analyzed. Please refer to the attached correspondence.

Samples N027812 -017 (AB1-Q118LL) and N027812-018 (AB2-Q118LL) were not analyzed as per COC.

Analytical Comments for SM 4500-NO3F:

Matrix Spike Duplicate (MSD) is outside recovery criteria in QC sample N027789-002DMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *19-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-001A	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001B	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001C	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001D	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001E	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-002A	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002B	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002C	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002D	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002E	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-003A	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003B	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003C	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003D	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003E	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-004A	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004B	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004C	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004D	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004E	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-005A	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005B	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005C	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005D	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005E	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-006A	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006B	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006C	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006D	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-006E	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-007A	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007B	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007C	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007D	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007E	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-008A	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008B	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008C	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008D	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008E	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-009A	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009B	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009C	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009D	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009E	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-010A	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010B	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010C	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-011A	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011B	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011C	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011D	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011E	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-012A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012B	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012C	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012D	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012E	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-013A	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-013B	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013C	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013D	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013E	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-014A	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014B	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014C	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-015A	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015B	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015C	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-016A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-017A	AB1-Q118LL	Groundwater	1/3/2018 8:45:00 AM	1/4/2018	1/15/2018
N027812-018A	AB2-Q118LL	Groundwater	1/3/2018 1:40:00 PM	1/4/2018	1/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:40:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027812-010CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID: **ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1011.000	0.10						1014	0.296	2	

Sample ID **N027812-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID: **ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1024.000	0.10						1028	0.390	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q118LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-010

Client Sample ID: MW-922-Q118LL
Collection Date: 1/3/2018 2:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-014

Client Sample ID: SW1-Q118LL
Collection Date: 1/3/2018 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027812-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121232**
Client ID: **ZZZZZZ** Batch ID: **R121232** TestNo: **SM4500-H+B** Analysis Date: **1/4/2018** SeqNo: **2885872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.290	0.10						8.270	0.242	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027812-015CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121232**
Client ID: **ZZZZZZ** Batch ID: **R121232** TestNo: **SM4500-H+B** Analysis Date: **1/4/2018** SeqNo: **2885887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.210	0.10						7.190	0.278	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**			PrepDate	**1/4/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**			PrepDate	**1/4/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**			PrepDate	**1/4/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66260	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121229
Client ID:	LCSW	Batch ID:	66260	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID	MB-66260	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121229
Client ID:	PBW	Batch ID:	66260	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027812-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121229
Client ID:	ZZZZZZ	Batch ID:	66260	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885811

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66261	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	LCSW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	918.000	10	1000	0	91.8	80	120				

Sample ID	MB-66261	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	PBW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027812-012DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	ZZZZZZ	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885828

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A**	QC Batch: **R121248**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:32 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C**	QC Batch: **66251**			PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:51 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:09 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:06 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:25 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 03:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:38 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-014

Client Sample ID: SW1-Q118LL
Collection Date: 1/3/2018 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 12:27 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 02:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R121248**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**PBW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	**LCS-R121248**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**LCSW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.195	0.20	5.000	0	104	90	110				

Sample ID	**N027812-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID	**N027812-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Sample ID	**N027812-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID:	**ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0	110	90	110				

Sample ID	N027812-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N027812-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N027812-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID	N027812-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	106	90	110				

Sample ID	N027812-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N027812-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027812-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027812-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110	1.073	0.336	20	

Sample ID	N027812-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027812-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.093	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121296**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **PBW**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121296**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **LCSW**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID **N027812-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID **N027819-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID **N027819-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N027820-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N027819-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N027820-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID **N027820-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID **N027820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027820-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66251	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	PBW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66251	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	LCSW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.036	1.0	10.00	0	100	85	115				

Sample ID	N027812-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.240	1.0	10.00	0	102	75	125				

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.491	1.0	10.00	0	105	75	125	10.24	2.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121239	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	PBW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121239	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	LCSW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.522	0.050	0.5000	0	104	85	115				

Sample ID	N027789-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.202	0.25						3.245	1.33	20	

Sample ID	N027789-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.587	0.25	2.500	2.954	105	75	125				

Sample ID	N027789-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.170	0.25	2.500	2.954	129	75	125	5.587	9.92	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	25	1.8	20		ug/L	1	1/4/2018 07:23 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/4/2018 09:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 07:55 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/4/2018 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:01 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	1/4/2018 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:06 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	1/4/2018 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q118LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-011

Client Sample ID: C-TAZ-S-Q118LL
Collection Date: 1/3/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 11:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	1/4/2018 11:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 09:02 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	37	1.8	20		ug/L	1	1/4/2018 11:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66256**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **PBW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66256**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **LCSW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.918	20	100.0	0	104	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.753	20	100.0	24.72	96.0	75	125				

Sample ID **N027812-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.232	20	100.0	24.72	95.5	75	125	120.8	0.432	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66255	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	PBW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66255	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	LCSW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.193	20	100.0	0	106	85	115				

Sample ID	N027812-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.504	20	100.0	20.28	100	75	125				

Sample ID	N027812-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.635	20	100.0	20.28	99.4	75	125	120.5	0.723	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 09:41 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 09:41 PM
Manganese	3.0	0.056	0.50		µg/L	1	1/5/2018 09:41 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 09:41 PM
Selenium	1.8	0.028	0.50		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:43 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:43 PM
Manganese	1.2	0.056	0.50		µg/L	1	1/5/2018 10:43 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 10:43 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:54 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:54 PM
Manganese	2.8	0.056	0.50		µg/L	1	1/5/2018 10:54 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 10:54 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:05 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:05 PM
Manganese	1.3	0.056	0.50		µg/L	1	1/5/2018 11:05 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 11:05 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:16 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 11:16 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 11:16 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 11:16 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:28 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:28 PM
Manganese	3.7	0.056	0.50		µg/L	1	1/5/2018 11:28 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:28 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:50 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:50 PM
Manganese	2.9	0.056	0.50		µg/L	1	1/5/2018 11:50 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:50 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 12:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:01 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:01 AM
Manganese	2.6	0.056	0.50		µg/L	1	1/6/2018 12:01 AM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 12:01 AM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 12:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q118LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:12 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:12 AM
Manganese	1.9	0.056	0.50		µg/L	1	1/6/2018 12:12 AM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 12:12 AM
Selenium	1.9	0.028	0.50		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-011

Client Sample ID: C-TAZ-S-Q118LL
Collection Date: 1/3/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:33 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:33 PM
Manganese	1.6	0.056	0.50		µg/L	1	1/5/2018 08:33 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 08:33 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 08:44 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:44 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 08:44 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:44 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:56 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:56 PM
Manganese	4.4	0.056	0.50		µg/L	1	1/5/2018 08:56 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:56 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66251**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **PBW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66251**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **LCSW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.756	0.10	10.00	0	97.6	85	115				
Barium	10.117	1.0	10.00	0	101	85	115				
Manganese	99.827	0.50	100.0	0	99.8	85	115				
Molybdenum	9.857	0.50	10.00	0	98.6	85	115				
Selenium	9.567	0.50	10.00	0	95.7	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.463	0.10	10.00	2.259	102	75	125				
Barium	141.826	1.0	10.00	129.4	124	75	125				
Manganese	103.441	0.50	100.0	3.007	100	75	125				
Molybdenum	16.612	0.50	10.00	5.016	116	75	125				
Selenium	12.937	0.50	10.00	1.769	112	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.796	0.10	10.00	2.259	105	75	125	12.46	2.64	20	
Barium	140.958	1.0	10.00	129.4	115	75	125	141.8	0.614	20	
Manganese	104.147	0.50	100.0	3.007	101	75	125	103.4	0.680	20	
Molybdenum	16.287	0.50	10.00	5.016	113	75	125	16.61	1.98	20	
Selenium	12.654	0.50	10.00	1.769	109	75	125	12.94	2.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
F: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Report to: Nara Tay	Bill to: Nara Tay	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: AECOM	Excel EDD	PQL:		
Address: Roseville, CA 95661	Email:	Geotracker	RWQCB ✓	1. Chilled	
	Address:	Labspec	CalTrans	2. Headspace	
Phone: 916-786-3302 Fax:	Email to: mbloes@pivox.com	Others ✓	LEVEL III	3. Container Intact	
Submitted By: Nara Tay	P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present	
Title: sample tech	Phone: 949-727-1400, ext 200 Fax:	Global ID:	Regulatory	5. IR number	3
Signature: Date: 1/3/18	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661		Specify State:	6. Method of Cooling: ice	
I hereby authorize ASSET Labs to perform the tests indicated below.	Phone: 916-786-3302 Fax:			Sample Temp: 2.1°C / 3.2°C / 2-6°C	
Project Name: PG&E Topock - RMP	Sampled By: Nara Tay			Courier:	
Project Number: RC000753.0801	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Tracking No.:	
	Signature: Date: 1/3/18				

Matrix: Ground x | Sediment; Potable | Soil; NPDES | Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba 3x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027812 -01	C-BNS-Q118LL	1/3/18	1155		X		X		X	X		X	X			X	X	E	7	P	BNS	
2		~~C-CON-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M7
3		~~C-CON-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
4	-02	C-I-3-D-Q118LL	1/3/18	0930		X		X		X	X		X	X			X	X	E	7	P	BNS	
5	-03	MW-921-Q118LL	1/3/18	1235		X		X		X	X		X	X			X	X	E	7	P	BNS	
6	-04	C-I-3-S-Q118LL	1/3/18	0950		X		X		X	X		X	X			X	X	E	7	P	BNS	
7		~~C-MAR-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M7
8		~~C-MAR-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M7
9		~~C-NR1-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
10		~~C-NR1-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
11		~~C-NR3-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
12		~~C-NR3-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
13		~~MW-920-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M
14		~~C-NR4-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	M

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tay	1/3/18 1600	[illegible]	1/3/18 1630
[illegible]	1/3/18 1900	[illegible]	1/3/18 1900

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Sample tech	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 1/3/18	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State:	6. Method of Cooling: IR
Project Name: PG&E Topock - RMP	Signature: Date: 1/3/18				Sample Temp: 2.1°C / 3.0°C / 2.6°C
Project Number: RC000753.0801					Courier: Tracking No.:

Matrix: Ground x | Potable | NPDES | Surface; Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Oxygen and deuterium stable isotopes (CFIRM) (1 250 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
2	N027812 -05	C-R22A-D-Q118LL	1/3/18	1050		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
3	-06	C-R22A-S-Q118LL	1/3/18	1105		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
4	-07	C-R27-D-Q118LL	1/3/18	1225		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
5	-08	C-R27-S-Q118LL	1/3/18	1250		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
	-09	C-TAZ-D-Q118LL	1/3/18	0835		X		X		X	X		X	X			X	X		E	7 6	P	BNS	
7	-10	MW-922-Q118LL	1/3/18	1450		X		X					X	X						E	5	P	BNS	
8	-11	C-TAZ-S-Q118LL	1/3/18	0855		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
9		~~R-19-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
10	-12	R-28-Q118LL	1/3/18	1325		X		X	~~X~~	X	X	~~X~~	X	X	~~X~~	~~X~~	X	X	~~X~~	E	7 6	P	BNS	
11	-13	R63-Q118LL	1/3/18	1015		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
12		~~RRB-Q118LL~~				X		X		X	X		X	X			X	X		E	7 8	P	BNS	M
13	-14	SW1-Q118LL	1/3/18	1440		X		X					X	X						E	5	P	BNS	
14	-15	SW2-Q118LL	1/3/18	1510		X		X					X	X						E	5	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	1/3/18 1600	Ping Wang	1/3/18 1630
Ping Wang	1/3/18 1905	Ping Wang	1/3/18 1905
Ping Wang		Ping Wang	

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Mary Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
			Geotracker	RWQCB ✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec	CalTrans	2. Headspace
			Others ✓	LEVEL III	3. Container Intact
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present
Submitted By: Nara Tan		Phone: 949-727-1400, ext 200 Fax:	Global ID:	Regulatory	5. IR number 3
Title: sample tech	Phone: 916-786-3302 Fax:			Specify State:	6. Method of Cooling: ice
Signature: Date: 1/3/18	Sampled By: Nara Tan				Sample Temp: 2.1°C / 3.2°C / 2.6°C

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - RMP
Project Number: RC000753.0801
Signature: Date: 1/3/18

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N027812-16	R-28-Q118LL	1/3/18	1325		X																
	-17	AB1-Q118LL	1/3/18	0845			X													E	1	P	BN	Hold
	-18	AB2-Q118LL	1/3/18	1340			X													E	1	P	BN	Hold
		~~AB3-Q118LL~~					X													E	1	P	BN	Hold

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tan	1/3/18		
			1/3/18 1630
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/3/18 1900		1/3/18 1900
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
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9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/3/2018	Workorder:	N027812
Rep sample Temp (Deg C):	2.1/3.2/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See correspondence.

Checklist Completed By: YR 1/4/2018

Reviewed By: 01/05/2018

Dylan 1/4/2018

nancy@assetlaboratories.com

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Friday, January 19, 2018 9:51 AM
To: nancy@assetlaboratories.com
Subject: Topock - N027812 - Load Failed

Hi Nancy,

The load for N027812 (Topock) failed – I looked at the error log and that was one where the sample ID needed to be updated:

From: C-TAZ-D-Q1188LL
To: C-TAZ-D-Q118LL

Should go through once you make that update.

Tina

Tina Rice
Database Analyst

CRITIGEN

Tina.Rice@critigen.com
1 360 600 3562 Direct
1 360 600 3562 Mobile

critigen.com
critigen.co.uk

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 11:45 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "jmahn@blainetech.com" <jmahn@blainetech.com>

Hello Yoandra,
See my comments below.

Thanks,
Laura
-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC. There are 2 sets of dissolved metals on page 2 of the COC you sent. Please see the attached original COC file for the list of metals. It looks like when printed the specific metals were cut off.

- Sample R-28-Q118LL is listed twice (# 12 and # 16). I'm looking into this one and have a call into the field team.

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label. AB1-Q118LL is correct

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label. AB2-Q118LL is correct

- Please also confirm if the samples 17 and 18 should be on hold as per COC. Yes, please hold.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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Attachments:

Topock COC RMP_ 01 2018.xlsx	118 KB

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 1:28 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>

Line # 16 is an error and was not submitted to the lab.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC.

- Sample R-28-Q118LL is listed twice (# 12 and # 16).

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label.

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label.

- Please also confirm if the samples 17 and 18 should be on hold as per COC.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-001A	C-BNS-Q118LL	1/3/2018 11:55:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-001C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-001D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-001E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-002A	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-002C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-002D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-002D	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-002E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-003A	MW-921-Q118LL	1/3/2018 12:35:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-003B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-003C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-003D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-003E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-004A	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-004B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-004B	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-004C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-004D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-004E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-005A	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-005B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-005C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-005D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-005E	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-006A	C-R22A-S-Q118LL	1/3/2018 11:05:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-006B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-006C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-006D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-006E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-007A	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-007B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-007C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-007C	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-007D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-007E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-008A	C-R27-S-Q118LL	1/3/2018 12:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-008B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-008C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-008D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-008E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-009A	C-TAZ-D-Q118LL	1/3/2018 8:35:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-009B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

Nancy 01/19/2018
for

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-009B	C-TAZ-D-Q118LL	1/3/2018 8:35:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-009C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-009D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-009E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-010A	MW-922-Q118LL	1/3/2018 2:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-010B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-010C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-011A	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-011B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

01/19/2018
for

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-011C	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-011D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-011E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-012A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-012B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-012C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-012D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-012E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-013A	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-013B	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-013C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-013D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-013E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-014A	SW1-Q118LL	1/3/2018 2:40:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-014B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-014C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-015A	SW2-Q118LL	1/3/2018 3:10:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-015B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-015C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-016A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N027812-017A	AB1-Q118LL	1/3/2018 8:45:00 AM					☐	☐	☐	WW
N027812-018A	AB2-Q118LL	1/3/2018 1:40:00 PM					☐	☐	☐	WW
N027812-019A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027812

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121231 **Analyst:** LSR

ASSET #: N027812 **Date Analyzed:** 1/4/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 1/8/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/4/18 1025

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 µS/cm	CIWV - 171018A	9.57 @ 20.7°C	% Rec: (90-110%)
1412	171121A	1412 @ 20.5°C	
9986	171018B	10040 @ 20.5°C	
99842	171121B	99400 @ 20.4°C	

	Sample ID	Matrix	Reading	Comments
1	NO27812-001D	H2O	886 @ 21.3C	
2	2D		893 @ 20.0C	
3	3D		913 @ 19.5C	
4	4D		911 @ 19.3°C	
5	5D		912 @ 19.1C	
6	6D		924 @ 19.3C	
7	7D		928 @ 19.8C	
8	8D		918 @ 19.7C	
9	9D		918 @ 19.5°C	
10	10C		1014 @ 19.8C	
Dup	10C DUP		1011 @ 19.5C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: CONT'D

Analyst:

Standard	Std ID	Reading	Comments
1413 µS/cm	CIWV - 170615G	1457 @ 20.7C	% Rec: (90-110%)
10000	170822F	10060 @ 20.6C	
99672	170831B	98700 @ 20.3°C	

	Sample ID	Matrix	Reading	Comments
1	NO27812-011D	H2O	911 @ 19.8C	
2	012D		939 @ 19.7°C	
3	13D		941 @ 19.9°C	
4	14C		1028 @ 19.8°C	
5	14C DUP		1029 @ 19.4°C	
6	15C		993 @ 19.5C	
7				
8				Julia Ramit 1/8/2018
9	1413 µS/cm	CIWV - 170615G	1463 @ 20.9°C	
10	10000	170822F	10010 @ 20.7°C	01/12/2018
Dup	99672	170831B	98900 @ 20.4°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121232 **Analyst:** LSR

ASSET #: N027812 **Date Analyzed:** 1/4/2018

Method: EPA 150.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X	X		X	X	
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

Samoles were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Lilia Ramit Date: 1/8/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/3/18 1417
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170615F	7.01 @25.0 C	SLOPE: 95.3%
Buffer 4	170615E	3.99 @25.0 C	
Buffer 10	170838B	10.02 @25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27809-001D	H2O	7.92 @25.0C	
2	1P DUP		7.95 @25.0 C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-171023A	7.03 @25.0 C	Accept: +/-0.1 pH units from expected value

Date: 1/4/17 920
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170615F	7.00 @25.0°C	SLOPE: 98.2%.
Buffer 4	170615E	4.02 @25.0 C	
Buffer 10	170822B	10.02 @25.0°C	

	Sample ID	Matrix	pH	Comments
1	NO27812-001D	H2O	8.27 @25.0 C	
2	1D DUP		8.29 @25.0 C	
3	2D		8.24 @25.0°C	
4	3D		8.27 @25.0°C	
5	4D		8.27 @25.0 C	
6	5D		8.26 @25.0 C	
7	6D		8.25 @25.0 C	Julia Ramit 1/8/2018
8	7D		8.27 @25.0 C	
9	8D		8.30 @25.0°C	01/12/2018
10	9D		8.24 @25.0 C	
Dup	10DC MK 1/4		8.41 @25.0 C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-171023A	7.03 @25.1 C	Accept: +/-0.1 pH units from expected value

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00722

pH Logbook

Date: 11/4/18 920
Analyst: LSR (cont'd)

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.00 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.02 @ 25.0 C	
Buffer 10	170822B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27812-011D	H2O	8.20 @ 24.0 C	
2	12D		8.26 @ 24.0 C	
3	13D		8.19 @ 25.0 C	
4	14C		8.38 @ 25.0 C	
5	15C		7.19 @ 24.0 C	
6	15CDUP		7.21 @ 25.0 C	
7				
8				
9				Julia Ramit 1/8/2018
10				RLB 01/12/2018
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.02 @ 25.0 C	Accept: +/-0.1 pH units from expected value

Date: 11/5/18 1110
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.01 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.01 @ 25.0 C	
Buffer 10	170822B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27819-001C	H2O	7.69 @ 25.0 C	
2	1CDUP		7.69 @ 25.0 C	
3	2C		7.32 @ 25.0 C	
4	NO27820-001D		8.32 @ 25.0 C	
5	2D		8.33 @ 25.0 C	
6	3D		8.15 @ 25.0 C	
7	4D		8.19 @ 25.0 C	
8	5D		8.35 @ 25.0 C	
9	6D		8.34 @ 25.0 C	
10	7D		8.34 @ 25.0 C	
Dup	8D		8.34 @ 25.0 C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.05 @ 25.0 C	Accept: +/-0.1 pH units from expected value

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66260/66261 **Analyst:** LSR

ASSET #: N027812 **Date Analyzed:** 1/4/2018

Method: EPA 160.2

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 1/9/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027812-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4127- 1.4124) *1000000}{100}$$

= 3 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 1/9/2018

RLB 01/12/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:16 A**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66260** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66260	Water	IWST171227A	100	☐	0	0	100	1.000		
MB-66260	Water		100	☐	0	0	100	1.000		
N027812-001D	Groundwater		100	☐	0	0	100	1.000		
N027812-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-002D	Groundwater		100	☐	0	0	100	1.000		
N027812-003D	Groundwater		100	☐	0	0	100	1.000		
N027812-004D	Groundwater		100	☐	0	0	100	1.000		
N027812-005D	Groundwater		100	☐	0	0	100	1.000		
N027812-006D	Groundwater		100	☐	0	0	100	1.000		
N027812-007D	Groundwater		100	☐	0	0	100	1.000		
N027812-008D	Groundwater		100	☐	0	0	100	1.000		
N027812-009D	Groundwater		100	☐	0	0	100	1.000		
N027812-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:19 A**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66261** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66261	Water	IWST171227A	100	☐	0	0	100	1.000		
MB-66261	Water		100	☐	0	0	100	1.000		
N027792-001A	Surface Water		100	☐	0	0	100	1.000		
N027792-002A	Surface Water		100	☐	0	0	100	1.000		
N027792-003A	Surface Water		100	☐	0	0	100	1.000		
N027792-004A	Surface Water		100	☐	0	0	100	1.000		
N027812-012D	Groundwater		100	☐	0	0	100	1.000		
N027812-012D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:16 A**
Prep End Date: **1/4/2018 4:40:00 P**

Reviewed/ Date: RLB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66260** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66260	Water		100	☐	0	0	100	1.000		
MB-66260	Water		100	☐	0	0	100	1.000		
N027812-001D	Groundwater		100	☐	0	0	100	1.000		
N027812-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-002D	Groundwater		100	☐	0	0	100	1.000		
N027812-003D	Groundwater		100	☐	0	0	100	1.000		
N027812-004D	Groundwater		100	☐	0	0	100	1.000		
N027812-005D	Groundwater		100	☐	0	0	100	1.000		
N027812-006D	Groundwater		100	☐	0	0	100	1.000		
N027812-007D	Groundwater		100	☐	0	0	100	1.000		
N027812-008D	Groundwater		100	☐	0	0	100	1.000		
N027812-009D	Groundwater		100	☐	0	0	100	1.000		
N027812-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171227A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 10:37:19 A**
Prep End Date: **1/4/2018 4:40:00 P**
Reviewed/ Date: RLB 01/12/2018
Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66261** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66261	Water		100	☐	0	0	100	1.000		
MB-66261	Water		100	☐	0	0	100	1.000		
N027792-001A	Surface Water		100	☐	0	0	100	1.000		
N027792-002A	Surface Water		100	☐	0	0	100	1.000		
N027792-003A	Surface Water		100	☐	0	0	100	1.000		
N027792-004A	Surface Water		100	☐	0	0	100	1.000		
N027812-012D	Groundwater		100	☐	0	0	100	1.000		
N027812-012D-DU	Groundwater		100	☐	0	0	100	1.000		
N027812-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171227A	1000 ppm Talc	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt (g)	Comments
1/4/18 1037	MB 66260	100	1.4184 1.4181	1.4180 1.4180	
	LCS 66260	100	1.4161 1.4160	1.5089 1.5087	
1	K0278I2-001D	100	1.4126 1.4124	1.4125 1.4127	
D1	1D DUP	100	1.4260 1.4262	1.4262 1.4264	
2	2D	100	1.4130 1.4127	1.4126 1.4126	
3	3D	100	1.4207 1.4207	1.4208 1.4209	
4	4D	100	1.4207 1.4206	1.4207 1.4207	
5	5D	100	1.4228 1.4228	1.4228 1.4230	
6	6D	100	1.4253 1.4252	1.4251 1.4254	
7	7D	100	1.4152 1.4150	1.4151 1.4151	

Silvia Ramit 1/9/2018

ASSET Laboratories

Logbook#9

01/12/2018

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/4/18 8	NO27812-008D	100	1.4220 1.4221	1.4231 1.42.22	
9	9D	100	1.4232 1.4232	1.4235 1.4234	
10	11D	100	1.4160 1.4162	1.4162 1.4163	
Divia Ramit	1/9/2018				

RLB 01/12/2018 ASSET Laboratories Logbook#9

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/4/2018							
MB-66260	100	1.4181	1.4180	-1.0000	1.00	-1	MBLK
LCS-66260	100	1.4160	1.5087	927.0000	1.00	927	LCS
N027812-001D	100	1.4124	1.4127	3.0000	1.00	3	SAMP
N027812-001DDUP	100	1.4262	1.4264	2.0000	1.00	2	DUP
N027812-002D	100	1.4127	1.4126	-1.0000	1.00	-1	SAMP
N027812-003D	100	1.4207	1.4209	2.0000	1.00	2	SAMP
N027812-004D	100	1.4206	1.4207	1.0000	1.00	1	SAMP
N027812-005D	100	1.4228	1.423	2.0000	1.00	2	SAMP
N027812-006D	100	1.4252	1.4254	2.0000	1.00	2	SAMP
N027812-007D	100	1.415	1.4151	1.0000	1.00	1	SAMP
N027812-008D	100	1.4221	1.4222	1.0000	1.00	1	SAMP
N027812-009D	100	1.4232	1.4234	2.0000	1.00	2	SAMP
N027812-011D	100	1.4162	1.4163	1.0000	1.00	1	SAMP

Sivia Ramit 1/9/2018

RB 01/12/2018

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/4/18 1037 G	MB 66261	100	1.4157 1.4154	1.4154 1.4153	
	LCS 66261	100	1.4117 1.4116	1.5036 1.5034	
11	N027792-001A	100	1.4226 1.4225	1.4237 1.4237	
12	2A	100	1.4194 1.4193	1.4212 1.4210	
13	3A	100	1.4207 1.4206	1.4219 1.4217	
14	4A	100	1.4118 1.4117	1.4133 1.4130	
15	N027812-012D	100	1.4112 1.4112	1.4119 1.4117	
D2	12D DUP	100	1.4274 1.4277	1.4283 1.4283	
16	13D	100	1.4155 1.4154	1.4161 1.4159	
	Closing wt	: 1.0001	1/4/18 @ 1640	KK	

ASSET Laboratories Logbook#9

Julia Ramit 1/9/2018

RB 01/12/2018

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/4/2018							
MB-66261	100	1.4154	1.4153	-1.0000	1.00	-1	MBLK
LCS-66261	100	1.4116	1.5034	918.0000	1.00	918	LCS
N027792-001A	100	1.4225	1.4237	12.0000	1.00	12	SAMP
N027792-002A	100	1.4193	1.421	17.0000	1.00	17	SAMP
N027792-003A	100	1.4206	1.4217	11.0000	1.00	11	SAMP
N027792-004A	100	1.4117	1.413	13.0000	1.00	13	SAMP
N027812-012D	100	1.4112	1.4117	5.0000	1.00	5	SAMP
N027812-012DDUP	100	1.4277	1.4283	6.0000	1.00	6	DUP
N027812-013D	100	1.4154	1.4159	5.0000	1.00	5	SAMP

Julia Ramit 1/9/2018

RLB 01/12/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121248
ASSET #: N027812

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/5/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:
~~N027812-014A for rerun due to matrix interference.~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 1/10/2018

2nd Level Reviewer: 01/12/2018 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R121296
ASSET #: N027812

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X			X		
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 1/10/2018

2nd Level Reviewer 01/12/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027812-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

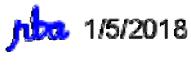
rba 1/10/2018

ANALYSIS RUN LOG

INJECTION LOG: 180102A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/02/18 1:22 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/02/18 1:34 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/02/18 1:43 PM	Reported



Injection Log Summary

Sequence Details

Name:	**IC-07_180102A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Jan/18 14:25:10**
No. of Injections:	**15**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		01/02/2018 13:22	Finished	ICV @5ppb, IWST-171002B
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/02/2018 13:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/02/2018 13:43	Finished	ICB R180102C
13	SHUTDOWN	14	1000	Unknown		01/02/2018 14:02	Finished	
14	Eluent: R180102A	15	1000	Unknown		n.a.	Finished	Eluent
15	PCR: R180102B	16	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 1/5/2018

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:24 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:35 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/05/18 8:44 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/05/18 8:54 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/05/18 9:03 AM	Reported
15	MB-R121248	MBLK	1	Hexavalent Chromium	01/05/18 9:13 AM	Reported
16	LCS-R121248	LCS	1	Hexavalent Chromium	01/05/18 9:22 AM	Reported
17	N027812-001A	SAMP	1	Hexavalent Chromium	01/05/18 9:32 AM	Reported
18	N027812-001AMS	MS	1	Hexavalent Chromium	01/05/18 9:41 AM	Reported
19	N027812-002A	SAMP	1	Hexavalent Chromium	01/05/18 9:51 AM	Reported
20	N027812-002AMS	MS	1	Hexavalent Chromium	01/05/18 10:00 AM	Reported
21	N027812-003A	SAMP	1	Hexavalent Chromium	01/05/18 10:09 AM	Reported
22	N027812-003AMS	MS	1	Hexavalent Chromium	01/05/18 10:19 AM	Reported
23	N027812-004A	SAMP	1	Hexavalent Chromium	01/05/18 10:28 AM	Reported
24	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 10:38 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/05/18 10:47 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/05/18 10:57 AM	Reported
27	N027812-005A	SAMP	1	Hexavalent Chromium	01/05/18 11:06 AM	Reported
28	N027812-005AMS	MS	1	Hexavalent Chromium	01/05/18 11:16 AM	Reported
29	N027812-006A	SAMP	1	Hexavalent Chromium	01/05/18 11:25 AM	Reported
30	N027812-006AMS	MS	1	Hexavalent Chromium	01/05/18 11:35 AM	Reported
31	N027812-007A	SAMP	1	Hexavalent Chromium	01/05/18 11:44 AM	Reported
32	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 11:54 AM	Not Reported
33	N027812-008A	SAMP	1	Hexavalent Chromium	01/05/18 12:03 PM	Reported
34	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 12:12 PM	Not Reported
35	N027812-009A	SAMP	1	Hexavalent Chromium	01/05/18 12:22 PM	Reported
36	N027812-009AMS	MS	1	Hexavalent Chromium	01/05/18 12:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/05/18 12:41 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/05/18 12:50 PM	Reported
39	N027557-002A	SAMP	1	Hexavalent Chromium	01/05/18 1:00 PM	Not Reported
40	N027557-002AMS	MS	1	Hexavalent Chromium	01/05/18 1:09 PM	Not Reported
41	N027812-011A	SAMP	1	Hexavalent Chromium	01/05/18 1:19 PM	Reported
42	N027812-011AMS	MS	1	Hexavalent Chromium	01/05/18 1:28 PM	Reported

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027812-012A	SAMP	1	Hexavalent Chromium	01/05/18 1:38 PM	Reported
44	N027812-012AMS	MS	1	Hexavalent Chromium	01/05/18 1:47 PM	Reported
45	N027812-013A	SAMP	1	Hexavalent Chromium	01/05/18 1:57 PM	Reported
46	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 2:06 PM	Not Reported
47	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 2:16 PM	Not Reported
48	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 2:25 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/05/18 2:34 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/05/18 2:44 PM	Reported
51	N027812-015A	SAMP	1	Hexavalent Chromium	01/05/18 2:53 PM	Reported
52	N027812-015AMS	MS	1	Hexavalent Chromium	N.A.	Not Reported
53	N027812-010A	SAMP	1	Hexavalent Chromium	01/05/18 3:39 PM	Reported
54	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 3:50 PM	Not Reported
55	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 4:00 PM	Reported
56	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 4:12 PM	Reported
57	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 4:21 PM	Reported
58	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 4:31 PM	Reported
59	N027812-009ADUP	DUP	1	Hexavalent Chromium	01/05/18 4:40 PM	Reported
60	N027812-003AMSD	MSD	1	Hexavalent Chromium	01/05/18 4:50 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/05/18 5:29 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/05/18 5:40 PM	Reported
63	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 5:49 PM	Not Reported
64	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 5:58 PM	Not Reported
65	N027812-015AMS	MS	1	Hexavalent Chromium	01/05/18 6:08 PM	Reported
66	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 6:17 PM	Reported
67	CCV-6	CCV1	1	Hexavalent Chromium	01/05/18 6:27 PM	Reported
68	CCB-6	CCB	1	Hexavalent Chromium	01/05/18 6:36 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180105A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/Jan/18 19:07:08**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		01/05/2018 08:24	Finished	BLANK
11	BLANK	2	1000	Unknown		01/05/2018 08:35	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		01/05/2018 08:44	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/05/2018 08:54	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/05/2018 09:03	Finished	CCB R180102C
15	MB-H2O,MBLK,1,	6	1000	Unknown		01/05/2018 09:13	Finished	MB R171129A
16	LCS-H2O,LCS,1,	7	1000	Unknown		01/05/2018 09:22	Finished	LCS, IWST-171002B
17	N027812-001A,SAMP	8	1000	Unknown		01/05/2018 09:32	Finished	SAMP,10mL
18	N027812-001AMS,MS	9	1000	Unknown		01/05/2018 09:41	Finished	MS (1ppb), IWST-171002B,10
19	N027812-002A,SAMP	10	1000	Unknown		01/05/2018 09:51	Finished	SAMP,10mL
20	N027812-002AMS,MS	11	1000	Unknown		01/05/2018 10:00	Finished	MS (1ppb), IWST-171002B,10
21	N027812-003A,SAMP	12	1000	Unknown		01/05/2018 10:09	Finished	SAMP,10mL
22	N027812-003AMS,MS	13	1000	Unknown		01/05/2018 10:19	Finished	MS (1ppb), IWST-171002B,10
23	N027812-004A,SAMP	14	1000	Unknown		01/05/2018 10:28	Finished	SAMP,10mL
24	N027812-004AMS,MS	15	1000	Unknown		01/05/2018 10:38	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		01/05/2018 10:47	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		01/05/2018 10:57	Finished	CCB R180102C
27	N027812-005A,SAMP	18	1000	Unknown		01/05/2018 11:06	Finished	SAMP,10mL
28	N027812-005AMS,MS	19	1000	Unknown		01/05/2018 11:16	Finished	MS (1ppb), IWST-171002B,10
29	N027812-006A,SAMP	20	1000	Unknown		01/05/2018 11:25	Finished	SAMP,10mL
30	N027812-006AMS,MS	21	1000	Unknown		01/05/2018 11:35	Finished	MS (1ppb), IWST-171002B,10
31	N027812-007A,SAMP	22	1000	Unknown		01/05/2018 11:44	Finished	SAMP,10mL
32	N027812-007AMS,MS	23	1000	Unknown		01/05/2018 11:54	Finished	MS (1ppb), IWST-171002B,10
33	N027812-008A,SAMP	24	1000	Unknown		01/05/2018 12:03	Finished	SAMP,10mL
34	N027812-008AMS,MS	25	1000	Unknown		01/05/2018 12:12	Finished	MS (1ppb), IWST-171002B,10
35	N027812-009A,SAMP	26	1000	Unknown		01/05/2018 12:22	Finished	SAMP,10mL
36	N027812-009AMS,MS	27	1000	Unknown		01/05/2018 12:31	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	28	1000	Unknown		01/05/2018 12:41	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		01/05/2018 12:50	Finished	CCB R180102C
39	N027557-002A,SAMP	30	1000	Unknown		01/05/2018 13:00	Finished	SAMP,2>10mL
40	N027557-002AMS,MS	31	1000	Unknown		01/05/2018 13:09	Finished	MS (1ppb), IWST-171002B,2>1
41	N027812-011A,SAMP	32	1000	Unknown		01/05/2018 13:19	Finished	SAMP,10mL
42	N027812-011AMS,MS	33	1000	Unknown		01/05/2018 13:28	Finished	MS (1ppb), IWST-171002B,10
43	N027812-012A,SAMP	34	1000	Unknown		01/05/2018 13:38	Finished	SAMP,10mL
44	N027812-012AMS,MS	35	1000	Unknown		01/05/2018 13:47	Finished	MS (1ppb), IWST-171002B,10
45	N027812-013A,SAMP	36	1000	Unknown		01/05/2018 13:57	Finished	SAMP,10mL
46	N027812-013AMS,MS	37	1000	Unknown		01/05/2018 14:06	Finished	MS (1ppb), IWST-171002B,10
47	N027812-014A,SAMP	38	1000	Unknown		01/05/2018 14:16	Finished	SAMP,10mL
48	N027812-014AMS,MS	39	1000	Unknown		01/05/2018 14:25	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	40	1000	Unknown		01/05/2018 14:34	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		01/05/2018 14:44	Finished	CCB R180102C
51	N027812-015A,SAMP	42	1000	Unknown		01/05/2018 14:53	Finished	SAMP,10mL
52	N027812-015AMS,MS	43	1000	Unknown		n.a.	Interrupted	MS (1ppb), IWST-171002B,10
53	N027812-010A,SAMP	44	1000	Unknown		01/05/2018 15:39	Finished	SAMP,10mL
54	N027812-010AMS,MS	45	1000	Unknown		01/05/2018 15:50	Finished	MS (1ppb), IWST-171002B,10
55	N027812-004AMS,MS	1	1000	Unknown		01/05/2018 16:00	Finished	MS (1ppb), IWST-171002B,10
56	N027812-007AMS,MS	2	1000	Unknown		01/05/2018 16:12	Finished	MS (1ppb), IWST-171002B,10
57	N027812-008AMS,MS	3	1000	Unknown		01/05/2018 16:21	Finished	MS (1ppb), IWST-171002B,10
58	N027812-013AMS,MS	4	1000	Unknown		01/05/2018 16:31	Finished	MS (1ppb), IWST-171002B,10
59	N027812-009ADUP,D	5	1000	Unknown		01/05/2018 16:40	Finished	DUP,1>10mL
60	N027812-003AMSD,M	6	1000	Unknown		01/05/2018 16:50	Finished	MSD (1ppb), IWST-171002B,10

61	CCV-5,CCV,1,	7	1000	Unknown		01/05/2018 17:29	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	8	1000	Unknown		01/05/2018 17:40	Finished	CCB R180102C
63	N027812-014A,SAMP	9	1000	Unknown		01/05/2018 17:49	Finished	SAMP,10mL
64	N027812-014AMS,MS	10	1000	Unknown		01/05/2018 17:58	Finished	MS (1ppb), IWST-171002B,10
65	N027812-015AMS,MS	11	1000	Unknown		01/05/2018 18:08	Finished	MS (1ppb), IWST-171002B,10
66	N027812-010AMS,MS	12	1000	Unknown		01/05/2018 18:17	Finished	MS (1ppb), IWST-171002B,10
67	CCV-6,CCV1,1,	13	1000	Unknown		01/05/2018 18:27	Finished	CCV @10ppb, IWST-171002A
68	CCB-6,CCB,1,	14	1000	Unknown		01/05/2018 18:36	Finished	CCB R180102C
69	SHUTDOWN	15	1000	Unknown		01/05/2018 18:46	Finished	
70	Eluent: R180104B	16	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	17	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMF	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMF	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMF	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMF	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMF	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMF	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMF	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMF	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMF	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMF	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMF	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMF	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMF	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMF	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMF	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMF	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMF	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMF	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 1/3/18
Time Prepared: 1005H
Prepared By: NSA

slope: 95.3%
pH4: 3.99 @ 25.0°C
7: 7.01 @ 25.0°C
10: 10.02 @ 25.0°C
LVS: 7.05 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-1706 20A
NH4OH + NH4SO4 eluent: R180102A / R180104B
NH4OH + NH4SO4 buffer: R180102C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M027789-001C	7.57	9.52	~250mL	~250mL		R180102C
2)	2C	7.51	9.69				
3)	3B	7.88	9.42				
4)	M027812-001A	9.51	-				1/3
5)	001A	9.52	-				2/3
6)	001A	9.53	-				3/3
7)	002A	9.52	-				1/3
8)	002A	9.51	-				2/3
9)	002A	9.56	-				3/3
10)	003A	9.55	-				1/3
11)	003A	9.55	-				2/3
12)	003A	9.54	-				3/3
13)	004A	9.54	-				1/3
14)	004A	9.55	-				2/3
15)	004A	9.58	-				3/3
	005A	9.56	-				1/3

Sample Preparation

Date Prepared: 1/4/18
Time Prepared: 1005H
Prepared By: MG

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-1706 20A
NH4OH + NH4SO4 eluent: R180104B
NH4OH + NH4SO4 buffer: R180102C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M027812-005A	9.56	-	~250 mL	~250mL		2/3 R180102C
2)	005A	9.53	-				3/3
3)	006A	9.55	-				1/3
4)	006A	9.57	-				2/3
5)	006A	9.57	-				3/3
6)	007A	9.54	-				1/3
7)	007A	9.54	-				2/3
8)	007A	9.54	-				3/3
9)	008A	9.55	-				1/3
10)	008A	9.50	-				2/3
11)	008A	9.46	-				3/3
12)	009A	9.46	-				1/3
13)	009A	9.44	-				2/3
14)	009A	9.44	-				3/3
15)	010A	9.49	-				1/3
	010A	9.46	-				2/3

Logbook No. 13

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 11/4/15
Time Prepared: 1005H
Prepared By: MH

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-170620A
NH4OH + NH4SO4 eluent: R1801048 / R1801080
NH4OH + NH4SO4 buffer: R1801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	1027812-010A	9.48	–	~250 ml	~250ml		R1801020
2)	011A	9.49	–				
3)	11A	9.45	–				
4)	11A	9.50	–				
5)	12A	9.49	–				
6)	12A	9.49	–				
7)	12A	9.49	–				
8)	13A	9.46	–				
9)	13A	9.49	–				
10)	17A	9.48	–				
11)	14A	9.49	–				
12)	14A	9.48	–				
13)	14A	9.46	–				
14)	15A	9.45	–				
15)	15A	9.45	–				
	15A	9.45	–				

Sample Preparation

Date Prepared: 11/4/15
Time Prepared: 1005H
Prepared By: MH

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CINV-170625A
NH4OH + NH4SO4 eluent: R1801048
NH4OH + NH4SO4 buffer: R1801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	1027812-17A	9.58	–	~250ml	~250		R1801020
2)	18A	9.54	–				1
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0505	0.2501	1.2761	2.5621	3.8523	5.1007	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/8/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0622	0.2487	1.2856	2.5688	3.8263	5.1131	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ICV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/2/2018**	SeqNo: **2887353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.059	0.20	5.000	0	101	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/2/2018**	SeqNo: **2887354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.193	0.20	0.2000	0	96.4	80	120				

Sample ID: **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.178	0.20	5.000	0	104	95	105				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID: **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.095	0.20	10.00	0	101	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.110	0.20	5.000	0	102	95	105				

Sample ID: **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.248	0.20	10.00	0	102	95	105				

Sample ID: **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCV**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.134	0.20	5.000	0	103	95	105				

Sample ID: **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.211	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.204	0.20	5.000	0	104	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.225	0.20	0.2000	0	113	80	120				

Sample ID: **CCV-1**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.253	0.20	10.00	0	103	95	105				

Sample ID: **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.233	0.20	5.000	0	105	95	105				

Sample ID: **CCV-3**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.161	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.117	0.20	5.000	0	102	95	105				

Sample ID: **CCV-5**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.174	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ICB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/2/2018**	SeqNo: **2887355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **CCB**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **CCB** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
Average	4.173	
Actual RT Window	4.093 - 4.253	
Applied RT Window	3.973 - 4.373	
MB-R121248	N.A.	N.A.
LCS-R121248	4.173	PASS
N027812-001A	N.A.	N.A.
N027812-001AMS	4.165	PASS
N027812-002A	N.A.	N.A.
N027812-002AMS	4.165	PASS
N027812-003A	N.A.	N.A.
N027812-003AMS	4.165	PASS
N027812-004A	N.A.	N.A.
N027812-004AMS	4.173	PASS
N027812-005A	N.A.	N.A.
N027812-005AMS	4.165	PASS
N027812-006A	N.A.	N.A.
N027812-006AMS	4.165	PASS
N027812-007A	N.A.	N.A.
N027812-007AMS	4.165	PASS
N027812-008A	N.A.	N.A.
N027812-008AMS	4.165	PASS
N027812-009A	N.A.	N.A.
N027812-009AMS	4.165	PASS
N027557-002A	4.131	PASS
N027557-002AMS	4.131	PASS
N027812-011A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/5/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
Average	4.173	
Actual RT Window	4.093 - 4.253	
Applied RT Window	3.973 - 4.373	
N027812-011AMS	4.165	PASS
N027812-012A	N.A.	N.A.
N027812-012AMS	4.165	PASS
N027812-013A	N.A.	N.A.
N027812-013AMS	4.165	PASS
N027812-014A	N.A.	N.A.
N027812-014AMS	4.173	PASS
N027812-015A	N.A.	N.A.
N027812-015AMS	N.A.	N.A.
N027812-010A	N.A.	N.A.
N027812-010AMS	4.165	PASS
N027812-004AMS	4.165	PASS
N027812-007AMS	4.165	PASS
N027812-008AMS	4.173	PASS
N027812-013AMS	4.173	PASS
N027812-009ADUP	N.A.	N.A.
N027812-003AMSD	4.165	PASS
N027812-014A	N.A.	N.A.
N027812-014AMS	4.165	PASS
N027812-015AMS	4.173	PASS
N027812-010AMS	4.165	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
MB-R121296	N.A.	N.A.
LCS-R121296	4.173	PASS
N027812-014A	4.156	PASS
N027812-014AMS	4.173	PASS
N027819-002A	4.173	PASS
N027819-002AMS	4.173	PASS
N027819-002AMSD	4.173	PASS
N027820-001A	N.A.	N.A.
N027820-001AMS	4.165	PASS
N027820-001ADUP	N.A.	N.A.
N027819-001A	N.A.	N.A.
N027819-001AMS	4.165	PASS
N027820-002A	N.A.	N.A.
N027820-002AMS	4.165	PASS
N027820-003A	N.A.	N.A.
N027820-003AMS	4.173	PASS
N027820-004A	4.148	PASS
N027820-004AMS	4.173	PASS
N027820-005A	N.A.	N.A.
N027820-005AMS	4.173	PASS
N027557-004A	4.098	PASS
N027557-004AMS	4.098	PASS
N027583-001A	4.056	PASS
N027583-001AMS	4.065	PASS
N027583-002A	4.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
N027583-002AMS	4.056	PASS
N027583-003A	4.048	PASS
N027583-003AMS	4.056	PASS
N027820-006A	N.A.	N.A.
N027820-006AMS	4.173	PASS
N027820-007A	N.A.	N.A.
N027820-007AMS	4.173	PASS
N027820-008A	N.A.	N.A.
N027820-008AMS	4.173	PASS
N027820-009A	4.106	PASS
N027820-009AMS	4.173	PASS
N027820-010A	N.A.	N.A.
N027820-010AMS	4.173	PASS
N027820-011A	N.A.	N.A.
N027820-011AMS	4.173	PASS
N027820-012A	N.A.	N.A.
N027820-012AMS	4.173	PASS
N027820-013A	N.A.	N.A.
N027820-013AMS	4.165	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

	Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte		**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium		0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 180102A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/02/18 1:22 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/02/18 1:34 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/02/18 1:43 PM	Reported

01/12/2018

1/5/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180102A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Jan/18 14:25:10**
No. of Injections:	**15**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	ICV,ICV,1,	11	1000	Unknown		01/02/2018 13:22	Finished	ICV @5ppb, IWST-171002B
11	PQL@0.2ppb,CCV2,1	12	1000	Unknown		01/02/2018 13:34	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	13	1000	Unknown		01/02/2018 13:43	Finished	ICB R180102C
13	SHUTDOWN	14	1000	Unknown		01/02/2018 14:02	Finished	
14	Eluent: R180102A	15	1000	Unknown		n.a.	Finished	Eluent
15	PCR: R180102B	16	1000	Unknown		n.a.	Finished	Post-Column Reagent

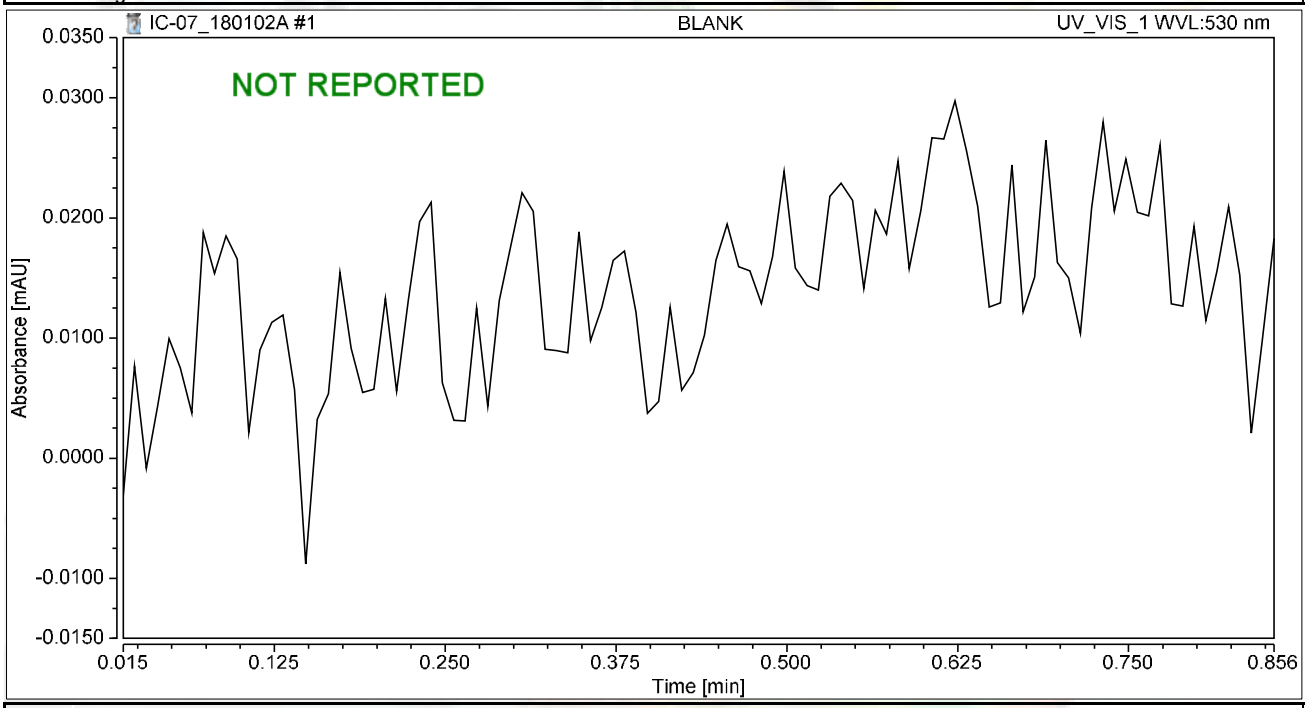
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.84**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

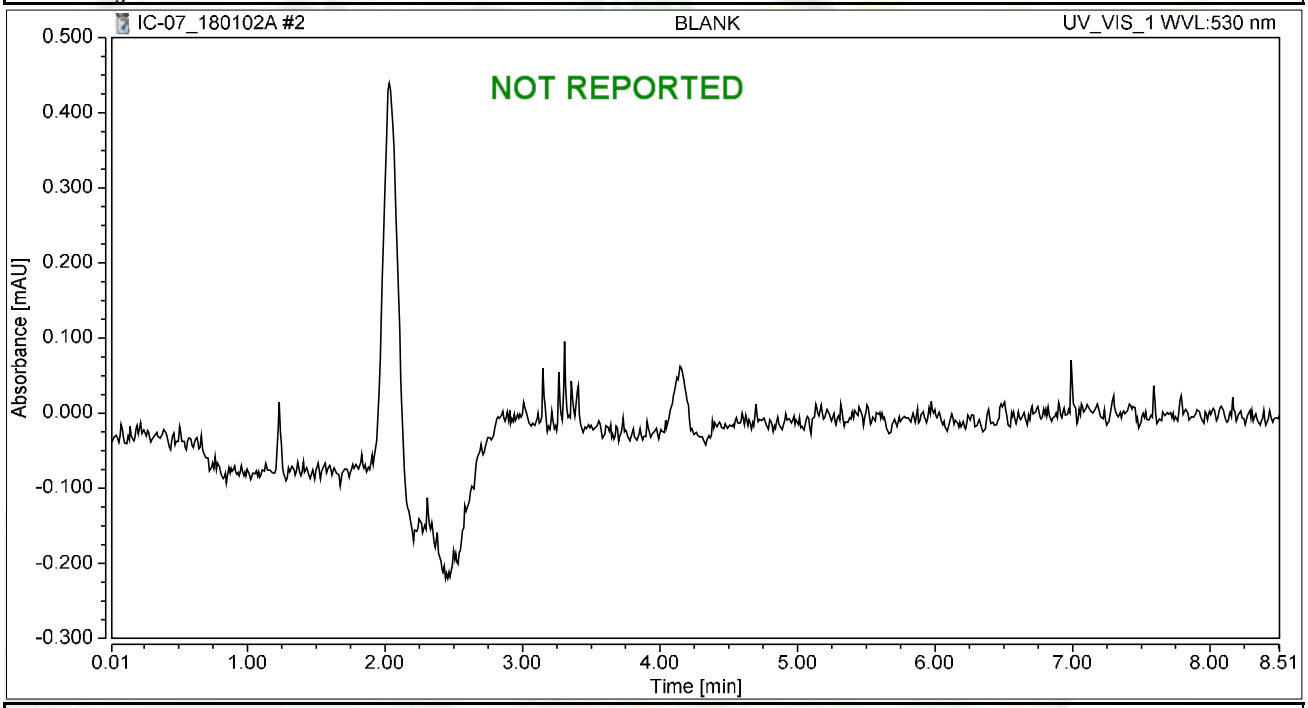
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

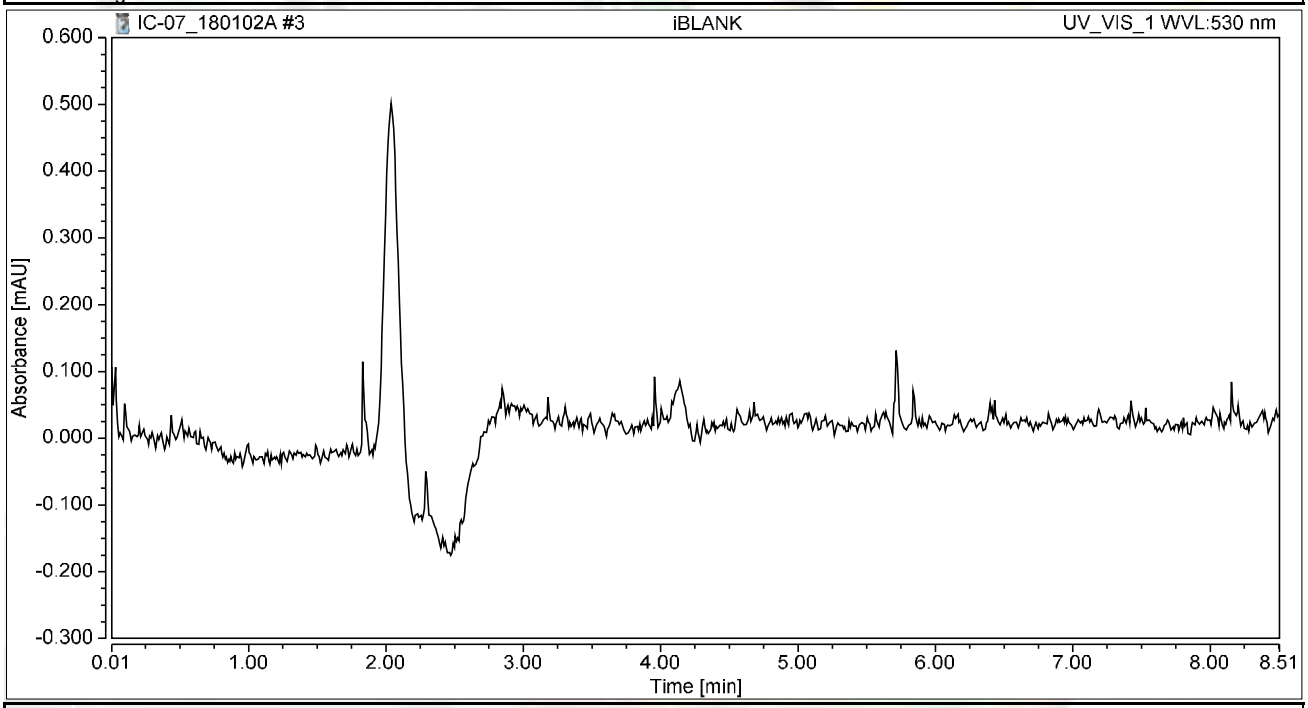
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

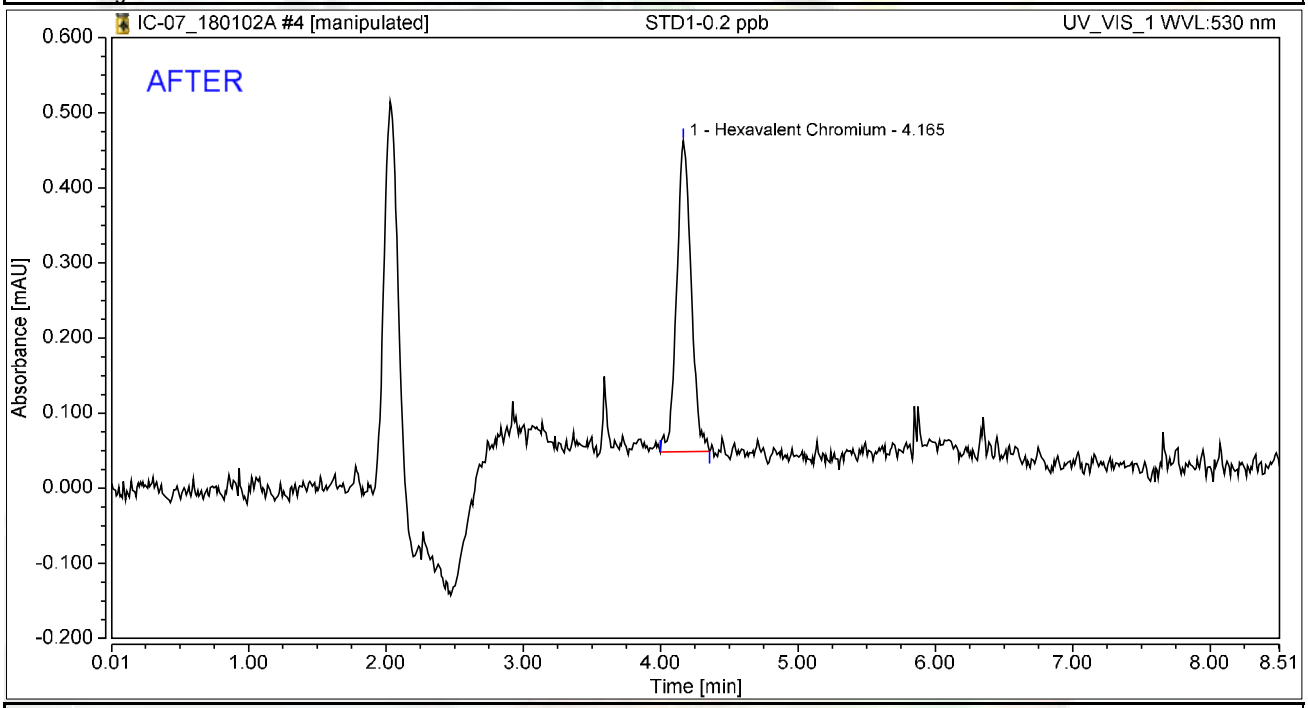
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.050	0.414	100.00	100.00	0.1973
Total:			**0.050**	**0.414**	**100.00**	**100.00**	

rba 1/5/2018

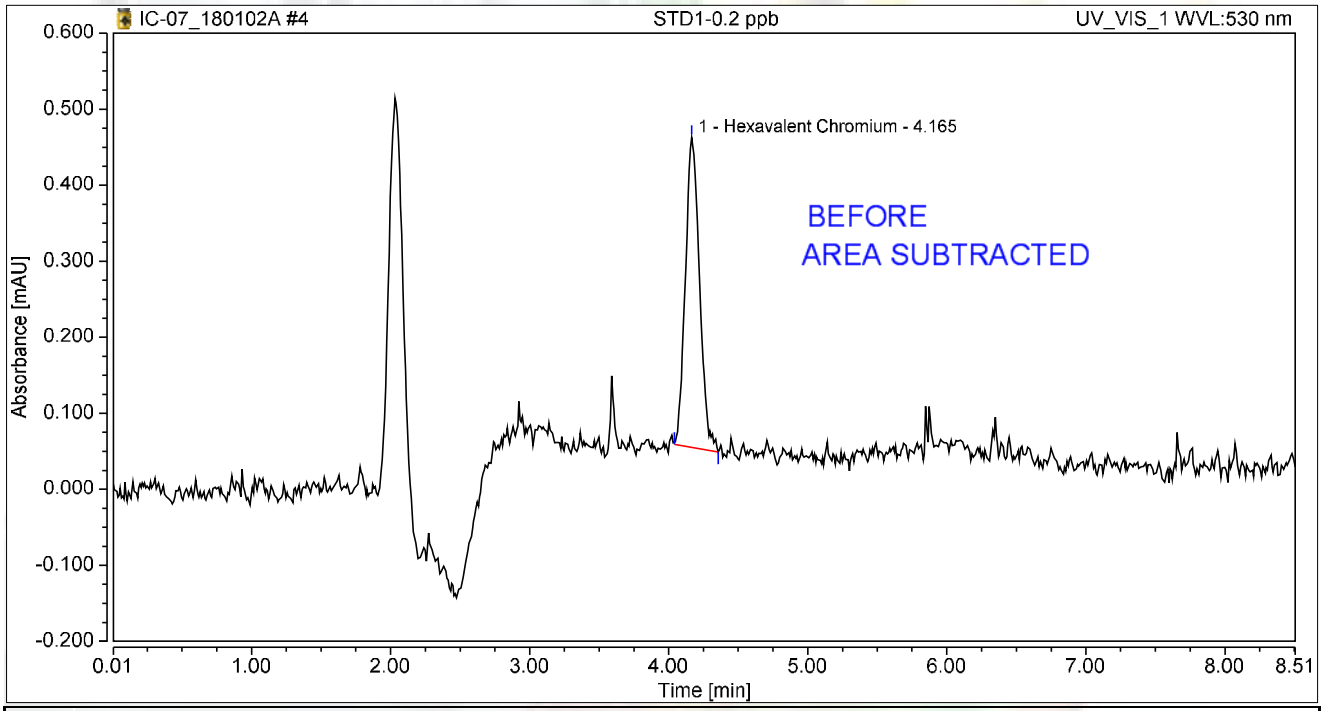
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.048	0.408	100.00	100.00	0.1874
Total:			**0.048**	**0.408**	**100.00**	**100.00**	

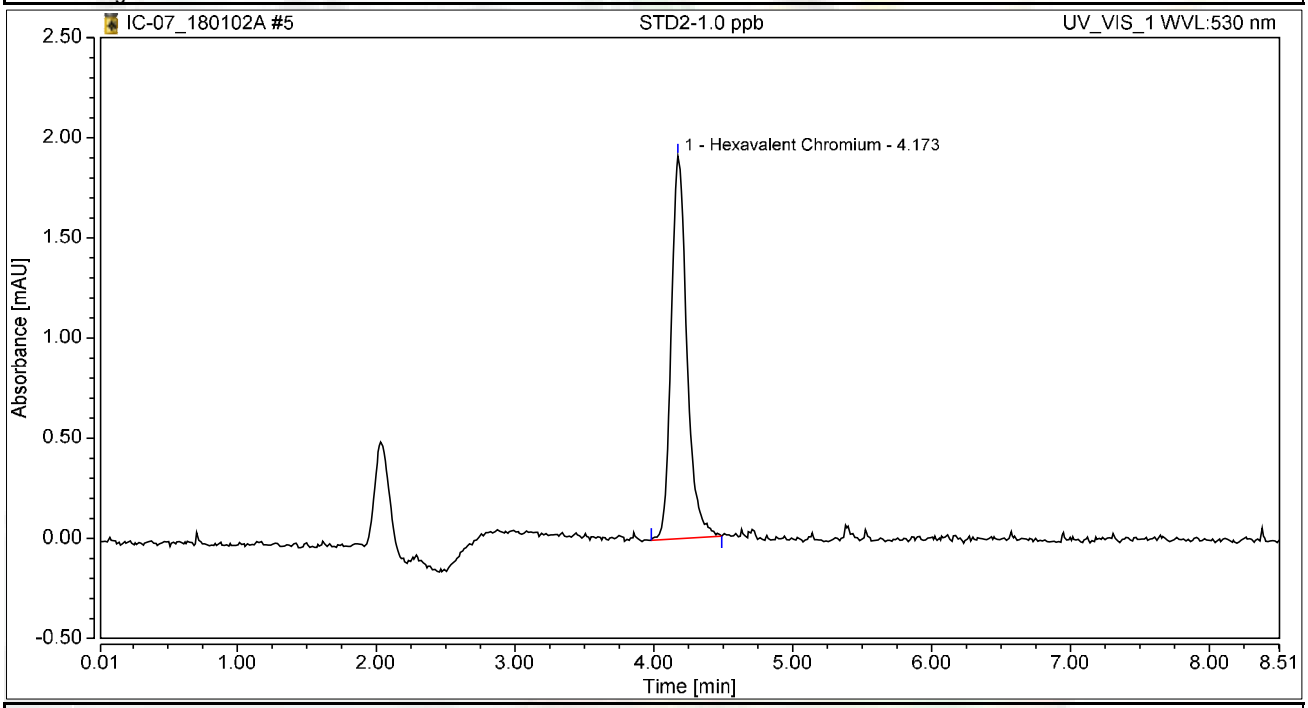
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

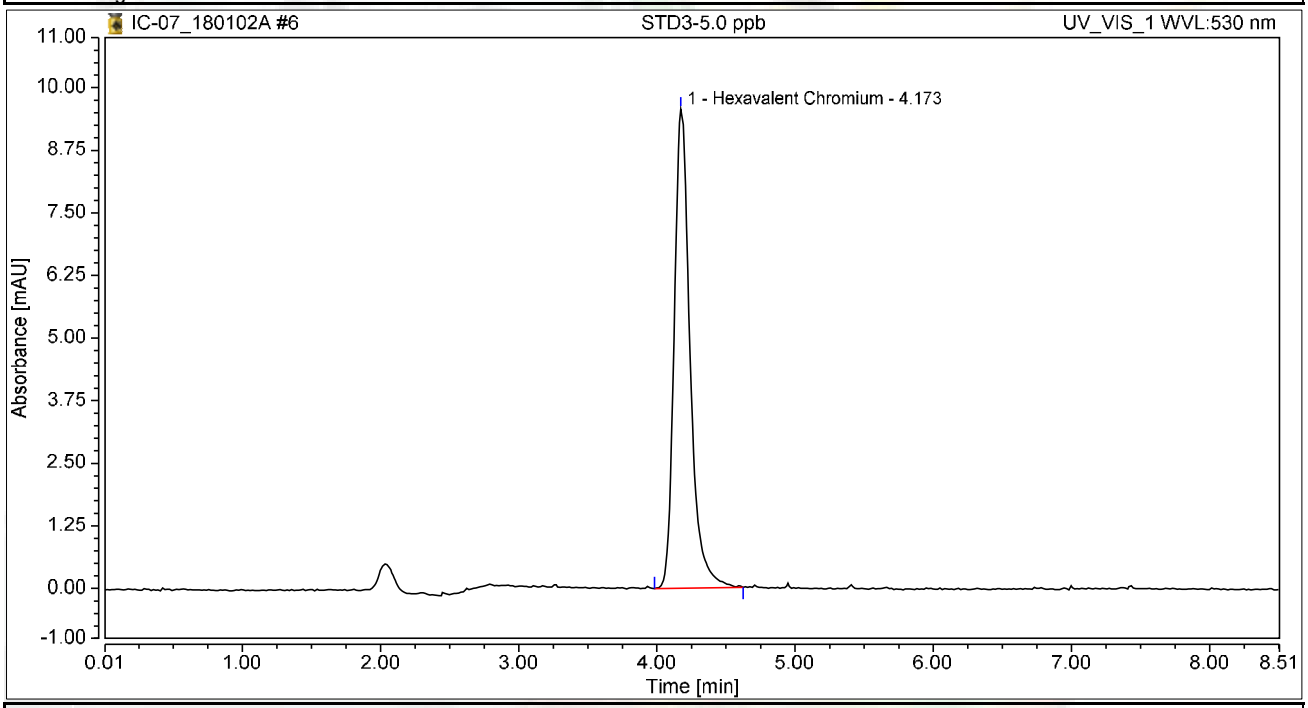
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.250	1.911	100.00	100.00	0.9781
Total:			**0.250**	**1.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

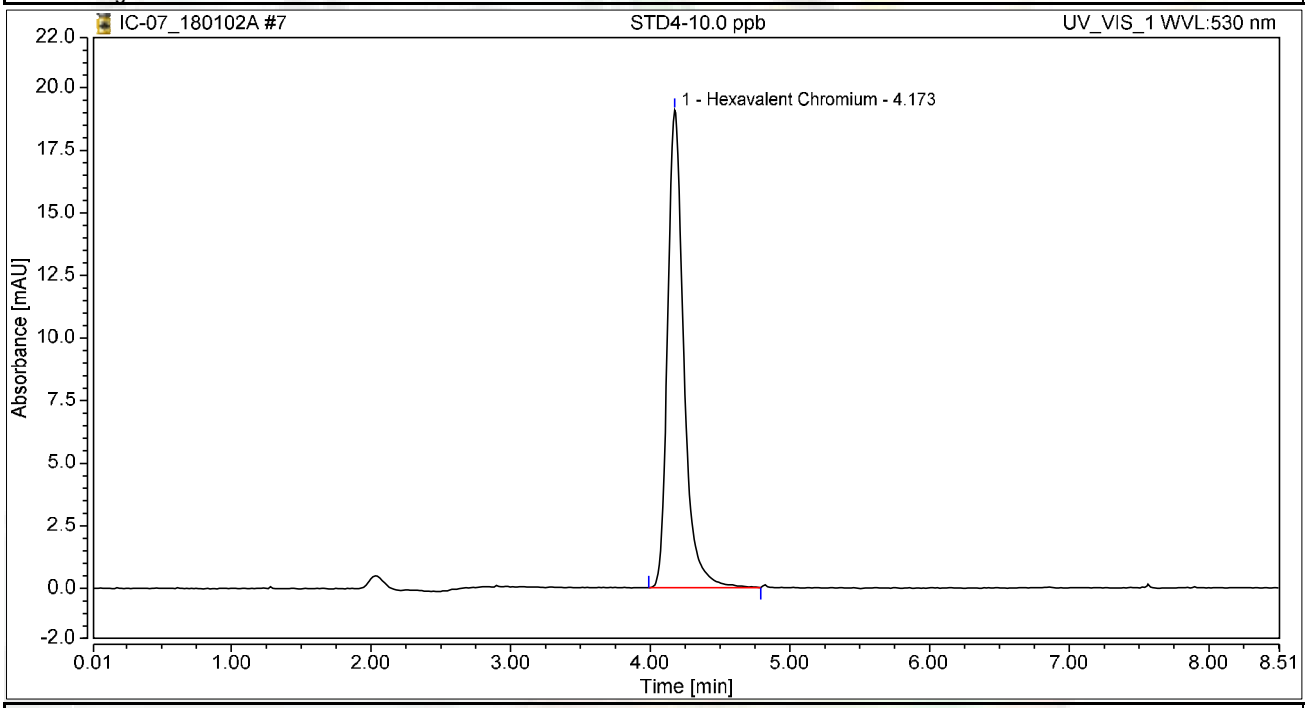
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.276	9.567	100.00	100.00	4.9902
Total:			**1.276**	**9.567**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

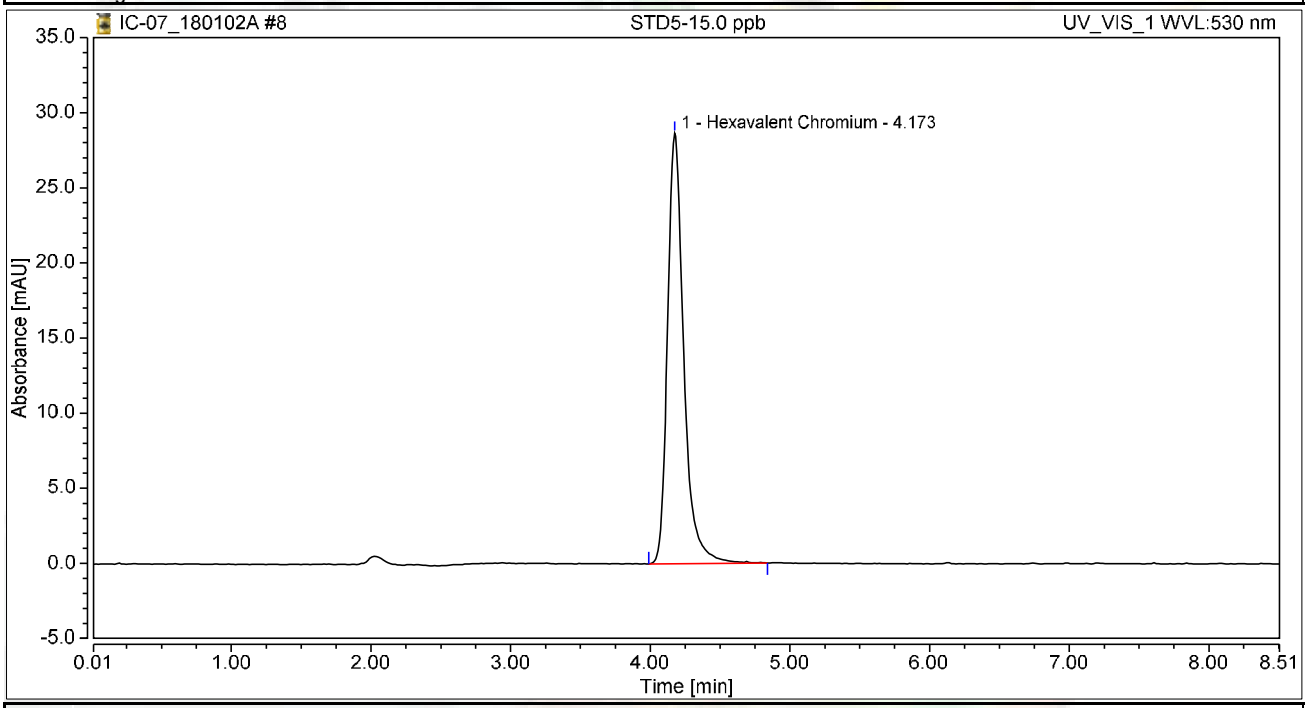
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.562	19.069	100.00	100.00	10.0190
Total:			**2.562**	**19.069**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

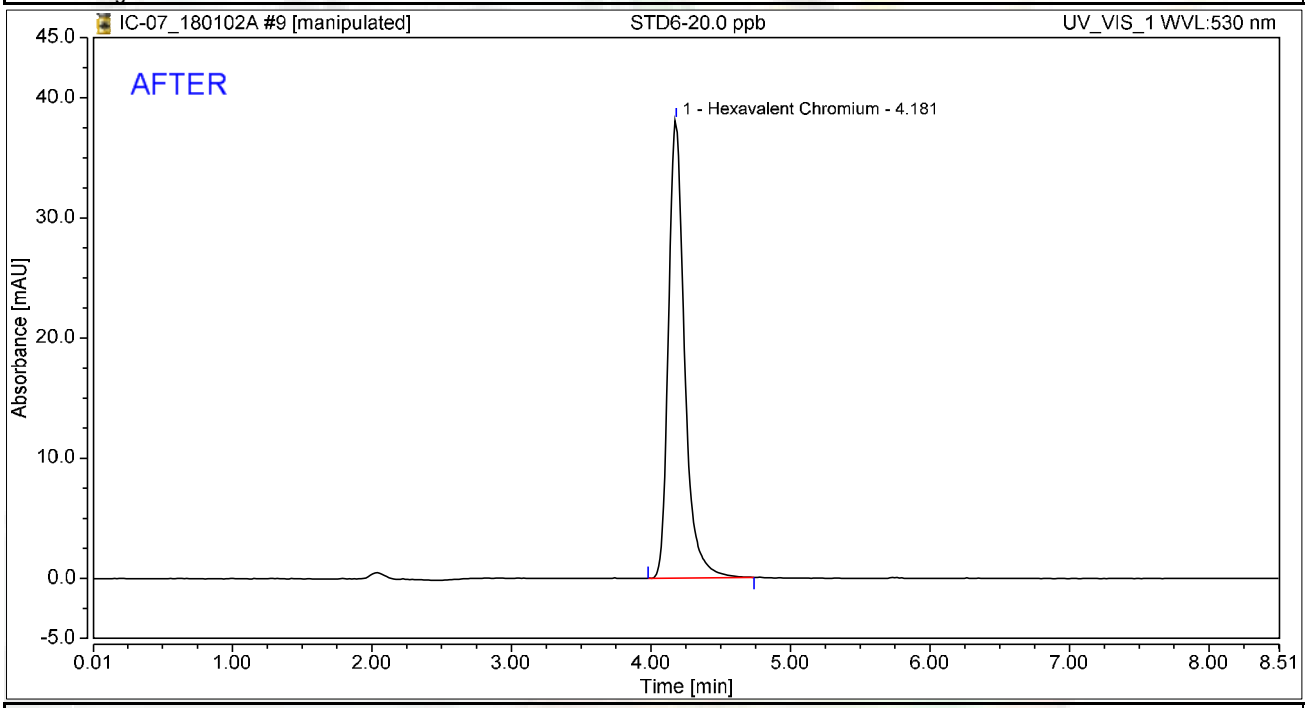
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.852	28.642	100.00	100.00	15.0640
Total:			**3.852**	**28.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	5.101	38.125	100.00	100.00	19.9461
Total:			**5.101**	**38.125**	**100.00**	**100.00**	

rba 1/5/2018

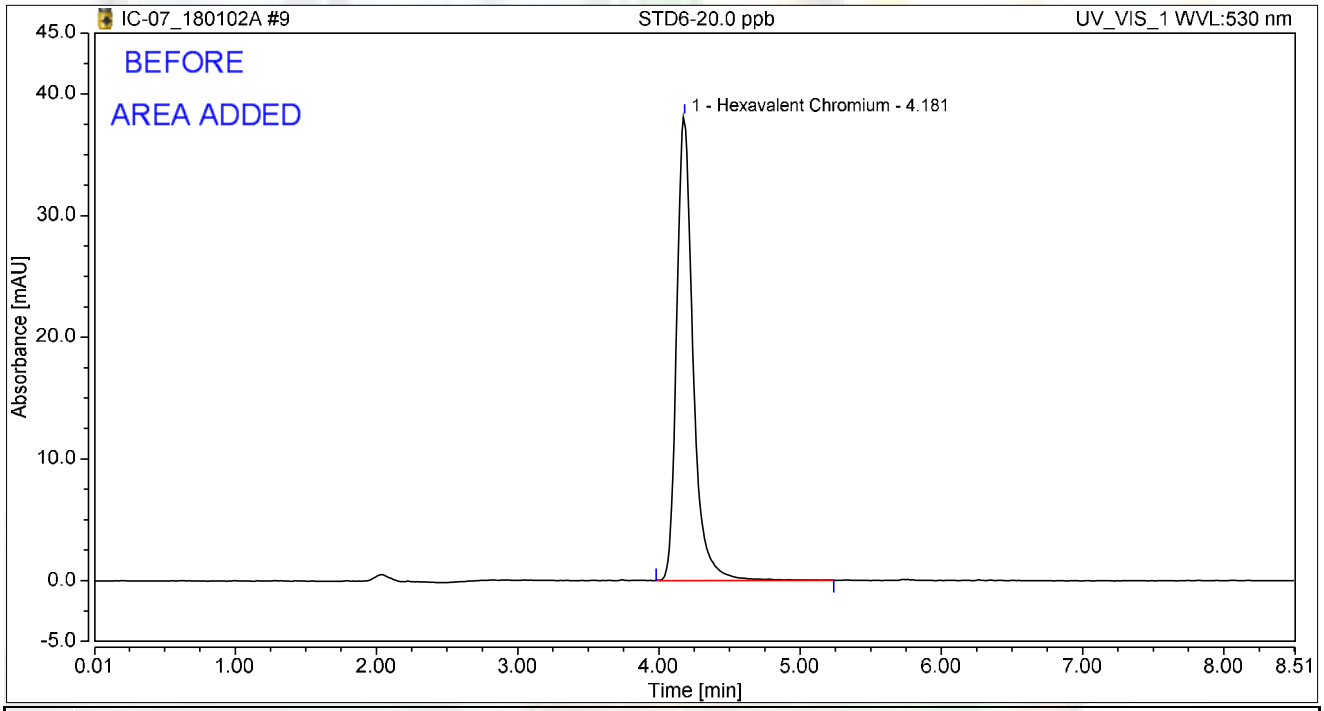
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

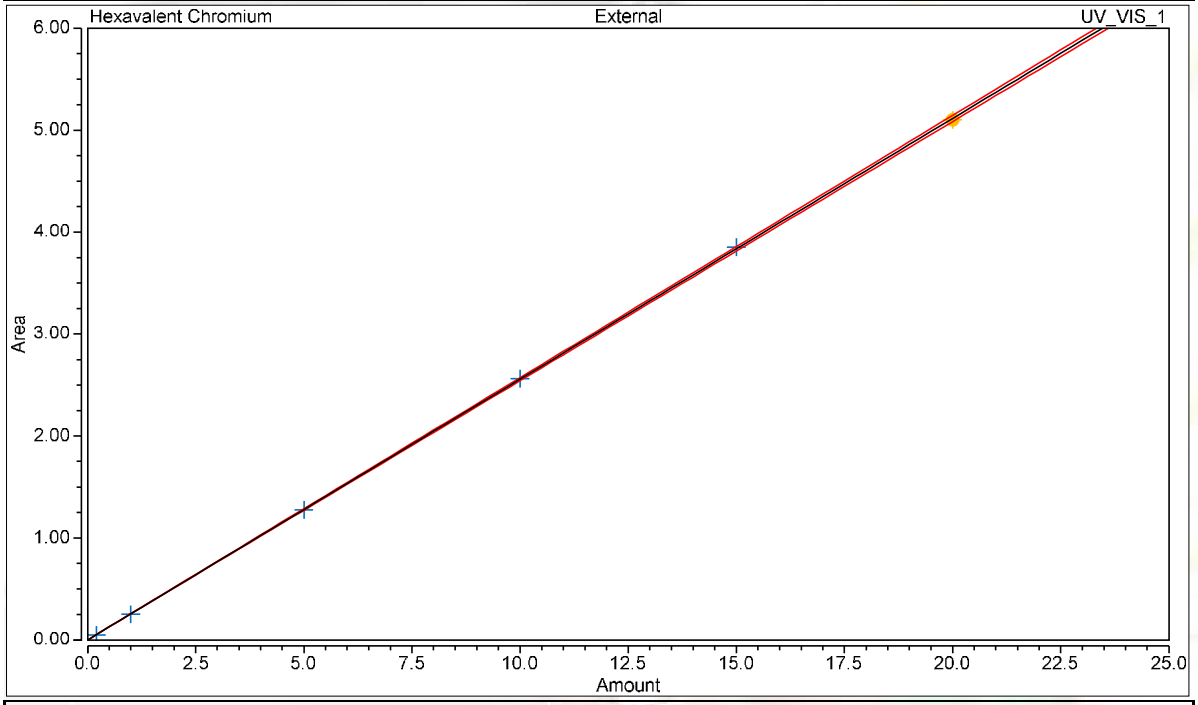
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	5.145	38.144	100.00	100.00	20.0261
Total:			**5.145**	**38.144**	**100.00**	**100.00**	

rba 1/5/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2557
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

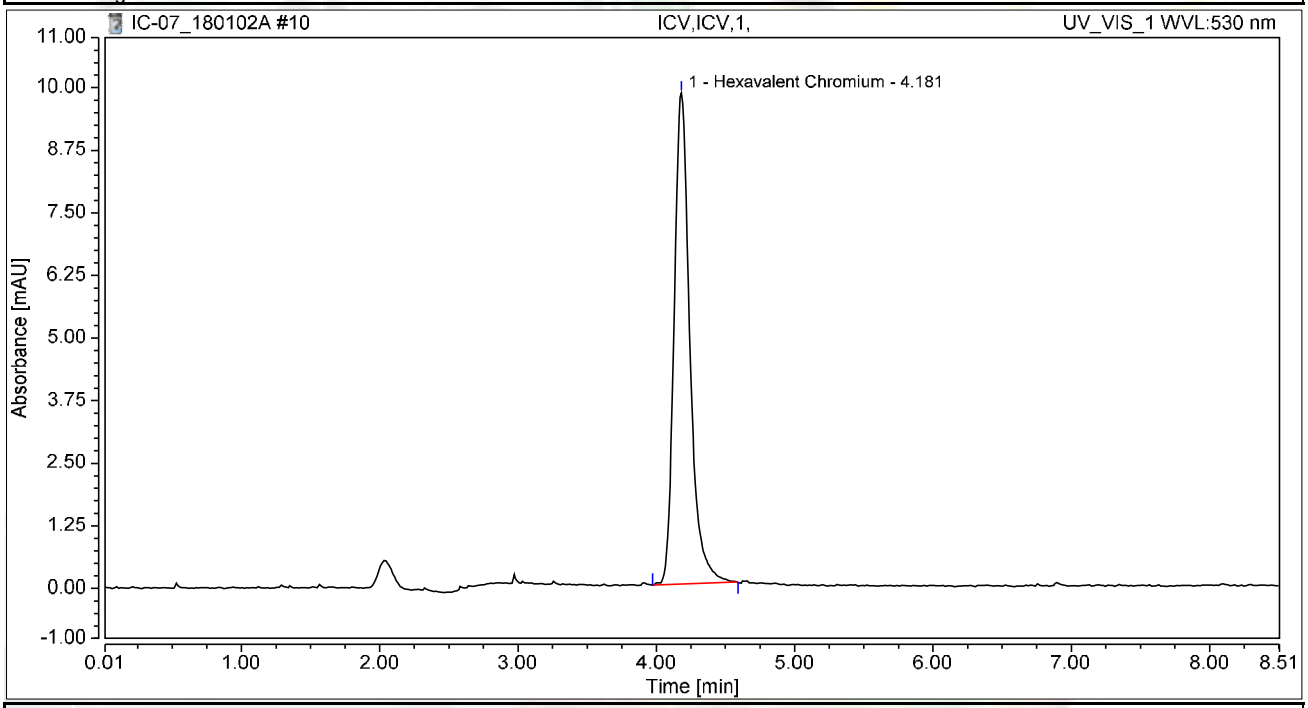
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0505	0.050	0.414
5	STD2-1.0 ppb	02	1.0000	0.2501	0.250	1.911
6	STD3-5.0 ppb	03	5.0000	1.2761	1.276	9.567
7	STD4-10.0 ppb	04	10.0000	2.5621	2.562	19.069
8	STD5-15.0 ppb	05	15.0000	3.8523	3.852	28.642
9	STD6-20.0 ppb	06	20.0000	5.1007	5.101	38.125

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

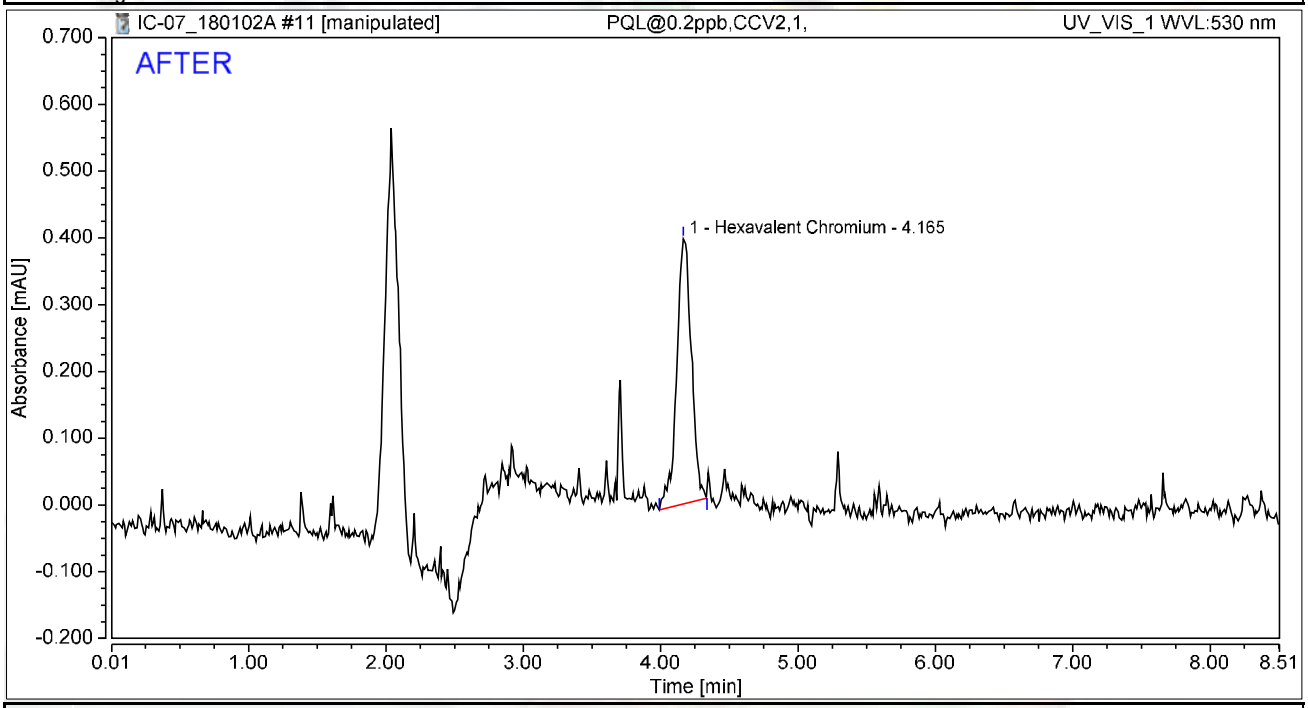
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.294	9.807	100.00	100.00	5.0592
Total:			**1.294**	**9.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.049	0.398	100.00	100.00	0.1928
Total:			**0.049**	**0.398**	**100.00**	**100.00**	

rba 1/5/2018

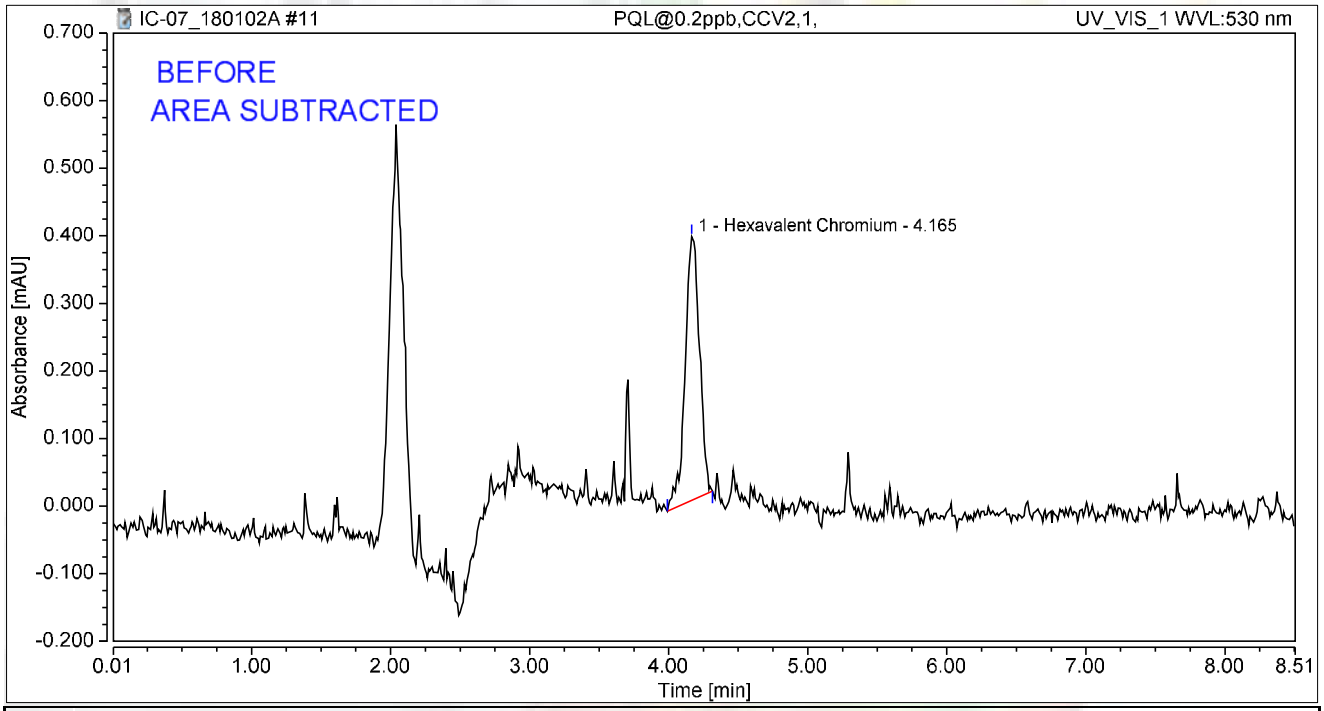
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.047	0.390	100.00	100.00	0.1830
Total:			**0.047**	**0.390**	**100.00**	**100.00**	

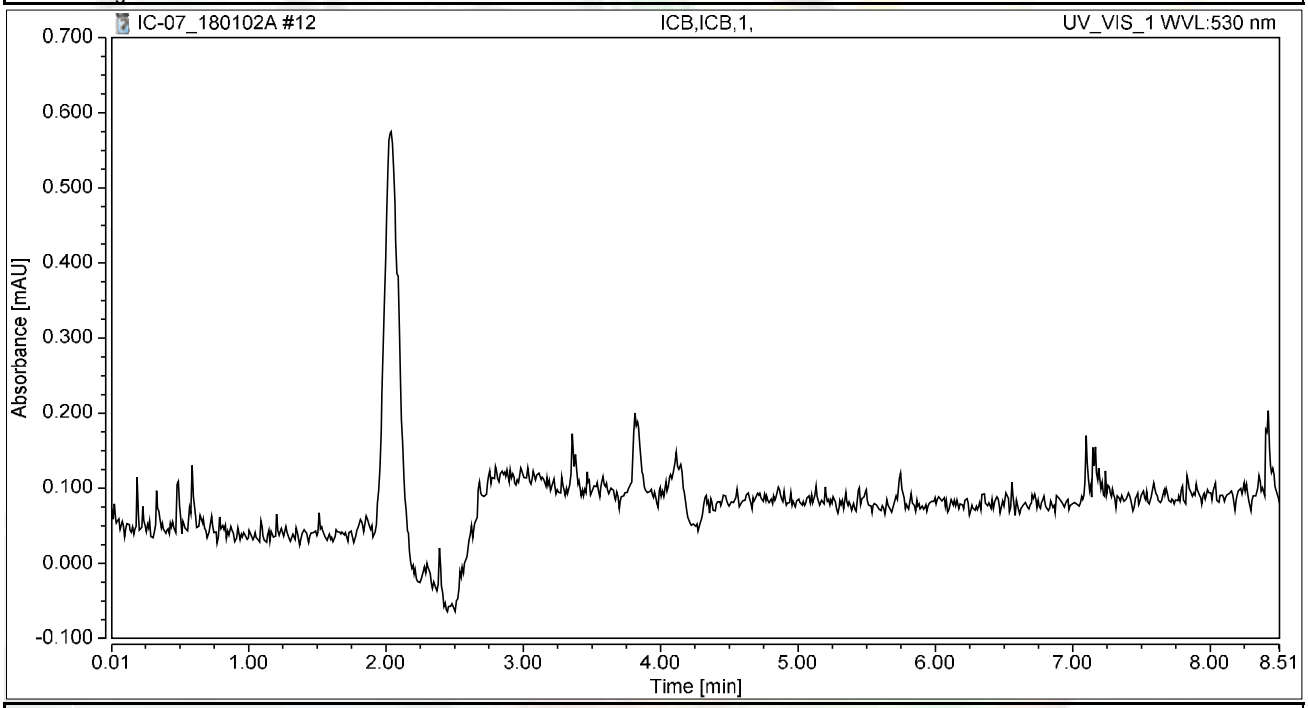
rba 1/5/2018

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Jan/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/02/18 11:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/02/18 11:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/02/18 11:57 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:09 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:18 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:28 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:37 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/02/18 12:47 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:24 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/05/18 8:35 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/05/18 8:44 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/05/18 8:54 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/05/18 9:03 AM	Reported
15	MB-R121248	MBLK	1	Hexavalent Chromium	01/05/18 9:13 AM	Reported
16	LCS-R121248	LCS	1	Hexavalent Chromium	01/05/18 9:22 AM	Reported
17	N027812-001A	SAMP	1	Hexavalent Chromium	01/05/18 9:32 AM	Reported
18	N027812-001AMS	MS	1	Hexavalent Chromium	01/05/18 9:41 AM	Reported
19	N027812-002A	SAMP	1	Hexavalent Chromium	01/05/18 9:51 AM	Reported
20	N027812-002AMS	MS	1	Hexavalent Chromium	01/05/18 10:00 AM	Reported
21	N027812-003A	SAMP	1	Hexavalent Chromium	01/05/18 10:09 AM	Reported
22	N027812-003AMS	MS	1	Hexavalent Chromium	01/05/18 10:19 AM	Reported
23	N027812-004A	SAMP	1	Hexavalent Chromium	01/05/18 10:28 AM	Reported
24	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 10:38 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/05/18 10:47 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/05/18 10:57 AM	Reported
27	N027812-005A	SAMP	1	Hexavalent Chromium	01/05/18 11:06 AM	Reported
28	N027812-005AMS	MS	1	Hexavalent Chromium	01/05/18 11:16 AM	Reported
29	N027812-006A	SAMP	1	Hexavalent Chromium	01/05/18 11:25 AM	Reported
30	N027812-006AMS	MS	1	Hexavalent Chromium	01/05/18 11:35 AM	Reported
31	N027812-007A	SAMP	1	Hexavalent Chromium	01/05/18 11:44 AM	Reported
32	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 11:54 AM	Not Reported
33	N027812-008A	SAMP	1	Hexavalent Chromium	01/05/18 12:03 PM	Reported
34	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 12:12 PM	Not Reported
35	N027812-009A	SAMP	1	Hexavalent Chromium	01/05/18 12:22 PM	Reported
36	N027812-009AMS	MS	1	Hexavalent Chromium	01/05/18 12:31 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/05/18 12:41 PM	Reported
38	CCB-3	CCB 5	1	Hexavalent Chromium	01/05/18 12:50 PM	Reported
39	N027557-002A	SAMP 5	1	Hexavalent Chromium	01/05/18 1:00 PM	Not Reported
40	N027557-002AMS	MS 5	1	Hexavalent Chromium	01/05/18 1:09 PM	Not Reported
41	N027812-011A	SAMP	1	Hexavalent Chromium	01/05/18 1:19 PM	Reported
42	N027812-011AMS	MS	1	Hexavalent Chromium	01/05/18 1:28 PM	Reported

INJECTION LOG: 180105A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027812-012A	SAMP	1	Hexavalent Chromium	01/05/18 1:38 PM	Reported
44	N027812-012AMS	MS	1	Hexavalent Chromium	01/05/18 1:47 PM	Reported
45	N027812-013A	SAMP	1	Hexavalent Chromium	01/05/18 1:57 PM	Reported
46	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 2:06 PM	Not Reported
47	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 2:16 PM	Not Reported
48	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 2:25 PM	Not Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/05/18 2:34 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/05/18 2:44 PM	Reported
51	N027812-015A	SAMP	1	Hexavalent Chromium	01/05/18 2:53 PM	Reported
52	N027812-015AMS	MS	1	Hexavalent Chromium	N.A.	Not Reported
53	N027812-010A	SAMP	1	Hexavalent Chromium	01/05/18 3:39 PM	Reported
54	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 3:50 PM	Not Reported
55	N027812-004AMS	MS	1	Hexavalent Chromium	01/05/18 4:00 PM	Reported
56	N027812-007AMS	MS	1	Hexavalent Chromium	01/05/18 4:12 PM	Reported
57	N027812-008AMS	MS	1	Hexavalent Chromium	01/05/18 4:21 PM	Reported
58	N027812-013AMS	MS	1	Hexavalent Chromium	01/05/18 4:31 PM	Reported
59	N027812-009ADUP	DUP	1	Hexavalent Chromium	01/05/18 4:40 PM	Reported
60	N027812-003AMSD	MSD	1	Hexavalent Chromium	01/05/18 4:50 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/05/18 5:29 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/05/18 5:40 PM	Reported
63	N027812-014A	SAMP	1	Hexavalent Chromium	01/05/18 5:49 PM	Not Reported
64	N027812-014AMS	MS	1	Hexavalent Chromium	01/05/18 5:58 PM	Not Reported
65	N027812-015AMS	MS	1	Hexavalent Chromium	01/05/18 6:08 PM	Reported
66	N027812-010AMS	MS	1	Hexavalent Chromium	01/05/18 6:17 PM	Reported
67	CCV-6	CCV1	1	Hexavalent Chromium	01/05/18 6:27 PM	Reported
68	CCB-6	CCB	1	Hexavalent Chromium	01/05/18 6:36 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180105A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/Jan/18 19:07:08**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/02/2018 11:22	Finished	BLANK
2	BLANK	2	1000	Unknown		01/02/2018 11:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/02/2018 11:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/02/2018 11:57	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/02/2018 12:09	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/02/2018 12:18	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/02/2018 12:28	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/02/2018 12:37	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/02/2018 12:47	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		01/05/2018 08:24	Finished	BLANK
11	BLANK	2	1000	Unknown		01/05/2018 08:35	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		01/05/2018 08:44	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/05/2018 08:54	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/05/2018 09:03	Finished	CCB R180102C
15	MB-H2O,MBLK,1,	6	1000	Unknown		01/05/2018 09:13	Finished	MB R171129A
16	LCS-H2O,LCS,1,	7	1000	Unknown		01/05/2018 09:22	Finished	LCS, IWST-171002B
17	N027812-001A,SAMF	8	1000	Unknown		01/05/2018 09:32	Finished	SAMP,10mL
18	N027812-001AMS,MS	9	1000	Unknown		01/05/2018 09:41	Finished	MS (1ppb), IWST-171002B,10
19	N027812-002A,SAMF	10	1000	Unknown		01/05/2018 09:51	Finished	SAMP,10mL
20	N027812-002AMS,MS	11	1000	Unknown		01/05/2018 10:00	Finished	MS (1ppb), IWST-171002B,10
21	N027812-003A,SAMF	12	1000	Unknown		01/05/2018 10:09	Finished	SAMP,10mL
22	N027812-003AMS,MS	13	1000	Unknown		01/05/2018 10:19	Finished	MS (1ppb), IWST-171002B,10
23	N027812-004A,SAMF	14	1000	Unknown		01/05/2018 10:28	Finished	SAMP,10mL
24	N027812-004AMS,MS	15	1000	Unknown		01/05/2018 10:38	Finished	MS (1ppb), IWST-171002B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		01/05/2018 10:47	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		01/05/2018 10:57	Finished	CCB R180102C
27	N027812-005A,SAMF	18	1000	Unknown		01/05/2018 11:06	Finished	SAMP,10mL
28	N027812-005AMS,MS	19	1000	Unknown		01/05/2018 11:16	Finished	MS (1ppb), IWST-171002B,10
29	N027812-006A,SAMF	20	1000	Unknown		01/05/2018 11:25	Finished	SAMP,10mL
30	N027812-006AMS,MS	21	1000	Unknown		01/05/2018 11:35	Finished	MS (1ppb), IWST-171002B,10
31	N027812-007A,SAMF	22	1000	Unknown		01/05/2018 11:44	Finished	SAMP,10mL
32	N027812-007AMS,MS	23	1000	Unknown		01/05/2018 11:54	Finished	MS (1ppb), IWST-171002B,10
33	N027812-008A,SAMF	24	1000	Unknown		01/05/2018 12:03	Finished	SAMP,10mL
34	N027812-008AMS,MS	25	1000	Unknown		01/05/2018 12:12	Finished	MS (1ppb), IWST-171002B,10
35	N027812-009A,SAMF	26	1000	Unknown		01/05/2018 12:22	Finished	SAMP,10mL
36	N027812-009AMS,MS	27	1000	Unknown		01/05/2018 12:31	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	28	1000	Unknown		01/05/2018 12:41	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		01/05/2018 12:50	Finished	CCB R180102C
39	N027557-002A,SAMF	30	1000	Unknown		01/05/2018 13:00	Finished	SAMP,2>10mL
40	N027557-002AMS,MS	31	1000	Unknown		01/05/2018 13:09	Finished	MS (1ppb), IWST-171002B,2>1
41	N027812-011A,SAMF	32	1000	Unknown		01/05/2018 13:19	Finished	SAMP,10mL
42	N027812-011AMS,MS	33	1000	Unknown		01/05/2018 13:28	Finished	MS (1ppb), IWST-171002B,10
43	N027812-012A,SAMF	34	1000	Unknown		01/05/2018 13:38	Finished	SAMP,10mL
44	N027812-012AMS,MS	35	1000	Unknown		01/05/2018 13:47	Finished	MS (1ppb), IWST-171002B,10
45	N027812-013A,SAMF	36	1000	Unknown		01/05/2018 13:57	Finished	SAMP,10mL
46	N027812-013AMS,MS	37	1000	Unknown		01/05/2018 14:06	Finished	MS (1ppb), IWST-171002B,10
47	N027812-014A,SAMF	38	1000	Unknown		01/05/2018 14:16	Finished	SAMP,10mL
48	N027812-014AMS,MS	39	1000	Unknown		01/05/2018 14:25	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	40	1000	Unknown		01/05/2018 14:34	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		01/05/2018 14:44	Finished	CCB R180102C
51	N027812-015A,SAMF	42	1000	Unknown		01/05/2018 14:53	Finished	SAMP,10mL
52	N027812-015AMS,MS	43	1000	Unknown		n.a.	Interrupted	MS (1ppb), IWST-171002B,10
53	N027812-010A,SAMF	44	1000	Unknown		01/05/2018 15:39	Finished	SAMP,10mL
54	N027812-010AMS,MS	45	1000	Unknown		01/05/2018 15:50	Finished	MS (1ppb), IWST-171002B,10
55	N027812-004AMS,MS	1	1000	Unknown		01/05/2018 16:00	Finished	MS (1ppb), IWST-171002B,10
56	N027812-007AMS,MS	2	1000	Unknown		01/05/2018 16:12	Finished	MS (1ppb), IWST-171002B,10
57	N027812-008AMS,MS	3	1000	Unknown		01/05/2018 16:21	Finished	MS (1ppb), IWST-171002B,10
58	N027812-013AMS,MS	4	1000	Unknown		01/05/2018 16:31	Finished	MS (1ppb), IWST-171002B,10
59	N027812-009ADUP,D	5	1000	Unknown		01/05/2018 16:40	Finished	DUP,1>10mL
60	N027812-003AMSD,M	6	1000	Unknown		01/05/2018 16:50	Finished	MSD (1ppb), IWST-171002B,10

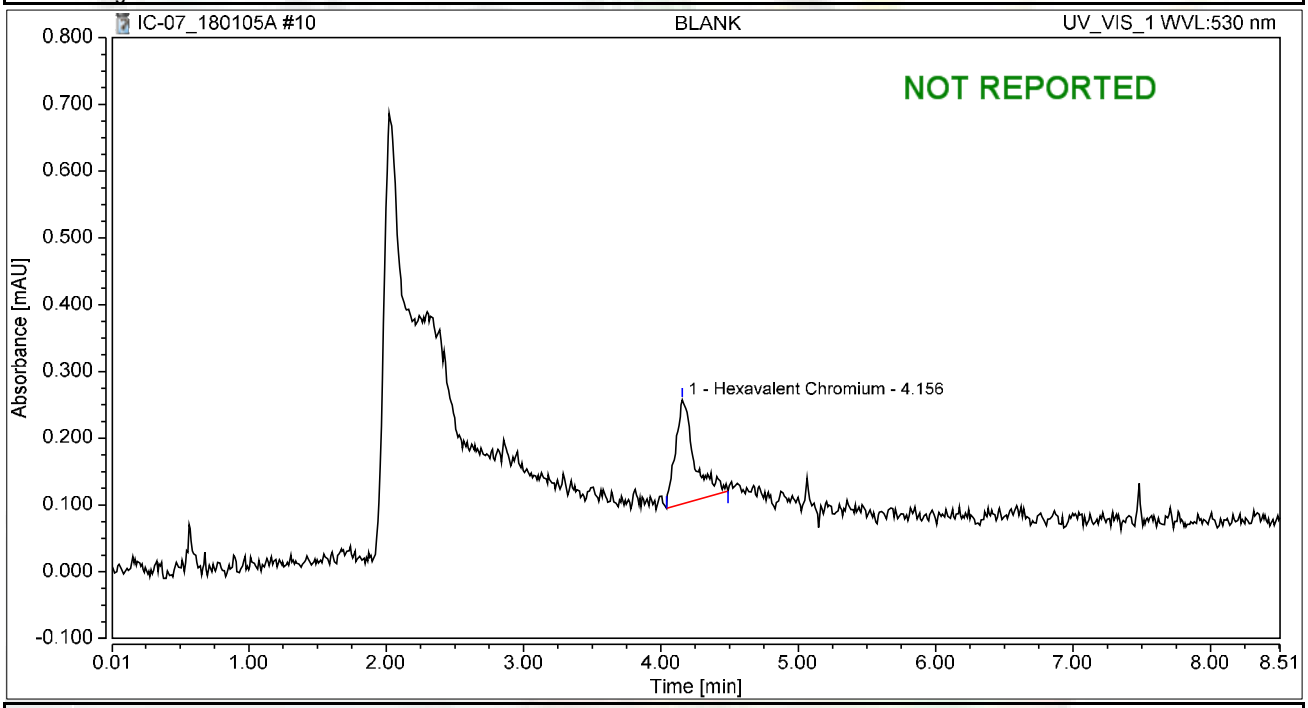
61	CCV-5,CCV,1,	7	1000	Unknown		01/05/2018 17:29	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	8	1000	Unknown		01/05/2018 17:40	Finished	CCB R180102C
63	N027812-014A,SAMP	9	1000	Unknown		01/05/2018 17:49	Finished	SAMP,10mL
64	N027812-014AMS,MS	10	1000	Unknown		01/05/2018 17:58	Finished	MS (1ppb), IWST-171002B,10
65	N027812-015AMS,MS	11	1000	Unknown		01/05/2018 18:08	Finished	MS (1ppb), IWST-171002B,10
66	N027812-010AMS,MS	12	1000	Unknown		01/05/2018 18:17	Finished	MS (1ppb), IWST-171002B,10
67	CCV-6,CCV1,1,	13	1000	Unknown		01/05/2018 18:27	Finished	CCV @10ppb, IWST-171002A
68	CCB-6,CCB,1,	14	1000	Unknown		01/05/2018 18:36	Finished	CCB R180102C
69	SHUTDOWN	15	1000	Unknown		01/05/2018 18:46	Finished	
70	Eluent: R180104B	16	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	17	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

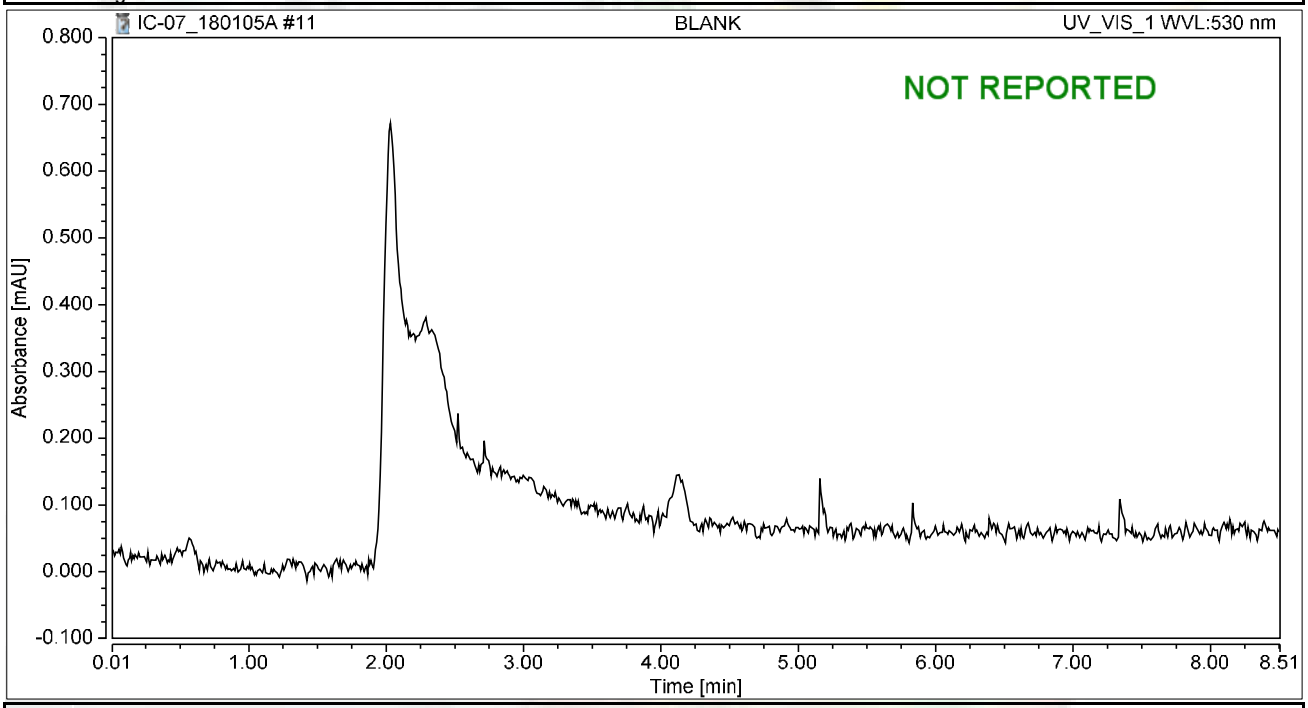
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.025	0.155	100.00	100.00	0.0980
Total:			**0.025**	**0.155**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

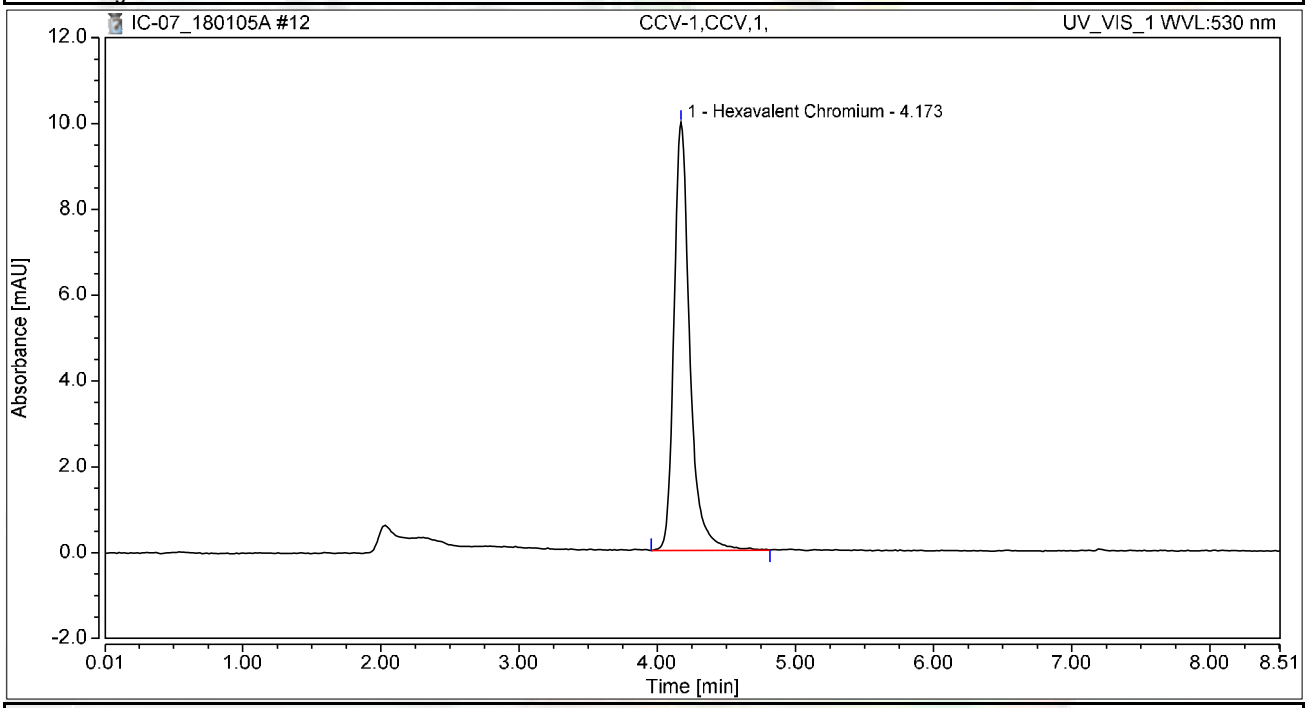
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

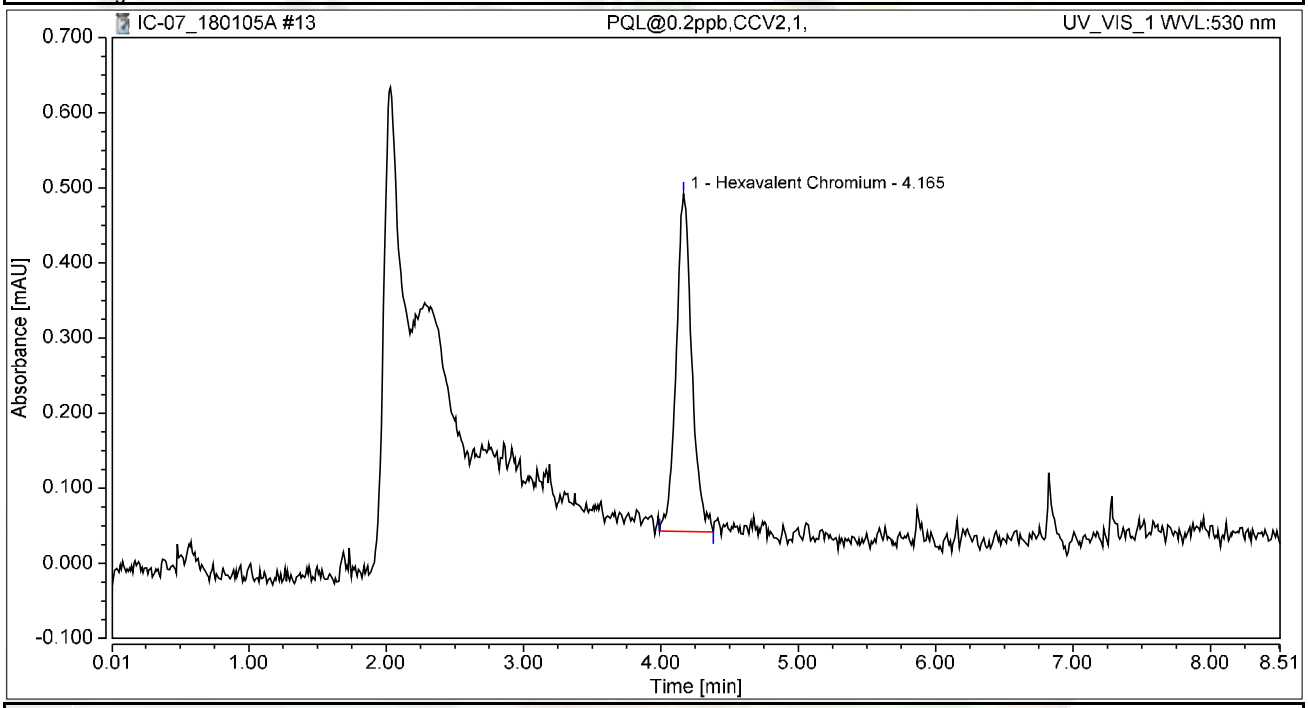
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.324	9.970	100.00	100.00	5.1779
Total:			**1.324**	**9.970**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 08:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

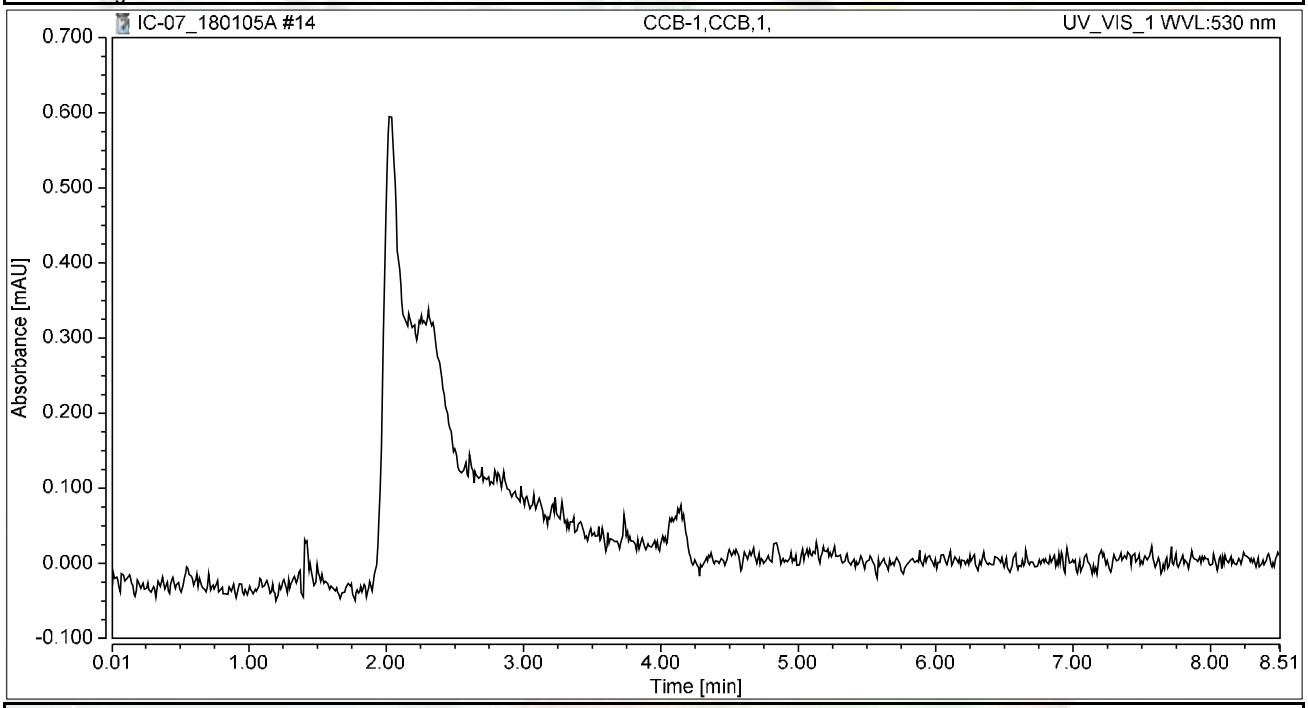
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.059	0.450	100.00	100.00	0.2314
Total:			**0.059**	**0.450**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

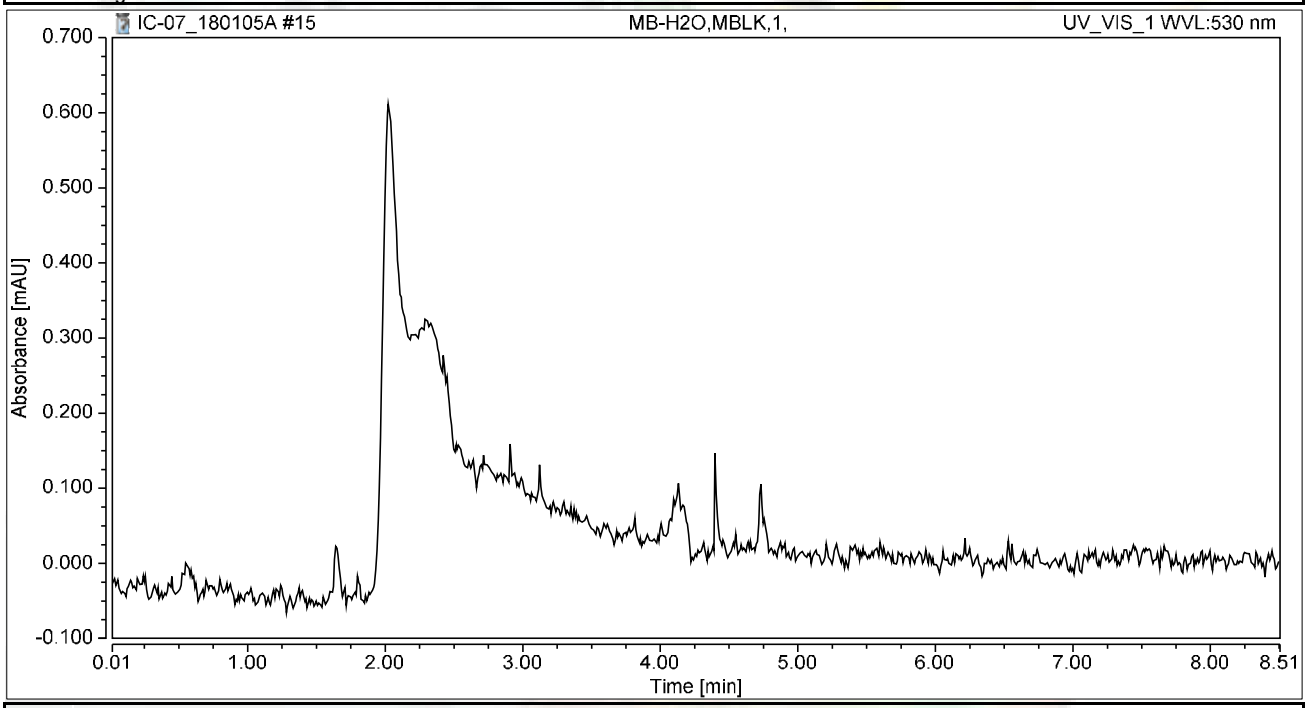
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

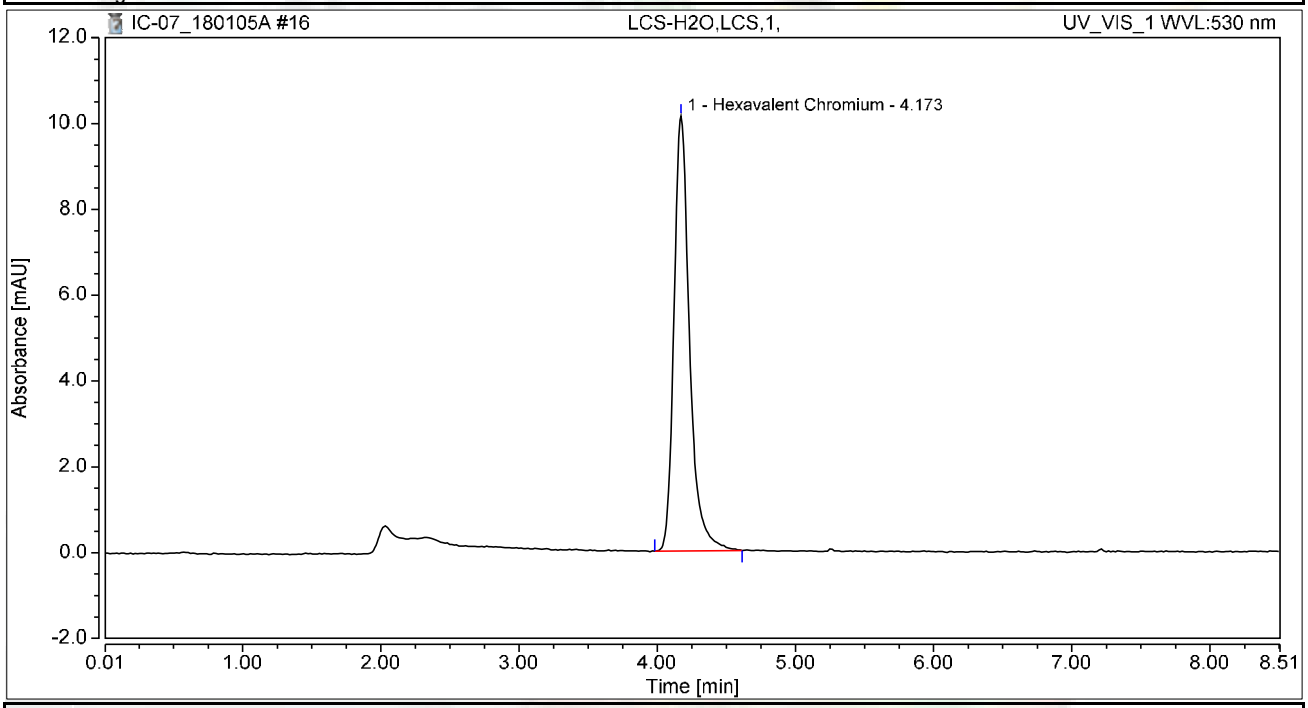
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

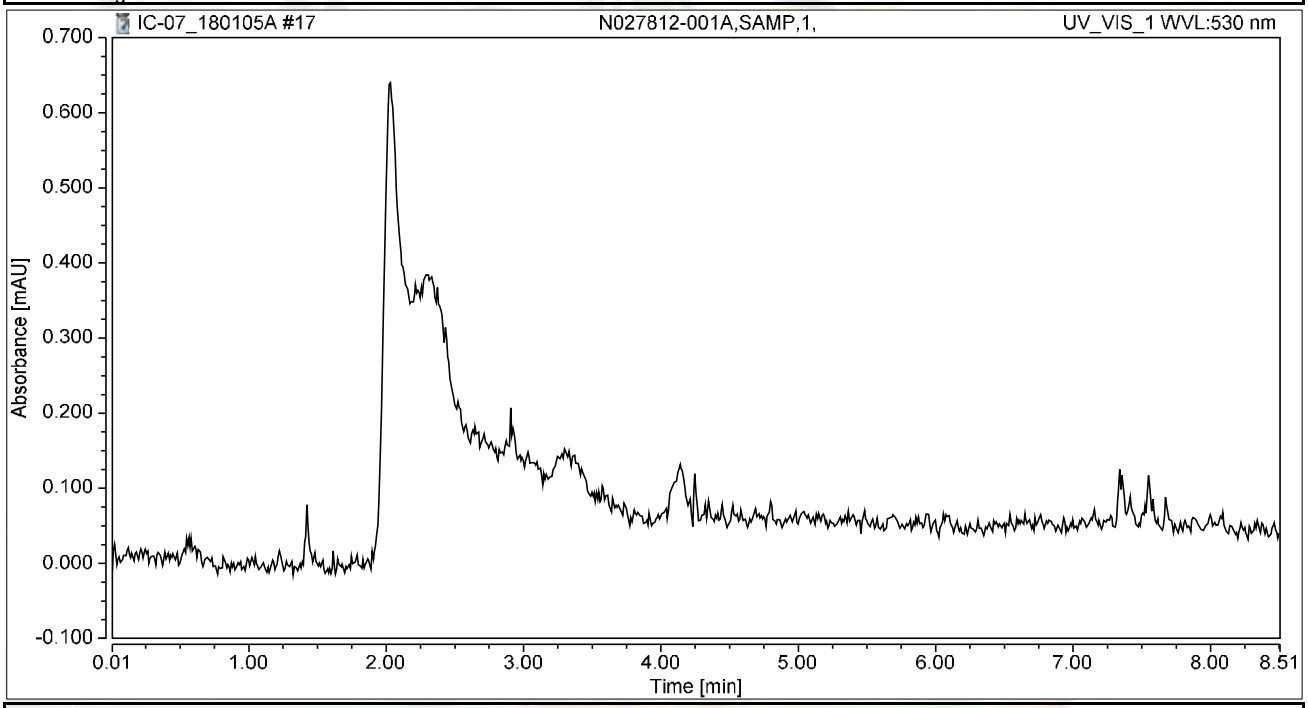
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.329	10.135	100.00	100.00	5.1953
Total:			**1.329**	**10.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

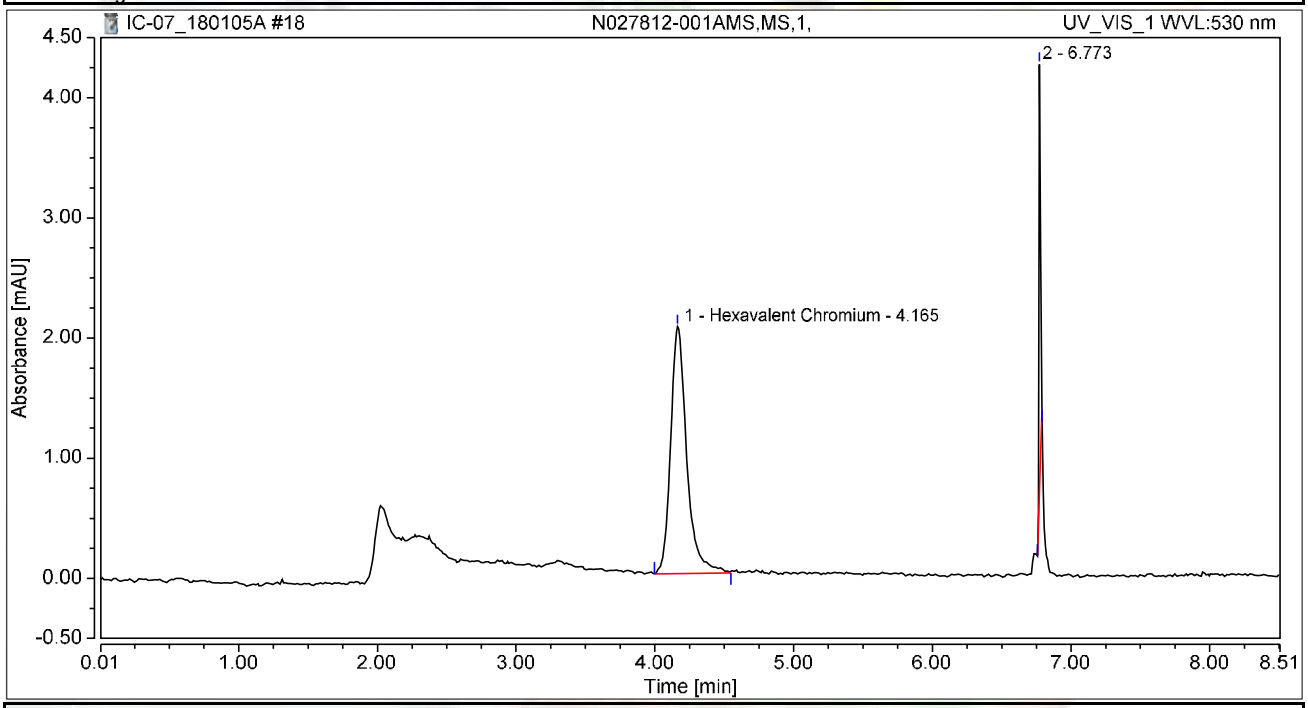
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

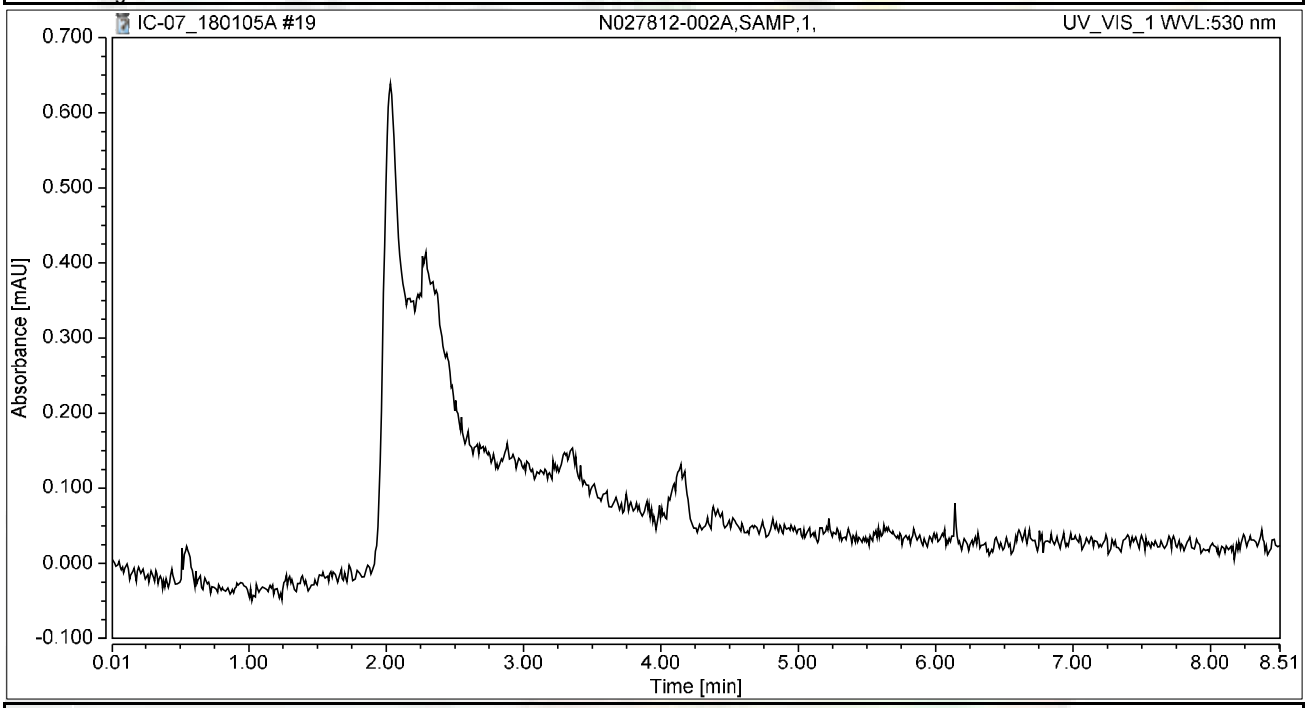
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.277	2.057	86.65	37.12	1.0839
2		6.773	0.043	3.484	13.35	62.88	n.a.
Total:			**0.320**	**5.541**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

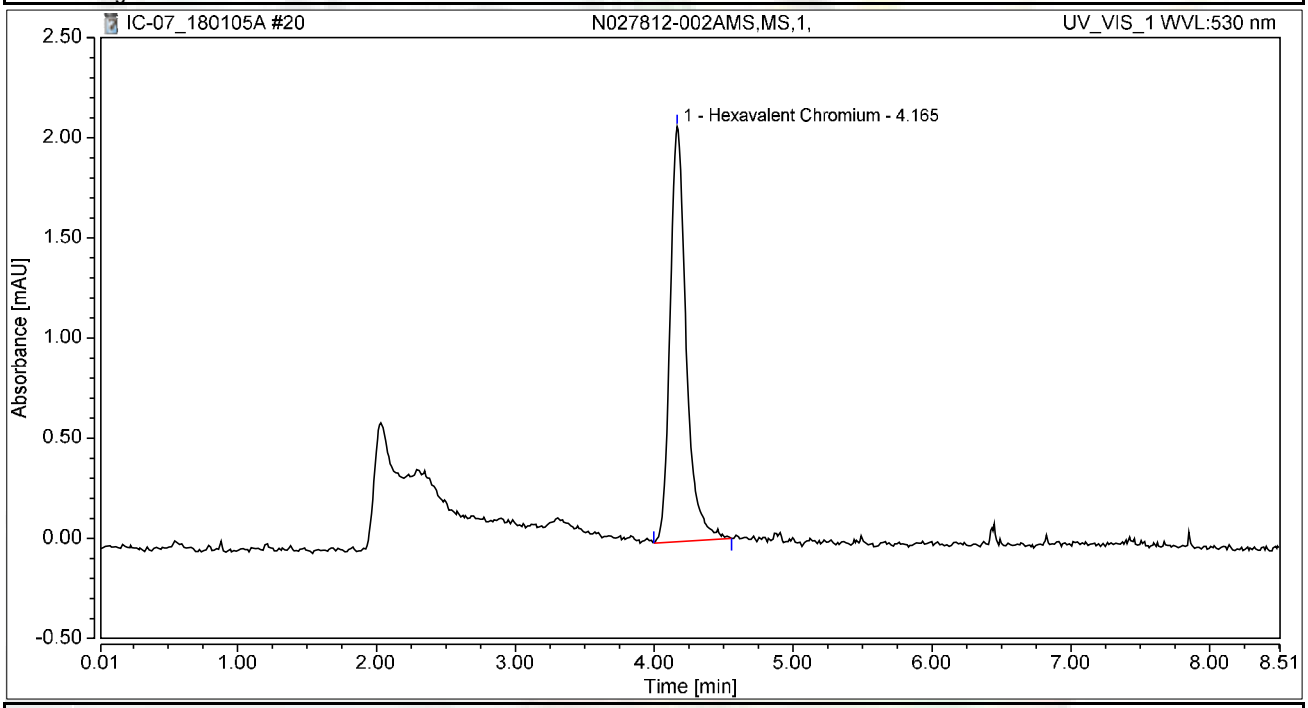
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

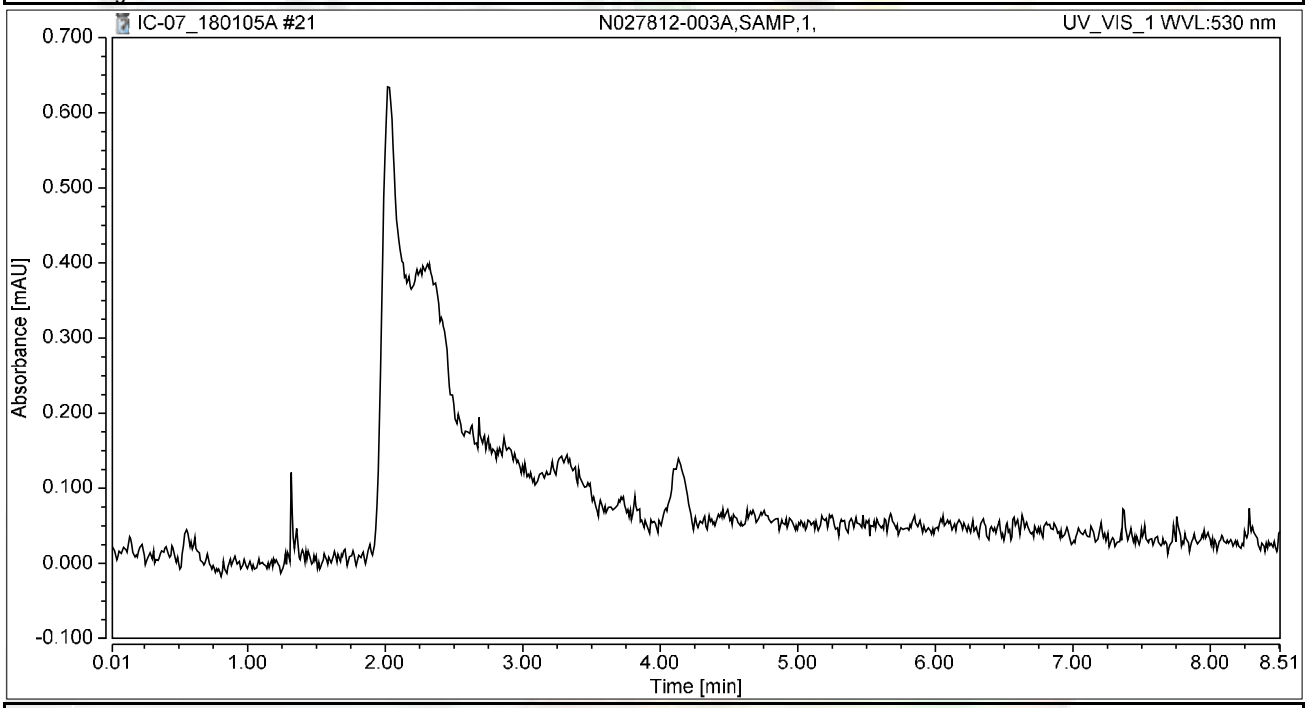
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.279	2.074	100.00	100.00	1.0911
Total:			**0.279**	**2.074**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

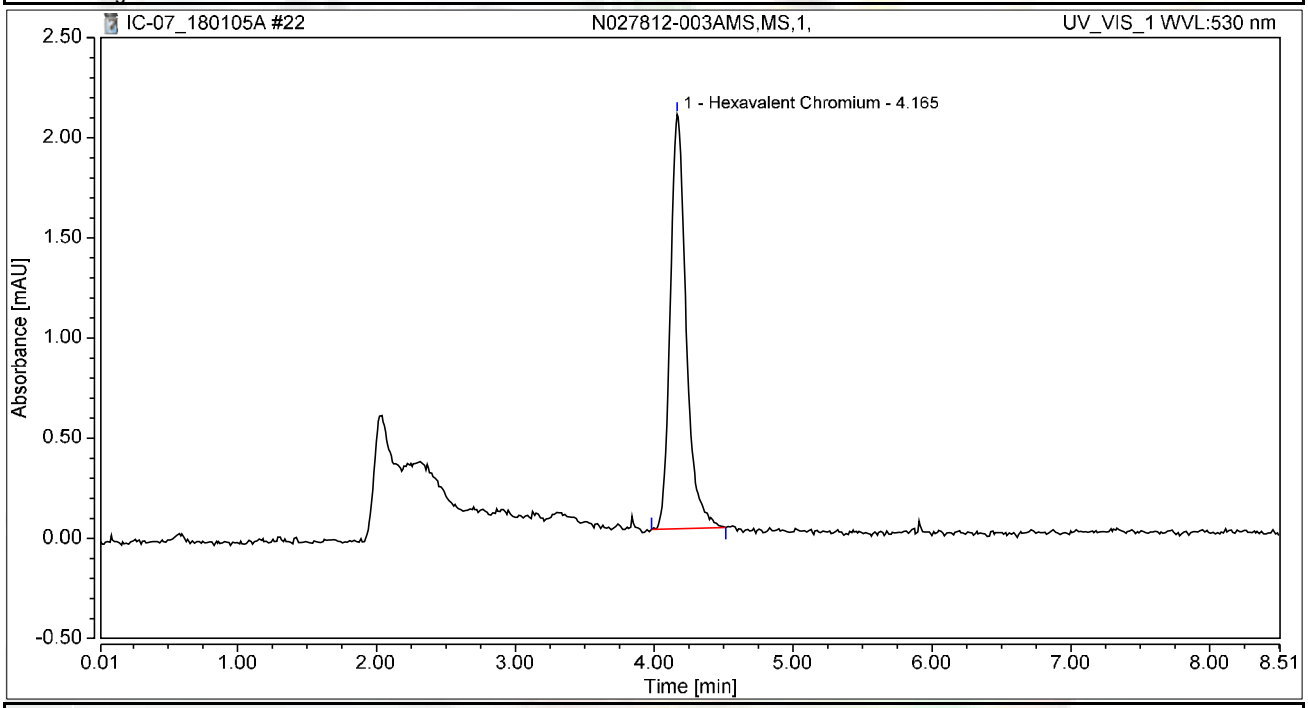
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

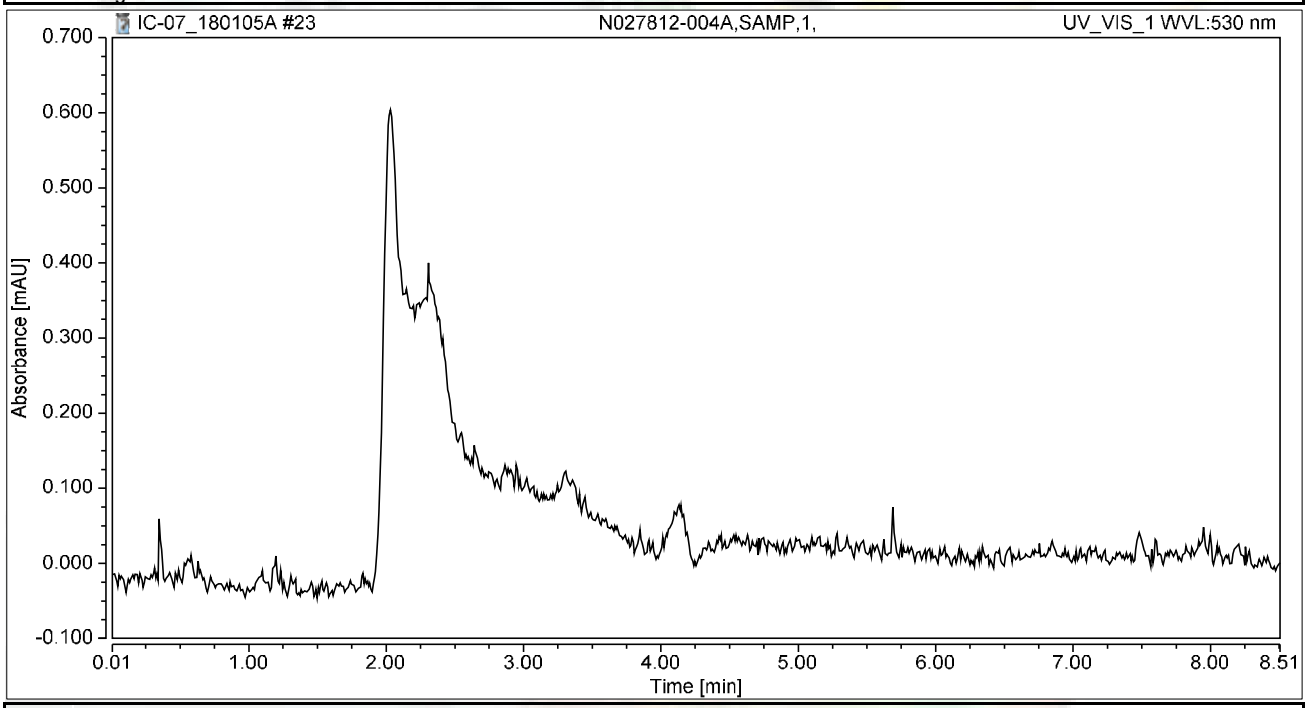
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	2.070	100.00	100.00	1.0734
Total:			**0.275**	**2.070**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

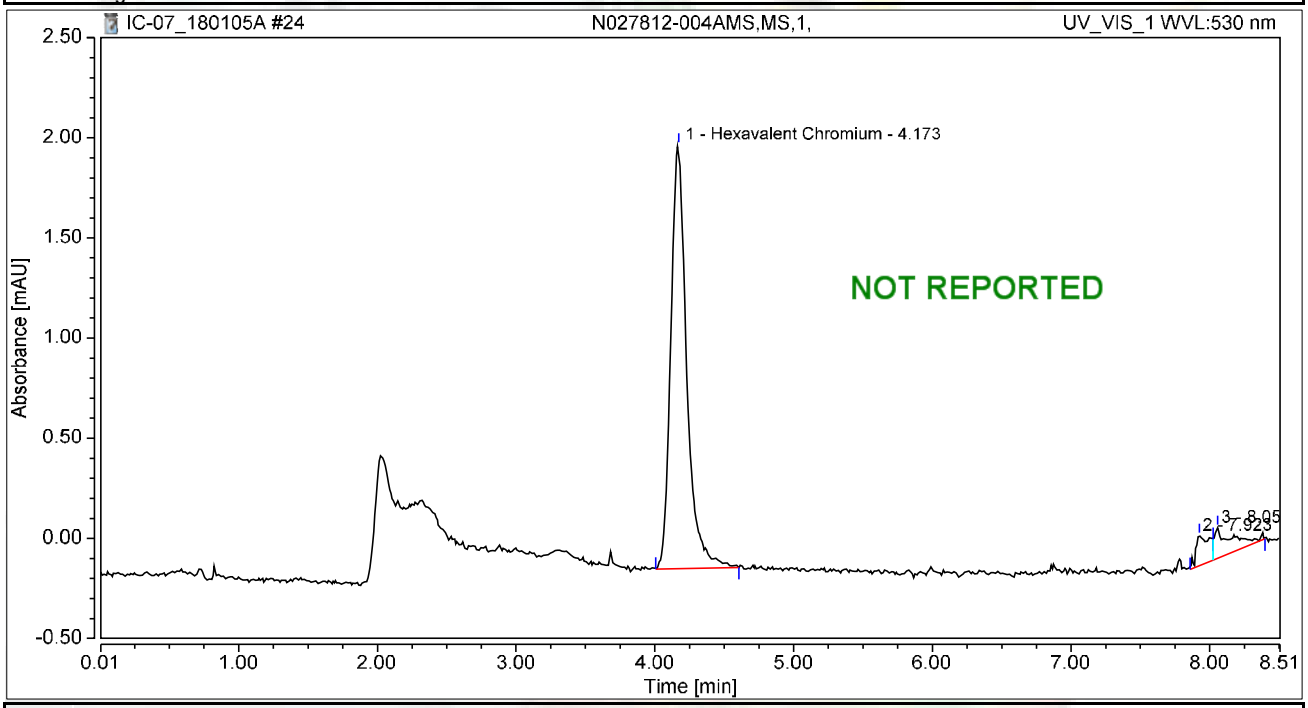
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

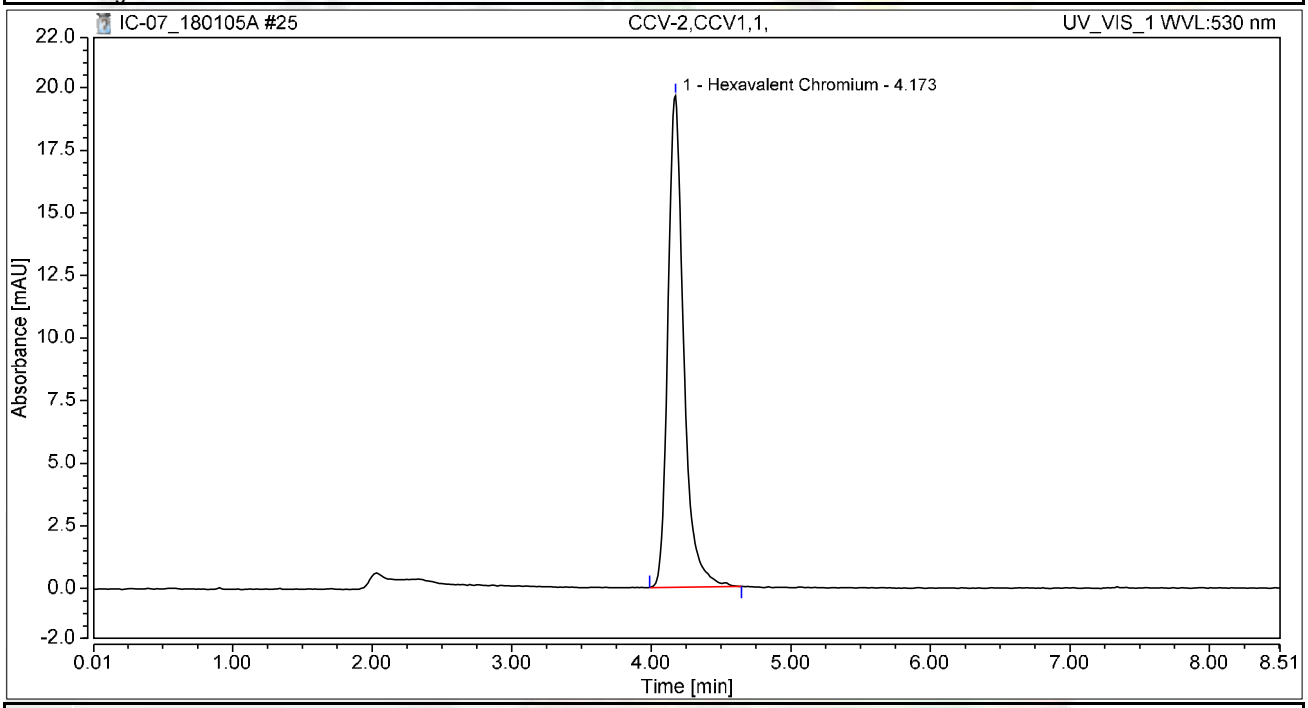
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.282	2.116	88.19	87.52	1.1033
2		7.923	0.016	0.150	5.08	6.21	n.a.
3		8.056	0.022	0.152	6.72	6.27	n.a.
Total:			**0.320**	**2.418**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

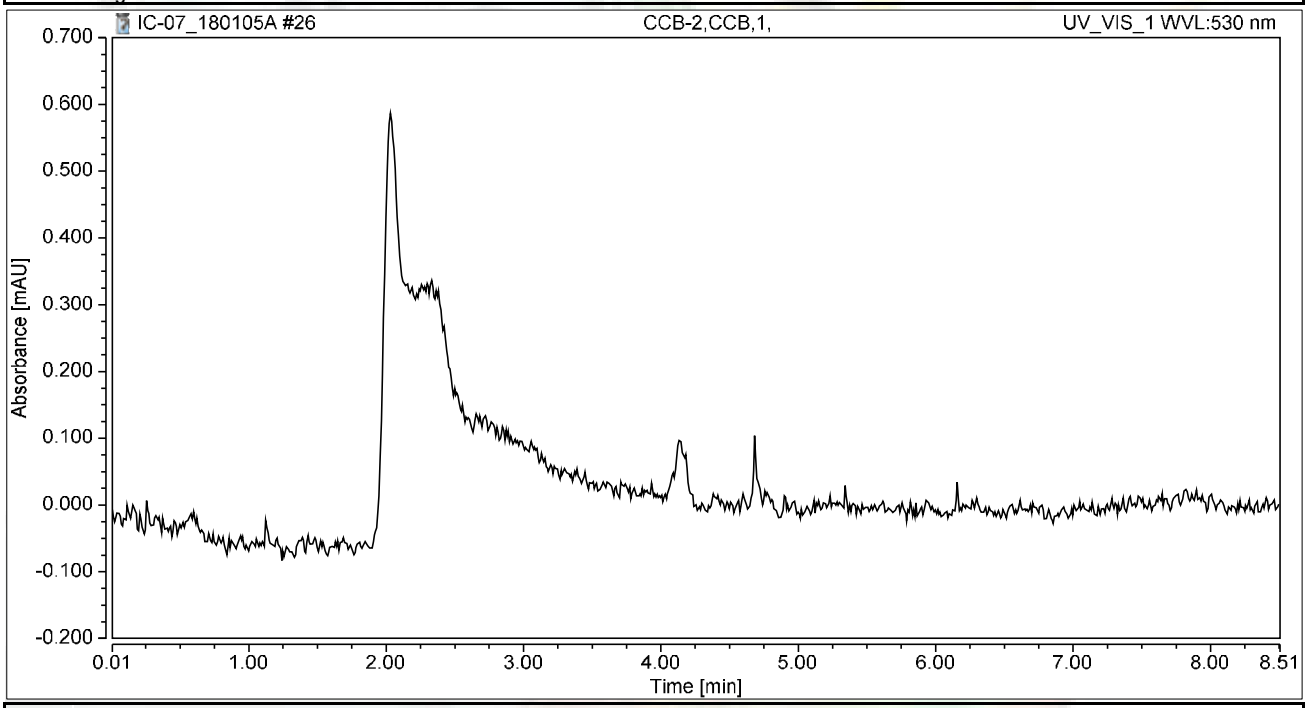
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.581	19.627	100.00	100.00	10.0947
Total:			**2.581**	**19.627**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

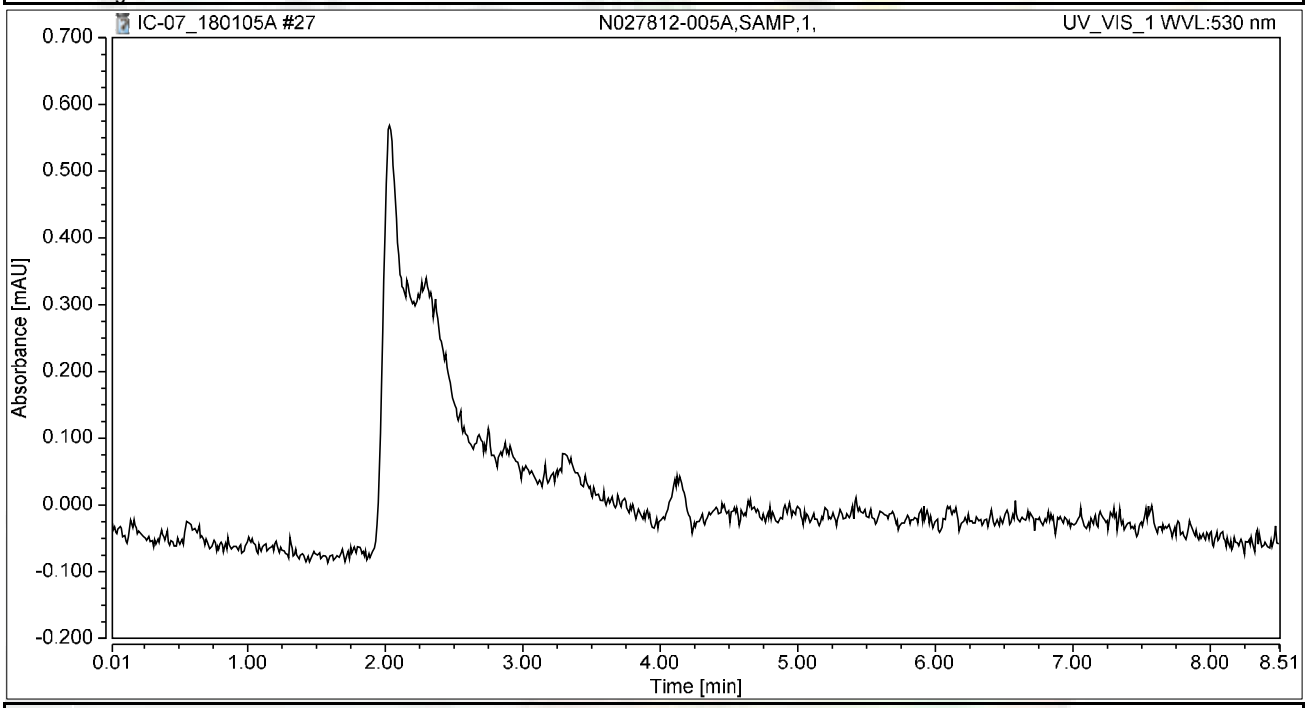
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

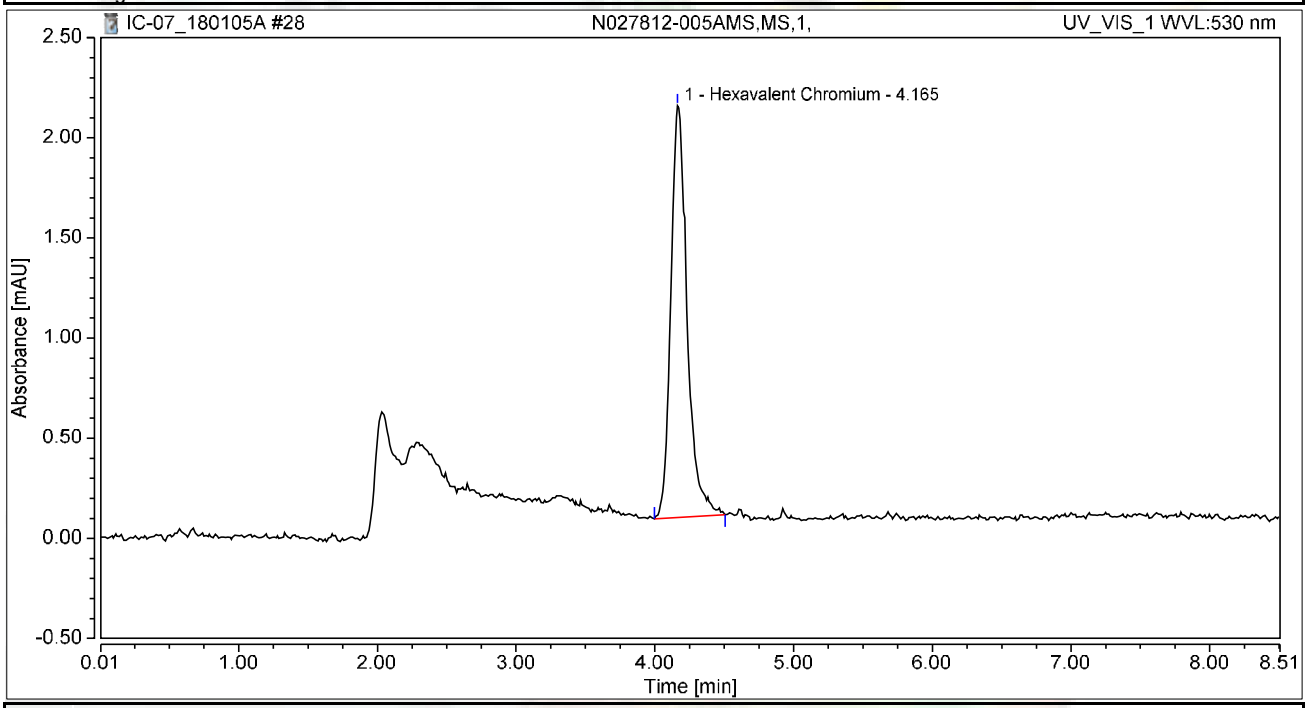
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

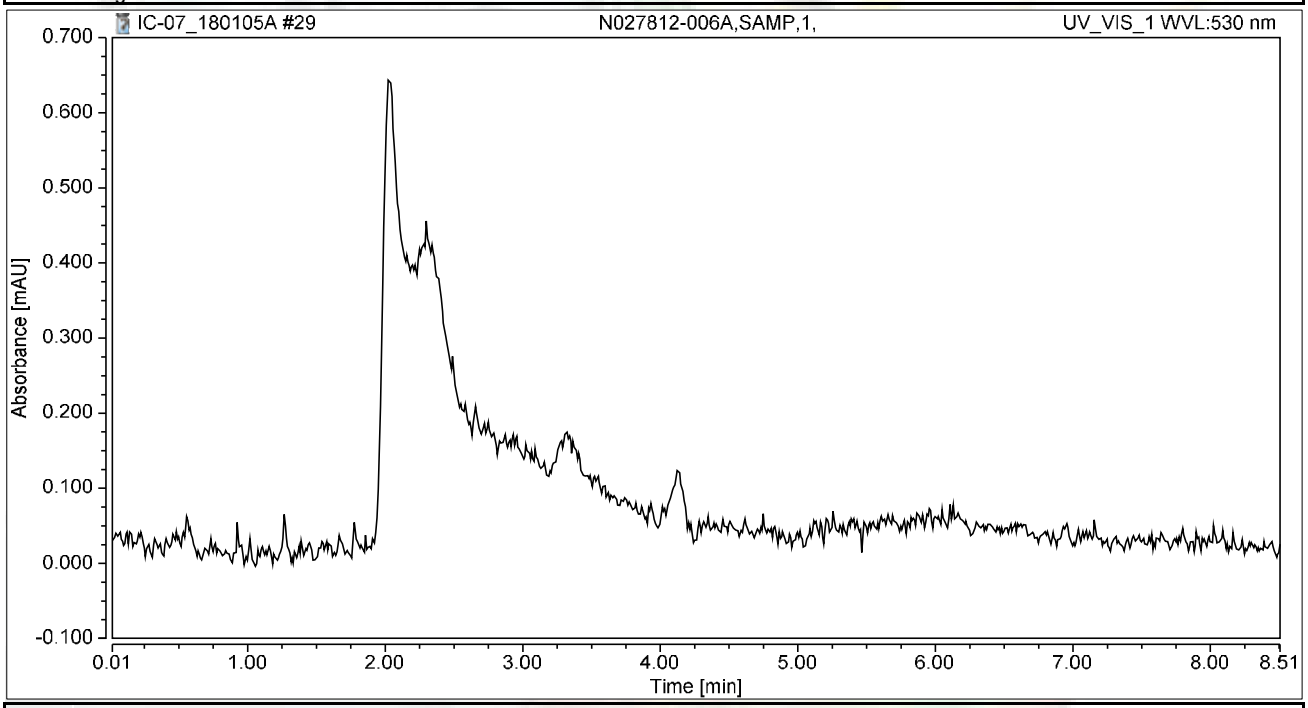
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.281	2.056	100.00	100.00	1.0998
Total:			**0.281**	**2.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

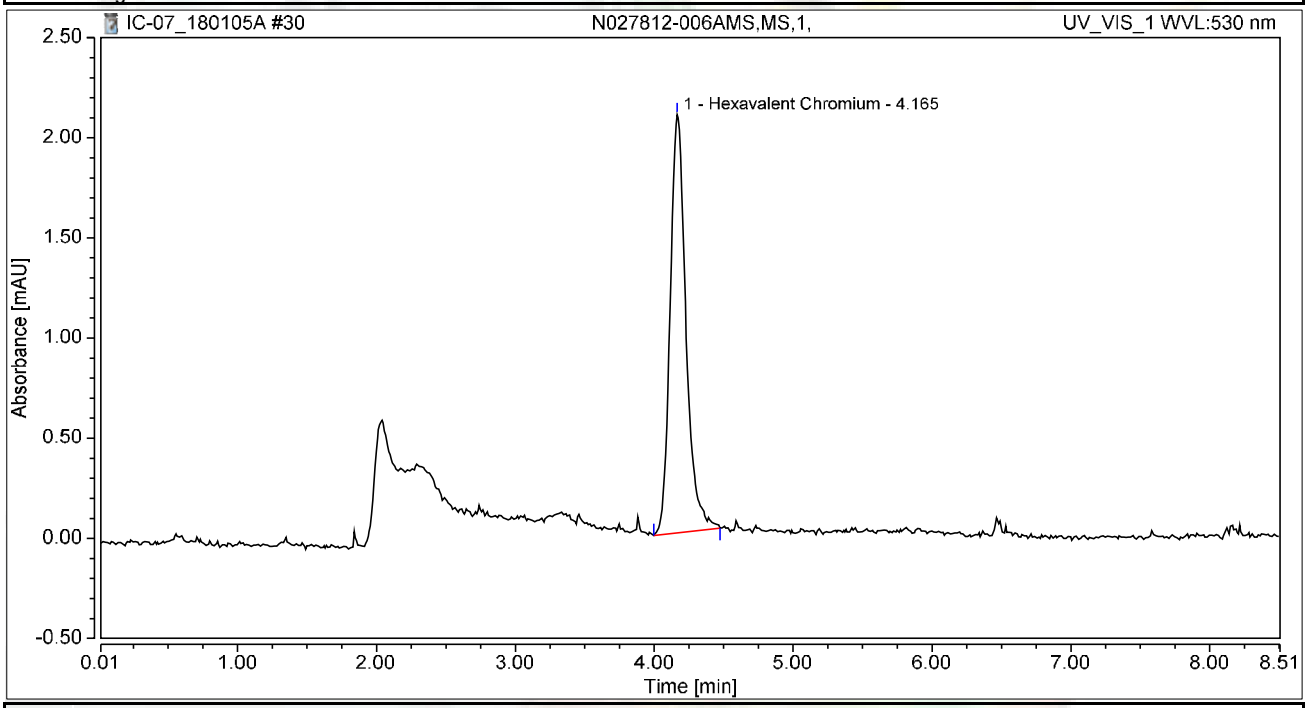
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

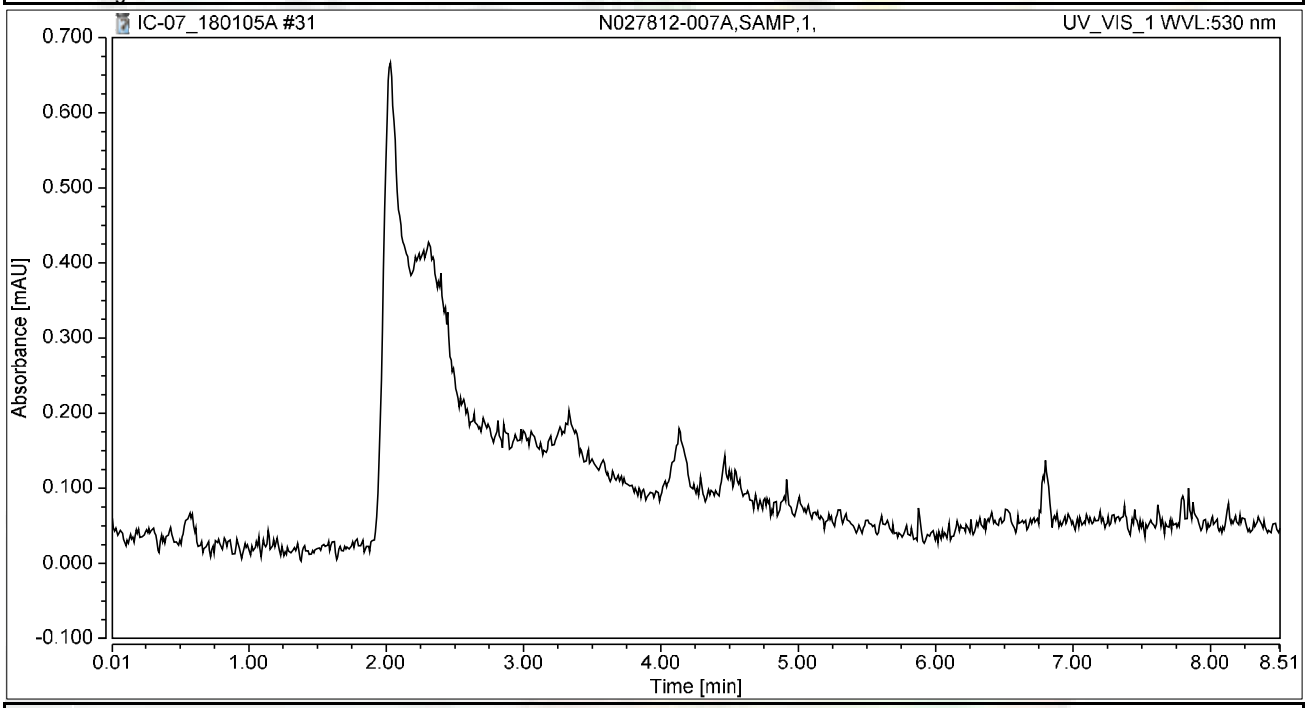
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.277	2.088	100.00	100.00	1.0819
Total:			**0.277**	**2.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

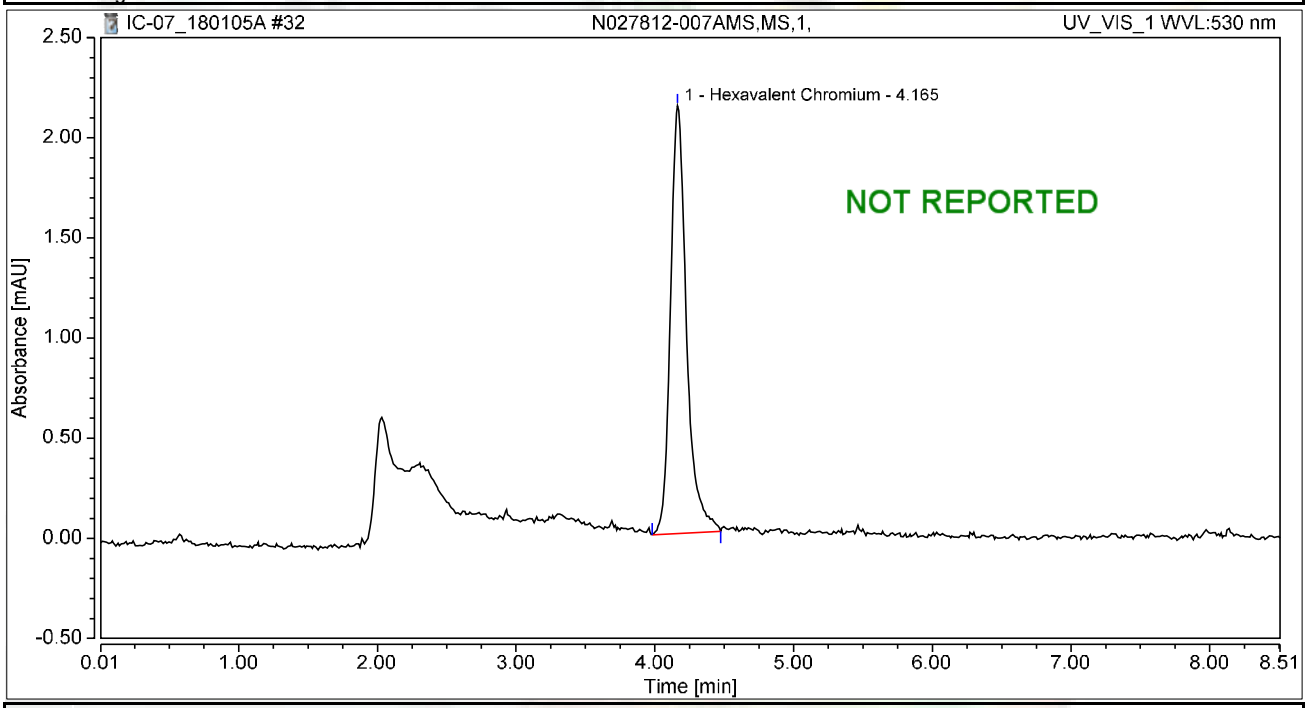
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

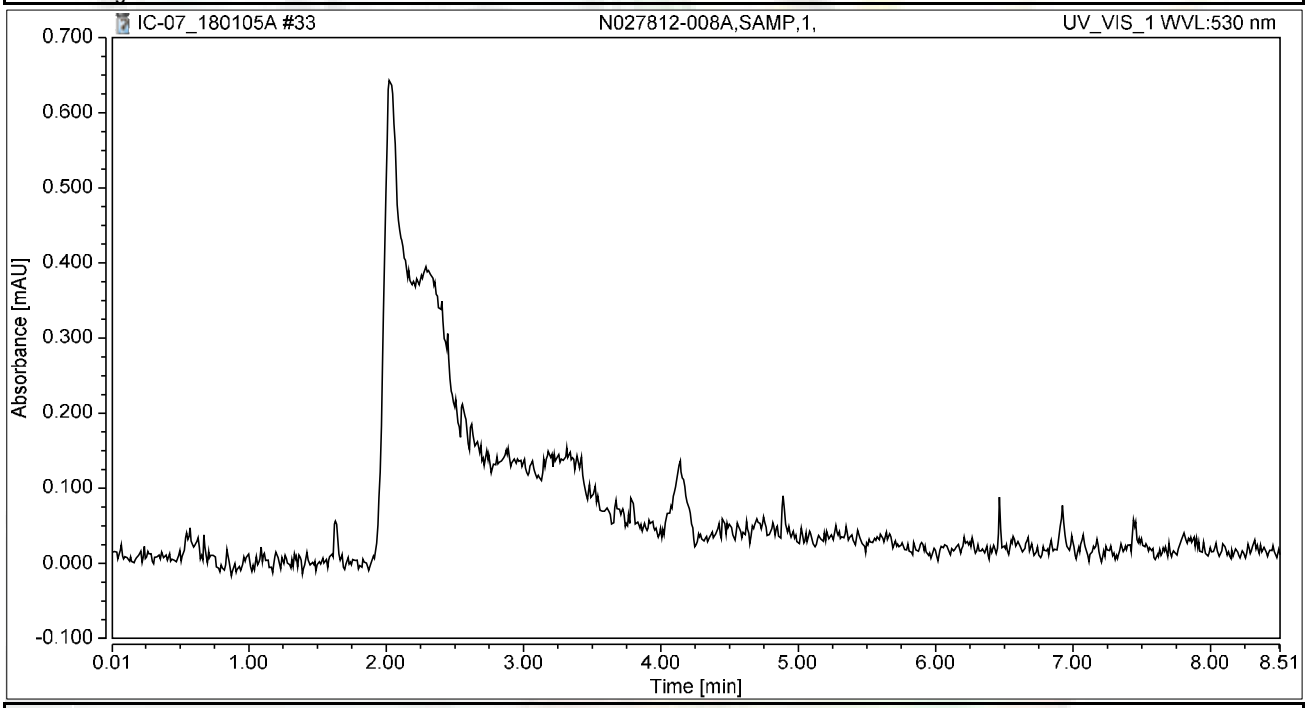
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.287	2.135	100.00	100.00	1.1211
Total:			**0.287**	**2.135**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

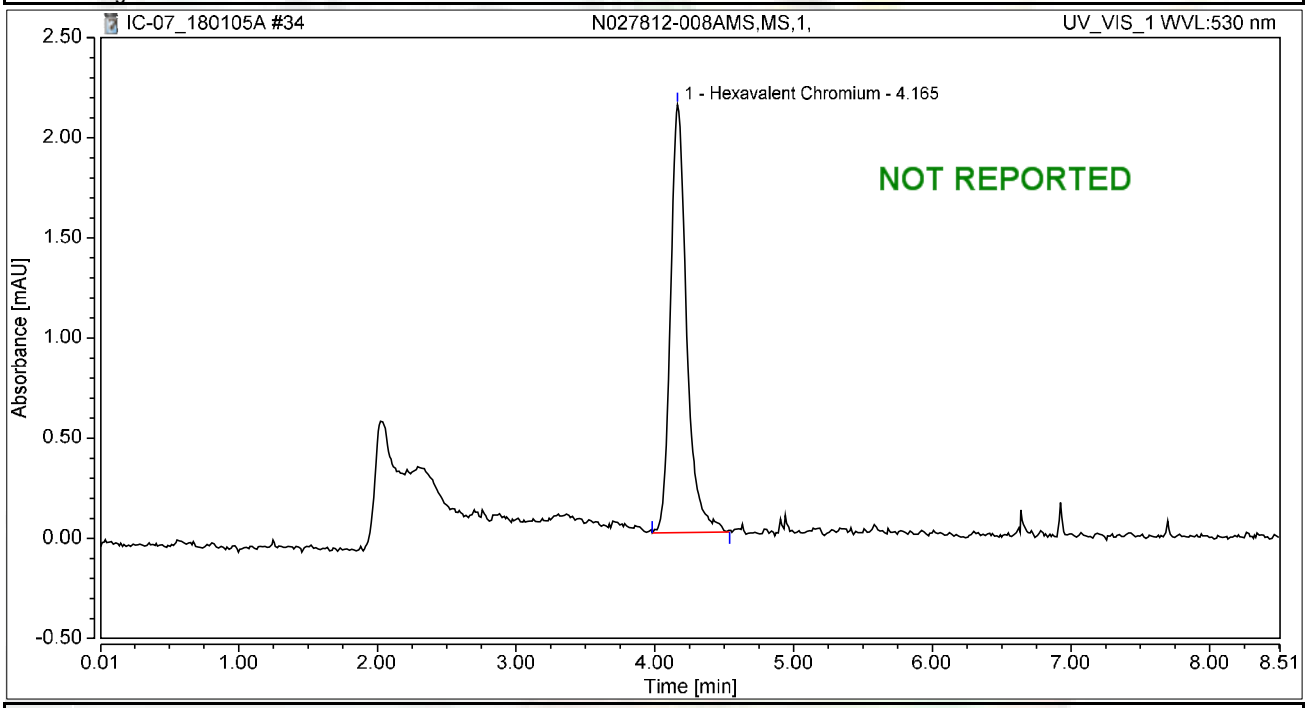
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

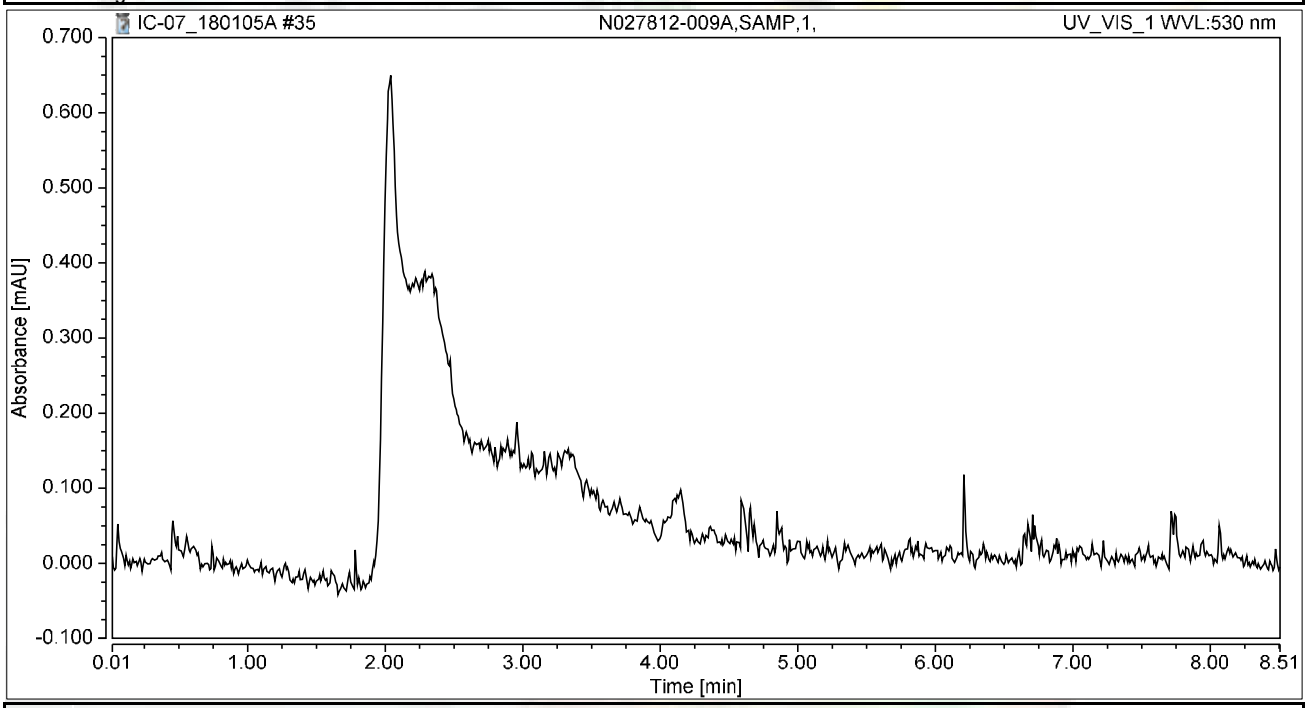
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.290	2.137	100.00	100.00	1.1323
Total:			**0.290**	**2.137**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

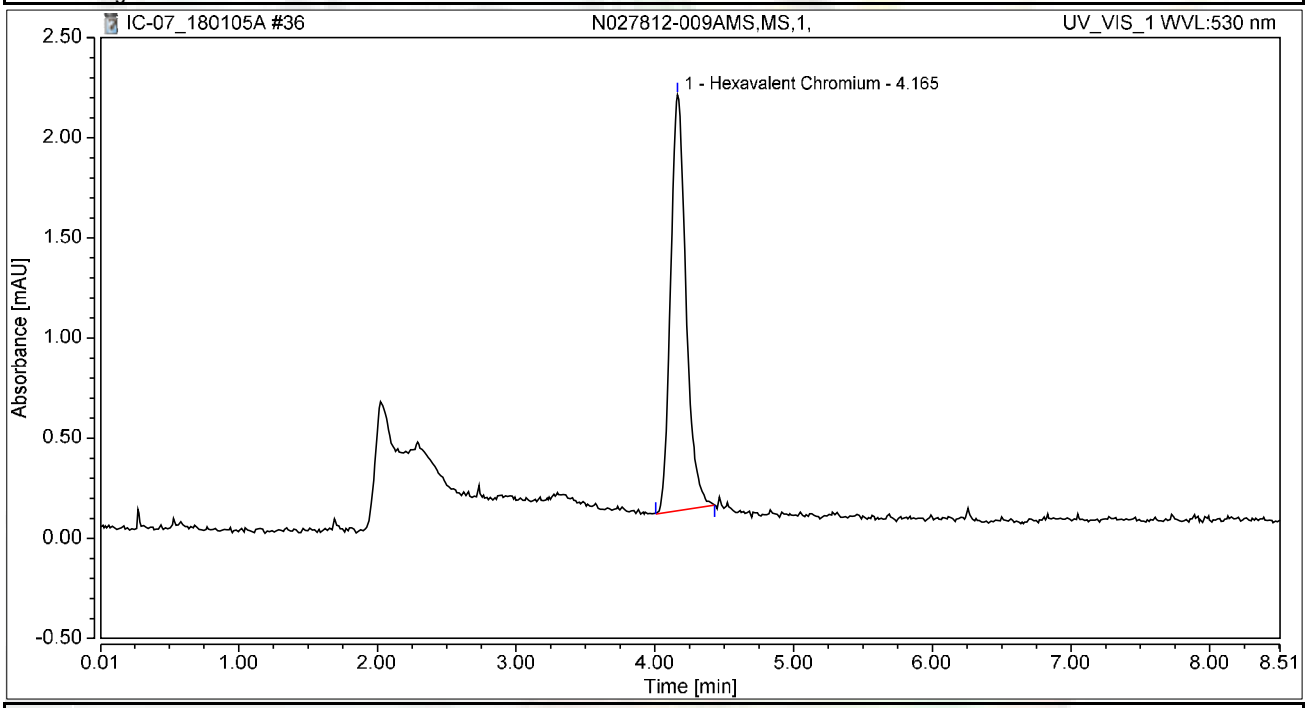
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

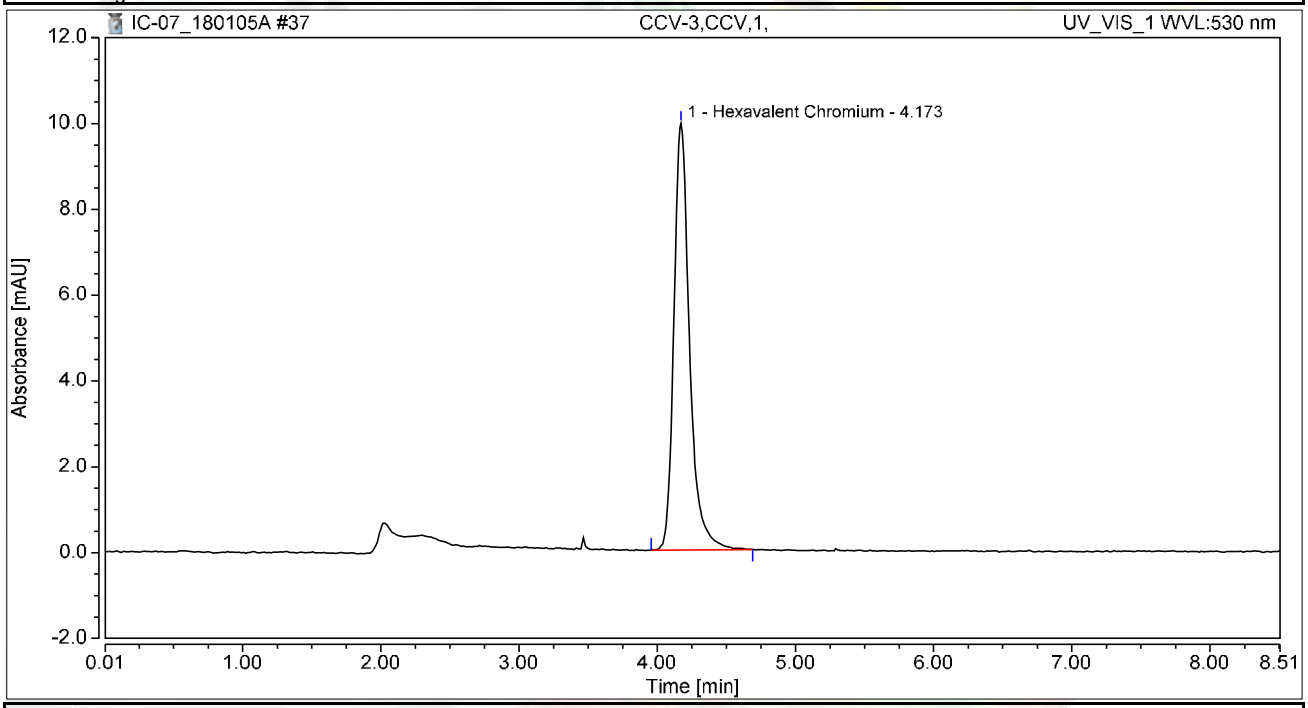
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.268	2.078	100.00	100.00	1.0487
Total:			**0.268**	**2.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

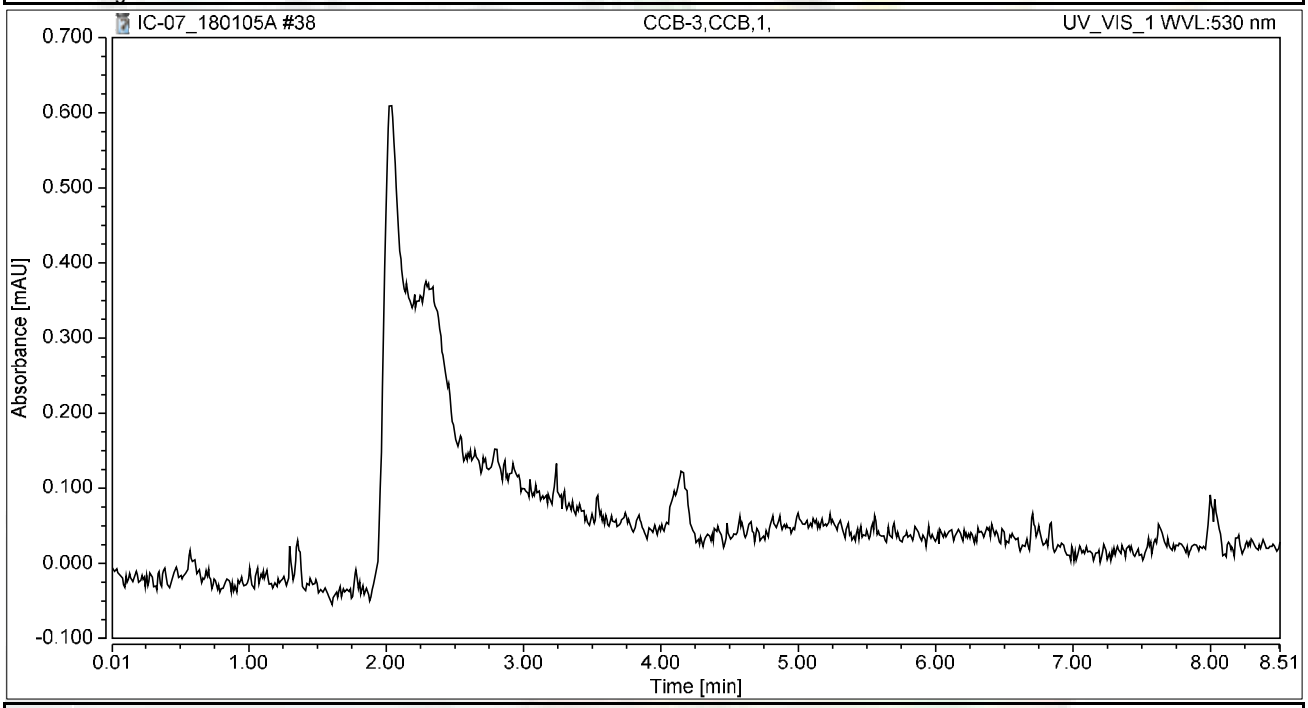
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.307	9.945	100.00	100.00	5.1104
Total:			**1.307**	**9.945**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

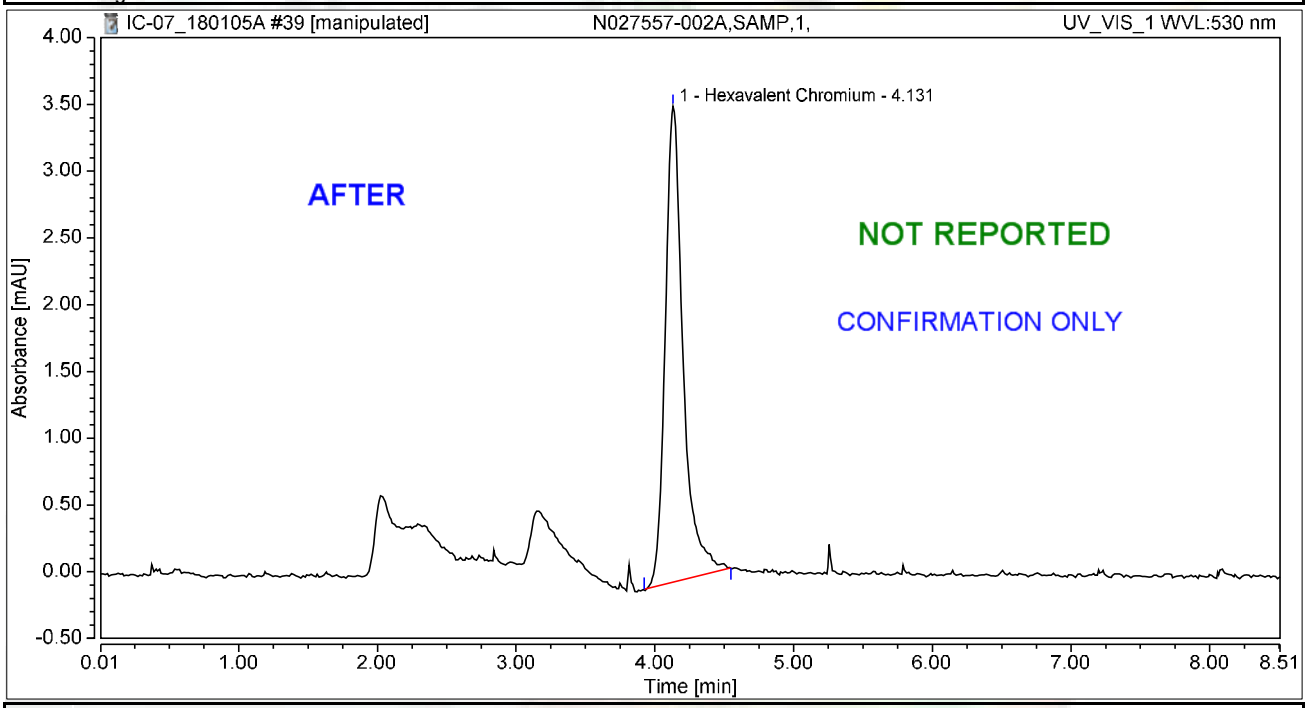
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.533	3.562	100.00	100.00	2.0832
Total:			**0.533**	**3.562**	**100.00**	**100.00**	

rba 1/8/2018

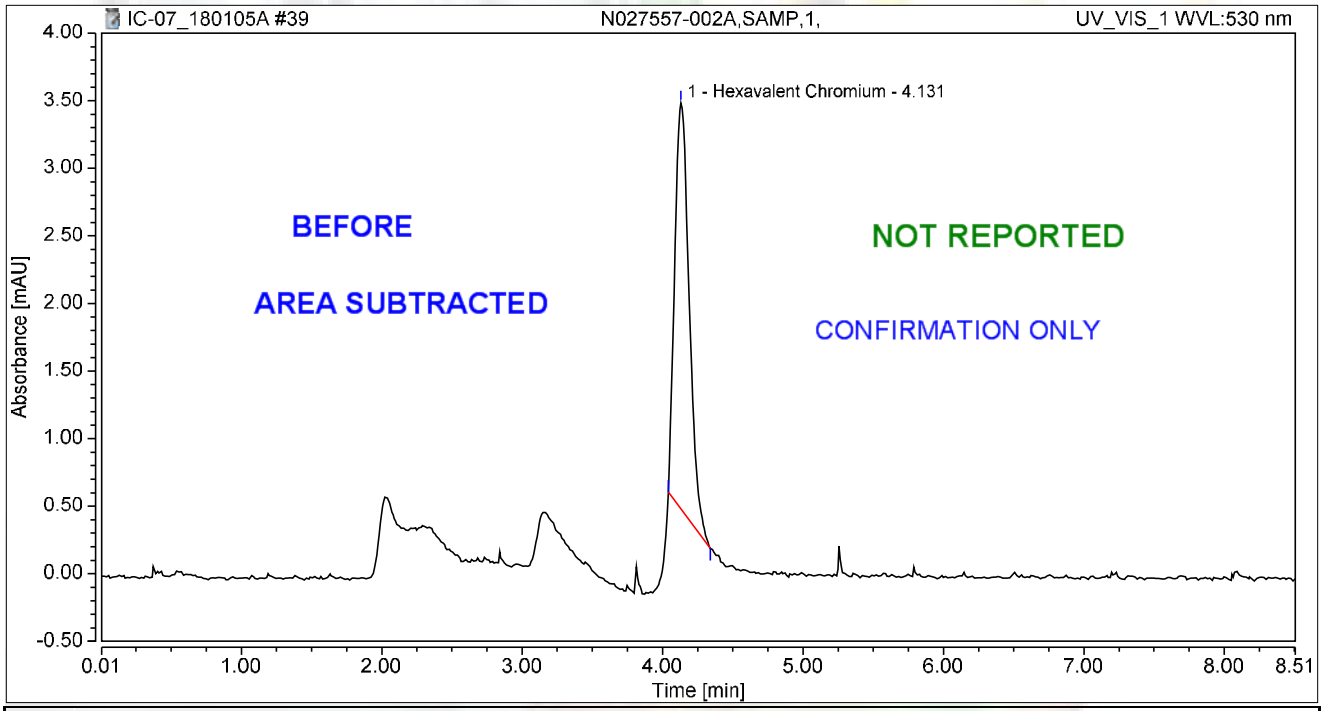
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002A,SAMP,~~1,~~**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.359	3.006	100.00	100.00	1.4038
Total:			**0.359**	**3.006**	**100.00**	**100.00**	

rba 1/8/2018

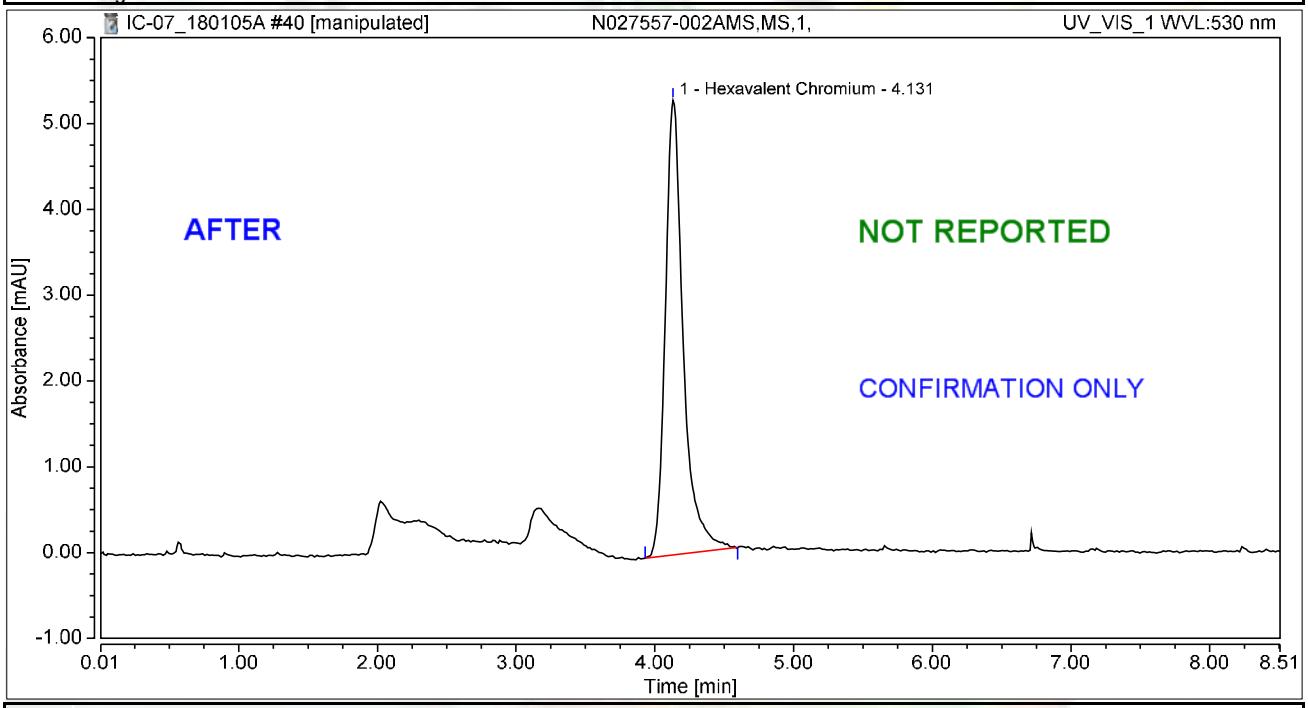
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.795	5.298	100.00	100.00	3.1084
Total:			**0.795**	**5.298**	**100.00**	**100.00**	

rba 1/8/2018

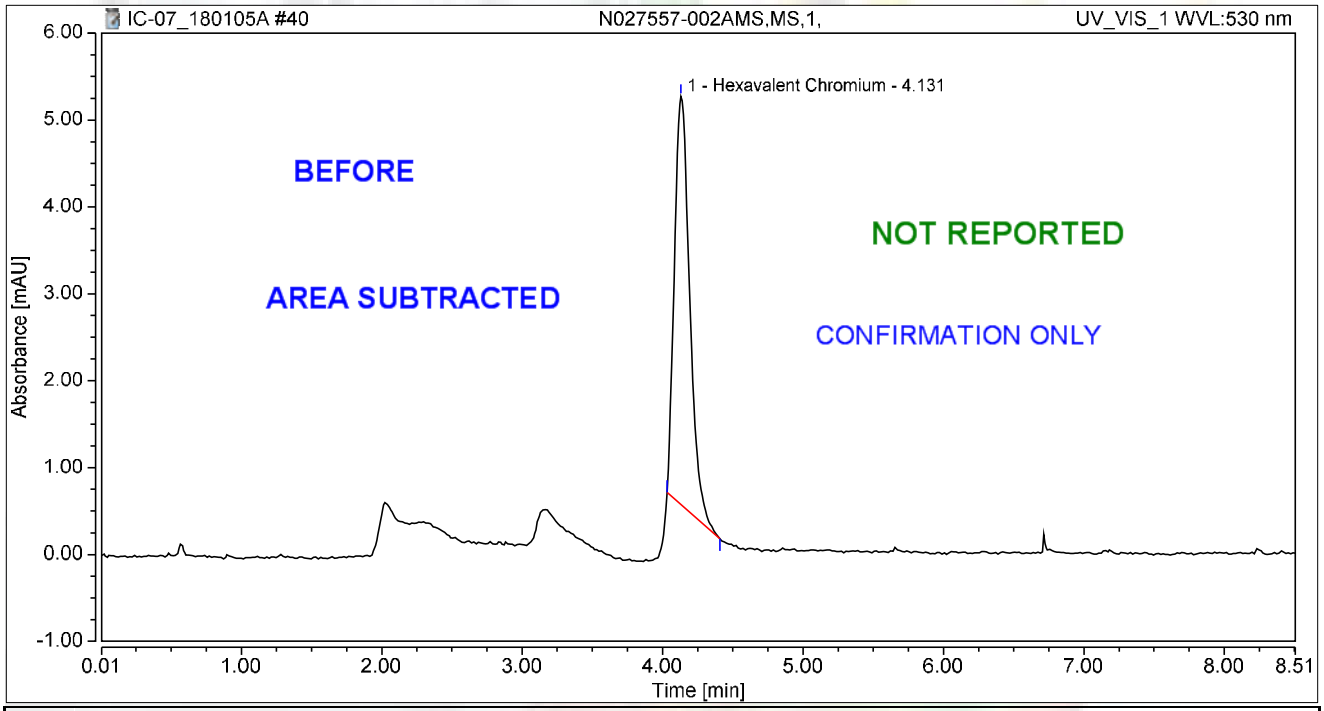
Chromatogram and Results

Injection Details

5

Injection Name:	**N027557-002AMS,MS,~~1,~~**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.594	4.698	100.00	100.00	2.3239
Total:			**0.594**	**4.698**	**100.00**	**100.00**	

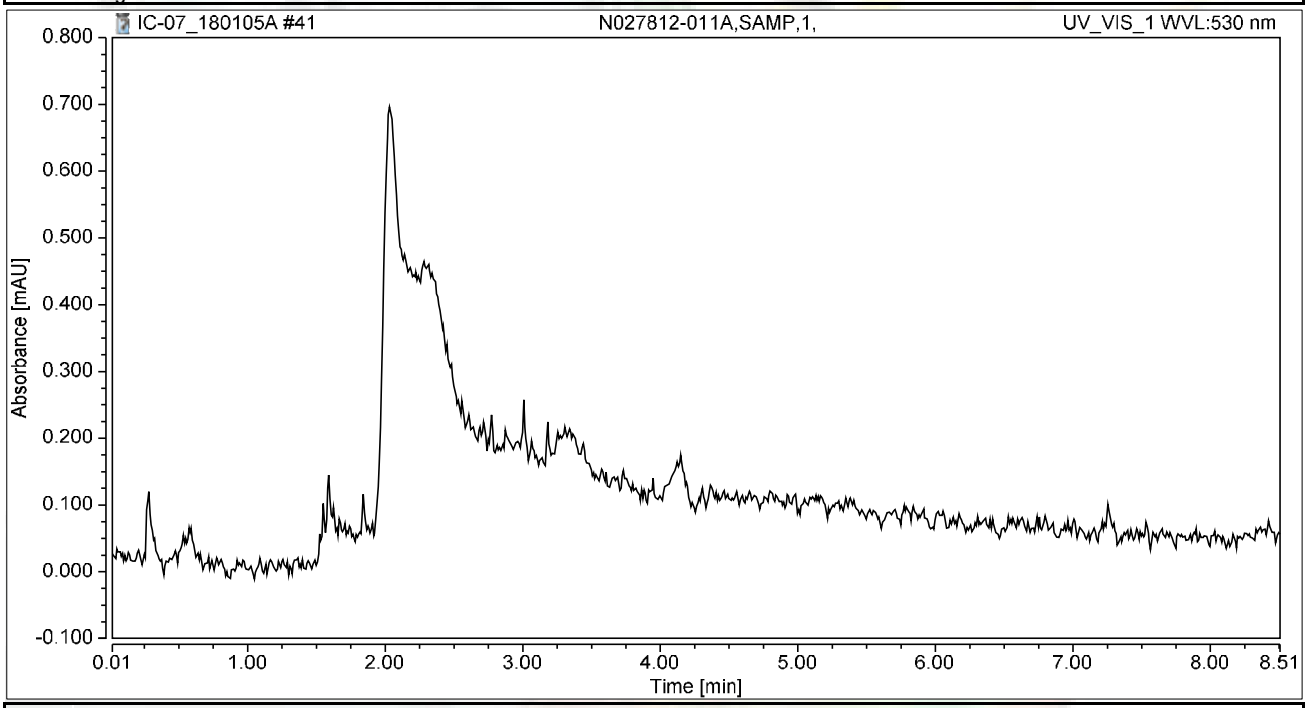
rba 1/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

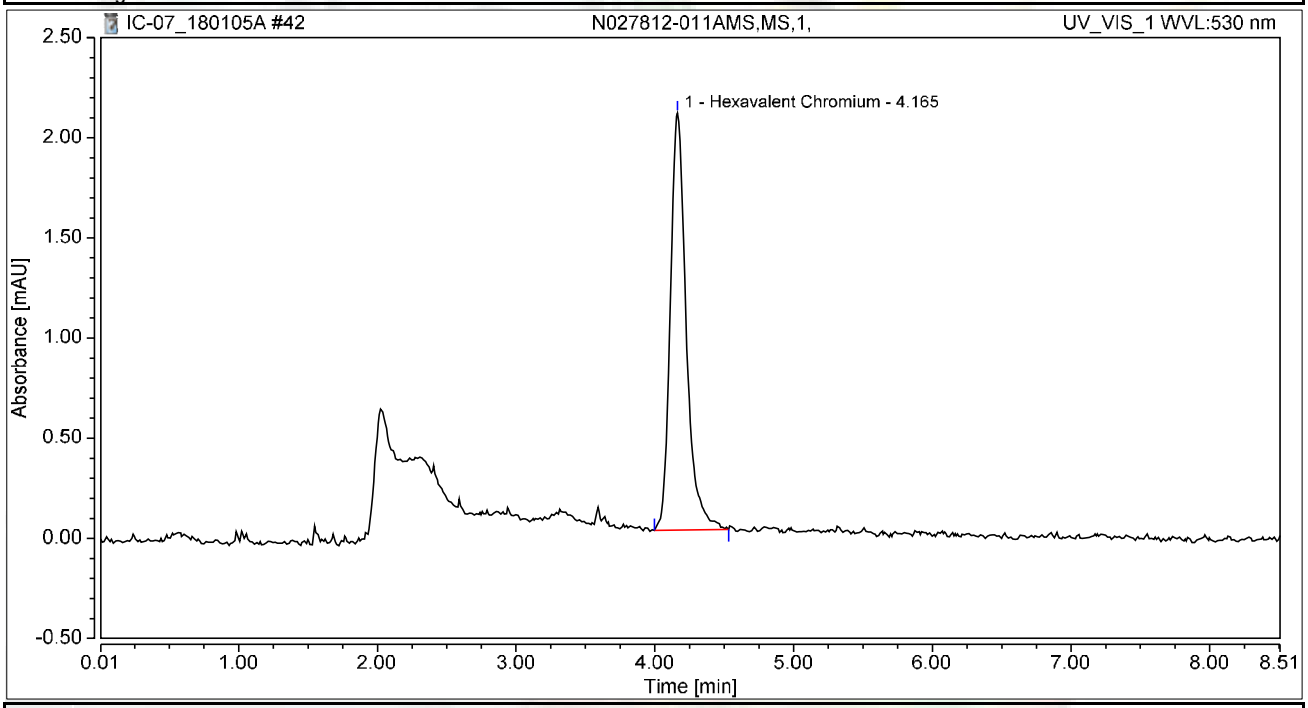
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

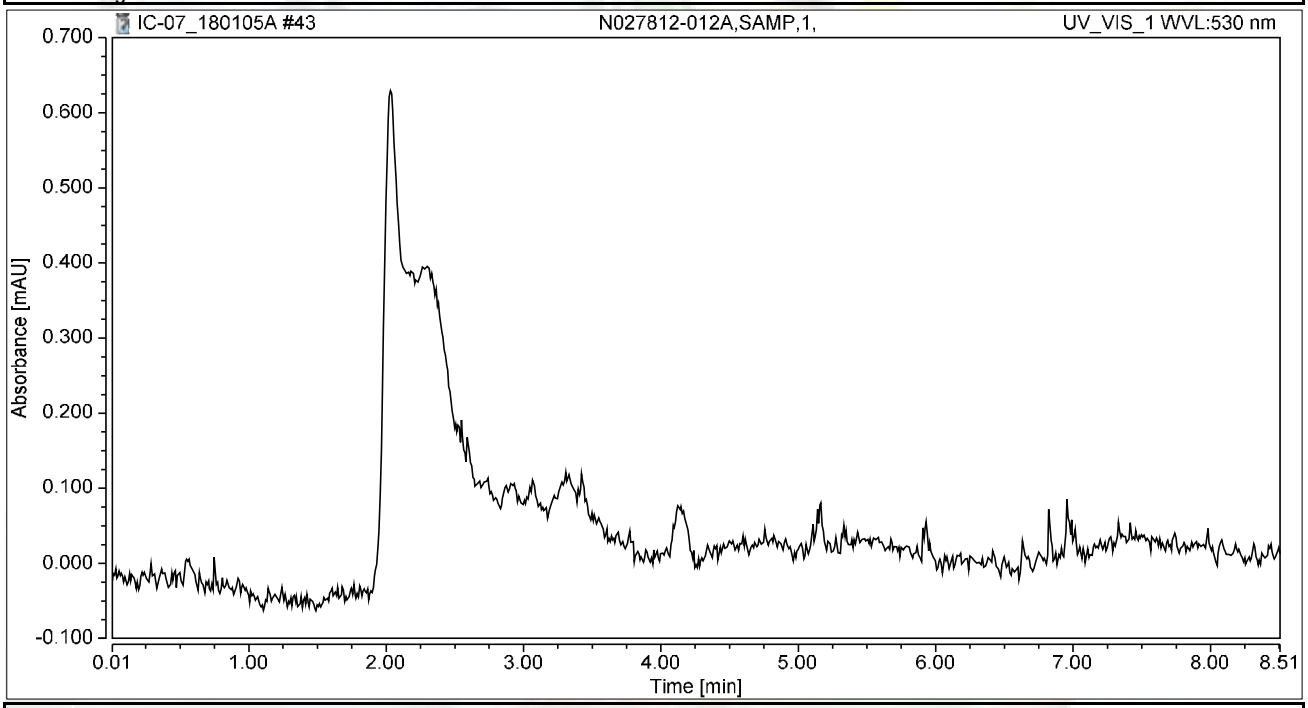
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.278	2.082	100.00	100.00	1.0868
Total:			**0.278**	**2.082**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

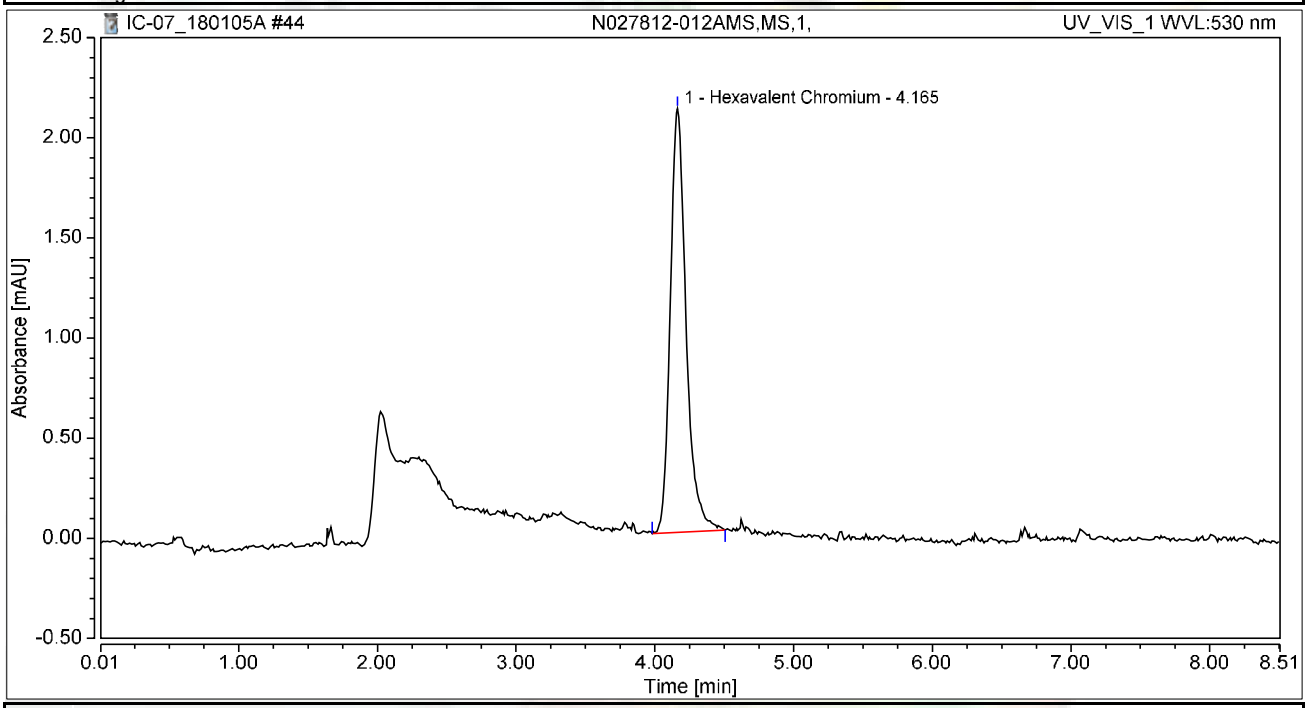
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

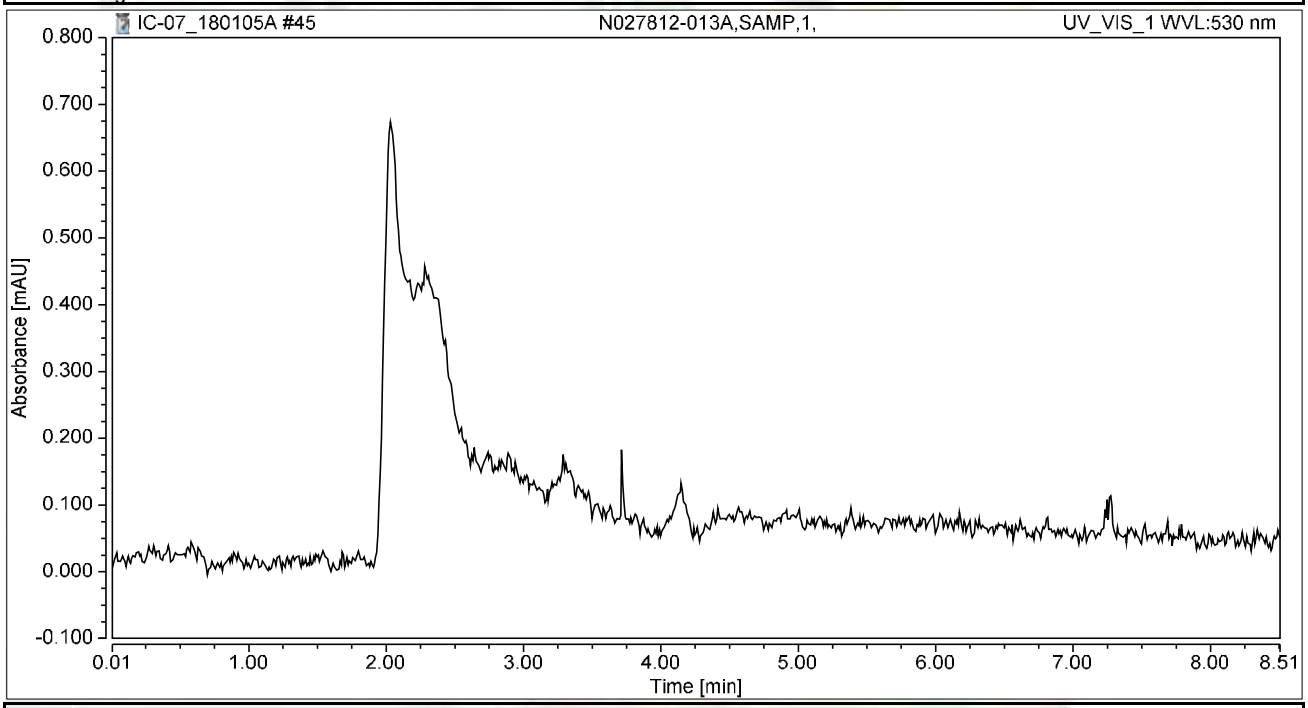
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.280	2.116	100.00	100.00	1.0955
Total:			**0.280**	**2.116**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

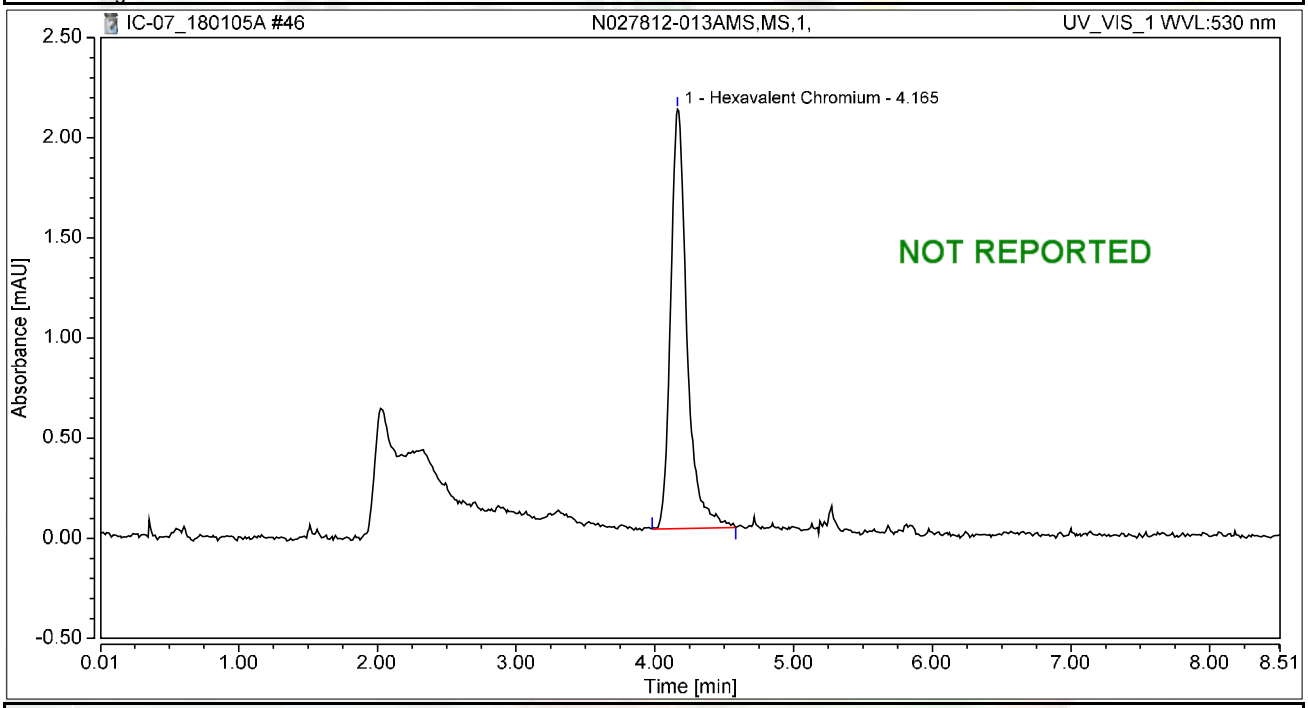
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

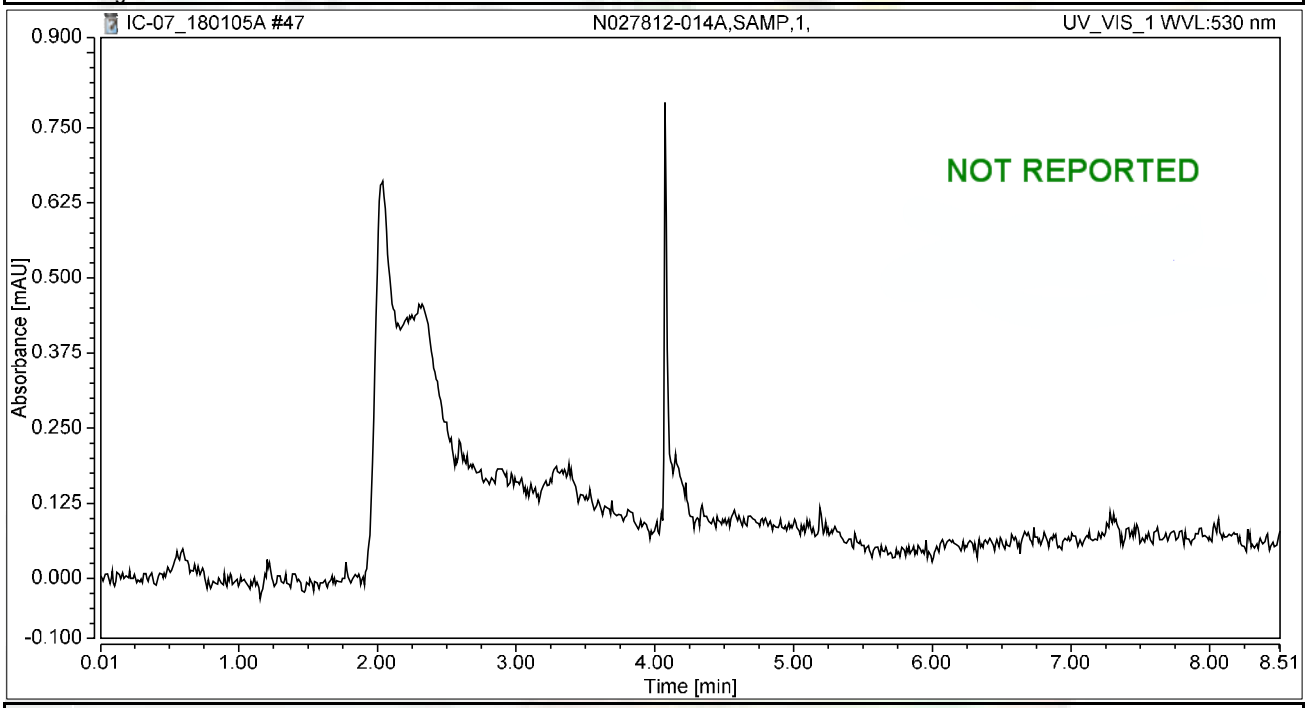
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.286	2.094	100.00	100.00	1.1176
Total:			**0.286**	**2.094**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

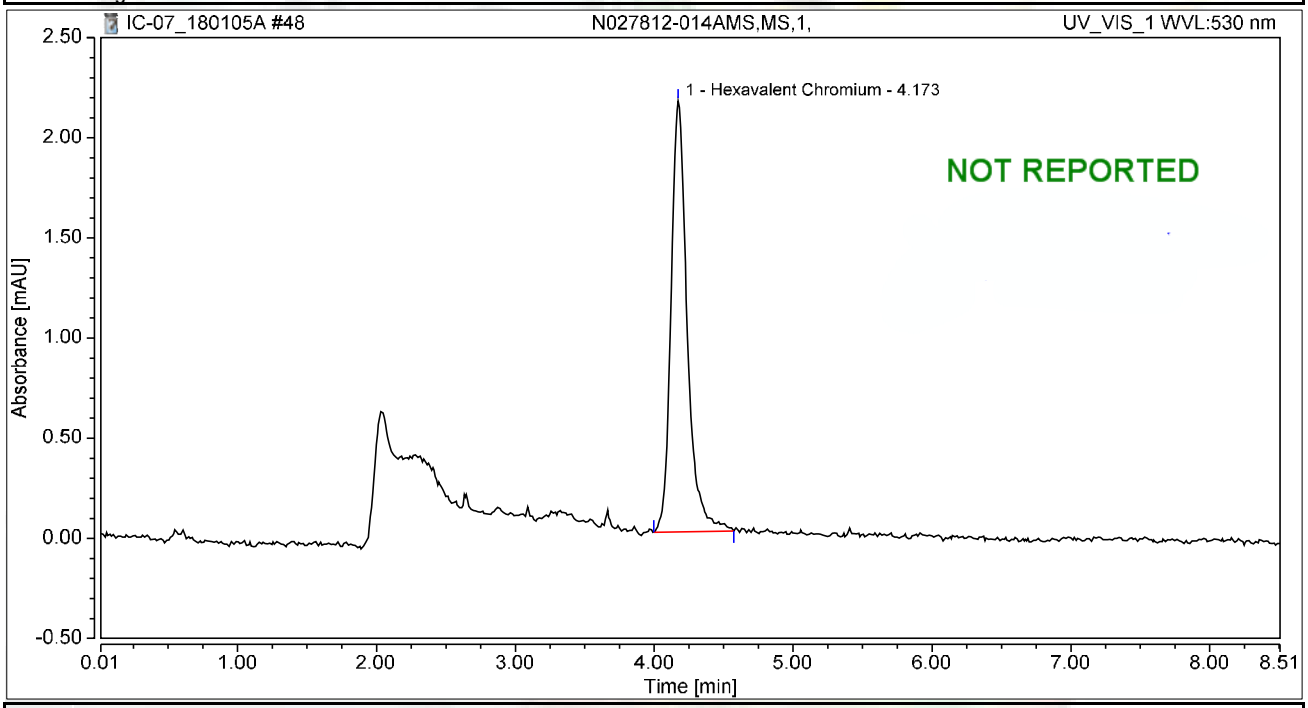
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

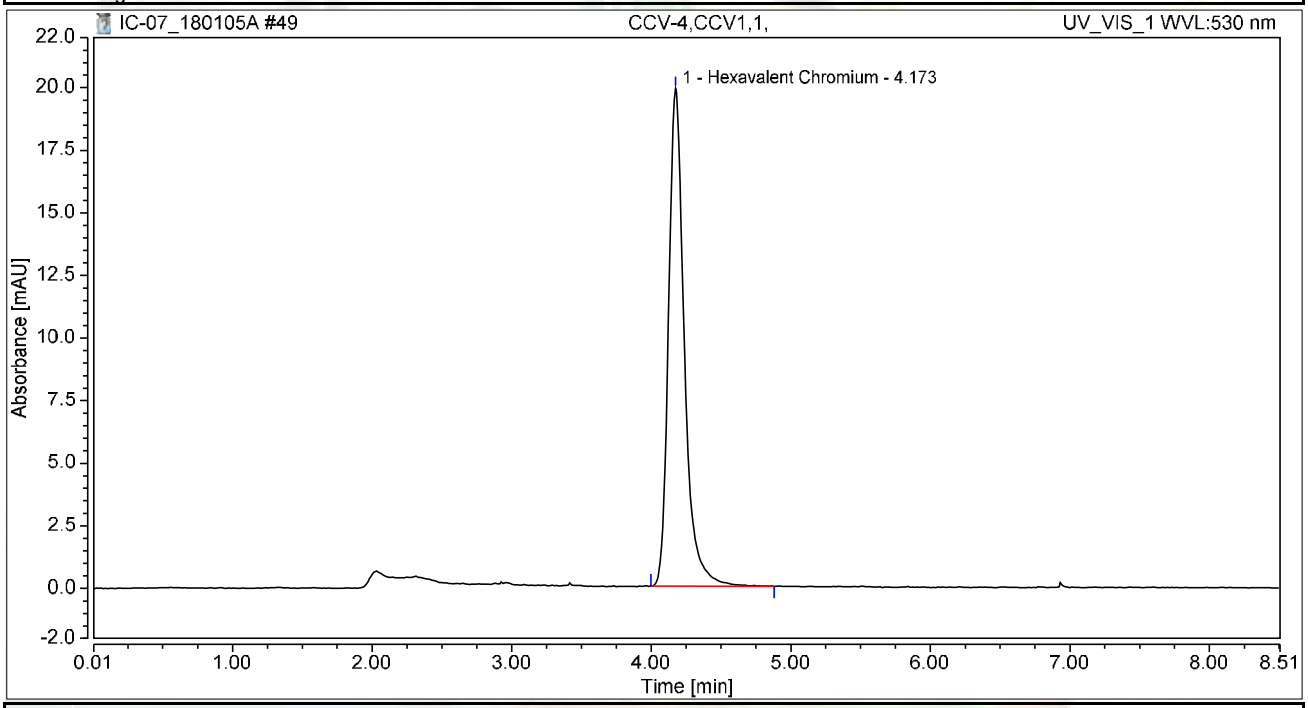
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.291	2.151	100.00	100.00	1.1382
Total:			**0.291**	**2.151**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

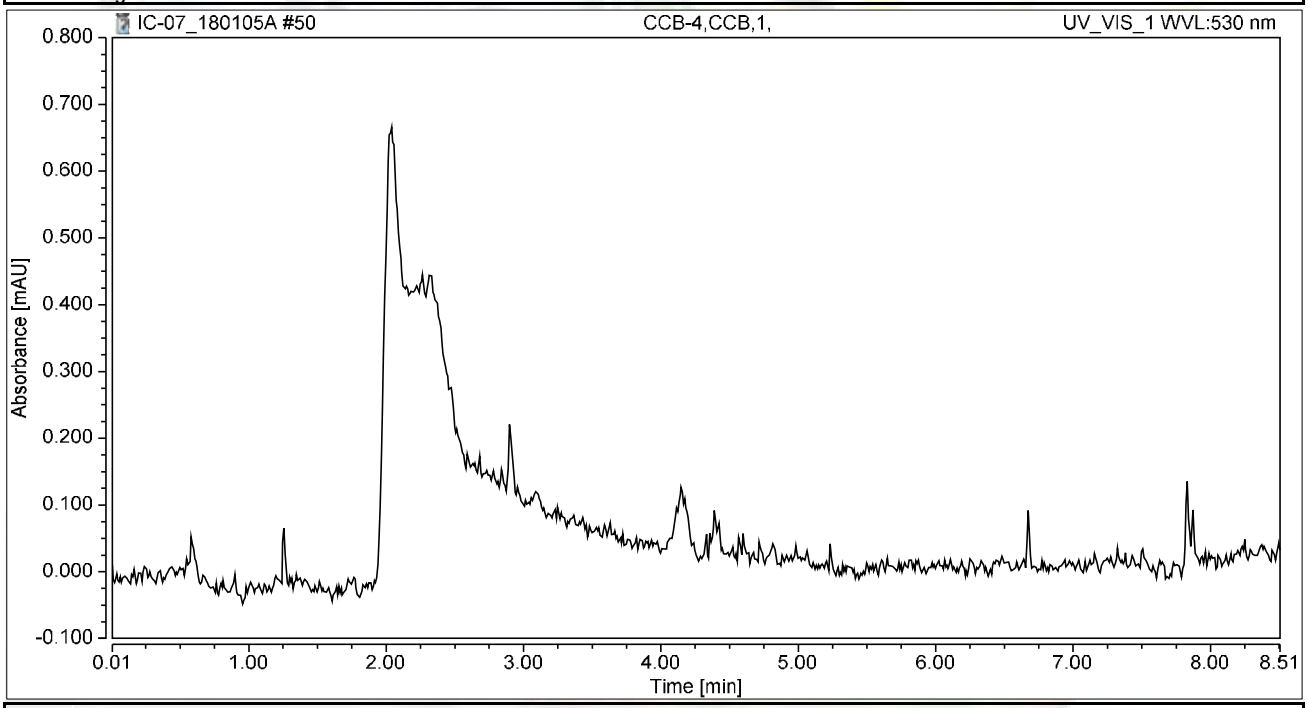
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.621	19.874	100.00	100.00	10.2477
Total:			**2.621**	**19.874**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

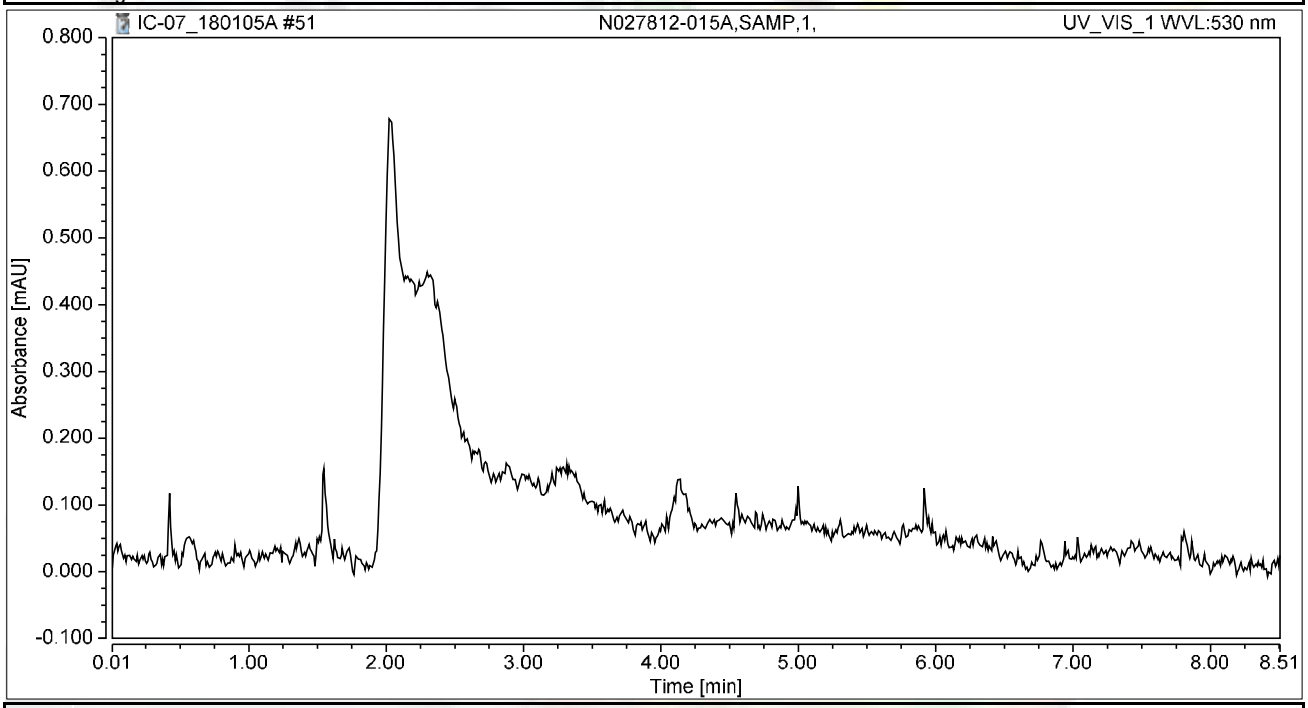
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-015AMS,MS,1,**	*Run Time (min):*	**n.a.**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**n.a.**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**n.a.**	*Sample Weight:*	**1.0000**

Chromatogram

Can't read channel UV_VIS_1 from injection #52 - N027812-015AMS,MS,1,.
Channel is not available.

NOT REPORTED

SKIPPED BY AUTOSAMPLER

Integration Results

No.	Peak Name	Retention Time min	Area n.a.	Height n.a.	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

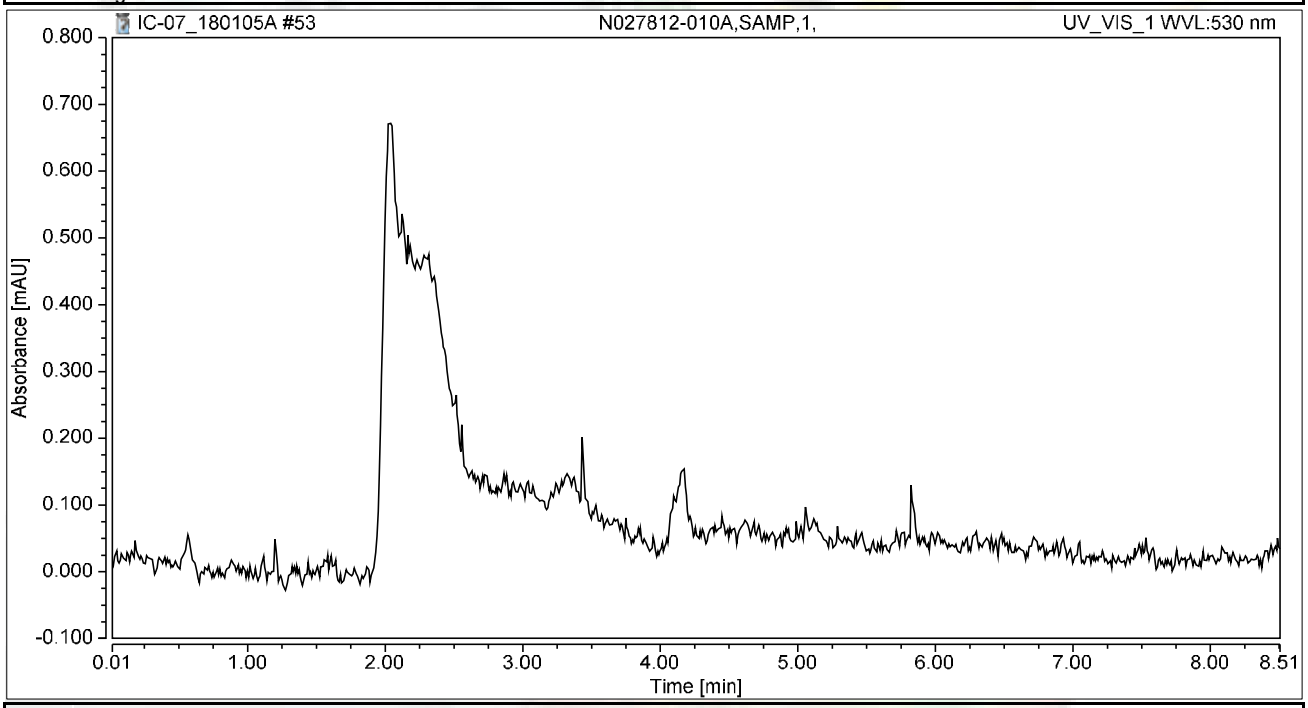
rba 1/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-010A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 15:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

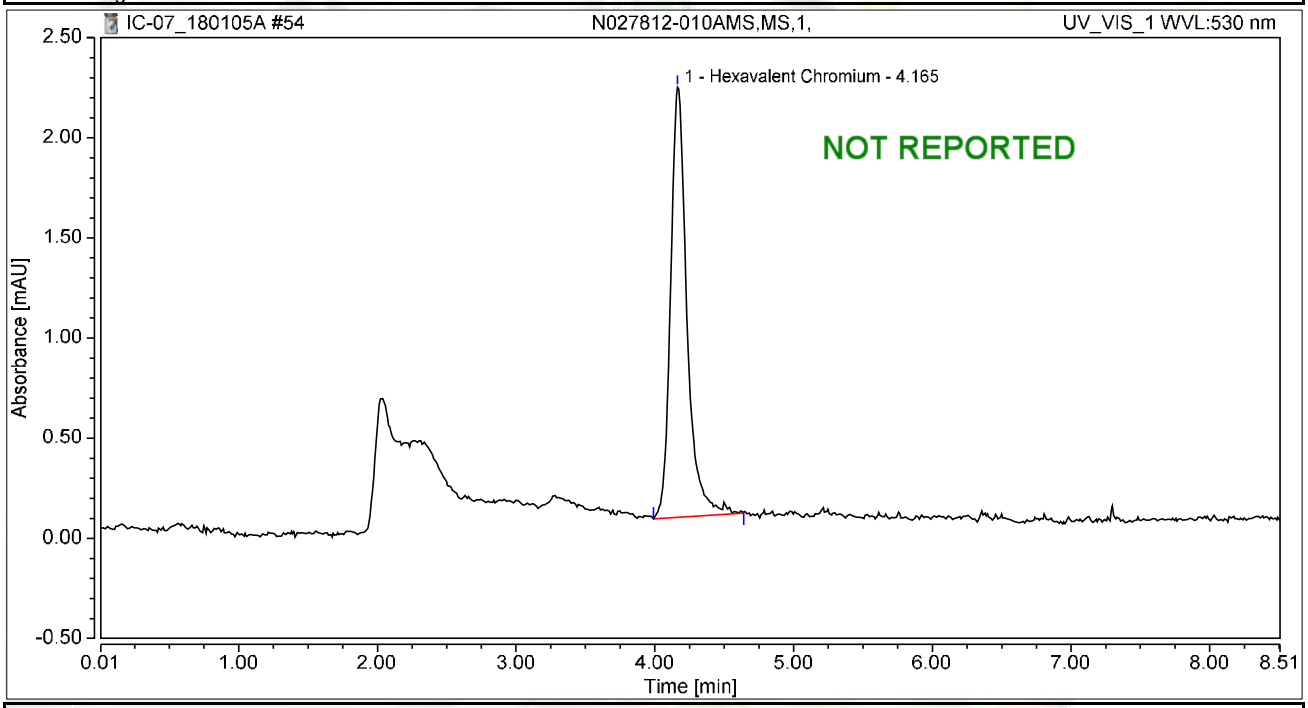
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 15:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

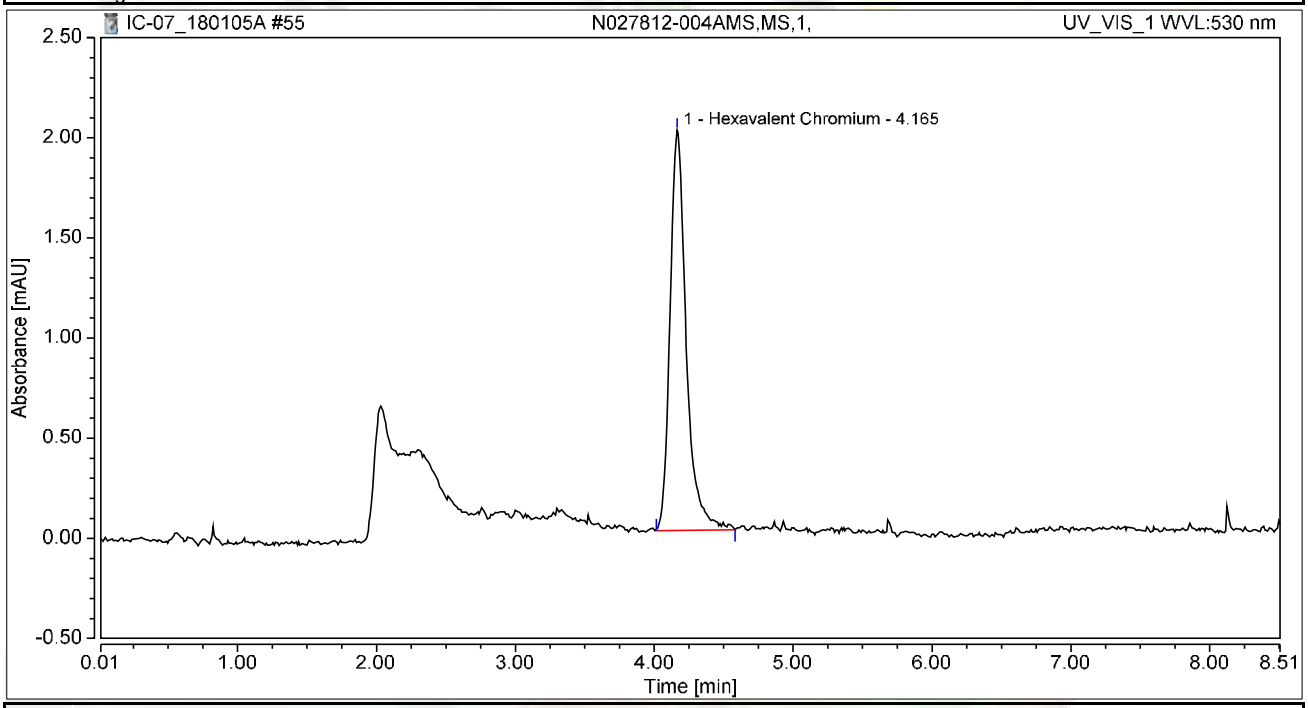
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.295	2.147	100.00	100.00	1.1522
Total:			**0.295**	**2.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

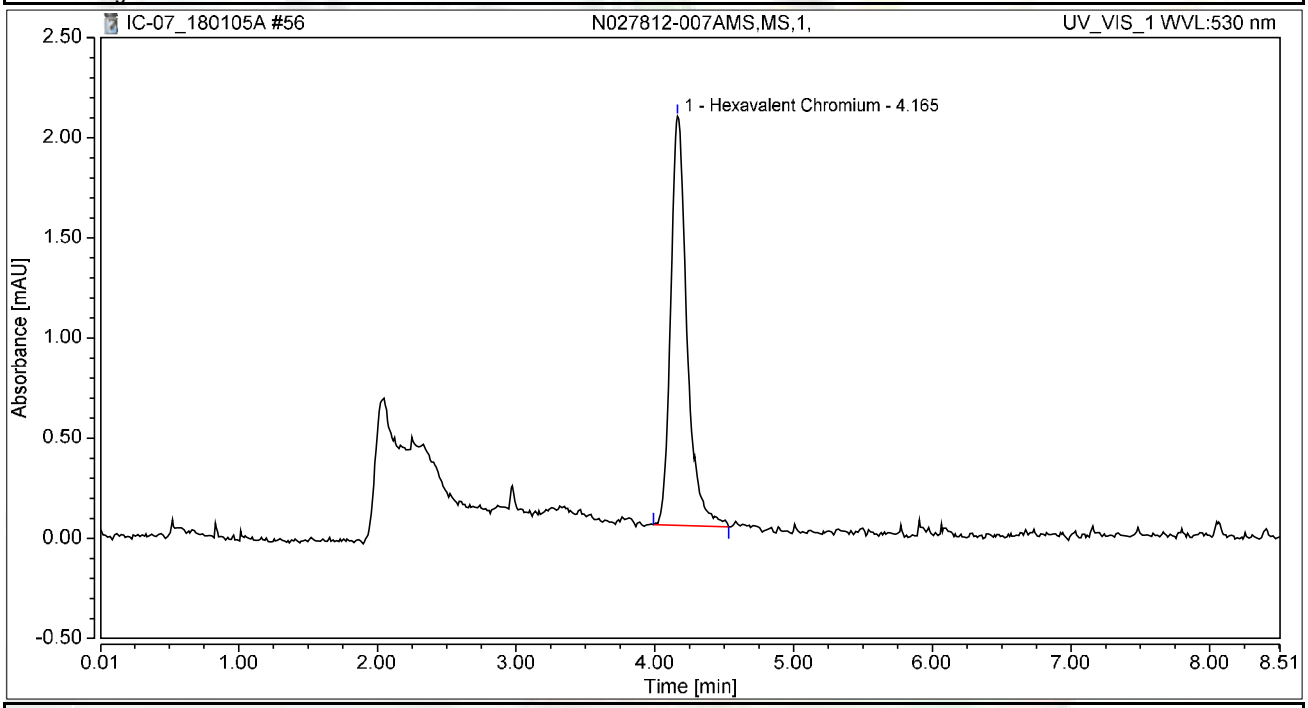
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.270	1.999	100.00	100.00	1.0552
Total:			**0.270**	**1.999**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

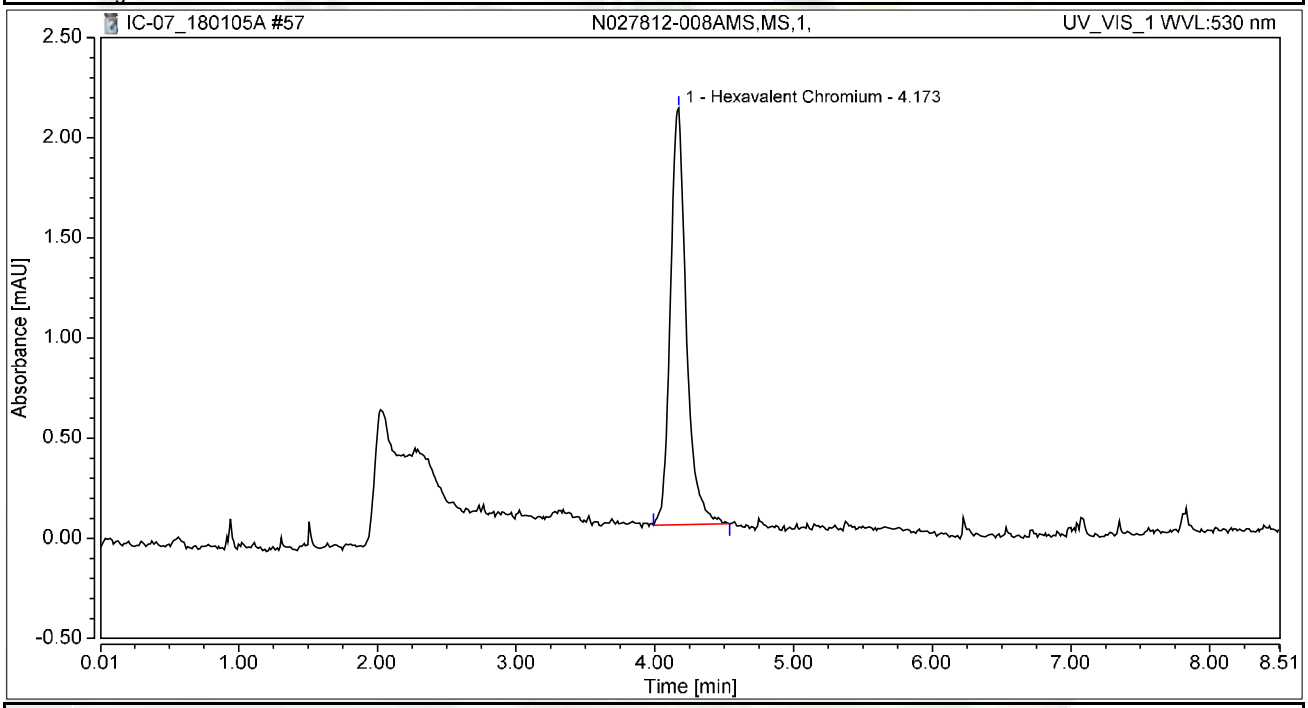
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.279	2.042	100.00	100.00	1.0904
Total:			**0.279**	**2.042**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

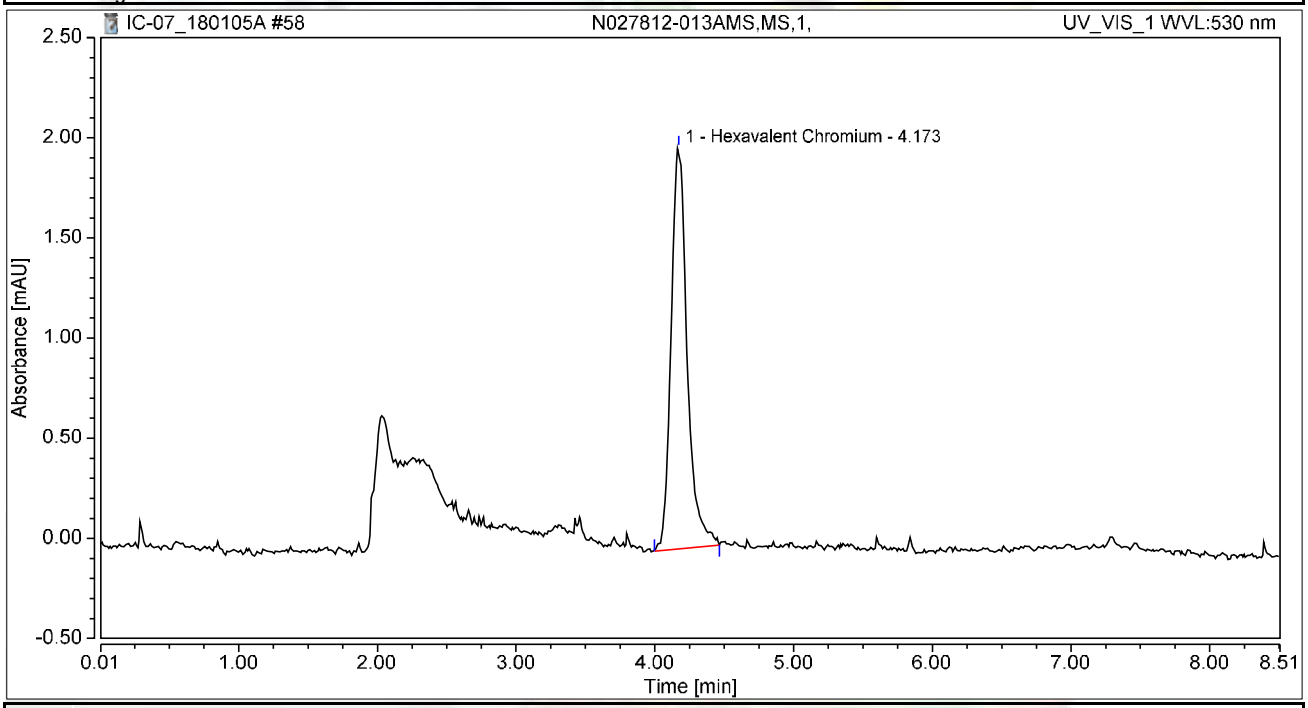
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.278	2.082	100.00	100.00	1.0863
Total:			**0.278**	**2.082**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

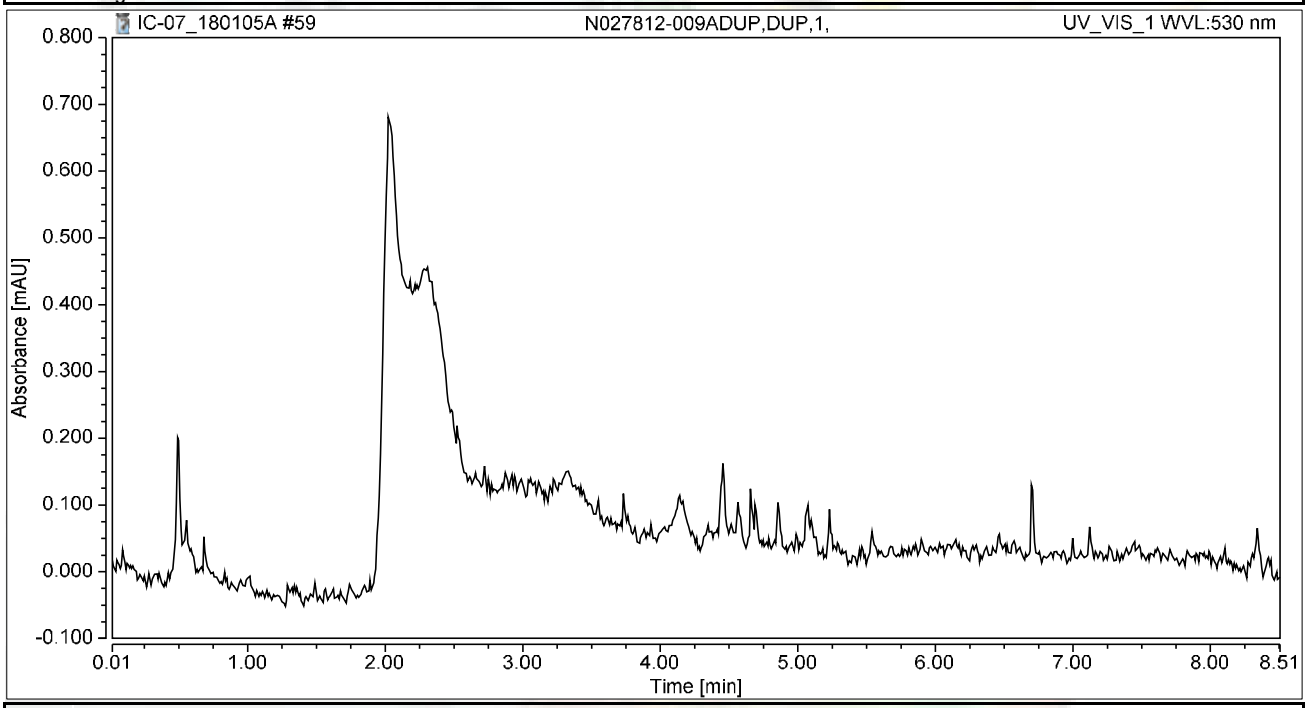
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.004	100.00	100.00	1.0557
Total:			**0.270**	**2.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-009ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

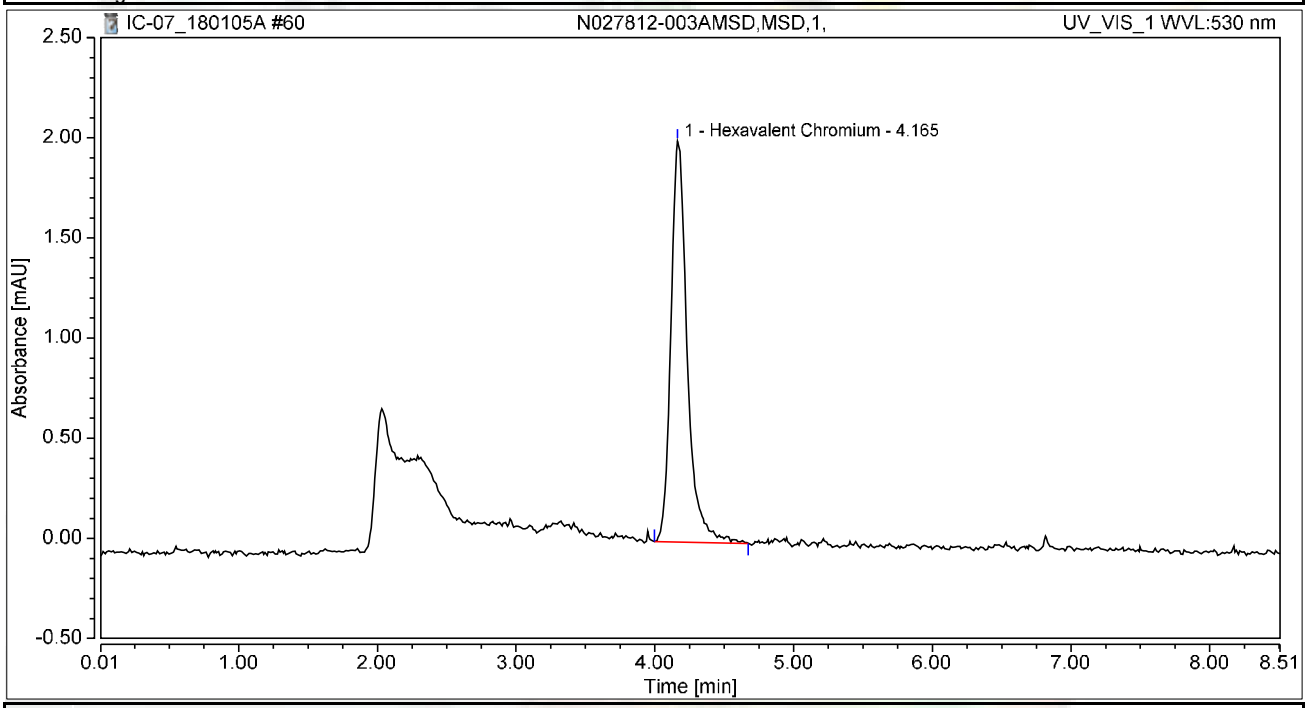
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-003AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 16:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

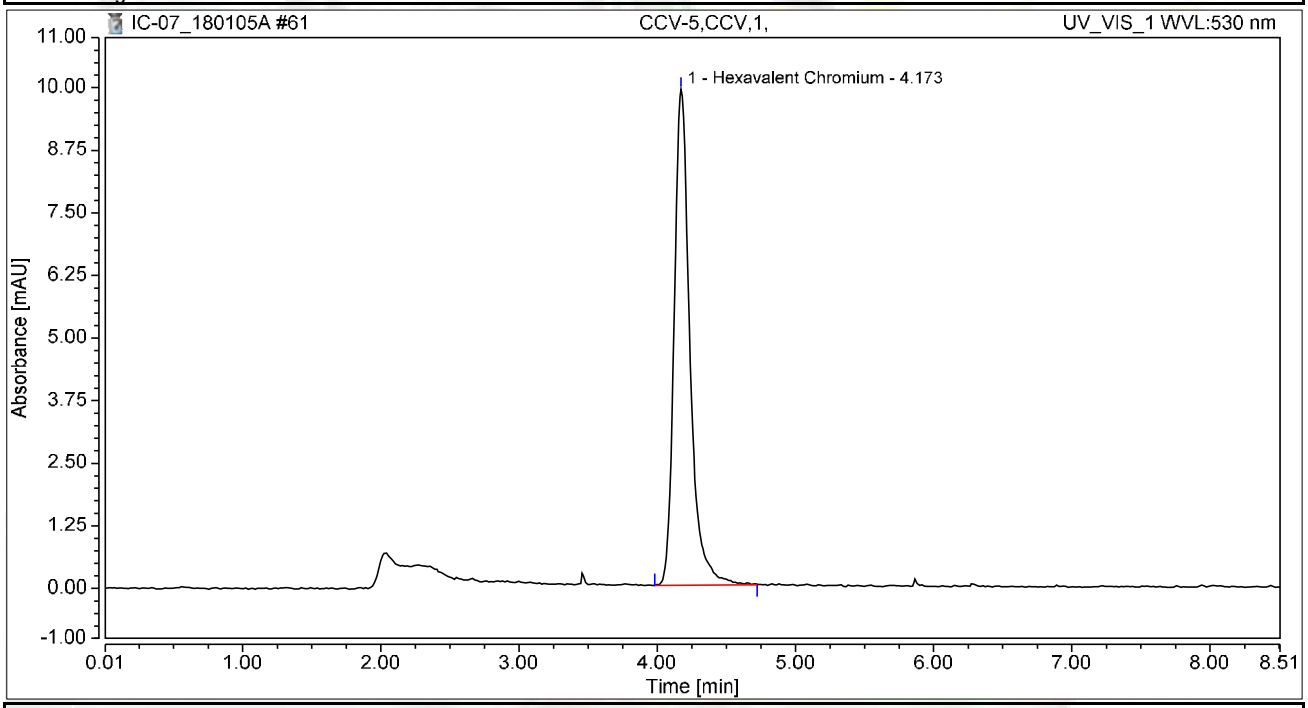
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.274	2.001	100.00	100.00	1.0698
Total:			**0.274**	**2.001**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

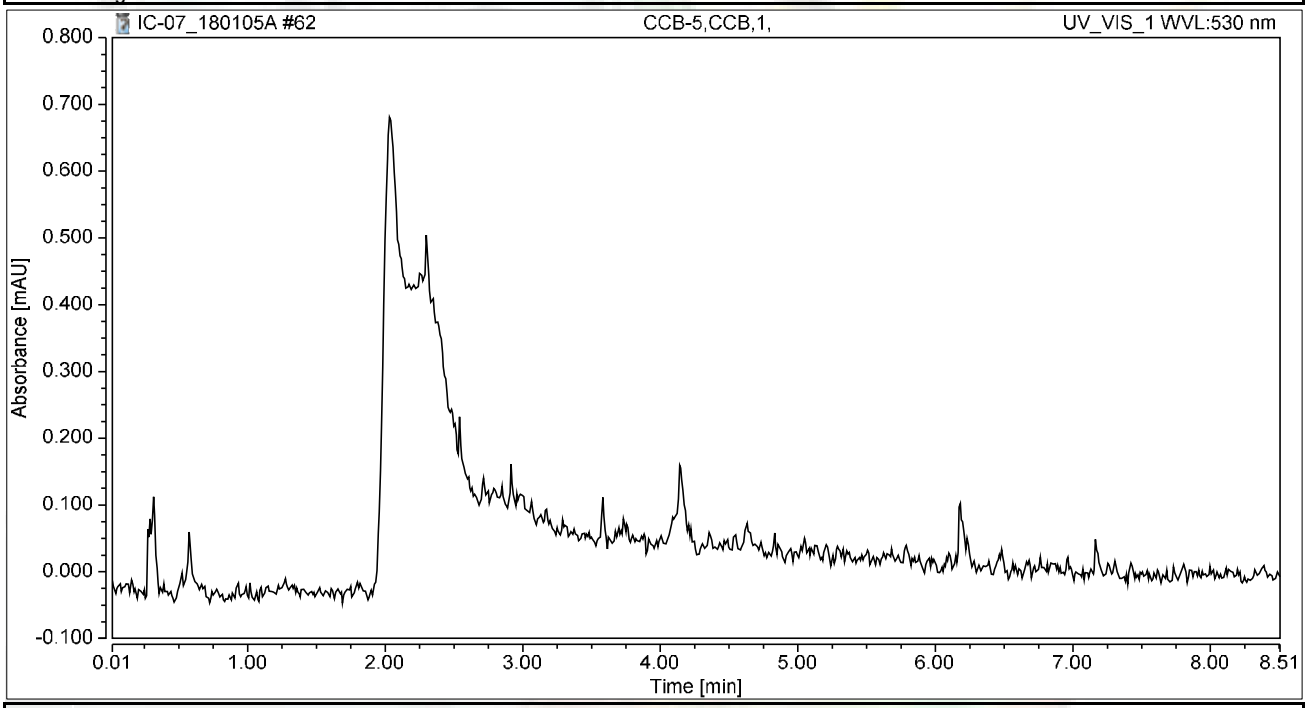
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.313	9.909	100.00	100.00	5.1339
Total:			**1.313**	**9.909**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

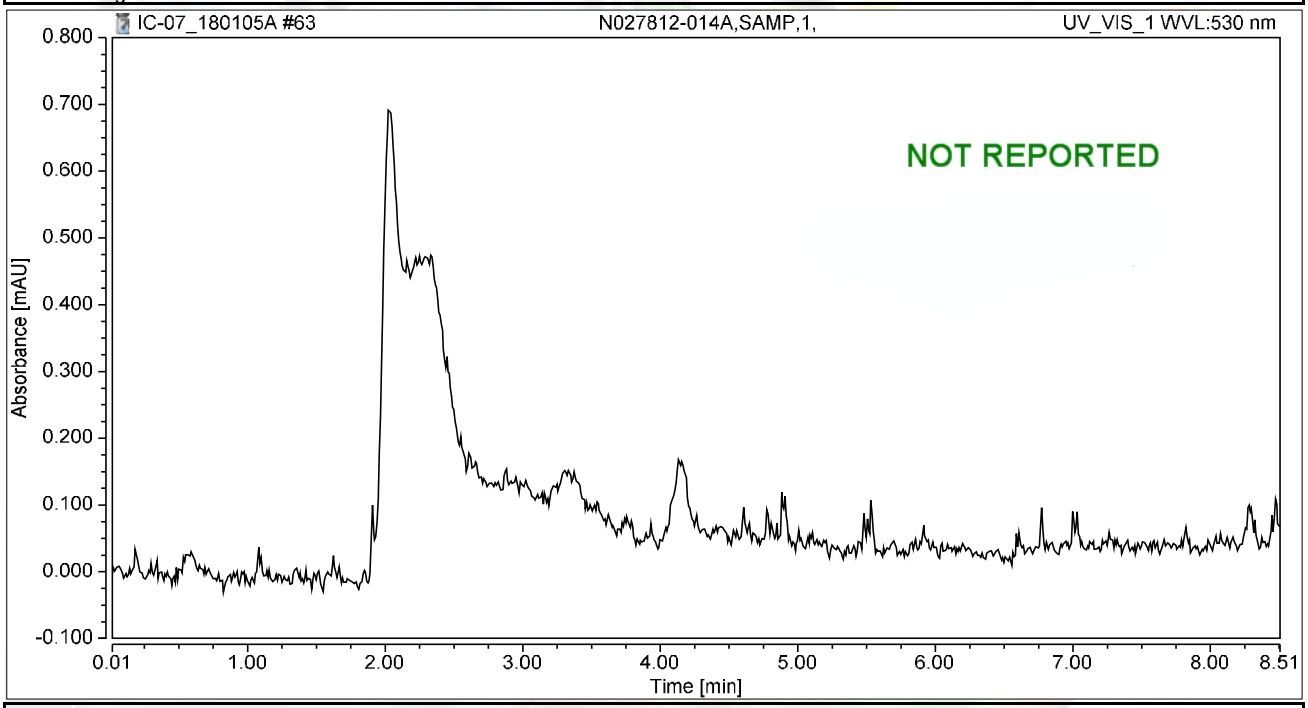
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

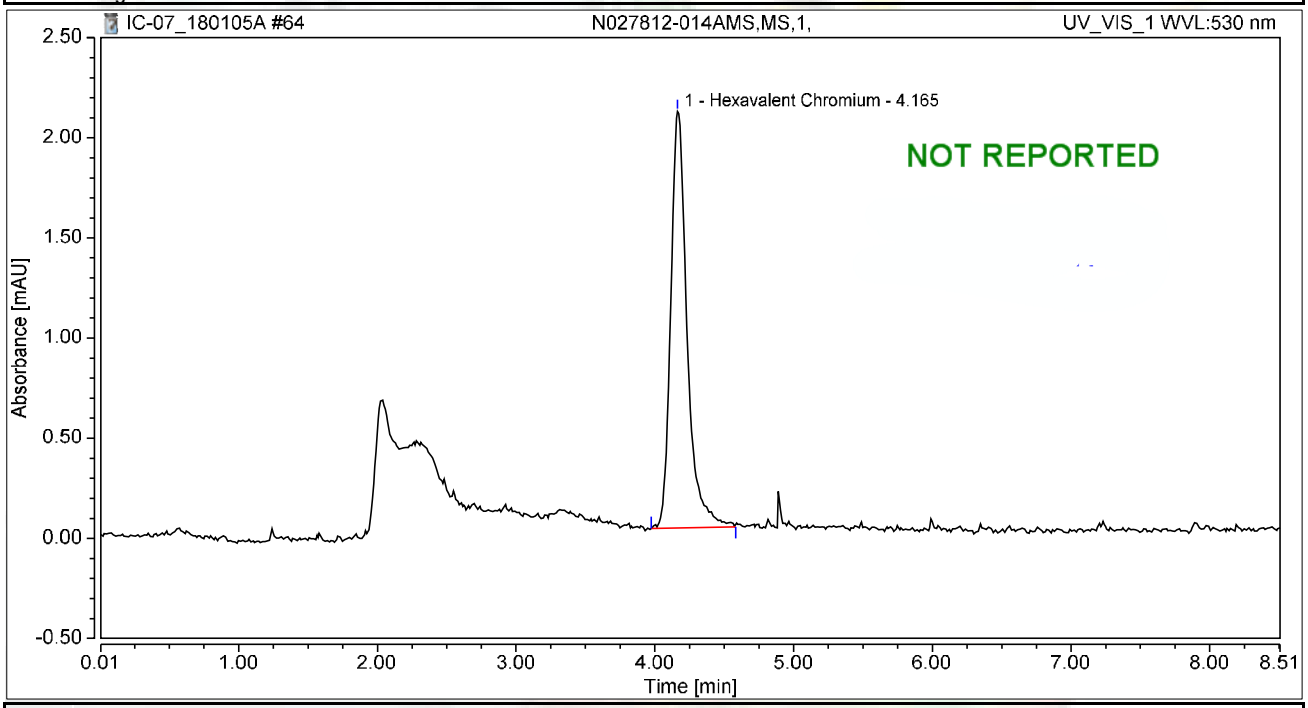
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

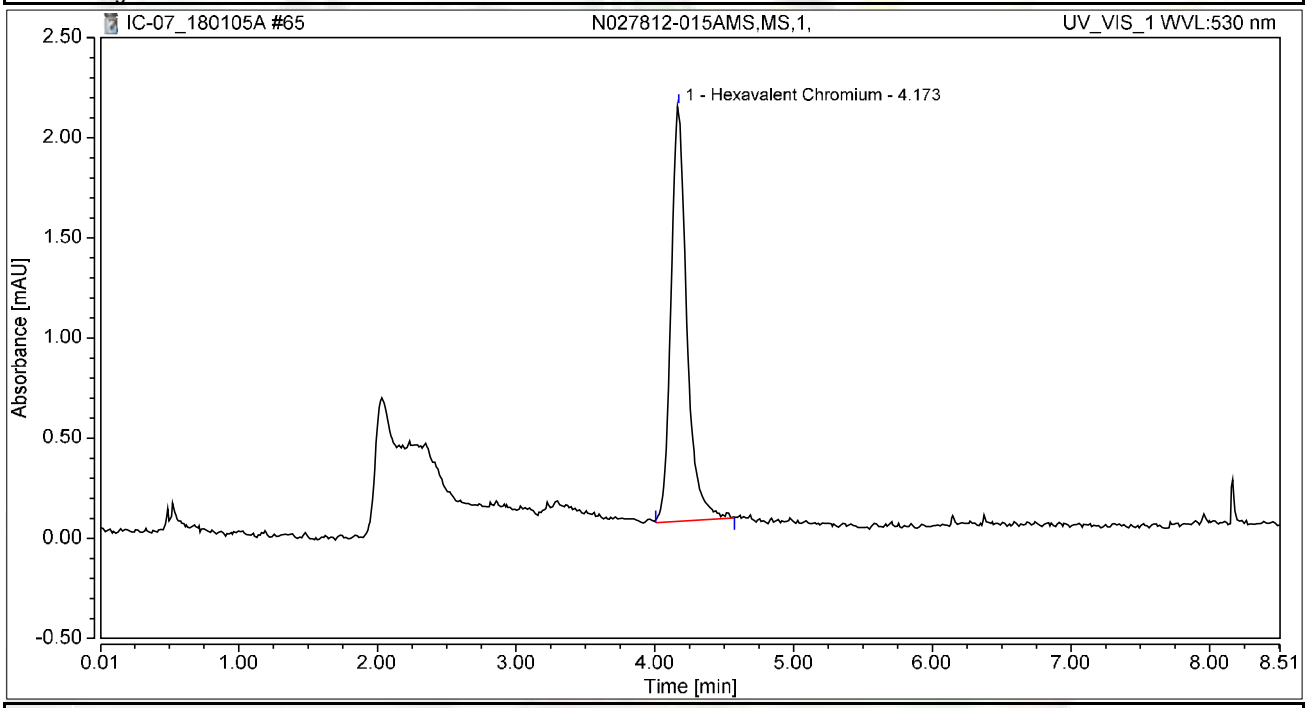
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.284	2.079	100.00	100.00	1.1108
Total:			**0.284**	**2.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

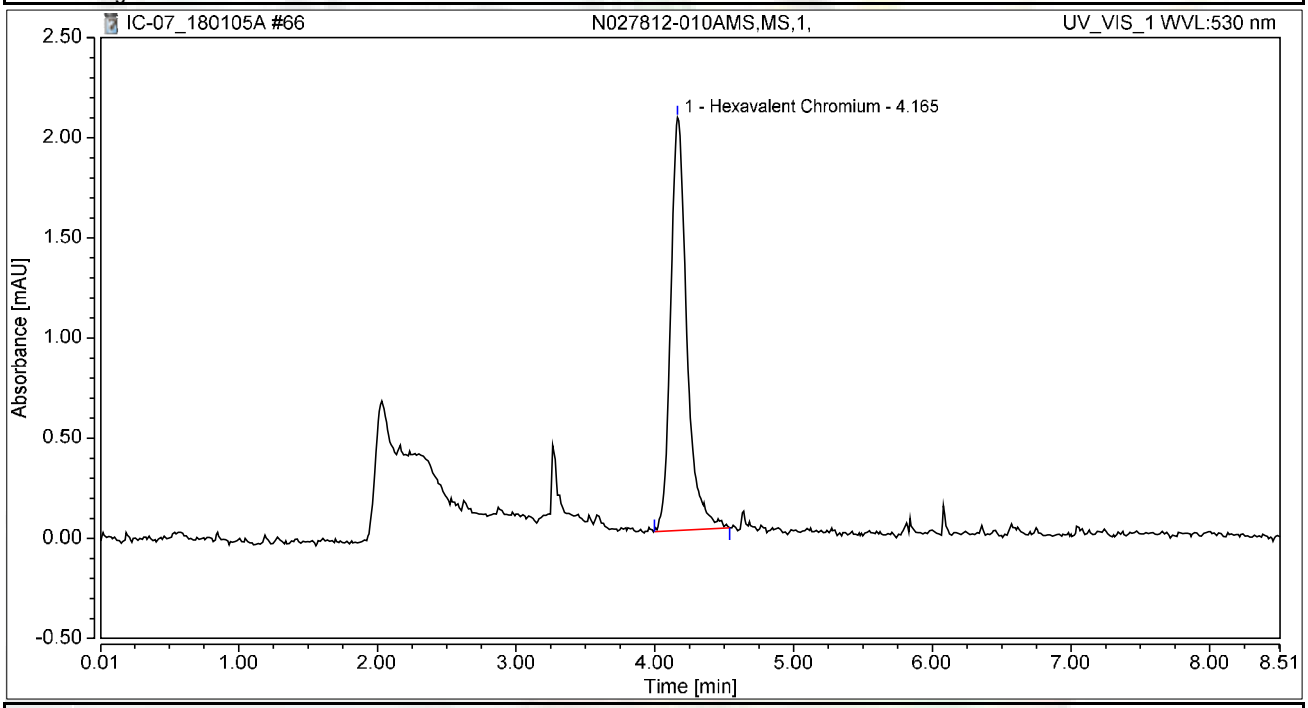
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.072	100.00	100.00	1.0777
Total:			**0.276**	**2.072**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

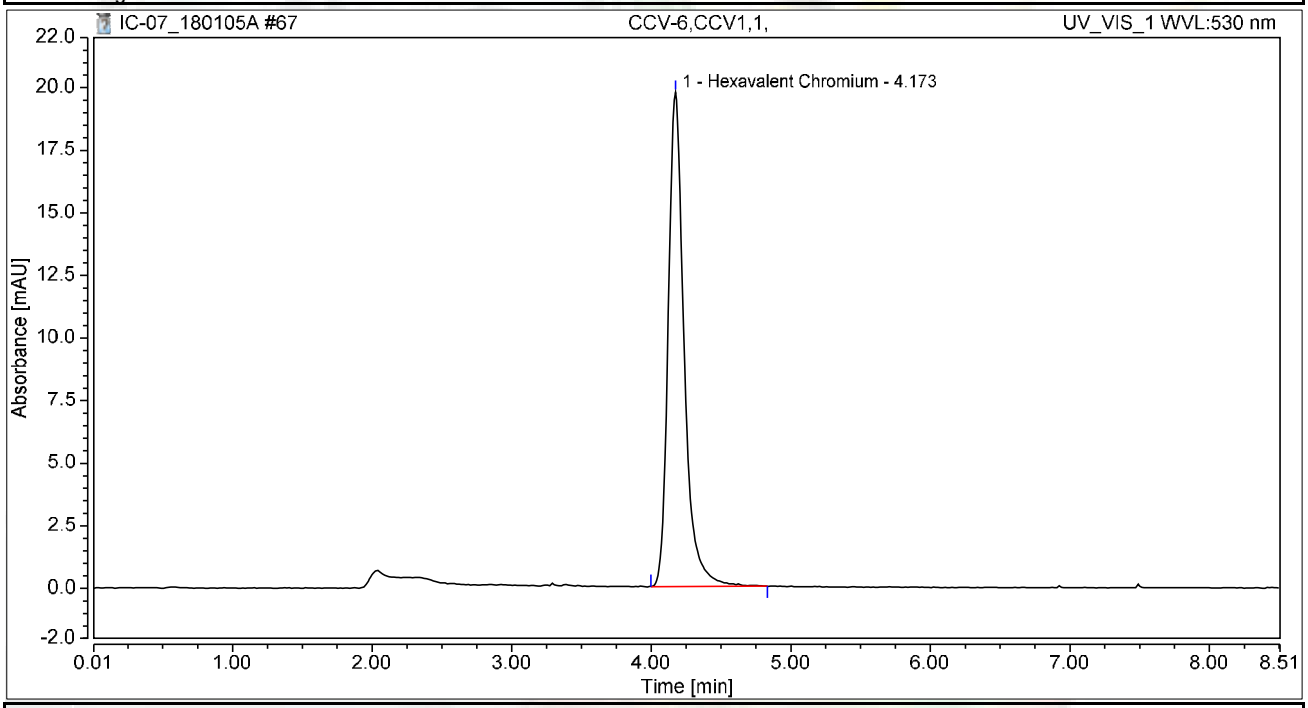
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.279	2.062	100.00	100.00	1.0927
Total:			**0.279**	**2.062**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

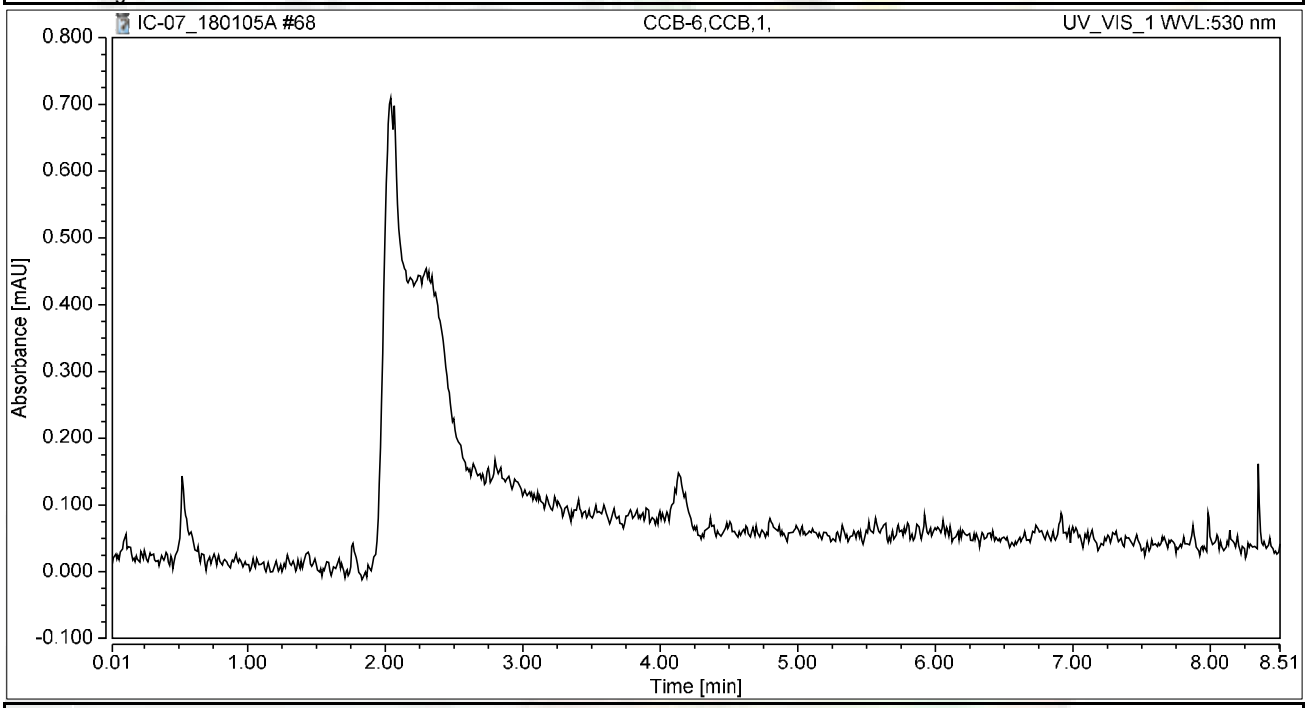
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.611	19.732	100.00	100.00	10.2107
Total:			**2.611**	**19.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180102_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

01/12/2018

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMF	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMF	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMF	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMF	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMF	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMF	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMF	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMF	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMF	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMF	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMF	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMF	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMF	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMF	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMF	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMF	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMF	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMF	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

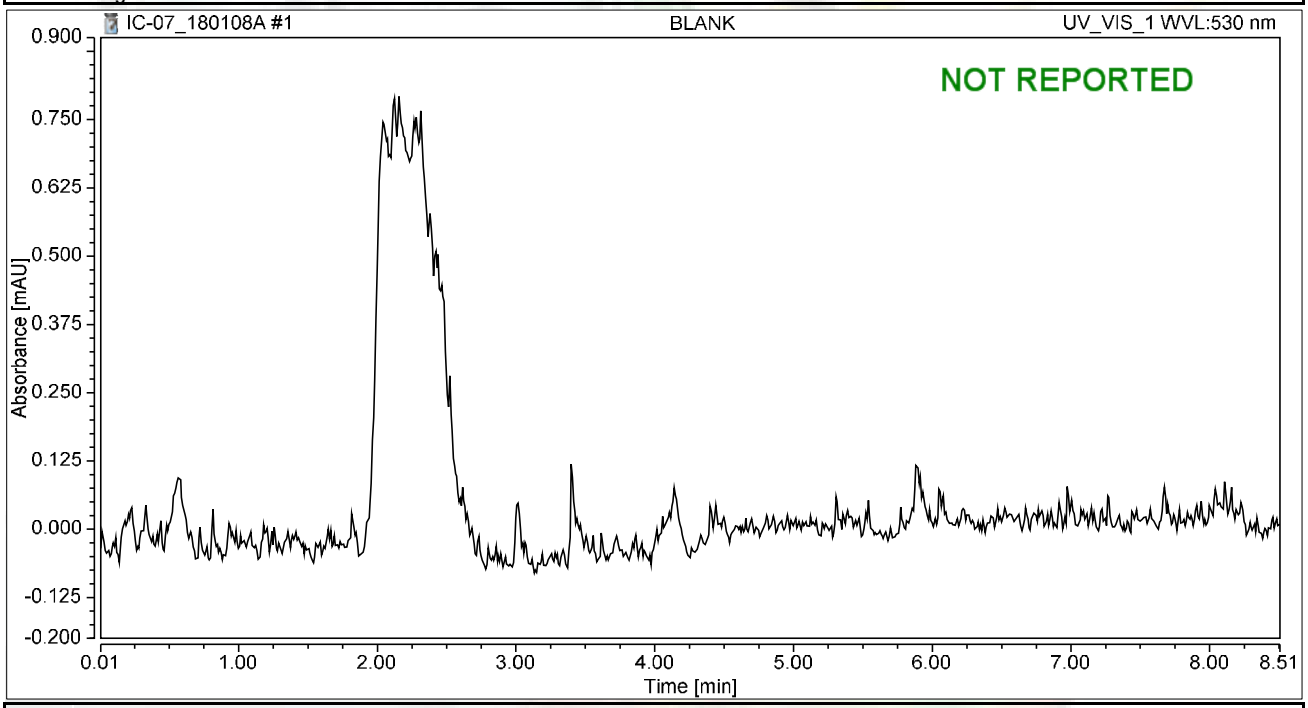
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

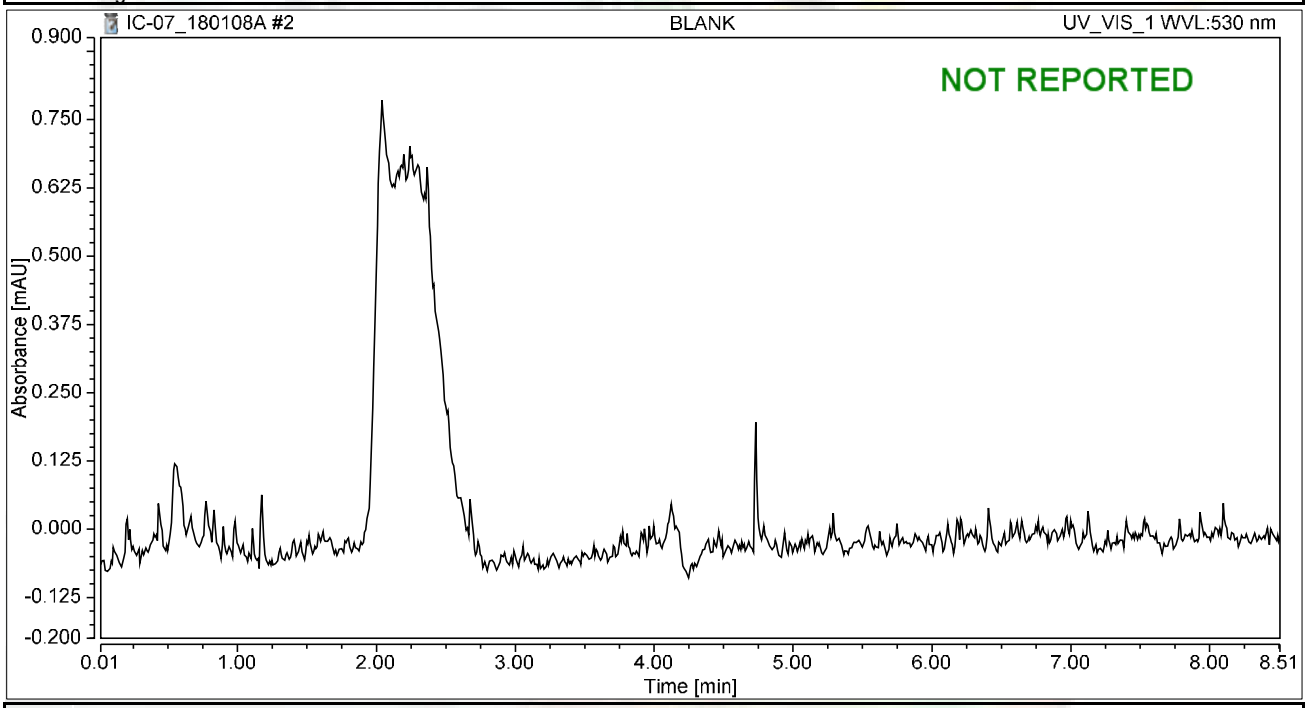
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

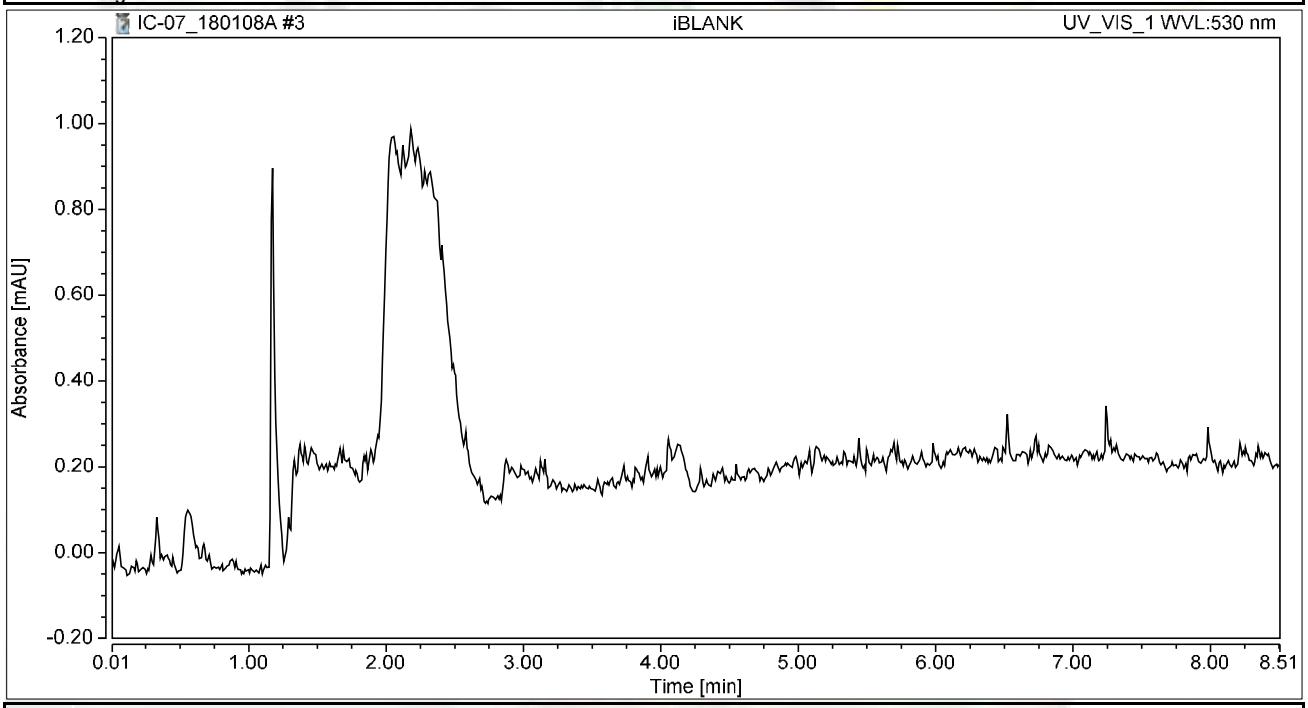
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

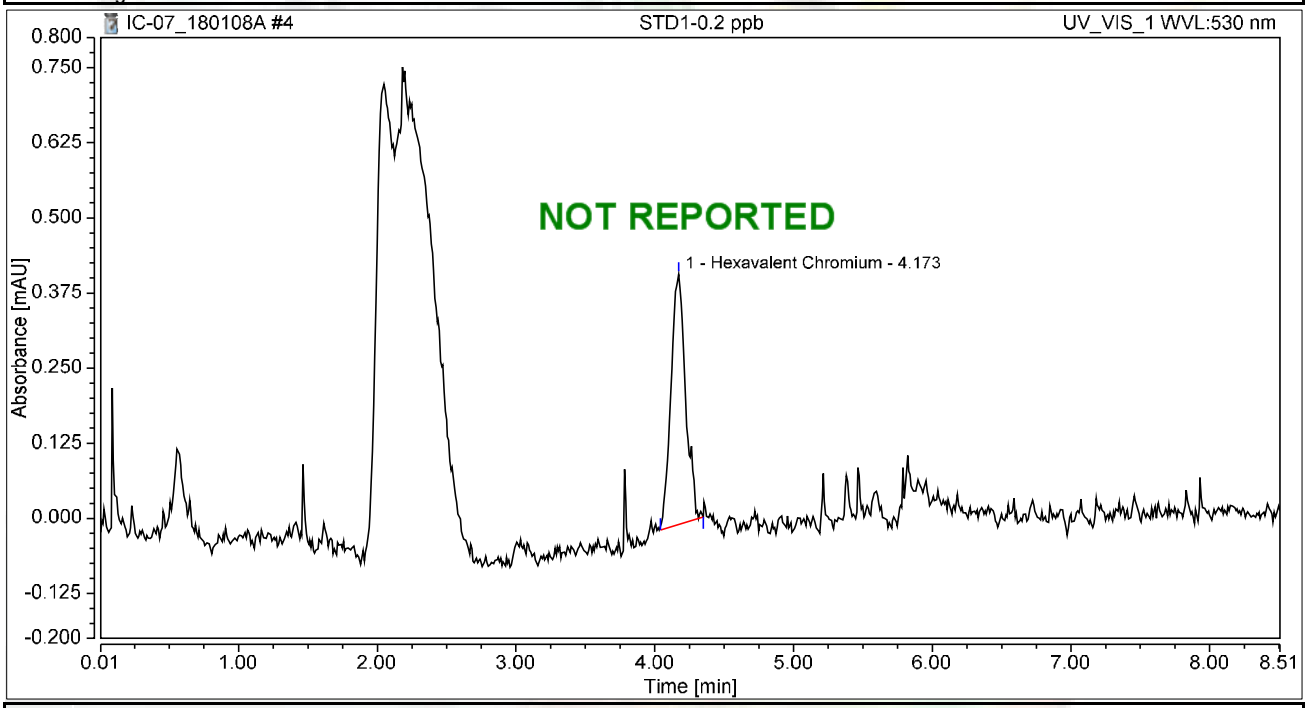
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

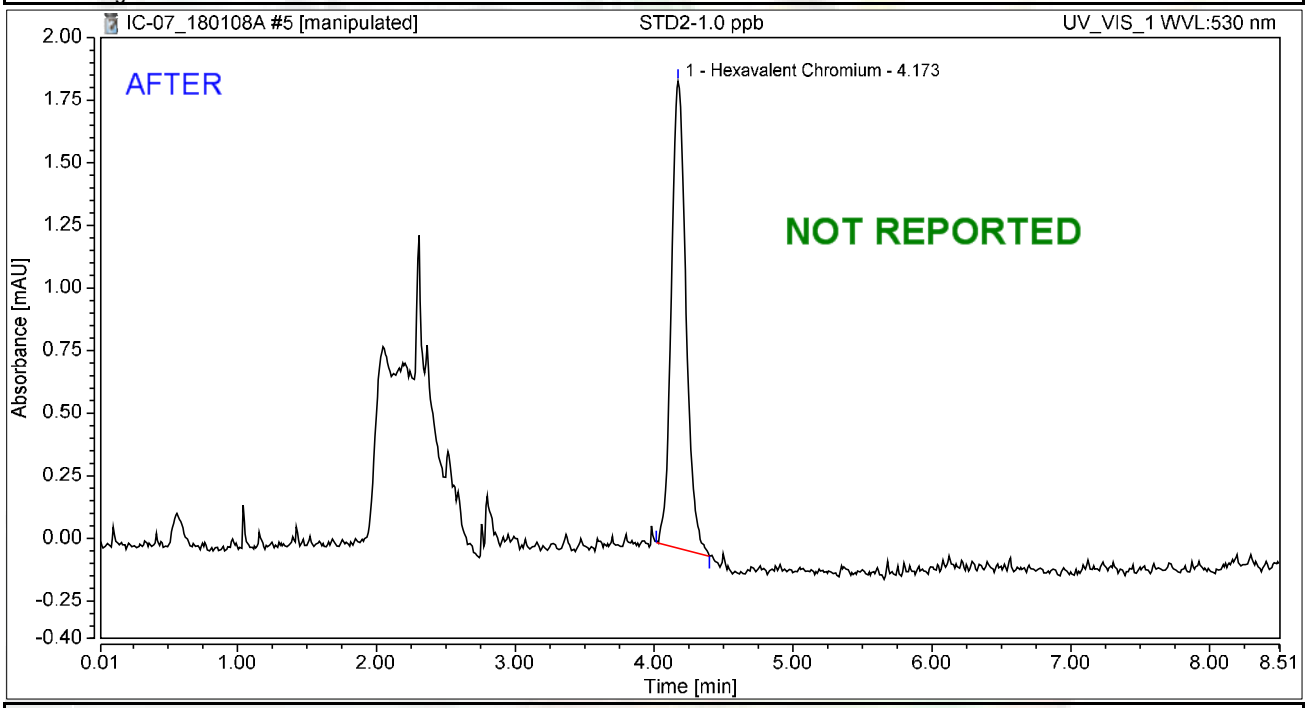
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.051	0.416	100.00	100.00	0.1983
Total:			**0.051**	**0.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.229	1.865	100.00	100.00	0.8962
Total:			**0.229**	**1.865**	**100.00**	**100.00**	

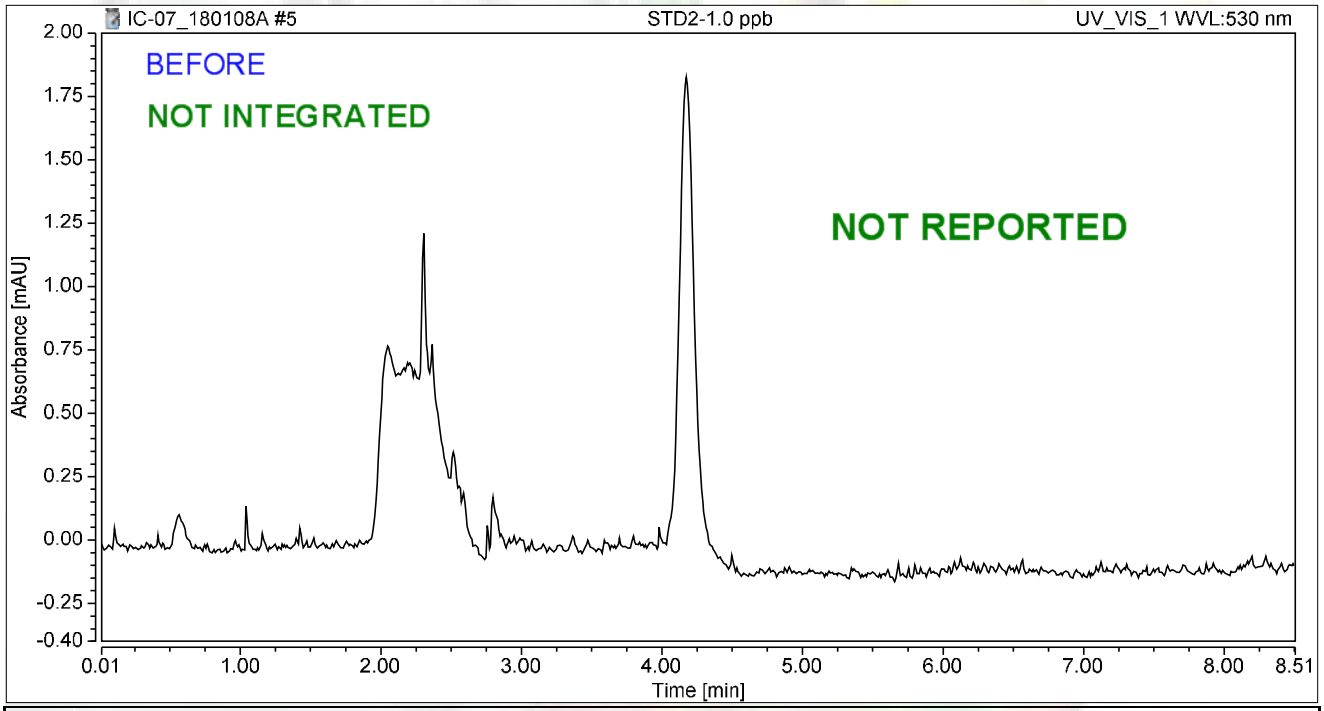
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

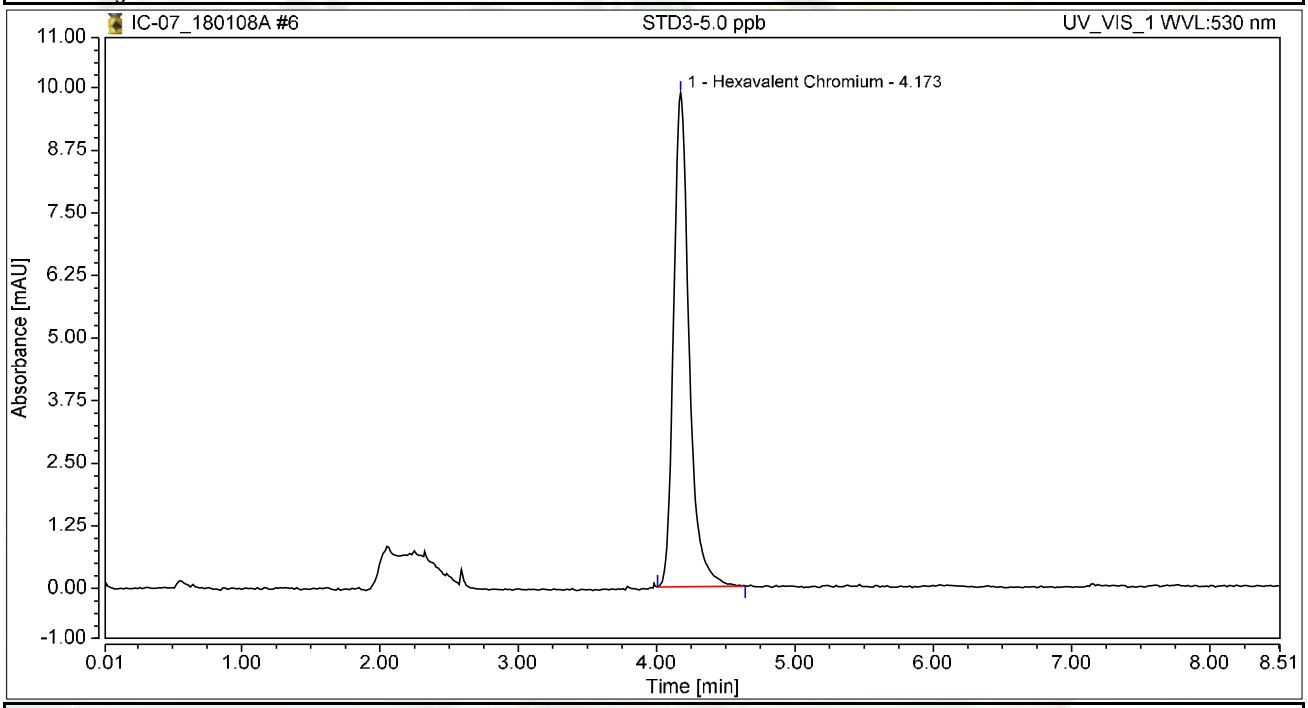
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

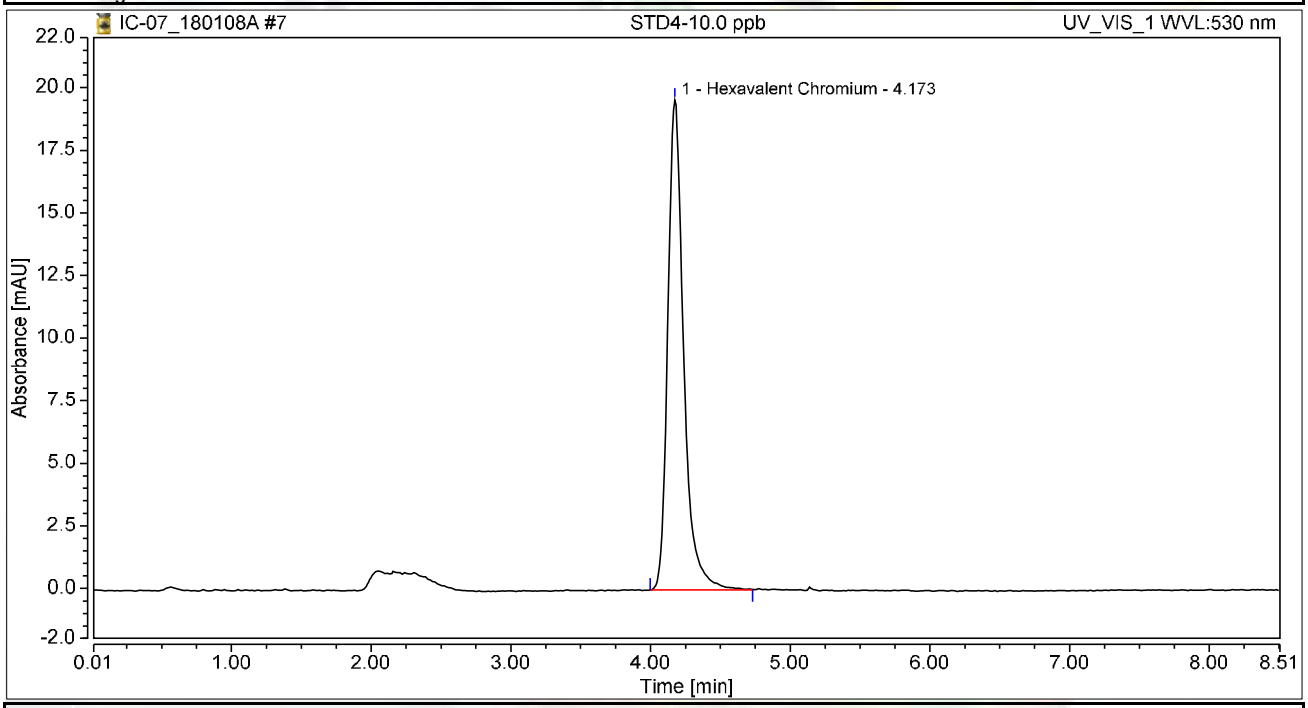
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.286	9.861	100.00	100.00	5.0280
Total:			**1.286**	**9.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

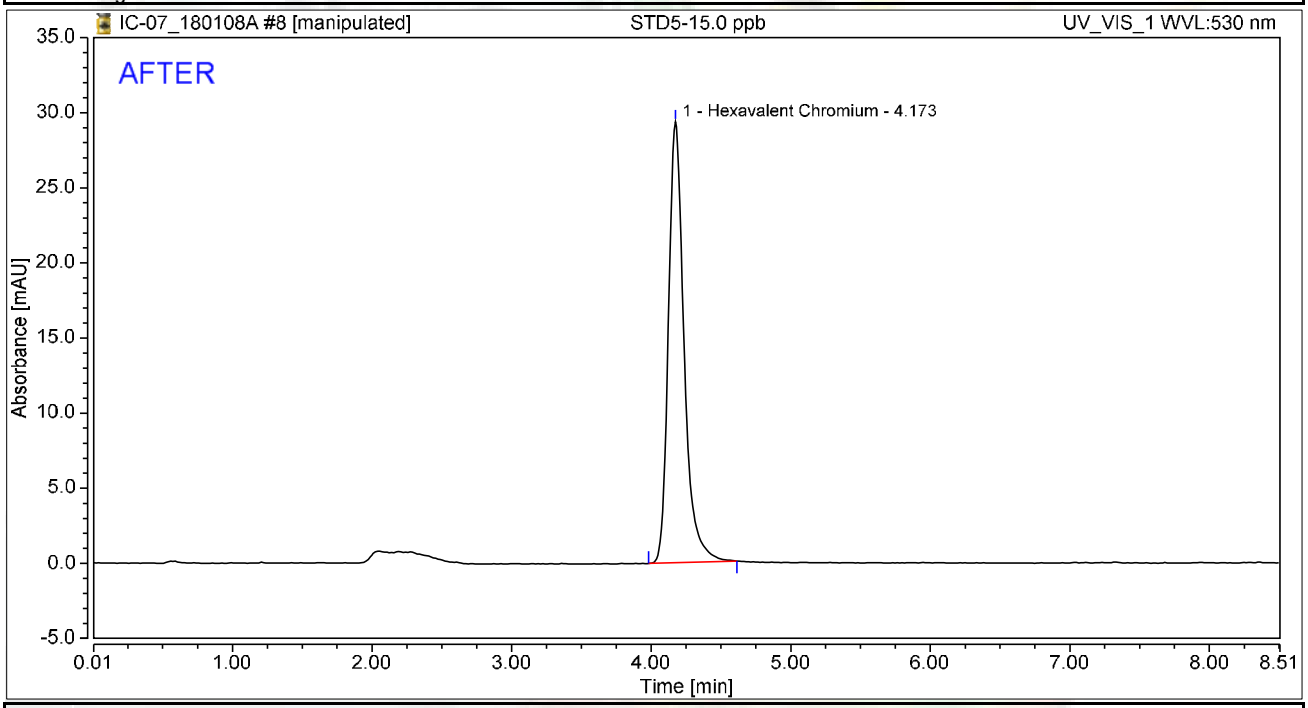
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.569	19.568	100.00	100.00	10.0465
Total:			**2.569**	**19.568**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.826	29.356	100.00	100.00	14.9645
Total:			**3.826**	**29.356**	**100.00**	**100.00**	

rba 1/10/2018

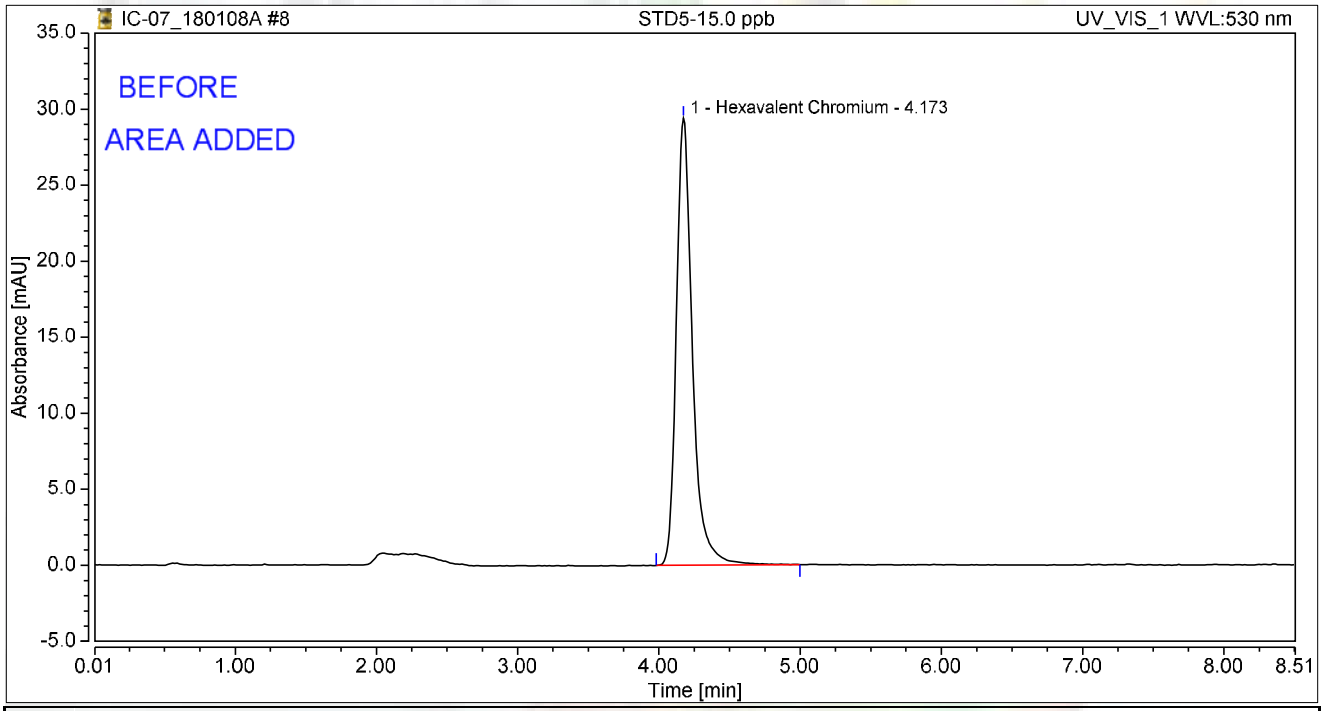
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.876	29.388	100.00	100.00	14.9767
Total:			**3.876**	**29.388**	**100.00**	**100.00**	

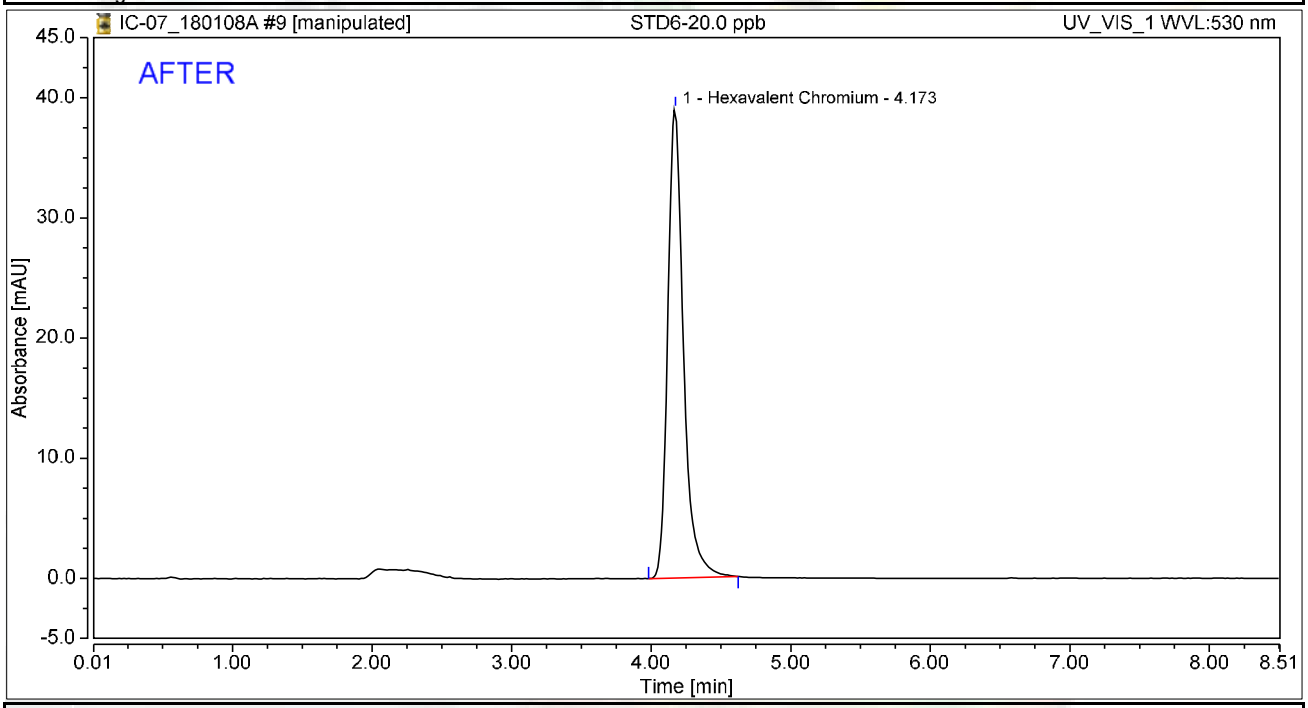
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.113	39.057	100.00	100.00	19.9973
Total:			**5.113**	**39.057**	**100.00**	**100.00**	

rba 1/10/2018

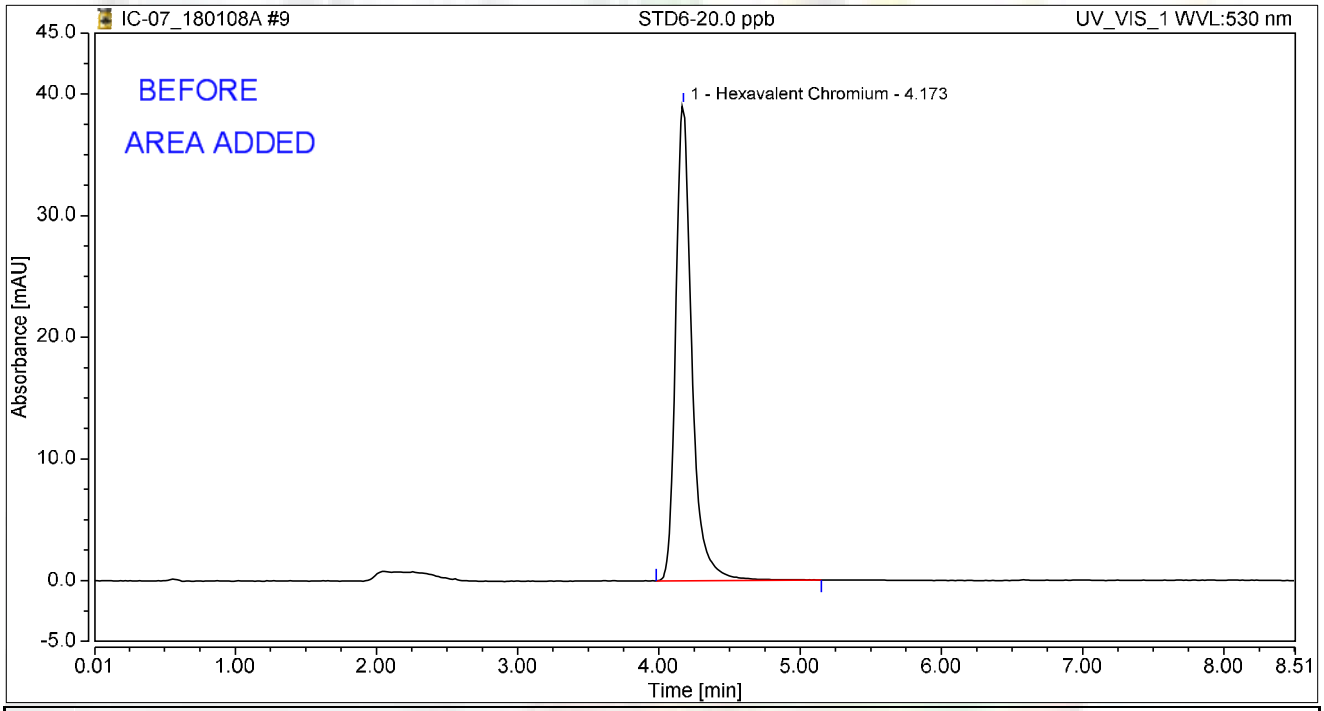
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.193	39.103	100.00	100.00	20.0648
Total:			**5.193**	**39.103**	**100.00**	**100.00**	

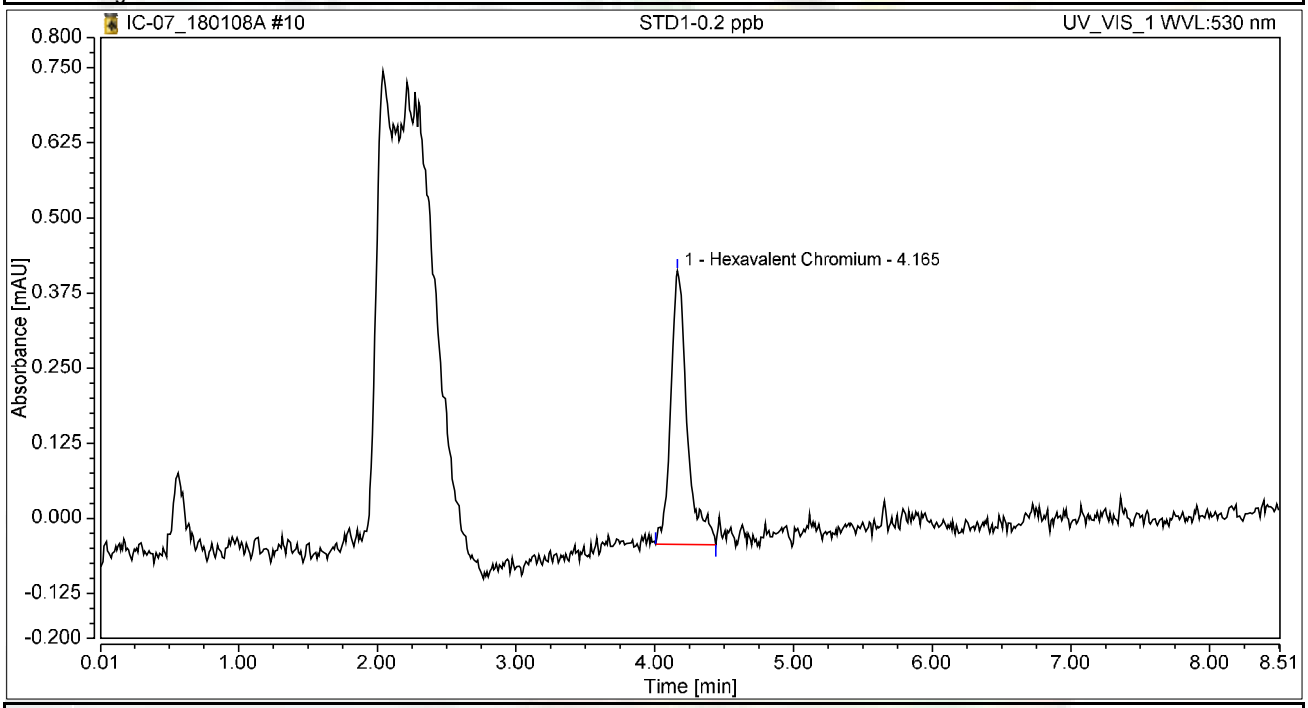
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

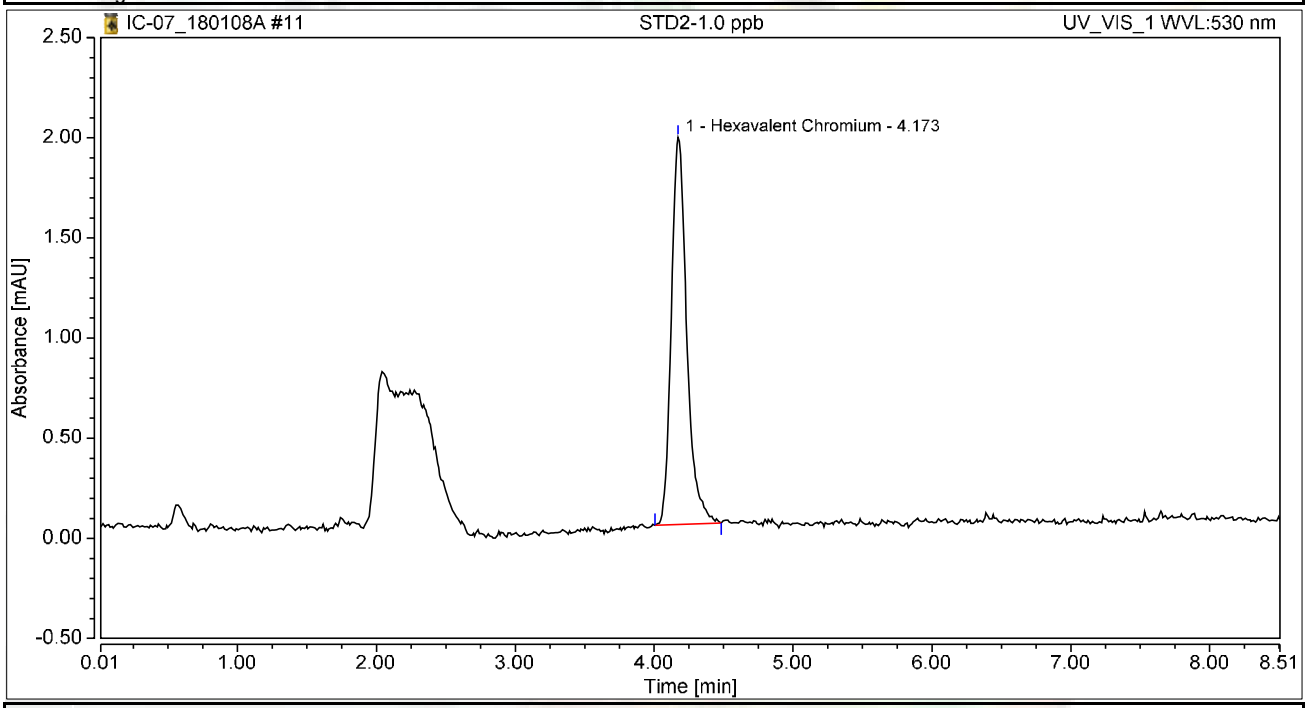
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.062	0.455	100.00	100.00	0.2434
Total:			**0.062**	**0.455**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



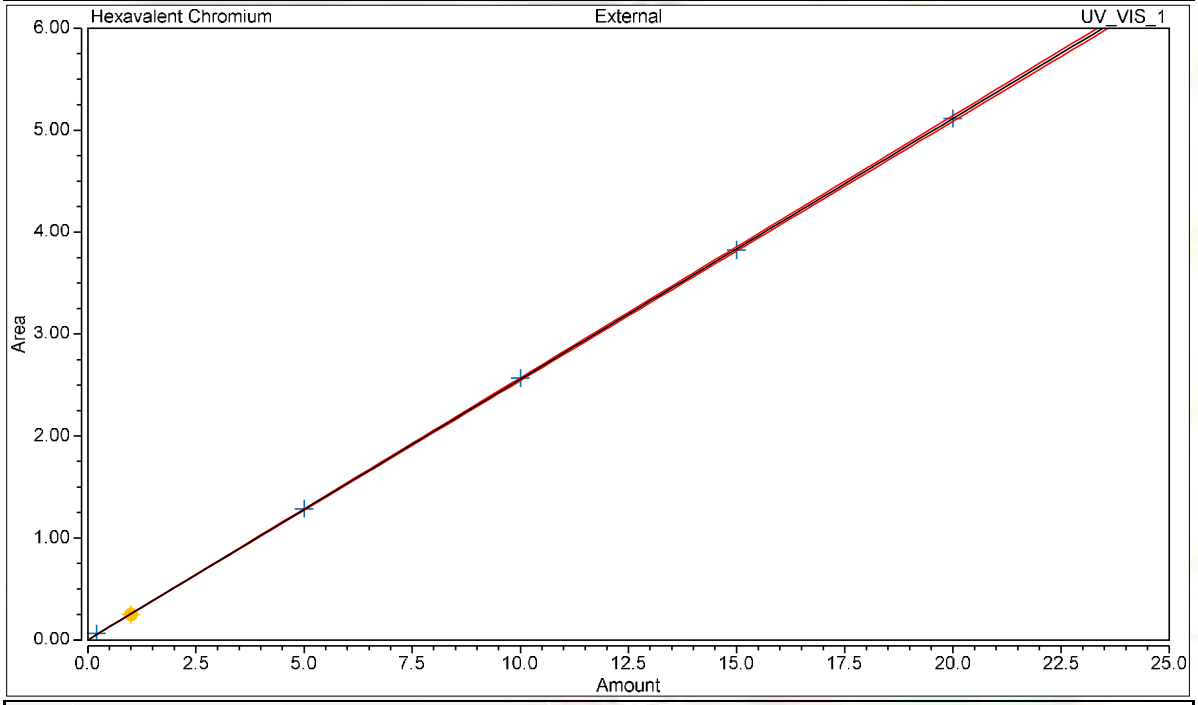
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.249	1.933	100.00	100.00	0.9728
Total:			**0.249**	**1.933**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2557
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

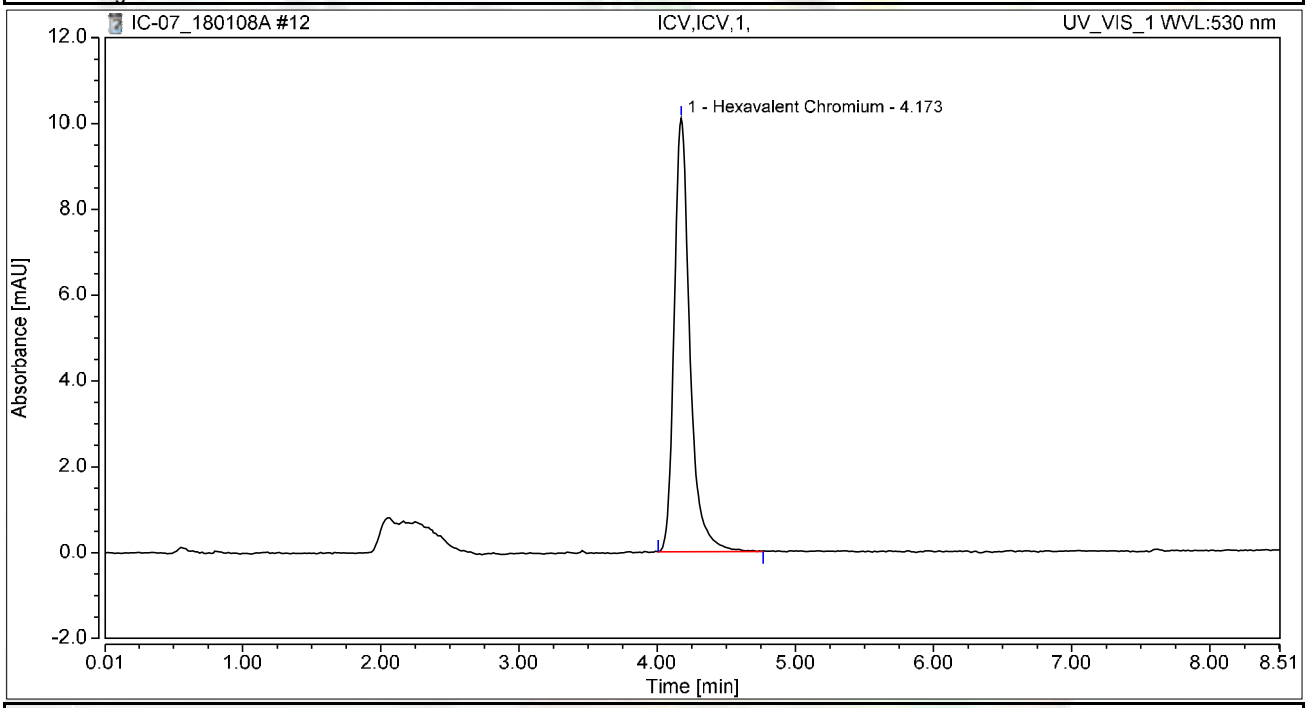
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD3-5.0 ppb	03	5.0000	1.2856	1.286	9.861
7	STD4-10.0 ppb	04	10.0000	2.5688	2.569	19.568
8	STD5-15.0 ppb	05	15.0000	3.8263	3.826	29.356
9	STD6-20.0 ppb	06	20.0000	5.1131	5.113	39.057
10	STD1-0.2 ppb	01	0.2000	0.0622	0.062	0.455
11	STD2-1.0 ppb	02	1.0000	0.2487	0.249	1.933

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

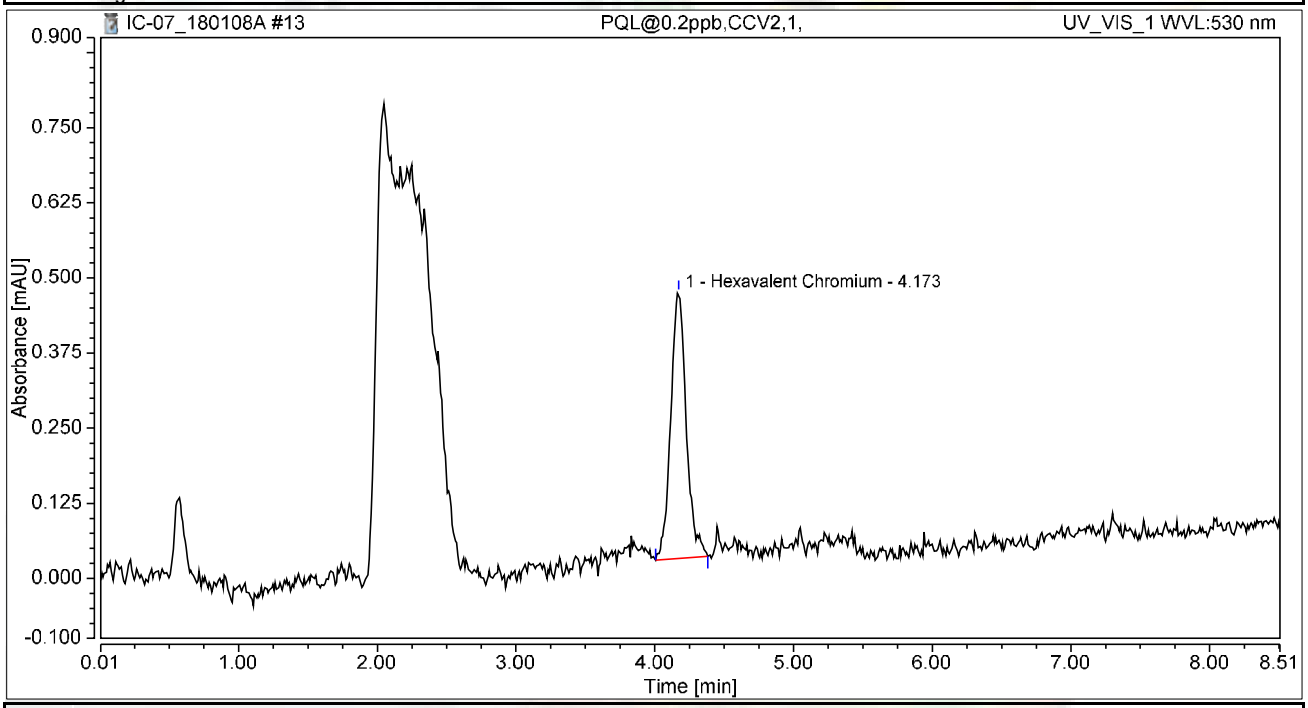
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

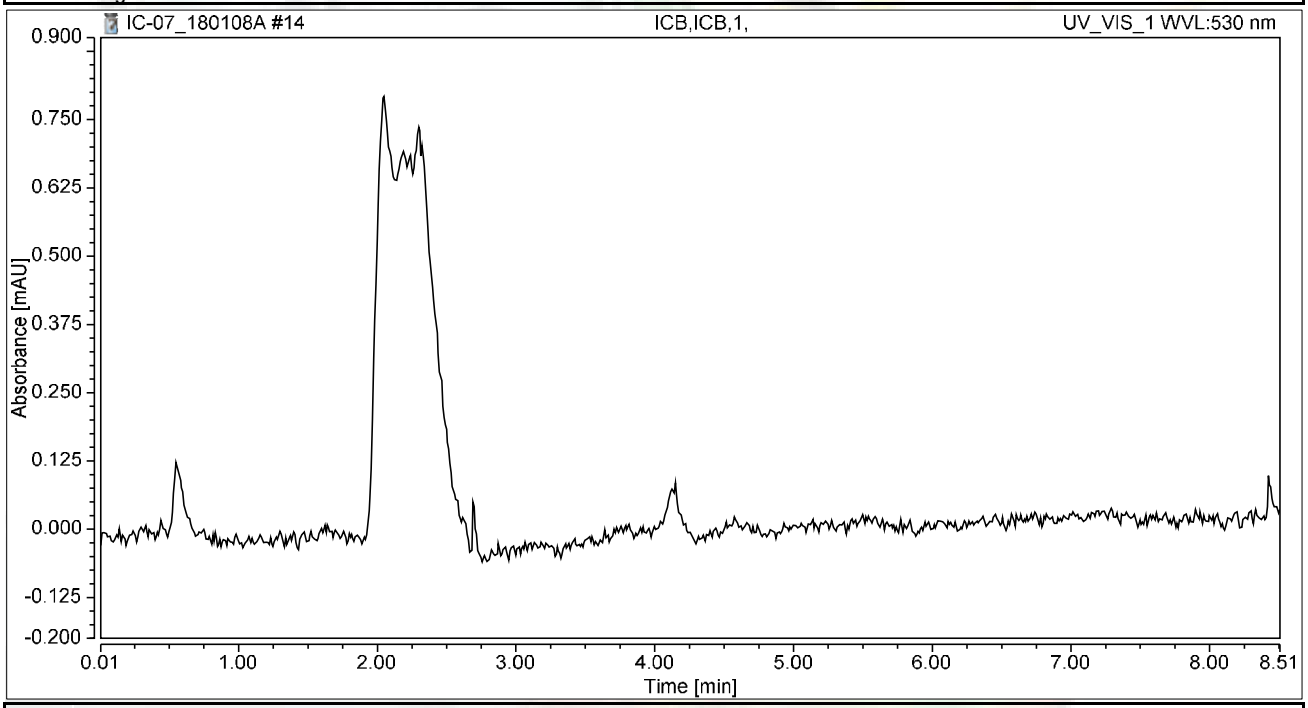
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

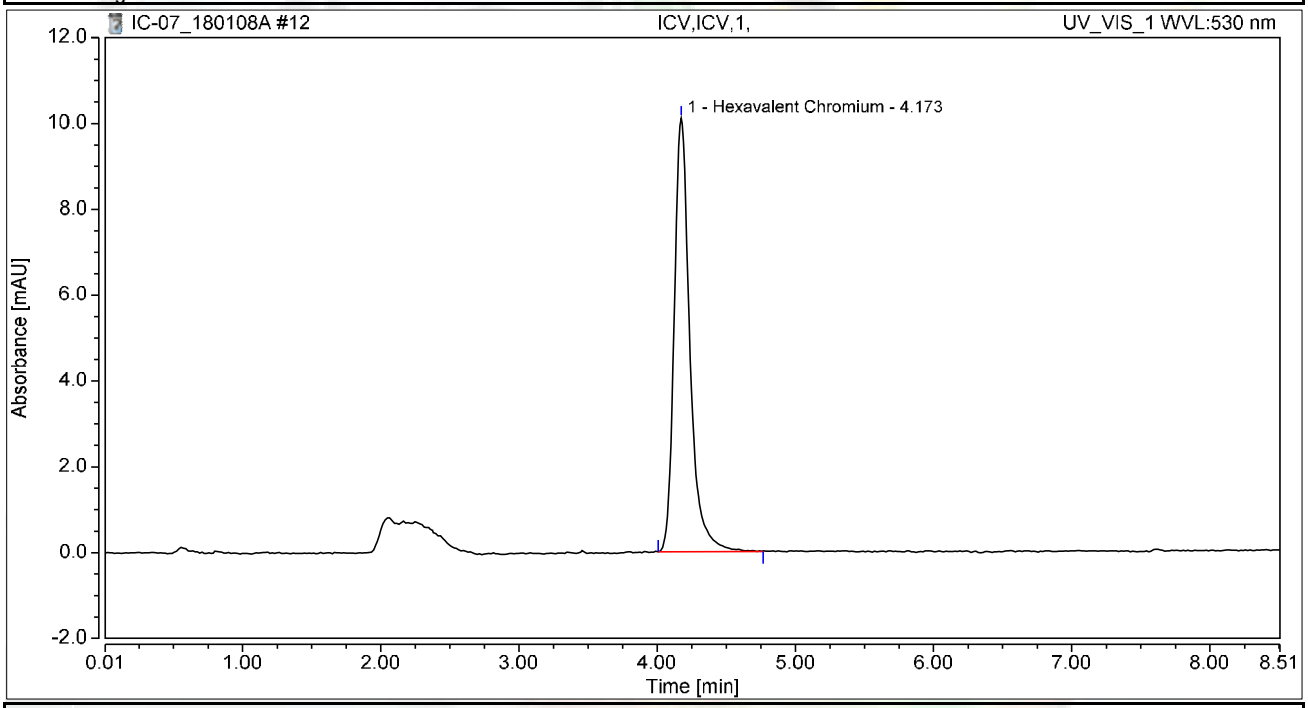
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

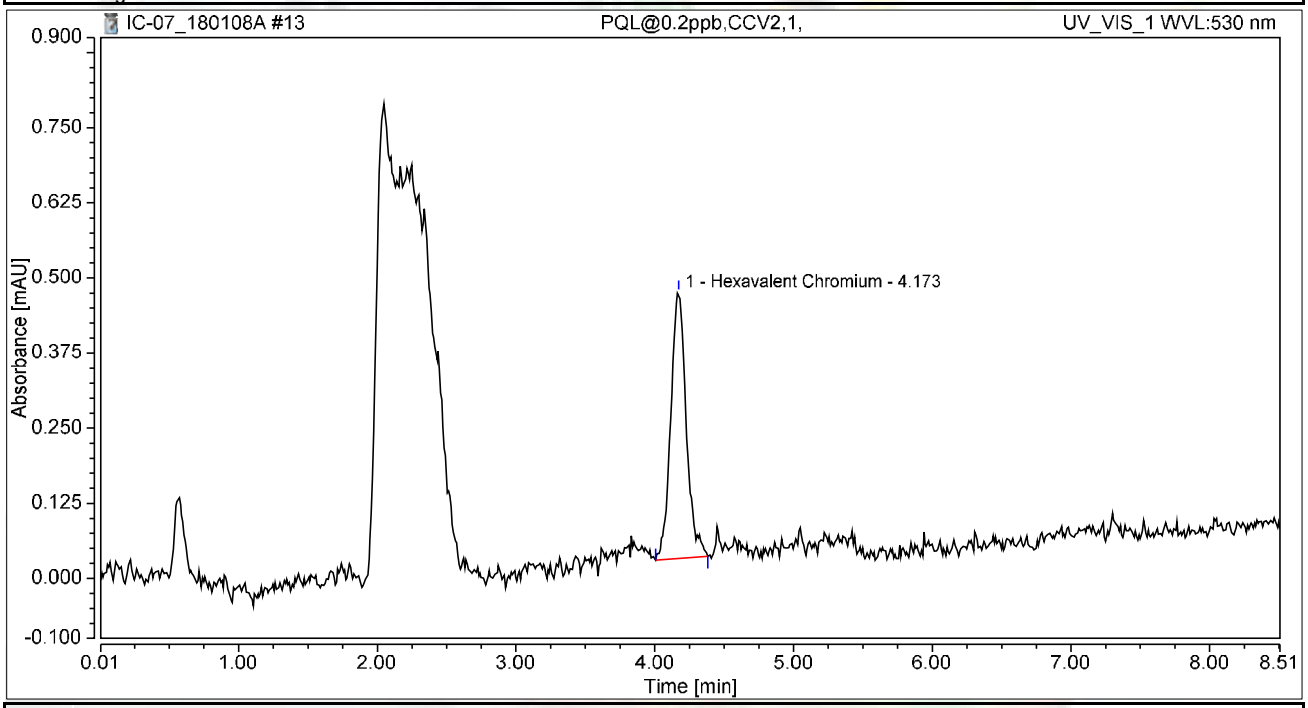
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

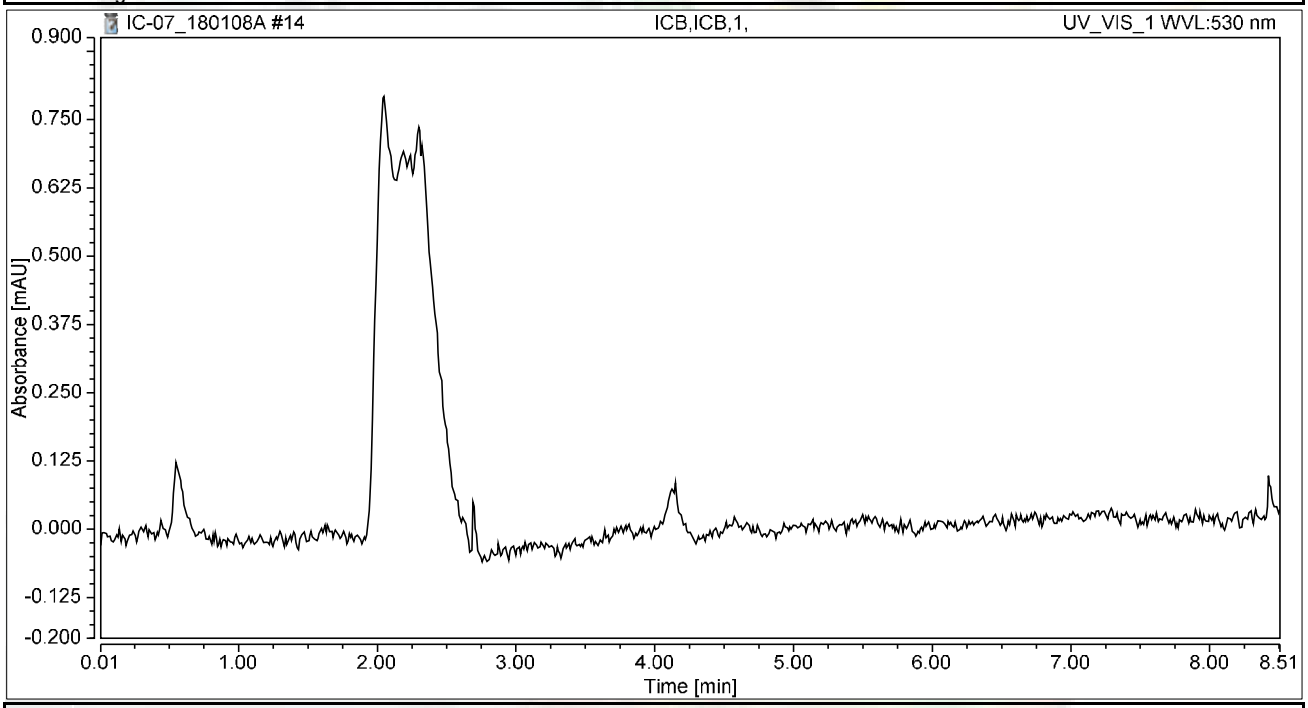
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

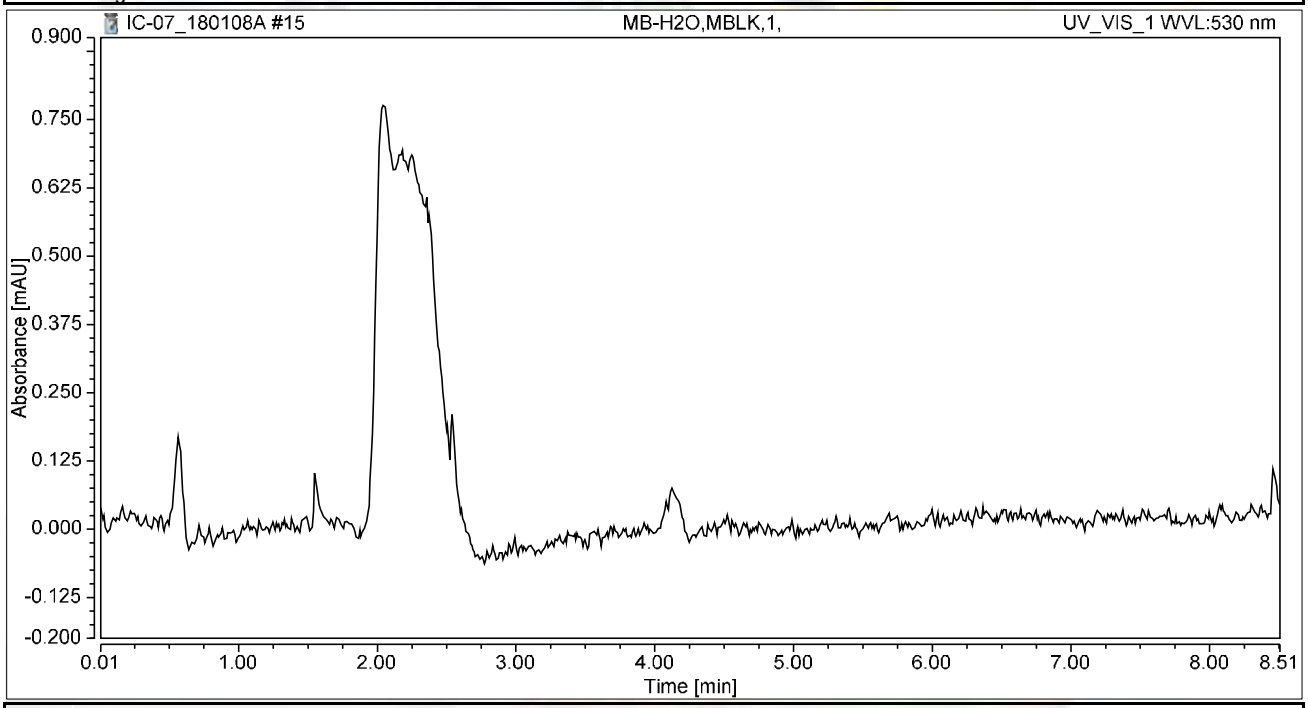
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

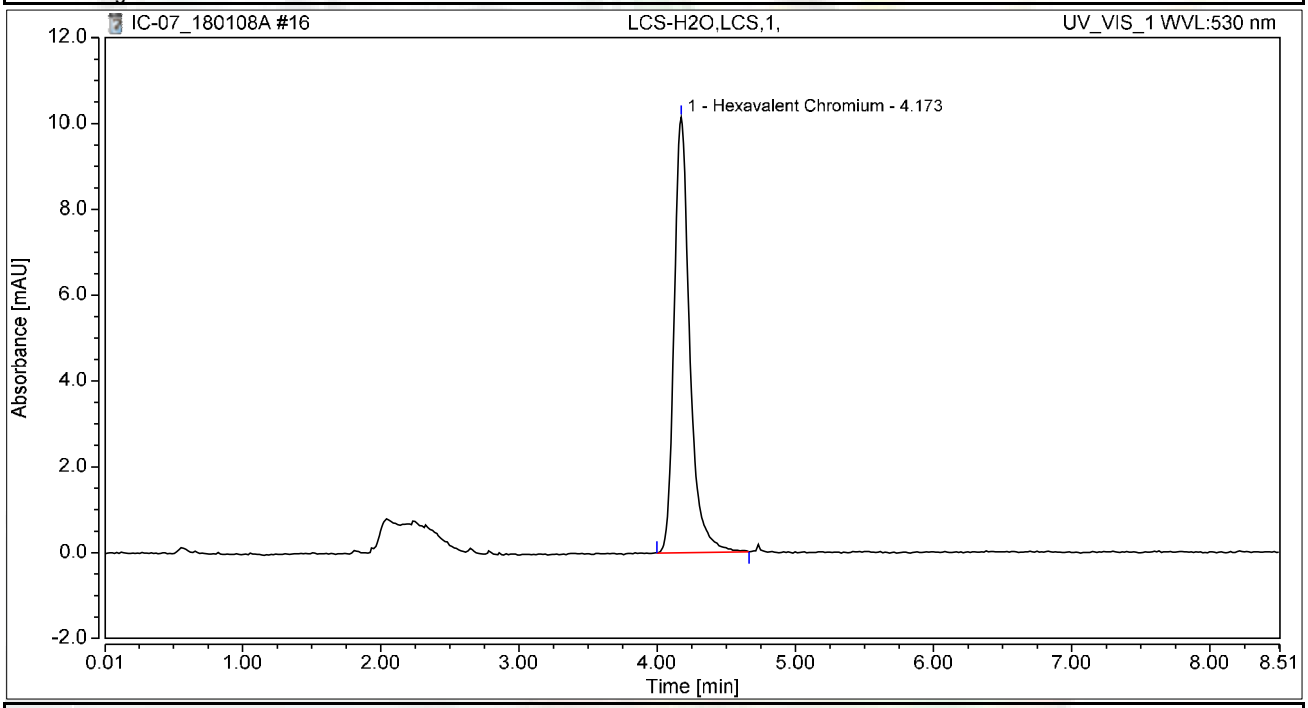
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

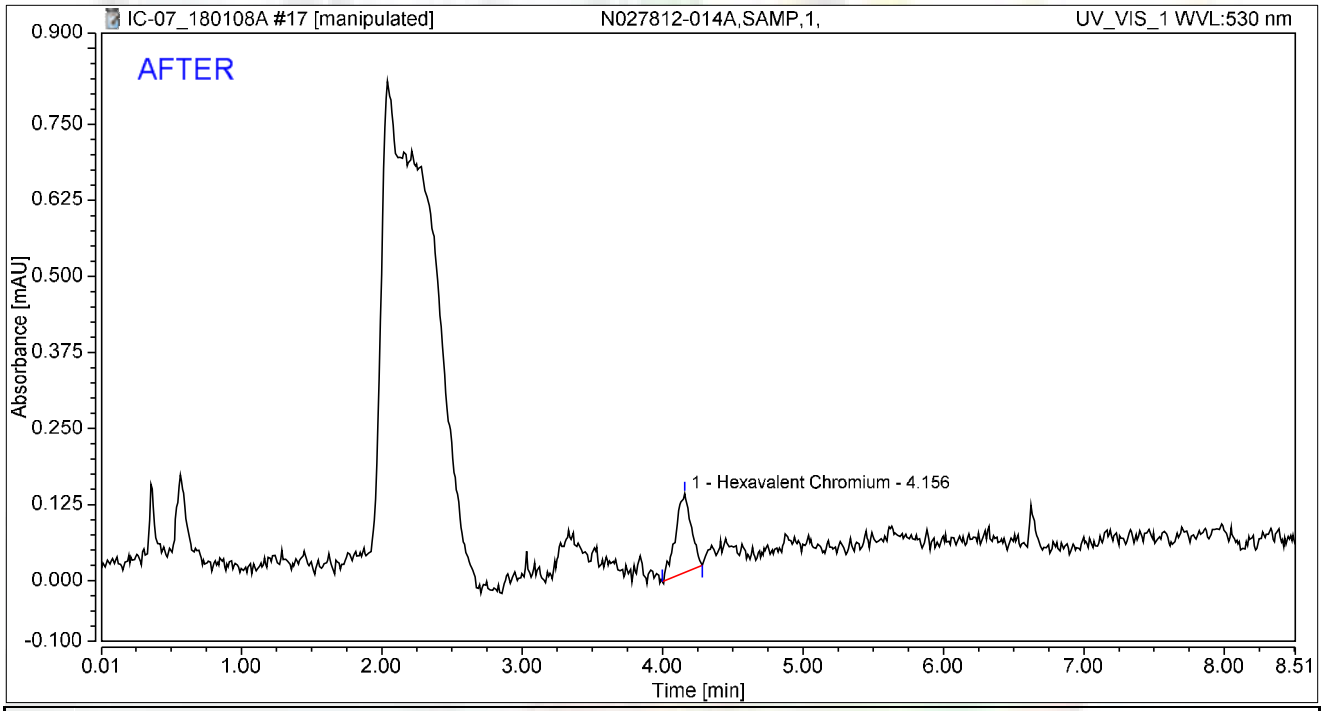
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.330	10.147	100.00	100.00	5.2014
Total:			**1.330**	**10.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.017	0.129	100.00	100.00	0.0660
Total:			**0.017**	**0.129**	**100.00**	**100.00**	

rba 1/10/2018

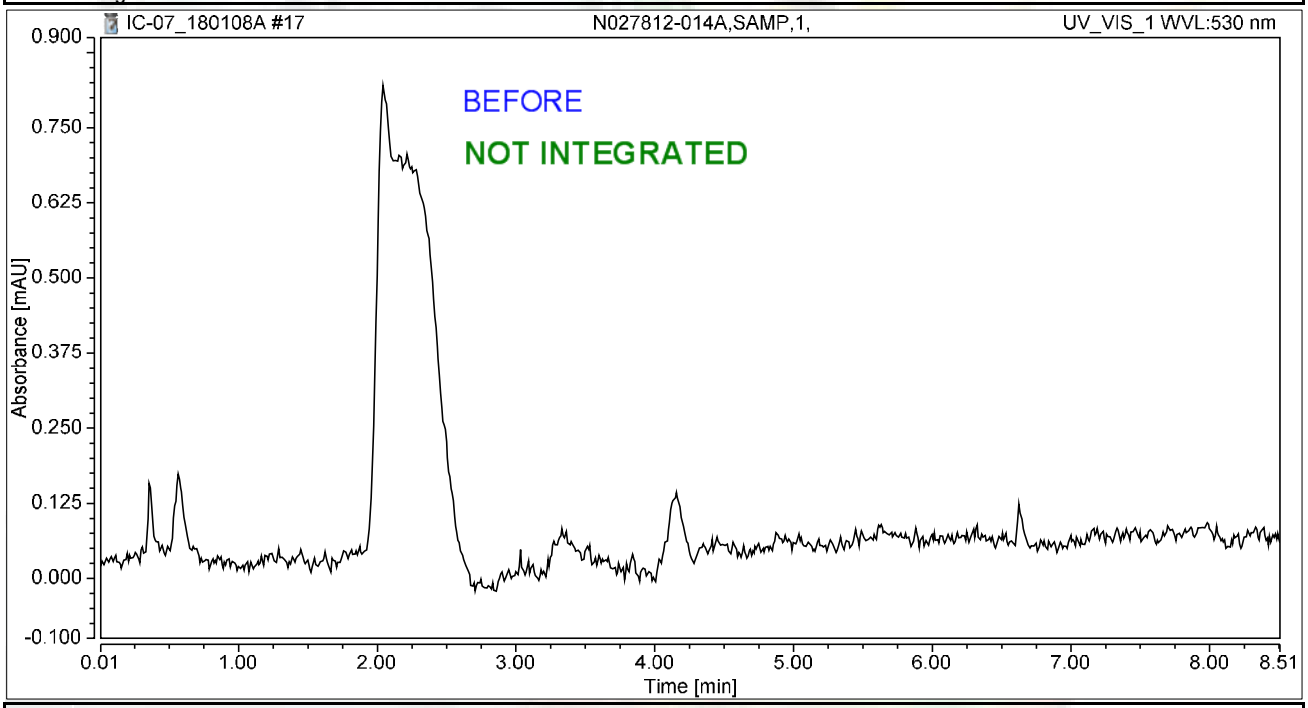
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

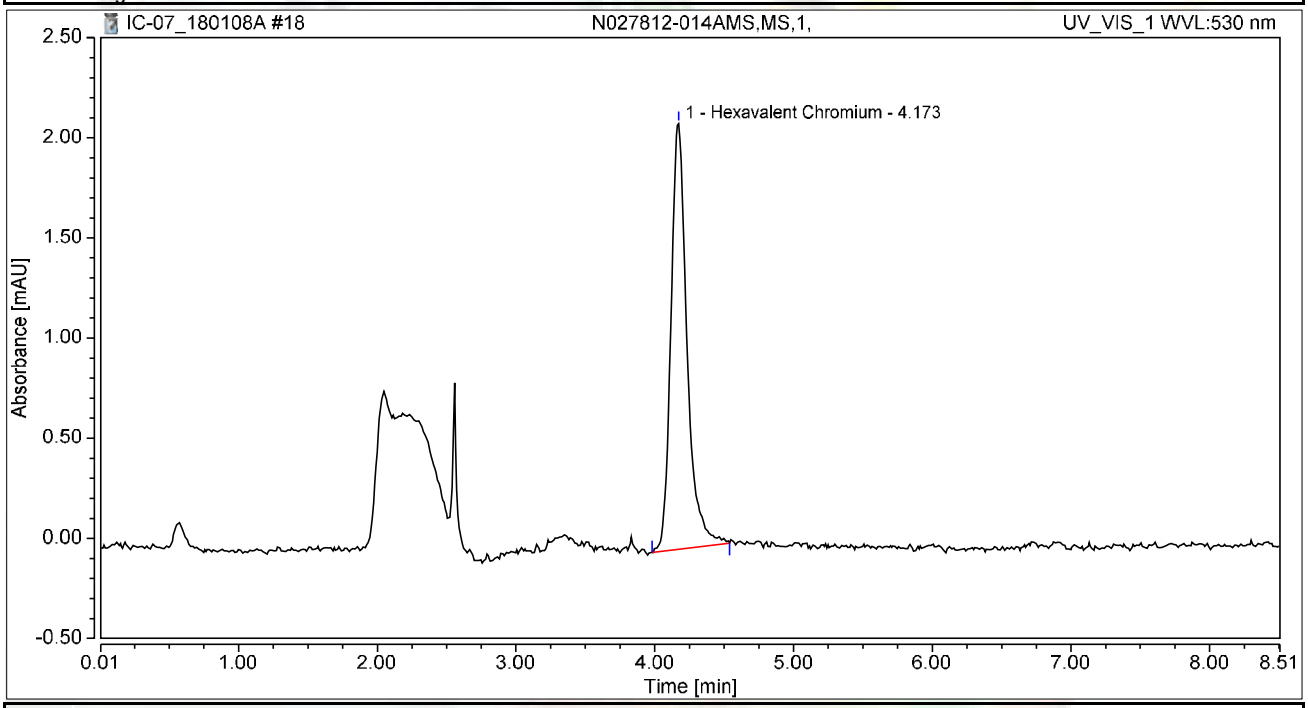
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

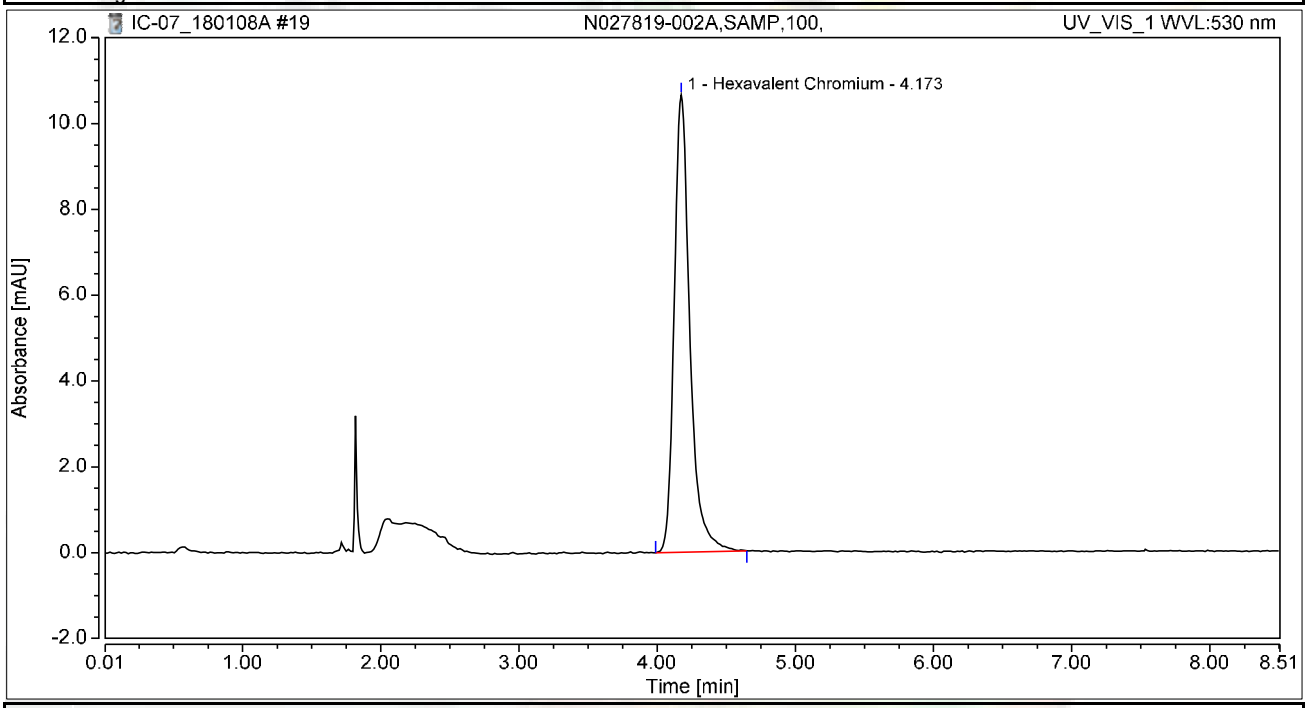
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.287	2.126	100.00	100.00	1.1207
Total:			**0.287**	**2.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

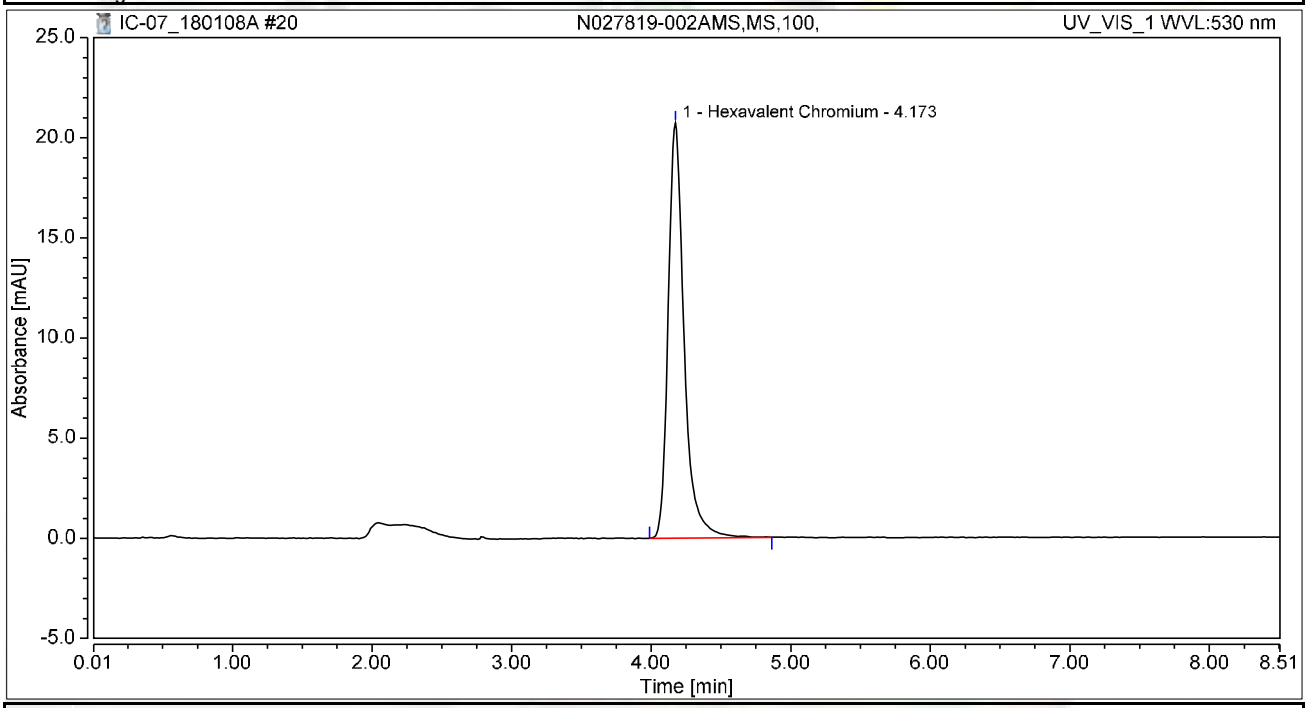
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.401	10.655	100.00	100.00	5.4805
Total:			**1.401**	**10.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

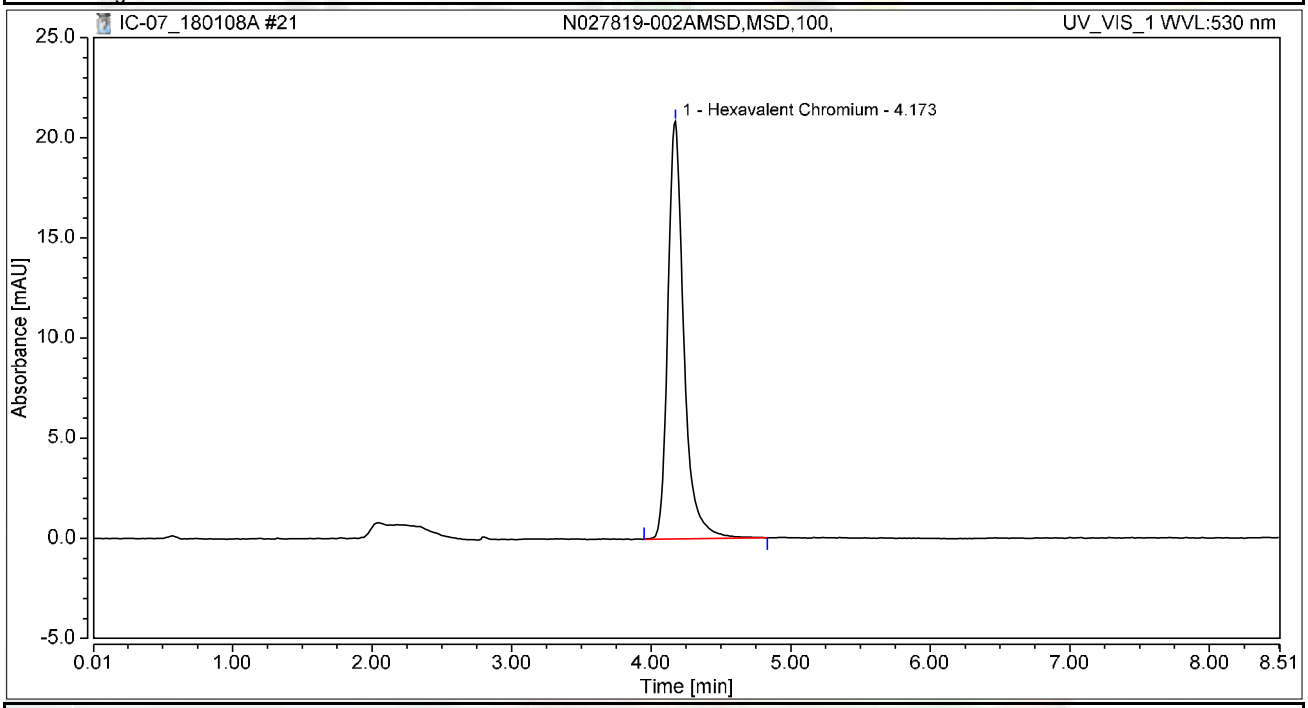
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.747	20.732	100.00	100.00	10.7445
Total:			**2.747**	**20.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

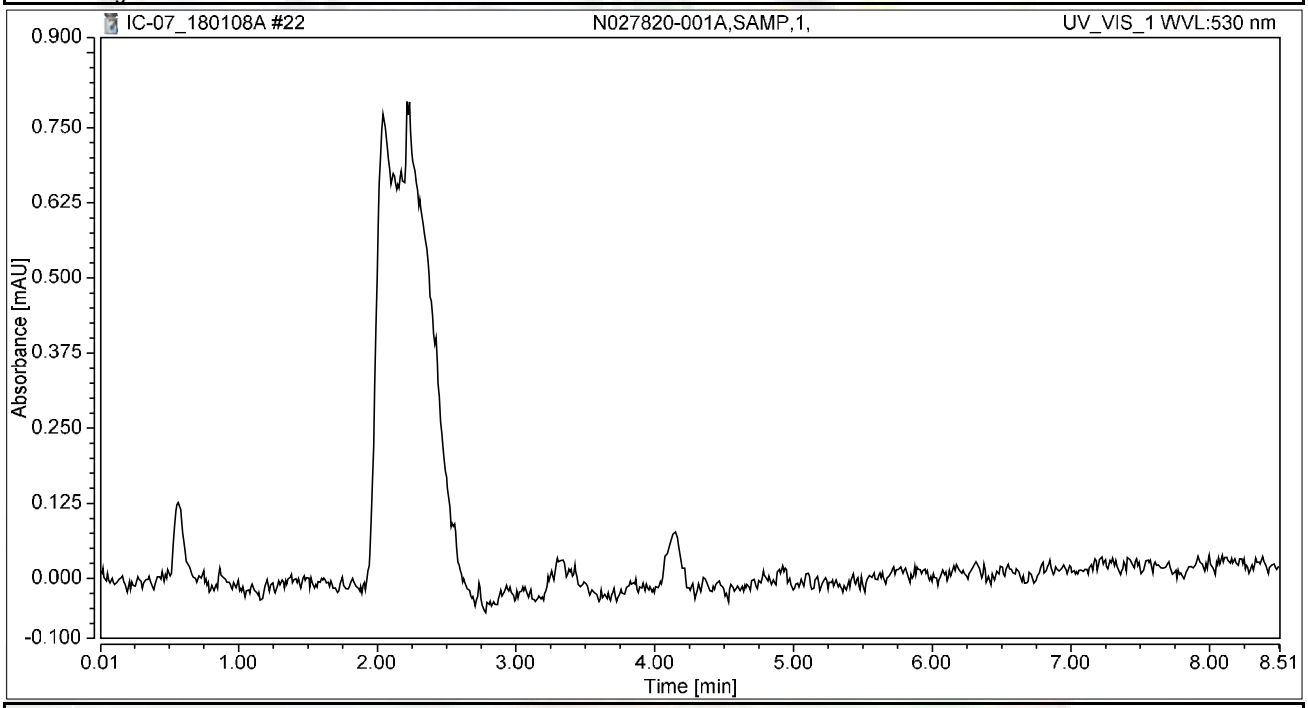
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.766	20.845	100.00	100.00	10.8163
Total:			**2.766**	**20.845**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

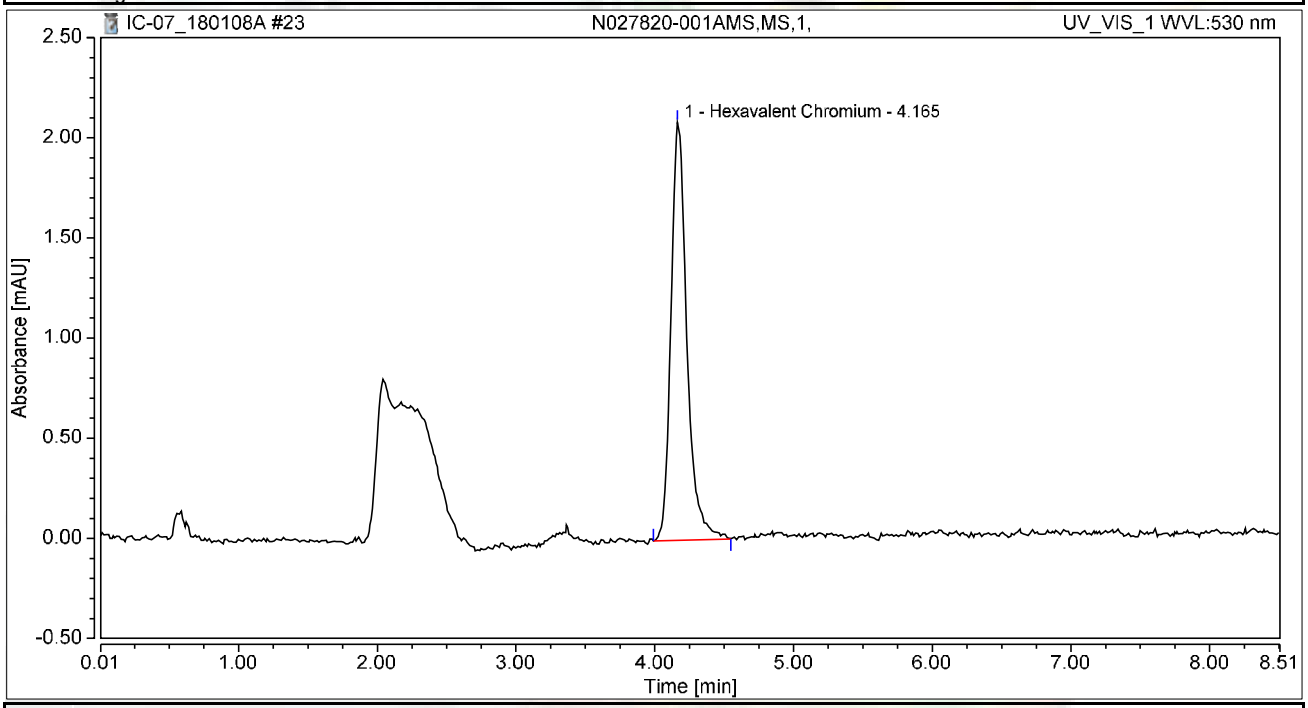
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

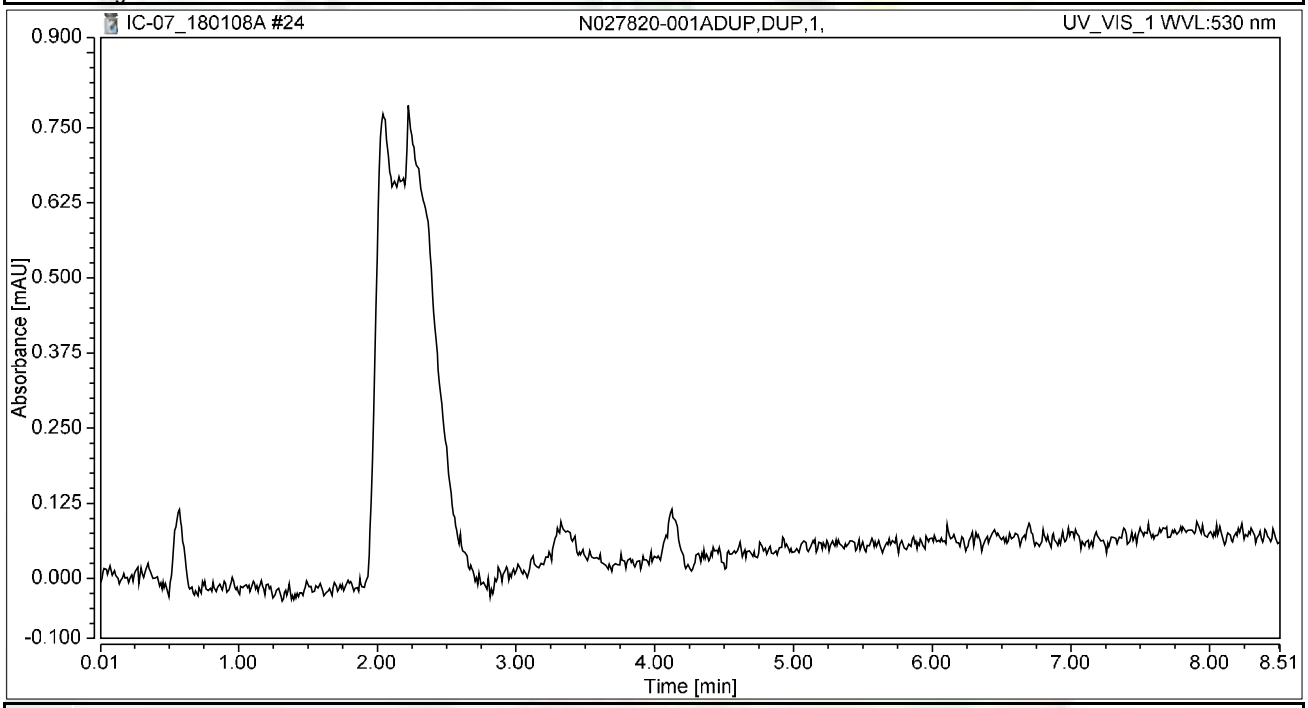
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.278	2.086	100.00	100.00	1.0876
Total:			**0.278**	**2.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

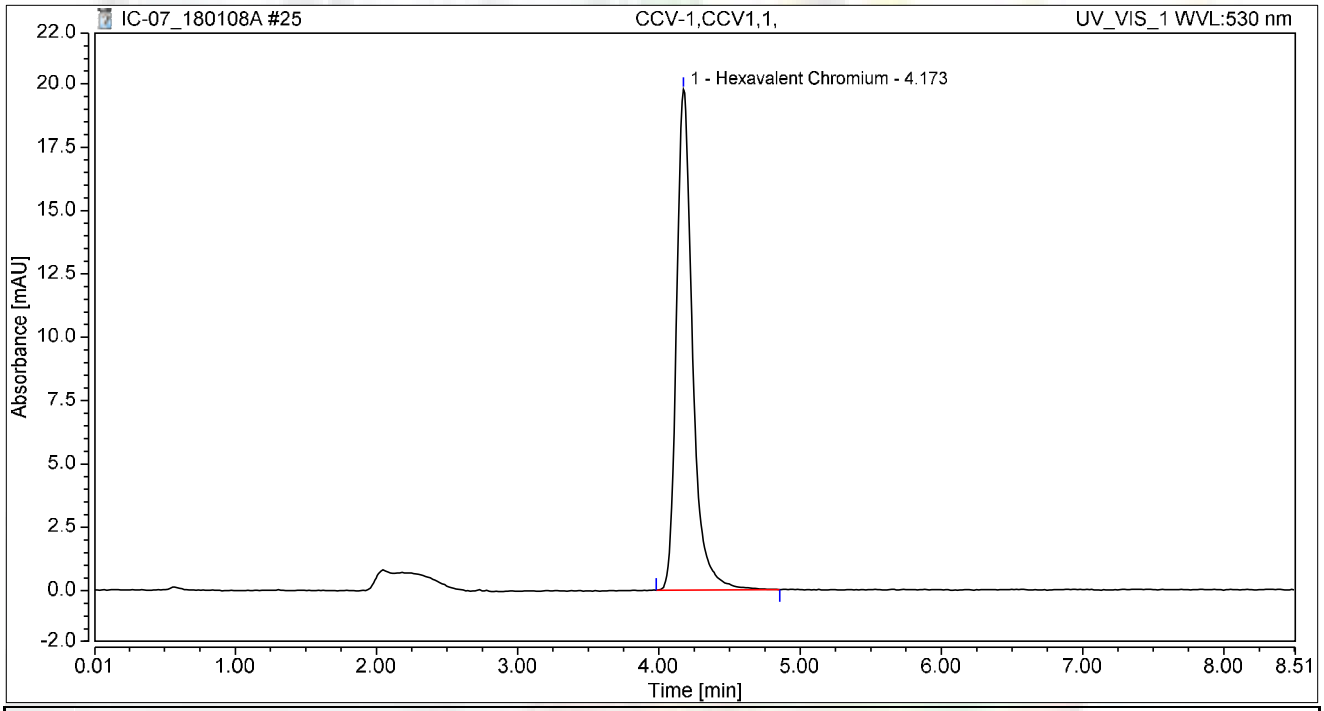
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

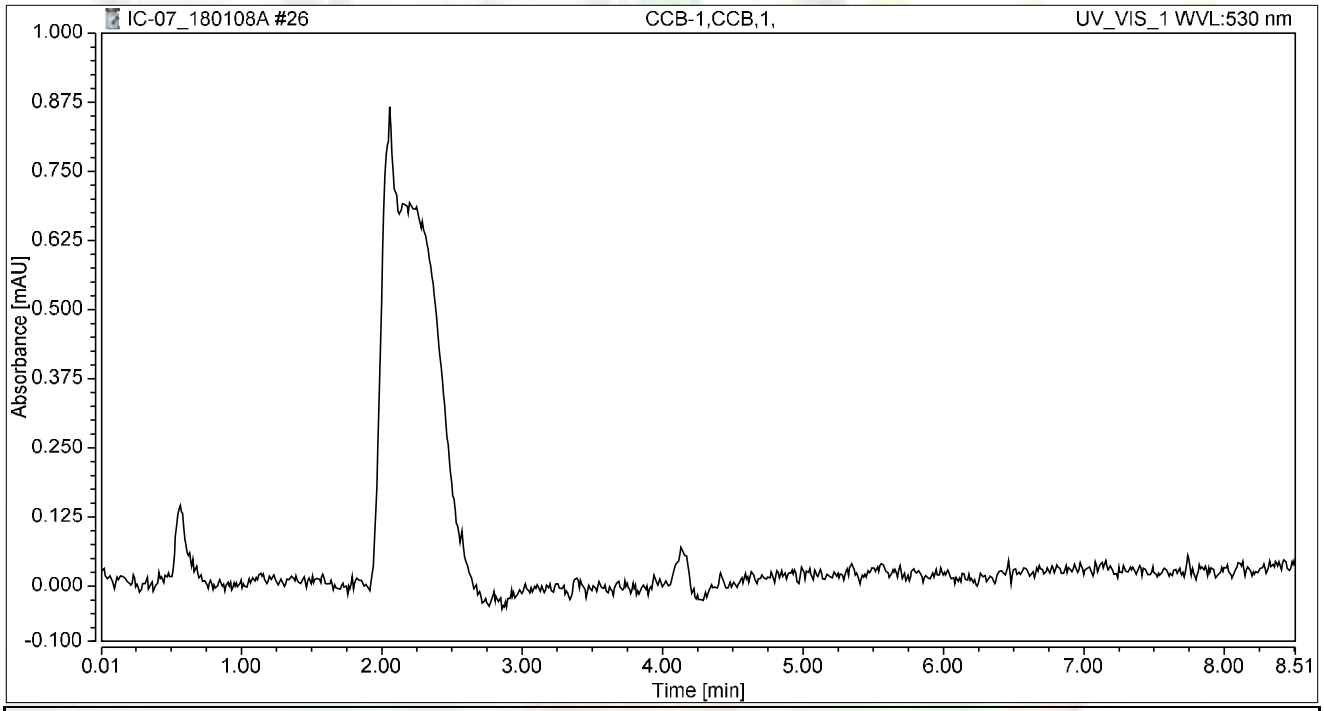
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.622	19.758	100.00	100.00	10.2530
Total:			**2.622**	**19.758**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

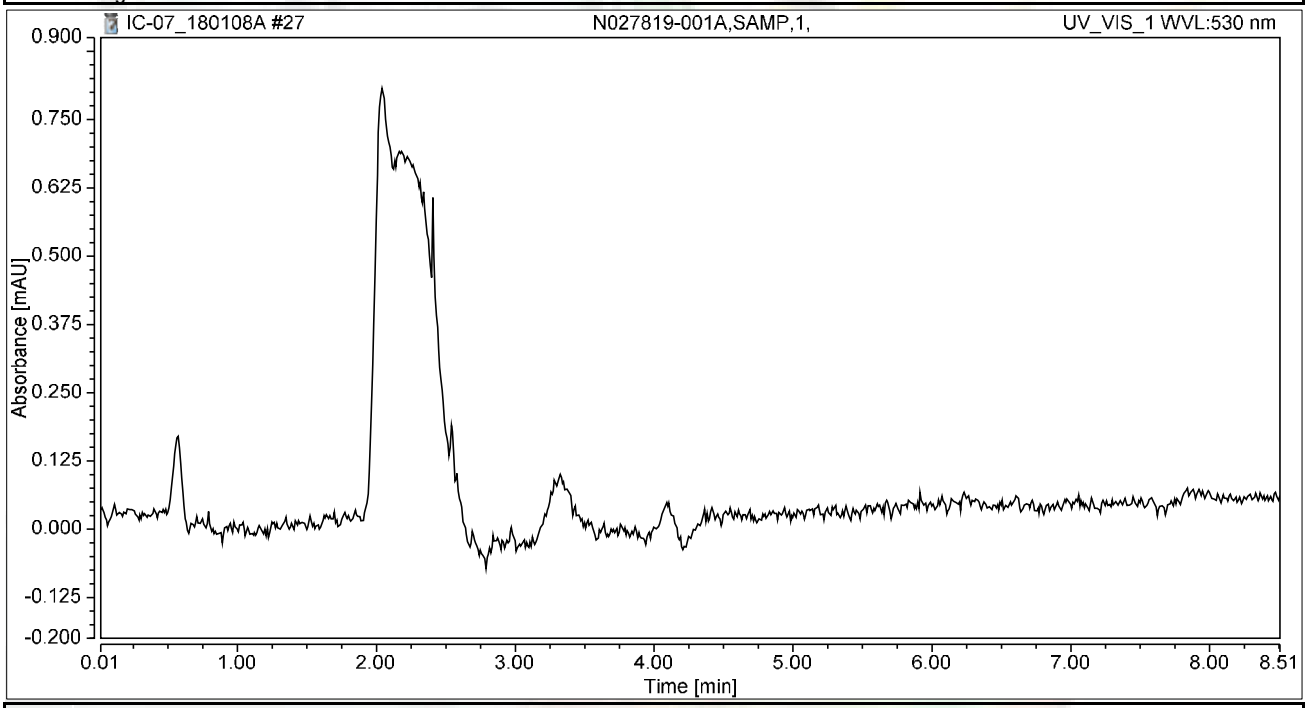
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

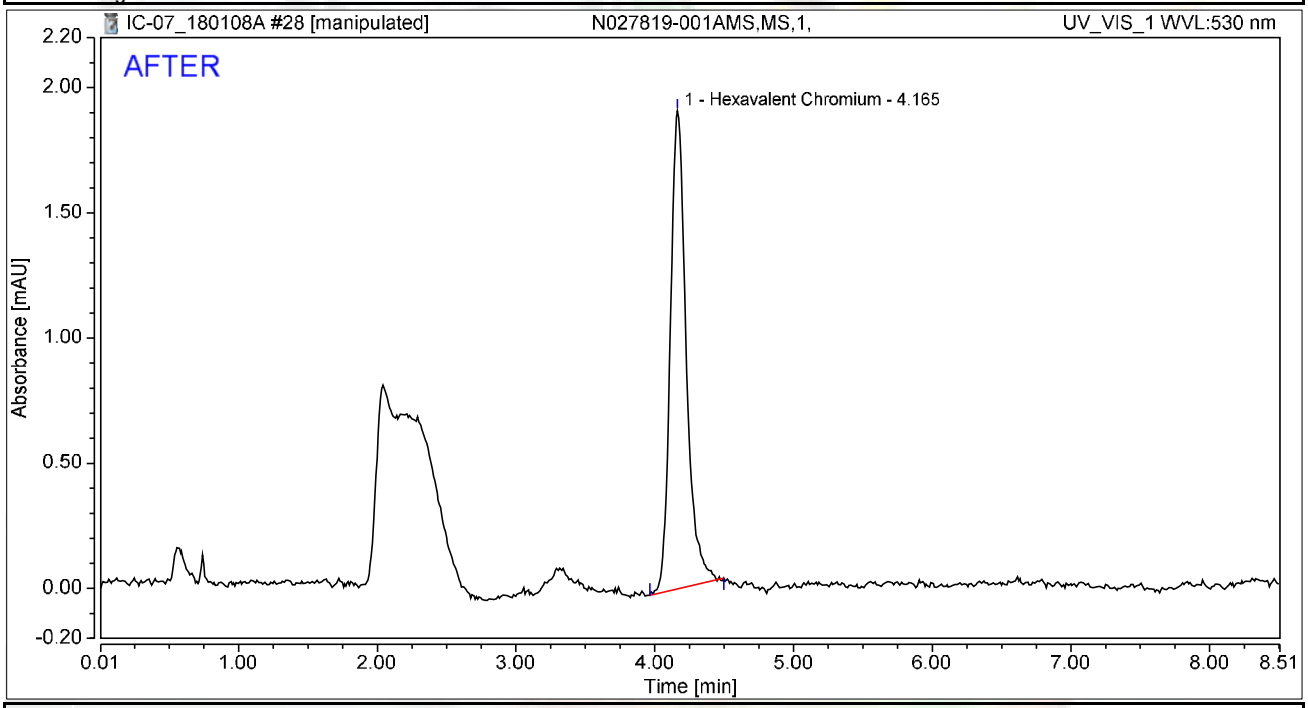
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.254	1.909	100.00	100.00	0.9940
Total:			**0.254**	**1.909**	**100.00**	**100.00**	

rba 1/10/2018

Reviewed by: Nancy 01/12/2018
MJ first report/Integration

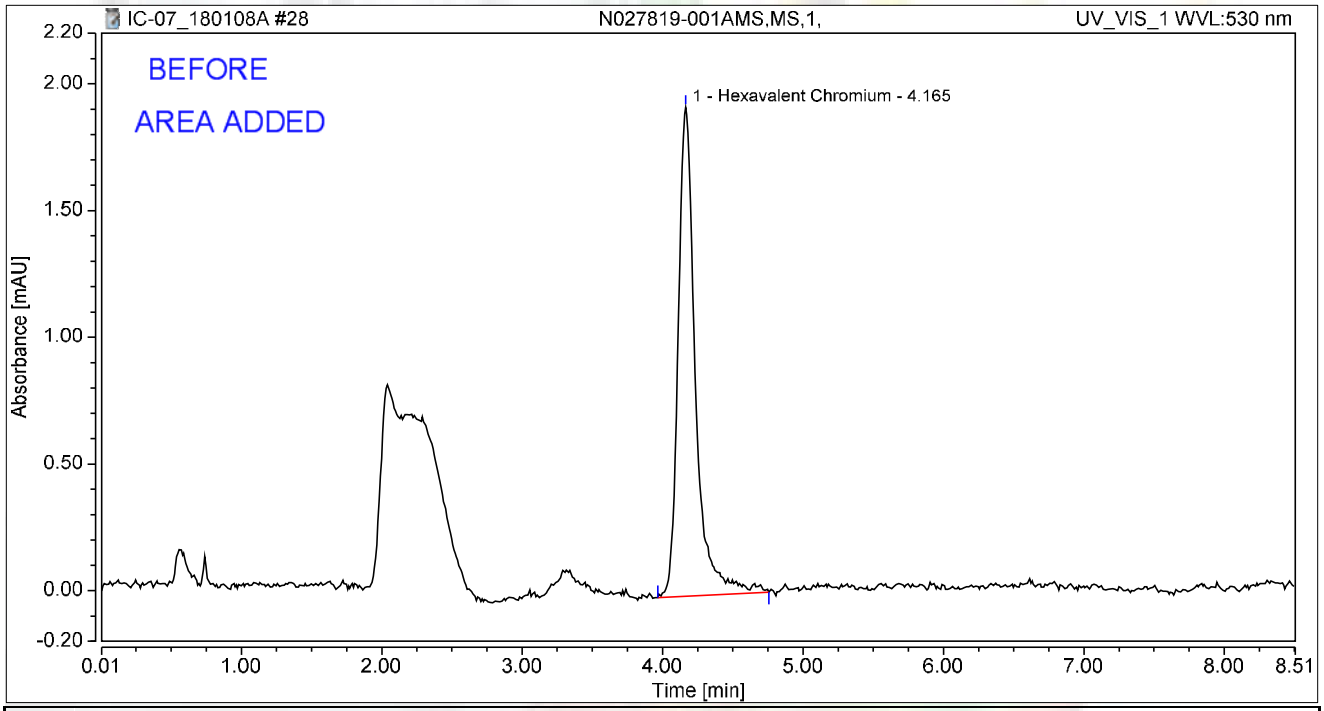
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	1.930	100.00	100.00	1.0637
Total:			**0.275**	**1.930**	**100.00**	**100.00**	

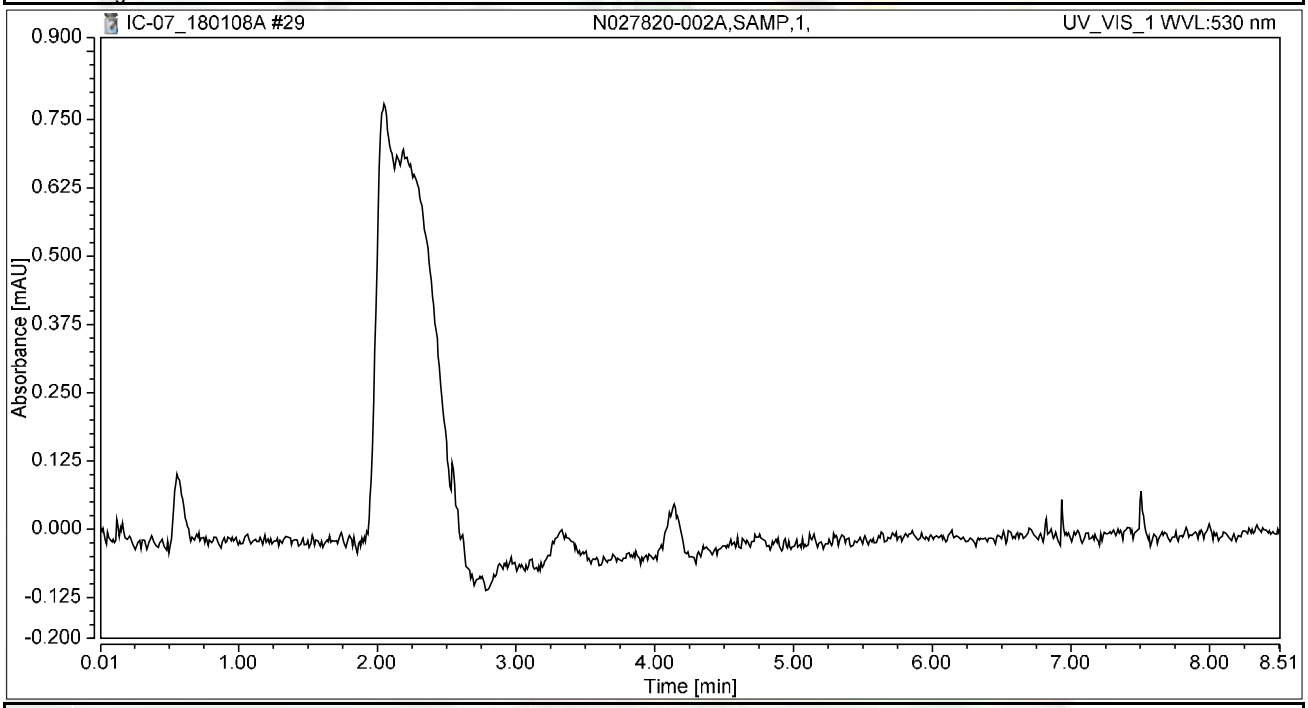
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

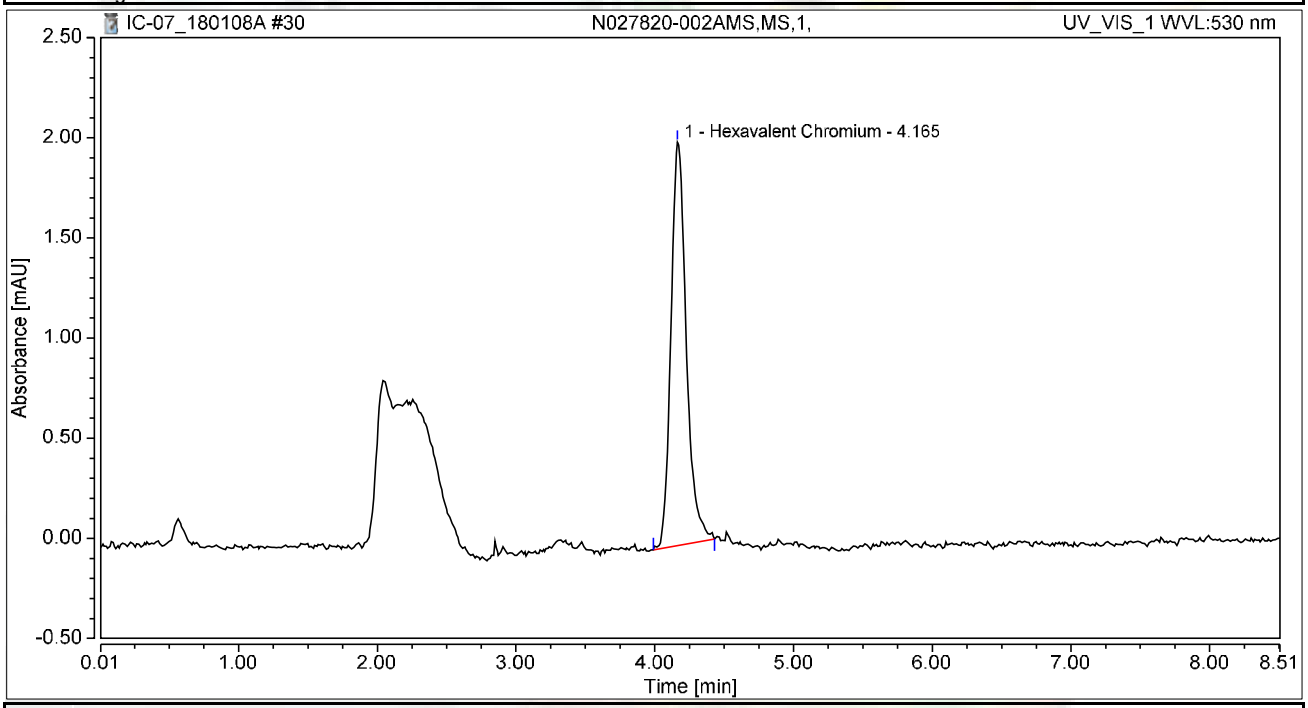
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

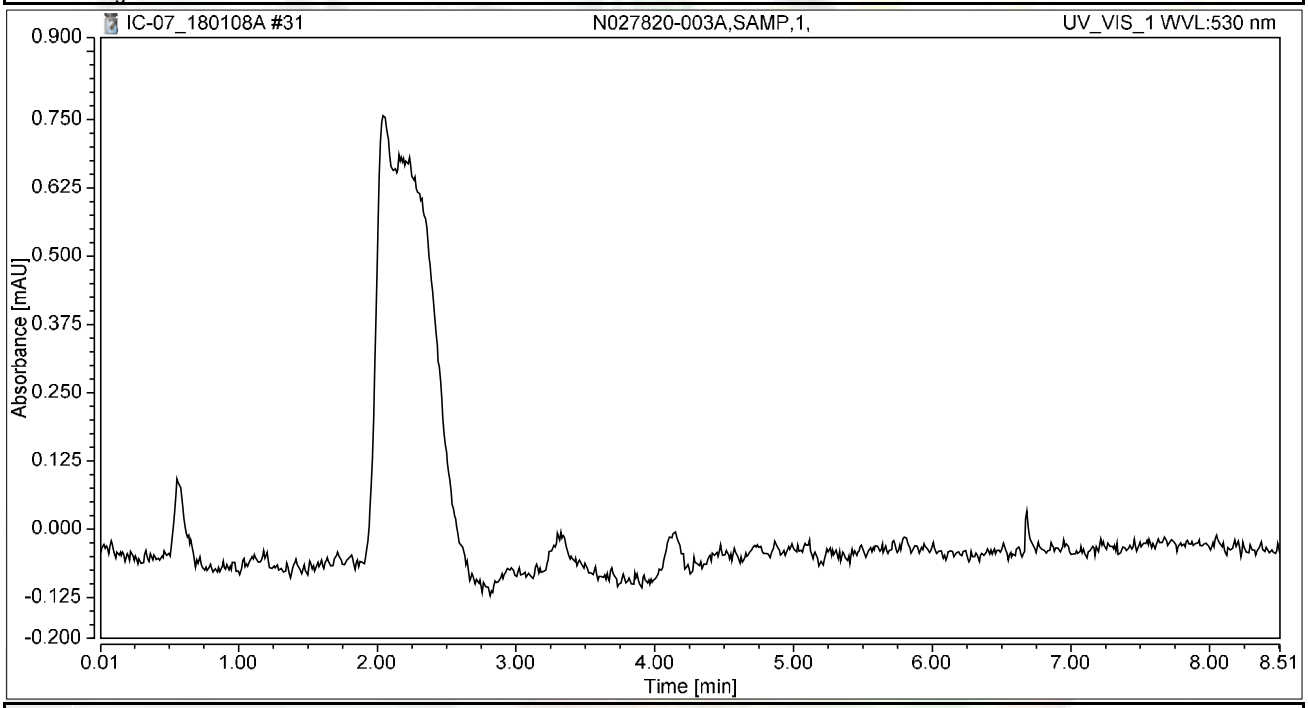
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.259	2.012	100.00	100.00	1.0115
Total:			**0.259**	**2.012**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

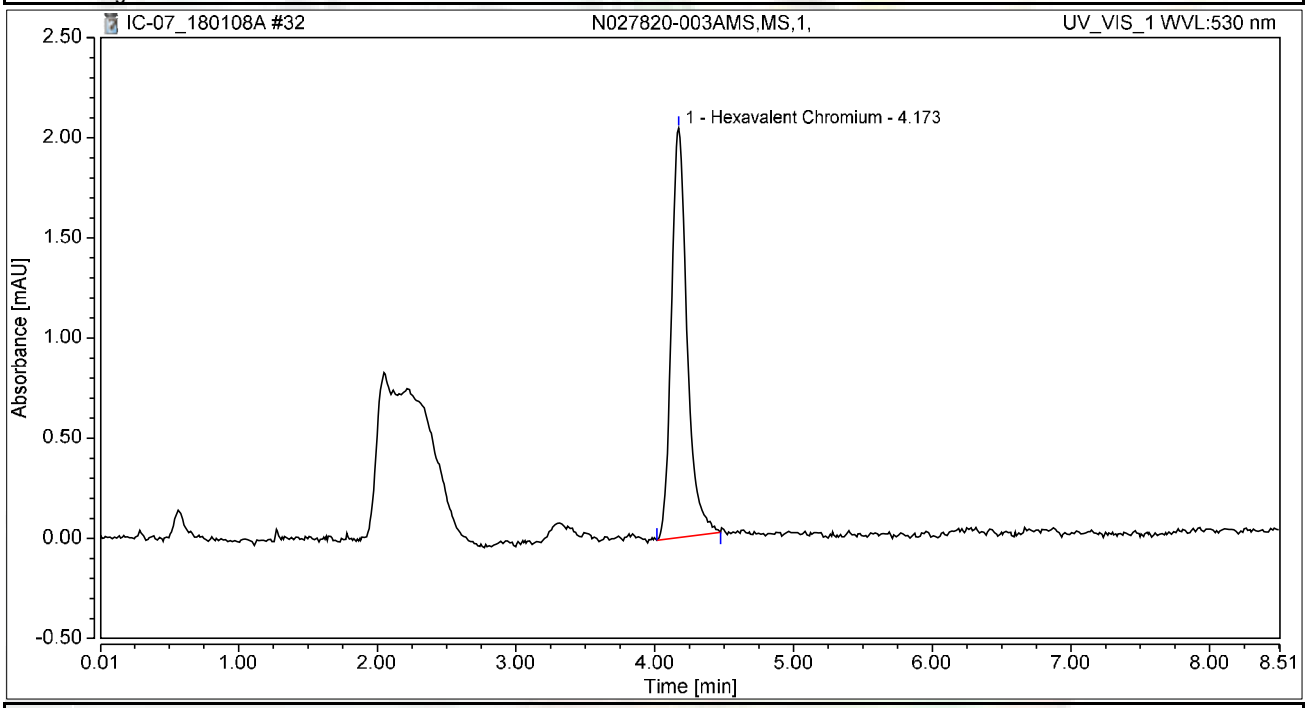
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

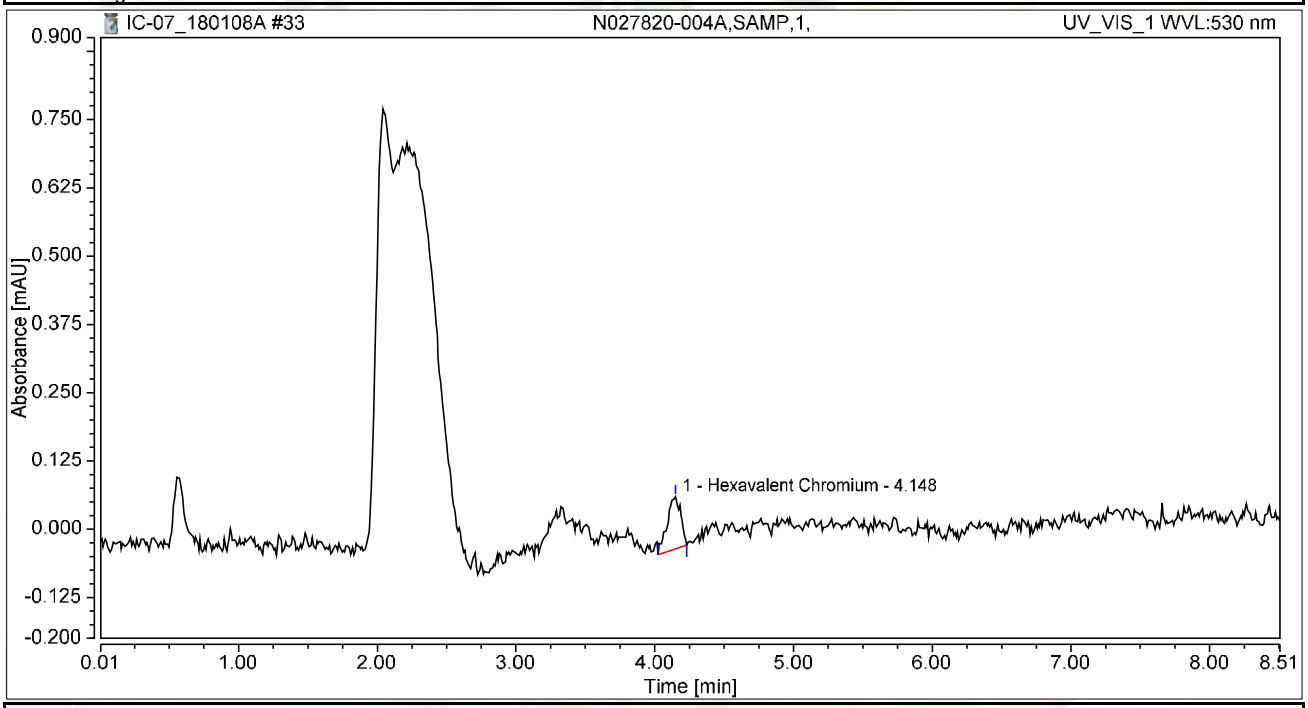
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.268	2.043	100.00	100.00	1.0498
Total:			**0.268**	**2.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

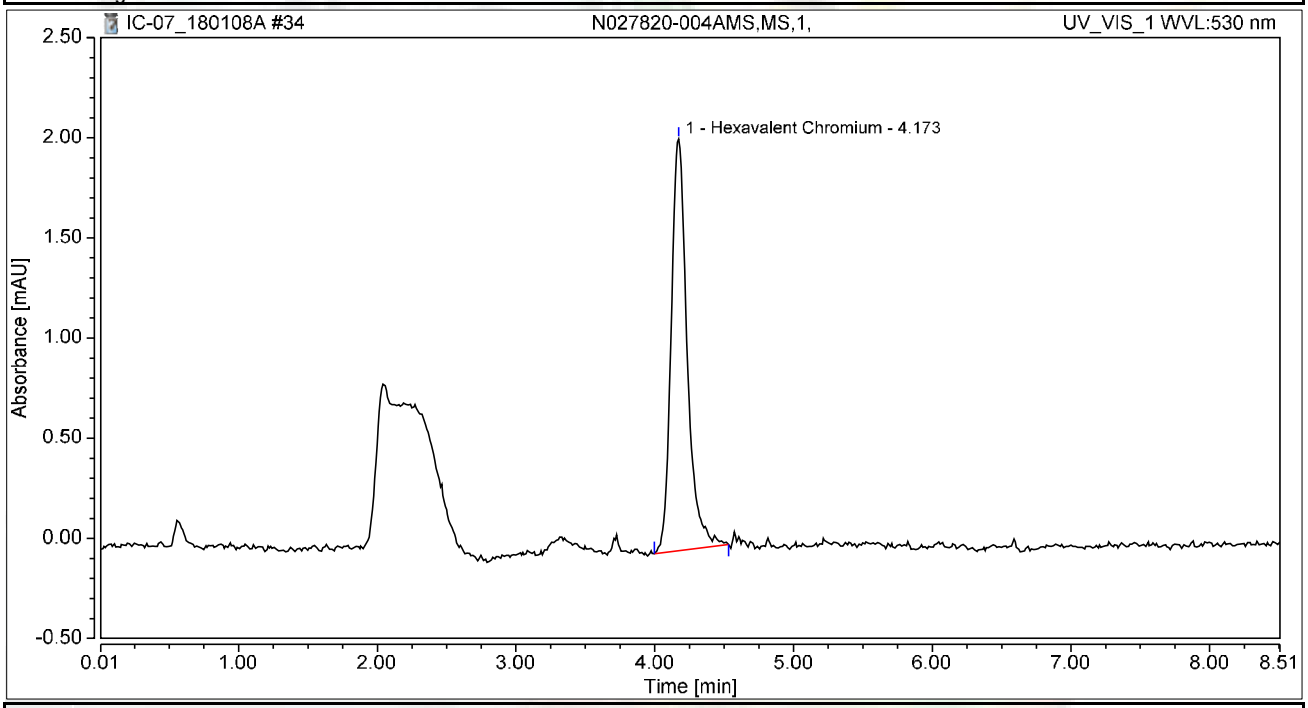
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.011	0.095	100.00	100.00	0.0418
Total:			**0.011**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

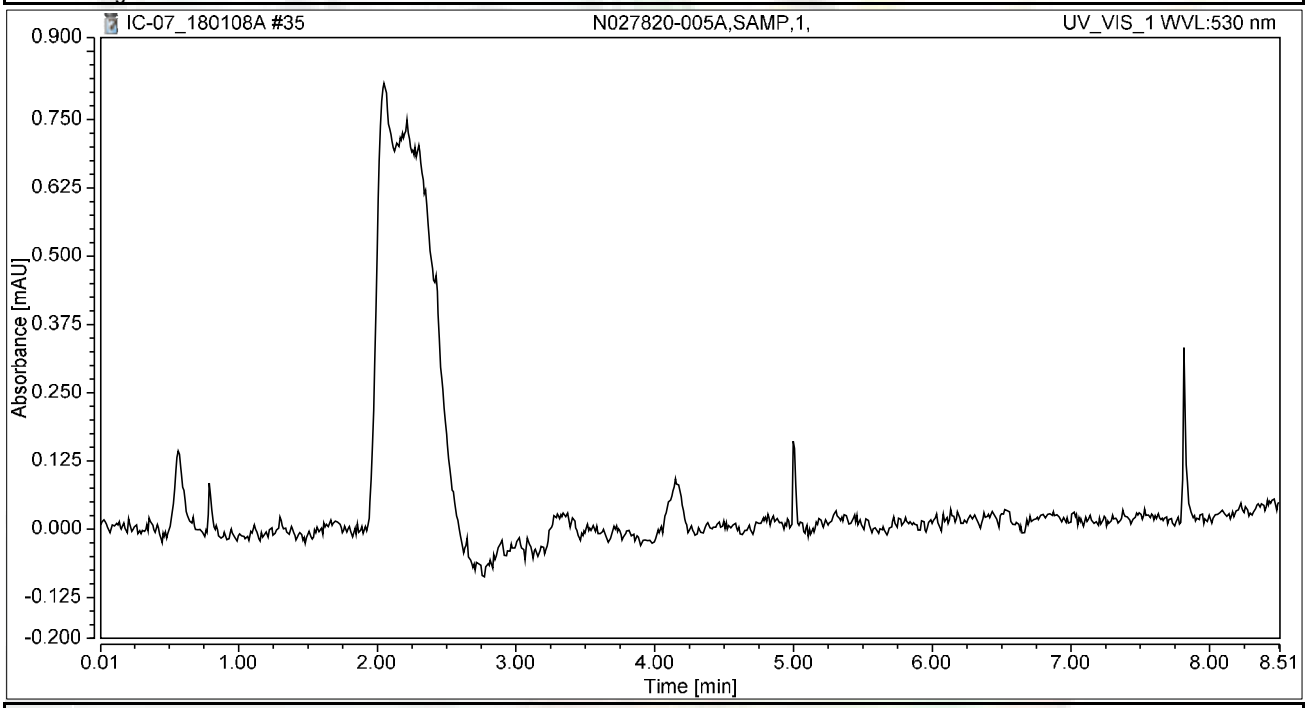
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.054	100.00	100.00	1.0786
Total:			**0.276**	**2.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

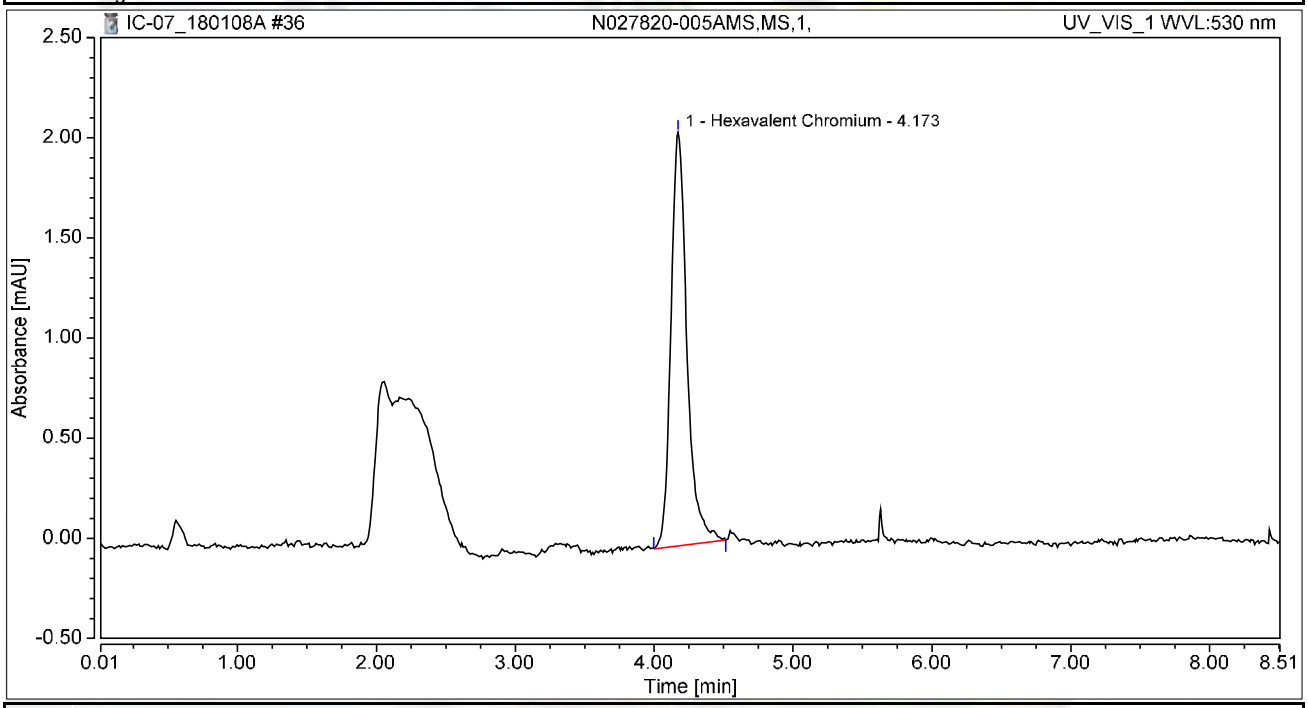
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

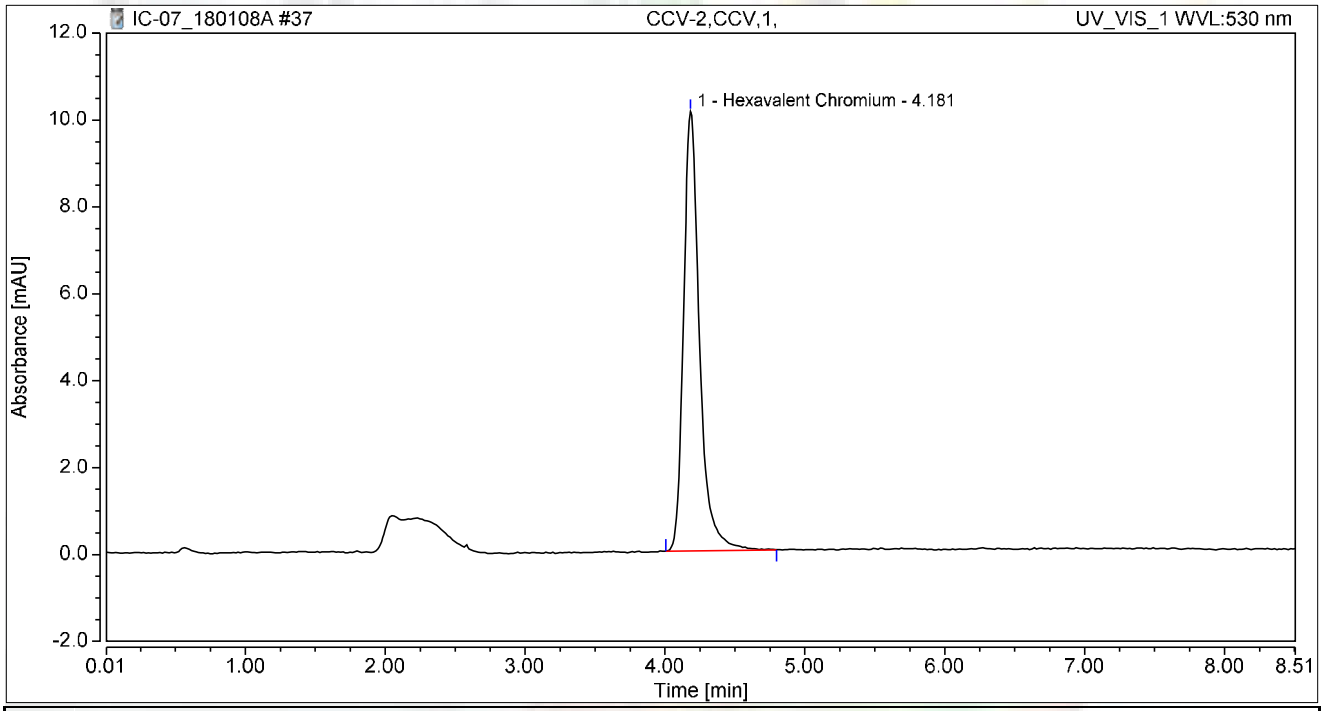
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.066	100.00	100.00	1.0782
Total:			**0.276**	**2.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

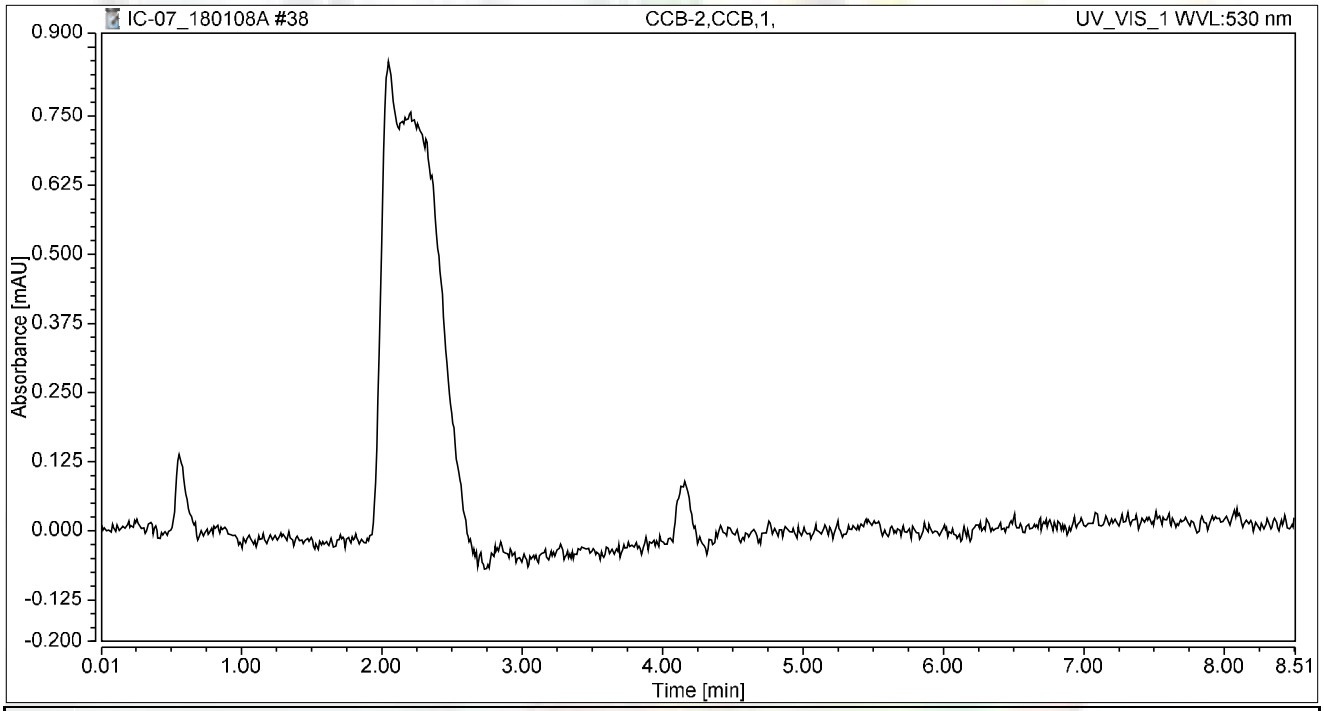
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.338	10.114	100.00	100.00	5.2328
Total:			**1.338**	**10.114**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

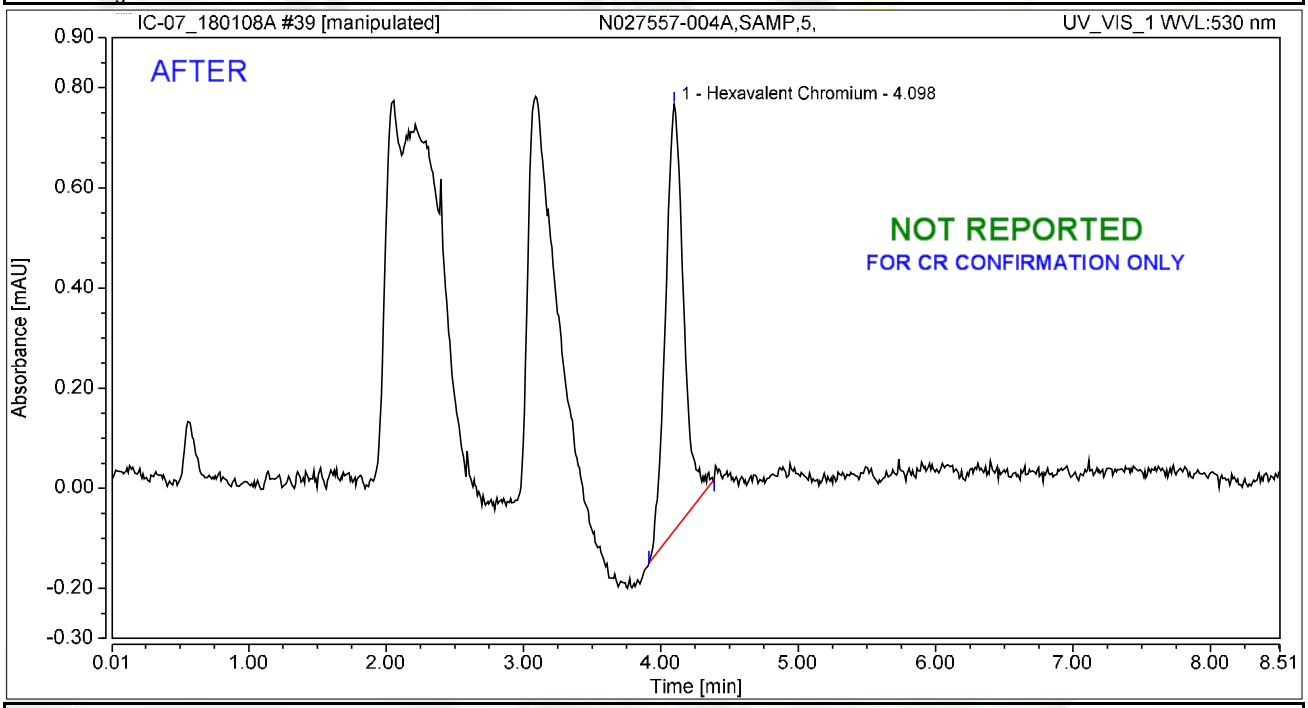
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.130	0.852	100.00	100.00	0.5084
Total:			**0.130**	**0.852**	**100.00**	**100.00**	

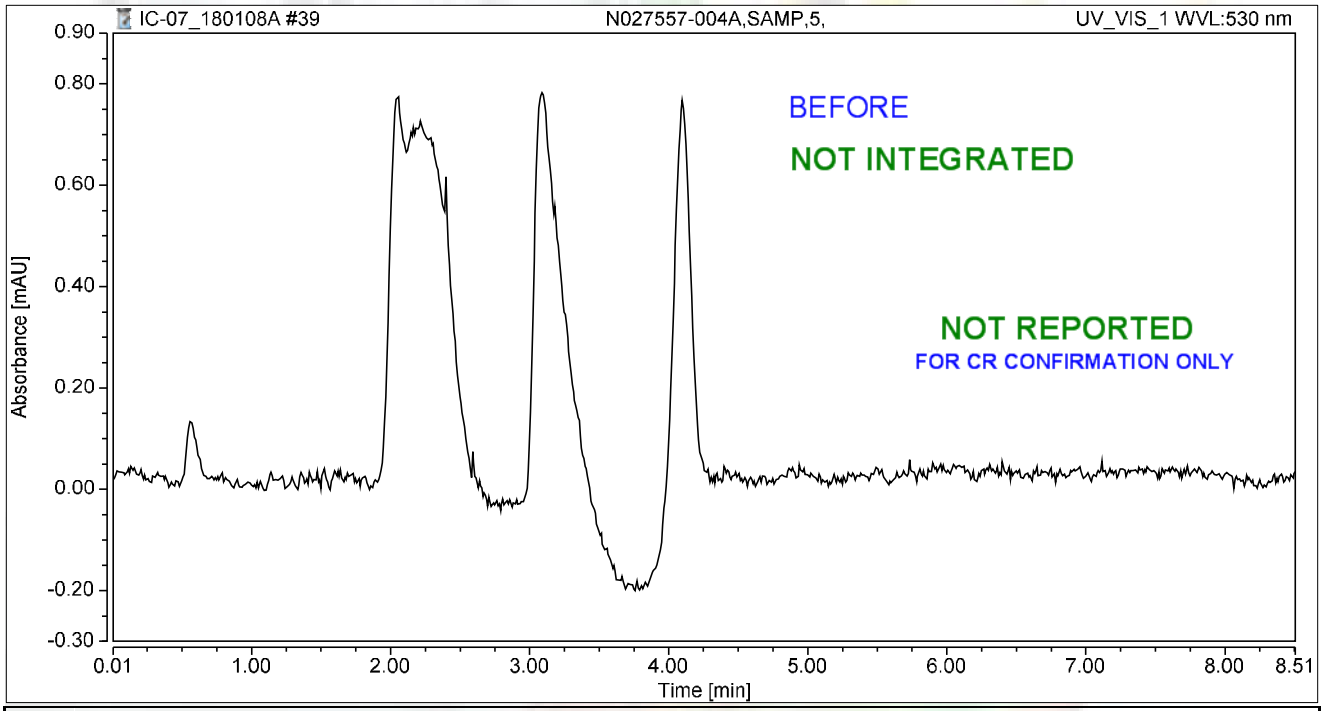
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

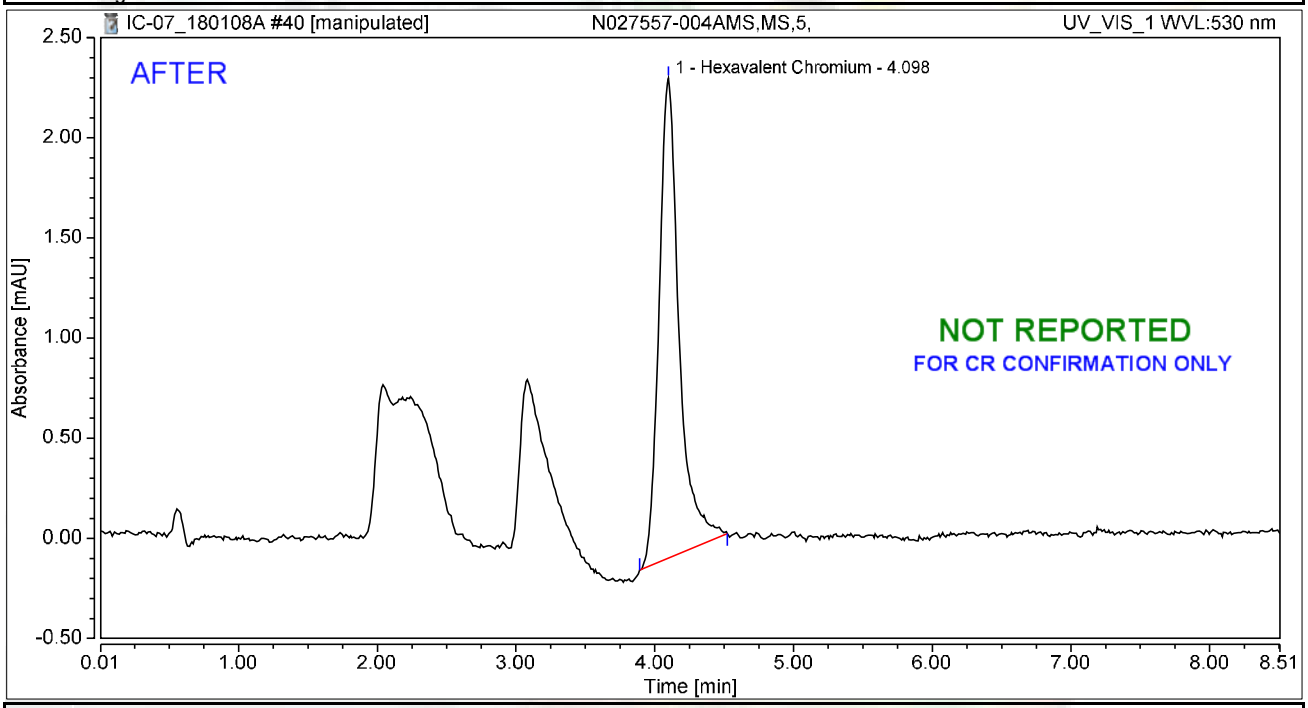
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.403	2.396	100.00	100.00	1.5776
Total:			**0.403**	**2.396**	**100.00**	**100.00**	

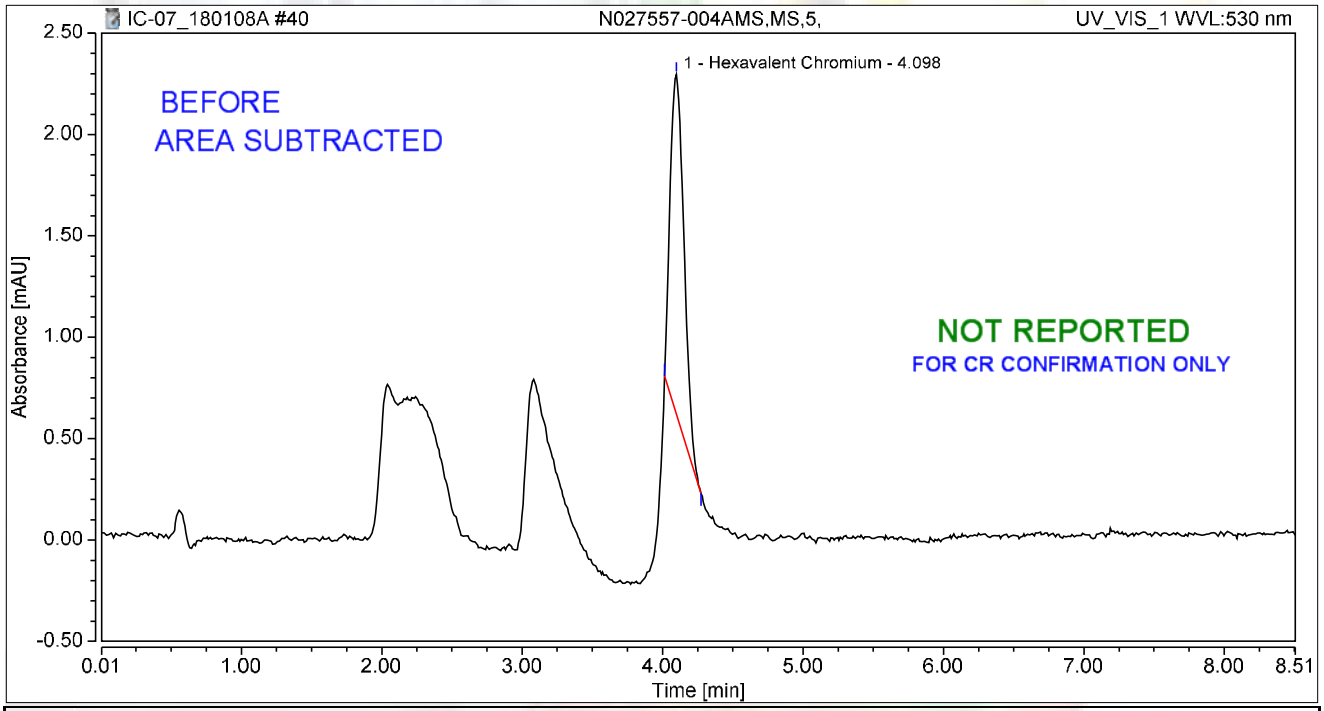
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.192	1.676	100.00	100.00	0.7404
Total:			**0.192**	**1.676**	**100.00**	**100.00**	

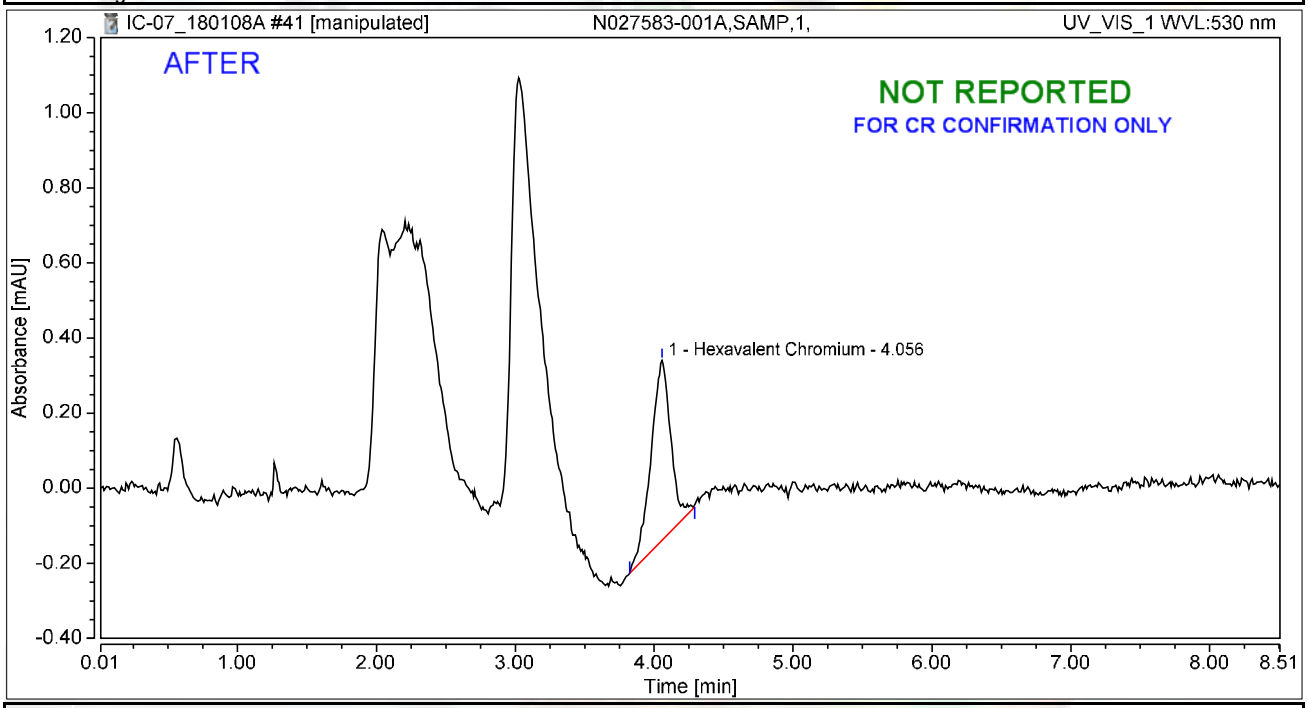
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.079	0.479	100.00	100.00	0.3088
Total:			**0.079**	**0.479**	**100.00**	**100.00**	

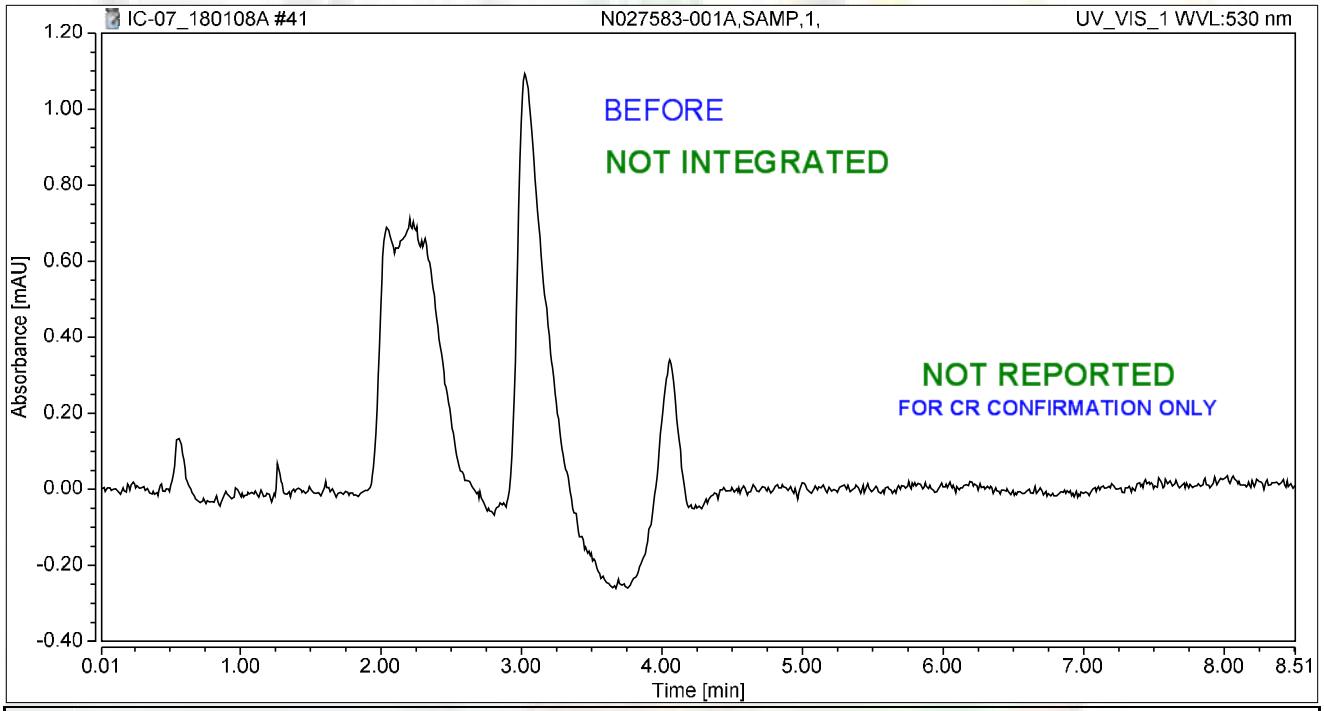
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

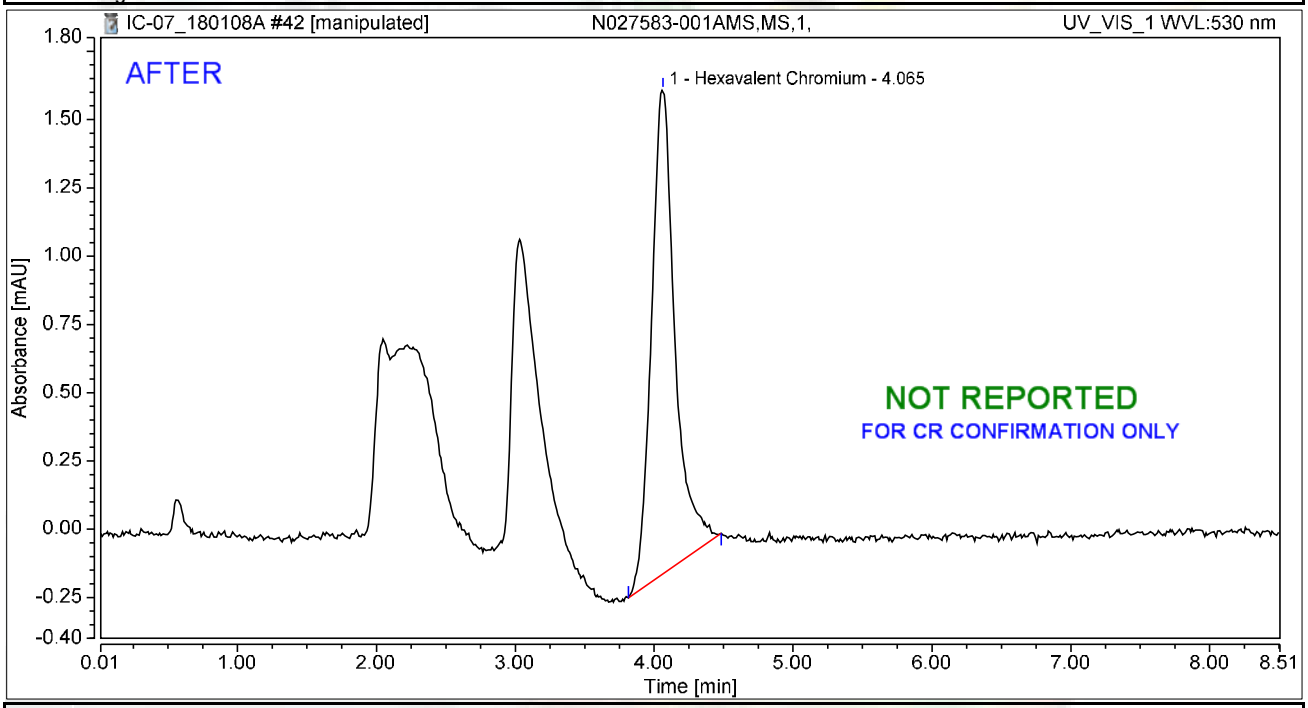
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.350	1.773	100.00	100.00	1.3670
Total:			**0.350**	**1.773**	**100.00**	**100.00**	

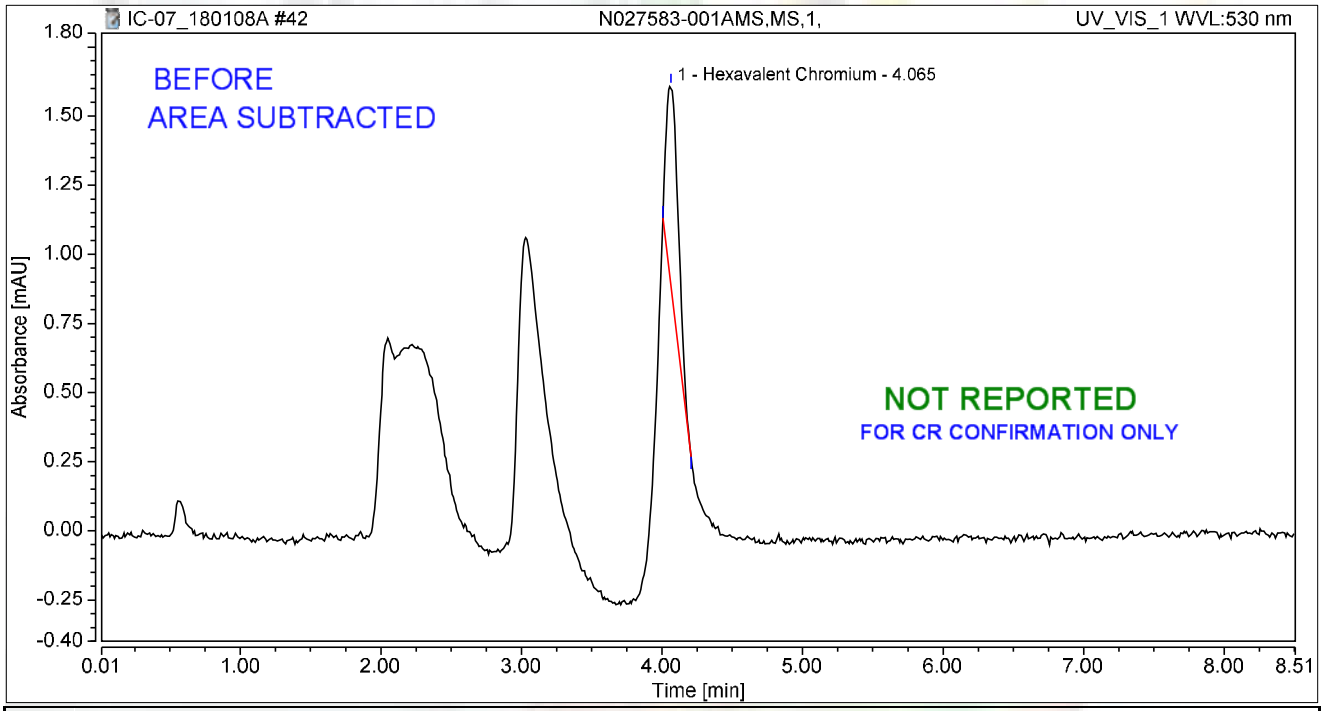
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.073	0.730	100.00	100.00	0.2831
Total:			**0.073**	**0.730**	**100.00**	**100.00**	

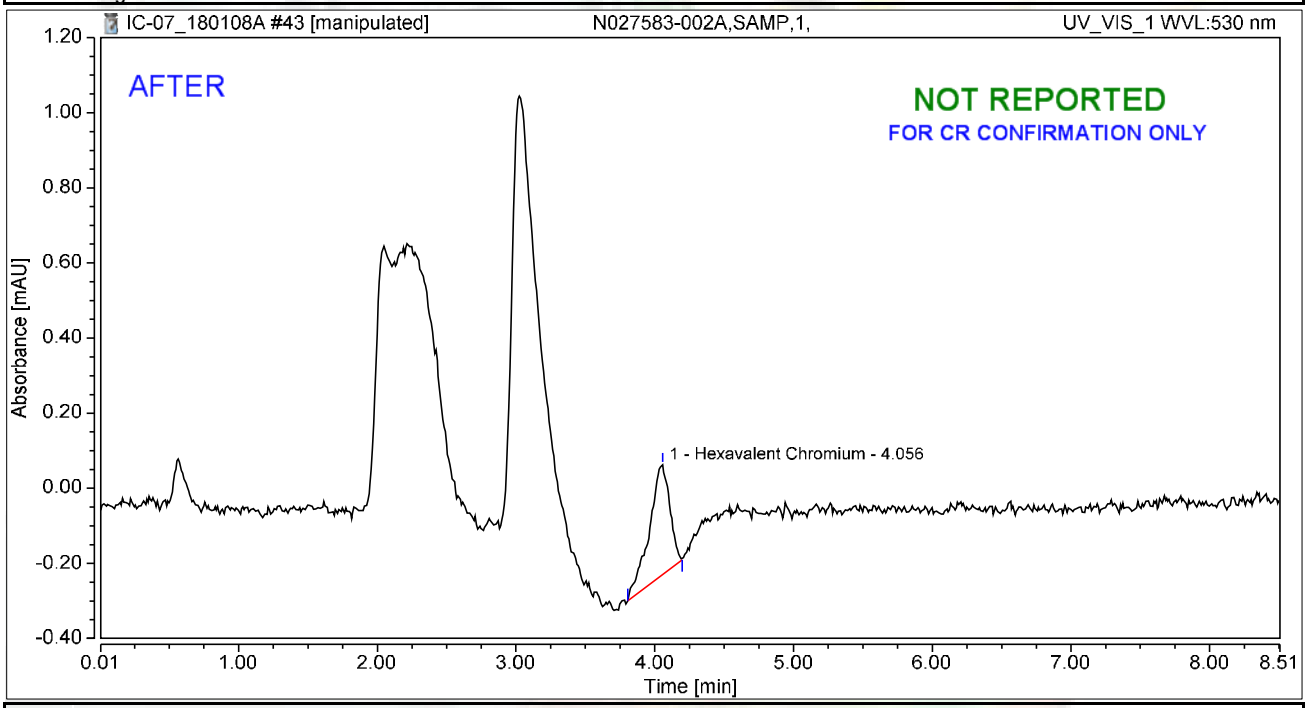
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.050	0.292	100.00	100.00	0.1973
Total:			**0.050**	**0.292**	**100.00**	**100.00**	

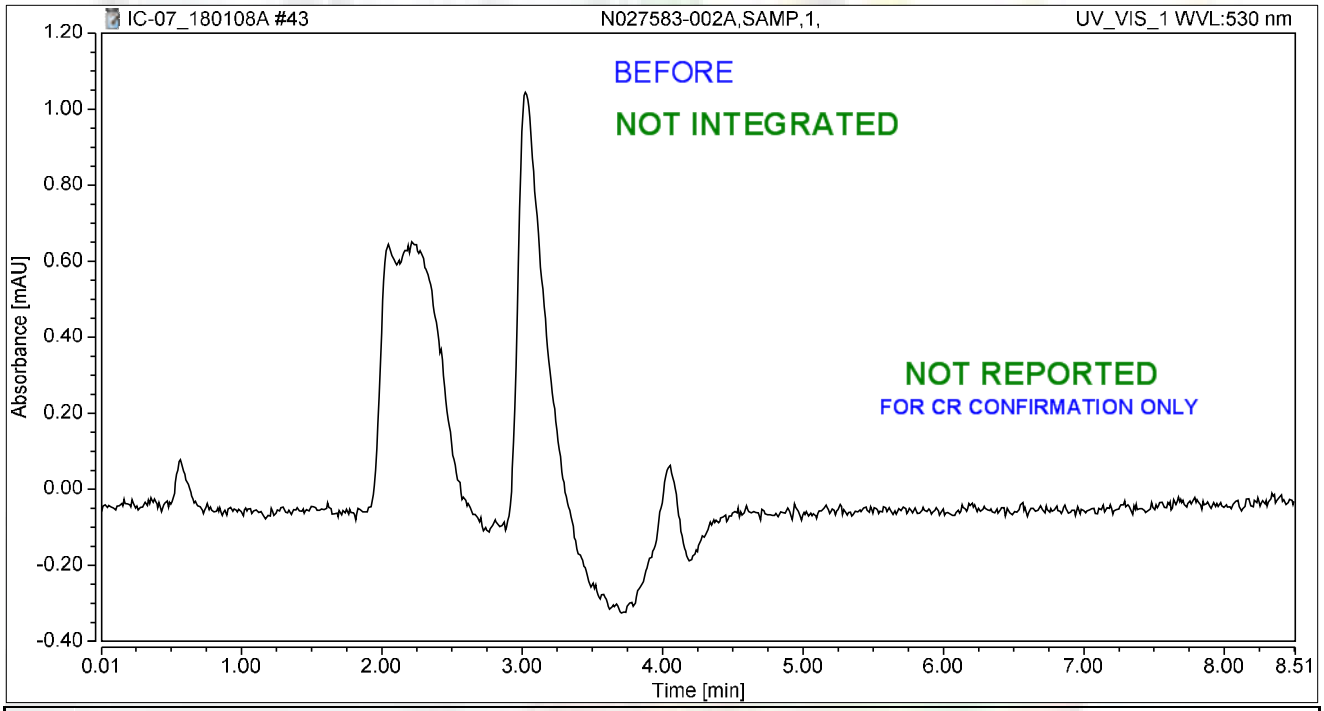
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

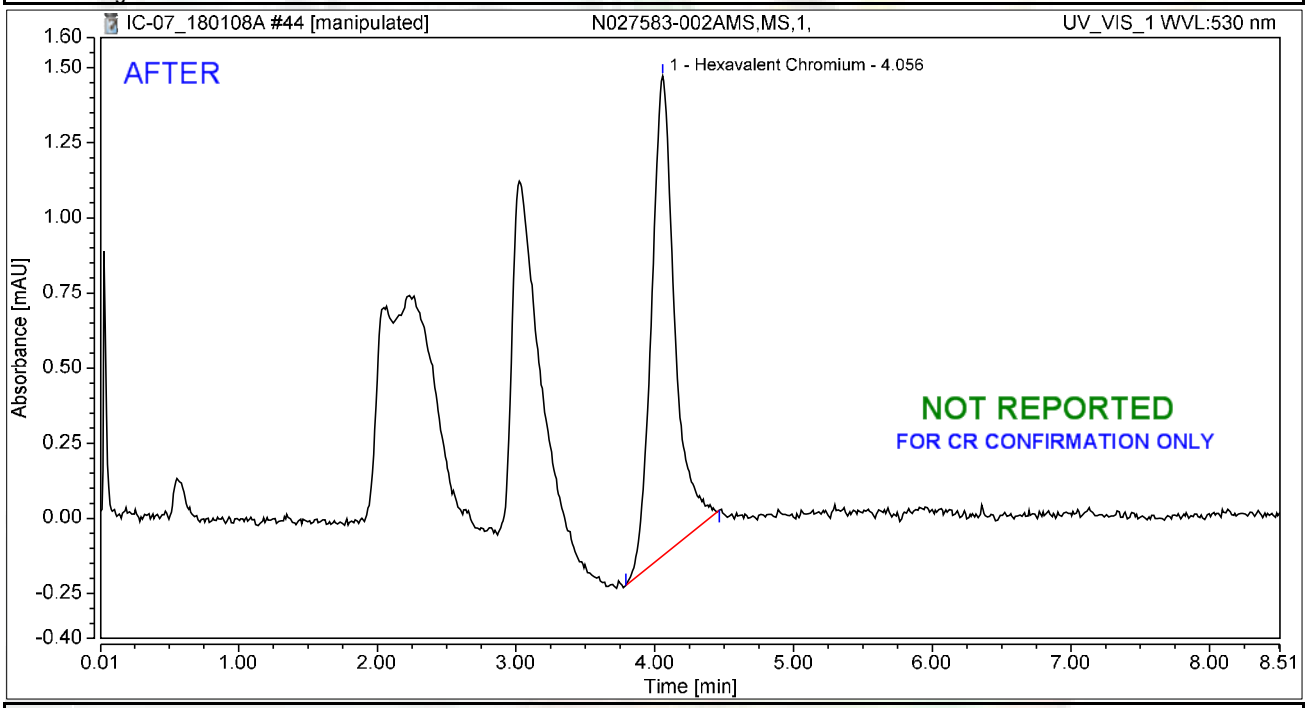
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.310	1.597	100.00	100.00	1.2138
Total:			**0.310**	**1.597**	**100.00**	**100.00**	

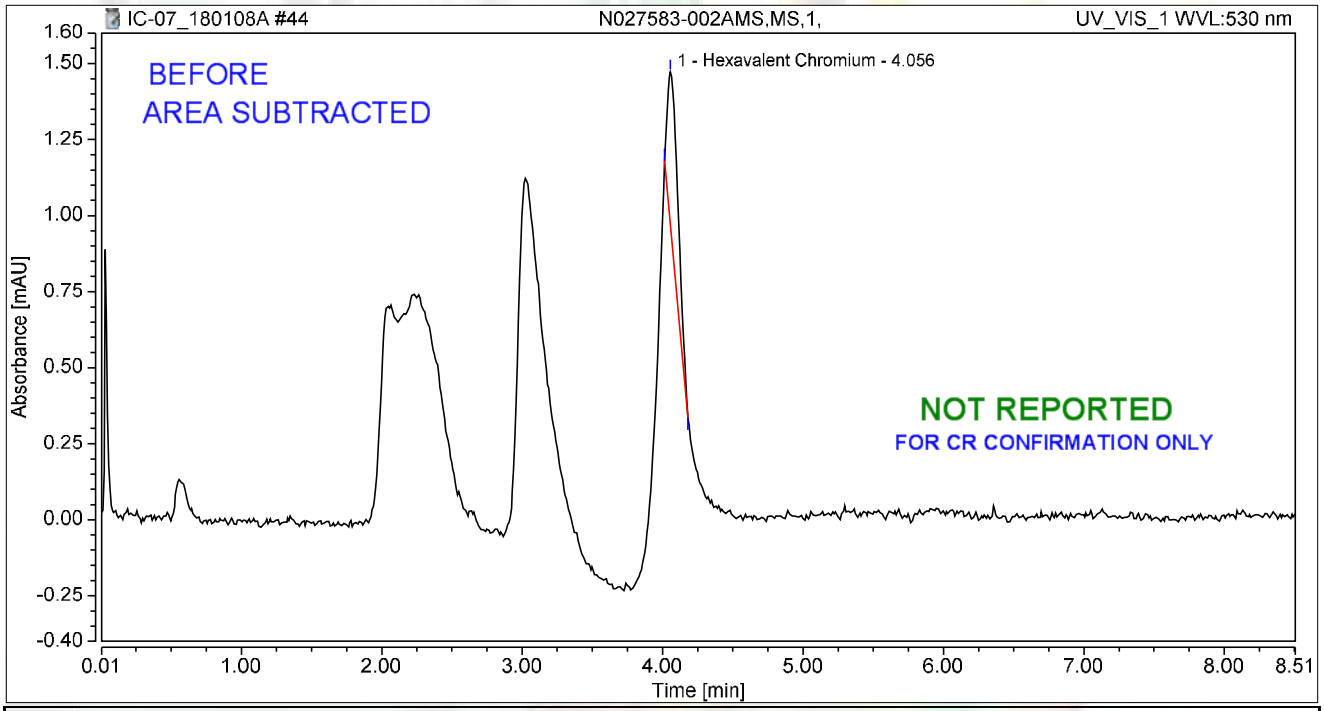
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.047	0.503	100.00	100.00	0.1810
Total:			**0.047**	**0.503**	**100.00**	**100.00**	

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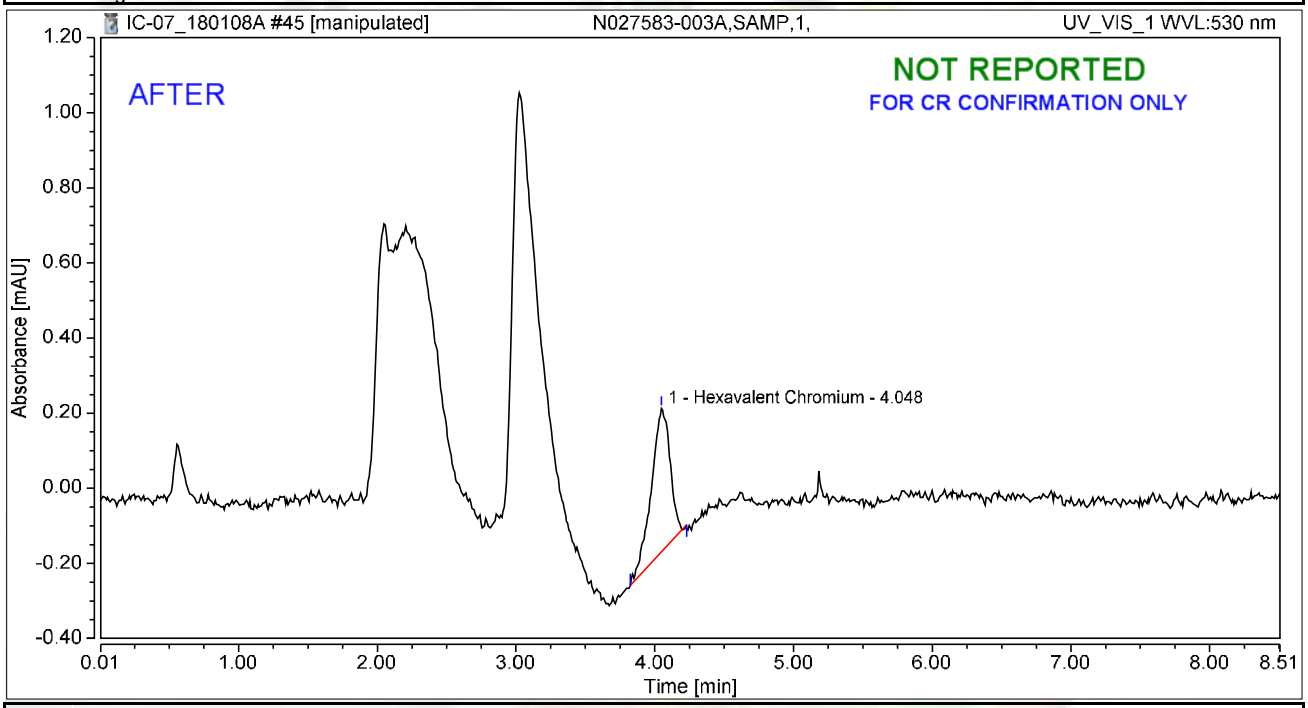
Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.060	0.383	100.00	100.00	0.2344
Total:			**0.060**	**0.383**	**100.00**	**100.00**	

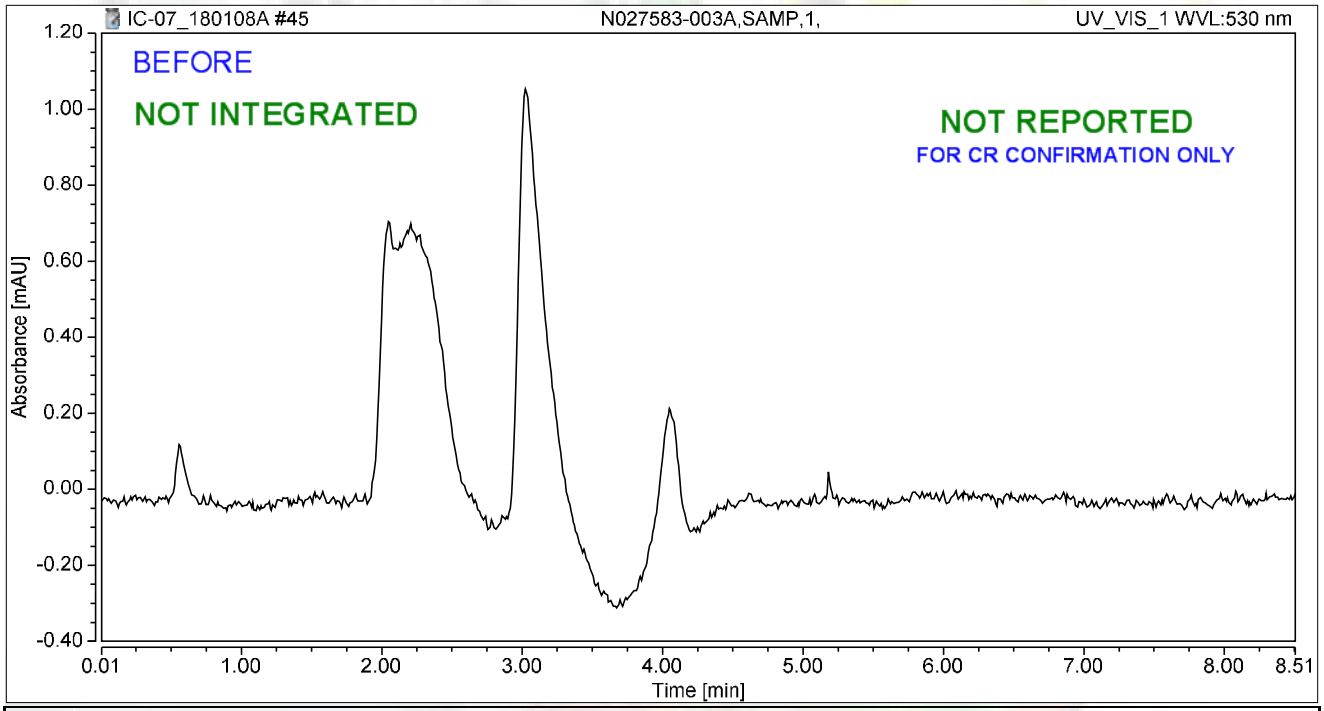
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

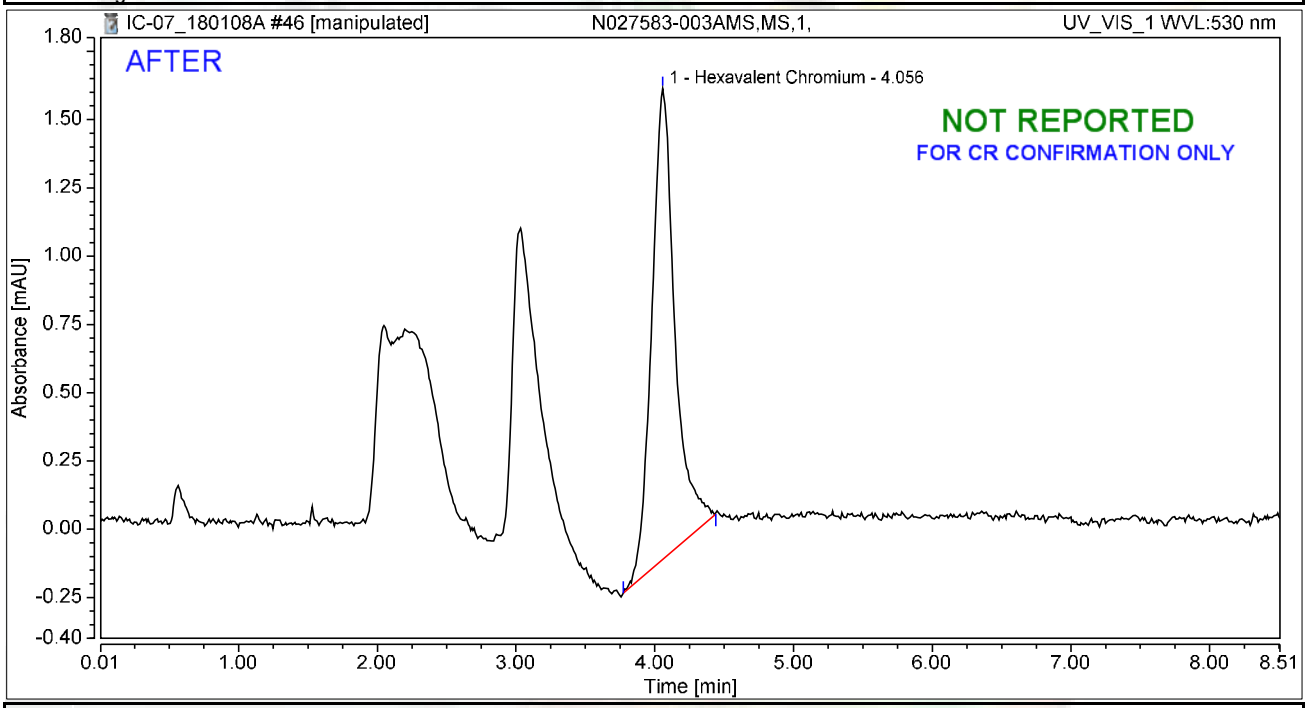
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.335	1.726	100.00	100.00	1.3100
Total:			**0.335**	**1.726**	**100.00**	**100.00**	

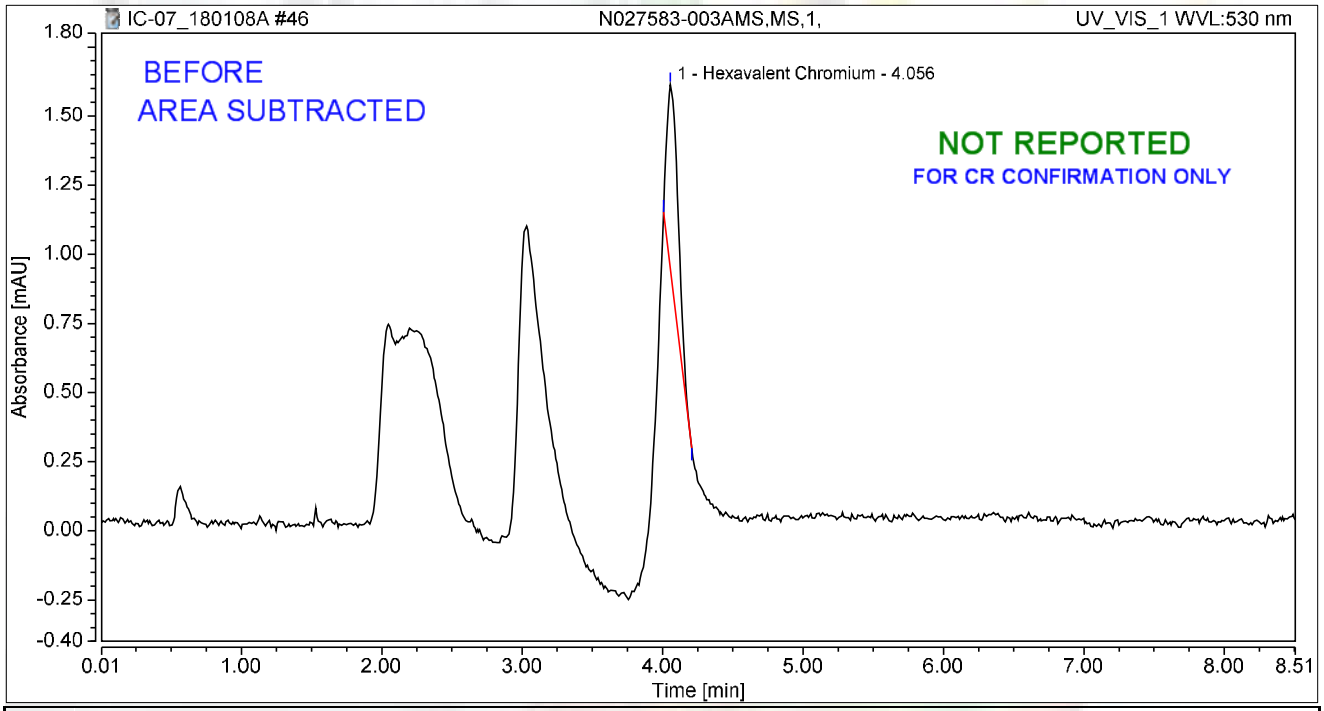
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.066	0.675	100.00	100.00	0.2558
Total:			**0.066**	**0.675**	**100.00**	**100.00**	

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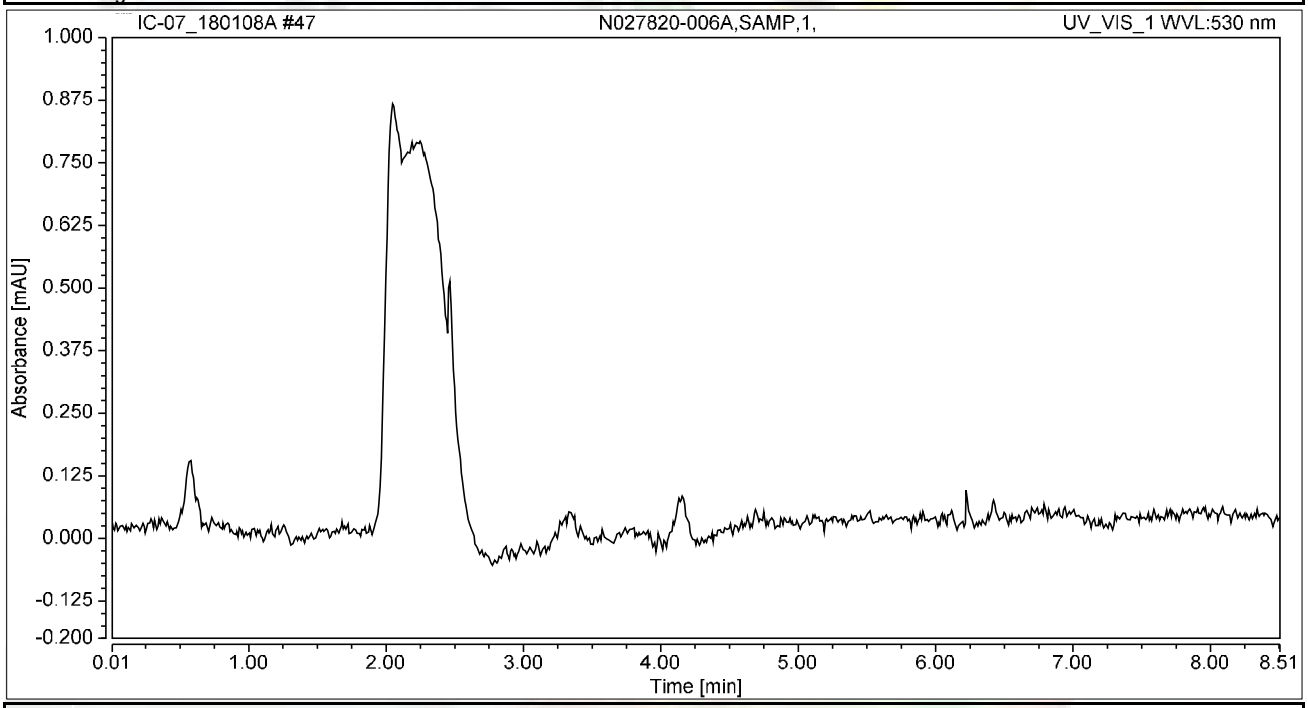
Chromatogram and Results

Injection Details

Injection Name:	**N027820-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

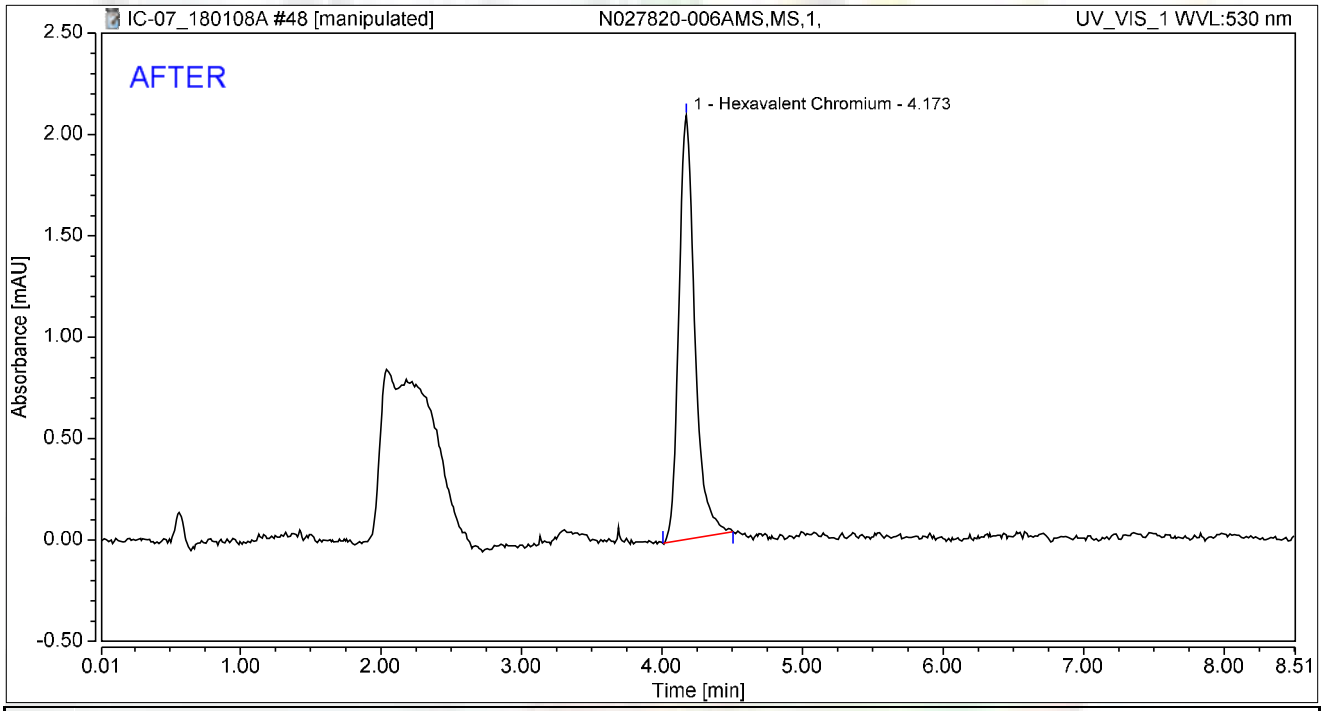
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.090	100.00	100.00	1.0786
Total:			**0.276**	**2.090**	**100.00**	**100.00**	

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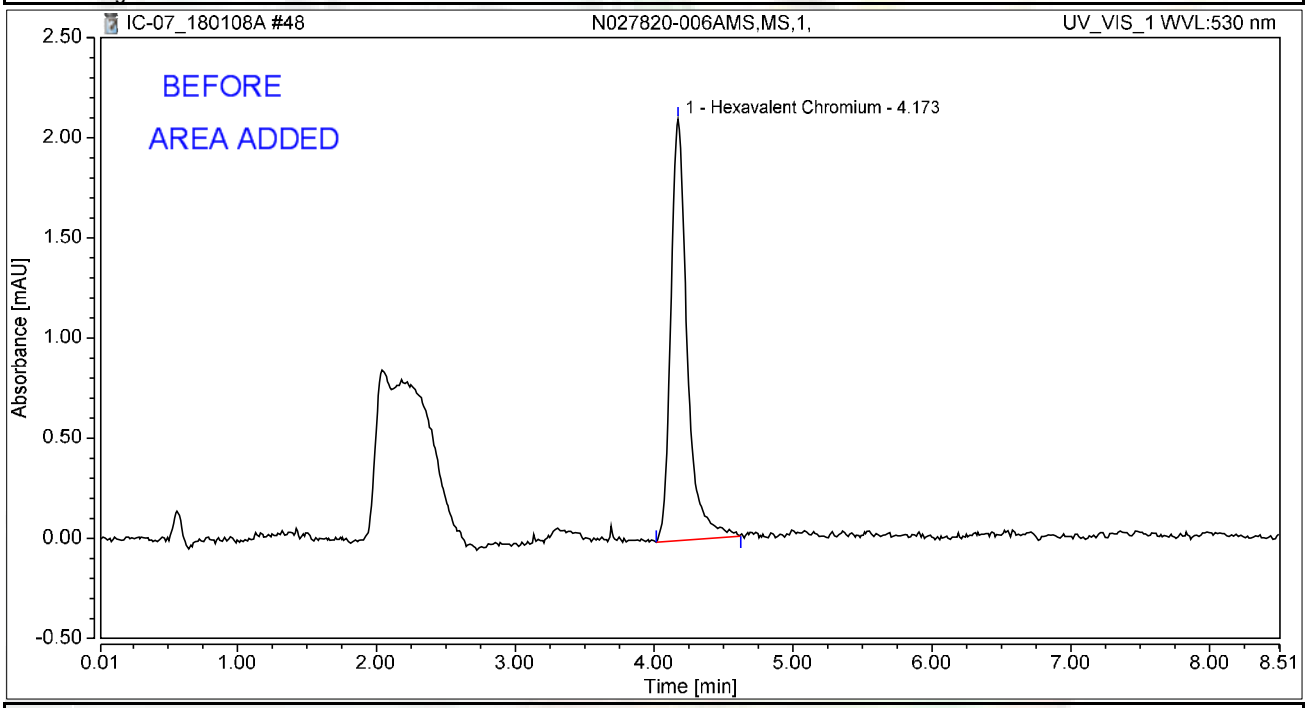
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.289	2.105	100.00	100.00	1.1287
Total:			**0.289**	**2.105**	**100.00**	**100.00**	

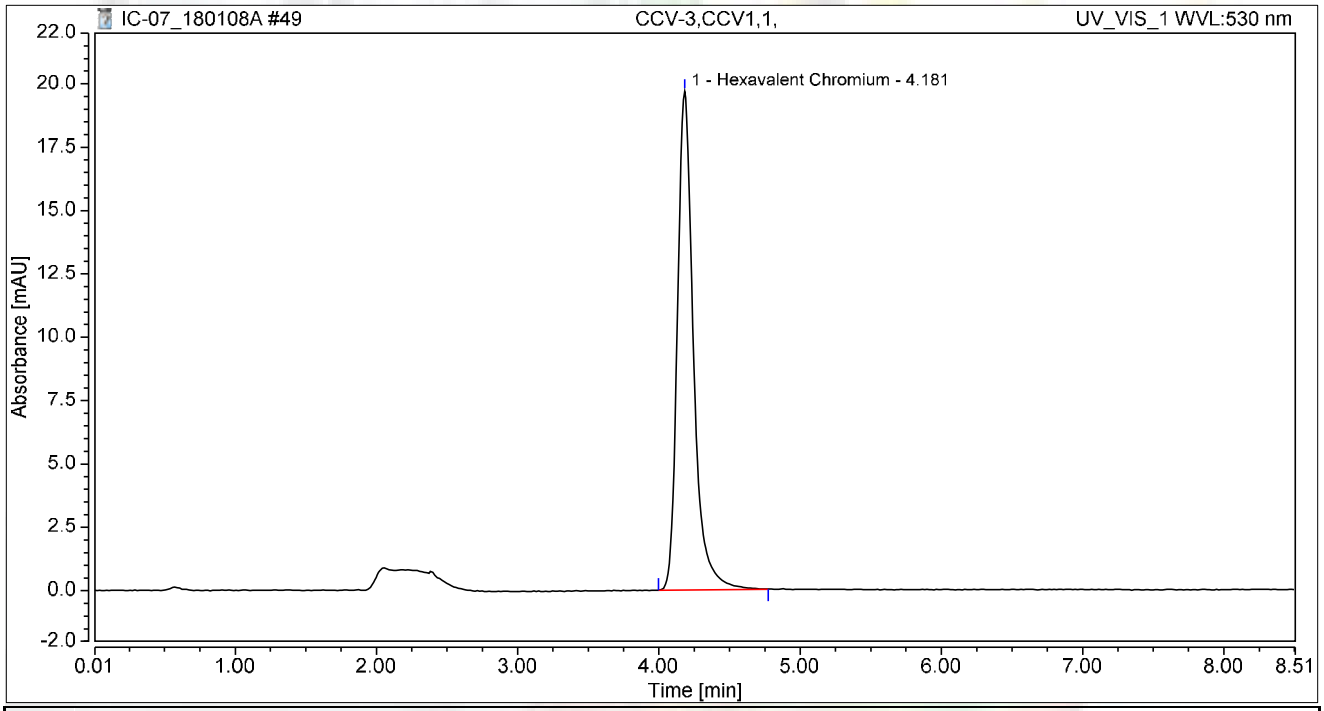
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

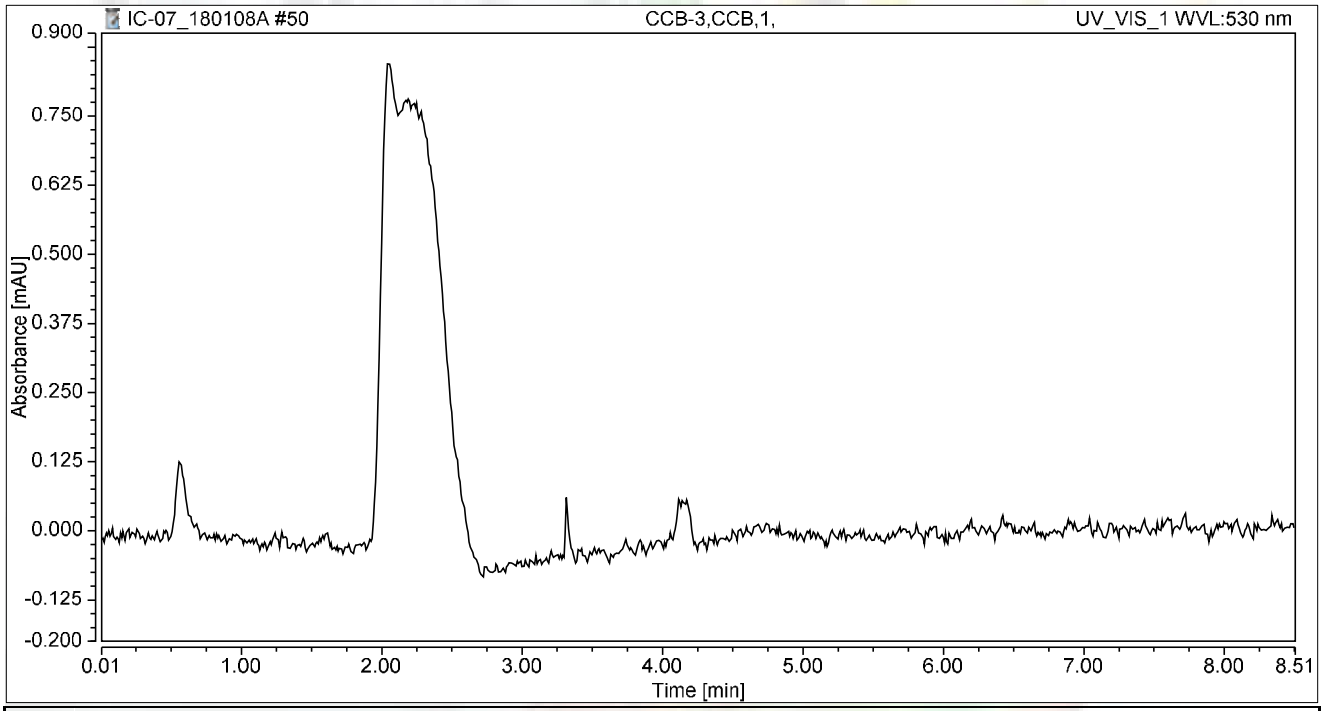
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.598	19.677	100.00	100.00	10.1608
Total:			**2.598**	**19.677**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

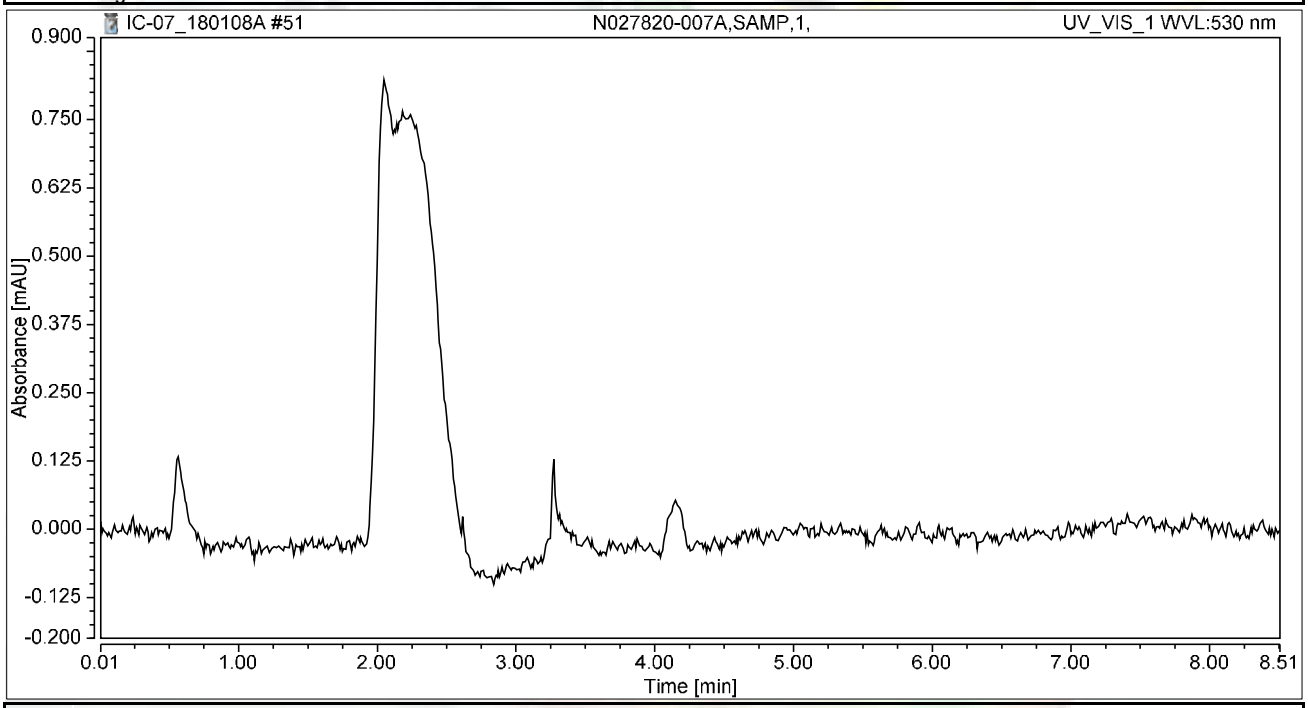
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

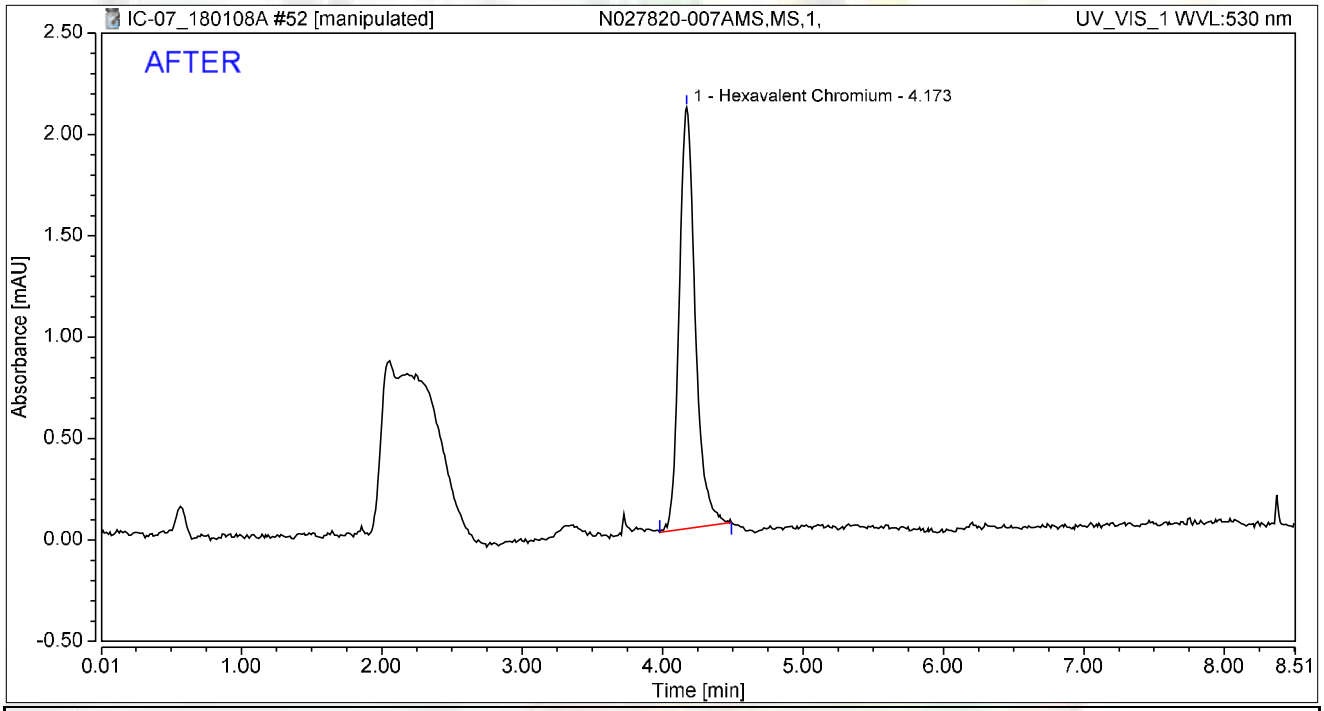
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.077	100.00	100.00	1.0767
Total:			**0.275**	**2.077**	**100.00**	**100.00**	

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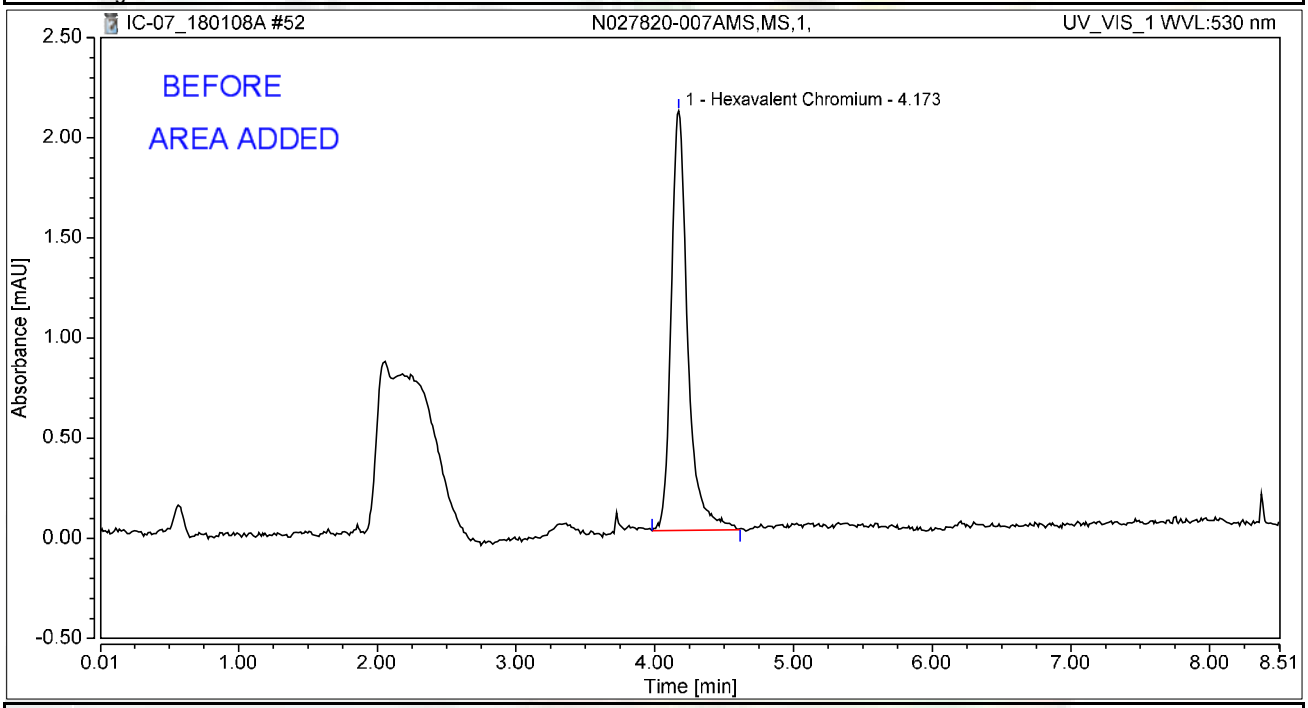
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.290	2.094	100.00	100.00	1.1336
Total:			**0.290**	**2.094**	**100.00**	**100.00**	

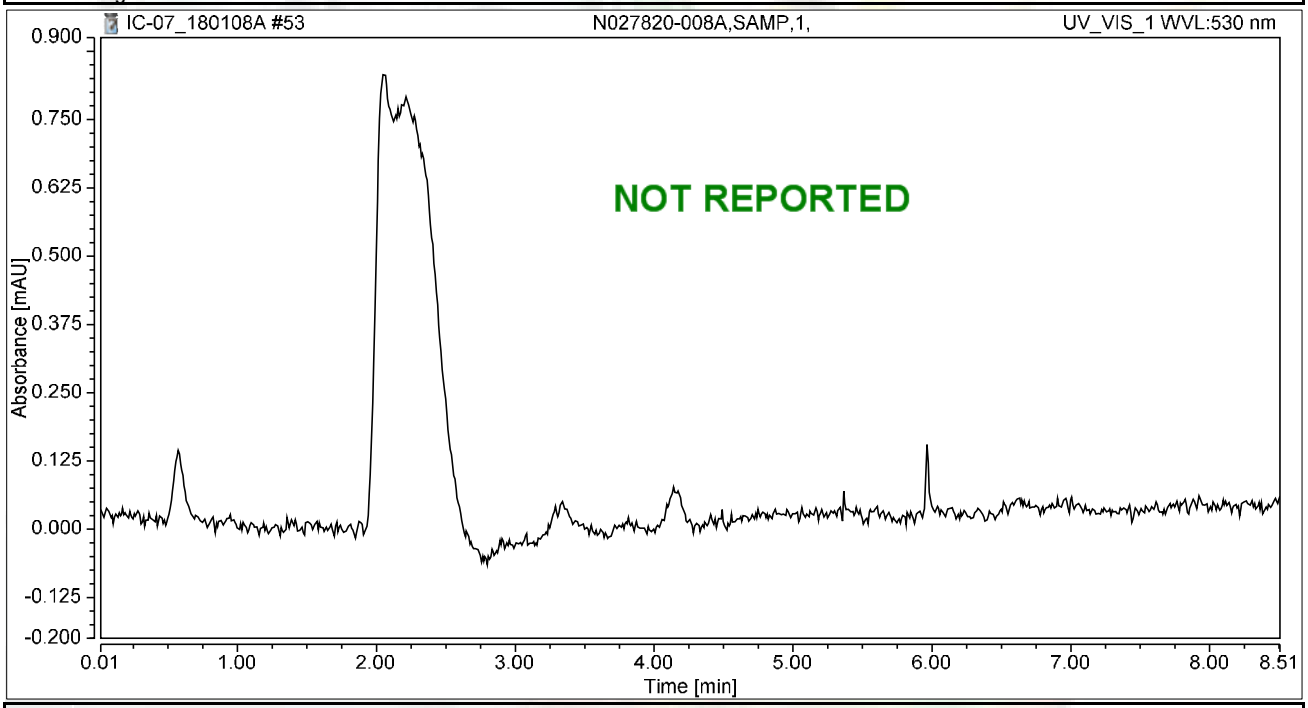
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

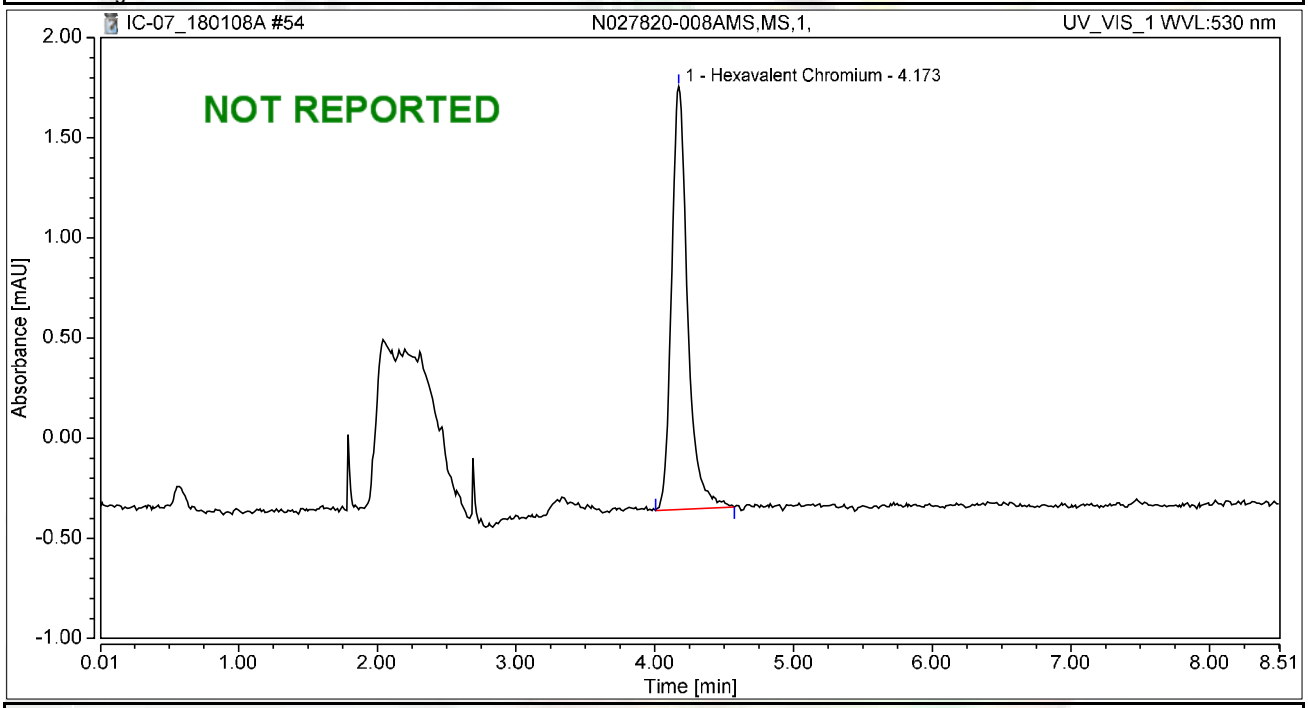
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

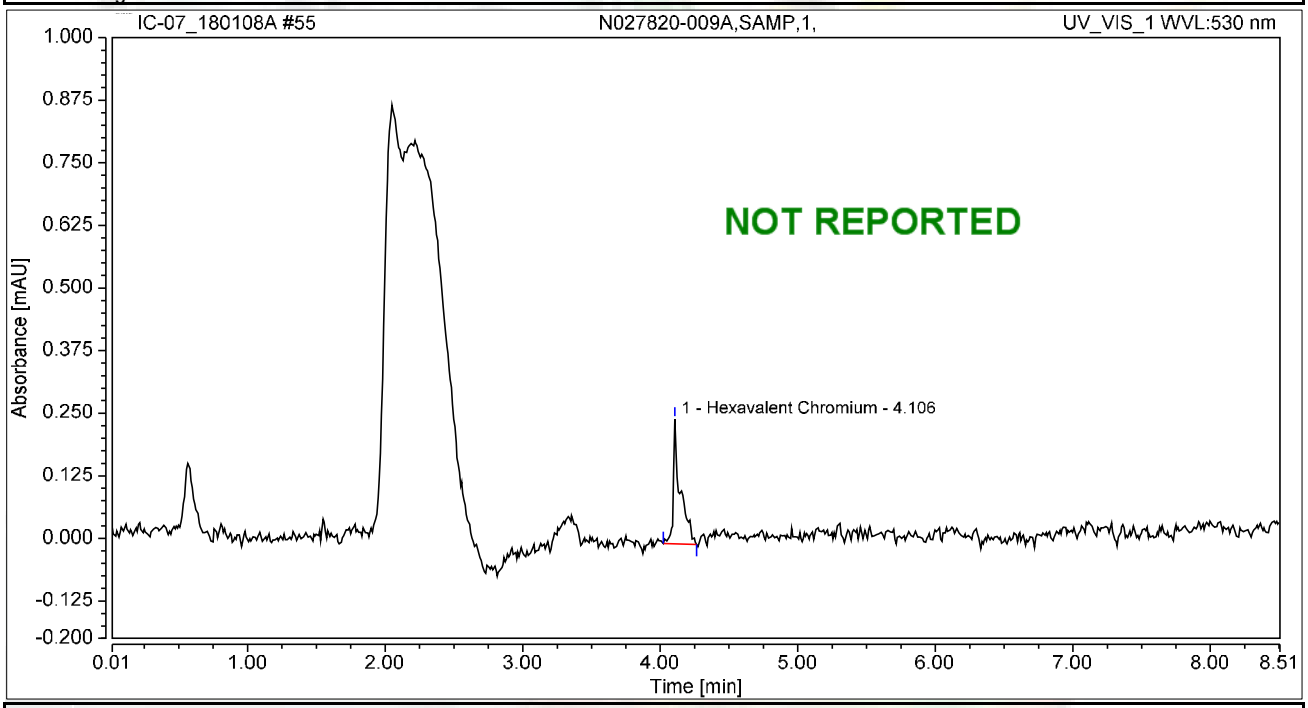
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.113	100.00	100.00	1.1081
Total:			**0.283**	**2.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

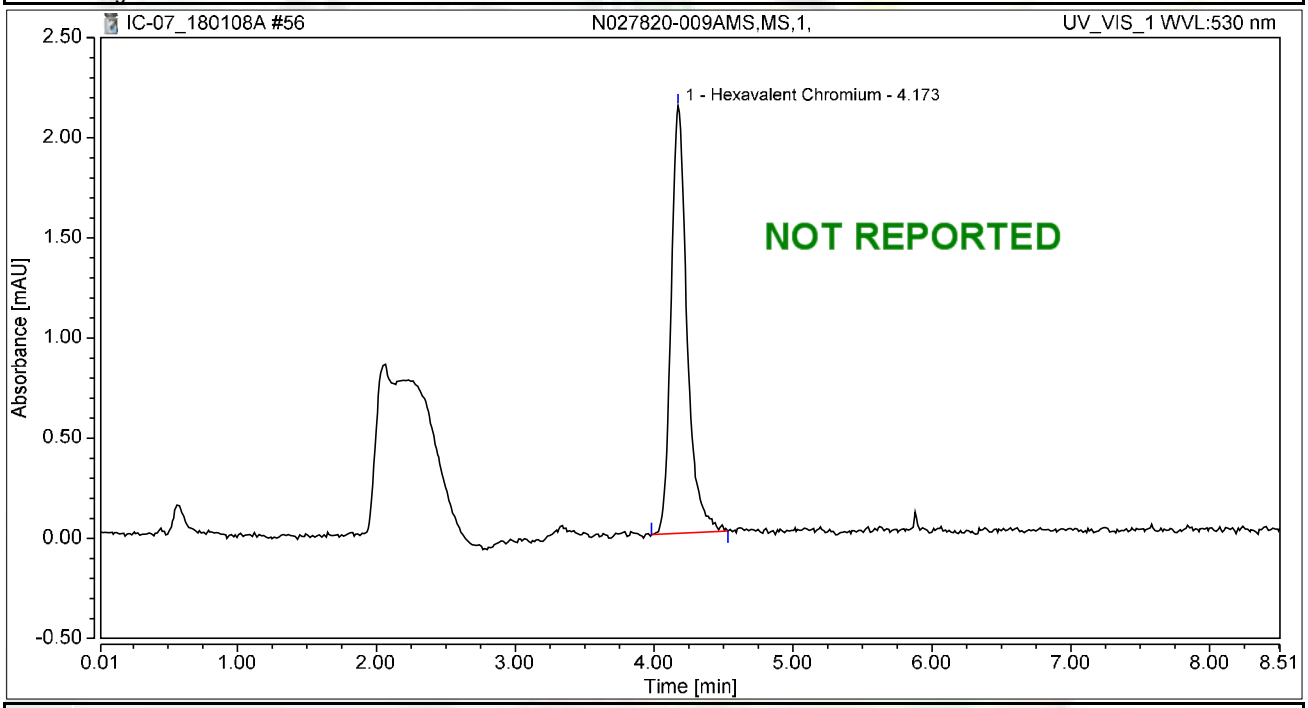
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.015	0.249	100.00	100.00	0.0568
Total:			**0.015**	**0.249**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

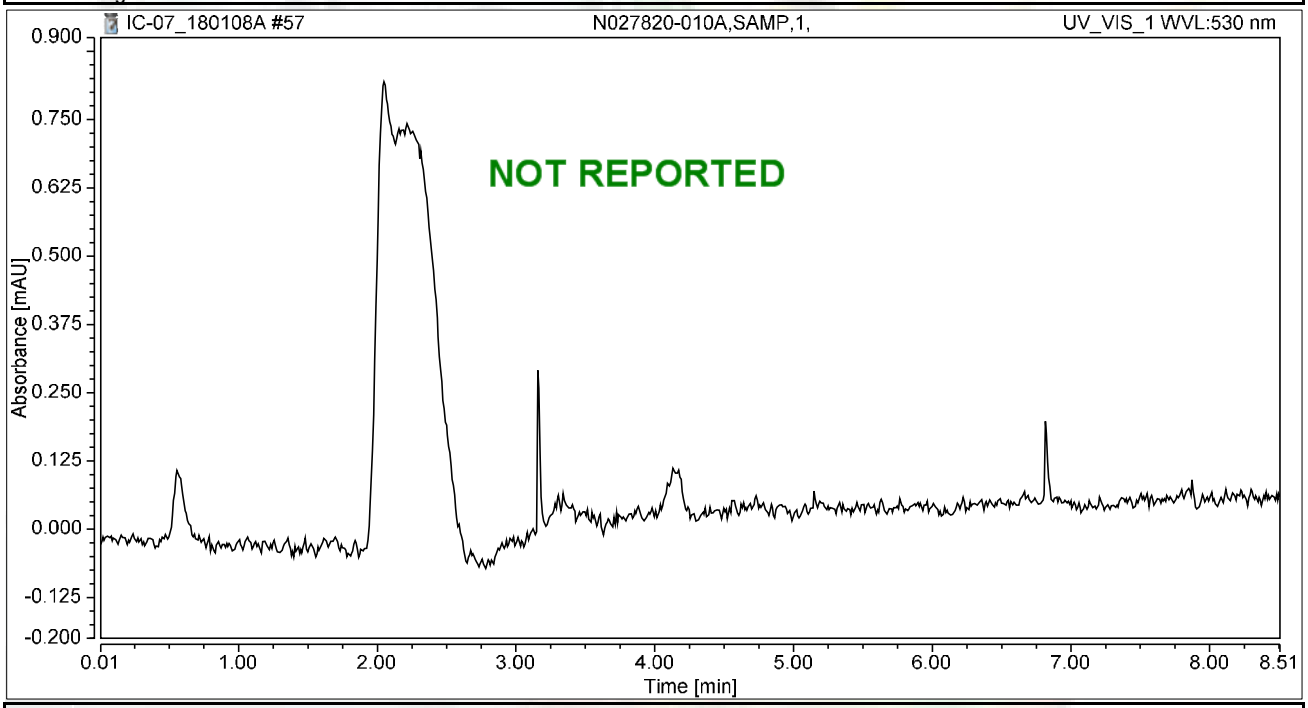
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.134	100.00	100.00	1.1118
Total:			**0.284**	**2.134**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

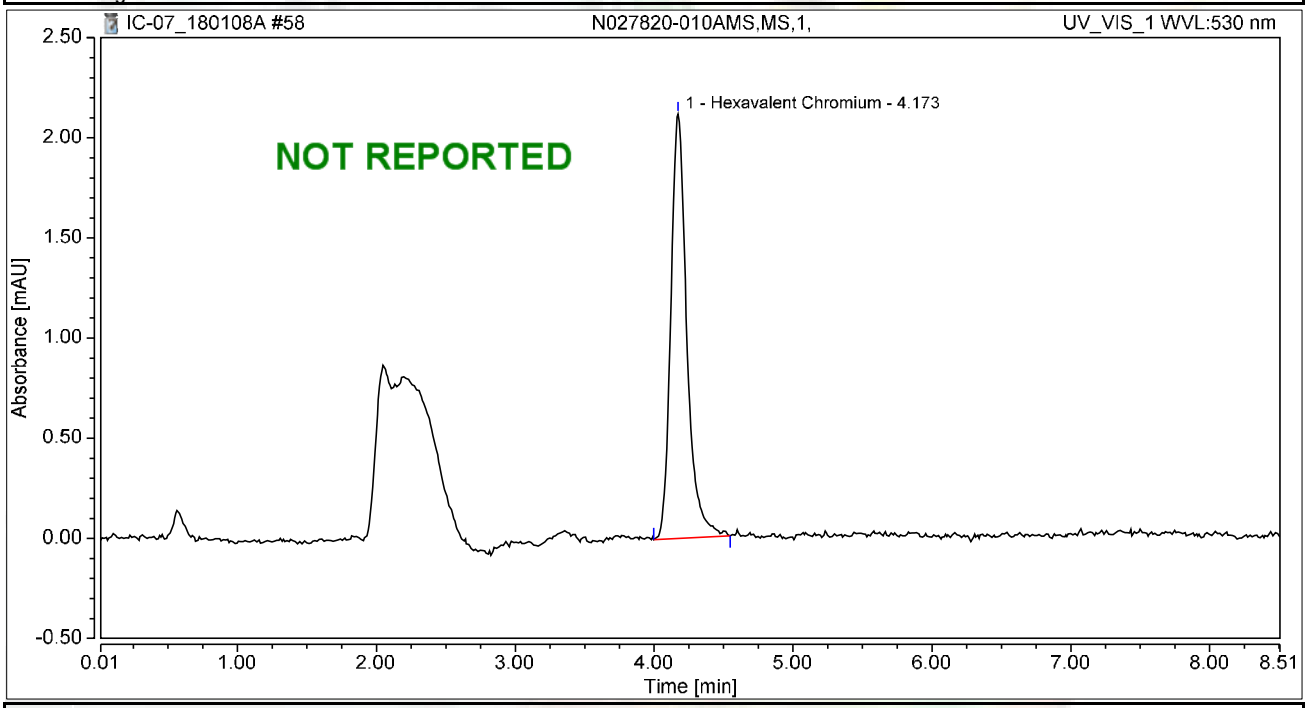
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

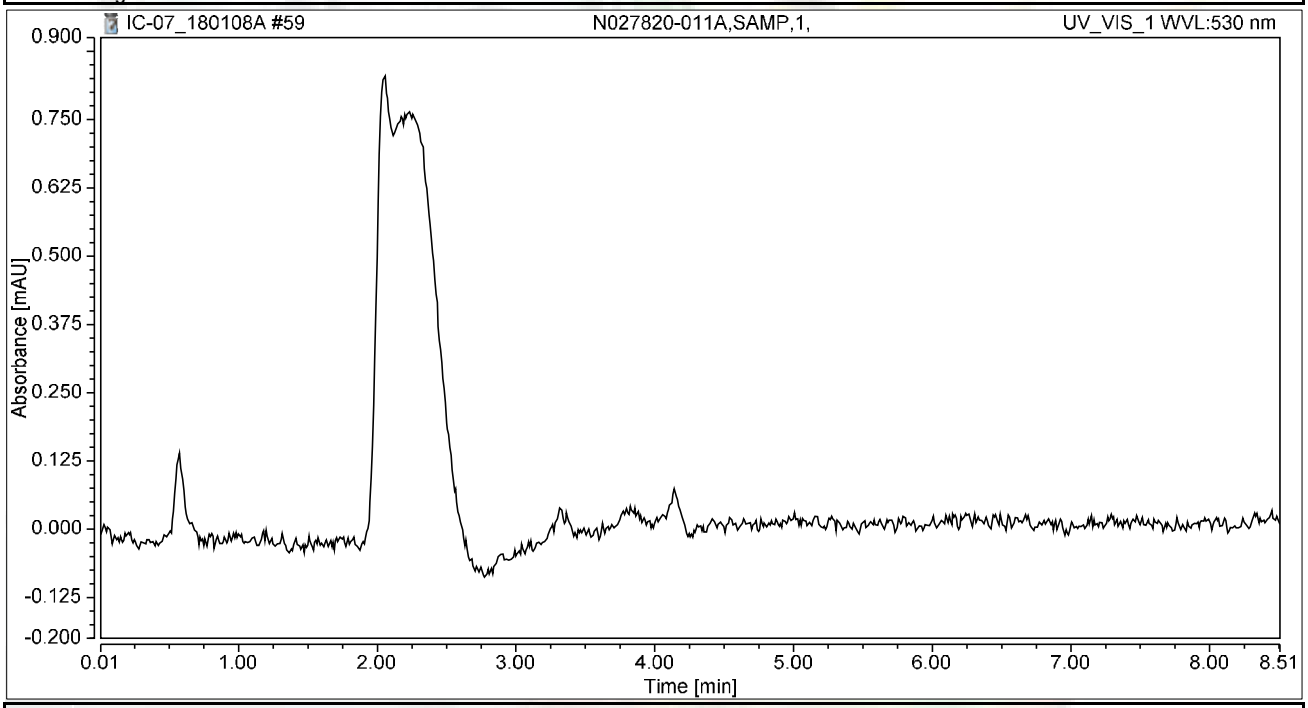
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.118	100.00	100.00	1.1083
Total:			**0.283**	**2.118**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

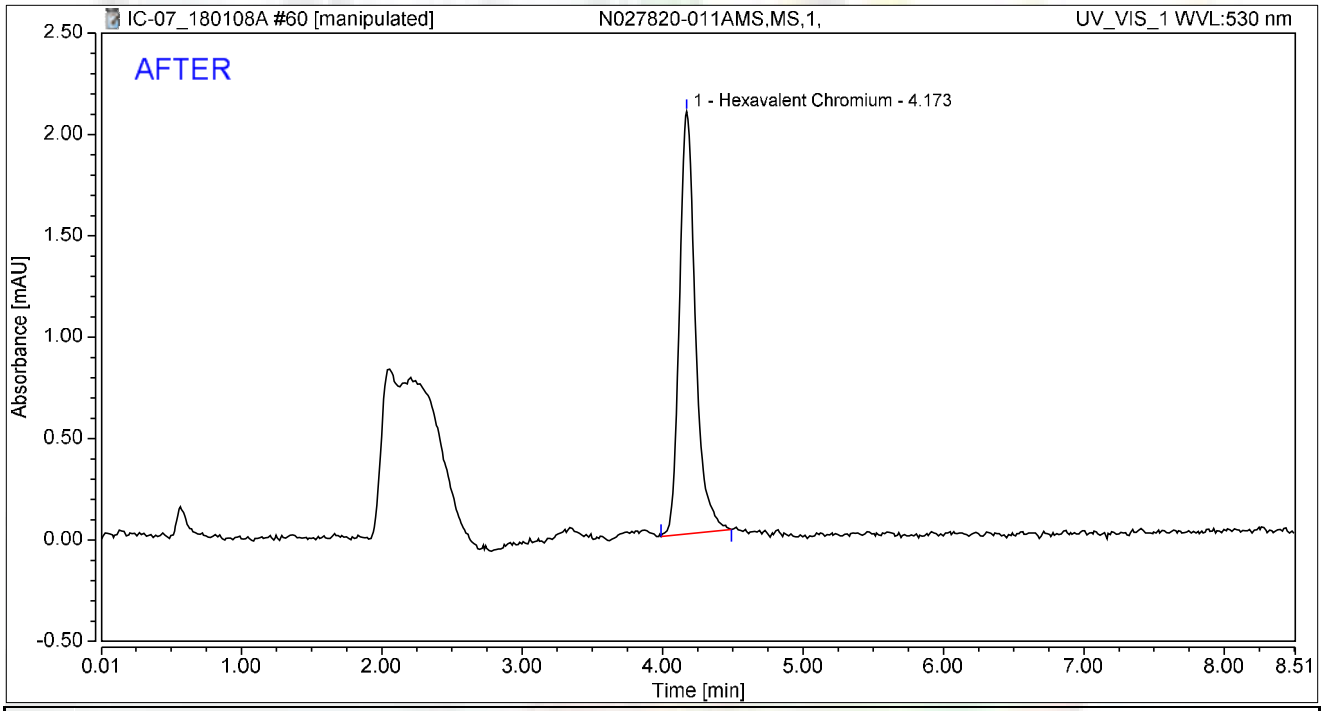
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.083	100.00	100.00	1.0774
Total:			**0.275**	**2.083**	**100.00**	**100.00**	

rba 1/10/2018

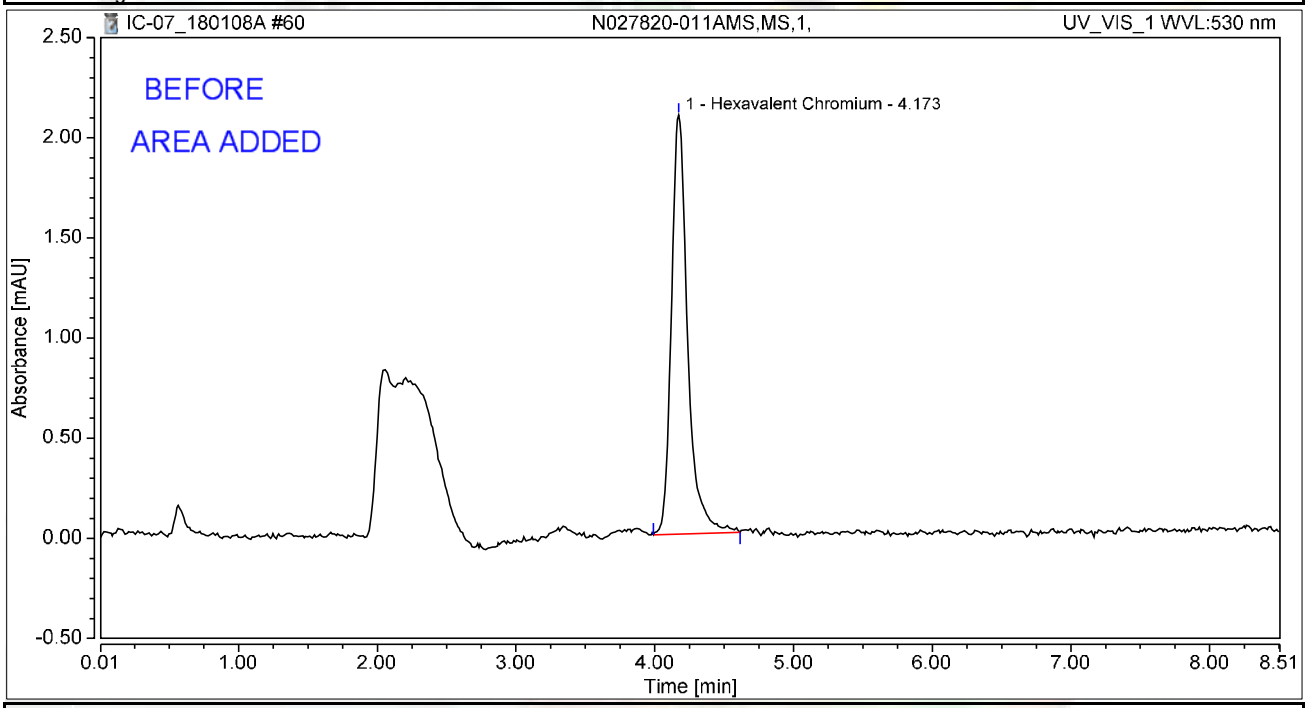
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.092	100.00	100.00	1.1105
Total:			**0.284**	**2.092**	**100.00**	**100.00**	

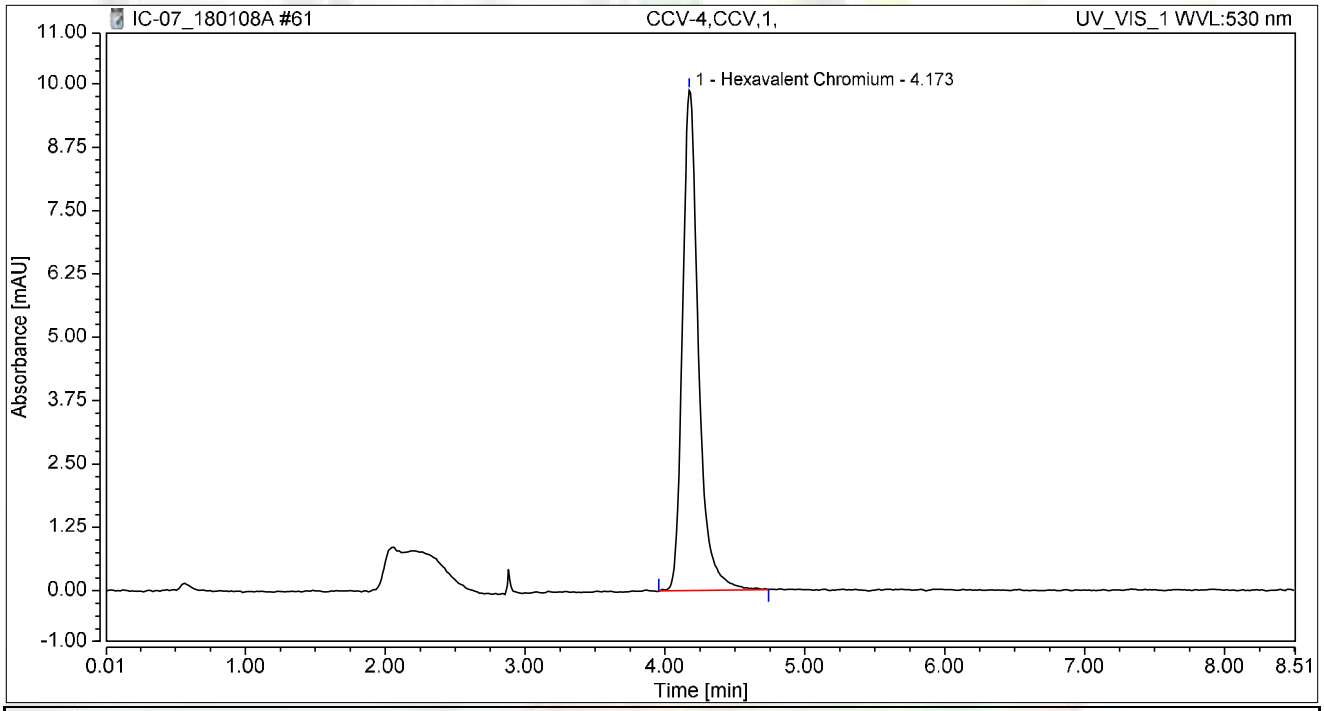
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

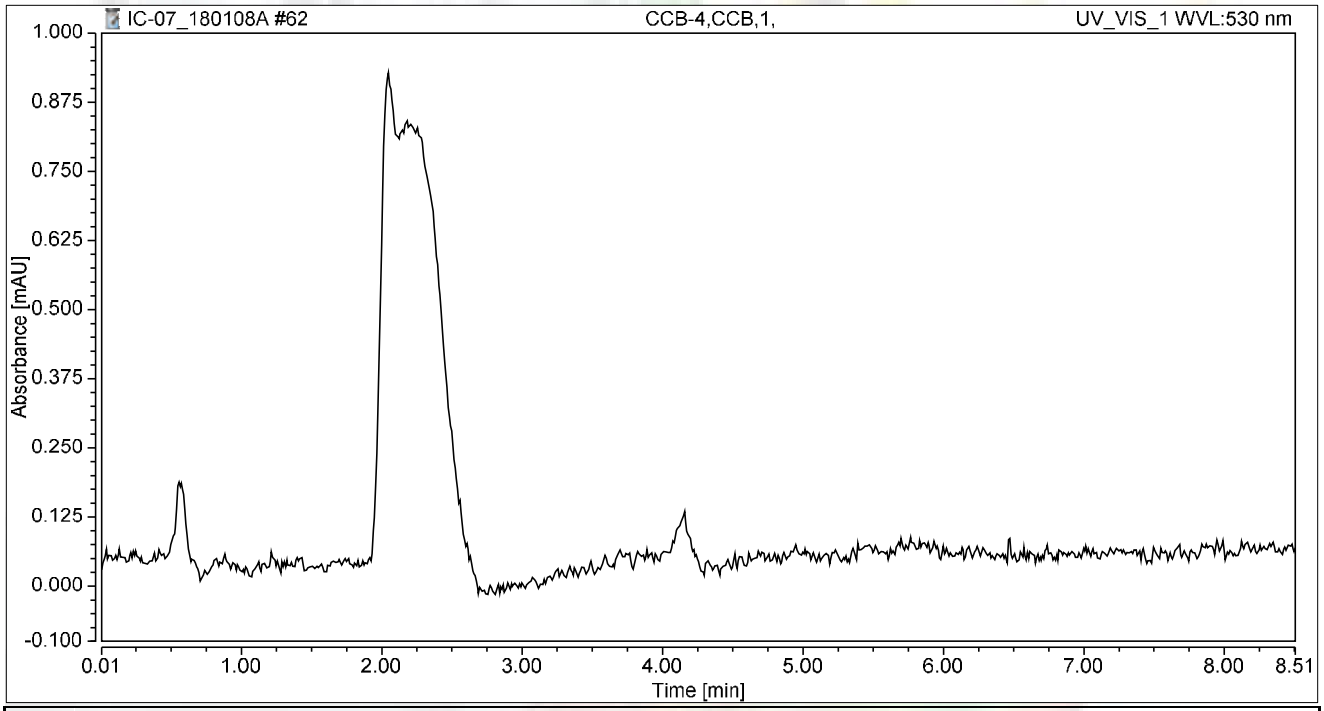
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.308	9.867	100.00	100.00	5.1168
Total:			**1.308**	**9.867**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

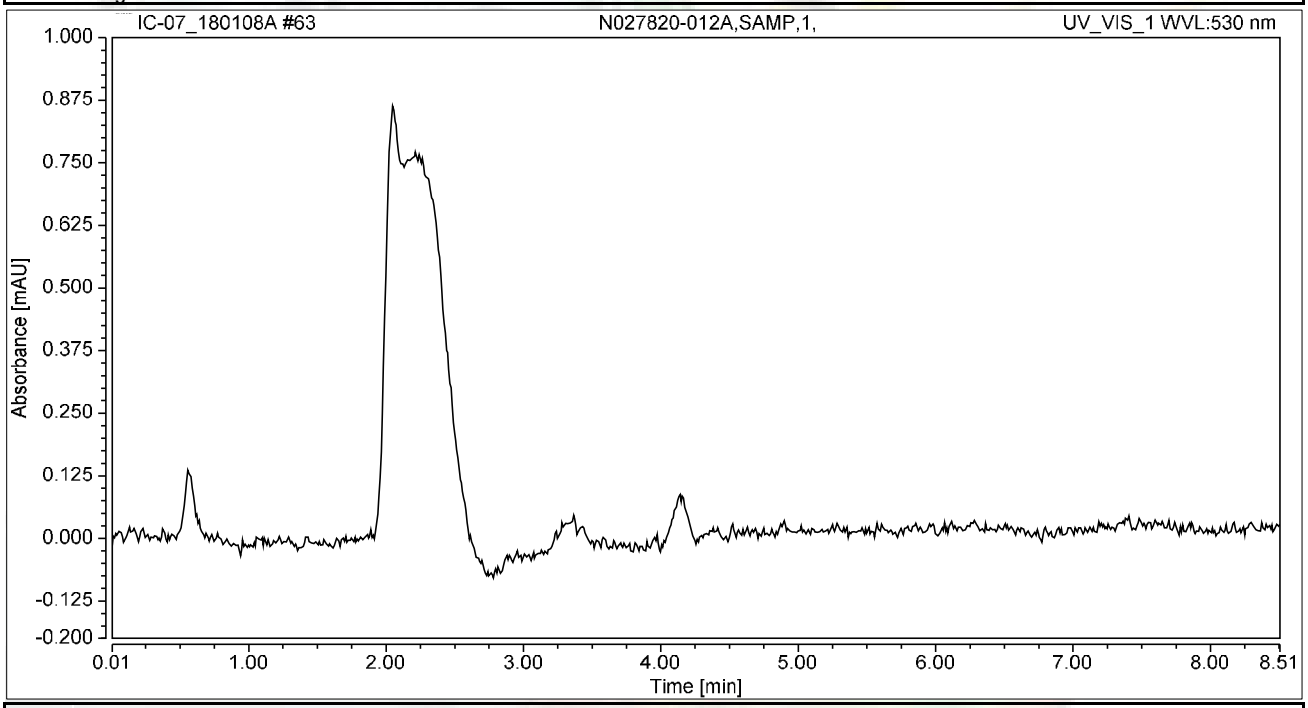
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

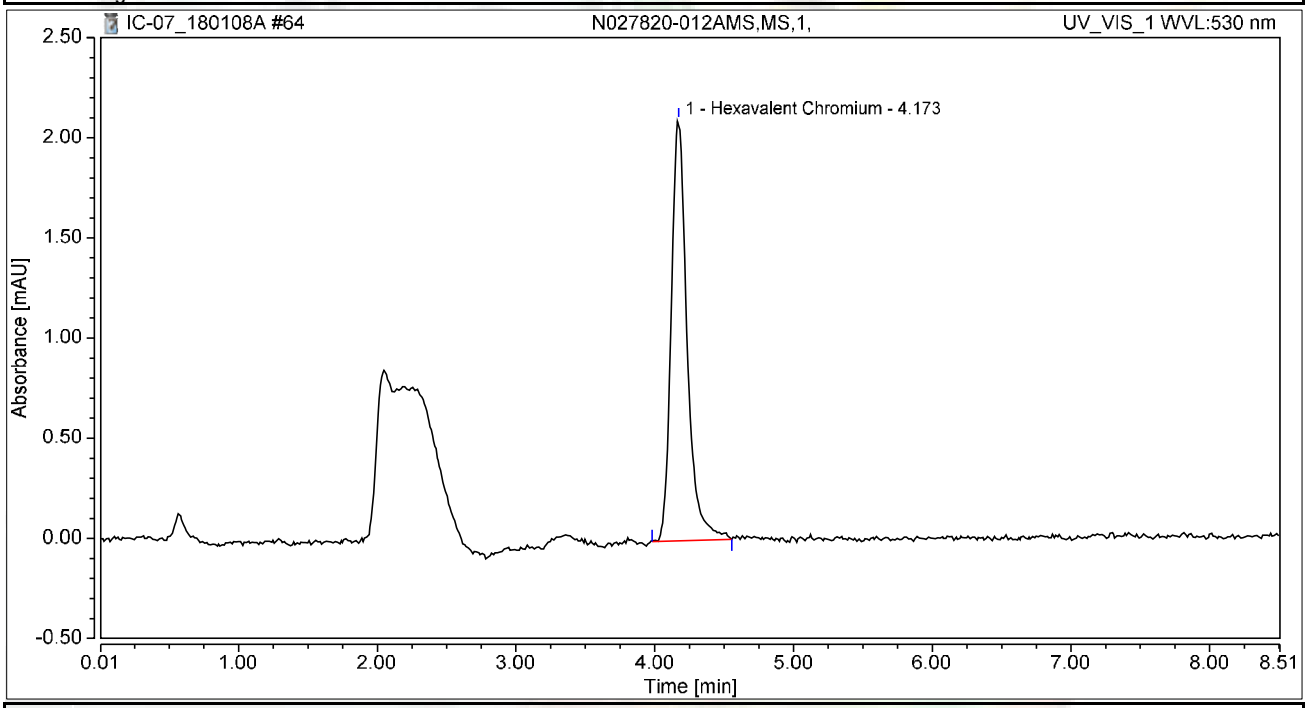
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

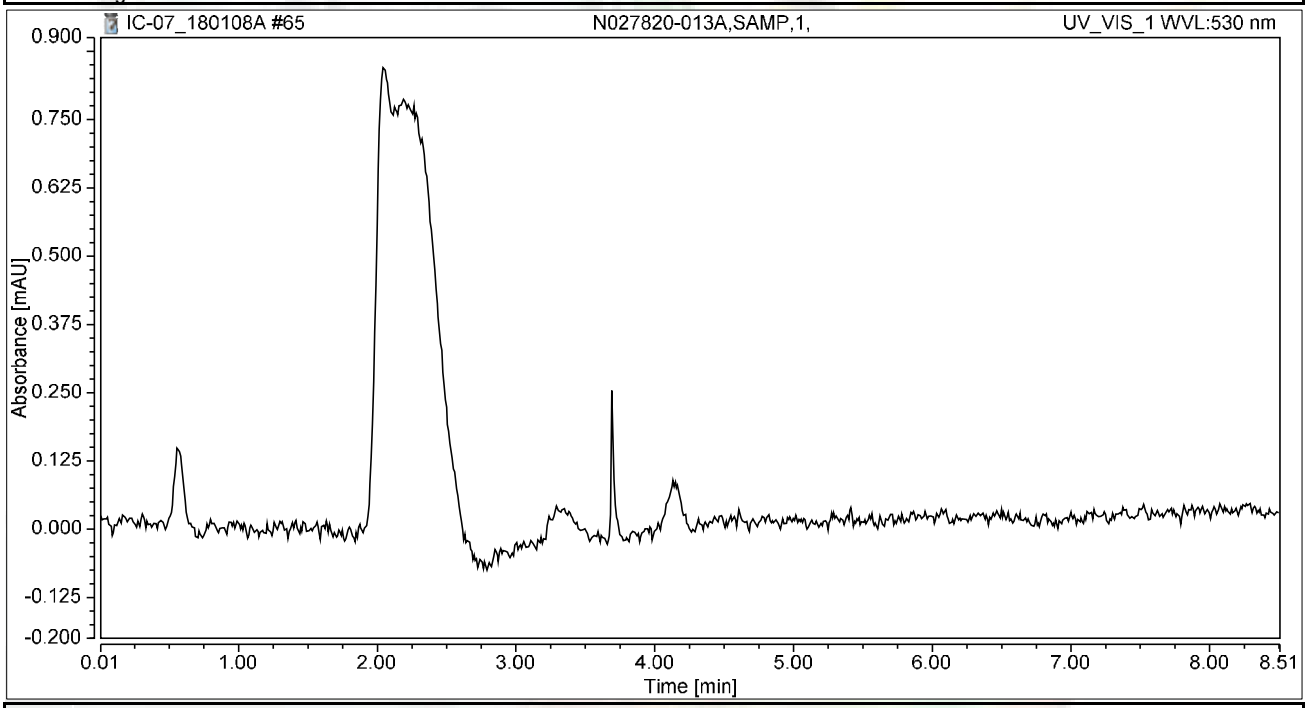
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.280	2.103	100.00	100.00	1.0962
Total:			**0.280**	**2.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

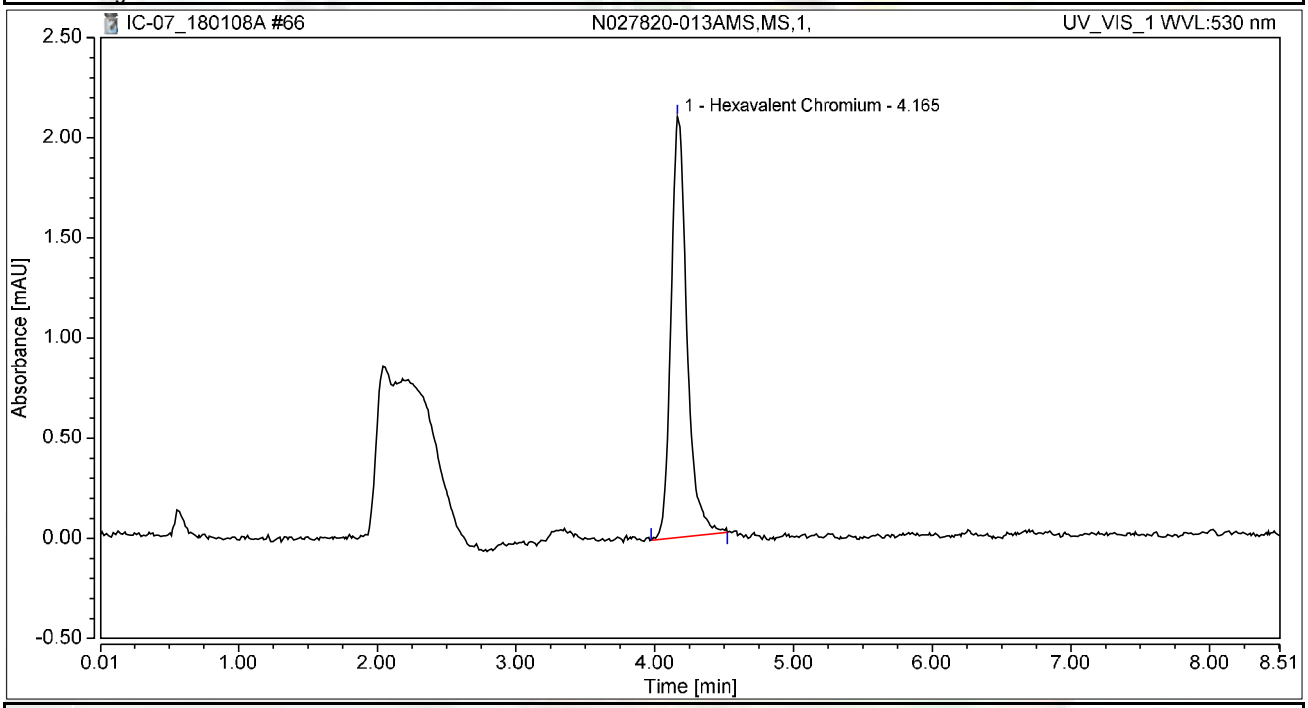
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

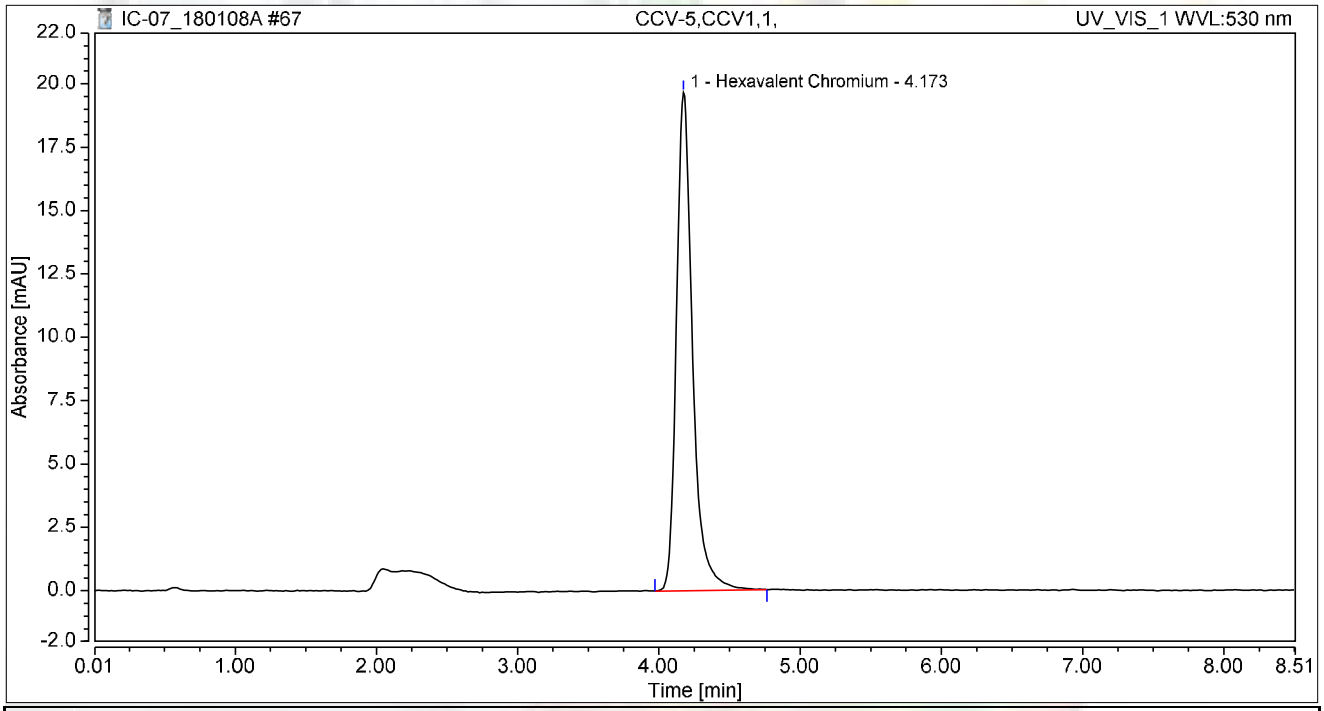
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.280	2.101	100.00	100.00	1.0947
Total:			**0.280**	**2.101**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

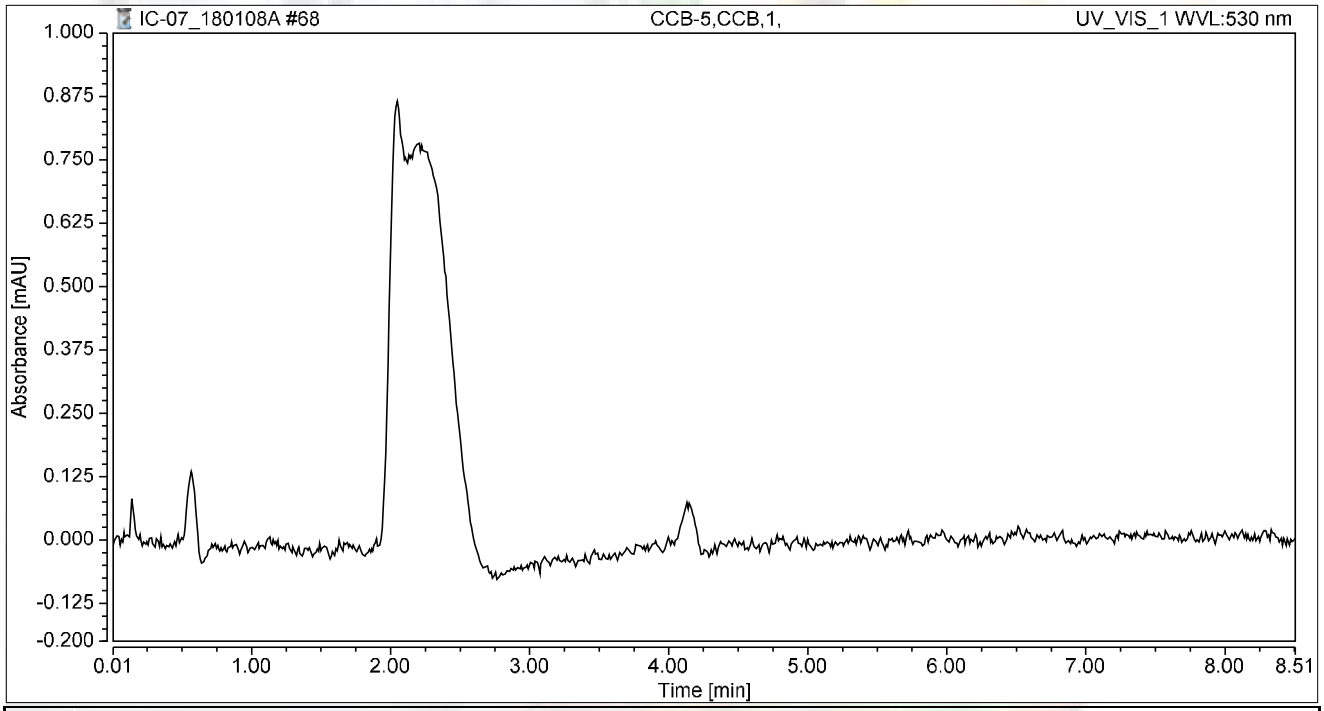
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.601	19.666	100.00	100.00	10.1741
Total:			**2.601**	**19.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121239 **Analyst:** QBM

ASSET #: N027812 **Date Analyzed:** 1/5/2018

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in MSD failed, high bias. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/15/2018

2nd Level Reviewer RJB 01/15/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027812-001E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.3864	*	1
	=	0.3864	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.39 mg/L

RLB 01/15/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

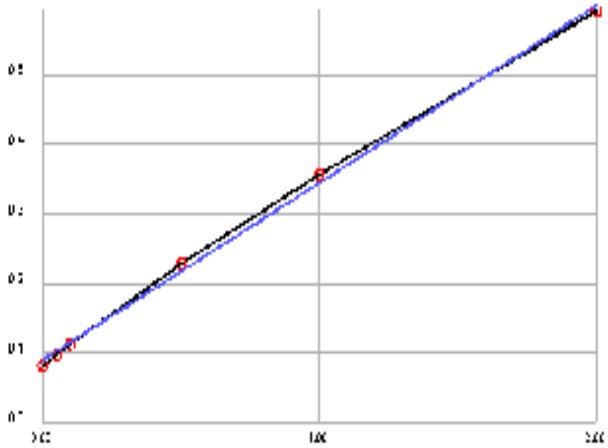
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2555x + 0.0897
Correlation	.998873

Calibrant	Energy	Set	Conc
1	0.0820	0.0000	-0.0300
2	0.0978	0.0500	0.0318
3	0.1126	0.1000	0.0898
4	0.2286	0.5000	0.5437
5	0.3578	1.0000	1.0493
6	0.5919	2.0000	1.9654

Notes:

01/15/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **ICV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.529	0.050	0.5000	0	106	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	99.0	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.472	0.050	0.5000	0	94.3	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCV**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.532	0.050	0.5000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **ICB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121239**
Client ID: **CCB**	Batch ID: **R121239**	TestNo: **SM4500-NO3**		Analysis Date: **1/5/2018**	SeqNo: **2886062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 01-05-2018 14:27
Time end: 01-05-2018 17:01

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:26:07	-0.0026		0.0890
2	<BLANK>	16:27:08	-0.0292		0.0822
3	<CAL1>	16:28:02	-0.0300	[0]	0.0820
4	<CAL2>	16:28:57	0.0318	[0.05]	0.0978
5	<CAL3>	16:29:53	0.0898	[0.1]	0.1126
6	<CAL4>	16:30:53	0.5437	[0.5]	0.2286
7	<CAL5>	16:31:49	1.0493	[1]	0.3578
8	<CAL6>	16:32:50	1.9654	[2]	0.5919
9	,BLANK,BLANK,1, NOT REPORTED	16:33:46	0.0291		0.0971
10	,ICV,ICV,1,	16:34:40	0.5292		0.2249
11	,ICB,ICB,1,	16:35:41	-0.0147		0.0859
12	,MB-H2O,MBLK,1,	16:36:37	-0.0288		0.0823
13	,LCS-H2O,LCS,1,	16:37:31	0.5218		0.2230
14	,N027789-001D,SAMP,5,	16:38:32	0.6490		0.2555
15	,N027789-001DDUP,DUP,5,	16:39:28	0.6404		0.2533
16	,N027789-002D,SAMP,5,	16:40:23	0.5907		0.2406
17	,N027789-002DMS,MS,5,	16:41:24	1.1174		0.3752
18	,N027789-002DMSD,MSD,5,	16:42:19	1.2340		0.4050
19	,N027793-001A,SAMP,10,	16:43:15	1.0094		0.3476
20	,N027812-001E,SAMP,1,	16:44:15	0.3864		0.1884
21	,BLANK, NOT REPORTED	16:45:11	-0.0237		0.0836
22	,CCV-1,CCV,1,	16:45:54	0.4948		0.2161
23	,CCB-1,CCB,1,	16:46:42	-0.0276		0.0826
24	,N027812-002E,SAMP,1,	16:47:26	0.3840		0.1878
25	,N027812-003E,SAMP,1,	16:48:14	0.3551		0.1804
26	,N027812-004E,SAMP,1,	16:48:57	0.3946		0.1905

RJB 01/15/2018 **398**

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027812-005E,SAMP,1,	16:49:40	0.3606		0.1818
28	,N027812-006E,SAMP,1,	16:50:28	0.3962		0.1909
29	,N027812-007E,SAMP,1,	16:51:12	0.3516		0.1795
30	,N027812-008E,SAMP,1,	16:52:00	0.3316		0.1744
31	,N027812-009E,SAMP,1,	16:52:43	0.3402		0.1766
32	,N027812-011E,SAMP,1,	16:53:25	0.3355		0.1754
33	,BLANK, NOT REPORTED	16:54:15	-0.0362		0.0804
34	,CCV-2,CCV,1,	16:54:58	0.4717		0.2102
35	,CCB-2,CCB,1,	16:55:40	-0.0433		0.0786
36	,N027812-012E,SAMP,1,	16:56:29	0.3379		0.1760
37	,N027812-013E,SAMP,1,	16:57:11	0.3218		0.1719
38	,BLANK, NOT REPORTED	16:57:55	-0.0523		0.0763
39	,CCV-3,CCV,1,	16:58:43	0.5324		0.2257
40	,CCB-3,CCB,1,	16:59:26	-0.0468		0.0777

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 1/5/2018
Time Analyzed: 2:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027789-001D		8.63							
N027789-002D		8.38							
N027793-001A		6.40							
N027812-001E		5.78							
N027812-002E		7.79							
N027812-003E		7.13							
N027812-004E		8.13							
N027812-005E		7.89							
N027812-006E		8.06							
N027812-007E		7.66							
N027812-008E		8.02							
N027812-009E		7.87							
N027812-011E		8.20							
N027812-012E		8.27							
N027812-013E		7.73							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66256
ASSET #: N027812

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[X] EPA 6010B / 200.7 DISS
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed	/		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/11/18

2nd Level Reviewer 01/11/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027812-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02472 * 1 * (25/25) * 1000

Iron , ug/L = 24.72

Reporting results in two significant figures,

Iron , ug/L = 25

% RSD SUMMARY

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	18.55	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.5	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.67	15	PASS
Standard4	ICAL	1	Fe	5	0.31	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.62	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.48	0.4	15	PASS
ICB	ICB	1	Fe	-0.0011	71.3	15	<PQL
LLICV	CCV1	1	Fe	0.02	0.6	20	PASS
ICSA1	ICSA	1	Fe	177.44	0.066	15	PASS
ICSAB1	ICSAB	1	Fe	180.15	0.52	15	PASS
CCV1	CCV	1	Fe	10.52	0.51	15	PASS
CCB1	CCB	1	Fe	-0.00061	39.43	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	1.78	20	PASS
ICSA2	ICSA	1	Fe	176.77	0.63	15	PASS
ICSAB2	ICSAB	1	Fe	181.34	0.47	15	PASS
MB-66256	MBLK	1	Fe	0.0014	33.98	15	<PQL
LCS-66256	LCS	1	Fe	0.1	0.71	15	PASS
N027812-001B	SAMP	1	Fe	0.025	3.87	15	PASS
N027812-001B	SAMP	5	Fe	0.005	11.63	15	PASS
N027812-001B-PS	PS	1	Fe	0.12	0.52	15	PASS
N027812-001B-MS	MS	1	Fe	0.12	1.16	15	PASS
N027812-001B-MSD	MSD	1	Fe	0.12	0.59	15	PASS
N027812-002B	SAMP	1	Fe	0.0089	8.15	15	PASS
N027812-003B	SAMP	1	Fe	0.0083	7.55	15	PASS
N027812-004B	SAMP	1	Fe	0.0071	9.61	15	PASS
CCV2	CCV	1	Fe	10.29	0.15	15	PASS
CCB2	CCB	1	Fe	-0.00023	153.15	15	<PQL
N027812-005B	SAMP	1	Fe	0.017	3.79	15	PASS
N027812-006B	SAMP	1	Fe	0.017	1.35	15	PASS
N027812-007B	SAMP	1	Fe	0.0092	1.9	15	PASS
N027812-008B	SAMP	1	Fe	0.0097	2.79	15	PASS
N027812-009B	SAMP	1	Fe	0.012	5.041	15	PASS
N027812-011B	SAMP	1	Fe	0.0072	7.15	15	PASS
N027812-012B	SAMP	1	Fe	0.0092	3.37	15	PASS
N027812-013B	SAMP	1	Fe	0.0068	15.59	15	<PQL
CCV3	CCV	1	Fe	10.22	0.55	15	PASS
CCB3	CCB	1	Fe	-0.0007	40.17	15	<PQL
CCV4	CCV	1	Fe	10.23	0.59	15	PASS
CCB4	CCB	1	Fe	0.00011	307.9	15	<PQL

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.2	0.39	15	PASS
CCB5	CCB	1	Fe	0.00013	385.93	15	<PQL
LLCCV2	CCV2	1	Fe	0.02	2.3	20	PASS
ICSA3	ICSA	1	Fe	174.06	0.21	15	PASS
ICSAB3	ICSAB	1	Fe	178.83	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180104C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/04/2018	03:47:58 PM
2	Standard1	ICAL	1	01/04/2018	03:52:47 PM
3	Standard2	ICAL	1	01/04/2018	03:58:07 PM
11	Standard3	ICAL	1	01/04/2018	04:03:28 PM
12	Standard4	ICAL	1	01/04/2018	04:08:50 PM
6	Standard5	ICAL	1	01/04/2018	04:16:12 PM
7	Standard6	ICAL	1	01/04/2018	04:23:31 PM
8	Standard7	ICAL	1	01/04/2018	04:30:53 PM
9	ICV	ICV	1	01/04/2018	04:34:44 PM
1	ICB	ICB	1	01/04/2018	05:04:46 PM
2	LLICV	CCV1	1	01/04/2018	05:10:05 PM
4	ICSA1	ICSA	1	01/04/2018	05:15:24 PM
5	ICSAB1	ICSAB	1	01/04/2018	05:22:57 PM
38	MB-66254	MBLK	1	01/04/2018	05:29:16 PM
39	LCS-66254	LCS	1	01/04/2018	05:34:06 PM
40	N027789-001E	SAMP	1	01/04/2018	05:41:29 PM
41	N027789-001E	SAMP	5	01/04/2018	05:48:50 PM
42	N027789-001E-PS	PS	1	01/04/2018	05:54:11 PM
43	N027789-001E-MS	MS	1	01/04/2018	06:01:34 PM
44	N027789-001E-MSD	MSD	1	01/04/2018	06:08:58 PM
45	N027789-002E	SAMP	1	01/04/2018	06:16:21 PM
7	CCV1	CCV	1	01/04/2018	06:23:41 PM
1	CCB1	CCB	1	01/04/2018	06:43:30 PM
2	LLCCV1	CCV2	1	01/04/2018	06:48:48 PM
4	ICSA2	ICSA	1	01/04/2018	06:54:15 PM
5	ICSAB2	ICSAB	1	01/04/2018	07:01:47 PM
46	MB-66256	MBLK	1	01/04/2018	07:10:55 PM
47	LCS-66256	LCS	1	01/04/2018	07:15:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N027812-001B	SAMP	1	01/04/2018	07:23:07 PM
49	N027812-001B	SAMP	5	01/04/2018	07:28:29 PM
50	N027812-001B-PS	PS	1	01/04/2018	07:33:51 PM
51	N027812-001B-MS	MS	1	01/04/2018	07:41:14 PM
52	N027812-001B-MSD	MSD	1	01/04/2018	07:48:36 PM
53	N027812-002B	SAMP	1	01/04/2018	07:55:58 PM
54	N027812-003B	SAMP	1	01/04/2018	08:01:20 PM
55	N027812-004B	SAMP	1	01/04/2018	08:06:41 PM
7	CCV2	CCV	1	01/04/2018	08:12:03 PM
1	CCB2	CCB	1	01/04/2018	08:19:25 PM
56	N027812-005B	SAMP	1	01/04/2018	08:24:44 PM
57	N027812-006B	SAMP	1	01/04/2018	08:30:04 PM
58	N027812-007B	SAMP	1	01/04/2018	08:35:26 PM
59	N027812-008B	SAMP	1	01/04/2018	08:40:48 PM
60	N027812-009B	SAMP	1	01/04/2018	08:46:10 PM
61	N027812-011B	SAMP	1	01/04/2018	08:51:32 PM
62	N027812-012B	SAMP	1	01/04/2018	08:56:55 PM
63	N027812-013B	SAMP	1	01/04/2018	09:02:17 PM
64	MB-66255	MBLK	1	01/04/2018	09:07:39 PM
65	LCS-66255	LCS	1	01/04/2018	09:12:30 PM
7	CCV3	CCV	1	01/04/2018	09:19:53 PM
1	CCB3	CCB	1	01/04/2018	09:27:15 PM
66	N027812-001C	SAMP	1	01/04/2018	09:32:33 PM
67	N027812-001C	SAMP	5	01/04/2018	09:37:55 PM
68	N027812-001C-PS	PS	1	01/04/2018	09:43:15 PM
69	N027812-001C-MS	MS	1	01/04/2018	09:50:39 PM
70	N027812-001C-MSD	MSD	1	01/04/2018	09:58:03 PM
71	N027812-002C	SAMP	1	01/04/2018	10:05:26 PM
72	N027812-003C	SAMP	1	01/04/2018	10:10:49 PM
73	N027812-004C	SAMP	1	01/04/2018	10:16:11 PM
74	N027812-005C	SAMP	1	01/04/2018	10:21:34 PM
75	N027812-006C	SAMP	1	01/04/2018	10:26:56 PM
7	CCV4	CCV	1	01/04/2018	10:32:18 PM
1	CCB4	CCB	1	01/04/2018	10:39:40 PM
76	N027812-007C	SAMP	1	01/04/2018	10:44:59 PM
77	N027812-008C	SAMP	1	01/04/2018	10:50:21 PM
78	N027812-009C	SAMP	1	01/04/2018	10:55:44 PM
79	N027812-011C	SAMP	1	01/04/2018	11:01:06 PM
80	N027812-012C	SAMP	1	01/04/2018	11:06:28 PM
81	N027812-013C	SAMP	1	01/04/2018	11:11:50 PM
7	CCV5	CCV	1	01/04/2018	11:17:12 PM
1	CCB5	CCB	1	01/04/2018	11:24:34 PM
2	LLCCV2	CCV2	1	01/04/2018	11:29:53 PM
4	ICSA3	ICSA	1	01/04/2018	11:35:12 PM
5	ICSAB3	ICSAB	1	01/04/2018	11:42:45 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**
Prep Batch **66256** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-13**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66256	Aqueous		25	☐	0	0	25	1.000		
MB-66256	Aqueous		25	☐	0	0	25	1.000		
N027812-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**

Reviewed/ Date: 01/11/2018

Initials/ Date: for

Prep Batch **66256** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-13**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027812-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180104C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/04/2018	03:47:58 PM	Fe	273.953	-109	0.00	mg/L	
Standard1	01/04/2018	03:52:47 PM	Fe	273.953	470	0.0200	mg/L	
Standard2	01/04/2018	03:58:07 PM	Fe	273.953	2119	0.050	mg/L	
Standard3	01/04/2018	04:03:28 PM	Fe	273.953	50127	2.000	mg/L	
Standard4	01/04/2018	04:08:50 PM	Fe	273.953	121061	5.000	mg/L	
Standard5	01/04/2018	04:16:12 PM	Fe	273.953	182374	7.500	mg/L	
Standard6	01/04/2018	04:23:31 PM	Fe	273.953	250286	10.000	mg/L	
Standard7	01/04/2018	04:30:53 PM	Fe	273.953	470832	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10485.234	20	10000	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.539	20	20.00	0	97.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10519.238	20	10000	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.292	20	20.00	0	96.5	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10286.443	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10225.161	20	10000	0	102	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10231.801	20	10000	0	102	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10201.479	20	10000	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.529	20	20.00	0	97.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.133477	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.613154	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.22904	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.702715	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.112	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.134	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSA** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492902.022	50	500000	0	98.6	80	120				
Calcium	489965.341	500	500000	0	98.0	80	120				
Iron	177444.108	20	200000	0	88.7	80	120				
Magnesium	446960.149	100	500000	0	89.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSAB** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556798.175	50	500000	0	111	80	120				
Calcium	557365.832	500	500000	0	111	80	120				
Iron	180147.619	20	200000	0	90.1	80	120				
Magnesium	509336.647	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSA** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	493621.908	50	500000	0	98.7	80	120				
Calcium	492010.718	500	500000	0	98.4	80	120				
Iron	176767.469	20	200000	0	88.4	80	120				
Magnesium	446712.921	100	500000	0	89.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSAB** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	555448.820	50	500000	0	111	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	558055.797	500	500000	0	112	80	120				
Iron	181338.126	20	200000	0	90.7	80	120				
Magnesium	512626.520	100	500000	0	103	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486023.627	50	500000	0	97.2	80	120				
Calcium	483294.827	500	500000	0	96.7	80	120				
Iron	174064.389	20	200000	0	87.0	80	120				
Magnesium	448996.705	100	500000	0	89.8	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	547524.753	50	500000	0	110	80	120				
Calcium	548809.367	500	500000	0	110	80	120				
Iron	178826.914	20	200000	0	89.4	80	120				
Magnesium	515102.835	100	500000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.8	65-125	PASS
Standard2	ICAL	1	1.051	105.08	65-125	PASS
Standard3	ICAL	1	1.0052	100.52	65-125	PASS
Standard4	ICAL	1	0.99	99.31	65-125	PASS
Standard5	ICAL	1	0.99	99.039	65-125	PASS
Standard6	ICAL	1	0.98	97.68	65-125	PASS
Standard7	ICAL	1	0.95	94.65	65-125	PASS
ICV	ICV	1	0.98	97.87	65-125	PASS
ICB	ICB	1	1.005	100.5	65-125	PASS
LLICV	CCV1	1	1.0052	100.52	65-125	PASS
ICSA1	ICSA	1	0.95	94.85	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.31	65-125	PASS
CCV1	CCV	1	0.98	98.088	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
LLCCV1	CCV2	1	1.0093	100.93	65-125	PASS
ICSA2	ICSA	1	0.96	95.73	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.31	65-125	PASS
MB-66256	MBLK	1	1.016	101.55	65-125	PASS
LCS-66256	LCS	1	0.92	92.39	65-125	PASS
N027812-001B	SAMP	1	0.97	96.65	65-125	PASS
N027812-001B	SAMP	5	0.99	99.16	65-125	PASS
N027812-001B-PS	PS	1	0.97	96.9	65-125	PASS
N027812-001B-MS	MS	1	0.95	95.15	65-125	PASS
N027812-001B-MSD	MSD	1	0.95	94.97	65-125	PASS
N027812-002B	SAMP	1	0.95	94.63	65-125	PASS
N027812-003B	SAMP	1	0.94	93.88	65-125	PASS
N027812-004B	SAMP	1	0.95	94.55	65-125	PASS
CCV2	CCV	1	0.98	98.33	65-125	PASS
CCB2	CCB	1	1.0002	100.02	65-125	PASS
N027812-005B	SAMP	1	0.95	94.69	65-125	PASS
N027812-006B	SAMP	1	0.93	93.47	65-125	PASS
N027812-007B	SAMP	1	0.94	94.36	65-125	PASS
N027812-008B	SAMP	1	0.96	95.89	65-125	PASS
N027812-009B	SAMP	1	0.94	93.99	65-125	PASS
N027812-011B	SAMP	1	0.96	95.5	65-125	PASS
N027812-012B	SAMP	1	0.94	94.23	65-125	PASS
N027812-013B	SAMP	1	0.95	94.7	65-125	PASS
CCV3	CCV	1	0.99	99.28	65-125	PASS
CCB3	CCB	1	1.016	101.58	65-125	PASS
CCV4	CCV	1	0.98	98.39	65-125	PASS

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1.0077	100.77	65-125	PASS
CCV5	CCV	1	0.99	98.71	65-125	PASS
CCB5	CCB	1	1.0097	100.97	65-125	PASS
LLCCV2	CCV2	1	1.012	101.18	65-125	PASS
ICSA3	ICSA	1	0.96	95.81	65-125	PASS
ICSAB3	ICSAB	1	0.79	79.028	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027812
Test Method: EPA 6010B
Analysis Date: 1/4/2018

Matrix: Groundwater
Batch No.: 66256

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027812-001B DT 5X	Iron	ug/L	25.07068	NA	24.72467	1.40%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027812-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID:	**ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.278	20	100.0	24.72	91.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66255
ASSET #: N027812

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/4/2018

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?	/		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/11/18
2nd Level Reviewer 01/11/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027812-001C** , the concentration inug/L is calculated as follows:

Iron , ug/L = 0.02028 * 1 * (25/25) * 1000

Iron , ug/L = 20.28

Reporting results in two significant figures,

Iron , ug/L = 20

% RSD SUMMARY

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	18.55	15	<PQL
Standard1	ICAL	1	Fe	0.02	2.5	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.67	15	PASS
Standard4	ICAL	1	Fe	5	0.31	15	PASS
Standard5	ICAL	1	Fe	7.5	0.18	15	PASS
Standard6	ICAL	1	Fe	10	0.62	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.48	0.4	15	PASS
ICB	ICB	1	Fe	-0.0011	71.3	15	<PQL
LLICV	CCV1	1	Fe	0.02	0.6	20	PASS
ICSA1	ICSA	1	Fe	177.44	0.066	15	PASS
ICSAB1	ICSAB	1	Fe	180.15	0.52	15	PASS
CCV1	CCV	1	Fe	10.52	0.51	15	PASS
CCB1	CCB	1	Fe	-0.00061	39.43	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	1.78	20	PASS
ICSA2	ICSA	1	Fe	176.77	0.63	15	PASS
ICSAB2	ICSAB	1	Fe	181.34	0.47	15	PASS
CCV2	CCV	1	Fe	10.29	0.15	15	PASS
CCB2	CCB	1	Fe	-0.00023	153.15	15	<PQL
MB-66255	MBLK	1	Fe	-0.00037	82.22	15	<PQL
LCS-66255	LCS	1	Fe	0.11	0.88	15	PASS
CCV3	CCV	1	Fe	10.22	0.55	15	PASS
CCB3	CCB	1	Fe	-0.0007	40.17	15	<PQL
N027812-001C	SAMP	1	Fe	0.02	5.87	15	PASS
N027812-001C	SAMP	5	Fe	0.0054	3.025	15	PASS
N027812-001C-PS	PS	1	Fe	0.13	0.42	15	PASS
N027812-001C-MS	MS	1	Fe	0.12	0.84	15	PASS
N027812-001C-MSD	MSD	1	Fe	0.12	0.75	15	PASS
N027812-002C	SAMP	1	Fe	0.022	1.36	15	PASS
N027812-003C	SAMP	1	Fe	0.027	1.53	15	PASS
N027812-004C	SAMP	1	Fe	0.021	2.48	15	PASS
N027812-005C	SAMP	1	Fe	0.031	1.99	15	PASS
N027812-006C	SAMP	1	Fe	0.021	0.98	15	PASS
CCV4	CCV	1	Fe	10.23	0.59	15	PASS
CCB4	CCB	1	Fe	0.00011	307.9	15	<PQL
N027812-007C	SAMP	1	Fe	0.02	1.7	15	PASS
N027812-008C	SAMP	1	Fe	0.021	2.96	15	PASS
N027812-009C	SAMP	1	Fe	0.02	3.8	15	PASS
N027812-011C	SAMP	1	Fe	0.019	2.74	15	PASS
N027812-012C	SAMP	1	Fe	0.049	0.74	15	PASS
N027812-013C	SAMP	1	Fe	0.037	1.75	15	PASS

RSD SUMMARY: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.2	0.39	15	PASS
CCB5	CCB	1	Fe	0.00013	385.93	15	<PQL
LLCCV2	CCV2	1	Fe	0.02	2.3	20	PASS
ICSA3	ICSA	1	Fe	174.06	0.21	15	PASS
ICSAB3	ICSAB	1	Fe	178.83	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180104C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/04/2018	03:47:58 PM
2	Standard1	ICAL	1	01/04/2018	03:52:47 PM
3	Standard2	ICAL	1	01/04/2018	03:58:07 PM
11	Standard3	ICAL	1	01/04/2018	04:03:28 PM
12	Standard4	ICAL	1	01/04/2018	04:08:50 PM
6	Standard5	ICAL	1	01/04/2018	04:16:12 PM
7	Standard6	ICAL	1	01/04/2018	04:23:31 PM
8	Standard7	ICAL	1	01/04/2018	04:30:53 PM
9	ICV	ICV	1	01/04/2018	04:34:44 PM
1	ICB	ICB	1	01/04/2018	05:04:46 PM
2	LLICV	CCV1	1	01/04/2018	05:10:05 PM
4	ICSA1	ICSA	1	01/04/2018	05:15:24 PM
5	ICSAB1	ICSAB	1	01/04/2018	05:22:57 PM
38	MB-66254	MBLK	1	01/04/2018	05:29:16 PM
39	LCS-66254	LCS	1	01/04/2018	05:34:06 PM
40	N027789-001E	SAMP	1	01/04/2018	05:41:29 PM
41	N027789-001E	SAMP	5	01/04/2018	05:48:50 PM
42	N027789-001E-PS	PS	1	01/04/2018	05:54:11 PM
43	N027789-001E-MS	MS	1	01/04/2018	06:01:34 PM
44	N027789-001E-MSD	MSD	1	01/04/2018	06:08:58 PM
45	N027789-002E	SAMP	1	01/04/2018	06:16:21 PM
7	CCV1	CCV	1	01/04/2018	06:23:41 PM
1	CCB1	CCB	1	01/04/2018	06:43:30 PM
2	LLCCV1	CCV2	1	01/04/2018	06:48:48 PM
4	ICSA2	ICSA	1	01/04/2018	06:54:15 PM
5	ICSAB2	ICSAB	1	01/04/2018	07:01:47 PM
46	MB-66256	MBLK	1	01/04/2018	07:10:55 PM
47	LCS-66256	LCS	1	01/04/2018	07:15:45 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N027812-001B	SAMP	1	01/04/2018	07:23:07 PM
49	N027812-001B	SAMP	5	01/04/2018	07:28:29 PM
50	N027812-001B-PS	PS	1	01/04/2018	07:33:51 PM
51	N027812-001B-MS	MS	1	01/04/2018	07:41:14 PM
52	N027812-001B-MSD	MSD	1	01/04/2018	07:48:36 PM
53	N027812-002B	SAMP	1	01/04/2018	07:55:58 PM
54	N027812-003B	SAMP	1	01/04/2018	08:01:20 PM
55	N027812-004B	SAMP	1	01/04/2018	08:06:41 PM
7	CCV2	CCV	1	01/04/2018	08:12:03 PM
1	CCB2	CCB	1	01/04/2018	08:19:25 PM
56	N027812-005B	SAMP	1	01/04/2018	08:24:44 PM
57	N027812-006B	SAMP	1	01/04/2018	08:30:04 PM
58	N027812-007B	SAMP	1	01/04/2018	08:35:26 PM
59	N027812-008B	SAMP	1	01/04/2018	08:40:48 PM
60	N027812-009B	SAMP	1	01/04/2018	08:46:10 PM
61	N027812-011B	SAMP	1	01/04/2018	08:51:32 PM
62	N027812-012B	SAMP	1	01/04/2018	08:56:55 PM
63	N027812-013B	SAMP	1	01/04/2018	09:02:17 PM
64	MB-66255	MBLK	1	01/04/2018	09:07:39 PM
65	LCS-66255	LCS	1	01/04/2018	09:12:30 PM
7	CCV3	CCV	1	01/04/2018	09:19:53 PM
1	CCB3	CCB	1	01/04/2018	09:27:15 PM
66	N027812-001C	SAMP	1	01/04/2018	09:32:33 PM
67	N027812-001C	SAMP	5	01/04/2018	09:37:55 PM
68	N027812-001C-PS	PS	1	01/04/2018	09:43:15 PM
69	N027812-001C-MS	MS	1	01/04/2018	09:50:39 PM
70	N027812-001C-MSD	MSD	1	01/04/2018	09:58:03 PM
71	N027812-002C	SAMP	1	01/04/2018	10:05:26 PM
72	N027812-003C	SAMP	1	01/04/2018	10:10:49 PM
73	N027812-004C	SAMP	1	01/04/2018	10:16:11 PM
74	N027812-005C	SAMP	1	01/04/2018	10:21:34 PM
75	N027812-006C	SAMP	1	01/04/2018	10:26:56 PM
7	CCV4	CCV	1	01/04/2018	10:32:18 PM
1	CCB4	CCB	1	01/04/2018	10:39:40 PM
76	N027812-007C	SAMP	1	01/04/2018	10:44:59 PM
77	N027812-008C	SAMP	1	01/04/2018	10:50:21 PM
78	N027812-009C	SAMP	1	01/04/2018	10:55:44 PM
79	N027812-011C	SAMP	1	01/04/2018	11:01:06 PM
80	N027812-012C	SAMP	1	01/04/2018	11:06:28 PM
81	N027812-013C	SAMP	1	01/04/2018	11:11:50 PM
7	CCV5	CCV	1	01/04/2018	11:17:12 PM
1	CCB5	CCB	1	01/04/2018	11:24:34 PM
2	LLCCV2	CCV2	1	01/04/2018	11:29:53 PM
4	ICSA3	ICSA	1	01/04/2018	11:35:12 PM
5	ICSAB3	ICSAB	1	01/04/2018	11:42:45 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**
Prep Batch **66255** Prep Code: **3010_W**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-12**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66255	Aqueous		25	☐	0	0	25	1.000		
MB-66255	Aqueous		25	☐	0	0	25	1.000		
N027812-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 9:00:00 A**
Prep End Date: **1/4/2018 1:00:00 P**
Prep Batch **66255** Prep Code: **3010_W**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-1-12**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027812-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180104C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/04/2018	03:47:58 PM	Fe	273.953	-109	0.00	mg/L	
Standard1	01/04/2018	03:52:47 PM	Fe	273.953	470	0.0200	mg/L	
Standard2	01/04/2018	03:58:07 PM	Fe	273.953	2119	0.050	mg/L	
Standard3	01/04/2018	04:03:28 PM	Fe	273.953	50127	2.000	mg/L	
Standard4	01/04/2018	04:08:50 PM	Fe	273.953	121061	5.000	mg/L	
Standard5	01/04/2018	04:16:12 PM	Fe	273.953	182374	7.500	mg/L	
Standard6	01/04/2018	04:23:31 PM	Fe	273.953	250286	10.000	mg/L	
Standard7	01/04/2018	04:30:53 PM	Fe	273.953	470832	20.000	mg/L	0.9997

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10485.234	20	10000	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.539	20	20.00	0	97.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10519.238	20	10000	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.292	20	20.00	0	96.5	70	130				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10286.443	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10225.161	20	10000	0	102	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10231.801	20	10000	0	102	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCV**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10201.479	20	10000	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.529	20	20.00	0	97.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.133477	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.613154	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.22904	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.702715	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.112	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID:	**CCB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.134	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSA** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492902.022	50	500000	0	98.6	80	120				
Calcium	489965.341	500	500000	0	98.0	80	120				
Iron	177444.108	20	200000	0	88.7	80	120				
Magnesium	446960.149	100	500000	0	89.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSAB** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556798.175	50	500000	0	111	80	120				
Calcium	557365.832	500	500000	0	111	80	120				
Iron	180147.619	20	200000	0	90.1	80	120				
Magnesium	509336.647	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSA** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	493621.908	50	500000	0	98.7	80	120				
Calcium	492010.718	500	500000	0	98.4	80	120				
Iron	176767.469	20	200000	0	88.4	80	120				
Magnesium	446712.921	100	500000	0	89.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121218**
Client ID: **ICSAB** Batch ID: **R121218** TestNo: **EPA 6010B** Analysis Date: **1/4/2018** SeqNo: **2885382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	555448.820	50	500000	0	111	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	558055.797	500	500000	0	112	80	120				
Iron	181338.126	20	200000	0	90.7	80	120				
Magnesium	512626.520	100	500000	0	103	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSA**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486023.627	50	500000	0	97.2	80	120				
Calcium	483294.827	500	500000	0	96.7	80	120				
Iron	174064.389	20	200000	0	87.0	80	120				
Magnesium	448996.705	100	500000	0	89.8	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID: **ICSAB**	Batch ID: **R121218**	TestNo: **EPA 6010B**		Analysis Date: **1/4/2018**	SeqNo: **2885429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	547524.753	50	500000	0	110	80	120				
Calcium	548809.367	500	500000	0	110	80	120				
Iron	178826.914	20	200000	0	89.4	80	120				
Magnesium	515102.835	100	500000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.8	65-125	PASS
Standard2	ICAL	1	1.051	105.08	65-125	PASS
Standard3	ICAL	1	1.0052	100.52	65-125	PASS
Standard4	ICAL	1	0.99	99.31	65-125	PASS
Standard5	ICAL	1	0.99	99.039	65-125	PASS
Standard6	ICAL	1	0.98	97.68	65-125	PASS
Standard7	ICAL	1	0.95	94.65	65-125	PASS
ICV	ICV	1	0.98	97.87	65-125	PASS
ICB	ICB	1	1.005	100.5	65-125	PASS
LLICV	CCV1	1	1.0052	100.52	65-125	PASS
ICSA1	ICSA	1	0.95	94.85	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.31	65-125	PASS
CCV1	CCV	1	0.98	98.088	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
LLCCV1	CCV2	1	1.0093	100.93	65-125	PASS
ICSA2	ICSA	1	0.96	95.73	65-125	PASS
ICSAB2	ICSAB	1	0.79	79.31	65-125	PASS
CCV2	CCV	1	0.98	98.33	65-125	PASS
CCB2	CCB	1	1.0002	100.02	65-125	PASS
MB-66255	MBLK	1	1.013	101.3	65-125	PASS
LCS-66255	LCS	1	0.93	92.84	65-125	PASS
CCV3	CCV	1	0.99	99.28	65-125	PASS
CCB3	CCB	1	1.016	101.58	65-125	PASS
N027812-001C	SAMP	1	0.9	89.72	65-125	PASS
N027812-001C	SAMP	5	0.98	97.96	65-125	PASS
N027812-001C-PS	PS	1	0.93	92.8	65-125	PASS
N027812-001C-MS	MS	1	0.94	94.25	65-125	PASS
N027812-001C-MSD	MSD	1	0.94	93.97	65-125	PASS
N027812-002C	SAMP	1	0.96	95.65	65-125	PASS
N027812-003C	SAMP	1	0.95	94.64	65-125	PASS
N027812-004C	SAMP	1	0.95	95.22	65-125	PASS
N027812-005C	SAMP	1	0.97	96.65	65-125	PASS
N027812-006C	SAMP	1	0.94	94.11	65-125	PASS
CCV4	CCV	1	0.98	98.39	65-125	PASS
CCB4	CCB	1	1.0077	100.77	65-125	PASS
N027812-007C	SAMP	1	0.95	94.62	65-125	PASS
N027812-008C	SAMP	1	0.94	94.08	65-125	PASS
N027812-009C	SAMP	1	0.95	94.94	65-125	PASS
N027812-011C	SAMP	1	0.93	92.73	65-125	PASS
N027812-012C	SAMP	1	0.95	94.83	65-125	PASS

INTERNAL STANDARD: 180104C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N027812-013C	SAMP	1	0.95	95.36	65-125	PASS
CCV5	CCV	1	0.99	98.71	65-125	PASS
CCB5	CCB	1	1.0097	100.97	65-125	PASS
LLCCV2	CCV2	1	1.012	101.18	65-125	PASS
ICSA3	ICSA	1	0.96	95.81	65-125	PASS
ICSAB3	ICSAB	1	0.79	79.028	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027812
Test Method: EPA 6010B
Analysis Date: 1/4/2018

Matrix: Groundwater
Batch No.: ~~66256~~ 66255

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027812-~~001B~~ -001C DT 5X	Iron	ug/L	26.95165	NA	20.2808	32.89%	10

Note: NA - Not applicable

Mary 01/11/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N027812-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121218**
Client ID:	**ZZZZZZ**	Batch ID: **66255**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.765	20	100.0	20.28	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66251
ASSET #: N027812

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/5/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in LLCCV2 & 4 failed > 20%. However %Rec of LLCCV2 & 4 passed criteria.
%RSD of Se in N027812-002B, 005B, 007B & 008B failed > 15%. For rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/10/18

2nd Level Reviewer 01/10/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66251
ASSET #: N027812

Instrument ID: ICPMS-02
Analyst: CEI

Method:
[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Date Analyzed: ~~1/6/2018~~ 1/8/18

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X	X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se in N027812-002B, 005B, 007B & 008B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/10/18

2nd Level Reviewer 01/10/2018 Date: ____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027812-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.25879 * 1 * (25/25)

Arsenic , ug/L = 2.25879

Reporting results in two significant figures,

Arsenic , ug/L = 2.3

% RSD SUMMARY

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.16	5.57	15	PASS	0.1	8.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.6	4.11	15	PASS	0.52	4.41	15	PASS
Std3-5/50 ppb	ICAL	1	5.095	0.41	15	PASS	5.14	2.72	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	1.0072	15	PASS	10.26	0.94	15	PASS
Std5-20/200 ppb	ICAL	1	19.85	0.87	15	PASS	20.35	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	39.57	0.098	15	PASS	40.88	0.85	15	PASS
Std7-100/1000 ppb	ICAL	1	98.56	0.32	15	PASS	99.2	1.61	15	PASS
Std8-200/2000 ppb	ICAL	1	200.81	0.33	15	PASS	200.17	1.048	15	PASS
ICV	ICV	1	9.72	1.36	15	PASS	9.99	0.75	15	PASS
ICB	ICB	1	0.0000058	9647.94	15	<PQL	0.0011	473.23	15	<PQL
LLICV	CCV1	1	1.13	3.37	20	PASS	1.03	3.65	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.057	12.27	15	PASS
ICSAB1	ICSAB	1	22.23	0.91	15	PASS	19.91	1.63	15	PASS
CCV1	CCV	1	20.84	0.23	15	PASS	20.62	1.32	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.83	0.54	15	PASS	20.36	2.3	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.81	0.15	15	PASS	20.27	1.78	15	PASS
CCB3	CCB	1	0.0059	52.38	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.19	1.36	20	PASS	1.036	2.27	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.074	15.044	15	<PQL
ICSAB2	ICSAB	1	23.38	0.17	15	PASS	21.11	2.071	15	PASS
CCV5	CCV	1	21.021	0.92	15	PASS	20.14	2.31	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.16	0.53	15	PASS	20.29	1.27	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66251	MBLK	1	<0.000	N/A	15	<PQL	0.015	30.68	15	<PQL
LCS-66251	LCS	1	10.12	0.78	15	PASS	10.036	2.91	15	PASS
CCV7	CCV	1	20.96	0.054	15	PASS	20.53	0.94	15	PASS
CCB7	CCB	1	0.0043	41.96	15	<PQL	0.0014	413.9	15	<PQL
LLCCV2	CCV2	1	1.2	0.29	20	PASS	1.014	3.025	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.085	17.69	15	<PQL
ICSAB3	ICSAB	1	23.6	0.53	15	PASS	20.19	1.16	15	PASS
N027812-010B	SAMP	1	80.85	0.13	15	PASS	<0.000	N/A	15	<PQL
N027812-010B	SAMP	5	16.29	0.69	15	PASS	0.0016	473.3	15	<PQL
N027812-011B	SAMP	1	127.57	0.82	15	PASS	<0.000	N/A	15	<PQL
N027812-011B	SAMP	5	25.2	0.83	15	PASS	0.0037	108.59	15	<PQL
N027812-012B	SAMP	1	125.26	0.92	15	PASS	0.017	28.72	15	<PQL
N027812-012B	SAMP	5	24.93	0.63	15	PASS	0.0074	148.31	15	<PQL
N027812-013B	SAMP	1	126.69	0.98	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027812-013B	SAMP	5	25	0.59	15	PASS	<0.000	N/A	15	<PQL
N027812-014B	SAMP	1	82.95	1.6	15	PASS	<0.000	N/A	15	<PQL
N027812-014B	SAMP	5	16.81	0.49	15	PASS	0.069	5.19	15	PASS
CCV8	CCV	1	21.24	0.68	15	PASS	20.37	0.84	15	PASS
CCB8	CCB	1	0.026	206.93	15	<PQL	0.0085	19.015	15	<PQL
N027812-015B	SAMP	1	131.46	0.45	15	PASS	<0.000	N/A	15	<PQL
N027812-015B	SAMP	5	26.13	0.32	15	PASS	<0.000	N/A	15	<PQL
N027812-001B	SAMP	1	129.41	0.38	15	PASS	<0.000	N/A	15	<PQL
N027812-001B	SAMP	5	25.56	0.25	15	PASS	0.01	50.87	15	<PQL
N027812-001B	SAMP	25	5.1	0.51	15	PASS	0.0041	60.28	15	<PQL
N027812-001B-PS	PS	1	140.92	0.69	15	PASS	10.19	0.58	15	PASS
N027812-001B-PS	PS	5	28.1	0.83	15	PASS	2.2	1.88	15	PASS
N027812-001B-MS	MS	1	141.83	0.69	15	PASS	10.24	0.32	15	PASS
N027812-001B-MS	MS	5	28.48	0.43	15	PASS	2.17	2.97	15	PASS
N027812-001B-MSD	MSD	1	140.96	2.45	15	PASS	10.49	1.3	15	PASS
CCV9	CCV	1	20.59	0.71	15	PASS	21.3	1.012	15	PASS
CCB9	CCB	1	0.0051	17.22	15	<PQL	0.0029	255.45	15	<PQL
N027812-001B-MSD	MSD	5	27.88	1.19	15	PASS	2.24	1.49	15	PASS
N027812-002B	SAMP	1	126.23	0.8	15	PASS	0.014	37.68	15	<PQL
N027812-002B	SAMP	5	25.1	0.71	15	PASS	0.0098	102.12	15	<PQL
N027812-003B	SAMP	1	126.24	2.33	15	PASS	0.0012	729.11	15	<PQL
N027812-003B	SAMP	5	24.79	0.49	15	PASS	<0.000	N/A	15	<PQL
N027812-004B	SAMP	1	120.56	0.58	15	PASS	0.14	6.86	15	PASS
N027812-004B	SAMP	5	24.42	1.25	15	PASS	0.035	29.49	15	<PQL
N027812-005B	SAMP	1	129.91	0.81	15	PASS	<0.000	N/A	15	<PQL
N027812-005B	SAMP	5	25.39	1.0096	15	PASS	<0.000	N/A	15	<PQL
N027812-006B	SAMP	1	124.088	0.53	15	PASS	0.0022	502.62	15	<PQL
CCV10	CCV	1	20.55	0.18	15	PASS	21.1	1.41	15	PASS
CCB10	CCB	1	0.0083	22.81	15	<PQL	0.0023	198.32	15	<PQL
N027812-006B	SAMP	5	24.62	0.095	15	PASS	<0.000	N/A	15	<PQL
N027812-007B	SAMP	1	124.1	0.59	15	PASS	0.012	13.7	15	PASS
N027812-007B	SAMP	5	24.9	0.97	15	PASS	0.0016	473.26	15	<PQL
N027812-008B	SAMP	1	120.81	0.51	15	PASS	0.01	89.13	15	<PQL
N027812-008B	SAMP	5	24.41	1.21	15	PASS	0.0026	235.41	15	<PQL
N027812-009B	SAMP	1	122.98	1.79	15	PASS	0.0079	104.48	15	<PQL
N027812-009B	SAMP	5	24.6	0.26	15	PASS	<0.000	N/A	15	<PQL
CCV11	CCV	1	21.51	0.93	15	PASS	20.27	0.29	15	PASS
CCB11	CCB	1	0.013	20.72	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.23	1.91	20	PASS	1.036	1.2	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.071	15.61	15	<PQL
ICSAB4	ICSAB	1	23.96	0.61	15	PASS	20.31	0.52	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV12	CCV	1	21.31	1.22	15	PASS	20.42	1.42	15	PASS
CCB12	CCB	1	<0.000	N/A	15	<PQL	0.034	21.81	15	<PQL
CCV13	CCV	1	21.2	0.11	15	PASS	20.49	0.9	15	PASS
CCB13	CCB	1	0.0014	134.2	15	<PQL	0.0067	158.5	15	<PQL
LLCCV4	CCV2	1	1.19	1.064	20	PASS	1.047	2.31	20	PASS
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	0.095	14.8	15	PASS
ICSAB5	ICSAB	1	20.93	13.11	15	PASS	20.54	1.87	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	9.53	15	PASS	0.12	10.61	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	5.5	15	PASS	0.51	3.19	15	PASS
Std3-5/50 ppb	ICAL	1	5.38	2.38	15	PASS	5.072	1.65	15	PASS
Std4-10/100 ppb	ICAL	1	10.42	1.053	15	PASS	10.31	1.49	15	PASS
Std5-20/200 ppb	ICAL	1	20.73	1.28	15	PASS	20.32	2.091	15	PASS
Std6-40/400 ppb	ICAL	1	41.68	0.93	15	PASS	40.6	0.52	15	PASS
Std7-100/1000 ppb	ICAL	1	101.37	1.78	15	PASS	99.41	1.075	15	PASS
Std8-200/2000 ppb	ICAL	1	198.88	0.31	15	PASS	200.12	1.041	15	PASS
ICV	ICV	1	101.079	0.23	15	PASS	9.97	2.29	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.021	46.53	15	<PQL
LLICV	CCV1	1	0.52	5.79	20	PASS	0.11	4.013	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	17.61	0.96	15	PASS	20.9	0.27	15	PASS
CCV1	CCV	1	20.64	1.54	15	PASS	19.51	0.75	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0059	77.25	15	<PQL
CCV2	CCV	1	20.98	1.65	15	PASS	19.6	1.15	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.01	115.68	15	<PQL
CCV3	CCV	1	20.84	2.27	15	PASS	19.93	1.57	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0026	51.8	15	<PQL
LLCCV1	CCV2	1	0.55	10.19	20	PASS	0.11	14.68	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	16.92	1.17	15	PASS	20.15	1.86	15	PASS
CCV5	CCV	1	20.5	2.83	15	PASS	19.64	2.26	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0092	46.82	15	<PQL
CCV6	CCV	1	20.67	2.016	15	PASS	19.62	1.77	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.012	43.41	15	<PQL
MB-66251	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66251	LCS	1	99.83	2.58	15	PASS	9.76	3.27	15	PASS
CCV7	CCV	1	20.84	2.094	15	PASS	19.69	1.87	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0089	31.99	15	<PQL
LLCCV2	CCV2	1	0.52	1.97	20	PASS	0.095	15.25	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.57	1.76	15	PASS	20.67	0.64	15	PASS
N027812-010B	SAMP	1	3.8	2.24	15	PASS	2.23	1.97	15	PASS
N027812-010B	SAMP	5	0.83	4.58	15	PASS	0.41	5.54	15	PASS
N027812-011B	SAMP	1	1.58	7.084	15	PASS	2.2	2.92	15	PASS
N027812-011B	SAMP	5	0.3	16.24	15	<PQL	0.45	5.45	15	PASS
N027812-012B	SAMP	1	3.86	1.38	15	PASS	2.28	7.11	15	PASS
N027812-012B	SAMP	5	1.014	3.31	15	PASS	0.45	8.08	15	PASS
N027812-013B	SAMP	1	4.4	2.67	15	PASS	2.21	1.77	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027812-013B	SAMP	5	1.073	2.56	15	PASS	0.42	6.95	15	PASS
N027812-014B	SAMP	1	4.16	1.34	15	PASS	2.22	1.63	15	PASS
N027812-014B	SAMP	5	0.81	1.38	15	PASS	0.44	6.45	15	PASS
CCV8	CCV	1	20.59	1.14	15	PASS	19.24	0.86	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.0045	98.34	15	<PQL
N027812-015B	SAMP	1	9.6	1.85	15	PASS	1.79	2.073	15	PASS
N027812-015B	SAMP	5	2.0099	3.48	15	PASS	0.32	3.28	15	PASS
N027812-001B	SAMP	1	3.0075	1.96	15	PASS	2.26	3.046	15	PASS
N027812-001B	SAMP	5	0.73	6.92	15	PASS	0.5	1.49	15	PASS
N027812-001B	SAMP	25	0.41	6.34	15	PASS	0.093	2.92	15	PASS
N027812-001B-PS	PS	1	102.92	1.00027	15	PASS	12.55	1.91	15	PASS
N027812-001B-PS	PS	5	22.028	1.3	15	PASS	2.63	3.63	15	PASS
N027812-001B-MS	MS	1	103.44	0.86	15	PASS	12.46	0.42	15	PASS
N027812-001B-MS	MS	5	21.97	1.55	15	PASS	2.55	1.95	15	PASS
N027812-001B-MSD	MSD	1	104.15	0.76	15	PASS	12.8	0.76	15	PASS
CCV9	CCV	1	20.65	0.76	15	PASS	19.42	0.81	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.015	59.4	15	<PQL
N027812-001B-MSD	MSD	5	22.34	1.75	15	PASS	2.6	5.39	15	PASS
N027812-002B	SAMP	1	1.18	8.2	15	PASS	2.25	1.56	15	PASS
N027812-002B	SAMP	5	0.25	16.72	15	<PQL	0.46	6.061	15	PASS
N027812-003B	SAMP	1	2.78	4.24	15	PASS	2.22	0.79	15	PASS
N027812-003B	SAMP	5	0.53	9.16	15	PASS	0.45	8.67	15	PASS
N027812-004B	SAMP	1	1.26	4.93	15	PASS	2.2	3.19	15	PASS
N027812-004B	SAMP	5	0.24	11.32	15	PASS	0.44	3.59	15	PASS
N027812-005B	SAMP	1	3.92	1.46	15	PASS	2.34	5.022	15	PASS
N027812-005B	SAMP	5	0.84	2.3	15	PASS	0.46	6.72	15	PASS
N027812-006B	SAMP	1	3.71	1.52	15	PASS	2.22	3.51	15	PASS
CCV10	CCV	1	20.83	1.91	15	PASS	19.59	1.06	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	0.0065	157.076	15	<PQL
N027812-006B	SAMP	5	0.76	1.65	15	PASS	0.45	14.16	15	PASS
N027812-007B	SAMP	1	2.85	2.34	15	PASS	2.3	5.35	15	PASS
N027812-007B	SAMP	5	0.58	5.88	15	PASS	0.45	8.11	15	PASS
N027812-008B	SAMP	1	2.62	1.81	15	PASS	2.2	4.44	15	PASS
N027812-008B	SAMP	5	0.5	10.68	15	PASS	0.46	3.56	15	PASS
N027812-009B	SAMP	1	1.88	1.64	15	PASS	2.17	4.13	15	PASS
N027812-009B	SAMP	5	0.38	11.36	15	PASS	0.43	2.4	15	PASS
CCV11	CCV	1	20.1	0.69	15	PASS	19.34	0.68	15	PASS
CCB11	CCB	1	<0.000	N/A	15	<PQL	0.01	61.43	15	<PQL
LLCCV3	CCV2	1	0.51	7.43	20	PASS	0.11	12.21	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	17.63	1.84	15	PASS	20.22	1.061	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV12	CCV	1	20.38	0.52	15	PASS	19.48	1.36	15	PASS
CCB12	CCB	1	<0.000	N/A	15	<PQL	0.0066	112.3	15	<PQL
CCV13	CCV	1	20.4	0.53	15	PASS	19.43	0.32	15	PASS
CCB13	CCB	1	<0.000	N/A	15	<PQL	0.0027	186.057	15	<PQL
LLCCV4	CCV2	1	0.52	8.19	20	PASS	0.097	9.98	20	PASS
ICSA5	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB5	ICSAB	1	17.88	1.58	15	PASS	20.099	0.49	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	62.85	15	<PQL	0.11	14.69	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	23.2	15	<PQL	0.49	4.83	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	7.8	15	PASS	4.96	0.57	15	PASS
Std4-10/100 ppb	ICAL	1	10.076	4.94	15	PASS	9.89	2.31	15	PASS
Std5-20/200 ppb	ICAL	1	20.42	2.29	15	PASS	19.86	0.91	15	PASS
Std6-40/400 ppb	ICAL	1	40.71	0.52	15	PASS	39.61	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	100.49	1.12	15	PASS	100.094	1.3	15	PASS
Std8-200/2000 ppb	ICAL	1	199.56	2.038	15	PASS	200.051	0.81	15	PASS
ICV	ICV	1	9.85	2.6	15	PASS	10.53	1.54	15	PASS
ICB	ICB	1	0.023	85.95	15	<PQL	0.16	7.87	15	PASS
LLICV	CCV1	1	0.47	15.5	20	PASS	0.59	3.85	20	PASS
ICSA1	ICSA	1	0.011	99.87	15	<PQL	0.087	11.49	15	PASS
ICSAB1	ICSAB	1	20.13	1.2	15	PASS	22.054	1.21	15	PASS
CCV1	CCV	1	19.5	1.55	15	PASS	19.5	1.29	15	PASS
CCB1	CCB	1	0.01	100.041	15	<PQL	0.084	14.59	15	PASS
CCV2	CCV	1	20.19	0.67	15	PASS	19.77	0.95	15	PASS
CCB2	CCB	1	0.024	49.037	15	<PQL	0.08	4.2	15	PASS
CCV3	CCV	1	19.34	3.29	15	PASS	19.68	0.92	15	PASS
CCB3	CCB	1	0.014	113.79	15	<PQL	0.068	13.026	15	PASS
LLCCV1	CCV2	1	0.44	9.9	20	PASS	0.53	4.49	20	PASS
ICSA2	ICSA	1	0.0067	173.21	15	<PQL	0.057	12.84	15	PASS
ICSAB2	ICSAB	1	20.86	1.58	15	PASS	21.86	1.44	15	PASS
CCV5	CCV	1	20.034	0.51	15	PASS	19.85	0.51	15	PASS
CCB5	CCB	1	0.042	66.45	15	<PQL	0.091	12.4	15	PASS
CCV6	CCV	1	19.45	0.79	15	PASS	19.87	0.43	15	PASS
CCB6	CCB	1	0.018	91.86	15	<PQL	0.085	13.99	15	PASS
MB-66251	MBLK	1	0	N/A	15	<PQL	0.021	37.18	15	<PQL
LCS-66251	LCS	1	9.57	3.15	15	PASS	9.86	0.58	15	PASS
CCV7	CCV	1	19.97	0.95	15	PASS	19.7	1.052	15	PASS
CCB7	CCB	1	0.015	86.6	15	<PQL	0.07	10.15	15	PASS
LLCCV2	CCV2	1	0.56	23.51	20	NR!	0.54	4.76	20	PASS
ICSA3	ICSA	1	0.0038	173.21	15	<PQL	0.058	14.48	15	PASS
ICSAB3	ICSAB	1	19.89	0.8	15	PASS	22.36	1.12	15	PASS
N027812-010B	SAMP	1	0.99	10.57	15	PASS	5.38	1.47	15	PASS
N027812-010B	SAMP	5	0.22	45.62	15	<PQL	1.037	2.28	15	PASS
N027812-011B	SAMP	1	1.86	5.67	15	PASS	5.18	0.89	15	PASS
N027812-011B	SAMP	5	0.42	14.21	15	PASS	1	2.92	15	PASS
N027812-012B	SAMP	1	1.94	11.31	15	PASS	4.98	2.6	15	PASS
N027812-012B	SAMP	5	0.36	12.19	15	PASS	0.98	3.43	15	PASS
N027812-013B	SAMP	1	1.6	7.84	15	PASS	5.016	1.79	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027812-013B	SAMP	5	0.44	5.46	15	PASS	0.99	3.29	15	PASS
N027812-014B	SAMP	1	0.98	11.24	15	PASS	5.49	1.027	15	PASS
N027812-014B	SAMP	5	0.23	41.64	15	<PQL	1.038	2.014	15	PASS
CCV8	CCV	1	20.75	1.53	15	PASS	19.45	0.91	15	PASS
CCB8	CCB	1	0.019	91.54	15	<PQL	0.089	14.98	15	PASS
N027812-015B	SAMP	1	0.84	22.44	15	NR!	4.57	2.083	15	PASS
N027812-015B	SAMP	5	0.21	14.11	15	PASS	0.91	2.56	15	PASS
N027812-001B	SAMP	1	1.77	9.91	15	PASS	5.016	0.92	15	PASS
N027812-001B	SAMP	5	0.33	18.76	15	<PQL	1.029	0.17	15	PASS
N027812-001B	SAMP	25	0.091	59.093	15	<PQL	0.21	3.061	15	PASS
N027812-001B-PS	PS	1	12.31	0.75	15	PASS	16.25	0.88	15	PASS
N027812-001B-PS	PS	5	2.49	19.05	15	NR!	3.34	0.86	15	PASS
N027812-001B-MS	MS	1	12.94	2.96	15	PASS	16.61	0.91	15	PASS
N027812-001B-MS	MS	5	2.61	15.91	15	NR!	3.42	2.38	15	PASS
N027812-001B-MSD	MSD	1	12.65	5.01	15	PASS	16.29	0.76	15	PASS
CCV9	CCV	1	21.13	1.46	15	PASS	19.24	0.34	15	PASS
CCB9	CCB	1	0.0045	173.21	15	<PQL	0.093	16.3	15	<PQL
N027812-001B-MSD	MSD	5	2.62	3.55	15	PASS	3.25	1.35	15	PASS
N027812-002B	SAMP	1	1.67	15.28	15	NR!	5.037	1.86	15	PASS
N027812-002B	SAMP	5	0.28	3.36	15	PASS	1.02	1.19	15	PASS
N027812-003B	SAMP	1	1.69	11.13	15	PASS	5.078	1.88	15	PASS
N027812-003B	SAMP	5	0.48	20.31	15	<PQL	1	6.77	15	PASS
N027812-004B	SAMP	1	1.69	8.81	15	PASS	5.025	1.84	15	PASS
N027812-004B	SAMP	5	0.32	36.28	15	<PQL	0.98	1.71	15	PASS
N027812-005B	SAMP	1	1.69	17.63	15	NR!	5.23	1.86	15	PASS
N027812-005B	SAMP	5	0.33	21.45	15	<PQL	1.017	1.53	15	PASS
N027812-006B	SAMP	1	1.91	9.33	15	PASS	5.059	2.69	15	PASS
CCV10	CCV	1	20.93	0.73	15	PASS	19.52	0.38	15	PASS
CCB10	CCB	1	0.023	91.15	15	<PQL	0.078	16.34	15	<PQL
N027812-006B	SAMP	5	0.4	21.049	15	<PQL	0.98	3.33	15	PASS
N027812-007B	SAMP	1	1.99	28.51	15	NR!	5.073	0.91	15	PASS
N027812-007B	SAMP	5	0.49	23.96	15	<PQL	0.96	1.15	15	PASS
N027812-008B	SAMP	1	1.64	21.19	15	NR!	5.041	1.93	15	PASS
N027812-008B	SAMP	5	0.33	7.8	15	PASS	0.96	2.8	15	PASS
N027812-009B	SAMP	1	1.88	3.025	15	PASS	5.074	1.25	15	PASS
N027812-009B	SAMP	5	0.37	34.1	15	<PQL	0.97	1.78	15	PASS
CCV11	CCV	1	20.67	3.23	15	PASS	19.79	1.42	15	PASS
CCB11	CCB	1	0.014	115	15	<PQL	0.09	8.0034	15	PASS
LLCCV3	CCV2	1	0.5	21.62	20	<PQL	0.55	0.73	20	PASS
ICSA4	ICSA	1	0.015	173.21	15	<PQL	0.075	19.61	15	<PQL
ICSAB4	ICSAB	1	20.43	2.17	15	PASS	22.2	1.057	15	PASS

PERCENT RSD SUMMARY: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV12	CCV	1	21.2	1.34	15	PASS	19.77	0.48	15	PASS
CCB12	CCB	1	0.019	34.87	15	<PQL	0.087	10.62	15	PASS
CCV13	CCV	1	21.73	5.21	15	PASS	19.9	0.75	15	PASS
CCB13	CCB	1	0.016	44.26	15	<PQL	0.083	6.14	15	PASS
LLCCV4	CCV2	1	0.55	38.98	20	NR!	0.53	2.58	20	PASS
ICSA5	ICSA	1	0.029	137.58	15	<PQL	0.053	20.31	15	<PQL
ICSAB5	ICSAB	1	20.96	1.67	15	PASS	22.2	1.15	15	PASS

PERCENT RSD SUMMARY: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	16.66	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	14.035	15	PASS
Std3-5/50 ppb	ICAL	1	5.31	0.83	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	3.25	15	PASS
Std5-20/200 ppb	ICAL	1	21.79	1.76	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	1.49	15	PASS
Std7-100/1000 ppb	ICAL	1	100.64	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	199.36	0.73	15	PASS
ICV	ICV	1	9.91	2.16	15	PASS
ICB	ICB	1	0.028	59.34	15	<PQL
LLICV	CCV1	1	0.63	4.47	20	PASS
ICSA1	ICSA	1	0.041	65.64	15	<PQL
ICSAB1	ICSAB	1	19.5	4.67	15	PASS
LLICV	CCV1	1	0.6	18.91	20	PASS
CCV1	CCV	1	18.97	0.68	15	PASS
CCB1	CCB	1	0.0092	154.42	15	<PQL
N027812-002B	SAMP	1	1.52	5.13	15	PASS
N027812-005B	SAMP	1	1.51	4.1	15	PASS
N027812-007B	SAMP	1	1.67	7.72	15	PASS
N027812-008B	SAMP	1	1.39	12.044	15	PASS
CCV2	CCV	1	19.64	3.14	15	PASS
CCB2	CCB	1	0.0072	290.86	15	<PQL
CCV3	CCV	1	19.63	2.78	15	PASS
CCB3	CCB	1	0.017	45.38	15	<PQL
CCV4	CCV	1	19.036	2.77	15	PASS
CCB4	CCB	1	0.036	19.15	15	<PQL
LLCCV1	CCV2	1	0.4	27.22	20	<PQL
ICSA2	ICSA	1	0.021	107.33	15	<PQL
ICSAB2	ICSAB	1	19.3	2.28	15	PASS
CCV5	CCV	1	18.97	4.5	15	PASS
CCB5	CCB	1	0.018	158.73	15	<PQL
LLCCV2	CCV2	1	0.51	21.32	20	NR!
ICSA3	ICSA	1	0.0082	159.17	15	<PQL
ICSAB3	ICSAB	1	19.31	3.15	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105001.D	RINSE	RINSE	1	01/05/18 11:43 AM
B0105002.D	Cal Blank	IBLK	1	01/05/18 11:49 AM
B0105003.D	Std1-0.1/1 ppb	ICAL	1	01/05/18 11:54 AM
B0105004.D	Std2-0.5/5 ppb	ICAL	1	01/05/18 12:00 PM
B0105005.D	Std3-5/50 ppb	ICAL	1	01/05/18 12:05 PM
B0105006.D	Std4-10/100 ppb	ICAL	1	01/05/18 12:11 PM
B0105007.D	Std5-20/200 ppb	ICAL	1	01/05/18 12:16 PM
B0105008.D	Std6-40/400 ppb	ICAL	1	01/05/18 12:22 PM
B0105009.D	Std7-100/1000 ppb	ICAL	1	01/05/18 12:27 PM
B0105010.D	Std8-200/2000 ppb	ICAL	1	01/05/18 12:33 PM
B0105011.D	ICV	ICV	1	01/05/18 12:38 PM
B0105012.D	ICB	ICB	1	01/05/18 12:44 PM
B0105013.D	LLICV	CCV1	1	01/05/18 12:49 PM
B0105014.D	ICSA1	ICSA	1	01/05/18 12:55 PM
B0105015.D	ICSAB1	ICSAB	1	01/05/18 1:00 PM
B0105016.D	N027546-010B	SAMP	1	01/05/18 1:06 PM
B0105017.D	N027546-010B	SAMP	1	01/05/18 1:12 PM
B0105018.D	MB-66269	MBLK	1	01/05/18 1:17 PM
B0105019.D	LCS-66269	LCS	1	01/05/18 1:23 PM
B0105020.D	N027817-006C	SAMP	1	01/05/18 1:28 PM
B0105021.D	N027817-006C	SAMP	5	01/05/18 1:34 PM
B0105022.D	N027817-006C-DUP	DUP	1	01/05/18 1:39 PM
B0105023.D	N027817-006C-PS	PS	1	01/05/18 1:45 PM
B0105024.D	N027817-006C-MS	MS	1	01/05/18 1:50 PM
B0105025.D	N027817-006C-MSD	MSD	1	01/05/18 1:56 PM
B0105026.D	CCV1	CCV	1	01/05/18 2:03 PM
B0105027.D	CCB1	CCB	1	01/05/18 2:08 PM
B0105028.D	MB-66130	MBLK	1	01/05/18 2:14 PM
B0105029.D	LCS-66130	LCS	1	01/05/18 2:20 PM
B0105030.D	N027583-001E	SAMP	1	01/05/18 2:25 PM
B0105031.D	N027583-001E	SAMP	5	01/05/18 2:31 PM
B0105032.D	N027583-002E	SAMP	1	01/05/18 2:36 PM
B0105033.D	N027583-002E	SAMP	5	01/05/18 2:42 PM
B0105034.D	N027583-003E	SAMP	1	01/05/18 2:47 PM
B0105035.D	N027583-003E	SAMP	5	01/05/18 2:53 PM
B0105036.D	N027557-008E	SAMP	1	01/05/18 2:59 PM
B0105037.D	N027557-008E	SAMP	5	01/05/18 3:04 PM
B0105038.D	CCV2	CCV	1	01/05/18 3:10 PM
B0105039.D	CCB2	CCB	1	01/05/18 3:15 PM
B0105040.D	N027557-008E	SAMP	25	01/05/18 3:21 PM
B0105041.D	N027557-008E-PS	PS	1	01/05/18 3:26 PM
B0105042.D	N027557-008E-PS	PS	5	01/05/18 3:32 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105043.D	N027557-008E-MS	MS	1	01/05/18 3:39 PM
B0105044.D	N027557-008E-MSD	MSD	1	01/05/18 3:45 PM
B0105045.D	N027557-009E	SAMP	1	01/05/18 3:50 PM
B0105046.D	N027557-009E	SAMP	5	01/05/18 3:56 PM
B0105047.D	N027557-010E	SAMP	1	01/05/18 4:02 PM
B0105048.D	N027557-010E	SAMP	5	01/05/18 4:07 PM
B0105049.D	MB-66129	MBLK	1	01/05/18 4:13 PM
B0105050.D	CCV3	CCV	1	01/05/18 4:18 PM
B0105051.D	CCB3	CCB	1	01/05/18 4:24 PM
B0105052.D	LLCCV1	CCV2	1	01/05/18 4:29 PM
B0105053.D	ICSA2	ICSA	1	01/05/18 4:35 PM
B0105054.D	ICSAB2	ICSAB	1	01/05/18 4:39 PM
B0105055.D	LCS-66129	LCS	1	01/05/18 4:45 PM
B0105056.D	N027557-001B	SAMP	1	01/05/18 4:51 PM
B0105057.D	N027557-001B	SAMP	5	01/05/18 4:57 PM
B0105058.D	N027557-001B	SAMP	25	01/05/18 5:02 PM
B0105059.D	N027557-001B-PS	PS	1	01/05/18 5:08 PM
B0105060.D	N027557-001B-PS	PS	5	01/05/18 5:13 PM
B0105061.D	N027557-001B-MS	MS	1	01/05/18 5:19 PM
B0105062.D	N027557-001B-MS	MS	5	01/05/18 5:25 PM
B0105063.D	N027557-001B-MSD	MSD	1	01/05/18 5:30 PM
B0105064.D	N027557-001B-MSD	MSD	5	01/05/18 5:36 PM
B0105065.D	CCV5	CCV	1	01/05/18 5:41 PM
B0105066.D	CCB5	CCB	1	01/05/18 5:47 PM
B0105067.D	N027557-002B	SAMP	1	01/05/18 5:52 PM
B0105068.D	N027557-002B	SAMP	5	01/05/18 5:58 PM
B0105069.D	N027557-003B	SAMP	1	01/05/18 6:03 PM
B0105070.D	N027557-003B	SAMP	5	01/05/18 6:09 PM
B0105071.D	N027557-004B	SAMP	1	01/05/18 6:14 PM
B0105072.D	N027557-004B	SAMP	5	01/05/18 6:20 PM
B0105073.D	N027557-005B	SAMP	1	01/05/18 6:26 PM
B0105074.D	N027557-005B	SAMP	5	01/05/18 6:31 PM
B0105075.D	N027557-006B	SAMP	1	01/05/18 6:37 PM
B0105076.D	N027557-006B	SAMP	5	01/05/18 6:42 PM
B0105077.D	CCV6	CCV	1	01/05/18 6:48 PM
B0105078.D	CCB6	CCB	1	01/05/18 6:53 PM
B0105079.D	N027557-007B	SAMP	1	01/05/18 6:59 PM
B0105080.D	N027557-007B	SAMP	5	01/05/18 7:05 PM
B0105081.D	N027557-008B	SAMP	1	01/05/18 7:10 PM
B0105082.D	N027557-008B	SAMP	5	01/05/18 7:16 PM
B0105083.D	N027557-009B	SAMP	1	01/05/18 7:21 PM
B0105084.D	N027557-009B	SAMP	5	01/05/18 7:27 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105085.D	N027557-010B	SAMP	1	01/05/18 7:32 PM
B0105086.D	N027557-010B	SAMP	5	01/05/18 7:38 PM
B0105087.D	MB-66251	MBLK	1	01/05/18 7:43 PM
B0105088.D	LCS-66251	LCS	1	01/05/18 7:49 PM
B0105089.D	CCV7	CCV	1	01/05/18 7:54 PM
B0105090.D	CCB7	CCB	1	01/05/18 8:00 PM
B0105091.D	LLCCV2	CCV2	1	01/05/18 8:05 PM
B0105092.D	ICSA3	ICSA	1	01/05/18 8:11 PM
B0105093.D	ICSAB3	ICSAB	1	01/05/18 8:17 PM
B0105094.D	N027812-010B	SAMP	1	01/05/18 8:22 PM
B0105095.D	N027812-010B	SAMP	5	01/05/18 8:28 PM
B0105096.D	N027812-011B	SAMP	1	01/05/18 8:33 PM
B0105097.D	N027812-011B	SAMP	5	01/05/18 8:39 PM
B0105098.D	N027812-012B	SAMP	1	01/05/18 8:44 PM
B0105099.D	N027812-012B	SAMP	5	01/05/18 8:50 PM
B0105100.D	N027812-013B	SAMP	1	01/05/18 8:56 PM
B0105101.D	N027812-013B	SAMP	5	01/05/18 9:01 PM
B0105102.D	N027812-014B	SAMP	1	01/05/18 9:07 PM
B0105103.D	N027812-014B	SAMP	5	01/05/18 9:12 PM
B0105104.D	CCV8	CCV	1	01/05/18 9:19 PM
B0105105.D	CCB8	CCB	1	01/05/18 9:25 PM
B0105106.D	N027812-015B	SAMP	1	01/05/18 9:31 PM
B0105107.D	N027812-015B	SAMP	5	01/05/18 9:36 PM
B0105108.D	N027812-001B	SAMP	1	01/05/18 9:41 PM
B0105109.D	N027812-001B	SAMP	5	01/05/18 9:47 PM
B0105110.D	N027812-001B	SAMP	25	01/05/18 9:52 PM
B0105111.D	N027812-001B-PS	PS	1	01/05/18 9:58 PM
B0105112.D	N027812-001B-PS	PS	5	01/05/18 10:04 PM
B0105113.D	N027812-001B-MS	MS	1	01/05/18 10:09 PM
B0105114.D	N027812-001B-MS	MS	5	01/05/18 10:15 PM
B0105115.D	N027812-001B-MSD	MSD	1	01/05/18 10:21 PM
B0105116.D	CCV9	CCV	1	01/05/18 10:27 PM
B0105117.D	CCB9	CCB	1	01/05/18 10:32 PM
B0105118.D	N027812-001B-MSD	MSD	5	01/05/18 10:38 PM
B0105119.D	N027812-002B	SAMP	1	01/05/18 10:43 PM
B0105120.D	N027812-002B	SAMP	5	01/05/18 10:49 PM
B0105121.D	N027812-003B	SAMP	1	01/05/18 10:54 PM
B0105122.D	N027812-003B	SAMP	5	01/05/18 11:00 PM
B0105123.D	N027812-004B	SAMP	1	01/05/18 11:05 PM
B0105124.D	N027812-004B	SAMP	5	01/05/18 11:11 PM
B0105125.D	N027812-005B	SAMP	1	01/05/18 11:16 PM
B0105126.D	N027812-005B	SAMP	5	01/05/18 11:22 PM

INJECTION LOG: 180105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0105127.D	N027812-006B	SAMP	1	01/05/18 11:28 PM
B0105128.D	CCV10	CCV	1	01/05/18 11:33 PM
B0105129.D	CCB10	CCB	1	01/05/18 11:39 PM
B0105130.D	N027812-006B	SAMP	5	01/05/18 11:44 PM
B0105131.D	N027812-007B	SAMP	1	01/05/18 11:50 PM
B0105132.D	N027812-007B	SAMP	5	01/05/18 11:55 PM
B0105133.D	N027812-008B	SAMP	1	01/06/18 12:01 AM
B0105134.D	N027812-008B	SAMP	5	01/06/18 12:06 AM
B0105135.D	N027812-009B	SAMP	1	01/06/18 12:12 AM
B0105136.D	N027812-009B	SAMP	5	01/06/18 12:18 AM
B0105137.D	MB-66250	MBLK	1	01/06/18 12:23 AM
B0105138.D	LCS-66250	LCS	1	01/06/18 12:29 AM
B0105139.D	N027789-003C	SAMP	1	01/06/18 12:34 AM
B0105140.D	CCV11	CCV	1	01/06/18 12:41 AM
B0105141.D	CCB11	CCB	1	01/06/18 12:47 AM
B0105142.D	LLCCV3	CCV2	1	01/06/18 12:52 AM
B0105143.D	ICSA4	ICSA	1	01/06/18 12:56 AM
B0105144.D	ICSAB4	ICSAB	1	01/06/18 1:02 AM
B0105145.D	N027789-003C	SAMP	5	01/06/18 1:08 AM
B0105146.D	N027789-003C	SAMP	25	01/06/18 1:13 AM
B0105147.D	N027789-001E	SAMP	1	01/06/18 1:19 AM
B0105148.D	N027789-001E	SAMP	5	01/06/18 1:24 AM
B0105149.D	N027789-001E	SAMP	25	01/06/18 1:30 AM
B0105150.D	N027789-001E-PS	PS	1	01/06/18 1:35 AM
B0105151.D	N027789-001E-PS	PS	5	01/06/18 1:41 AM
B0105152.D	N027789-001E-MS	MS	1	01/06/18 1:46 AM
B0105153.D	N027789-001E-MS	MS	5	01/06/18 1:52 AM
B0105154.D	N027789-001E-MSD	MSD	1	01/06/18 1:58 AM
B0105155.D	CCV12	CCV	1	01/06/18 2:03 AM
B0105156.D	CCB12	CCB	1	01/06/18 2:09 AM
B0105157.D	N027789-001E-MSD	MSD	5	01/06/18 2:14 AM
B0105158.D	N027789-002E	SAMP	1	01/06/18 2:20 AM
B0105159.D	N027789-002E	SAMP	5	01/06/18 2:25 AM
B0105160.D	CCV13	CCV	1	01/06/18 2:31 AM
B0105161.D	CCB13	CCB	1	01/06/18 2:36 AM
B0105162.D	LLCCV4	CCV2	1	01/06/18 2:42 AM
B0105163.D	ICSA5	ICSA	1	01/06/18 2:47 AM
B0105164.D	ICSAB5	ICSAB	1	01/06/18 2:53 AM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108001.D	RINSE	RINSE	1	01/08/18 9:11 AM
A0108002.D	Cal Blank	IBLK	1	01/08/18 9:16 AM
A0108003.D	Std1-0.1/1 ppb	ICAL	1	01/08/18 9:22 AM
A0108004.D	Std2-0.5/5 ppb	ICAL	1	01/08/18 9:27 AM
A0108005.D	Std3-5/50 ppb	ICAL	1	01/08/18 9:33 AM
A0108006.D	Std4-10/100 ppb	ICAL	1	01/08/18 9:39 AM
A0108007.D	Std5-20/200 ppb	ICAL	1	01/08/18 9:46 AM
A0108008.D	Std6-40/400 ppb	ICAL	1	01/08/18 9:52 AM
A0108009.D	Std7-100/1000 ppb	ICAL	1	01/08/18 9:58 AM
A0108010.D	Std8-200/2000 ppb	ICAL	1	01/08/18 10:04 AM
A0108011.D	ICV	ICV	1	01/08/18 10:09 AM
A0108012.D	ICB	ICB	1	01/08/18 10:15 AM
A0108013.D	LLICV	CCV1	1	01/08/18 10:20 AM
A0108014.D	ICSA1	ICSA	1	01/08/18 10:29 AM
A0108015.D	ICSAB1	ICSAB	1	01/08/18 10:34 AM
A0108016.D	LLICV	CCV1	1	01/08/18 10:40 AM
A0108017.D	N027557-001B	SAMP	1	01/08/18 10:45 AM
A0108018.D	N027557-002B	SAMP	1	01/08/18 10:51 AM
A0108019.D	N027557-003B	SAMP	1	01/08/18 10:56 AM
A0108020.D	N027557-004B	SAMP	1	01/08/18 11:02 AM
A0108021.D	N027557-006B	SAMP	1	01/08/18 11:08 AM
A0108022.D	N027557-010B	SAMP	1	01/08/18 11:15 AM
A0108023.D	N027557-001B	SAMP	1	01/08/18 11:20 AM
A0108024.D	N027557-003B	SAMP	1	01/08/18 11:26 AM
A0108025.D	N027557-004B	SAMP	1	01/08/18 11:31 AM
A0108026.D	N027557-003B	SAMP	1	01/08/18 11:37 AM
A0108027.D	CCV1	CCV	1	01/08/18 11:43 AM
A0108028.D	CCB1	CCB	1	01/08/18 11:48 AM
A0108029.D	N027812-002B	SAMP	1	01/08/18 11:54 AM
A0108030.D	N027812-005B	SAMP	1	01/08/18 11:59 AM
A0108031.D	N027812-007B	SAMP	1	01/08/18 12:05 PM
A0108032.D	N027812-008B	SAMP	1	01/08/18 12:10 PM
A0108033.D	MB-66270	MBLK	1	01/08/18 12:16 PM
A0108034.D	LCS-66270	LCS	1	01/08/18 12:21 PM
A0108035.D	N027820-001B	SAMP	1	01/08/18 12:27 PM
A0108036.D	N027820-001B	SAMP	5	01/08/18 12:32 PM
A0108037.D	N027820-001B-PS	PS	1	01/08/18 12:38 PM
A0108038.D	N027820-001B-MS	MS	1	01/08/18 12:44 PM
A0108039.D	CCV2	CCV	1	01/08/18 12:49 PM
A0108040.D	CCB2	CCB	1	01/08/18 12:55 PM
A0108041.D	N027820-001B-MSD	MSD	1	01/08/18 1:00 PM
A0108042.D	N027820-002B	SAMP	1	01/08/18 1:06 PM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108043.D	N027820-003B	SAMP	1	01/08/18 1:11 PM
A0108044.D	N027820-004B	SAMP	1	01/08/18 1:17 PM
A0108045.D	N027820-005B	SAMP	1	01/08/18 1:22 PM
A0108046.D	N027820-006B	SAMP	1	01/08/18 1:28 PM
A0108047.D	N027820-007B	SAMP	1	01/08/18 1:34 PM
A0108048.D	N027820-008B	SAMP	1	01/08/18 1:40 PM
A0108049.D	N027820-009B	SAMP	1	01/08/18 1:45 PM
A0108050.D	N027820-010B	SAMP	1	01/08/18 1:51 PM
A0108051.D	CCV3	CCV	1	01/08/18 1:56 PM
A0108052.D	CCB3	CCB	1	01/08/18 2:02 PM
A0108053.D	LCS-66270	LCS	1	01/08/18 2:08 PM
A0108054.D	N027820-011B	SAMP	1	01/08/18 2:13 PM
A0108055.D	N027820-012B	SAMP	1	01/08/18 2:19 PM
A0108056.D	N027820-013B	SAMP	1	01/08/18 2:25 PM
A0108057.D	N027820-003B	SAMP	1	01/08/18 2:30 PM
A0108058.D	N027557-002B	SAMP	1	01/08/18 2:38 PM
A0108059.D	N027557-002A	SAMP	1	01/08/18 2:44 PM
A0108060.D	N027557-004B	SAMP	1	01/08/18 2:51 PM
A0108061.D	N027557-004A	SAMP	1	01/08/18 2:56 PM
A0108062.D	N027583-001B	SAMP	1	01/08/18 3:03 PM
A0108063.D	CCV4	CCV	1	01/08/18 3:09 PM
A0108064.D	CCB4	CCB	1	01/08/18 3:15 PM
A0108065.D	LLCCV1	CCV2	1	01/08/18 3:20 PM
A0108066.D	ICSA2	ICSA	1	01/08/18 3:26 PM
A0108067.D	ICSAB2	ICSAB	1	01/08/18 3:31 PM
A0108068.D	N027583-001A	SAMP	1	01/08/18 3:37 PM
A0108069.D	N027583-002B	SAMP	1	01/08/18 3:42 PM
A0108070.D	N027583-002A	SAMP	1	01/08/18 3:48 PM
A0108071.D	N027583-003B	SAMP	1	01/08/18 3:53 PM
A0108072.D	N027583-003A	SAMP	1	01/08/18 3:59 PM
A0108073.D	N027820-012B	SAMP	1	01/08/18 4:05 PM
A0108074.D	CCV5	CCV	1	01/08/18 4:10 PM
A0108075.D	CCB5	CCB	1	01/08/18 4:15 PM
A0108076.D	LLCCV2	CCV2	1	01/08/18 4:21 PM
A0108077.D	ICSA3	ICSA	1	01/08/18 4:28 PM
A0108078.D	ICSAB3	ICSAB	1	01/08/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 2:00:00 P**
Prep End Date: **1/4/2018 6:30:00 P**
Reviewed/ Date: _____
Initials/ Date: _____
Prep Batch **66251** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66251	Aqueous		25	☐	0	0	25	1.000		
MB-66251	Aqueous		25	☐	0	0	25	1.000		
N027812-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/4/2018 2:00:00 P**
Prep End Date: **1/4/2018 6:30:00 P**
Reviewed/ Date: _____
Initials/ Date: _____
Prep Batch **66251** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027812-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N027812-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Jan 2018 09:19:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	271212.00	0.00	
24 Mg	1049440.00	0.00	
25 Mg	138898.00	0.00	
26 Mg	161197.00	0.00	
59 Co	1084180.00	0.00	
115 In	1544490.00	0.00	
206 Pb	403628.00	0.00	
207 Pb	351349.00	0.00	
208 Pb	869853.00	0.00	

RSD (%)

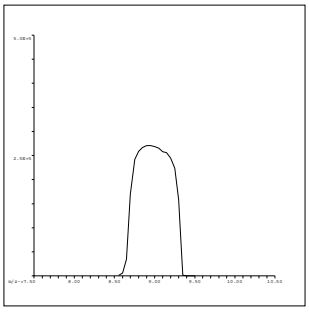
Element	Actual	Required	Flag
9 Be	0.37	5.00	
24 Mg	0.72	5.00	
25 Mg	0.49	5.00	
26 Mg	0.95	5.00	
59 Co	1.10	5.00	
115 In	0.56	5.00	
206 Pb	0.71	5.00	
207 Pb	0.92	5.00	
208 Pb	0.96	5.00	

Ion Ratio

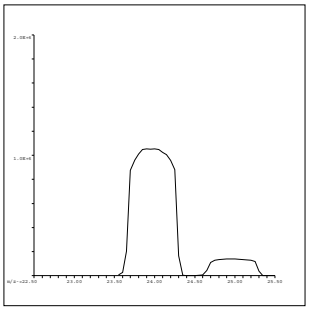
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

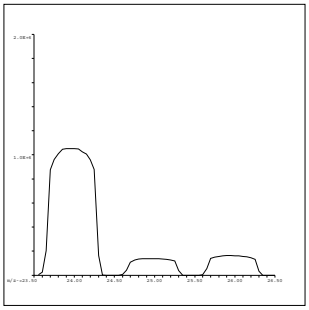
Element	Actual	Required	Flag



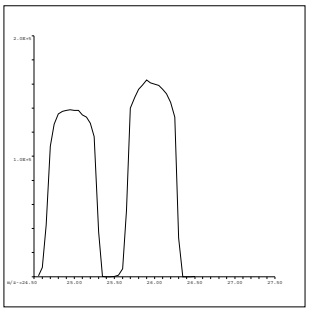
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



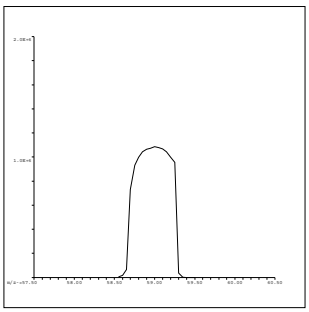
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



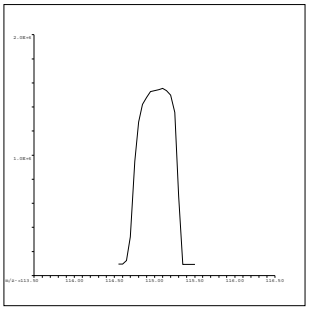
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



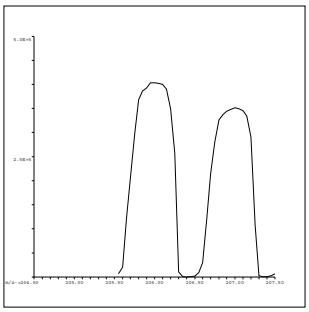
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



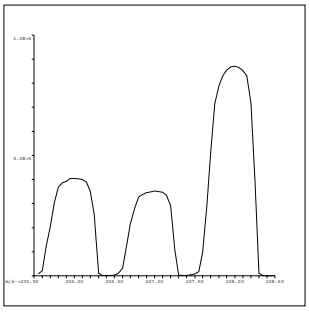
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



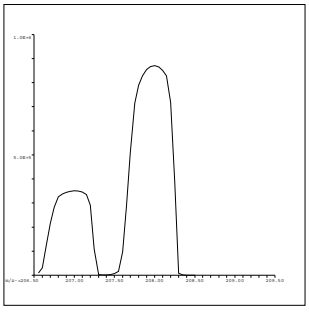
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

C:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Jan 2018 08:55:40 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	96941.10	0.00	
24	Mg	416281.00	0.00	
25	Mg	54933.90	0.00	
26	Mg	64371.70	0.00	
59	Co	524831.00	0.00	
115	In	934224.00	0.00	
206	Pb	243715.00	0.00	
207	Pb	211485.00	0.00	
208	Pb	521909.00	0.00	

RSD (%)

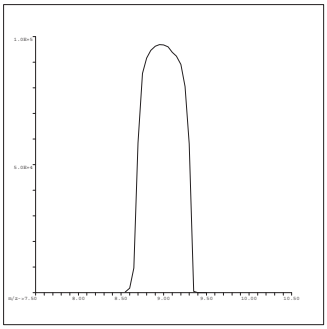
Element		Actual	Required	Flag
9	Be	1.32	5.00	
24	Mg	1.17	5.00	
25	Mg	1.12	5.00	
26	Mg	1.76	5.00	
59	Co	1.33	5.00	
115	In	1.01	5.00	
206	Pb	1.07	5.00	
207	Pb	0.57	5.00	
208	Pb	0.86	5.00	

Ion Ratio

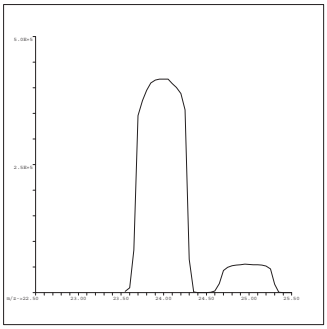
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

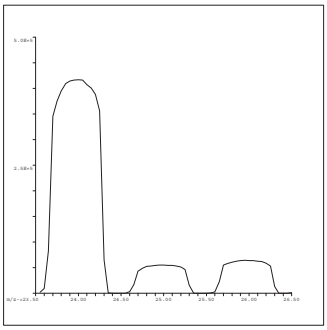
Element	Actual	Required	Flag



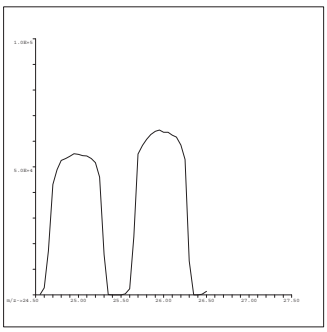
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



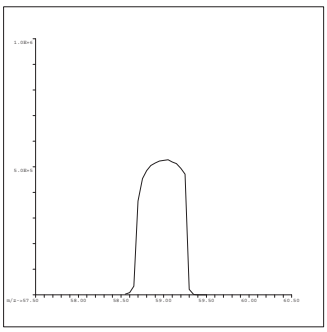
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



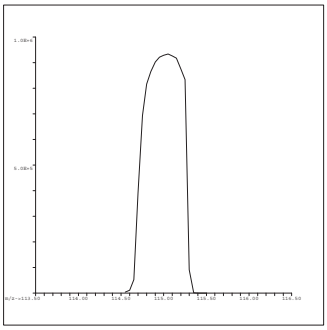
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



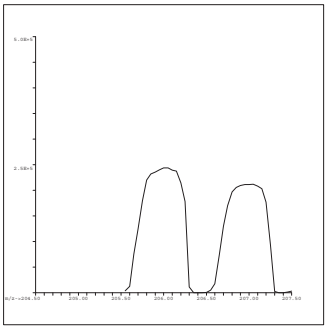
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



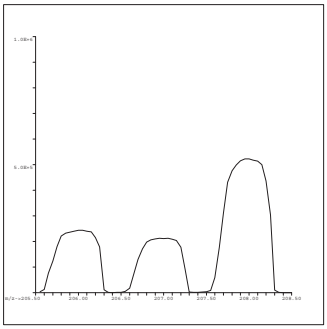
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



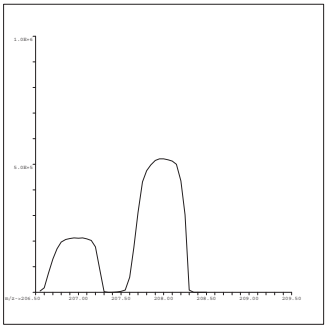
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180105B

Instrument ID: ICPMS-02

Analyte	Data File	B0105002.D	B0105003.D	B0105004.D	B0105005.D	B0105006.D	B0105007.D	B0105008.D	B0105009.D	B0105010.D	
	Acq. Date-Time	01/05/2018 11:49 AM	01/05/2018 11:54 AM	01/05/2018 12:00 PM	01/05/2018 12:05 PM	01/05/2018 12:11 PM	01/05/2018 12:16 PM	01/05/2018 12:22 PM	01/05/2018 12:27 PM	01/05/2018 12:33 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	98689.2		103014	103257.9	103971.1	104715.8	105546	106915	107843.3	
55 Mn [2]	CPS	337.9		2579.5	22159.5	42903.6	85590.8	173050.6	425701.3	842314.7	0.9999
52 Cr [2]	CPS	418.9		4875.2	44614.8	89300.4	177835	359660.9	883326.5	1797867.3	1.0000
72 Ge (ISTD) [1]	CPS	85800.3		87852.4	87543	88388.7	88069.4	88991.3	88217.8	90606.5	
78 Se [1]	CPS	0		128.9	1492.4	2952.6	5961.3	12010.4	29386.3	59937.9	1.0000
72 Ge (ISTD) [2]	CPS	69151.4	71094.1	71706.6	71535.9	70826.1	71065	71998.1	72904.2	71840.7	
75 As [2]	CPS	13.3	121.3	482.2	4645.2	9336.5	18445.7	37320	92510	183489.7	1.0000
103 Rh (ISTD) [2]	CPS	2266047.3		2354583.3	2338314.3	2314610	2315909.4	2339607.9	2318771.2	2318691.7	
95 Mo [2]	CPS	16.7		2633.7	26562.8	52431.1	105300.5	212144.5	531286.1	1061741.9	1.0000
159 Tb (ISTD) [3]	CPS	6077264.3		6306635.3	6254358	6228566.5	6214942.1	6309922.5	6207127.9	6292191.7	
137 Ba [3]	CPS	-13.3		6089.4	51542.6	101985.6	199571.8	404006	989855.9	2044511.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180108A

Instrument ID: ICPMS-02

Analyte	Data File	A0108002.D	A0108004.D	A0108005.D	A0108006.D	A0108007.D	A0108008.D	A0108009.D	A0108010.D	
	Acq. Date-Time	01/08/2018 09:16 AM	01/08/2018 09:27 AM	01/08/2018 09:33 AM	01/08/2018 09:39 AM	01/08/2018 09:46 AM	01/08/2018 09:52 AM	01/08/2018 09:58 AM	01/08/2018 10:04 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	62619.5	63563.5	63516.6	63395.8	52108.6	63322.2	61513.2	62853.8	
78 Se [1]	CPS	1.1	112.2	1202.3	2324.7	4042.9	9150.7	22034.5	44595.5	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.971	0.10	10.00	0	99.7	90	110				
Barium	9.718	1.0	10.00	0	97.2	90	110				
Manganese	101.079	0.50	100.0	0	101	90	110				
Molybdenum	10.533	0.50	10.00	0	105	90	110				
Selenium	9.846	0.50	10.00	0	98.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	80	120				
Barium	1.125	1.0	1.000	0	113	80	120				
Manganese	0.520	0.50	0.5000	0	104	80	120				
Molybdenum	0.593	0.50	0.5000	0	119	80	120				
Selenium	0.473	0.50	0.5000	0	94.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.510	0.10	20.00	0	97.6	90	110				
Barium	20.842	1.0	20.00	0	104	90	110				
Manganese	20.637	0.50	20.00	0	103	90	110				
Molybdenum	19.499	0.50	20.00	0	97.5	90	110				
Selenium	19.503	0.50	20.00	0	97.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.604	0.10	20.00	0	98.0	90	110				
Barium	20.825	1.0	20.00	0	104	90	110				
Manganese	20.976	0.50	20.00	0	105	90	110				
Molybdenum	19.769	0.50	20.00	0	98.8	90	110				
Selenium	20.189	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.934	0.10	20.00	0	99.7	90	110				
Barium	20.806	1.0	20.00	0	104	90	110				
Manganese	20.840	0.50	20.00	0	104	90	110				
Molybdenum	19.679	0.50	20.00	0	98.4	90	110				
Selenium	19.337	0.50	20.00	0	96.7	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.112	0.10	0.1000	0	112	70	130				
Barium	1.187	1.0	1.000	0	119	70	130				
Manganese	0.547	0.50	0.5000	0	109	70	130				
Molybdenum	0.527	0.50	0.5000	0	105	70	130				
Selenium	0.435	0.50	0.5000	0	87.0	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.642	0.10	20.00	0	98.2	90	110				
Barium	21.021	1.0	20.00	0	105	90	110				
Manganese	20.499	0.50	20.00	0	102	90	110				
Molybdenum	19.849	0.50	20.00	0	99.2	90	110				
Selenium	20.034	0.50	20.00	0	100	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.620	0.10	20.00	0	98.1	90	110				
Barium	21.160	1.0	20.00	0	106	90	110				
Manganese	20.667	0.50	20.00	0	103	90	110				
Molybdenum	19.866	0.50	20.00	0	99.3	90	110				
Selenium	19.446	0.50	20.00	0	97.2	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.689	0.10	20.00	0	98.4	90	110				
Barium	20.955	1.0	20.00	0	105	90	110				
Manganese	20.837	0.50	20.00	0	104	90	110				
Molybdenum	19.695	0.50	20.00	0	98.5	90	110				
Selenium	19.969	0.50	20.00	0	99.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.8	70	130				
Barium	1.204	1.0	1.000	0	120	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.555	0.50	0.5000	0	111	70	130				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.242	0.10	20.00	0	96.2	90	110				
Barium	21.237	1.0	20.00	0	106	90	110				
Manganese	20.585	0.50	20.00	0	103	90	110				
Molybdenum	19.450	0.50	20.00	0	97.3	90	110				
Selenium	20.754	0.50	20.00	0	104	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.420	0.10	20.00	0	97.1	90	110				
Barium	20.590	1.0	20.00	0	103	90	110				
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	19.242	0.50	20.00	0	96.2	90	110				
Selenium	21.126	0.50	20.00	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.587	0.10	20.00	0	97.9	90	110				
Barium	20.552	1.0	20.00	0	103	90	110				
Manganese	20.828	0.50	20.00	0	104	90	110				
Molybdenum	19.523	0.50	20.00	0	97.6	90	110				
Selenium	20.930	0.50	20.00	0	105	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCV**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.339	0.10	20.00	0	96.7	90	110				
Barium	21.509	1.0	20.00	0	108	90	110				
Manganese	20.105	0.50	20.00	0	101	90	110				
Molybdenum	19.790	0.50	20.00	0	99.0	90	110				
Selenium	20.672	0.50	20.00	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	70	130				
Barium	1.226	1.0	1.000	0	123	70	130				
Manganese	0.514	0.50	0.5000	0	103	70	130				
Molybdenum	0.549	0.50	0.5000	0	110	70	130				
Selenium	0.499	0.50	0.5000	0	99.8	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.906	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.596	0.50	0.5000	0	119	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.971	0.50	20.00	0	94.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.634	0.50	20.00	0	98.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.036	0.50	20.00	0	95.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.400	0.50	0.5000	0	80.1	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.968	0.50	20.00	0	94.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.989	1.0	10.00	0	99.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.615	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.358	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.272	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.139	1.0	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.288	1.0	20.00	0	101	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.531	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.014	1.0	1.000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.366	1.0	20.00	0	102	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.301	1.0	20.00	0	107	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.100	1.0	20.00	0	106	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCV**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.273	1.0	20.00	0	101	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ZZZZZZ**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.162	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.084	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.080	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.068	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.042	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.070	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.089	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.093	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **CCB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.090	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.036	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ICB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886445

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	CCB	Batch ID:	R121242	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886484

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **CCB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**CCB10**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**121242**
Client ID:	**CCB**	Batch ID:	**R121242**	TestNo:	**EPA 6020**			Analysis Date:	**1/6/2018**	SeqNo:	**2886559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.087	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.901	0.10	20.00	0	105	80	120				
Barium	22.233	1.0	20.00	0	111	80	120				
Manganese	17.615	0.50	20.00	0	88.1	80	120				
Molybdenum	22.054	0.50	20.00	0	110	80	120				
Selenium	20.130	0.50	20.00	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.057	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSAB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.153	0.10	20.00	0	101	80	120				
Barium	23.376	1.0	20.00	0	117	80	120				
Manganese	16.923	0.50	20.00	0	84.6	80	120				
Molybdenum	21.858	0.50	20.00	0	109	80	120				
Selenium	20.860	0.50	20.00	0	104	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSA	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.058	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121243
Client ID:	ICSAB	Batch ID:	R121243	TestNo:	EPA 6020			Analysis Date:	1/5/2018	SeqNo:	2886665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.675	0.10	20.00	0	103	80	120				
Barium	23.604	1.0	20.00	0	118	80	120				
Manganese	17.572	0.50	20.00	0	87.9	80	120				
Molybdenum	22.358	0.50	20.00	0	112	80	120				
Selenium	19.890	0.50	20.00	0	99.4	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSA**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.075	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID: **ICSAB**	Batch ID: **R121243**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.218	0.10	20.00	0	101	80	120				
Barium	23.964	1.0	20.00	0	120	80	120				
Manganese	17.635	0.50	20.00	0	88.2	80	120				
Molybdenum	22.201	0.50	20.00	0	111	80	120				
Selenium	20.435	0.50	20.00	0	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.041	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSAB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888688

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.499	0.50	20.00	0	97.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSAB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888740

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.304	0.50	20.00	0	96.5	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSAB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.315	0.50	20.00	0	96.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.057	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.914	1.0	20.00	0	99.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.074	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.112	1.0	20.00	0	106	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.085	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/5/2018**	SeqNo: **2886511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.193	1.0	20.00	0	101	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSA**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.071	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121242**
Client ID: **ICSAB**	Batch ID: **R121242**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2886562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.310	1.0	20.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	6077264.3	6077264.3	100	PASS	70-125	98689.2	98689.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	6293236.6	6077264.3	103.55	PASS	70-125	103050.7	98689.2	104.42	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	6306635.3	6077264.3	103.77	PASS	70-125	103014	98689.2	104.38	PASS	70-125
Std3-5/50 ppb	ICAL	1	6254358	6077264.3	102.91	PASS	70-125	103257.9	98689.2	104.63	PASS	70-125
Std4-10/100 ppb	ICAL	1	6228566.5	6077264.3	102.49	PASS	70-125	103971.1	98689.2	105.35	PASS	70-125
Std5-20/200 ppb	ICAL	1	6214942.1	6077264.3	102.27	PASS	70-125	104715.8	98689.2	106.11	PASS	70-125
Std6-40/400 ppb	ICAL	1	6309922.5	6077264.3	103.83	PASS	70-125	105546	98689.2	106.95	PASS	70-125
Std7-100/1000 ppb	ICAL	1	6207127.9	6077264.3	102.14	PASS	70-125	106915	98689.2	108.34	PASS	70-125
Std8-200/2000 ppb	ICAL	1	6292191.7	6077264.3	103.54	PASS	70-125	107843.3	98689.2	109.28	PASS	70-125
ICV	ICV	1	6605865.9	6077264.3	108.7	PASS	70-125	110378.5	98689.2	111.84	PASS	70-125
ICB	ICB	1	6089414.6	6077264.3	100.2	PASS	70-125	100697.6	98689.2	102.04	PASS	70-125
LLICV	CCV1	1	6603710	6077264.3	108.66	PASS	70-125	110692.6	98689.2	112.16	PASS	70-125
ICSA1	ICSA	1	6264948.2	6077264.3	103.09	PASS	70-125	114002.4	98689.2	115.52	PASS	70-125
ICSAB1	ICSAB	1	6509221.8	6077264.3	107.11	PASS	70-125	123987.3	98689.2	125.63	NR!	70-125
CCV1	CCV	1	6763744.3	6077264.3	111.3	PASS	70-125	108740.1	98689.2	110.18	PASS	70-125
CCB1	CCB	1	6554244.9	6077264.3	107.85	PASS	70-125	111191.4	98689.2	112.67	PASS	70-125
CCV2	CCV	1	6991155.4	6077264.3	115.04	PASS	70-125	114371.9	98689.2	115.89	PASS	70-125
CCB2	CCB	1	6648390.7	6077264.3	109.4	PASS	70-125	108325.1	98689.2	109.76	PASS	70-125
CCV3	CCV	1	6956575	6077264.3	114.47	PASS	70-125	110649.1	98689.2	112.12	PASS	70-125
CCB3	CCB	1	6585499.6	6077264.3	108.36	PASS	70-125	104844	98689.2	106.24	PASS	70-125
LLCCV1	CCV2	1	7270966.6	6077264.3	119.64	PASS	70-125	113176.7	98689.2	114.68	PASS	70-125
ICSA2	ICSA	1	6930083	6077264.3	114.03	PASS	70-125	118402.6	98689.2	119.98	PASS	70-125
ICSAB2	ICSAB	1	6579995.5	6077264.3	108.27	PASS	70-125	99365.8	98689.2	100.69	PASS	70-125
CCV5	CCV	1	6983364.1	6077264.3	114.91	PASS	70-125	115953.5	98689.2	117.49	PASS	70-125
CCB5	CCB	1	6680134.6	6077264.3	109.92	PASS	70-125	107055	98689.2	108.48	PASS	70-125
CCV6	CCV	1	6960795.6	6077264.3	114.54	PASS	70-125	111272	98689.2	112.75	PASS	70-125
CCB6	CCB	1	6647302.5	6077264.3	109.38	PASS	70-125	104154.1	98689.2	105.54	PASS	70-125
MB-66251	MBLK	1	6649850.5	6077264.3	109.42	PASS	70-125	102278.7	98689.2	103.64	PASS	70-125
LCS-66251	LCS	1	7233701.7	6077264.3	119.03	PASS	70-125	108512.4	98689.2	109.95	PASS	70-125
CCV7	CCV	1	6823489.7	6077264.3	112.28	PASS	70-125	103721.2	98689.2	105.1	PASS	70-125
CCB7	CCB	1	6643876.9	6077264.3	109.32	PASS	70-125	97483.5	98689.2	98.78	PASS	70-125
LLCCV2	CCV2	1	7152978	6077264.3	117.7	PASS	70-125	105876.5	98689.2	107.28	PASS	70-125
ICSA3	ICSA	1	6722112.7	6077264.3	110.61	PASS	70-125	105668.4	98689.2	107.07	PASS	70-125
ICSAB3	ICSAB	1	6914763.5	6077264.3	113.78	PASS	70-125	116478.7	98689.2	118.03	PASS	70-125
N027812-010B	SAMP	1	6285443	6077264.3	103.43	PASS	70-125	82955.7	98689.2	84.058	PASS	70-125
N027812-010B	SAMP	5	6801027.3	6077264.3	111.91	PASS	70-125	93301.9	98689.2	94.54	PASS	70-125
N027812-011B	SAMP	1	6596679.3	6077264.3	108.55	PASS	70-125	88301.4	98689.2	89.47	PASS	70-125
N027812-011B	SAMP	5	6883434.4	6077264.3	113.27	PASS	70-125	93516.6	98689.2	94.76	PASS	70-125
N027812-012B	SAMP	1	6582759.2	6077264.3	108.32	PASS	70-125	90270.3	98689.2	91.47	PASS	70-125
N027812-012B	SAMP	5	6909447.3	6077264.3	113.69	PASS	70-125	93944.1	98689.2	95.19	PASS	70-125
N027812-013B	SAMP	1	6520260.4	6077264.3	107.29	PASS	70-125	88658.8	98689.2	89.84	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027812-013B	SAMP	5	6965969.8	6077264.3	114.62	PASS	70-125	94486.4	98689.2	95.74	PASS	70-125
N027812-014B	SAMP	1	6425147.1	6077264.3	105.72	PASS	70-125	85904.4	98689.2	87.045	PASS	70-125
N027812-014B	SAMP	5	6815862.4	6077264.3	112.15	PASS	70-125	92262.7	98689.2	93.49	PASS	70-125
CCV8	CCV	1	7164930.5	6077264.3	117.9	PASS	70-125	110760.7	98689.2	112.23	PASS	70-125
CCB8	CCB	1	6821884.1	6077264.3	112.25	PASS	70-125	104079.4	98689.2	105.46	PASS	70-125
N027812-015B	SAMP	1	6304424.8	6077264.3	103.74	PASS	70-125	81836.5	98689.2	82.92	PASS	70-125
N027812-015B	SAMP	5	6860901.1	6077264.3	112.89	PASS	70-125	92565.2	98689.2	93.79	PASS	70-125
N027812-001B	SAMP	1	6523755	6077264.3	107.35	PASS	70-125	99537.9	98689.2	100.86	PASS	70-125
N027812-001B	SAMP	5	6706771.6	6077264.3	110.36	PASS	70-125	102493.4	98689.2	103.85	PASS	70-125
N027812-001B	SAMP	25	6788149.5	6077264.3	111.7	PASS	70-125	101043.4	98689.2	102.39	PASS	70-125
N027812-001B-PS	PS	1	6694653	6077264.3	110.16	PASS	70-125	100917.8	98689.2	102.26	PASS	70-125
N027812-001B-PS	PS	5	6709032.6	6077264.3	110.4	PASS	70-125	102551.2	98689.2	103.91	PASS	70-125
N027812-001B-MS	MS	1	6515535	6077264.3	107.21	PASS	70-125	97282.4	98689.2	98.57	PASS	70-125
N027812-001B-MS	MS	5	6613936.5	6077264.3	108.83	PASS	70-125	102058.2	98689.2	103.41	PASS	70-125
N027812-001B-MSD	MSD	1	6506833.2	6077264.3	107.07	PASS	70-125	94651	98689.2	95.91	PASS	70-125
CCV9	CCV	1	6636714.7	6077264.3	109.21	PASS	70-125	92648.3	98689.2	93.88	PASS	70-125
CCB9	CCB	1	6395368.1	6077264.3	105.23	PASS	70-125	89859	98689.2	91.053	PASS	70-125
N027812-001B-MSD	MSD	5	6549047.6	6077264.3	107.76	PASS	70-125	90726.8	98689.2	91.93	PASS	70-125
N027812-002B	SAMP	1	6288721.6	6077264.3	103.48	PASS	70-125	88019.9	98689.2	89.19	PASS	70-125
N027812-002B	SAMP	5	6546101.8	6077264.3	107.71	PASS	70-125	92634.7	98689.2	93.87	PASS	70-125
N027812-003B	SAMP	1	6195002.3	6077264.3	101.94	PASS	70-125	87295.4	98689.2	88.45	PASS	70-125
N027812-003B	SAMP	5	6527834.2	6077264.3	107.41	PASS	70-125	92492	98689.2	93.72	PASS	70-125
N027812-004B	SAMP	1	6185930.5	6077264.3	101.79	PASS	70-125	86037.5	98689.2	87.18	PASS	70-125
N027812-004B	SAMP	5	6541017.8	6077264.3	107.63	PASS	70-125	92157.6	98689.2	93.38	PASS	70-125
N027812-005B	SAMP	1	6139520.7	6077264.3	101.02	PASS	70-125	85612.4	98689.2	86.75	PASS	70-125
N027812-005B	SAMP	5	6520405.1	6077264.3	107.29	PASS	70-125	92211.8	98689.2	93.44	PASS	70-125
N027812-006B	SAMP	1	6110666.7	6077264.3	100.55	PASS	70-125	86768.2	98689.2	87.92	PASS	70-125
CCV10	CCV	1	6625127.3	6077264.3	109.02	PASS	70-125	93102.8	98689.2	94.34	PASS	70-125
CCB10	CCB	1	6379086.5	6077264.3	104.97	PASS	70-125	87502.7	98689.2	88.66	PASS	70-125
N027812-006B	SAMP	5	6509776	6077264.3	107.12	PASS	70-125	88936.1	98689.2	90.12	PASS	70-125
N027812-007B	SAMP	1	6176920.1	6077264.3	101.64	PASS	70-125	86232.3	98689.2	87.38	PASS	70-125
N027812-007B	SAMP	5	6542564.6	6077264.3	107.66	PASS	70-125	91078.3	98689.2	92.29	PASS	70-125
N027812-008B	SAMP	1	6123629.4	6077264.3	100.76	PASS	70-125	86443.2	98689.2	87.59	PASS	70-125
N027812-008B	SAMP	5	6539479.3	6077264.3	107.61	PASS	70-125	92308.7	98689.2	93.53	PASS	70-125
N027812-009B	SAMP	1	6147084.5	6077264.3	101.15	PASS	70-125	86003	98689.2	87.15	PASS	70-125
N027812-009B	SAMP	5	6532397.1	6077264.3	107.49	PASS	70-125	91617.1	98689.2	92.83	PASS	70-125
CCV11	CCV	1	7532157.6	6077264.3	123.94	PASS	70-125	113424.7	98689.2	114.93	PASS	70-125
CCB11	CCB	1	7249604.3	6077264.3	119.29	PASS	70-125	107836.2	98689.2	109.27	PASS	70-125
LLCCV3	CCV2	1	7754898	6077264.3	127.61	NR!	70-125	115378.3	98689.2	116.91	PASS	70-125
ICSA4	ICSA	1	7011548.6	6077264.3	115.37	PASS	70-125	111428.3	98689.2	112.91	PASS	70-125
ICSAB4	ICSAB	1	7049760.2	6077264.3	116	PASS	70-125	118794.2	98689.2	120.37	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV12	CCV	1	7232867.6	6077264.3	119.02	PASS	70-125	116248.9	98689.2	117.79	PASS	70-125
CCB12	CCB	1	6775160.6	6077264.3	111.48	PASS	70-125	104478.4	98689.2	105.87	PASS	70-125
CCV13	CCV	1	7222445.3	6077264.3	118.84	PASS	70-125	114451.4	98689.2	115.97	PASS	70-125
CCB13	CCB	1	6799732.5	6077264.3	111.89	PASS	70-125	103837	98689.2	105.22	PASS	70-125
LLCCV4	CCV2	1	7351968.1	6077264.3	120.97	PASS	70-125	109195.9	98689.2	110.65	PASS	70-125
ICSA5	ICSA	1	6842592.3	6077264.3	112.59	PASS	70-125	104675.6	98689.2	106.07	PASS	70-125
ICSAB5	ICSAB	1	6962539.5	6077264.3	114.57	PASS	70-125	112996.2	98689.2	114.5	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	69151.4	69151.4	100	PASS	70-125	85800.3	85800.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	71094.1	69151.4	102.81	PASS	70-125	88563	85800.3	103.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	71706.6	69151.4	103.7	PASS	70-125	87852.4	85800.3	102.39	PASS	70-125
Std3-5/50 ppb	ICAL	1	71535.9	69151.4	103.45	PASS	70-125	87543	85800.3	102.03	PASS	70-125
Std4-10/100 ppb	ICAL	1	70826.1	69151.4	102.42	PASS	70-125	88388.7	85800.3	103.02	PASS	70-125
Std5-20/200 ppb	ICAL	1	71065	69151.4	102.77	PASS	70-125	88069.4	85800.3	102.64	PASS	70-125
Std6-40/400 ppb	ICAL	1	71998.1	69151.4	104.12	PASS	70-125	88991.3	85800.3	103.72	PASS	70-125
Std7-100/1000 ppb	ICAL	1	72904.2	69151.4	105.43	PASS	70-125	88217.8	85800.3	102.82	PASS	70-125
Std8-200/2000 ppb	ICAL	1	71840.7	69151.4	103.89	PASS	70-125	90606.5	85800.3	105.6	PASS	70-125
ICV	ICV	1	75846.3	69151.4	109.68	PASS	70-125	94889.9	85800.3	110.59	PASS	70-125
ICB	ICB	1	70033.9	69151.4	101.28	PASS	70-125	88646.8	85800.3	103.32	PASS	70-125
LLICV	CCV1	1	76495	69151.4	110.62	PASS	70-125	95674	85800.3	111.51	PASS	70-125
ICSA1	ICSA	1	76105.4	69151.4	110.06	PASS	70-125	95132.7	85800.3	110.88	PASS	70-125
ICSAB1	ICSAB	1	81802.8	69151.4	118.3	PASS	70-125	102558.6	85800.3	119.53	PASS	70-125
CCV1	CCV	1	77358.1	69151.4	111.87	PASS	70-125	89281.5	85800.3	104.06	PASS	70-125
CCB1	CCB	1	79434.2	69151.4	114.87	PASS	70-125	96172.1	85800.3	112.09	PASS	70-125
CCV2	CCV	1	83285.7	69151.4	120.44	PASS	70-125	102059.8	85800.3	118.95	PASS	70-125
CCB2	CCB	1	78904.3	69151.4	114.1	PASS	70-125	98424.6	85800.3	114.71	PASS	70-125
CCV3	CCV	1	80170.3	69151.4	115.93	PASS	70-125	101738.4	85800.3	118.58	PASS	70-125
CCB3	CCB	1	76781.7	69151.4	111.03	PASS	70-125	97514.6	85800.3	113.65	PASS	70-125
LLCCV1	CCV2	1	83467.5	69151.4	120.7	PASS	70-125	105588.8	85800.3	123.06	PASS	70-125
ICSA2	ICSA	1	83859.9	69151.4	121.27	PASS	70-125	100313.3	85800.3	116.91	PASS	70-125
ICSAB2	ICSAB	1	71146.5	69151.4	102.89	PASS	70-125	69571.9	85800.3	81.086	PASS	70-125
CCV5	CCV	1	83906.5	69151.4	121.34	PASS	70-125	103304.4	85800.3	120.4	PASS	70-125
CCB5	CCB	1	78630.6	69151.4	113.71	PASS	70-125	96884.5	85800.3	112.92	PASS	70-125
CCV6	CCV	1	81560.6	69151.4	117.94	PASS	70-125	98339.7	85800.3	114.61	PASS	70-125
CCB6	CCB	1	77234.8	69151.4	111.69	PASS	70-125	92389.6	85800.3	107.68	PASS	70-125
MB-66251	MBLK	1	76487	69151.4	110.61	PASS	70-125	91086.8	85800.3	106.16	PASS	70-125
LCS-66251	LCS	1	80238.3	69151.4	116.03	PASS	70-125	97887.1	85800.3	114.09	PASS	70-125
CCV7	CCV	1	76352.2	69151.4	110.41	PASS	70-125	92386.4	85800.3	107.68	PASS	70-125
CCB7	CCB	1	72572.8	69151.4	104.95	PASS	70-125	88619	85800.3	103.29	PASS	70-125
LLCCV2	CCV2	1	79029.1	69151.4	114.28	PASS	70-125	95427.5	85800.3	111.22	PASS	70-125
ICSA3	ICSA	1	76893.5	69151.4	111.2	PASS	70-125	88680.3	85800.3	103.36	PASS	70-125
ICSAB3	ICSAB	1	82413.4	69151.4	119.18	PASS	70-125	97458.4	85800.3	113.59	PASS	70-125
N027812-010B	SAMP	1	62150.2	69151.4	89.88	PASS	70-125	61048.1	85800.3	71.15	PASS	70-125
N027812-010B	SAMP	5	70051.5	69151.4	101.3	PASS	70-125	74911.1	85800.3	87.31	PASS	70-125
N027812-011B	SAMP	1	66569.9	69151.4	96.27	PASS	70-125	70837.2	85800.3	82.56	PASS	70-125
N027812-011B	SAMP	5	71295	69151.4	103.1	PASS	70-125	75880	85800.3	88.44	PASS	70-125
N027812-012B	SAMP	1	67792.3	69151.4	98.035	PASS	70-125	72813.8	85800.3	84.86	PASS	70-125
N027812-012B	SAMP	5	71817	69151.4	103.85	PASS	70-125	77964	85800.3	90.87	PASS	70-125
N027812-013B	SAMP	1	67391.9	69151.4	97.46	PASS	70-125	72198.9	85800.3	84.15	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027812-013B	SAMP	5	72527.8	69151.4	104.88	PASS	70-125	77495.4	85800.3	90.32	PASS	70-125
N027812-014B	SAMP	1	65806.6	69151.4	95.16	PASS	70-125	71519.2	85800.3	83.36	PASS	70-125
N027812-014B	SAMP	5	71154.4	69151.4	102.9	PASS	70-125	77331.4	85800.3	90.13	PASS	70-125
CCV8	CCV	1	82495	69151.4	119.3	PASS	70-125	94187.9	85800.3	109.78	PASS	70-125
CCB8	CCB	1	78104.8	69151.4	112.95	PASS	70-125	88458.3	85800.3	103.1	PASS	70-125
N027812-015B	SAMP	1	61360.5	69151.4	88.73	PASS	70-125	62385.3	85800.3	72.71	PASS	70-125
N027812-015B	SAMP	5	71071.7	69151.4	102.78	PASS	70-125	76598.7	85800.3	89.28	PASS	70-125
N027812-001B	SAMP	1	73094.9	69151.4	105.7	PASS	70-125	83943.4	85800.3	97.84	PASS	70-125
N027812-001B	SAMP	5	76718.3	69151.4	110.94	PASS	70-125	86472.1	85800.3	100.78	PASS	70-125
N027812-001B	SAMP	25	76692.9	69151.4	110.91	PASS	70-125	84605.8	85800.3	98.61	PASS	70-125
N027812-001B-PS	PS	1	73423	69151.4	106.18	PASS	70-125	81606.3	85800.3	95.11	PASS	70-125
N027812-001B-PS	PS	5	75902.1	69151.4	109.76	PASS	70-125	84835.7	85800.3	98.88	PASS	70-125
N027812-001B-MS	MS	1	72075.7	69151.4	104.23	PASS	70-125	80165.9	85800.3	93.43	PASS	70-125
N027812-001B-MS	MS	5	76000.6	69151.4	109.9	PASS	70-125	83933.5	85800.3	97.82	PASS	70-125
N027812-001B-MSD	MSD	1	69898.9	69151.4	101.08	PASS	70-125	77835.9	85800.3	90.72	PASS	70-125
CCV9	CCV	1	69267.6	69151.4	100.17	PASS	70-125	70488.1	85800.3	82.15	PASS	70-125
CCB9	CCB	1	68202.2	69151.4	98.63	PASS	70-125	74042.6	85800.3	86.3	PASS	70-125
N027812-001B-MSD	MSD	5	69112.7	69151.4	99.94	PASS	70-125	75995	85800.3	88.57	PASS	70-125
N027812-002B	SAMP	1	66366.7	69151.4	95.97	PASS	70-125	72453.5	85800.3	84.44	PASS	70-125
N027812-002B	SAMP	5	69735.9	69151.4	100.85	PASS	70-125	75937.9	85800.3	88.51	PASS	70-125
N027812-003B	SAMP	1	65204	69151.4	94.29	PASS	70-125	72701.9	85800.3	84.73	PASS	70-125
N027812-003B	SAMP	5	69616.6	69151.4	100.67	PASS	70-125	76405.6	85800.3	89.051	PASS	70-125
N027812-004B	SAMP	1	64695.4	69151.4	93.56	PASS	70-125	71782.7	85800.3	83.66	PASS	70-125
N027812-004B	SAMP	5	69709.4	69151.4	100.81	PASS	70-125	76923.5	85800.3	89.65	PASS	70-125
N027812-005B	SAMP	1	64420	69151.4	93.16	PASS	70-125	71614.1	85800.3	83.47	PASS	70-125
N027812-005B	SAMP	5	69571	69151.4	100.61	PASS	70-125	77397.8	85800.3	90.21	PASS	70-125
N027812-006B	SAMP	1	65172.8	69151.4	94.25	PASS	70-125	71357.5	85800.3	83.17	PASS	70-125
CCV10	CCV	1	70310.9	69151.4	101.68	PASS	70-125	78288.9	85800.3	91.25	PASS	70-125
CCB10	CCB	1	67746.2	69151.4	97.97	PASS	70-125	73219.1	85800.3	85.34	PASS	70-125
N027812-006B	SAMP	5	67899.5	69151.4	98.19	PASS	70-125	74636.9	85800.3	86.99	PASS	70-125
N027812-007B	SAMP	1	65486.4	69151.4	94.7	PASS	70-125	70695.8	85800.3	82.4	PASS	70-125
N027812-007B	SAMP	5	69582	69151.4	100.62	PASS	70-125	76865.5	85800.3	89.59	PASS	70-125
N027812-008B	SAMP	1	65495.6	69151.4	94.71	PASS	70-125	70716.9	85800.3	82.42	PASS	70-125
N027812-008B	SAMP	5	69293.1	69151.4	100.2	PASS	70-125	77644.1	85800.3	90.49	PASS	70-125
N027812-009B	SAMP	1	64762.5	69151.4	93.65	PASS	70-125	72343	85800.3	84.32	PASS	70-125
N027812-009B	SAMP	5	69025.3	69151.4	99.82	PASS	70-125	76910.1	85800.3	89.64	PASS	70-125
CCV11	CCV	1	81841.8	69151.4	118.35	PASS	70-125	88289.7	85800.3	102.9	PASS	70-125
CCB11	CCB	1	80231.6	69151.4	116.02	PASS	70-125	93399.6	85800.3	108.86	PASS	70-125
LLCCV3	CCV2	1	85608.6	69151.4	123.8	PASS	70-125	96745.6	85800.3	112.76	PASS	70-125
ICSA4	ICSA	1	81672	69151.4	118.11	PASS	70-125	90769.3	85800.3	105.79	PASS	70-125
ICSAB4	ICSAB	1	84601.1	69151.4	122.34	PASS	70-125	92153.7	85800.3	107.4	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV12	CCV	1	84112.2	69151.4	121.63	PASS	70-125	95503.3	85800.3	111.31	PASS	70-125
CCB12	CCB	1	78744.5	69151.4	113.87	PASS	70-125	88653.8	85800.3	103.33	PASS	70-125
CCV13	CCV	1	84158	69151.4	121.7	PASS	70-125	93373.1	85800.3	108.83	PASS	70-125
CCB13	CCB	1	78071.3	69151.4	112.9	PASS	70-125	86339.3	85800.3	100.63	PASS	70-125
LLCCV4	CCV2	1	80695	69151.4	116.69	PASS	70-125	88921.8	85800.3	103.64	PASS	70-125
ICSA5	ICSA	1	77635.7	69151.4	112.27	PASS	70-125	81087.1	85800.3	94.51	PASS	70-125
ICSAB5	ICSAB	1	82518.2	69151.4	119.33	PASS	70-125	89051.6	85800.3	103.79	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2266047.3	2266047.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2356418.7	2266047.3	103.99	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2354583.3	2266047.3	103.91	PASS	70-125
Std3-5/50 ppb	ICAL	1	2338314.3	2266047.3	103.19	PASS	70-125
Std4-10/100 ppb	ICAL	1	2314610	2266047.3	102.14	PASS	70-125
Std5-20/200 ppb	ICAL	1	2315909.4	2266047.3	102.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	2339607.9	2266047.3	103.25	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2318771.2	2266047.3	102.33	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2318691.7	2266047.3	102.32	PASS	70-125
ICV	ICV	1	2429288.5	2266047.3	107.2	PASS	70-125
ICB	ICB	1	2277136.3	2266047.3	100.49	PASS	70-125
LLICV	CCV1	1	2476349.8	2266047.3	109.28	PASS	70-125
ICSA1	ICSA	1	2228839	2266047.3	98.36	PASS	70-125
ICSAB1	ICSAB	1	2398520.7	2266047.3	105.85	PASS	70-125
CCV1	CCV	1	2451986.8	2266047.3	108.21	PASS	70-125
CCB1	CCB	1	2458066.8	2266047.3	108.47	PASS	70-125
CCV2	CCV	1	2580842.4	2266047.3	113.89	PASS	70-125
CCB2	CCB	1	2472755.3	2266047.3	109.12	PASS	70-125
CCV3	CCV	1	2506826.9	2266047.3	110.63	PASS	70-125
CCB3	CCB	1	2392061.7	2266047.3	105.56	PASS	70-125
LLCCV1	CCV2	1	2612894.2	2266047.3	115.31	PASS	70-125
ICSA2	ICSA	1	2383562.2	2266047.3	105.19	PASS	70-125
ICSAB2	ICSAB	1	2106431.4	2266047.3	92.96	PASS	70-125
CCV5	CCV	1	2565999	2266047.3	113.24	PASS	70-125
CCB5	CCB	1	2436101.4	2266047.3	107.5	PASS	70-125
CCV6	CCV	1	2535829.2	2266047.3	111.91	PASS	70-125
CCB6	CCB	1	2395777.1	2266047.3	105.72	PASS	70-125
MB-66251	MBLK	1	2355173.3	2266047.3	103.93	PASS	70-125
LCS-66251	LCS	1	2523730.8	2266047.3	111.37	PASS	70-125
CCV7	CCV	1	2413024.1	2266047.3	106.49	PASS	70-125
CCB7	CCB	1	2311369.5	2266047.3	102	PASS	70-125
LLCCV2	CCV2	1	2497701.8	2266047.3	110.22	PASS	70-125
ICSA3	ICSA	1	2215131.8	2266047.3	97.75	PASS	70-125
ICSAB3	ICSAB	1	2356727.5	2266047.3	104	PASS	70-125
N027812-010B	SAMP	1	1900709.7	2266047.3	83.88	PASS	70-125
N027812-010B	SAMP	5	2183957.6	2266047.3	96.38	PASS	70-125
N027812-011B	SAMP	1	2009331.2	2266047.3	88.67	PASS	70-125
N027812-011B	SAMP	5	2215144.4	2266047.3	97.75	PASS	70-125
N027812-012B	SAMP	1	2037947.3	2266047.3	89.93	PASS	70-125
N027812-012B	SAMP	5	2227630.9	2266047.3	98.3	PASS	70-125
N027812-013B	SAMP	1	2036145.6	2266047.3	89.85	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027812-013B	SAMP	5	2229488.1	2266047.3	98.39	PASS	70-125
N027812-014B	SAMP	1	1982979.2	2266047.3	87.51	PASS	70-125
N027812-014B	SAMP	5	2207788	2266047.3	97.43	PASS	70-125
CCV8	CCV	1	2564739.7	2266047.3	113.18	PASS	70-125
CCB8	CCB	1	2437447.6	2266047.3	107.56	PASS	70-125
N027812-015B	SAMP	1	1897351.8	2266047.3	83.73	PASS	70-125
N027812-015B	SAMP	5	2194980.1	2266047.3	96.86	PASS	70-125
N027812-001B	SAMP	1	2148490.1	2266047.3	94.81	PASS	70-125
N027812-001B	SAMP	5	2285803.3	2266047.3	100.87	PASS	70-125
N027812-001B	SAMP	25	2359365.6	2266047.3	104.12	PASS	70-125
N027812-001B-PS	PS	1	2173445.8	2266047.3	95.91	PASS	70-125
N027812-001B-PS	PS	5	2279488.7	2266047.3	100.59	PASS	70-125
N027812-001B-MS	MS	1	2102521.8	2266047.3	92.78	PASS	70-125
N027812-001B-MS	MS	5	2282645.1	2266047.3	100.73	PASS	70-125
N027812-001B-MSD	MSD	1	2097646.6	2266047.3	92.57	PASS	70-125
CCV9	CCV	1	2248494.5	2266047.3	99.23	PASS	70-125
CCB9	CCB	1	2210410.4	2266047.3	97.54	PASS	70-125
N027812-001B-MSD	MSD	5	2165035.1	2266047.3	95.54	PASS	70-125
N027812-002B	SAMP	1	2013900.9	2266047.3	88.87	PASS	70-125
N027812-002B	SAMP	5	2155927.3	2266047.3	95.14	PASS	70-125
N027812-003B	SAMP	1	1958595.5	2266047.3	86.43	PASS	70-125
N027812-003B	SAMP	5	2143376.8	2266047.3	94.59	PASS	70-125
N027812-004B	SAMP	1	1952832.2	2266047.3	86.18	PASS	70-125
N027812-004B	SAMP	5	2155711.5	2266047.3	95.13	PASS	70-125
N027812-005B	SAMP	1	1925416.8	2266047.3	84.97	PASS	70-125
N027812-005B	SAMP	5	2147862.8	2266047.3	94.78	PASS	70-125
N027812-006B	SAMP	1	1953333.3	2266047.3	86.2	PASS	70-125
CCV10	CCV	1	2271253.3	2266047.3	100.23	PASS	70-125
CCB10	CCB	1	2193079	2266047.3	96.78	PASS	70-125
N027812-006B	SAMP	5	2113430.8	2266047.3	93.27	PASS	70-125
N027812-007B	SAMP	1	1960884.5	2266047.3	86.53	PASS	70-125
N027812-007B	SAMP	5	2158582	2266047.3	95.26	PASS	70-125
N027812-008B	SAMP	1	1937281.7	2266047.3	85.49	PASS	70-125
N027812-008B	SAMP	5	2154222.7	2266047.3	95.065	PASS	70-125
N027812-009B	SAMP	1	1933385.7	2266047.3	85.32	PASS	70-125
N027812-009B	SAMP	5	2152384.3	2266047.3	94.98	PASS	70-125
CCV11	CCV	1	2579473.3	2266047.3	113.83	PASS	70-125
CCB11	CCB	1	2518397.4	2266047.3	111.14	PASS	70-125
LLCCV3	CCV2	1	2668964	2266047.3	117.78	PASS	70-125
ICSA4	ICSA	1	2344851.2	2266047.3	103.48	PASS	70-125
ICSAB4	ICSAB	1	2421483	2266047.3	106.86	PASS	70-125

INTERNAL STANDARD: 180105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCV12	CCV	1	2602634.3	2266047.3	114.85	PASS	70-125
CCB12	CCB	1	2458113.7	2266047.3	108.48	PASS	70-125
CCV13	CCV	1	2592648.8	2266047.3	114.41	PASS	70-125
CCB13	CCB	1	2446745.1	2266047.3	107.97	PASS	70-125
LLCCV4	CCV2	1	2570650.7	2266047.3	113.44	PASS	70-125
ICSA5	ICSA	1	2239398.9	2266047.3	98.82	PASS	70-125
ICSAB5	ICSAB	1	2370124.8	2266047.3	104.59	PASS	70-125

INTERNAL STANDARD: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	62619.5	62619.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	65940.2	62619.5	105.3	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	63563.5	62619.5	101.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	63516.6	62619.5	101.43	PASS	70-125
Std4-10/100 ppb	ICAL	1	63395.8	62619.5	101.24	PASS	70-125
Std5-20/200 ppb	ICAL	1	52108.6	62619.5	83.21	PASS	70-125
Std6-40/400 ppb	ICAL	1	63322.2	62619.5	101.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61513.2	62619.5	98.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	62853.8	62619.5	100.37	PASS	70-125
ICV	ICV	1	68295.6	62619.5	109.06	PASS	70-125
ICB	ICB	1	57903.4	62619.5	92.47	PASS	70-125
LLICV	CCV1	1	57110.5	62619.5	91.2	PASS	70-125
ICSA1	ICSA	1	55013.5	62619.5	87.85	PASS	70-125
ICSAB1	ICSAB	1	69228.5	62619.5	110.55	PASS	70-125
LLICV	CCV1	1	69055.2	62619.5	110.28	PASS	70-125
CCV1	CCV	1	61540.9	62619.5	98.28	PASS	70-125
CCB1	CCB	1	66459	62619.5	106.13	PASS	70-125
N027812-002B	SAMP	1	73176.5	62619.5	116.86	PASS	70-125
N027812-005B	SAMP	1	73437.8	62619.5	117.28	PASS	70-125
N027812-007B	SAMP	1	73647.6	62619.5	117.61	PASS	70-125
N027812-008B	SAMP	1	72268.2	62619.5	115.41	PASS	70-125
CCV2	CCV	1	77852.2	62619.5	124.33	PASS	70-125
CCB2	CCB	1	75901	62619.5	121.21	PASS	70-125
CCV3	CCV	1	74193	62619.5	118.48	PASS	70-125
CCB3	CCB	1	71460	62619.5	114.12	PASS	70-125
CCV4	CCV	1	62815.9	62619.5	100.31	PASS	70-125
CCB4	CCB	1	76461.3	62619.5	122.1	PASS	70-125
LLCCV1	CCV2	1	73233.4	62619.5	116.95	PASS	70-125
ICSA2	ICSA	1	73354.5	62619.5	117.14	PASS	70-125
ICSAB2	ICSAB	1	74704	62619.5	119.3	PASS	70-125
CCV5	CCV	1	61305.7	62619.5	97.9	PASS	70-125
CCB5	CCB	1	68273.1	62619.5	109.03	PASS	70-125
LLCCV2	CCV2	1	67471.9	62619.5	107.75	PASS	70-125
ICSA3	ICSA	1	70782.4	62619.5	113.04	PASS	70-125
ICSAB3	ICSAB	1	67964.9	62619.5	108.54	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027812
Test Method: EPA 6020
Analysis Date: 1/5/2018

Matrix: Groundwater
Batch No.: 66251

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027812-001B DT 5X	Arsenic	ug/L	2.503918	NA	2.258794	10.85%	10
N027812-001B DT 5X	Barium	ug/L	127.7784	PASS	129.4095	1.26%	10
N027812-001B DT 5X	Chromium	ug/L	0	NA	0		10
N027812-001B DT 5X	Manganese	ug/L	3.672157	NA	3.007488	22.10%	10
N027812-001B DT 5X	Molybdenum	ug/L	5.14346	NA	5.015577	2.55%	10
N027812-001B DT 5X	Selenium	ug/L	5.14346	NA	1.769109	190.74%	10
			1.67			5.6%	

Note: NA - Not applicable

01/10/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N027812-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121243**
Client ID:	**ZZZZZZ**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.552	0.10	10.00	2.259	103	80	120				
Barium	140.916	1.0	10.00	129.4	115	80	120				
Manganese	102.921	0.50	100.0	3.007	99.9	80	120				
Molybdenum	16.253	0.50	10.00	5.016	112	80	120				
Selenium	12.311	0.50	10.00	1.769	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027812-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.191	1.0	10.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

January 19, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027812

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucan for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N027812-016 (R-28-Q118LL) was not analyzed. Please refer to the attached correspondence.

Samples N027812 -017 (AB1-Q118LL) and N027812-018 (AB2-Q118LL) were not analyzed as per COC.

Analytical Comments for SM 4500-NO3F:

Matrix Spike Duplicate (MSD) is outside recovery criteria in QC sample N027789-002DMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *19-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-001A	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001B	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001C	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001D	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-001E	C-BNS-Q118LL	Groundwater	1/3/2018 11:55:00 AM	1/4/2018	1/15/2018
N027812-002A	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002B	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002C	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002D	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-002E	C-I-3-D-Q118LL	Groundwater	1/3/2018 9:30:00 AM	1/4/2018	1/15/2018
N027812-003A	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003B	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003C	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003D	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-003E	MW-921-Q118LL	Groundwater	1/3/2018 12:35:00 PM	1/4/2018	1/15/2018
N027812-004A	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004B	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004C	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004D	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-004E	C-I-3-S-Q118LL	Groundwater	1/3/2018 9:50:00 AM	1/4/2018	1/15/2018
N027812-005A	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005B	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005C	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005D	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-005E	C-R22A-D-Q118LL	Groundwater	1/3/2018 10:50:00 AM	1/4/2018	1/15/2018
N027812-006A	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006B	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006C	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-006D	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-006E	C-R22A-S-Q118LL	Groundwater	1/3/2018 11:05:00 AM	1/4/2018	1/15/2018
N027812-007A	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007B	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007C	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007D	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-007E	C-R27-D-Q118LL	Groundwater	1/3/2018 12:25:00 PM	1/4/2018	1/15/2018
N027812-008A	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008B	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008C	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008D	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-008E	C-R27-S-Q118LL	Groundwater	1/3/2018 12:50:00 PM	1/4/2018	1/15/2018
N027812-009A	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009B	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009C	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009D	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-009E	C-TAZ-D-Q118LL	Groundwater	1/3/2018 8:35:00 AM	1/4/2018	1/15/2018
N027812-010A	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010B	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-010C	MW-922-Q118LL	Groundwater	1/3/2018 2:50:00 PM	1/4/2018	1/15/2018
N027812-011A	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011B	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011C	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011D	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-011E	C-TAZ-S-Q118LL	Groundwater	1/3/2018 8:55:00 AM	1/4/2018	1/15/2018
N027812-012A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012B	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012C	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012D	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-012E	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-013A	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027812
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027812-013B	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013C	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013D	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-013E	R63-Q118LL	Groundwater	1/3/2018 10:15:00 AM	1/4/2018	1/15/2018
N027812-014A	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014B	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-014C	SW1-Q118LL	Groundwater	1/3/2018 2:40:00 PM	1/4/2018	1/15/2018
N027812-015A	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015B	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-015C	SW2-Q118LL	Groundwater	1/3/2018 3:10:00 PM	1/4/2018	1/15/2018
N027812-016A	R-28-Q118LL	Groundwater	1/3/2018 1:25:00 PM	1/4/2018	1/15/2018
N027812-017A	AB1-Q118LL	Groundwater	1/3/2018 8:45:00 AM	1/4/2018	1/15/2018
N027812-018A	AB2-Q118LL	Groundwater	1/3/2018 1:40:00 PM	1/4/2018	1/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:40:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 3:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180104D**	QC Batch: **R121231**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	1/4/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027812-010CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID:	**ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1011.000	0.10						1014	0.296	2	

Sample ID	**N027812-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121231**
Client ID:	**ZZZZZZ**	Batch ID: **R121231**	TestNo: **EPA 120.1**		Analysis Date: **1/4/2018**	SeqNo: **2885869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1024.000	0.10						1028	0.390	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:40:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-015

Client Sample ID: SW2-Q118LL
Collection Date: 1/3/2018 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180104E**	QC Batch: **R121232**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	1/4/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/4/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027812-001DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121232**
Client ID: **ZZZZZZ**	Batch ID: **R121232**	TestNo: **SM4500-H+B**		Analysis Date: **1/4/2018**	SeqNo: **2885872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.290	0.10						8.270	0.242	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027812-015CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121232**
Client ID: **ZZZZZZ**	Batch ID: **R121232**	TestNo: **SM4500-H+B**		Analysis Date: **1/4/2018**	SeqNo: **2885887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.210	0.10						7.190	0.278	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104B**	QC Batch: **66260**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180104C**	QC Batch: **66261**				PrepDate	**1/4/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/4/2018 10:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-66260**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/4/2018**	RunNo:	**121229**
Client ID:	**LCSW**	Batch ID:	**66260**	TestNo:	**SM2540D**			Analysis Date:	**1/4/2018**	SeqNo:	**2885808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID	**MB-66260**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/4/2018**	RunNo:	**121229**
Client ID:	**PBW**	Batch ID:	**66260**	TestNo:	**SM2540D**			Analysis Date:	**1/4/2018**	SeqNo:	**2885809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N027812-001DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/4/2018**	RunNo:	**121229**
Client ID:	**ZZZZZZ**	Batch ID:	**66260**	TestNo:	**SM2540D**			Analysis Date:	**1/4/2018**	SeqNo:	**2885811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66261	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	LCSW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	918.000	10	1000	0	91.8	80	120				

Sample ID	MB-66261	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	PBW	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027812-012DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/4/2018	RunNo:	121230
Client ID:	ZZZZZZ	Batch ID:	66261	TestNo:	SM2540D			Analysis Date:	1/4/2018	SeqNo:	2885828

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:32 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 09:51 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:09 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:06 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:25 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A**	QC Batch: **R121248**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 11:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180105C**	QC Batch: **66251**			PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 11:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A**	QC Batch: **R121248**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180105C**	QC Batch: **66251**			PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 03:39 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate		**1/4/2018**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:38 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 01:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-014

Client Sample ID: SW1-Q118LL
Collection Date: 1/3/2018 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 12:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 3:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180105A** QC Batch: **R121248**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/5/2018 02:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180105C** QC Batch: **66251**				PrepDate	**1/4/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/5/2018 09:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121248**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **PBW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121248**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **LCSW**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.195	0.20	5.000	0	104	90	110				

Sample ID **N027812-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N027812-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Sample ID **N027812-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121248**
Client ID: **ZZZZZZ**	Batch ID: **R121248**	TestNo: **EPA 218.6**		Analysis Date: **1/5/2018**	SeqNo: **2887366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.073	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.100	0.20	1.000	0	110	90	110				

Sample ID	N027812-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N027812-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N027812-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.087	0.20	1.000	0	109	90	110				

Sample ID	N027812-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887384

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0	106	90	110				

Sample ID	N027812-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N027812-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N027812-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N027812-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027812-003AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110	1.073	0.336	20	

Sample ID	N027812-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027812-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121248
Client ID:	ZZZZZZ	Batch ID:	R121248	TestNo:	EPA 218.6			Analysis Date:	1/5/2018	SeqNo:	2887399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.093	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121296	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	PBW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121296	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	LCSW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID	N027812-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID	N027819-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID	N027819-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889188

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID	N027820-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N027819-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID	N027820-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID	N027820-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID **N027820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027820-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66251	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	PBW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66251	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	LCSW	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.036	1.0	10.00	0	100	85	115				

Sample ID	N027812-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.240	1.0	10.00	0	102	75	125				

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121242
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.491	1.0	10.00	0	105	75	125	10.24	2.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.33	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180105E**	QC Batch: **R121239**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.32	0.022	0.050		mg/L	1	1/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121239	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	PBW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886037

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121239	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	LCSW	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.522	0.050	0.5000	0	104	85	115				

Sample ID	N027789-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.202	0.25						3.245	1.33	20	

Sample ID	N027789-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886042

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.587	0.25	2.500	2.954	105	75	125				

Sample ID	N027789-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121239
Client ID:	ZZZZZZ	Batch ID:	R121239	TestNo:	SM4500-NO3			Analysis Date:	1/5/2018	SeqNo:	2886043

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.170	0.25	2.500	2.954	129	75	125	5.587	9.92	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	25	1.8	20		ug/L	1	1/4/2018 07:23 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/4/2018 09:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 07:55 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/4/2018 10:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:01 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	1/4/2018 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 9:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:06 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:24 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	1/4/2018 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-007

Client Sample ID: C-R27-D-Q118LL
Collection Date: 1/3/2018 12:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/4/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 10:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-011

Client Sample ID: C-TAZ-S-Q118LL
Collection Date: 1/3/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 11:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 08:56 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	49	1.8	20		ug/L	1	1/4/2018 11:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66256**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/4/2018 09:02 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180104D**	QC Batch: **66255**			PrepDate	**1/4/2018**		Analyst: **CEI**
Iron	37	1.8	20		ug/L	1	1/4/2018 11:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66256**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **PBW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66256**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **LCSW**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.918	20	100.0	0	104	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.753	20	100.0	24.72	96.0	75	125				

Sample ID **N027812-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/4/2018**	RunNo: **121218**
Client ID: **ZZZZZZ**	Batch ID: **66256**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/4/2018**	SeqNo: **2885454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.232	20	100.0	24.72	95.5	75	125	120.8	0.432	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66255	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	PBW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66255	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	LCSW	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885404

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.193	20	100.0	0	106	85	115				

Sample ID	N027812-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.504	20	100.0	20.28	100	75	125				

Sample ID	N027812-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/4/2018	RunNo:	121218
Client ID:	ZZZZZZ	Batch ID:	66255	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/4/2018	SeqNo:	2885411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.635	20	100.0	20.28	99.4	75	125	120.5	0.723	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-001

Client Sample ID: C-BNS-Q118LL
Collection Date: 1/3/2018 11:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 09:41 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 09:41 PM
Manganese	3.0	0.056	0.50		µg/L	1	1/5/2018 09:41 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 09:41 PM
Selenium	1.8	0.028	0.50		µg/L	1	1/5/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-002

Client Sample ID: C-I-3-D-Q118LL
Collection Date: 1/3/2018 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:43 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:43 PM
Manganese	1.2	0.056	0.50		µg/L	1	1/5/2018 10:43 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 10:43 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-003

Client Sample ID: MW-921-Q118LL
Collection Date: 1/3/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 10:54 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 10:54 PM
Manganese	2.8	0.056	0.50		µg/L	1	1/5/2018 10:54 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 10:54 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-004

Client Sample ID: C-I-3-S-Q118LL
Collection Date: 1/3/2018 9:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:05 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:05 PM
Manganese	1.3	0.056	0.50		µg/L	1	1/5/2018 11:05 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 11:05 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/5/2018 11:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-005

Client Sample ID: C-R22A-D-Q118LL
Collection Date: 1/3/2018 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:16 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 11:16 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 11:16 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 11:16 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-006

Client Sample ID: C-R22A-S-Q118LL
Collection Date: 1/3/2018 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 11:28 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:28 PM
Manganese	3.7	0.056	0.50		µg/L	1	1/5/2018 11:28 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:28 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-007		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180105D** QC Batch: **66251** PrepDate **1/4/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 11:50 PM
Barium	120	0.070	1.0		µg/L	1	1/5/2018 11:50 PM
Manganese	2.9	0.056	0.50		µg/L	1	1/5/2018 11:50 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/5/2018 11:50 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 12:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-008

Client Sample ID: C-R27-S-Q118LL
Collection Date: 1/3/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:01 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:01 AM
Manganese	2.6	0.056	0.50		µg/L	1	1/6/2018 12:01 AM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 12:01 AM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 12:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *19-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-009

Client Sample ID: C-TAZ-D-Q118LL
Collection Date: 1/3/2018 8:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 12:12 AM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 12:12 AM
Manganese	1.9	0.056	0.50		µg/L	1	1/6/2018 12:12 AM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 12:12 AM
Selenium	1.9	0.028	0.50		µg/L	1	1/6/2018 12:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118LL
Lab Order:	N027812	**Collection Date:**	1/3/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027812-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**				PrepDate	**1/4/2018**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:33 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:33 PM
Manganese	1.6	0.056	0.50		µg/L	1	1/5/2018 08:33 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/5/2018 08:33 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-012

Client Sample ID: R-28-Q118LL
Collection Date: 1/3/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/5/2018 08:44 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:44 PM
Manganese	3.9	0.056	0.50		µg/L	1	1/5/2018 08:44 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:44 PM
Selenium	1.9	0.028	0.50		µg/L	1	1/5/2018 08:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027812
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027812-013

Client Sample ID: R63-Q118LL
Collection Date: 1/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180105D**	QC Batch: **66251**			PrepDate	**1/4/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/5/2018 08:56 PM
Barium	130	0.070	1.0		µg/L	1	1/5/2018 08:56 PM
Manganese	4.4	0.056	0.50		µg/L	1	1/5/2018 08:56 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/5/2018 08:56 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/5/2018 08:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66251**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **PBW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66251**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **LCSW**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.756	0.10	10.00	0	97.6	85	115				
Barium	10.117	1.0	10.00	0	101	85	115				
Manganese	99.827	0.50	100.0	0	99.8	85	115				
Molybdenum	9.857	0.50	10.00	0	98.6	85	115				
Selenium	9.567	0.50	10.00	0	95.7	85	115				

Sample ID **N027812-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/4/2018**	RunNo: **121243**
Client ID: **ZZZZZZ**	Batch ID: **66251**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/5/2018**	SeqNo: **2886685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.463	0.10	10.00	2.259	102	75	125				
Barium	141.826	1.0	10.00	129.4	124	75	125				
Manganese	103.441	0.50	100.0	3.007	100	75	125				
Molybdenum	16.612	0.50	10.00	5.016	116	75	125				
Selenium	12.937	0.50	10.00	1.769	112	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027812
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027812-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/4/2018	RunNo:	121243
Client ID:	ZZZZZZ	Batch ID:	66251	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/5/2018	SeqNo:	2886687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.796	0.10	10.00	2.259	105	75	125	12.46	2.64	20	
Barium	140.958	1.0	10.00	129.4	115	75	125	141.8	0.614	20	
Manganese	104.147	0.50	100.0	3.007	101	75	125	103.4	0.680	20	
Molybdenum	16.287	0.50	10.00	5.016	113	75	125	16.61	1.98	20	
Selenium	12.654	0.50	10.00	1.769	109	75	125	12.94	2.21	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
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Contact us:
F: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Report to: Nara Tay	Bill to: Nara Tay	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: PGE	Excel EDD	PQL:		
Address: Roseville, CA 95661	Email:	Geotracker	RWQCB ✓	1. Chilled	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Labspec	CalTrans	2. Headspace	
Submitted By: Nara Tay	Email to: mbloes@pivox.com	Others ✓	LEVEL III	3. Container Intact	
Title: sample tech	P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present	
Signature: Date: 1/3/18	Phone: 949-727-1400, ext 200	Global ID:	Regulatory	5. IR number	3
I hereby authorize ASSET Labs to perform the tests indicated below.	Fax:		Specify State:	6. Method of Cooling: Ice	
Project Name: PG&E Topock - RMP	Phone: 916-786-3302 Fax:			Sample Temp: 2.1°C/3.2°C / 2-6°C	
Project Number: RC000753.0801	Sampled By: Nara Tay			Courier:	
	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Tracking No.:	
	Signature: Date: 1/3/18				

Matrix: Ground x | Sediment; Potable | Soil; NPDES | Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027812 -01	C-BNS-Q118LL	1/3/18	1155		X		X		X	X		X	X			X	X	E	7	P	BNS
2		~~C-CON-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
3		~~C-CON-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
4	-02	C-I-3-D-Q118LL	1/3/18	0930		X		X		X	X		X	X			X	X	E	7	P	BNS
5	-03	MW-921-Q118LL	1/3/18	1235		X		X		X	X		X	X			X	X	E	7	P	BNS
6	-04	C-I-3-S-Q118LL	1/3/18	0950		X		X		X	X		X	X			X	X	E	7	P	BNS
7		~~C-MAR-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
8		~~C-MAR-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
9		~~C-NR1-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
10		~~C-NR1-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
11		~~C-NR3-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
12		~~C-NR3-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
13		~~MW-920-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS
14		~~C-NR4-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tay	1/3/18 1600	[illegible]	1/3/18 1630
[illegible]	1/3/18 1900	[illegible]	1/3/18 1900

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Nara Tey		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Sample tech	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 1/3/18	Sampled By: Nara Tey		Global ID:	Regulatory	5. IR number ✓
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State:	6. Method of Cooling: IR
Project Name: PG&E Topock - RMP	Signature: Date: 1/3/18				Sample Temp: 2.1°C / 3.0°C / 2-6°C
Project Number: RC000753.0801					Courier: Tracking No.:

Matrix: Ground x | Potable | NPDES | Surface | Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Oxygen and deuterium stable isotopes (CFIRM) (1 250 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
2	N027812 -05	C-R22A-D-Q118LL	1/3/18	1050		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
3	-06	C-R22A-S-Q118LL	1/3/18	1105		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
4	-07	C-R27-D-Q118LL	1/3/18	1225		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
5	-08	C-R27-S-Q118LL	1/3/18	1250		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
	-09	C-TAZ-D-Q118LL	1/3/18	0835		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
7	-10	MW-922-Q118LL	1/3/18	1450		X		X					X	X						E	5	P	BNS	
8	-11	C-TAZ-S-Q118LL	1/3/18	0855		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
9		~~R-19-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
10	-12	R-28-Q118LL	1/3/18	1325		X		X	~~X~~	X	X	~~X~~	X	X	~~X~~	~~X~~	X	X	~~X~~	E	7 6	P	BNS	
11	-13	R63-Q118LL	1/3/18	1015		X		X		X	X		X	X			X	X		E	7 8	P	BNS	
12		~~RRB-Q118LL~~				X		X		X	X		X	X			X	X		E	7 8	P	BNS	M
13	-14	SW1-Q118LL	1/3/18	1440		X		X					X	X						E	5	P	BNS	
14	-15	SW2-Q118LL	1/3/18	1510		X		X					X	X						E	5	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Nara Tey	1/3/18 1600	Ping Wang	1/3/18 1630
Ping Wang	1/3/18 1905	Ping Wang	1/3/18 1905
Ping Wang		Ping Wang	

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Mary Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
			Geotracker	RWQCB ✓	1. Chilled ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Labspec	CalTrans	2. Headspace
			Others ✓	LEVEL III	3. Container Intact
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	Specify: RWQCB	LEVEL IV	4. Seal Present
				Regulatory	5. IR number 3
Submitted By: Nara Tan		Phone: 949-727-1400, ext 200 Fax:	Global ID:	Specify State:	6. Method of Cooling: ice
Title: sample tech	Phone: 916-786-3302 Fax:	P.O.#			Sample Temp: 2.1°C / 3.2°C / 2.6°C
Signature: Date: 1/3/18	Sampled By: Nara Tan				Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*				Tracking No.:
Project Name: PG&E Topock - RMP	Signature: Date: 1/3/18				
Project Number: RC000753.0801					

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N027812-16	R-28-Q118LL	1/3/18	1325		X																
	-17	AB1-Q118LL	1/3/18	0845			X													E	1	P	BN	Hold
	-18	AB2-Q118LL	1/3/18	1340			X													E	1	P	BN	Hold
		~~AB3-Q118LL~~					X													E	1	P	BN	Hold

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tan	1/3/18		
			1/3/18 1630
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	1/3/18 1900		1/3/18 1900
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
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- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

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8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/3/2018	Workorder:	N027812
Rep sample Temp (Deg C):	2.1/3.2/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See correspondence.

Checklist Completed By: YR 1/4/2018

Reviewed By: 01/05/2018

Dylan 1/4/2018

nancy@assetlaboratories.com

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Friday, January 19, 2018 9:51 AM
To: nancy@assetlaboratories.com
Subject: Topock - N027812 - Load Failed

Hi Nancy,

The load for N027812 (Topock) failed – I looked at the error log and that was one where the sample ID needed to be updated:

From: C-TAZ-D-Q1188LL
To: C-TAZ-D-Q118LL

Should go through once you make that update.

Tina

Tina Rice
Database Analyst

CRITIGEN

Tina.Rice@critigen.com
1 360 600 3562 Direct
1 360 600 3562 Mobile

critigen.com
critigen.co.uk

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 11:45 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "jmahn@blainetech.com" <jmahn@blainetech.com>

Hello Yoandra,
See my comments below.

Thanks,
Laura
-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC. There are 2 sets of dissolved metals on page 2 of the COC you sent. Please see the attached original COC file for the list of metals. It looks like when printed the specific metals were cut off.

- Sample R-28-Q118LL is listed twice (# 12 and # 16). I'm looking into this one and have a call into the field team.

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label. AB1-Q118LL is correct

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label. AB2-Q118LL is correct

- Please also confirm if the samples 17 and 18 should be on hold as per COC. Yes, please hold.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.

Attachments:

Topock COC RMP_ 01 2018.xlsx	118 KB

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 1/4/2018 1:28 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "Bush, Dan" <Dan.Bush@arcadis.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>

Line # 16 is an error and was not submitted to the lab.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, January 4, 2018 12:08 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; nancy@assetlaboratories.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N027812)

Hello Dan/Laura:

Please kindly advise on the following issues for the attached COC:

- Please inform the requested Diss Metals for the samples listed on page 2 of the COC.

- Sample R-28-Q118LL is listed twice (# 12 and # 16).

- Sample 17: ID is AB1-Q118LL on COC and AB-1-0118LL on sample label.

- Sample 18: ID is AB2-Q118LL on COC and AB-2-0118LL on sample label.

- Please also confirm if the samples 17 and 18 should be on hold as per COC.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-001A	C-BNS-Q118LL	1/3/2018 11:55:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-001C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-001D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-001E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-002A	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-002C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-002D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-002D	C-I-3-D-Q118LL	1/3/2018 9:30:00 AM	1/18/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-002E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-003A	MW-921-Q118LL	1/3/2018 12:35:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-003B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-003C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-003D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-003E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-004A	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-004B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-004B	C-I-3-S-Q118LL	1/3/2018 9:50:00 AM	1/18/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-004C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-004D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-004E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-005A	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-005B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-005C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-005D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-005E	C-R22A-D-Q118LL	1/3/2018 10:50:00 AM	1/18/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-006A	C-R22A-S-Q118LL	1/3/2018 11:05:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-006B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-006C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-006D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-006E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-007A	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-007B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-007C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-007C	C-R27-D-Q118LL	1/3/2018 12:25:00 PM	1/18/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-007D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-007E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-008A	C-R27-S-Q118LL	1/3/2018 12:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-008B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-008C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-008D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-008E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-009A	C-TAZ-D-Q118LL	1/3/2018 8:35:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-009B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

Nancy 01/19/2018
for

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-009B	C-TAZ-D-Q118LL	1/3/2018 8:35:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-009C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-009D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-009E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-010A	MW-922-Q118LL	1/3/2018 2:50:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-010B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-010C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-011A	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-011B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

for 01/19/2018

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-011C	C-TAZ-S-Q118LL	1/3/2018 8:55:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-011D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-011E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-012A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-012B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-012C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-012D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-012E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-013A	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-013B	R63-Q118LL	1/3/2018 10:15:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-013C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027812-013D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027812-013E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027812-014A	SW1-Q118LL	1/3/2018 2:40:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-014B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-014C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N027812-015A	SW2-Q118LL	1/3/2018 3:10:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027812-015B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027812-015C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Jan-18

WorkOrder: N027812

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027812-016A	R-28-Q118LL	1/3/2018 1:25:00 PM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N027812-017A	AB1-Q118LL	1/3/2018 8:45:00 AM					☐	☐	☐	WW
N027812-018A	AB2-Q118LL	1/3/2018 1:40:00 PM					☐	☐	☐	WW
N027812-019A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

January 16, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027819

RE: PG&E Topock - PMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Iron in QC sample N027819-001B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027819-002B-MS2 and N027819-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N027819
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027819-001A	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-001B	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-001C	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-001D	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-002A	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018
N027819-002B	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018
N027819-002C	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018
N027819-002D	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 11:06:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027819-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121236**
Client ID:	**ZZZZZZ**	Batch ID: **R121236**	TestNo: **EPA 120.1**		Analysis Date: **1/5/2018**	SeqNo: **2885927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7630.000	0.10						7650	0.262	2	

Sample ID	**N027820-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121236**
Client ID:	**ZZZZZZ**	Batch ID: **R121236**	TestNo: **EPA 120.1**		Analysis Date: **1/5/2018**	SeqNo: **2885938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	912.000	0.10						911.0	0.110	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027819-001CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121235**
Client ID: **ZZZZZZ**	Batch ID: **R121235**	TestNo: **SM4500-H+B**		Analysis Date: **1/5/2018**	SeqNo: **2885908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.690	0.10						7.690	0	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027820-009DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121235**
Client ID: **ZZZZZZ**	Batch ID: **R121235**	TestNo: **SM4500-H+B**		Analysis Date: **1/5/2018**	SeqNo: **2885919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.360	0.10						8.370	0.120	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 11:06:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180108H**	QC Batch: **66296**				PrepDate	**1/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	950	10	10		mg/L	1	1/8/2018 01:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180108H**	QC Batch: **66296**				PrepDate	**1/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	1/8/2018 01:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66296**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **1/8/2018**	RunNo: **121293**
Client ID: **LCSW**	Batch ID: **66296**	TestNo: **SM2540C**		Analysis Date: **1/8/2018**	SeqNo: **2889174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	993.000	10	1000	0	99.3	80	120				

Sample ID **MB-66296**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **1/8/2018**	RunNo: **121293**
Client ID: **PBW**	Batch ID: **66296**	TestNo: **SM2540C**		Analysis Date: **1/8/2018**	SeqNo: **2889175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027819-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **1/8/2018**	RunNo: **121293**
Client ID: **ZZZZZZ**	Batch ID: **66296**	TestNo: **SM2540C**		Analysis Date: **1/8/2018**	SeqNo: **2889178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4615.000	50						4520	2.08	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180108B**	QC Batch: **66272**				PrepDate	**1/5/2018**	Analyst: **CEI**
Calcium	76000	28	500		µg/L	1	1/8/2018 04:32 PM
Iron	1200	1.8	20		µg/L	1	1/8/2018 04:32 PM
Magnesium	20000	4.4	100		µg/L	1	1/8/2018 04:32 PM
Sodium	130000	260	5000		µg/L	10	1/10/2018 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180108B**	QC Batch: **66272**				PrepDate	**1/5/2018**	Analyst: **CEI**
Calcium	180000	28	500		µg/L	1	1/8/2018 04:56 PM
Iron	ND	1.8	20		µg/L	1	1/8/2018 04:56 PM
Magnesium	27000	4.4	100		µg/L	1	1/8/2018 04:56 PM
Sodium	1400000	2600	50000		µg/L	100	1/10/2018 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66272**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121286**
Client ID: **PBW**	Batch ID: **66272**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66272**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121286**
Client ID: **LCSW**	Batch ID: **66272**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9812.908	500	10000	0	98.1	85	115				
Iron	107.758	20	100.0	0	108	85	115				
Magnesium	10204.594	100	10000	0	102	85	115				

Sample ID **N027819-001B-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121286**
Client ID: **ZZZZZZ**	Batch ID: **66272**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	84230.739	500	10000	76450	77.8	75	125				
Iron	1297.676	20	100.0	1241	56.7	75	125				S
Magnesium	28017.138	100	10000	19760	82.6	75	125				

Sample ID **N027819-001B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121286**
Client ID: **ZZZZZZ**	Batch ID: **66272**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	85927.631	500	10000	76450	94.8	75	125	84230	1.99	20	
Iron	1324.116	20	100.0	1241	83.1	75	125	1298	2.02	20	
Magnesium	28447.833	100	10000	19760	86.9	75	125	28020	1.53	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-66272	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313
Client ID:	PBW	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890263

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-66272	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313
Client ID:	LCSW	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890264

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	18221.014	500	20000	0	91.1	85	115				

Sample ID	N027819-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313
Client ID:	ZZZZZZ	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890270

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1437361.057	50000	20000	1370000	339	75	125				S

Sample ID	N027819-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313
Client ID:	ZZZZZZ	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890271

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1427219.351	50000	20000	1370000	289	75	125	1437000	0.708	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 11:06:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180109A** QC Batch: **66293** PrepDate **1/8/2018** Analyst: **CEI**							
Manganese	280	0.28	2.5		µg/L	5	1/9/2018 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180109A** QC Batch: **66293** PrepDate **1/8/2018** Analyst: **CEI**							
Manganese	12	0.056	0.50		µg/L	1	1/9/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-66293**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **PBW**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.231	0.50									

Sample ID **LCS-66293**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **LCSW**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	109.271	0.50	100.0	0	109	85	115				

Sample ID **N027819-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	386.839	2.5	100.0	276.3	110	75	125				

Sample ID **N027819-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	382.797	2.5	100.0	276.3	106	75	125	386.8	1.05	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:02 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180109A** QC Batch: **66293**				PrepDate	**1/8/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/9/2018 01:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	1/8/2018 12:46 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180109A** QC Batch: **66293**				PrepDate	**1/8/2018**		Analyst: **CEI**
Chromium	590	0.096	5.0		µg/L	5	1/9/2018 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**MB-66293**	SampType:	**MBLK**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**1/8/2018**	RunNo:	**121307**
Client ID:	**PBW**	Batch ID:	**66293**	TestNo:	**EPA 200.8**			Analysis Date:	**1/9/2018**	SeqNo:	**2890008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**LCS-66293**	SampType:	**LCS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**1/8/2018**	RunNo:	**121307**
Client ID:	**LCSW**	Batch ID:	**66293**	TestNo:	**EPA 200.8**			Analysis Date:	**1/9/2018**	SeqNo:	**2890009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.104	1.0	10.00	0	111	85	115				

Sample ID	**N027819-001B-MS**	SampType:	**MS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**1/8/2018**	RunNo:	**121307**
Client ID:	**ZZZZZZ**	Batch ID:	**66293**	TestNo:	**EPA 200.8**			Analysis Date:	**1/9/2018**	SeqNo:	**2890013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.361	1.0	10.00	0.2203	101	75	125				

Sample ID	**N027819-001B-MSD**	SampType:	**MSD**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**1/8/2018**	RunNo:	**121307**
Client ID:	**ZZZZZZ**	Batch ID:	**66293**	TestNo:	**EPA 200.8**			Analysis Date:	**1/9/2018**	SeqNo:	**2890014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.177	1.0	10.00	0.2203	99.6	75	125	10.36	1.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121296	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	PBW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121296	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	LCSW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID	N027812-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID	N027819-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID	N027819-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889188

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

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- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID	N027820-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N027819-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID	N027820-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID	N027820-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID	N027820-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889203

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027820-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID	N027820-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID	N027820-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889213

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 11:06:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180108A**	QC Batch: **R121268**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	1/8/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180108A**	QC Batch: **R121268**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	1/8/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121268**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **LCSW**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.107	5.0	100.0	0	97.1	85	115				

Sample ID **MB-R121268**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **PBW**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027819-001CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **ZZZZZZ**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	258.264	5.0	100.0	165.3	93.0	75	125				

Sample ID **N027819-001CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **ZZZZZZ**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	258.264	5.0	100.0	165.3	93.0	75	125	258.3	0	20	

Sample ID **N027819-002CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **ZZZZZZ**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	150.826	5.0						146.7	2.78	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180105A** QC Batch: **R121259**				PrepDate			Analyst: **RAB**
Chloride	220	0.46	25		mg/L	50	1/5/2018 10:43 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180105A** QC Batch: **R121259**				PrepDate			Analyst: **RAB**
Sulfate	250	1.1	25		mg/L	50	1/5/2018 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180105A**	QC Batch: **R121259**			PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	1/5/2018 11:57 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180105A**	QC Batch: **R121259**			PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	1/5/2018 10:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121259_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:				RunNo:	121259	
Client ID:	PBW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018			SeqNo:	2888249	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual			
Chloride	ND	0.50												

Sample ID	LCS-R121259_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:				RunNo:	121259	
Client ID:	LCSW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018			SeqNo:	2888250	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual			
Chloride	1.960	0.50	2.000	0	98.0	90	110							

Sample ID	N027819-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:				RunNo:	121259	
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018			SeqNo:	2888252	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual			
Chloride	214.215	25						216.6	1.11	20				

Sample ID	N027819-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:				RunNo:	121259	
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018			SeqNo:	2888253	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual			
Chloride	317.335	25	100.0	216.6	101	80	120							

Sample ID	N027819-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:				RunNo:	121259	
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018			SeqNo:	2888254	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual			
Chloride	316.830	25	100.0	216.6	100	80	120	317.3	0.159	20				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121259_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	PBW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121259_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	LCSW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888263

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.928	0.50	4.000	0	98.2	90	110				

Sample ID	N027819-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	250.855	25						251.9	0.434	20	

Sample ID	N027819-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888267

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	447.035	25	200.0	251.9	97.5	80	120				

Sample ID	N027819-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	446.875	25	200.0	251.9	97.5	80	120	447.0	0.0358	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 11:06:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.097	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121323	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	PBW	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121323	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	LCSW	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	N027819-002DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890439

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.974	0.25						2.838	4.68	20	

Sample ID	N027819-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890440

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.571	0.25	2.500	2.838	109	75	125				

Sample ID	N027819-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890441

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.770	0.25	2.500	2.838	117	75	125	5.571	3.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Geotracker		RWQCB	✓	1. Chilled	✓				
Labspec		CalTrans		2. Headspace					
Others	✓	LEVEL III		3. Container Intact					
Specify: RWQCB		LEVEL IV		4. Seal Present					
		Regulatory		5. IR number					
Global ID:		Specify State:		6. Method of Cooling: ice					

Sample Temp: 1.9°C / 2.6°C / 2.9°C

Courier:

Tracking No.:

Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:			
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#		
Submitted By: Nam Tey		Phone: 949-727-1400, ext 200	Fax:		
Title: sample tech	Phone: 916-786-3302 Fax:				

Signature: Date: 1/4/18 1/4/18

I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By:

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature: Date: 1-4-18

Project Name: PG&E Topock - PMP

Project Number: RC000753.801B

Matrix

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)		Dissolved metals (EPA 200.8) FF; HNO3, 500 mL poly (1 L poly) Cr, Mn	Dissolved metals (EPA200.7) FF; HNO3 (1 L poly) Ca, Mg, Fe, Na,	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (1 L poly) As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B); HNO3 (500 mL poly) Fe	Anions (E300.0); Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)								Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027819 - 01	PE-01-0118	1/4/18	1106		X		X	X			X	X	X	X	X		X								E	4	P	BN	
2	- 02	TW-03D-0118	1/4/18	1054		X		X	X			X	X	X	X	X		X								E	4	P	BN	
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																

Reliquished by (Signature and Printed Name): Nam Tey Date/Time: 1/4/18 1600

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time: 1/4/18 1680

Reliquished by (Signature and Printed Name): Date/Time: 1/4/18 1820

Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		
Others/Specify:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/4/2018	Workorder:	N027819
Rep sample Temp (Deg C):	1.9/2.6/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 1/5/2018

Reviewed By: 01/11/2018

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027819

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 1/4/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027819-001A	PE-01-0118	1/4/2018 11:06:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027819-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027819-001C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	WW
			1/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027819-001D			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027819-002A	TW-03D-0118	1/4/2018 10:54:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027819-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027819-002C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027819

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 1/4/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027819-002C	TW-03D-0118	1/4/2018 10:54:00 AM	1/18/2018	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027819-002D			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027819-003A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N027819

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N027819

Item	Page
Cover Page	1-5
Analytical Result/QC Summary Reports	6-38
Sample Receiving Items	39-43
List of Analysts	44
Raw Data	
EPA 120.1	45-48
SM 4500-H+B	49-52
SM 2540C	53-62
EPA 200.7_Dissolved	63-102
EPA 200.8_Dissolved	103-136
EPA 218.6	137-260
SM 2320 B	261-270
EPA 300.0	271-296
SM 4500-NO3F	297-310

January 16, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027819

RE: PG&E Topock - PMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N027819

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Iron in QC sample N027819-001B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N027819-002B-MS2 and N027819-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *16-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N027819
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027819-001A	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-001B	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-001C	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-001D	PE-01-0118	Groundwater	1/4/2018 11:06:00 AM	1/4/2018	1/16/2018
N027819-002A	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018
N027819-002B	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018
N027819-002C	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018
N027819-002D	TW-03D-0118	Groundwater	1/4/2018 10:54:00 AM	1/4/2018	1/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 11:06:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	1400	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N027819-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121236**
Client ID: **ZZZZZZ**	Batch ID: **R121236**	TestNo: **EPA 120.1**		Analysis Date: **1/5/2018**	SeqNo: **2885927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7630.000	0.10						7650	0.262	2	

Sample ID **N027820-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121236**
Client ID: **ZZZZZZ**	Batch ID: **R121236**	TestNo: **EPA 120.1**		Analysis Date: **1/5/2018**	SeqNo: **2885938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	912.000	0.10						911.0	0.110	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027819-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121235**
Client ID: **ZZZZZZ** Batch ID: **R121235** TestNo: **SM4500-H+B** Analysis Date: **1/5/2018** SeqNo: **2885908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.690	0.10						7.690	0	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027820-009DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121235**
Client ID: **ZZZZZZ** Batch ID: **R121235** TestNo: **SM4500-H+B** Analysis Date: **1/5/2018** SeqNo: **2885919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.360	0.10						8.370	0.120	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180108H**	QC Batch: **66296**				PrepDate	**1/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	950	10	10		mg/L	1	1/8/2018 01:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180108H**	QC Batch: **66296**				PrepDate	**1/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	1/8/2018 01:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66296**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **1/8/2018**	RunNo: **121293**
Client ID: **LCSW**	Batch ID: **66296**	TestNo: **SM2540C**		Analysis Date: **1/8/2018**	SeqNo: **2889174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	993.000	10	1000	0	99.3	80	120				

Sample ID **MB-66296**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **1/8/2018**	RunNo: **121293**
Client ID: **PBW**	Batch ID: **66296**	TestNo: **SM2540C**		Analysis Date: **1/8/2018**	SeqNo: **2889175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N027819-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **1/8/2018**	RunNo: **121293**
Client ID: **ZZZZZZ**	Batch ID: **66296**	TestNo: **SM2540C**		Analysis Date: **1/8/2018**	SeqNo: **2889178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4615.000	50						4520	2.08	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180108B**	QC Batch: **66272**				PrepDate	**1/5/2018**	Analyst: **CEI**
Calcium	76000	28	500		µg/L	1	1/8/2018 04:32 PM
Iron	1200	1.8	20		µg/L	1	1/8/2018 04:32 PM
Magnesium	20000	4.4	100		µg/L	1	1/8/2018 04:32 PM
Sodium	130000	260	5000		µg/L	10	1/10/2018 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180108B**	QC Batch: **66272**				PrepDate	**1/5/2018**	Analyst: **CEI**
Calcium	180000	28	500		µg/L	1	1/8/2018 04:56 PM
Iron	ND	1.8	20		µg/L	1	1/8/2018 04:56 PM
Magnesium	27000	4.4	100		µg/L	1	1/8/2018 04:56 PM
Sodium	1400000	2600	50000		µg/L	100	1/10/2018 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66272** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/5/2018** RunNo: **121286**
Client ID: **PBW** Batch ID: **66272** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66272** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/5/2018** RunNo: **121286**
Client ID: **LCSW** Batch ID: **66272** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9812.908	500	10000	0	98.1	85	115				
Iron	107.758	20	100.0	0	108	85	115				
Magnesium	10204.594	100	10000	0	102	85	115				

Sample ID **N027819-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/5/2018** RunNo: **121286**
Client ID: **ZZZZZZ** Batch ID: **66272** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	84230.739	500	10000	76450	77.8	75	125				
Iron	1297.676	20	100.0	1241	56.7	75	125				S
Magnesium	28017.138	100	10000	19760	82.6	75	125				

Sample ID **N027819-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **1/5/2018** RunNo: **121286**
Client ID: **ZZZZZZ** Batch ID: **66272** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	85927.631	500	10000	76450	94.8	75	125	84230	1.99	20	
Iron	1324.116	20	100.0	1241	83.1	75	125	1298	2.02	20	
Magnesium	28447.833	100	10000	19760	86.9	75	125	28020	1.53	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-66272	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313		
Client ID:	PBW	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890263		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		ND	500										

Sample ID	LCS2-66272	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313		
Client ID:	LCSW	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890264		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		18221.014	500	20000	0	91.1	85	115					

Sample ID	N027819-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313		
Client ID:	ZZZZZZ	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890270		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		1437361.057	50000	20000	1370000	339	75	125				S	

Sample ID	N027819-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121313		
Client ID:	ZZZZZZ	Batch ID:	66272	TestNo:	EPA 200.7			Analysis Date:	1/10/2018	SeqNo:	2890271		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		1427219.351	50000	20000	1370000	289	75	125	1437000	0.708	20	S	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180109A** QC Batch: **66293** PrepDate **1/8/2018** Analyst: **CEI**							
Manganese	280	0.28	2.5		µg/L	5	1/9/2018 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180109A** QC Batch: **66293** PrepDate **1/8/2018** Analyst: **CEI**							
Manganese	12	0.056	0.50		µg/L	1	1/9/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-66293**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **PBW**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.231	0.50									

Sample ID **LCS-66293**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **LCSW**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	109.271	0.50	100.0	0	109	85	115				

Sample ID **N027819-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	386.839	2.5	100.0	276.3	110	75	125				

Sample ID **N027819-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **1/8/2018**	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	382.797	2.5	100.0	276.3	106	75	125	386.8	1.05	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:02 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180109A** QC Batch: **66293**				PrepDate	**1/8/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/9/2018 01:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-002

Client Sample ID: TW-03D-0118
Collection Date: 1/4/2018 10:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	1/8/2018 12:46 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180109A**	QC Batch: **66293**			PrepDate	**1/8/2018**		Analyst: **CEI**
Chromium	590	0.096	5.0		µg/L	5	1/9/2018 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-66293	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	1/8/2018	RunNo:	121307
Client ID:	PBW	Batch ID:	66293	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66293	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	1/8/2018	RunNo:	121307
Client ID:	LCSW	Batch ID:	66293	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890009

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.104	1.0	10.00	0	111	85	115				

Sample ID	N027819-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	1/8/2018	RunNo:	121307
Client ID:	ZZZZZZ	Batch ID:	66293	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.361	1.0	10.00	0.2203	101	75	125				

Sample ID	N027819-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	1/8/2018	RunNo:	121307
Client ID:	ZZZZZZ	Batch ID:	66293	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890014

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.177	1.0	10.00	0.2203	99.6	75	125	10.36	1.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121296	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	PBW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121296	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	LCSW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID	N027812-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID	N027819-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID	N027819-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889188

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N027820-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N027819-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N027820-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID **N027820-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID **N027820-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID **N027820-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N027820-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N027820-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **ZZZZZZ** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180108A**	QC Batch: **R121268**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	1/8/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180108A**	QC Batch: **R121268**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	1/8/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121268**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **LCSW**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.107	5.0	100.0	0	97.1	85	115				

Sample ID **MB-R121268**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **PBW**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N027819-001CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **ZZZZZZ**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	258.264	5.0	100.0	165.3	93.0	75	125				

Sample ID **N027819-001CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **ZZZZZZ**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	258.264	5.0	100.0	165.3	93.0	75	125	258.3	0	20	

Sample ID **N027819-002CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121268**
Client ID: **ZZZZZZ**	Batch ID: **R121268**	TestNo: **SM 2320 B**		Analysis Date: **1/8/2018**	SeqNo: **2888516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	150.826	5.0						146.7	2.78	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180105A** QC Batch: **R121259**				PrepDate			Analyst: **RAB**
Chloride	220	0.46	25		mg/L	50	1/5/2018 10:43 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180105A** QC Batch: **R121259**				PrepDate			Analyst: **RAB**
Sulfate	250	1.1	25		mg/L	50	1/5/2018 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180105A** QC Batch: **R121259**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	1/5/2018 11:57 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180105A** QC Batch: **R121259**				PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	1/5/2018 10:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121259_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	PBW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121259_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	LCSW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.960	0.50	2.000	0	98.0	90	110				

Sample ID	N027819-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	214.215	25						216.6	1.11	20	

Sample ID	N027819-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888253

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	317.335	25	100.0	216.6	101	80	120				

Sample ID	N027819-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	316.830	25	100.0	216.6	100	80	120	317.3	0.159	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121259_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	PBW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121259_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	LCSW	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888263

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.928	0.50	4.000	0	98.2	90	110				

Sample ID	N027819-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	250.855	25						251.9	0.434	20	

Sample ID	N027819-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888267

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	447.035	25	200.0	251.9	97.5	80	120				

Sample ID	N027819-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121259
Client ID:	ZZZZZZ	Batch ID:	R121259	TestNo:	EPA 300.0			Analysis Date:	1/5/2018	SeqNo:	2888268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	446.875	25	200.0	251.9	97.5	80	120	447.0	0.0358	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027819
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N027819-001

Client Sample ID: PE-01-0118
Collection Date: 1/4/2018 11:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.097	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0118
Lab Order:	N027819	**Collection Date:**	1/4/2018 10:54:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N027819-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R121323**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121323**			
Client ID: **PBW**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**			SeqNo: **2890435**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R121323**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121323**			
Client ID: **LCSW**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**			SeqNo: **2890436**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID **N027819-002DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121323**			
Client ID: **ZZZZZZ**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**			SeqNo: **2890439**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.974	0.25						2.838	4.68	20	

Sample ID **N027819-002DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121323**			
Client ID: **ZZZZZZ**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**			SeqNo: **2890440**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.571	0.25	2.500	2.838	109	75	125				

Sample ID **N027819-002DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **121323**			
Client ID: **ZZZZZZ**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**			SeqNo: **2890441**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.770	0.25	2.500	2.838	117	75	125	5.571	3.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CHAIN OF CUSTODY RECORD

Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker ☐ RWQCB ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec ☐ CalTrans ☐
Submitted By: Nam Tey		Phone: 949-727-1400, ext 200 Fax:	Others ✓ LEVEL III ☐
Title: sample tech	Phone: 916-786-3302 Fax:		Specify: RWQCB LEVEL IV ☐
Signature: Date: 1/4/18	Sampled By:		Global ID: Regulatory ☐
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		Specify State:
Project Name: PG&E Topock - PMP	Signature: Date: 1-4-18		
Project Number: RC000753.801B			

Matrix: Ground x | Sediment ☐ | Potable ☐ | Soil ☐ | NPDES ☐ | Other Solid ☐ | Surface ☐

1. Chilled ✓
2. Headspace ☐
3. Container Intact ☐
4. Seal Present ☐
5. IR number ☐
6. Method of Cooling: ice

Sample Temp: 1.9°C / 2.6°C / 2.9°C

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Dissolved metals (EPA 200.8) FF; HNO3, 500 mL poly Cr, Mn (1 L poly)	Dissolved metals (EPA200.7) FF; HNO3 Ca, Mg, Fe, Na, (1 L poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1 L poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027819 - 01	PE-01-0118	1/4/18	1106		X	X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0118	1/4/18	1054		X	X	X			X	X	X	X	X		X	E	4	P	BN	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by (Signature and Printed Name): Nam Tey 1/4/18 1600 Date/Time:
Received by (Signature and Printed Name): Dung Dang 1/4/18 1680 Date/Time:
Relinquished by (Signature and Printed Name): Dung Dang 1/4/18 1820 Date/Time:
Received by (Signature and Printed Name): Dung Dang 1/4/18 1820 Date/Time:
Relinquished by (Signature and Printed Name): Date/Time:
Received by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- ☐ A = < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☒ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		
Others/Specify:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/4/2018	Workorder:	N027819
Rep sample Temp (Deg C):	1.9/2.6/2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 1/5/2018

Reviewed By: 01/11/2018

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027819

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 1/4/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027819-001A	PE-01-0118	1/4/2018 11:06:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027819-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027819-001C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	WW
			1/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027819-001D			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027819-002A	TW-03D-0118	1/4/2018 10:54:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027819-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027819-002C			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	WW

WORK ORDER Summary

05-Jan-18

WorkOrder: N027819

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801A **QC Level:** Level IV **Date Received:** 1/4/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027819-002C	TW-03D-0118	1/4/2018 10:54:00 AM	1/18/2018	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			1/18/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			1/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			1/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N027819-002D			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027819-003A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027819

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 200.8_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121236 **Analyst:** LSR

ASSET #: N027819 **Date Analyzed:** 1/5/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 1/9/2018

2nd Level Reviewer RB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/5/18 1340

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-171018A	9.60 @22.0°C	% Rec: (90-110%)
1412	171121A	1430 @22.9°C	
9986	171018B	10020 @22.7°C	
99842	171121B	100100 @22.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO27819-001C	H2O	1449 @21.6°C	
2	2C		7650 @21.1°C	
3	NO27820-001D		949 @20.4°C	
4	2D		935 @21.1°C	
5	3D		1054 @20.6°C	
6	4D		1043 @20.5°C	
7	5D		938 @20.3°C	
8	6D		943 @20.3°C	
9	7D		934 @20.8°C	
10	8D		936 @20.9°C	
Dup	NO27819-002C DUP		7630 @20.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: CONTD

Analyst:

Julia Ramit 1/9/2018

RB 01/12/2018

Standard	Std ID	Reading	Comments
1413 uS/cm	CINV-170615G	1467 @22.6°C	% Rec: (90-110%)
10000	170822F	10040 @22.6°C	
99672	170831B	99900 @22.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27820-009D	H2O	911 @21.1°C	
2	10D		932 @20.9°C	
3	11D		934 @20.8°C	
4	12D		958 @20.7°C	
5	13D		984 @20.8°C	
6	9D DUP		912 @20.9°C	
7				
8				
9	1413 uS/cm	CINV-170615G	1464 @22.7°C	
10	10000	170822F	10040 @22.7°C	
Dup	99672	170831B	99600 @22.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121235 **Analyst:** LSR

ASSET #: N027819 **Date Analyzed:** 1/5/2018

Method: EPA 150.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.		X		X	X	
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 1/8/2018

2nd Level Reviewer RLB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 11/4/18 920
Analyst: LSR (cont'd)

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.00 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.02 @ 25.0 C	
Buffer 10	170822B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27812-011D	H2O	8.20 @ 24.0 C	
2	12D		8.26 @ 24.0 C	
3	13D		8.19 @ 24.0 C	
4	14C		8.38 @ 25.0 C	
5	15C		7.19 @ 24.0 C	
6	15CDUP		7.21 @ 25.0 C	
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.02 @ 25.0 C	Accept: +/-0.1 pH units from expected value

Date: 11/5/18 1110
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.01 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.01 @ 25.0 C	
Buffer 10	170822B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	NO27819-001C	H2O	7.69 @ 25.0 C	
2	1CDUP		7.69 @ 25.0 C	
3	2C		7.32 @ 25.0 C	
4	NO27820-001D		8.32 @ 25.0 C	
5	2D		8.33 @ 25.0 C	
6	3D		8.15 @ 25.0 C	
7	4D		8.19 @ 25.0 C	
8	5D		8.35 @ 25.0 C	
9	6D		8.34 @ 25.0 C	Julia Ramit 1/8/2018
10	7D		8.34 @ 25.0 C	RLB 01/12/2018
Dup	8D		8.34 @ 25.0 C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.05 @ 25.0 C	Accept: +/-0.1 pH units from expected value

ASSET LABORATORIES
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66296 **Analyst:** LSR

ASSET #: N027819 **Date Analyzed:** 1/8/2018

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 1/9/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027819-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(68.2746 - 68.1797)*1000000}{100}$$

= 949 mg/L

Reporting result in two significant figures,

TDS = 950 mg/L

Sujita Ramit 1/9/2018

RLB 01/12/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 1:12:19 P**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66296** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66296	Water	IWST180162A	100	☐	0	0	100	1.000		
MB-66296	Water		100	☐	0	0	100	1.000		
N027819-001C	Groundwater	1449	100	☐	0	0	100	1.000		
N027819-002C	Groundwater	7650	100 /20	☐	0	0	100	1.000		
N027819-002C-DU	Groundwater	1	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 1:12:19 P**
Prep End Date: **1/9/2018 11:30:00 A**

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66296** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66296	Water		100	☐	0	0	100	1.000		
MB-66296	Water		100	☐	0	0	100	1.000		
N027819-001C	Groundwater		100	☐	0	0	100	1.000		
N027819-002C	Groundwater		20	☐	0	0	100	5.000		
N027819-002C-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180102A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/8/18 1312 RB	MB 66296	100	68.4375 68.4380	68.4382 68.4381	
LS	LCS 66296	100	76.5381 76.5385	76.6379 76.6378	
EE	N027819-001C	100	68.1793 68.1797	68.2748 68.2746	
V	2C	20	48.8854 48.8858	48.9761 48.9762	
XX	2C DUP	20	49.6314 49.6319	49.7244 49.7242	
	Julia Ramit 1/9/2018				
	RB 01/12/2018 Closing WT: 49.9997 1/9/18 @ 1130				

ASSET LABORATORIES
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert N 22

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
1/9/2018									
MB-66296	100	68.438	68.4381	1	1	1			MBLK
LCS-66296	100	76.5385	76.6378	993	1	993			LCS
N027819-001C	100	68.1797	68.2746	949	1	949	1449	0.655	SAMP
N027819-002C	20	48.8858	48.9762	904	5	4520	7650	0.591	SAMP
N027819-002CDUP	20	49.6319	49.7242	923	5	4615	7650	0.603	DUP

Julia Ramit 1/9/2018

RLB 01/12/2018

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66272
ASSET #: N027819

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/8/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X			X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca & Fe in N027819-001B PS/MS failed. However LCS passed criteria.
Dilution test failed Ca, Fe & Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/11/18

2nd Level Reviewer 01/11/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66272
ASSET #: N027819

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/10/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
%Rec of Na in N027819-002B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/11/18

2nd Level Reviewer 01/11/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027819-001B** , the concentration in ug/L is calculated as follows:

Iron , ug/L = 1.24097 * 1 * (25/25) * 1000

Iron , ug/L = 1240.97

Reporting results in two significant figures,

Iron , ug/L = 1200

% RSD SUMMARY

RSD SUMMARY: 180108B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	2.55	15	PASS
Standard1	ICAL	1	Ca	0.2	6.68	15	PASS
Standard2	ICAL	1	Ca	1	1.32	15	PASS
Standard3	ICAL	1	Ca	2	0.82	15	PASS
Standard4	ICAL	1	Ca	5	0.76	15	PASS
Standard5	ICAL	1	Ca	7.5	0.36	15	PASS
Standard6	ICAL	1	Ca	10	0.65	15	PASS
Standard7	ICAL	1	Ca	20	0.5	15	PASS
ICV	ICV	1	Ca	10.054	0.48	15	PASS
ICB	ICB	1	Ca	-0.011	232.38	15	<PQL
LLICV	CCV1	1	Ca	0.2	4.01	20	PASS
ICSA1	ICSA	1	Ca	477.5	0.24	15	PASS
ICSAB1	ICSAB	1	Ca	530.22	0.15	15	PASS
MB-66272	MBLK	1	Ca	-0.013	188.84	15	<PQL
LCS1-66272	LCS	1	Ca	9.81	0.41	15	PASS
N027819-001B	SAMP	1	Ca	76.45	0.44	15	PASS
N027819-001B	SAMP	5	Ca	17.3	0.25	15	PASS
N027819-001B-PS	PS	1	Ca	89.7	0.095	15	PASS
N027819-001B-MS1	MS	1	Ca	84.23	0.4	15	PASS
N027819-001B-MSD1	MSD	1	Ca	85.93	0.5	15	PASS
N027819-002B	SAMP	1	Ca	179.56	0.66	15	PASS
CCV1	CCV	1	Ca	10.2	0.47	15	PASS
CCB1	CCB	1	Ca	-0.026	60.28	15	<PQL
CCV2	CCV	1	Ca	10.19	0.12	15	PASS
CCB2	CCB	1	Ca	0.01	174.9	15	<PQL
LLCCV1	CCV2	1	Ca	0.2	23.33	20	<PQL
ICSA2	ICSA	1	Ca	476.31	0.19	15	PASS
ICSAB2	ICSAB	1	Ca	530.28	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	3.46	15	PASS
Standard1	ICAL	1	Fe	0.02	3.35	15	PASS
Standard2	ICAL	1	Fe	0.05	0.84	15	PASS
Standard3	ICAL	1	Fe	2	0.69	15	PASS
Standard4	ICAL	1	Fe	5	0.68	15	PASS
Standard5	ICAL	1	Fe	7.5	0.099	15	PASS
Standard6	ICAL	1	Fe	10	0.08	15	PASS
Standard7	ICAL	1	Fe	20	0.04	15	PASS
ICV	ICV	1	Fe	10.13	0.26	15	PASS
ICB	ICB	1	Fe	0.00049	140.1	15	<PQL
LLICV	CCV1	1	Fe	0.021	1.09	20	PASS
ICSA1	ICSA	1	Fe	169.15	0.5	15	PASS
ICSAB1	ICSAB	1	Fe	182.99	0.3	15	PASS
MB-66272	MBLK	1	Fe	0.0013	28.16	15	<PQL

RSD SUMMARY: 180108B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LCS1-66272	LCS	1	Fe	0.11	0.38	15	PASS
N027819-001B	SAMP	1	Fe	1.24	0.25	15	PASS
N027819-001B	SAMP	5	Fe	0.3	0.39	15	PASS
N027819-001B-PS	PS	1	Fe	1.38	0.046	15	PASS
N027819-001B-MS1	MS	1	Fe	1.3	0.37	15	PASS
N027819-001B-MSD1	MSD	1	Fe	1.32	0.39	15	PASS
N027819-002B	SAMP	1	Fe	0.0064	6.68	15	PASS
CCV1	CCV	1	Fe	10.42	0.42	15	PASS
CCB1	CCB	1	Fe	0.00048	190.52	15	<PQL
CCV2	CCV	1	Fe	10.33	0.63	15	PASS
CCB2	CCB	1	Fe	0.00048	35.97	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.63	20	PASS
ICSA2	ICSA	1	Fe	168.84	0.5	15	PASS
ICSAB2	ICSAB	1	Fe	183.41	0.31	15	PASS
CalBlk	IBLK	1	Mg	0	2.4	15	PASS
Standard1	ICAL	1	Mg	0.1	0.44	15	PASS
Standard2	ICAL	1	Mg	1	0.084	15	PASS
Standard3	ICAL	1	Mg	2	0.68	15	PASS
Standard4	ICAL	1	Mg	5	0.45	15	PASS
Standard5	ICAL	1	Mg	7.5	0.35	15	PASS
Standard6	ICAL	1	Mg	10	0.16	15	PASS
Standard7	ICAL	1	Mg	20	0.099	15	PASS
ICV	ICV	1	Mg	10.1	0.37	15	PASS
ICB	ICB	1	Mg	0.00003	2823.11	15	<PQL
LLICV	CCV1	1	Mg	0.098	1.9	20	PASS
ICSA1	ICSA	1	Mg	457.63	0.61	15	PASS
ICSAB1	ICSAB	1	Mg	512.94	0.38	15	PASS
MB-66272	MBLK	1	Mg	0.00035	245.34	15	<PQL
LCS1-66272	LCS	1	Mg	10.21	0.57	15	PASS
N027819-001B	SAMP	1	Mg	19.75	0.093	15	PASS
N027819-001B	SAMP	5	Mg	4.58	0.33	15	PASS
N027819-001B-PS	PS	1	Mg	29.18	0.22	15	PASS
N027819-001B-MS1	MS	1	Mg	28.017	0.38	15	PASS
N027819-001B-MSD1	MSD	1	Mg	28.45	0.098	15	PASS
N027819-002B	SAMP	1	Mg	26.62	0.13	15	PASS
CCV1	CCV	1	Mg	10.49	0.37	15	PASS
CCB1	CCB	1	Mg	-0.00008	957.91	15	<PQL
CCV2	CCV	1	Mg	10.4	0.68	15	PASS
CCB2	CCB	1	Mg	-0.00027	301.81	15	<PQL
LLCCV1	CCV2	1	Mg	0.098	0.48	20	PASS
ICSA2	ICSA	1	Mg	458.67	0.53	15	PASS
ICSAB2	ICSAB	1	Mg	515.86	0.23	15	PASS

RSD SUMMARY: 180110B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	8.36	15	PASS
Standard1	ICAL	1	Na	0.1	2.87	15	PASS
Standard2	ICAL	1	Na	1	0.29	15	PASS
Standard3	ICAL	1	Na	5	0.31	15	PASS
Standard4	ICAL	1	Na	10	0.47	15	PASS
Standard5	ICAL	1	Na	20	0.16	15	PASS
Standard6	ICAL	1	Na	40	0.2	15	PASS
ICV	ICV	1	Na	10.085	0.28	15	PASS
ICB	ICB	1	Na	0.0023	192.95	15	<PQL
ICSA1	ICSA	1	Na	0.00041	179.46	15	<PQL
ICSAB1	ICSAB	1	Na	10.15	0.33	15	PASS
MB-66272	MBLK	1	Na	-0.0029	246.55	15	<PQL
LCS2-66272	LCS	1	Na	18.22	0.35	15	PASS
N027819-001B	SAMP	100	Na	1.27	0.14	15	PASS
N027819-002B	SAMP	100	Na	13.7	0.15	15	PASS
N027819-001B	SAMP	10	Na	12.72	0.53	15	PASS
N027819-002B	SAMP	500	Na	2.76	0.19	15	PASS
N027819-002B-PS	PS	100	Na	15.003	0.19	15	PASS
N027819-002B-MS2	MS	100	Na	14.37	0.27	15	PASS
N027819-002B-MSD2	MSD	100	Na	14.27	0.22	15	PASS
CCV1	CCV	1	Na	10.21	0.11	15	PASS
CCB1	CCB	1	Na	-0.0056	26.59	15	<PQL
ICSA2	ICSA	1	Na	-0.0078	38.61	15	<PQL
ICSAB2	ICSAB	1	Na	10.21	0.067	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180108B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/08/2018	03:16:11 PM
2	Standard1	ICAL	1	01/08/2018	03:21:00 PM
3	Standard2	ICAL	1	01/08/2018	03:25:48 PM
11	Standard3	ICAL	1	01/08/2018	03:30:39 PM
12	Standard4	ICAL	1	01/08/2018	03:35:29 PM
6	Standard5	ICAL	1	01/08/2018	03:40:20 PM
7	Standard6	ICAL	1	01/08/2018	03:45:09 PM
8	Standard7	ICAL	1	01/08/2018	03:49:31 PM
9	ICV	ICV	1	01/08/2018	03:55:56 PM
1	ICB	ICB	1	01/08/2018	04:01:20 PM
2	LLICV	CCV1	1	01/08/2018	04:06:10 PM
4	ICSA1	ICSA	1	01/08/2018	04:10:59 PM
5	ICSAB1	ICSAB	1	01/08/2018	04:17:01 PM
38	MB-66272	MBLK	1	01/08/2018	04:23:04 PM
39	LCS1-66272	LCS	1	01/08/2018	04:27:53 PM
40	N027819-001B	SAMP	1	01/08/2018	04:32:44 PM
41	N027819-001B	SAMP	5	01/08/2018	04:37:35 PM
42	N027819-001B-PS	PS	1	01/08/2018	04:42:26 PM
43	N027819-001B-MS1	MS	1	01/08/2018	04:47:16 PM
44	N027819-001B-MSD1	MSD	1	01/08/2018	04:52:07 PM
45	N027819-002B	SAMP	1	01/08/2018	04:56:58 PM
46	MB-66271	MBLK	1	01/08/2018	05:02:55 PM
47	LCS-66271	LCS	1	01/08/2018	05:07:47 PM
7	CCV1	CCV	1	01/08/2018	05:12:39 PM
1	CCB1	CCB	1	01/08/2018	05:18:29 PM
48	N027820-001C	SAMP	1	01/08/2018	05:23:18 PM
49	N027820-001C	SAMP	5	01/08/2018	05:28:10 PM
50	N027820-001C-PS	PS	1	01/08/2018	05:33:02 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV2	CCV	1	01/08/2018	05:40:17 PM
1	CCB2	CCB	1	01/08/2018	05:45:08 PM
2	LLCCV1	CCV2	1	01/08/2018	05:49:57 PM
4	ICSA2	ICSA	1	01/08/2018	05:54:46 PM
5	ICSAB2	ICSAB	1	01/08/2018	06:00:48 PM

INJECTION LOG: 180110B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	MWST-170601A,0.025<50mL	MWST-171201R
Standard2	MWST-170601A,0.25<50mL	
Standard3	MWST-170601A,1.25<50mL	
Standard4	MWST-170601A,2.5<50mL	
Standard5	MWST-170601A,5<50mL	
Standard6	MWST-170601A,10<50mL	
ICV	MWST-171030L	
CCV	MWST-170601A,2.5<50mL	MWST-171201R
ICSA/ICSAB	MWST-170601L/MWST-170601B	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B	
PS Spike	MSST-130329D/E	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/10/2018	12:19:15 PM
26	Standard1	ICAL	1	01/10/2018	12:22:32 PM
27	Standard2	ICAL	1	01/10/2018	12:25:49 PM
28	Standard3	ICAL	1	01/10/2018	12:29:37 PM
29	Standard4	ICAL	1	01/10/2018	12:33:29 PM
30	Standard5	ICAL	1	01/10/2018	12:37:23 PM
31	Standard6	ICAL	1	01/10/2018	12:41:27 PM
32	ICV	ICV	1	01/10/2018	12:45:31 PM
1	ICB	ICB	1	01/10/2018	12:49:25 PM
33	ICSA1	ICSA	1	01/10/2018	12:52:42 PM
34	ICSAB1	ICSAB	1	01/10/2018	12:56:00 PM
62	MB-66272	MBLK	1	01/10/2018	12:59:56 PM
63	LCS2-66272	LCS	1	01/10/2018	01:03:15 PM
64	N027819-001B	SAMP	100	01/10/2018	01:07:20 PM
65	N027819-002B	SAMP	100	01/10/2018	01:10:37 PM
66	N027819-001B	SAMP	10	01/10/2018	01:13:57 PM
67	N027819-002B	SAMP	500	01/10/2018	01:17:47 PM
68	N027819-002B-PS	PS	100	01/10/2018	01:21:07 PM
69	N027819-002B-MS2	MS	100	01/10/2018	01:24:27 PM
70	N027819-002B-MSD2	MSD	100	01/10/2018	01:27:47 PM
29	CCV1	CCV	1	01/10/2018	01:31:07 PM
1	CCB1	CCB	1	01/10/2018	01:35:01 PM
33	ICSA2	ICSA	1	01/10/2018	01:38:19 PM
34	ICSAB2	ICSAB	1	01/10/2018	01:41:38 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:10:37 A**
Prep End Date: **1/5/2018 1:00:00 P**
Prep Batch **66272** Prep Code: **200.7_PR**

Reviewed/ Date: 01/11/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-29**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66272	Aqueous		25	☐	0	0	25	1.000		
LCS2-66272	Aqueous		25	☐	0	0	25	1.000		
MB-66272	Aqueous		25	☐	0	0	25	1.000		
N027819-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180108B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	01/08/2018	03:16:11 PM	Mg	279.079	277	0.00	mg/L	
Standard1	01/08/2018	03:21:00 PM	Mg	279.079	1527	0.1000	mg/L	
Standard2	01/08/2018	03:25:48 PM	Mg	279.079	15088	1.000	mg/L	
Standard3	01/08/2018	03:30:39 PM	Mg	279.079	32237	2.000	mg/L	
Standard4	01/08/2018	03:35:29 PM	Mg	279.079	80142	5.000	mg/L	
Standard5	01/08/2018	03:40:20 PM	Mg	279.079	120479	7.500	mg/L	
Standard6	01/08/2018	03:45:09 PM	Mg	279.079	154778	10.000	mg/L	
Standard7	01/08/2018	03:49:31 PM	Mg	279.079	299979	20.000	mg/L	0.9997
Calcium								
CalBlk	01/08/2018	03:16:11 PM	Ca	227.546	-161	0.00	mg/L	
Standard1	01/08/2018	03:21:00 PM	Ca	227.546	66	0.2000	mg/L	
Standard2	01/08/2018	03:25:48 PM	Ca	227.546	342	1.000	mg/L	
Standard3	01/08/2018	03:30:39 PM	Ca	227.546	686	2.000	mg/L	
Standard4	01/08/2018	03:35:29 PM	Ca	227.546	1671	5.000	mg/L	
Standard5	01/08/2018	03:40:20 PM	Ca	227.546	2529	7.500	mg/L	
Standard6	01/08/2018	03:45:09 PM	Ca	227.546	3312	10.000	mg/L	
Standard7	01/08/2018	03:49:31 PM	Ca	227.546	6519	20.000	mg/L	0.9999
Iron								
CalBlk	01/08/2018	03:16:11 PM	Fe	273.953	-177	0.00	mg/L	
Standard1	01/08/2018	03:21:00 PM	Fe	273.953	507	0.0200	mg/L	
Standard2	01/08/2018	03:25:48 PM	Fe	273.953	2189	0.050	mg/L	
Standard3	01/08/2018	03:30:39 PM	Fe	273.953	51161	2.000	mg/L	
Standard4	01/08/2018	03:35:29 PM	Fe	273.953	127408	5.000	mg/L	
Standard5	01/08/2018	03:40:20 PM	Fe	273.953	191536	7.500	mg/L	
Standard6	01/08/2018	03:45:09 PM	Fe	273.953	246500	10.000	mg/L	
Standard7	01/08/2018	03:49:31 PM	Fe	273.953	475519	20.000	mg/L	0.9996

INITIAL CALIBRATION SUMMARY: 180110B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	01/10/2018	12:19:15 PM	Na	589.594	-157	0.00	mg/L	
Standard1	01/10/2018	12:22:32 PM	Na	589.594	665	0.1000	mg/L	
Standard2	01/10/2018	12:25:49 PM	Na	589.594	4238	1.000	mg/L	
Standard3	01/10/2018	12:29:37 PM	Na	589.594	21164	5.000	mg/L	
Standard4	01/10/2018	12:33:29 PM	Na	589.594	42265	10.000	mg/L	
Standard5	01/10/2018	12:37:23 PM	Na	589.594	83888	20.000	mg/L	
Standard6	01/10/2018	12:41:27 PM	Na	589.594	166364	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ICV** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10053.774	500	10000	0	101	90	110				
Iron	10130.917	20	10000	0	101	90	110				
Magnesium	10101.379	100	10000	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ZZZZZZ** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	200.308	500	200.0	0	100	80	120				
Iron	21.466	20	20.00	0	107	80	120				
Magnesium	97.971	100	100.0	0	98.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **CCV** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10194.668	500	10000	0	102	90	110				
Iron	10422.291	20	10000	0	104	90	110				
Magnesium	10485.808	100	10000	0	105	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **CCV** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10186.012	500	10000	0	102	90	110				
Iron	10331.379	20	10000	0	103	90	110				
Magnesium	10398.204	100	10000	0	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121286**
Client ID: **ZZZZZZ**	Batch ID: **R121286**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	198.491	500	200.0	0	99.2	70	130				
Iron	21.296	20	20.00	0	106	70	130				
Magnesium	97.818	100	100.0	0	97.8	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **ICV**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10084.960	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **CCV**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10213.432	500	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121286**
Client ID: **ICB**	Batch ID: **R121286**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-11.375571	500									
Iron	0.494	20									
Magnesium	0.033	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121286**
Client ID: **CCB**	Batch ID: **R121286**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-26.090169	500									
Iron	0.476	20									
Magnesium	-0.084315	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121286**
Client ID: **CCB**	Batch ID: **R121286**	TestNo: **EPA 200.7**		Analysis Date: **1/8/2018**	SeqNo: **2888988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.164	500									
Iron	0.478	20									
Magnesium	-0.269787	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **ICB**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2.334	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **CCB**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-5.551023	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ICSA** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	489779.691	50	500000	0	98.0	80	120				
Calcium	477498.209	500	500000	0	95.5	80	120				
Iron	169154.463	20	200000	0	84.6	80	120				
Magnesium	457627.713	100	500000	0	91.5	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ICSAB** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541783.794	50	500000	0	108	80	120				
Calcium	530224.921	500	500000	0	106	80	120				
Iron	182991.528	20	200000	0	91.5	80	120				
Magnesium	512941.176	100	500000	0	103	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ICSA** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	488342.445	50	500000	0	97.7	80	120				
Calcium	476305.151	500	500000	0	95.3	80	120				
Iron	168841.104	20	200000	0	84.4	80	120				
Magnesium	458666.648	100	500000	0	91.7	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ICSAB** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541753.312	50	500000	0	108	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121286**
Client ID: **ICSAB** Batch ID: **R121286** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	530277.547	500	500000	0	106	80	120				
Iron	183407.379	20	200000	0	91.7	80	120				
Magnesium	515855.282	100	500000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **ICSA**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.411	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **ICSAB**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10153.076	500	10000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **ICSA**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-7.825245	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **121313**
Client ID: **ICSAB**	Batch ID: **R121313**	TestNo: **EPA 200.7**		Analysis Date: **1/10/2018**	SeqNo: **2890275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10207.692	500	10000	0	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180108B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.64	65-125	PASS
Standard2	ICAL	1	1.23	122.89	65-125	PASS
Standard3	ICAL	1	1.0042	100.42	65-125	PASS
Standard4	ICAL	1	1.0048	100.48	65-125	PASS
Standard5	ICAL	1	1.013	101.34	65-125	PASS
Standard6	ICAL	1	1.016	101.62	65-125	PASS
Standard7	ICAL	1	1.045	104.5	65-125	PASS
ICV	ICV	1	1.017	101.68	65-125	PASS
ICB	ICB	1	1.0005	100.05	65-125	PASS
LLICV	CCV1	1	1.0071	100.71	65-125	PASS
ICSA1	ICSA	1	0.99	98.66	65-125	PASS
ICSAB1	ICSAB	1	0.84	83.78	65-125	PASS
MB-66272	MBLK	1	1.0017	100.17	65-125	PASS
LCS1-66272	LCS	1	0.92	91.56	65-125	PASS
N027819-001B	SAMP	1	1.11	111.31	65-125	PASS
N027819-001B	SAMP	5	1.059	105.88	65-125	PASS
N027819-001B-PS	PS	1	1.15	114.75	65-125	PASS
N027819-001B-MS1	MS	1	1.1	110.46	65-125	PASS
N027819-001B-MSD1	MSD	1	1.083	108.29	65-125	PASS
N027819-002B	SAMP	1	0.99	99.14	65-125	PASS
CCV1	CCV	1	1.013	101.28	65-125	PASS
CCB1	CCB	1	1	99.59	65-125	PASS
CCV2	CCV	1	1.017	101.68	65-125	PASS
CCB2	CCB	1	1.0035	100.35	65-125	PASS
LLCCV1	CCV2	1	1.0028	100.28	65-125	PASS
ICSA2	ICSA	1	0.98	97.83	65-125	PASS
ICSAB2	ICSAB	1	0.83	82.82	65-125	PASS

INTERNAL STANDARD: 180110B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.005	100.5	65-125	PASS
Standard2	ICAL	1	1.0009	100.09	65-125	PASS
Standard3	ICAL	1	0.98	98.18	65-125	PASS
Standard4	ICAL	1	0.97	97.31	65-125	PASS
Standard5	ICAL	1	0.97	96.88	65-125	PASS
Standard6	ICAL	1	0.97	97.14	65-125	PASS
ICV	ICV	1	0.97	97.17	65-125	PASS
ICB	ICB	1	0.99	99.17	65-125	PASS
ICSA1	ICSA	1	0.99	98.66	65-125	PASS
ICSAB1	ICSAB	1	0.98	97.82	65-125	PASS
MB-66272	MBLK	1	0.99	99	65-125	PASS
LCS2-66272	LCS	1	1.1	110.11	65-125	PASS
N027819-001B	SAMP	100	1.0017	100.17	65-125	PASS
N027819-002B	SAMP	100	0.99	98.91	65-125	PASS
N027819-001B	SAMP	10	1	99.95	65-125	PASS
N027819-002B	SAMP	500	0.98	97.67	65-125	PASS
N027819-002B-PS	PS	100	0.98	98.17	65-125	PASS
N027819-002B-MS2	MS	100	0.98	97.99	65-125	PASS
N027819-002B-MSD2	MSD	100	0.98	98.19	65-125	PASS
CCV1	CCV	1	0.97	96.82	65-125	PASS
CCB1	CCB	1	0.99	98.67	65-125	PASS
ICSA2	ICSA	1	0.98	98.33	65-125	PASS
ICSAB2	ICSAB	1	0.97	96.99	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027819
Test Method: EPA 200.7
Analysis Date: 1/8/2018 & 1/10/2018

Matrix: Groundwater
Batch No.: 66272

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for Ca, Fe & Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027819-001B DT 5X	Calcium	ug/L	86484.66	FAIL	76451.19	13.12%	10
N027819-001B DT 5X	Iron	ug/L	1479.262	FAIL	1240.973	19.20%	10
N027819-001B DT 5X	Magnesium	ug/L	22881.9	FAIL	19755.22	15.83%	10
N027819-002B DT 500X	Sodium	ug/L	1380598	PASS	1369514	0.81%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N027819-001B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: — RunNo: **121286**
Client ID: **ZZZZZZ** Batch ID: **66272** TestNo: **EPA 200.7** Analysis Date: **1/8/2018** SeqNo: **2888976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	89696.520	500	10000	76450	132	80	120				S
Iron	1384.523	20	100.0	1241	144	80	120				S
Magnesium	29185.159	100	10000	19760	94.3	80	120				

Sample ID **N027819-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **121313**
Client ID: **ZZZZZZ** Batch ID: **66272** TestNo: **EPA 200.7** Analysis Date: **1/10/2018** SeqNo: **2890269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1500305.319	50000	20000	1370000	654	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66293
ASSET #: N027819

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/9/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 01/11/2018
2nd Level Reviewer [signature] Date: 01/11/2018

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Water

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027819-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 117.393 * 5 * (25/25)

Chromium , ug/L = 586.965

Reporting results in two significant figures,

Chromium , ug/L = 590

% RSD SUMMARY

PERCENT RSD SUMMARY: 180109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	8.56	15	PASS	0.089	6.43	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	2.83	15	PASS	0.53	7.99	15	PASS
Std3-5/50 ppb	ICAL	1	5.22	2.048	15	PASS	5.22	1.87	15	PASS
Std4-10/100 ppb	ICAL	1	10.39	1.87	15	PASS	10.34	0.96	15	PASS
Std5-20/200 ppb	ICAL	1	20.76	2.33	15	PASS	20.63	3.42	15	PASS
Std6-40/400 ppb	ICAL	1	41.49	0.43	15	PASS	41.33	0.42	15	PASS
Std7-100/1000 ppb	ICAL	1	101.0062	0.32	15	PASS	101.35	0.4	15	PASS
Std8-200/2000 ppb	ICAL	1	199.098	3.23	15	PASS	198.97	3.25	15	PASS
ICV	ICV	1	10.87	0.97	15	PASS	107.92	1.1	15	PASS
ICB	ICB	1	0.0051	202.77	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.015	3.51	20	PASS	0.54	1.75	20	PASS
ICSA1	ICSA	1	0.1	9.18	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.88	1.6	15	PASS	16.34	1.89	15	PASS
LLICV	CCV1	1	1.034	1.86	20	PASS	0.5	5.7	20	PASS
MB-66293	MBLK	1	<0.000	N/A	15	<PQL	0.23	7.82	15	PASS
LCS-66293	LCS	1	11.1	2.94	15	PASS	109.27	2.57	15	PASS
N027819-001B	SAMP	1	0.22	5.35	15	PASS	246.3	0.9	15	PASS
N027819-001B	SAMP	5	0.057	14.9	15	PASS	55.27	0.7	15	PASS
N027819-001B-PS	PS	1	10.57	1.63	15	PASS	350.22	1.89	15	PASS
N027819-001B-MS	MS	1	10.36	0.96	15	PASS	340.69	1.012	15	PASS
N027819-001B-MSD	MSD	1	10.18	2.05	15	PASS	338.67	0.5	15	PASS
N027819-002B	SAMP	1	538.61	0.48	15	PASS	12.19	1.13	15	PASS
N027819-001B	SAMP	25	0.084	21.49	15	<PQL	11.44	1.79	15	PASS
N027819-001B-PS	PS	5	2.3	2.16	15	PASS	75.3	0.93	15	PASS
CCV1	CCV	1	20.59	0.6	15	PASS	20.3	1.52	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027819-001B-MS	MS	5	2.38	4.023	15	PASS	77.37	1.75	15	PASS
N027819-001B-MSD	MSD	5	2.36	3.41	15	PASS	76.56	2.72	15	PASS
N027819-002B	SAMP	5	117.39	1.23	15	PASS	2.69	1.5	15	PASS
CCV2	CCV	1	20.68	1.28	15	PASS	20.58	0.21	15	PASS
CCB2	CCB	1	0.00056	1755.73	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.063	3.47	20	PASS	0.55	9.36	20	PASS
ICSA2	ICSA	1	0.11	6.61	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.99	1.014	15	PASS	16.25	0.96	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0109001.D	RINSE	RINSE	1	01/09/18 12:12 PM
A0109002.D	Cal Blank	IBLK	1	01/09/18 12:17 PM
A0109003.D	Std1-0.1/1 ppb	ICAL	1	01/09/18 12:23 PM
A0109004.D	Std2-0.5/5 ppb	ICAL	1	01/09/18 12:29 PM
A0109005.D	Std3-5/50 ppb	ICAL	1	01/09/18 12:34 PM
A0109006.D	Std4-10/100 ppb	ICAL	1	01/09/18 12:40 PM
A0109007.D	Std5-20/200 ppb	ICAL	1	01/09/18 12:45 PM
A0109008.D	Std6-40/400 ppb	ICAL	1	01/09/18 12:51 PM
A0109009.D	Std7-100/1000 ppb	ICAL	1	01/09/18 12:56 PM
A0109010.D	Std8-200/2000 ppb	ICAL	1	01/09/18 1:02 PM
A0109011.D	ICV	ICV	1	01/09/18 1:07 PM
A0109012.D	ICB	ICB	1	01/09/18 1:13 PM
A0109013.D	LLICV	CCV1	1	01/09/18 1:19 PM
A0109014.D	ICSA1	ICSA	1	01/09/18 1:24 PM
A0109015.D	ICSAB1	ICSAB	1	01/09/18 1:30 PM
A0109016.D	LLICV	CCV1	1	01/09/18 1:35 PM
A0109017.D	MB-66293	MBLK	1	01/09/18 1:41 PM
A0109018.D	LCS-66293	LCS	1	01/09/18 1:45 PM
A0109019.D	N027819-001B	SAMP	1	01/09/18 1:52 PM
A0109020.D	N027819-001B	SAMP	5	01/09/18 1:57 PM
A0109021.D	N027819-001B-PS	PS	1	01/09/18 2:03 PM
A0109022.D	N027819-001B-MS	MS	1	01/09/18 2:08 PM
A0109023.D	N027819-001B-MSD	MSD	1	01/09/18 2:14 PM
A0109024.D	N027819-002B	SAMP	1	01/09/18 2:20 PM
A0109025.D	N027819-001B	SAMP	25	01/09/18 2:25 PM
A0109026.D	N027819-001B-PS	PS	5	01/09/18 2:31 PM
A0109027.D	CCV1	CCV	1	01/09/18 2:36 PM
A0109028.D	CCB1	CCB	1	01/09/18 2:42 PM
A0109029.D	N027819-001B-MS	MS	5	01/09/18 2:47 PM
A0109030.D	N027819-001B-MSD	MSD	5	01/09/18 2:53 PM
A0109031.D	N027819-002B	SAMP	5	01/09/18 2:58 PM
A0109032.D	CCV2	CCV	1	01/09/18 3:04 PM
A0109033.D	CCB2	CCB	1	01/09/18 3:10 PM
A0109034.D	LLCCV1	CCV2	1	01/09/18 3:15 PM
A0109035.D	ICSA2	ICSA	1	01/09/18 3:21 PM
A0109036.D	ICSAB2	ICSAB	1	01/09/18 3:26 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 9:47:39 A**
Prep End Date: **1/8/2018 2:00:00 P**

Reviewed/ Date: 01/11/2018

Initials/ Date: 01/11/2018

Prep Batch **66293** Prep Code: **200.8_DISS_P** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66293	Aqueous		25	☐	0	0	25	1.000		
MB-66293	Aqueous		25	☐	0	0	25	1.000		
N027819-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027819-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 Jan 2018 10:31:18 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	69740.60	0.00	
24 Mg	414072.00	0.00	
25 Mg	54624.80	0.00	
26 Mg	63409.00	0.00	
59 Co	452251.00	0.00	
115 In	861223.00	0.00	
206 Pb	229883.00	0.00	
207 Pb	199574.00	0.00	
208 Pb	487989.00	0.00	

RSD (%)

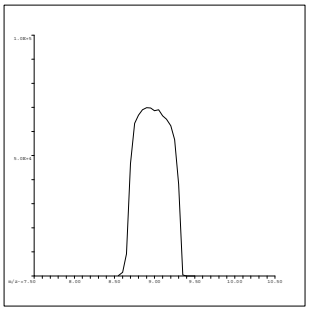
Element	Actual	Required	Flag
9 Be	2.10	5.00	
24 Mg	1.33	5.00	
25 Mg	1.75	5.00	
26 Mg	1.46	5.00	
59 Co	0.69	5.00	
115 In	0.37	5.00	
206 Pb	0.52	5.00	
207 Pb	0.84	5.00	
208 Pb	0.68	5.00	

Ion Ratio

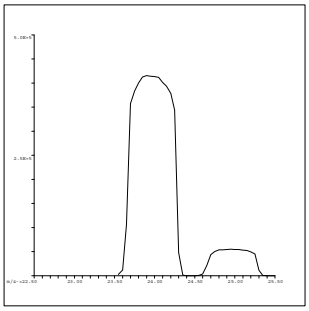
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

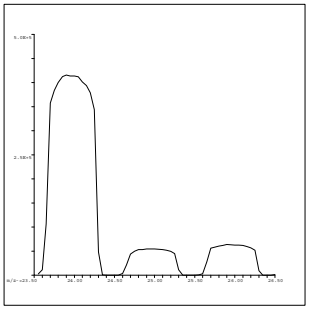
Element	Actual	Required	Flag



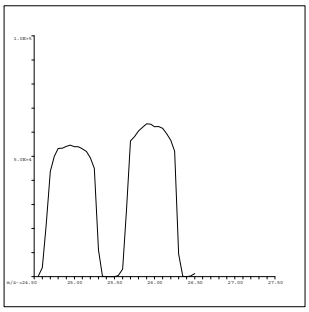
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



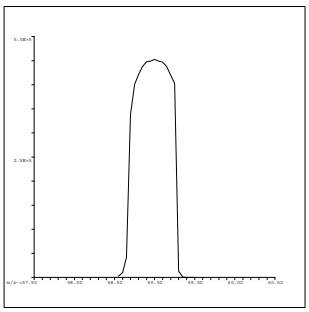
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



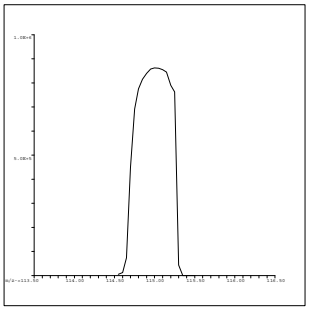
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



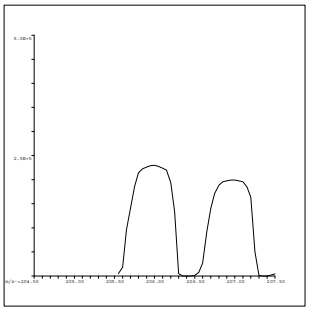
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



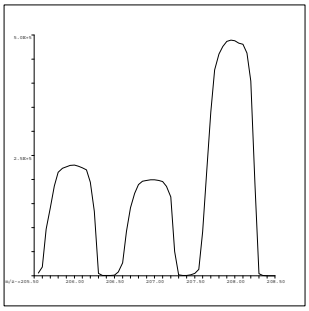
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



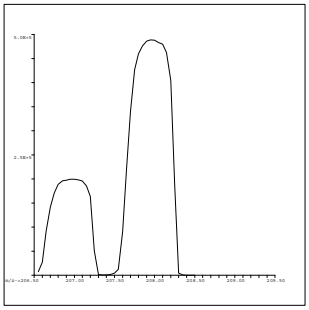
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180109A

Instrument ID: ICPMS-02

Analyte	Data File	A0109002.D	A0109003.D	A0109004.D	A0109005.D	A0109006.D	A0109007.D	A0109008.D	A0109009.D	A0109010.D	
	Acq. Date-Time	01/09/2018 12:17 PM	01/09/2018 12:23 PM	01/09/2018 12:29 PM	01/09/2018 12:34 PM	01/09/2018 12:40 PM	01/09/2018 12:45 PM	01/09/2018 12:51 PM	01/09/2018 12:56 PM	01/09/2018 01:02 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	61308	61942.4	61398.2	60777.3	61488.5	59834.7	59311.9	59571.7	59356.5	
55 Mn [2]	CPS	237.5	462.9	1534.3	12994.2	25833.8	49880.1	98883.2	243224.8	475200.2	0.9999
52 Cr [2]	CPS	264.3	808.8	2805.7	26261.1	52609.2	101979.7	201800.4	493098.9	967507.7	1.0000

Std1 not used for As only

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICV**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	107.918	0.50	100.0	0	108	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.539	0.50	0.5000	0	108	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCV**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.297	0.50	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCV**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.585	0.50	20.00	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.548	0.50	0.5000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICV**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.866	1.0	10.00	0	109	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.015	1.0	1.000	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCV**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.587	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCV**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.681	1.0	20.00	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ZZZZZZ**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.063	1.0	1.000	0	106	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **CCB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICSA**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICSAB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.338	0.50	20.00	0	81.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICSA**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID: **ICSAB**	Batch ID: **R121307**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.252	0.50	20.00	0	81.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121307
Client ID:	ICSA	Batch ID:	R121307	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890005

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.102	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121307
Client ID:	ICSAB	Batch ID:	R121307	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.878	1.0	20.00	0	104	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121307
Client ID:	ICSA	Batch ID:	R121307	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890026

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.114	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121307
Client ID:	ICSAB	Batch ID:	R121307	TestNo:	EPA 200.8			Analysis Date:	1/9/2018	SeqNo:	2890027

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.988	1.0	20.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61308	61308	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	61942.4	61308	101.04	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	61398.2	61308	100.15	PASS	70-125
Std3-5/50 ppb	ICAL	1	60777.3	61308	99.13	PASS	70-125
Std4-10/100 ppb	ICAL	1	61488.5	61308	100.29	PASS	70-125
Std5-20/200 ppb	ICAL	1	59834.7	61308	97.6	PASS	70-125
Std6-40/400 ppb	ICAL	1	59311.9	61308	96.74	PASS	70-125
Std7-100/1000 ppb	ICAL	1	59571.7	61308	97.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	59356.5	61308	96.82	PASS	70-125
ICV	ICV	1	55917.9	61308	91.21	PASS	70-125
ICB	ICB	1	55769.8	61308	90.97	PASS	70-125
LLICV	CCV1	1	60947.6	61308	99.41	PASS	70-125
ICSA1	ICSA	1	55858.8	61308	91.11	PASS	70-125
ICSAB1	ICSAB	1	58551.4	61308	95.5	PASS	70-125
LLICV	CCV1	1	67522.8	61308	110.14	PASS	70-125
MB-66293	MBLK	1	66111.8	61308	107.84	PASS	70-125
LCS-66293	LCS	1	57184.7	61308	93.27	PASS	70-125
N027819-001B	SAMP	1	57338.3	61308	93.52	PASS	70-125
N027819-001B	SAMP	5	55674	61308	90.81	PASS	70-125
N027819-001B-PS	PS	1	55782.2	61308	90.99	PASS	70-125
N027819-001B-MS	MS	1	59152.4	61308	96.48	PASS	70-125
N027819-001B-MSD	MSD	1	60044.5	61308	97.94	PASS	70-125
N027819-002B	SAMP	1	55607.1	61308	90.7	PASS	70-125
N027819-001B	SAMP	25	65292.8	61308	106.5	PASS	70-125
N027819-001B-PS	PS	5	59999	61308	97.86	PASS	70-125
CCV1	CCV	1	60108.1	61308	98.043	PASS	70-125
CCB1	CCB	1	57910.3	61308	94.46	PASS	70-125
N027819-001B-MS	MS	5	56229.1	61308	91.72	PASS	70-125
N027819-001B-MSD	MSD	5	55485.6	61308	90.5	PASS	70-125
N027819-002B	SAMP	5	55683.9	61308	90.83	PASS	70-125
CCV2	CCV	1	58317.2	61308	95.12	PASS	70-125
CCB2	CCB	1	55211.1	61308	90.055	PASS	70-125
LLCCV1	CCV2	1	59850.3	61308	97.62	PASS	70-125
ICSA2	ICSA	1	54633.8	61308	89.11	PASS	70-125
ICSAB2	ICSAB	1	57911.2	61308	94.46	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027819
Test Method: EPA 200.8
Analysis Date: 1/9/2018

Matrix: Water
Batch No.: 66293

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr & Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027819-001B DT 5X	Chromium	ug/L	0.285863	NA	0.220342	29.74%	10
N027819-001B DT 25X	Manganese	ug/L	286.0848	PASS	276.3432	3.53%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	**N027819-001B-PS**	SampType: **PS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID:	**ZZZZZZ**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	376.520	2.5	100.0	276.3	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**N027819-001B-PS**	SampType: **PS**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121307**
Client ID:	**ZZZZZZ**	Batch ID: **66293**	TestNo: **EPA 200.8**		Analysis Date: **1/9/2018**	SeqNo: **2890012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.567	1.0	10.00	0.2203	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121296
ASSET #: N027819

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 1/10/2018

2nd Level Reviewer: 01/12/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027819-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 5.4805 * 100$$

$$Cr^{+6}, \mu g/L = 548.05$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 550}$$

rba 1/10/2018

ANALYSIS RUN LOG

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 1/8/18
Time Prepared: 1038A
Prepared By: RSA

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CRW-170620A
NH4OH + NH4SO4 eluent: M801080
NH4OH + NH4SO4 buffer: M801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	MW27819-10A	9.42	-	~250mL	~250mL		M801020
2)	2A	9.21	-				
3)	MW27820-1A	9.41	-				1/3
4)	1A	9.41	-				2/3
5)	1A	9.40	-				3/3
6)	2A	9.39	-				1/3
7)	2A	9.37	-				2/3
8)	2A	9.45	-				3/3
9)	3A	9.40	-				1/3
10)	3A	9.39	-				2/3
11)	3A	9.36	-				3/3
12)	4A	9.38	-				1/3
13)	4A	9.41	-				2/3
14)	4A	9.42	-				3/3
15)	5A	9.36	-				1/3
	5A	9.33	-				2/3

Sample Preparation

Date Prepared: 1/8/18
Time Prepared: 1038A
Prepared By: RSA

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CRW-170620A
NH4OH + NH4SO4 eluent: M801080 / M801020
NH4OH + NH4SO4 buffer: M801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	MW27820-5A	9.38	-	~250mL	~250mL		3/3 M801020
2)	6A	9.35	-				1/3
3)	6A	9.34	-				2/3
4)	6A	9.34	-				3/3
5)	7A	9.40	-				1/3
6)	7A	9.43	-				2/3
7)	7A	9.45	-				3/3
8)	8A	9.41	-				1/3
9)	8A	9.40	-				2/3
10)	8A	9.38	-				3/3
11)	9A	9.37	-				1/3
12)	9A	9.38	-				2/3
13)	9A	9.43	-				3/3
14)	10A	9.38	-				1/3
15)	10A	9.42	-				2/3
	10A	9.41	-				3/3

Logbook No. 13

rba 1/10/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/8/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0622	0.2487	1.2856	2.5688	3.8263	5.1131	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.204	0.20	5.000	0	104	90	110				

Sample ID: **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.225	0.20	0.2000	0	113	80	120				

Sample ID: **CCV-1**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.253	0.20	10.00	0	103	95	105				

Sample ID: **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.233	0.20	5.000	0	105	95	105				

Sample ID: **CCV-3**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.161	0.20	10.00	0	102	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.117	0.20	5.000	0	102	95	105				

Sample ID: **CCV-5**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.174	0.20	10.00	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID: **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **121296**
Client ID: **CCB** Batch ID: **R121296** TestNo: **EPA 218.6** Analysis Date: **1/8/2018** SeqNo: **2889221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
MB-R121296	N.A.	N.A.
LCS-R121296	4.173	PASS
N027812-014A	4.156	PASS
N027812-014AMS	4.173	PASS
N027819-002A	4.173	PASS
N027819-002AMS	4.173	PASS
N027819-002AMSD	4.173	PASS
N027820-001A	N.A.	N.A.
N027820-001AMS	4.165	PASS
N027820-001ADUP	N.A.	N.A.
N027819-001A	N.A.	N.A.
N027819-001AMS	4.165	PASS
N027820-002A	N.A.	N.A.
N027820-002AMS	4.165	PASS
N027820-003A	N.A.	N.A.
N027820-003AMS	4.173	PASS
N027820-004A	4.148	PASS
N027820-004AMS	4.173	PASS
N027820-005A	N.A.	N.A.
N027820-005AMS	4.173	PASS
N027557-004A	4.098	PASS
N027557-004AMS	4.098	PASS
N027583-001A	4.056	PASS
N027583-001AMS	4.065	PASS
N027583-002A	4.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
N027583-002AMS	4.056	PASS
N027583-003A	4.048	PASS
N027583-003AMS	4.056	PASS
N027820-006A	N.A.	N.A.
N027820-006AMS	4.173	PASS
N027820-007A	N.A.	N.A.
N027820-007AMS	4.173	PASS
N027820-008A	N.A.	N.A.
N027820-008AMS	4.173	PASS
N027820-009A	4.106	PASS
N027820-009AMS	4.173	PASS
N027820-010A	N.A.	N.A.
N027820-010AMS	4.173	PASS
N027820-011A	N.A.	N.A.
N027820-011AMS	4.173	PASS
N027820-012A	N.A.	N.A.
N027820-012AMS	4.173	PASS
N027820-013A	N.A.	N.A.
N027820-013AMS	4.165	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

01/12/2018

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

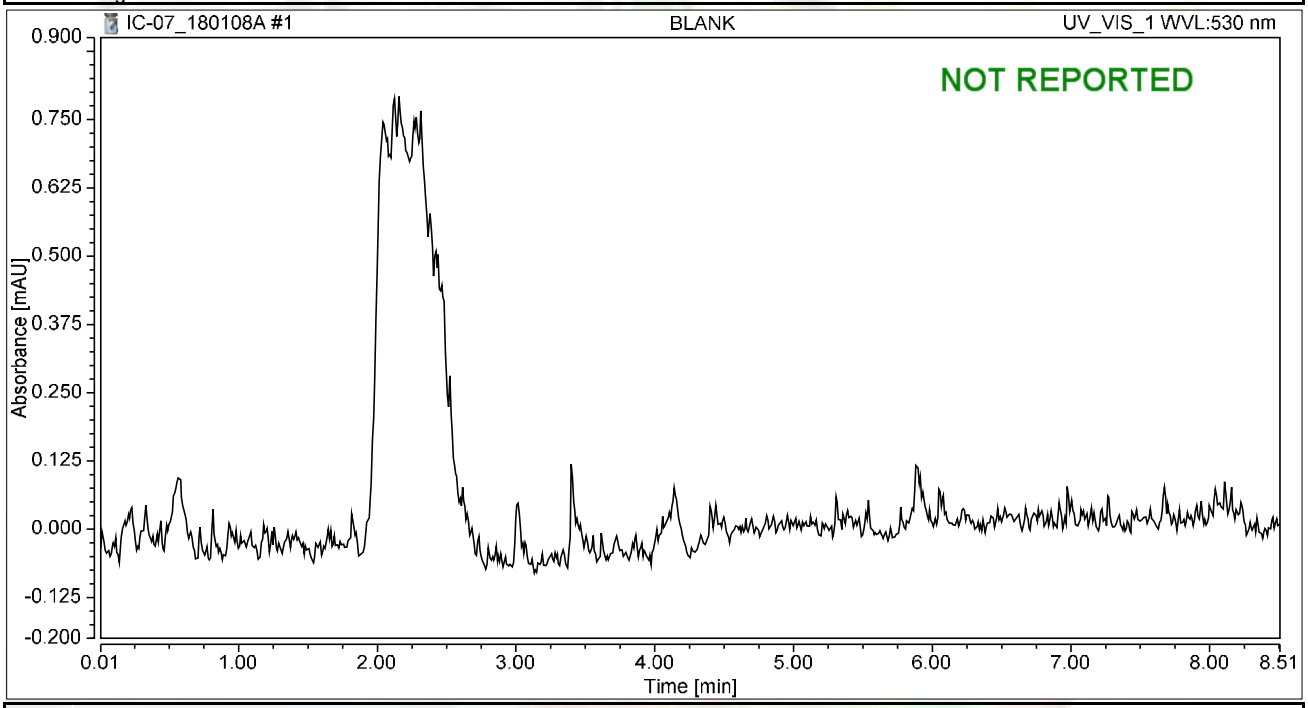
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

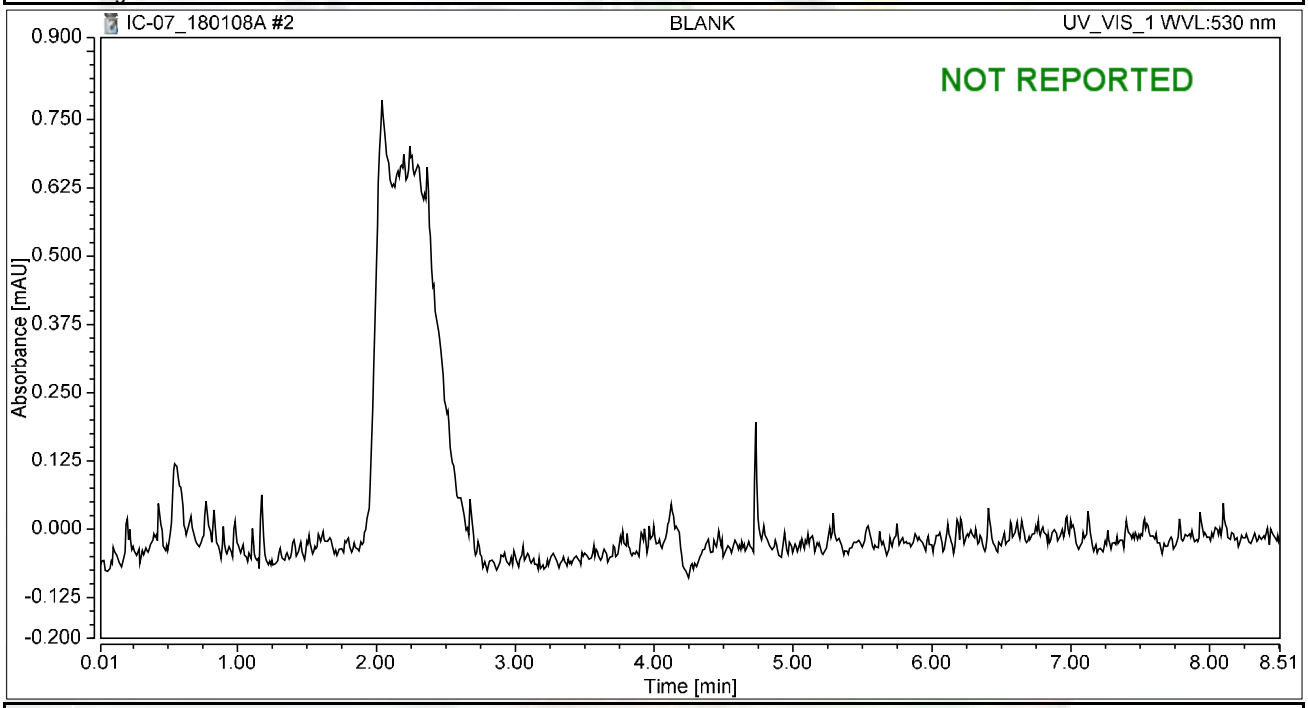
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

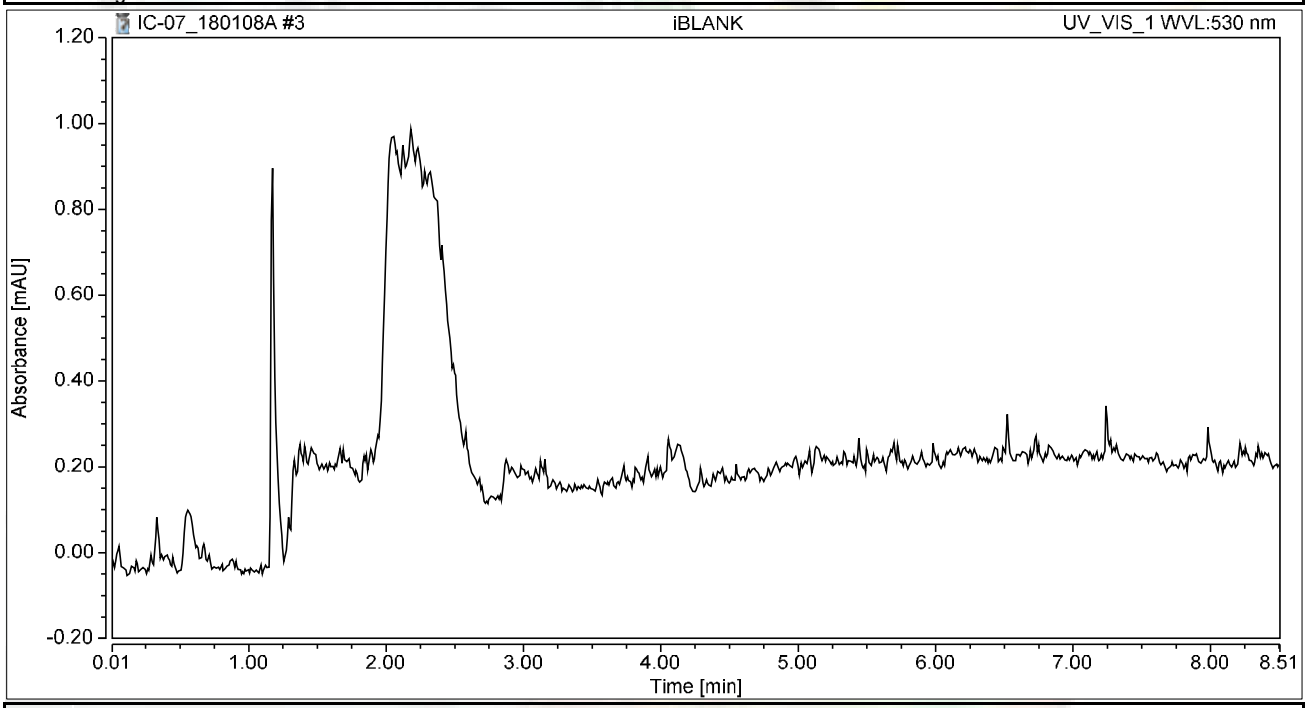
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

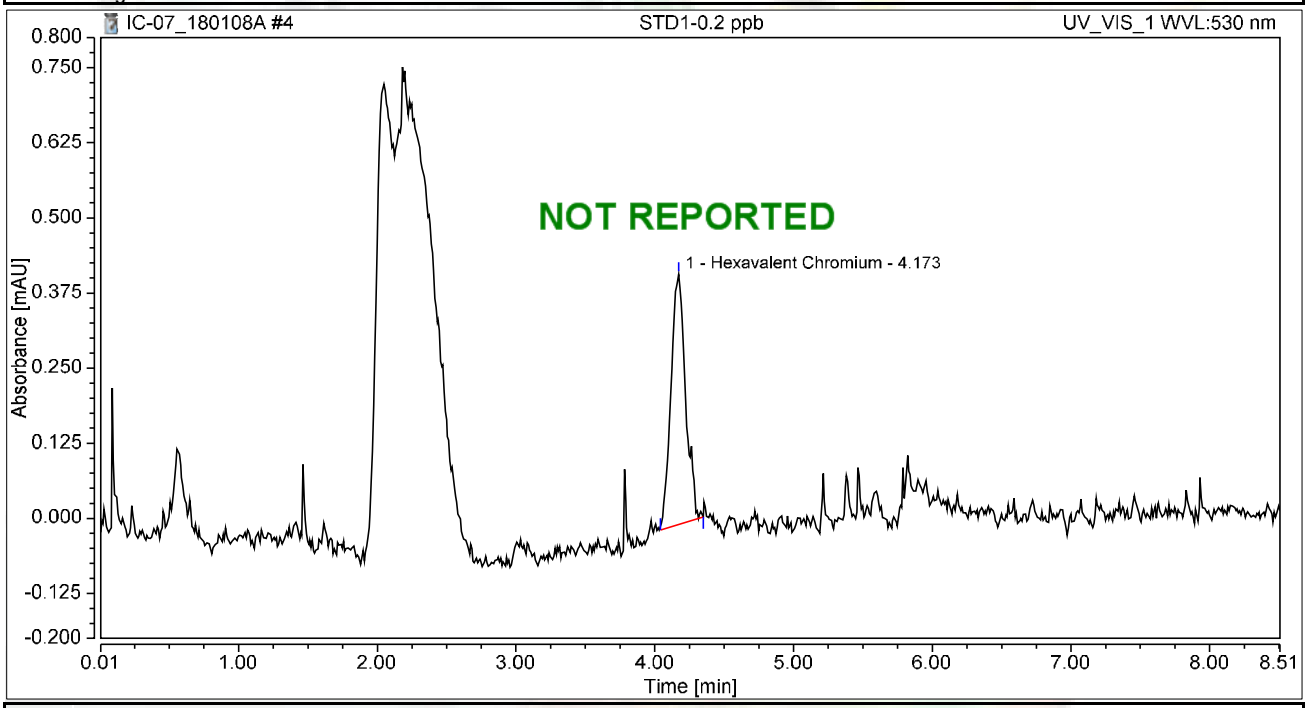
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

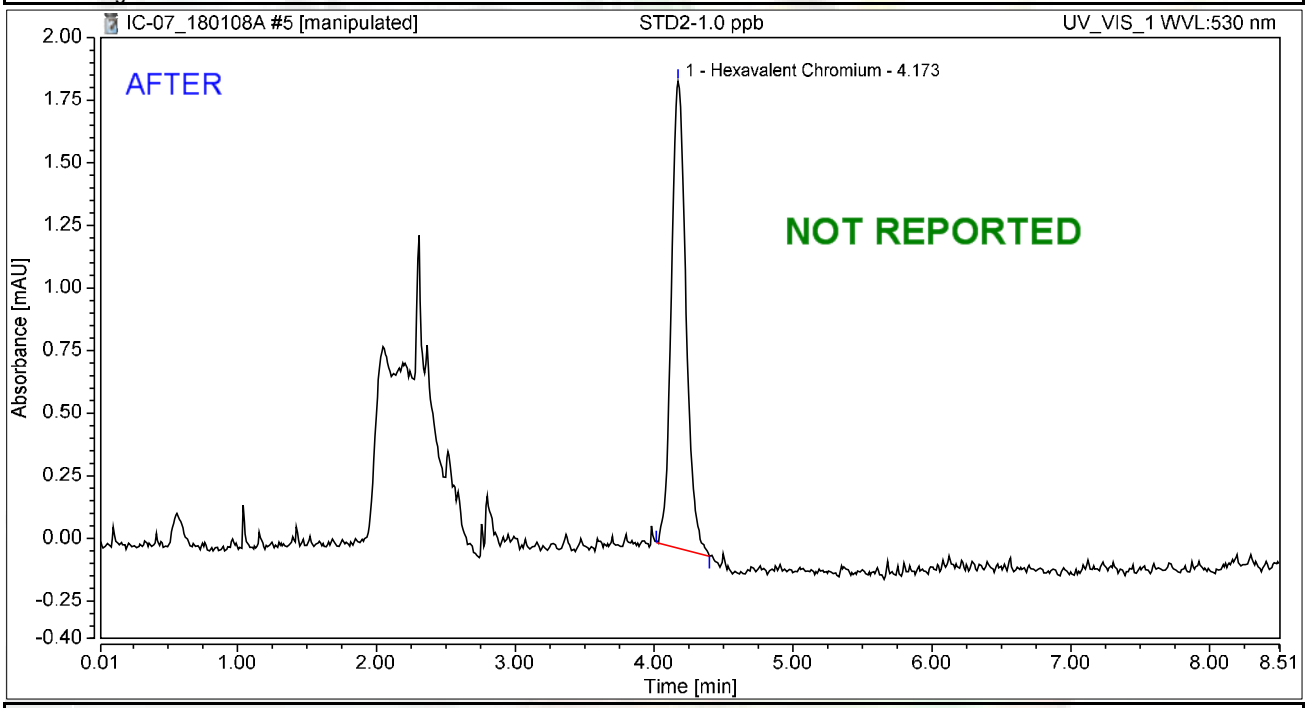
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.051	0.416	100.00	100.00	0.1983
Total:			**0.051**	**0.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.229	1.865	100.00	100.00	0.8962
Total:			**0.229**	**1.865**	**100.00**	**100.00**	

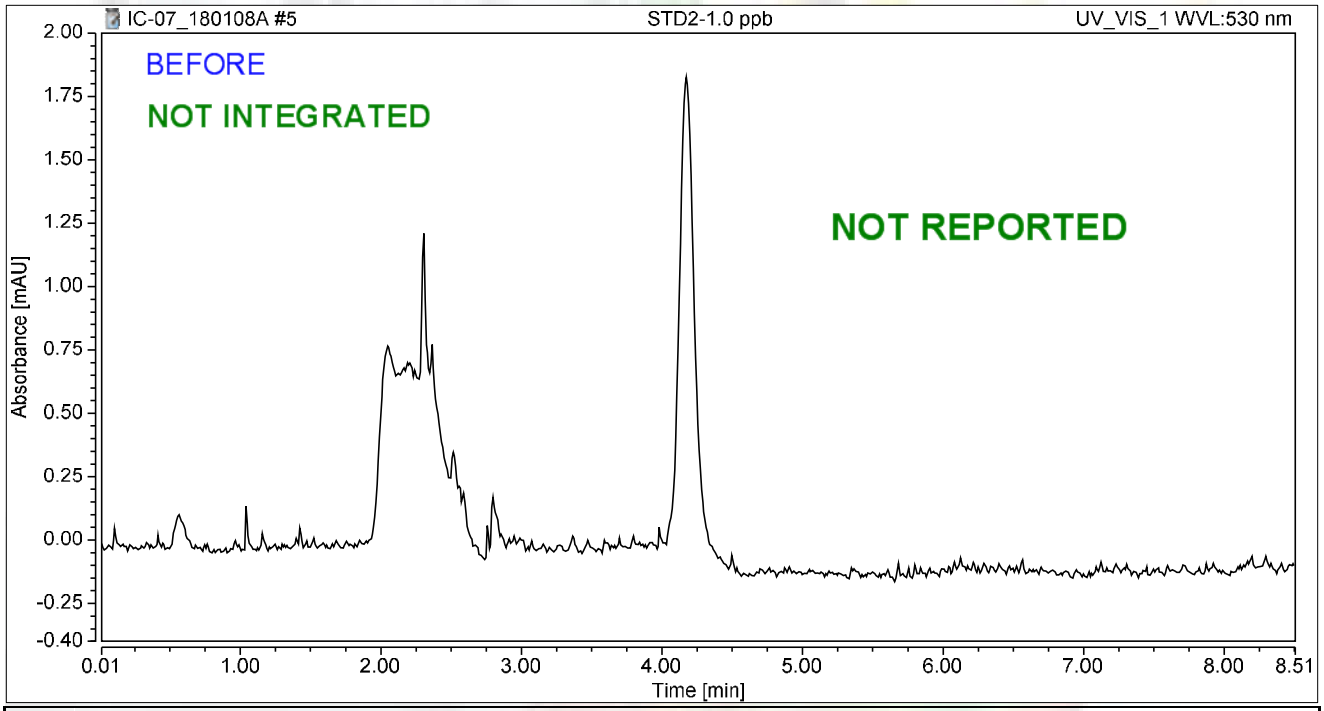
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

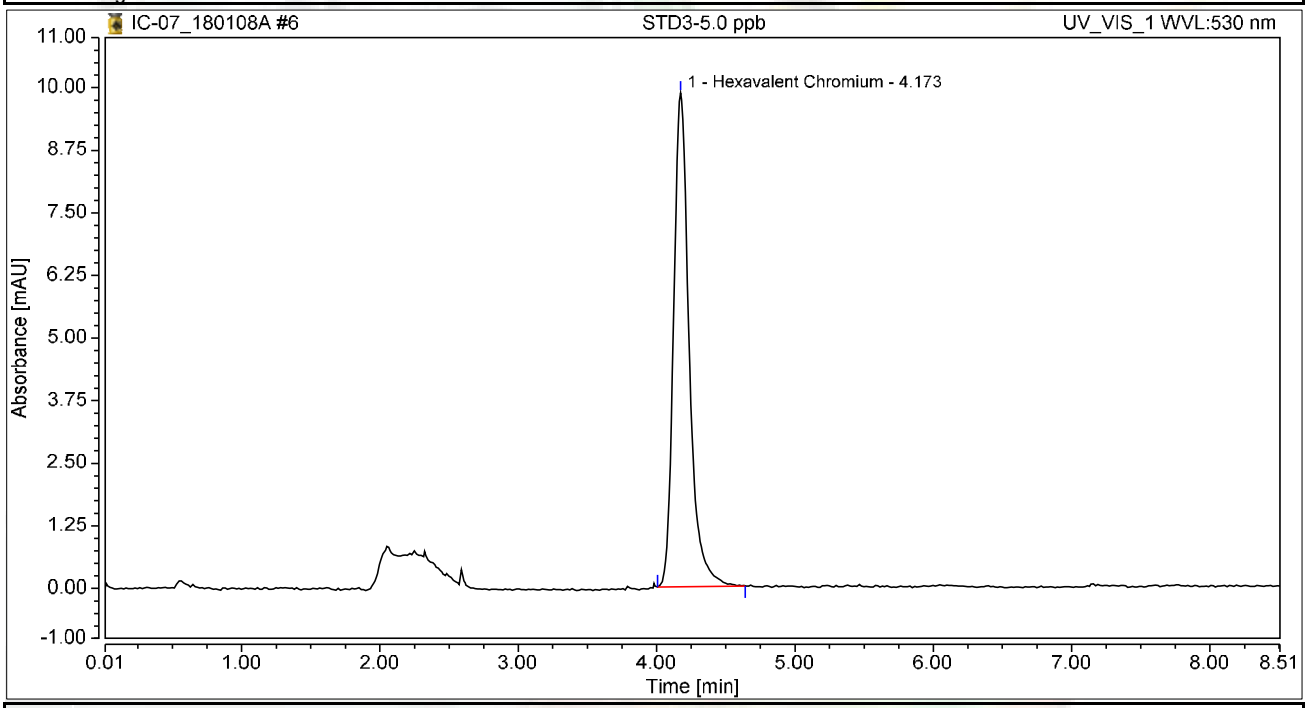
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

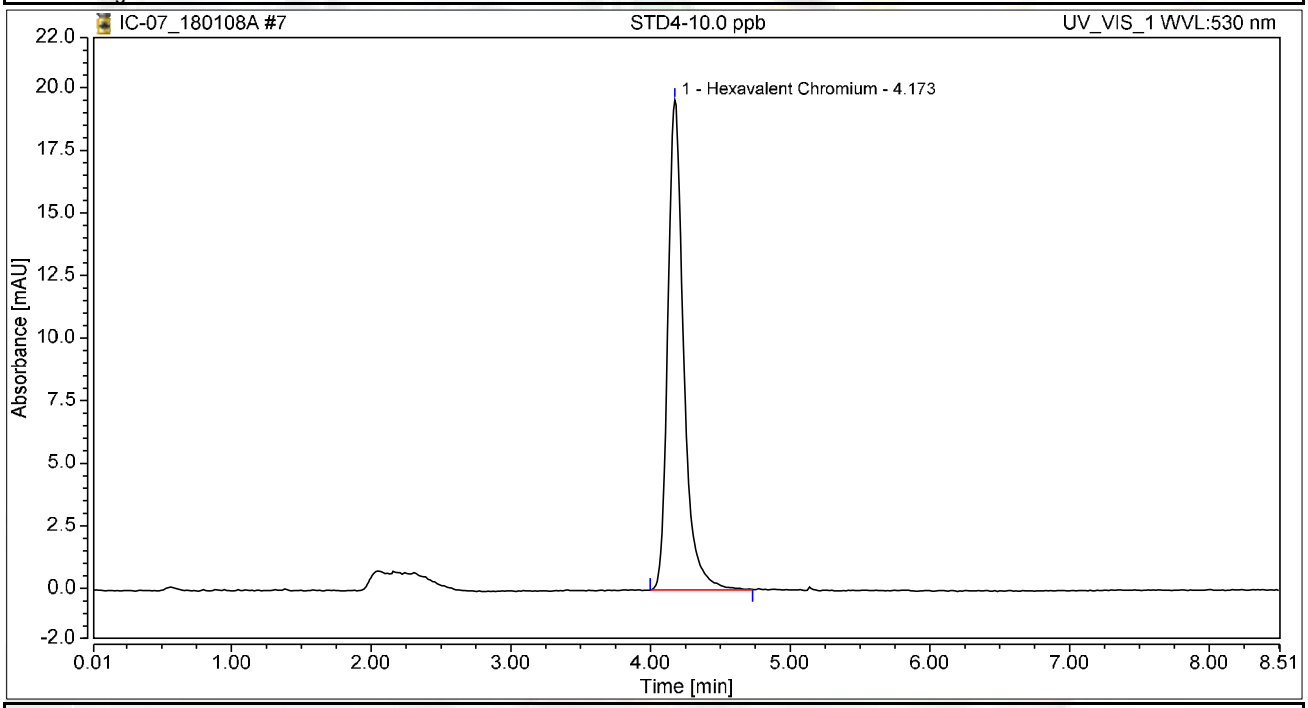
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.286	9.861	100.00	100.00	5.0280
Total:			**1.286**	**9.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

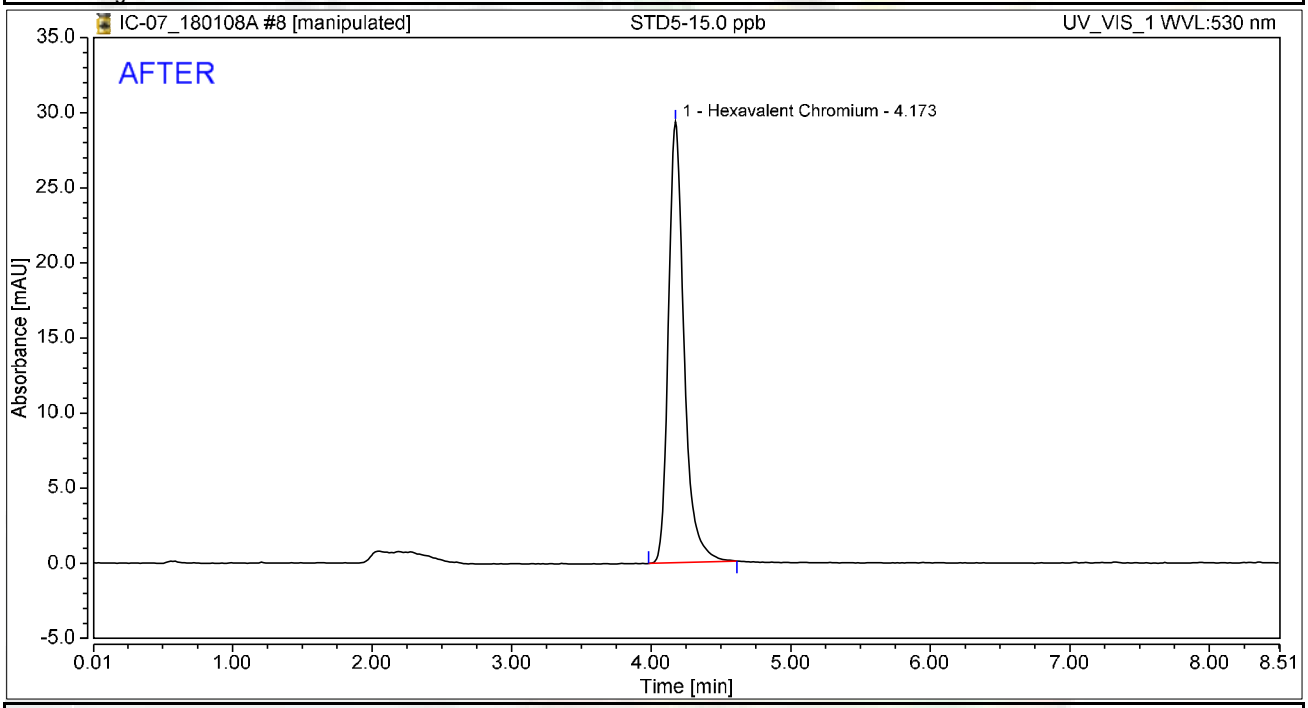
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.569	19.568	100.00	100.00	10.0465
Total:			**2.569**	**19.568**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.826	29.356	100.00	100.00	14.9645
Total:			**3.826**	**29.356**	**100.00**	**100.00**	

rba 1/10/2018

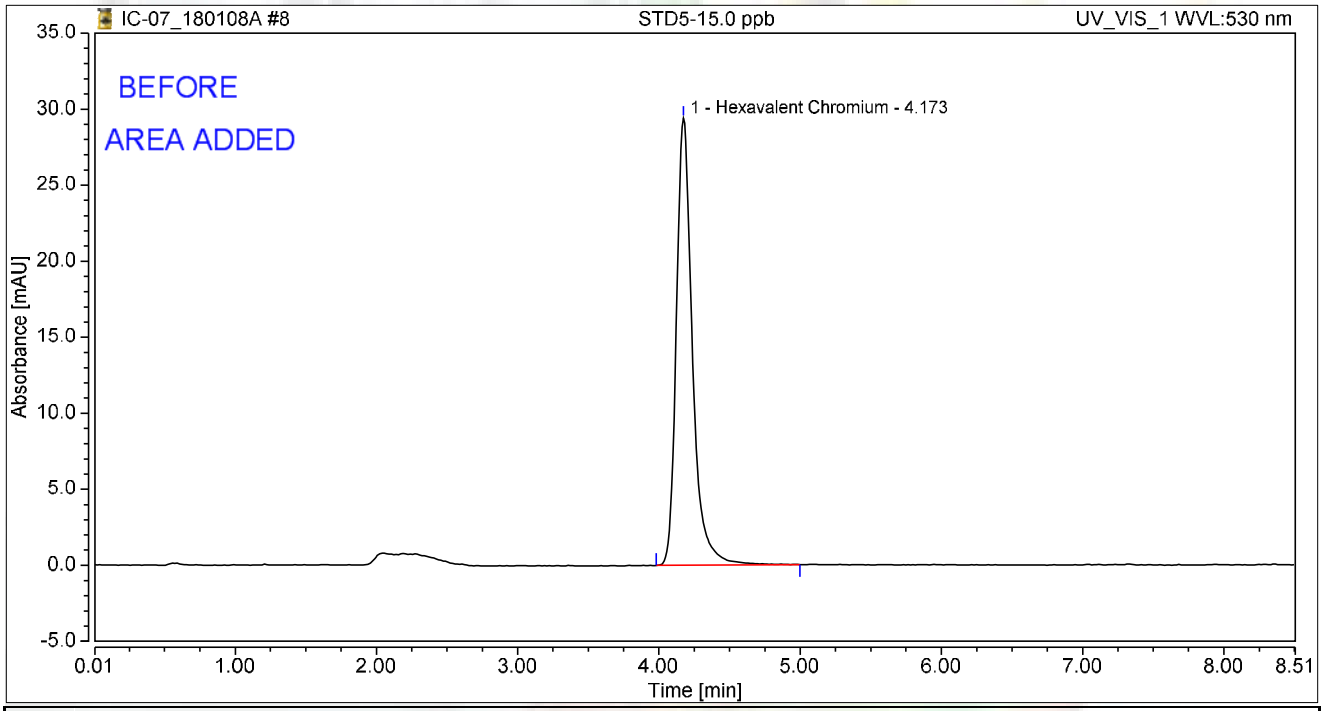
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.876	29.388	100.00	100.00	14.9767
Total:			**3.876**	**29.388**	**100.00**	**100.00**	

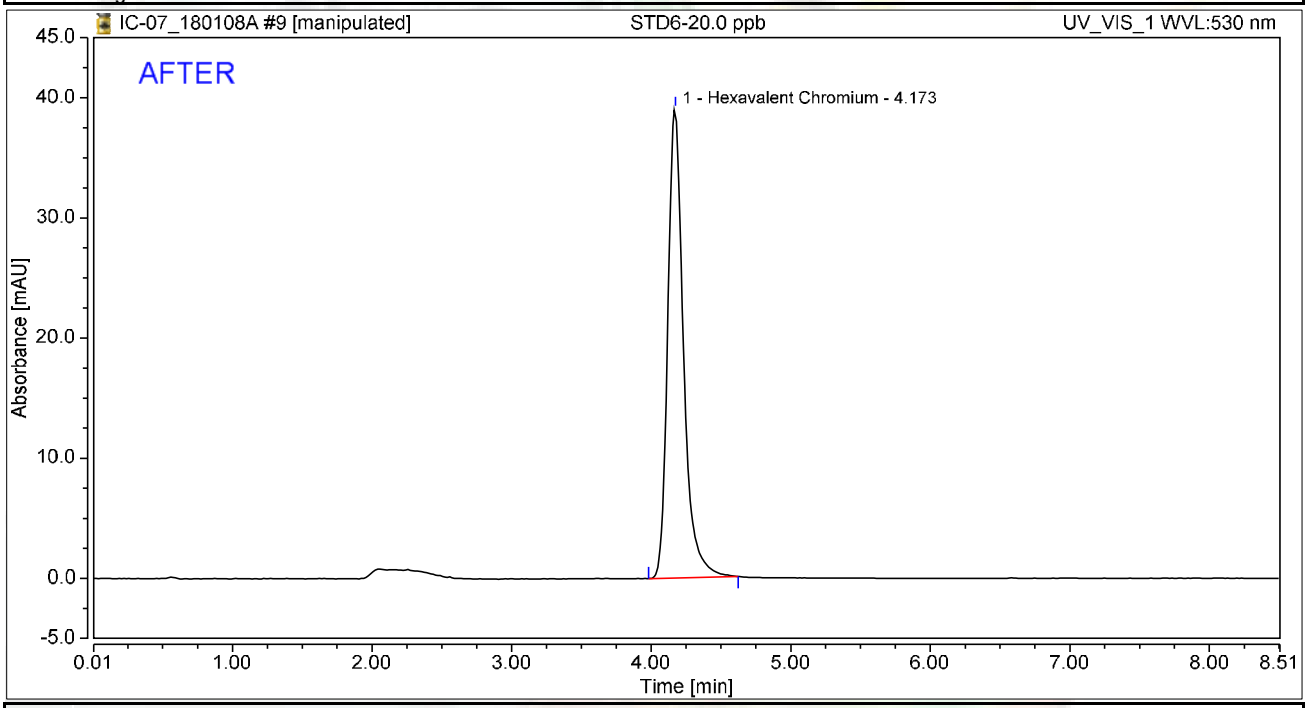
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.113	39.057	100.00	100.00	19.9973
Total:			**5.113**	**39.057**	**100.00**	**100.00**	

rba 1/10/2018

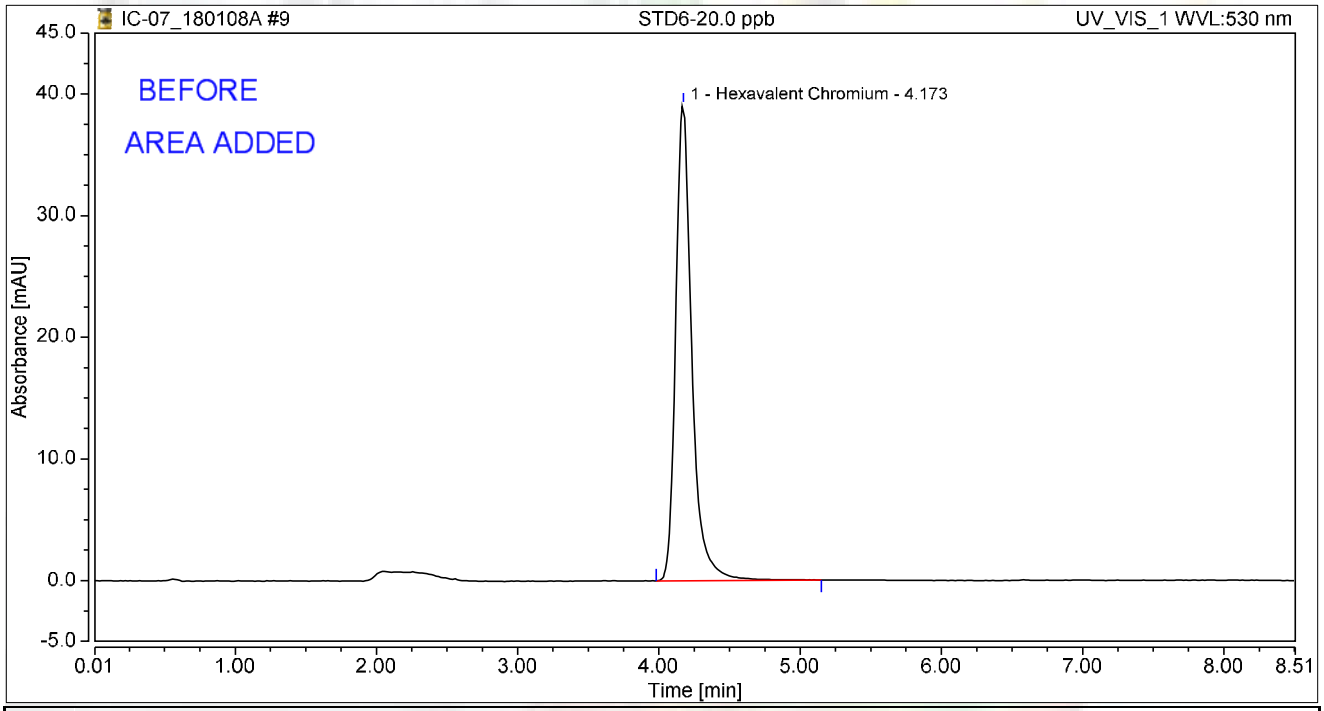
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.193	39.103	100.00	100.00	20.0648
Total:			**5.193**	**39.103**	**100.00**	**100.00**	

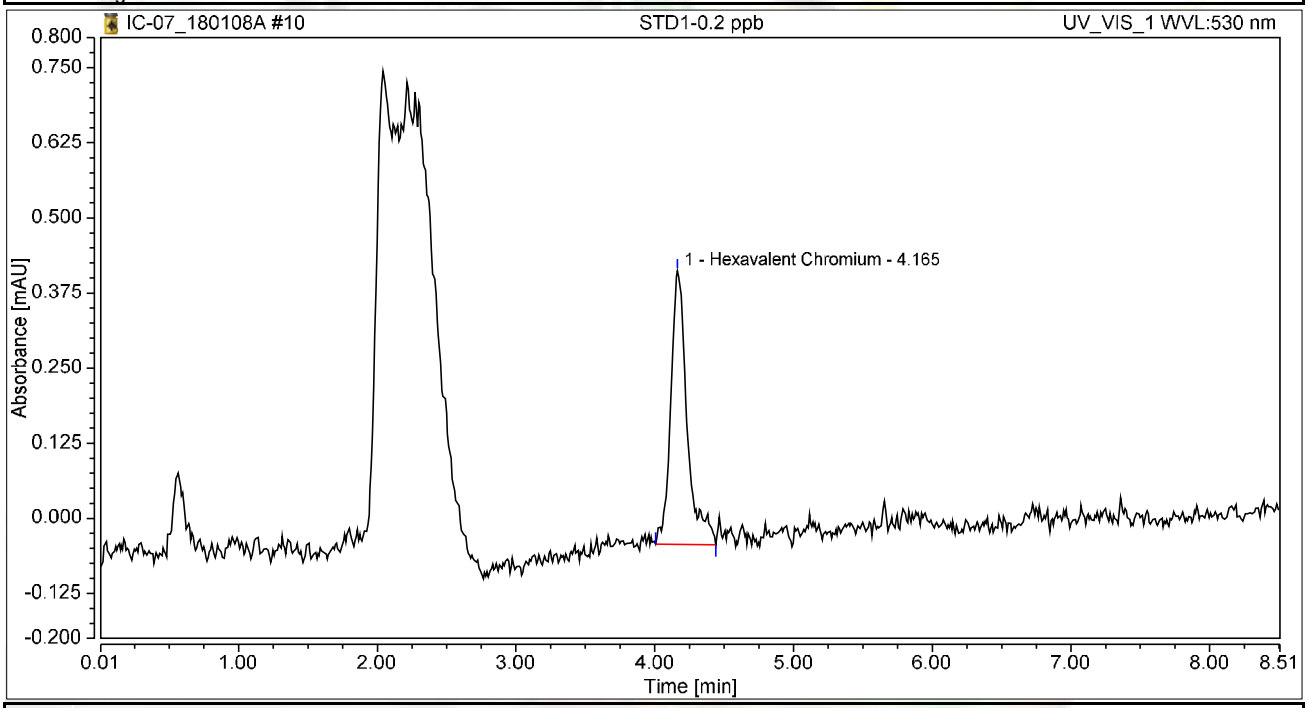
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

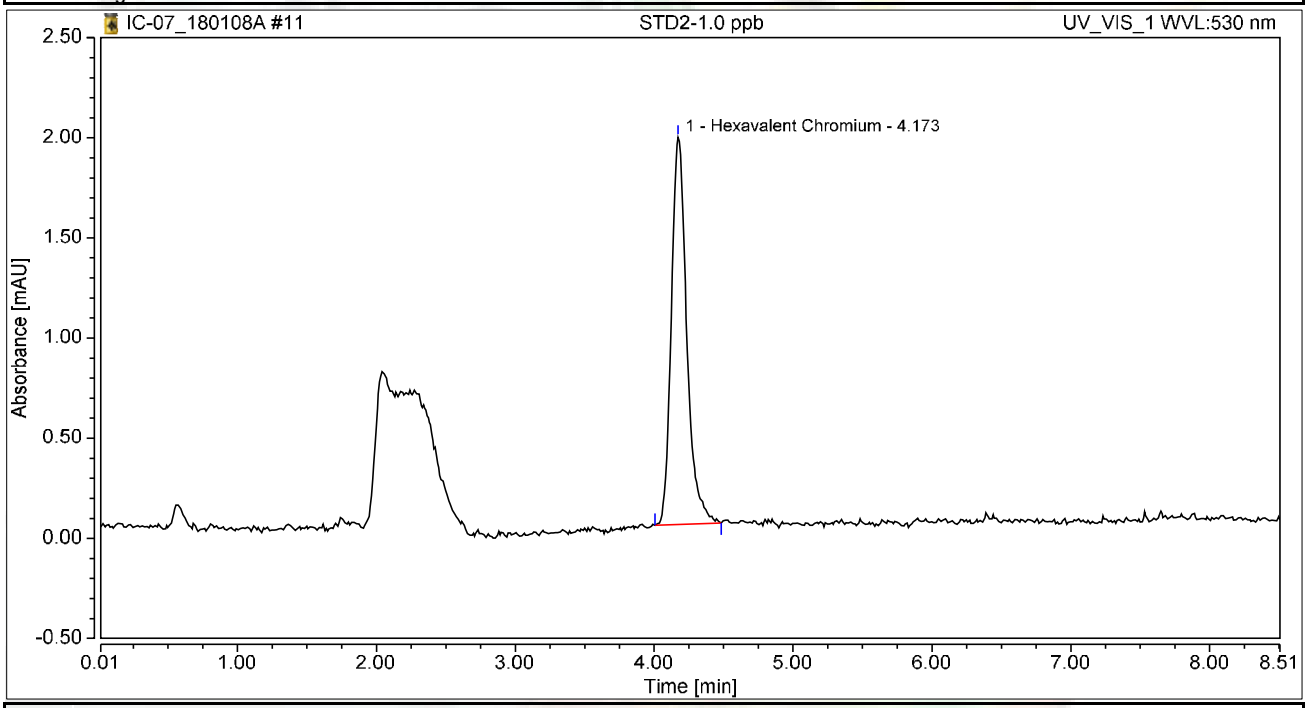
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.062	0.455	100.00	100.00	0.2434
Total:			**0.062**	**0.455**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



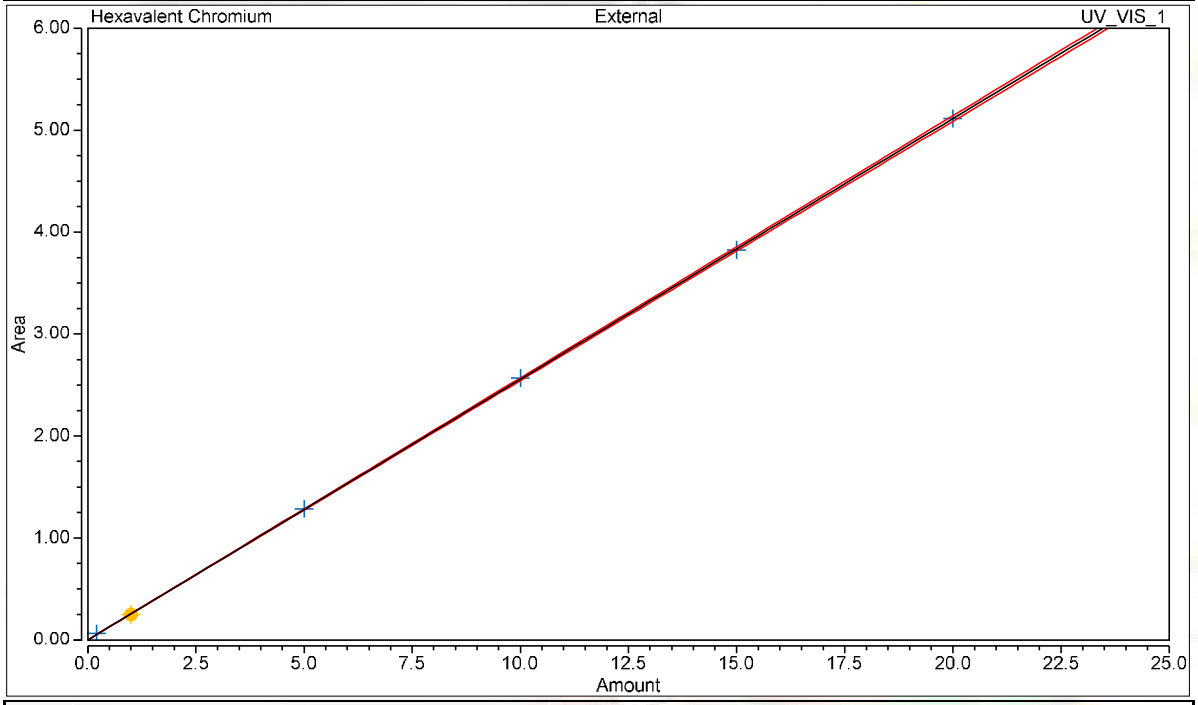
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.249	1.933	100.00	100.00	0.9728
Total:			**0.249**	**1.933**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2557
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

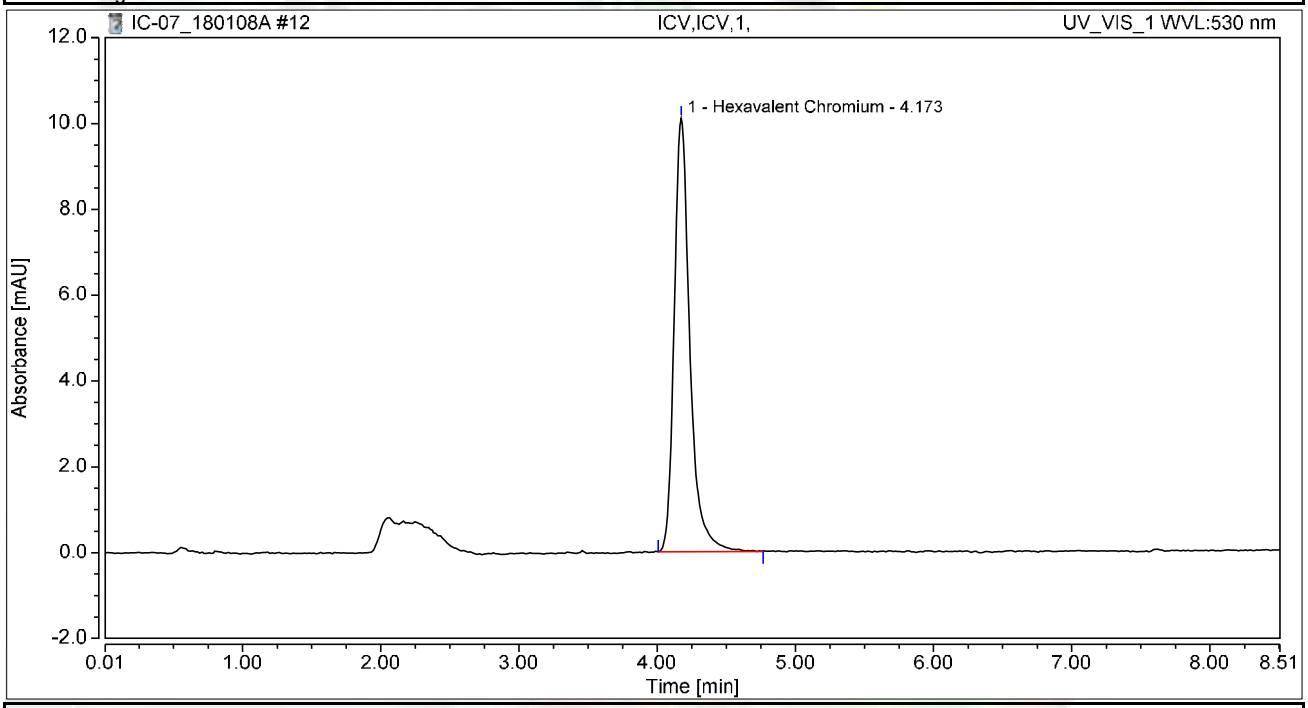
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD3-5.0 ppb	03	5.0000	1.2856	1.286	9.861
7	STD4-10.0 ppb	04	10.0000	2.5688	2.569	19.568
8	STD5-15.0 ppb	05	15.0000	3.8263	3.826	29.356
9	STD6-20.0 ppb	06	20.0000	5.1131	5.113	39.057
10	STD1-0.2 ppb	01	0.2000	0.0622	0.062	0.455
11	STD2-1.0 ppb	02	1.0000	0.2487	0.249	1.933

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

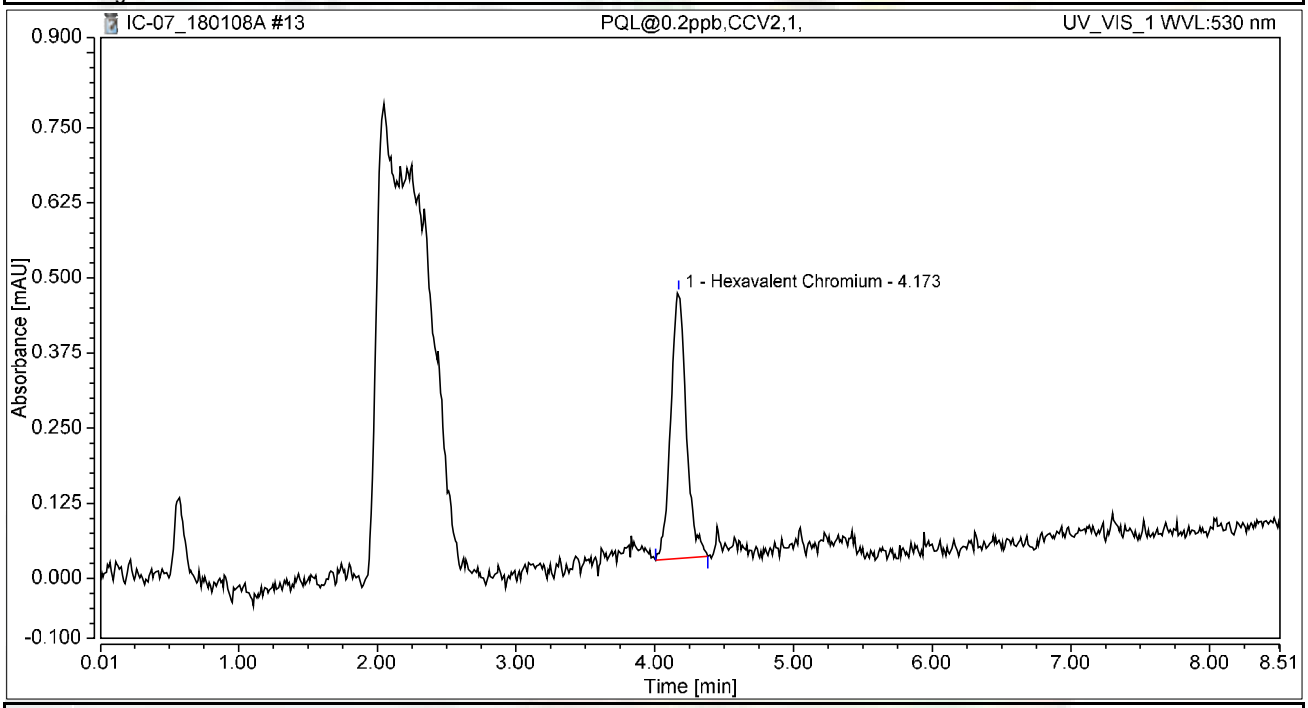
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

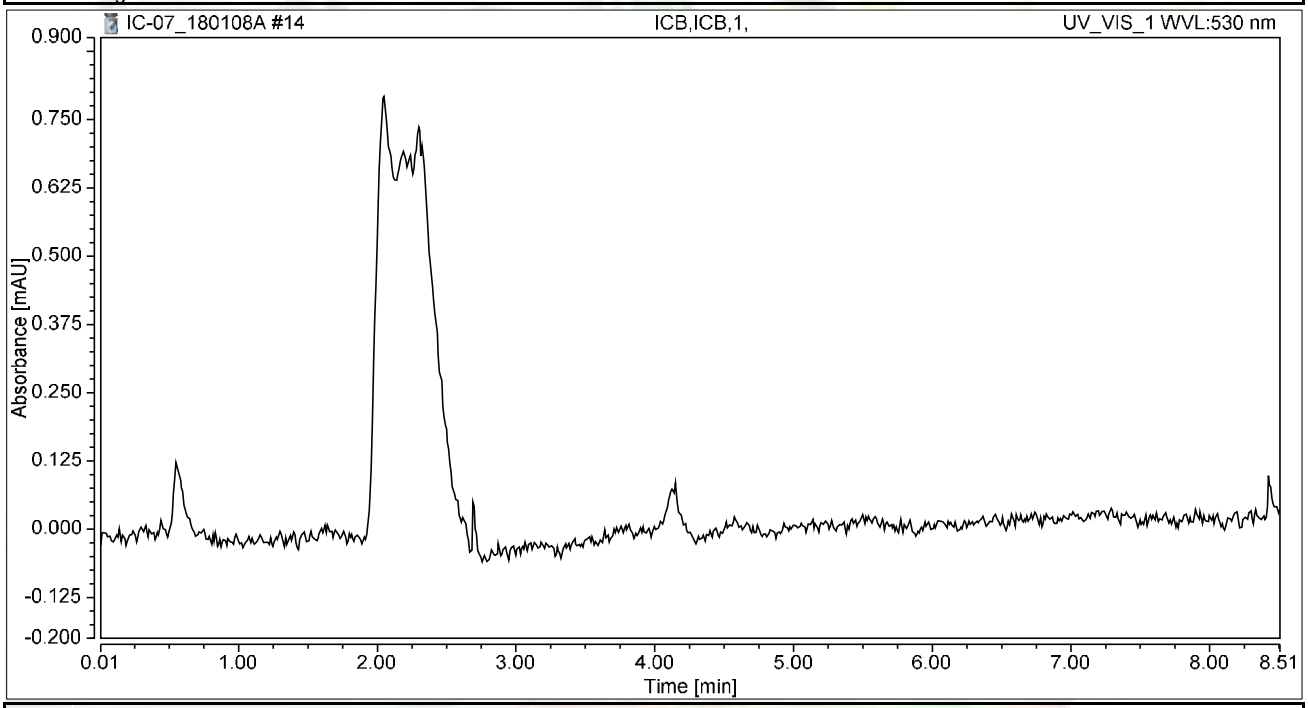
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

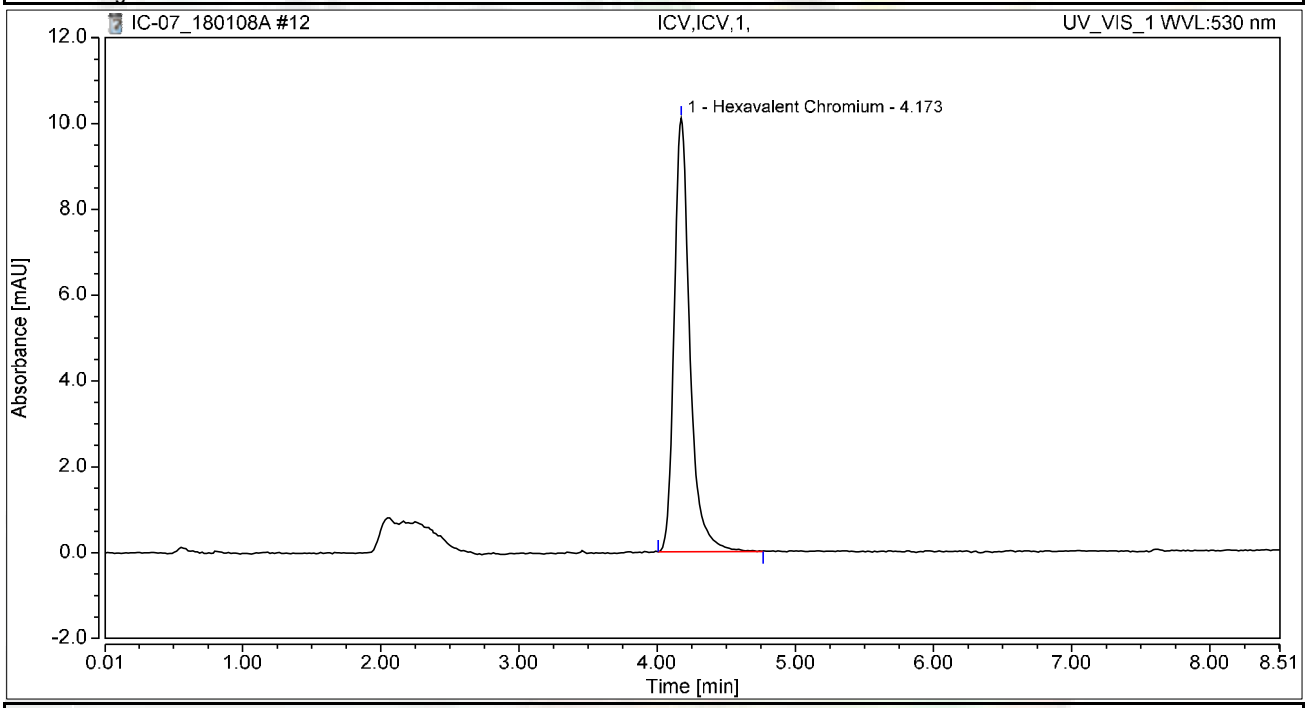
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

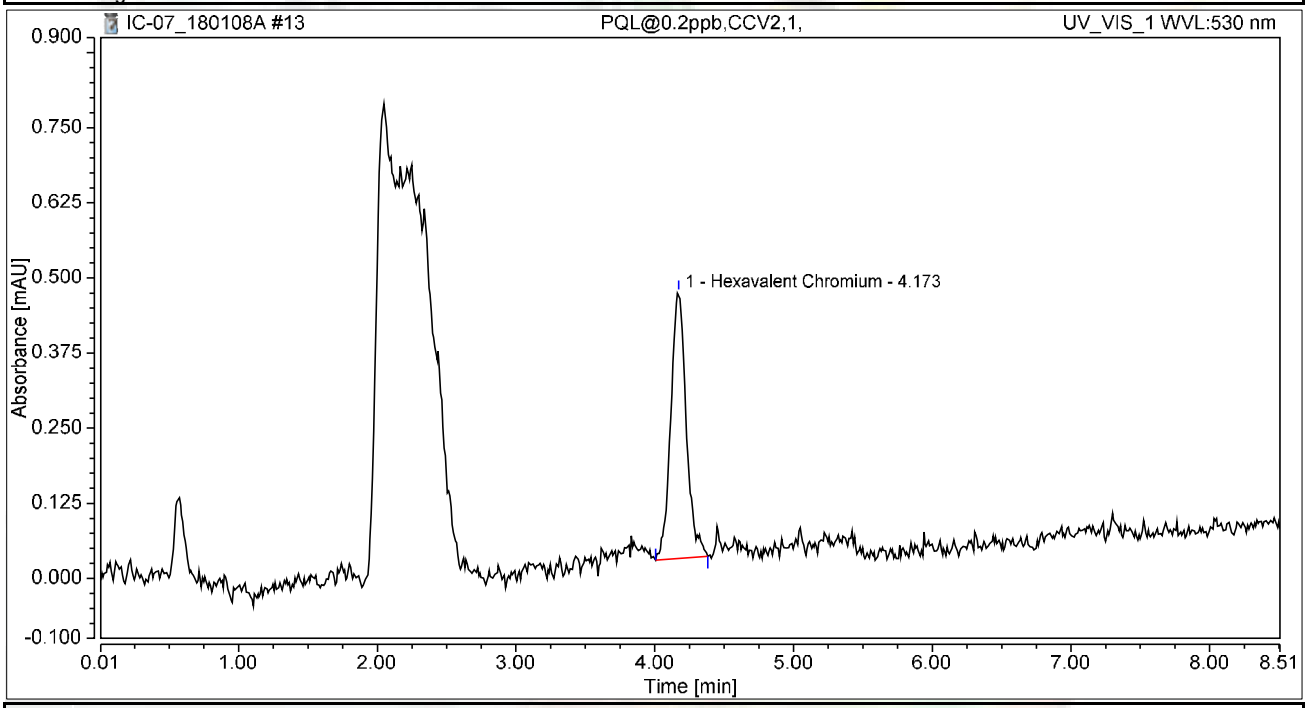
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

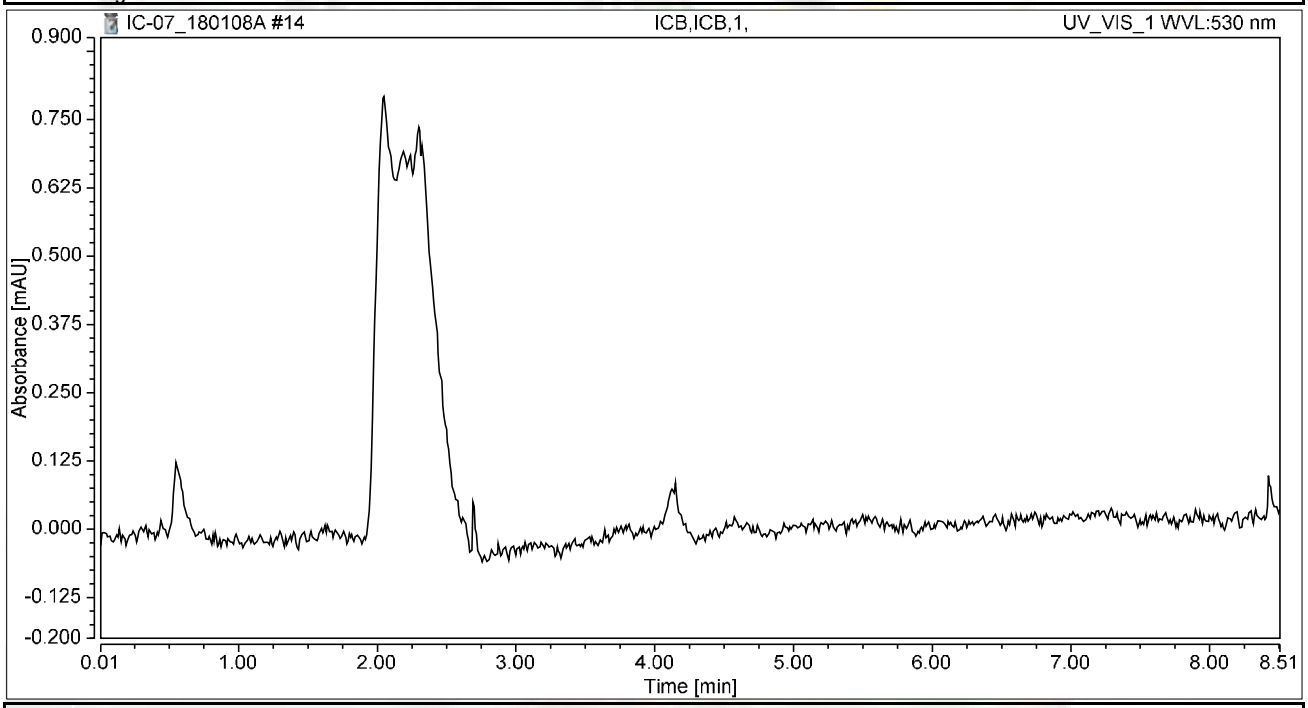
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

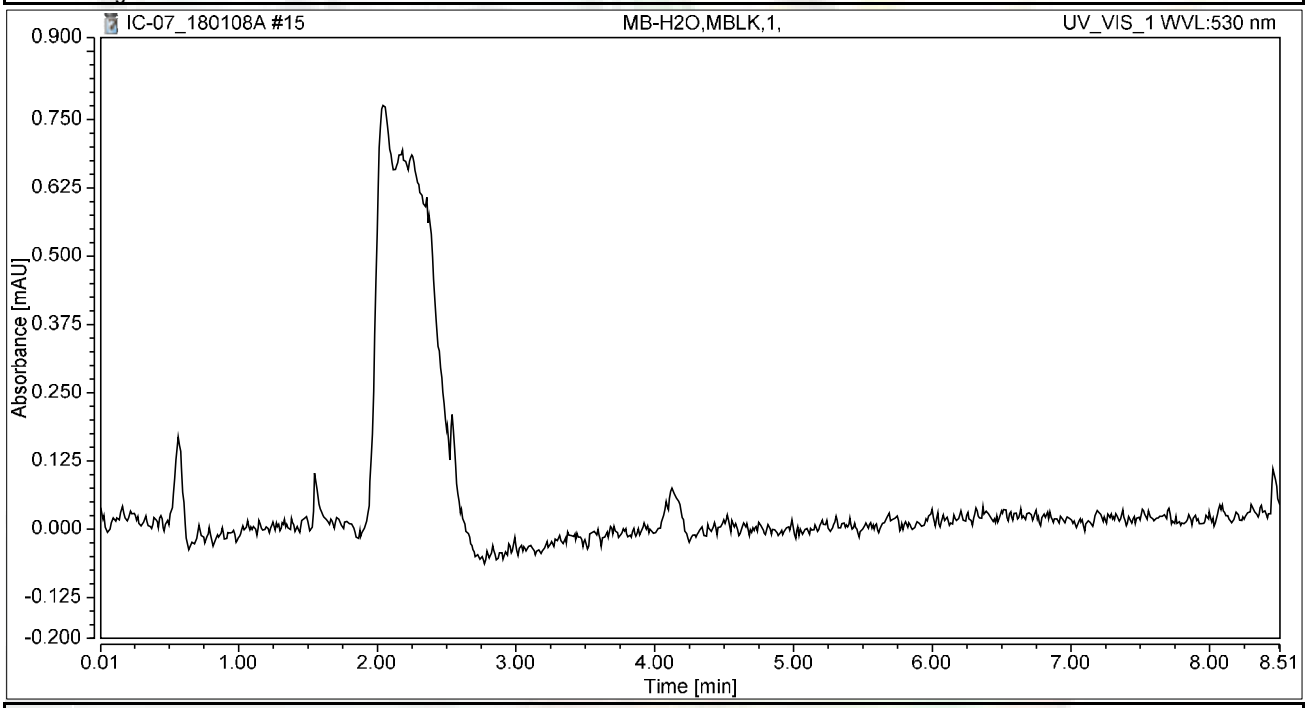
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

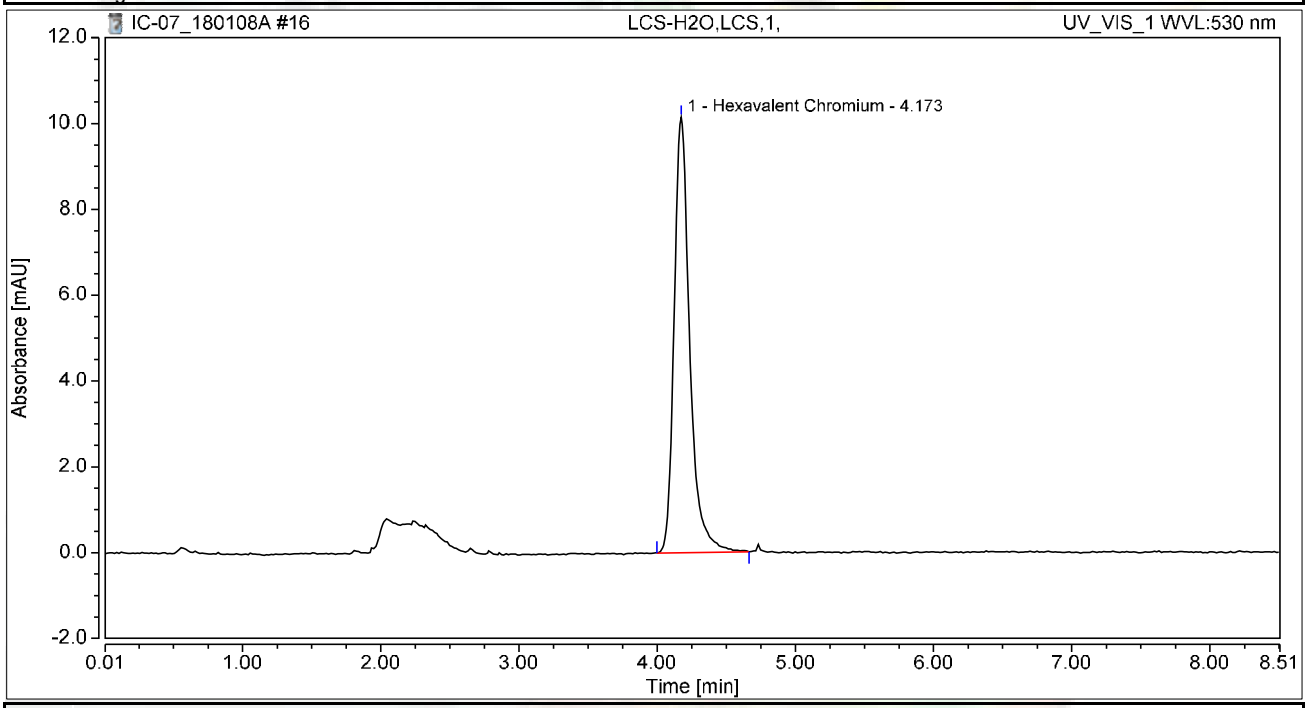
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

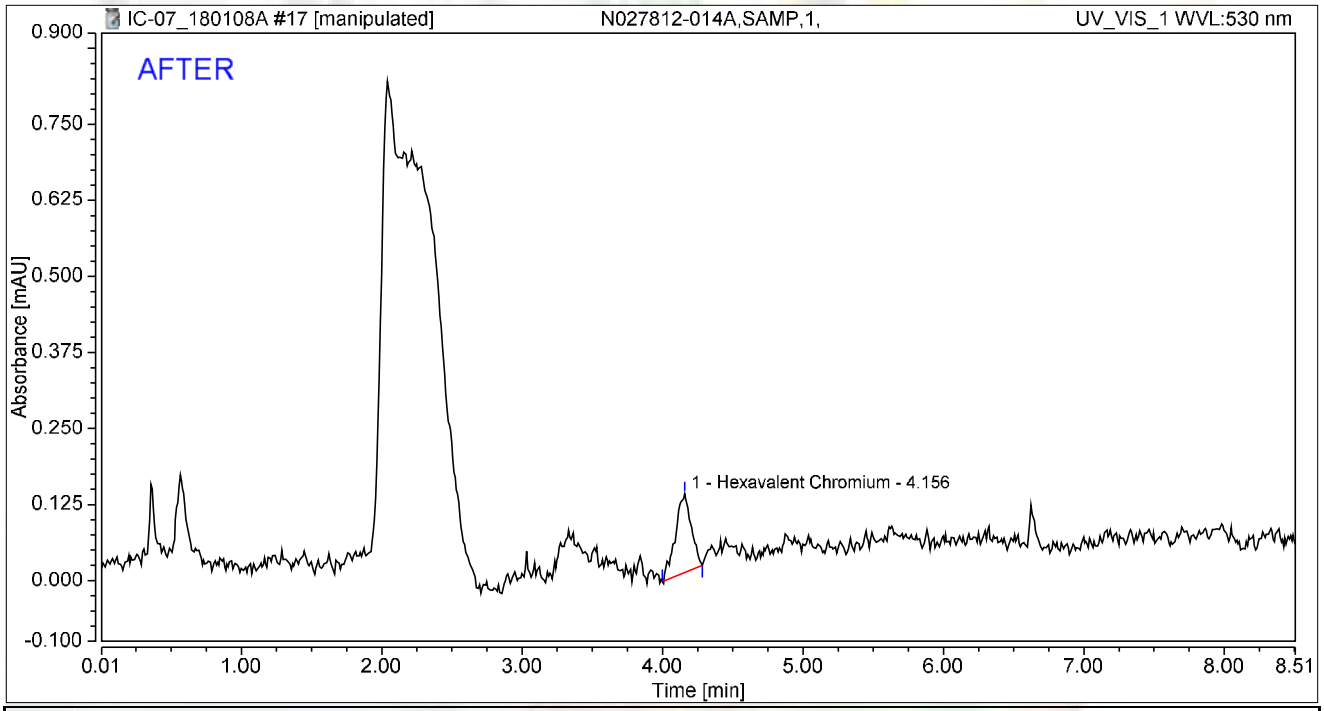
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.330	10.147	100.00	100.00	5.2014
Total:			**1.330**	**10.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.017	0.129	100.00	100.00	0.0660
Total:			**0.017**	**0.129**	**100.00**	**100.00**	

rba 1/10/2018

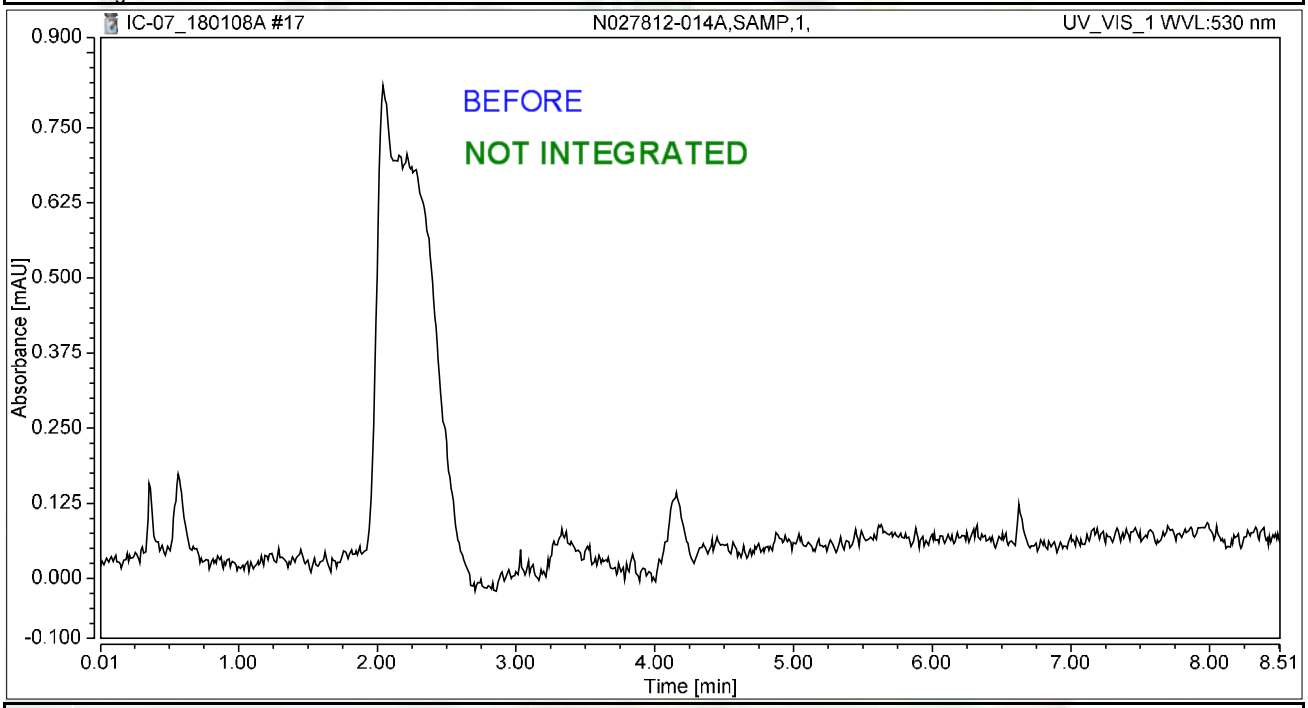
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

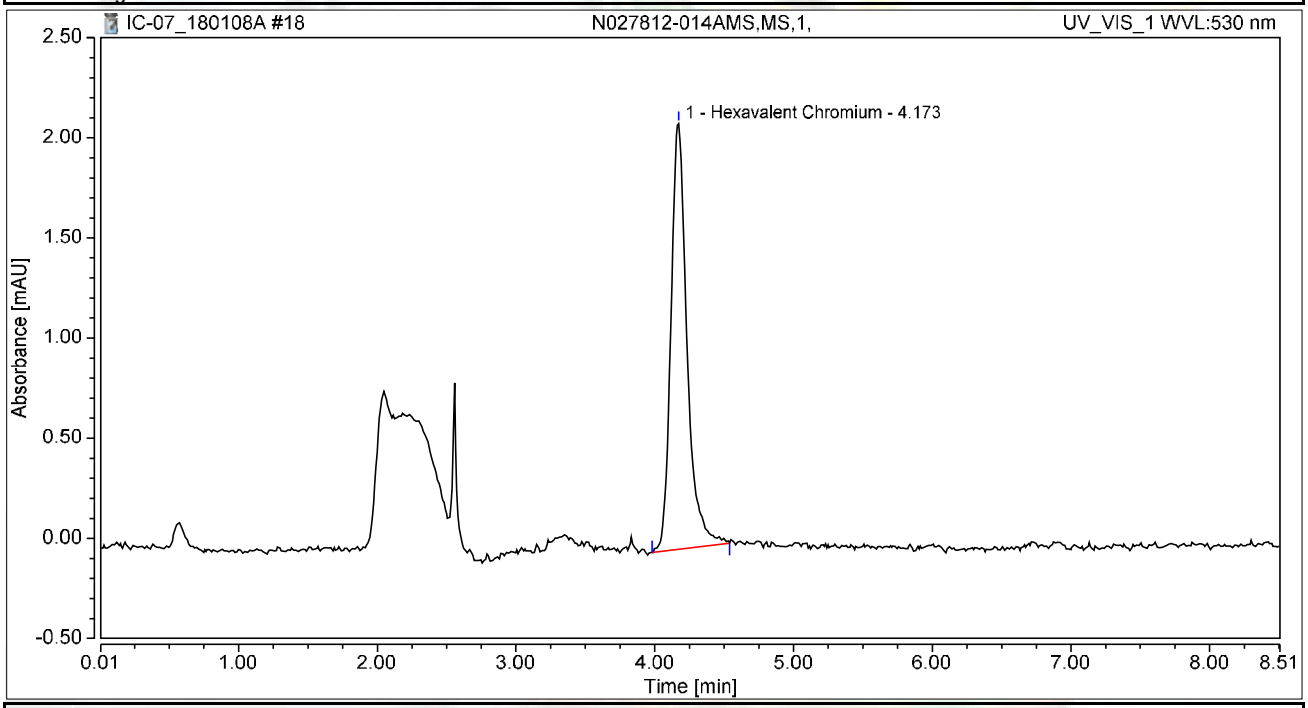
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

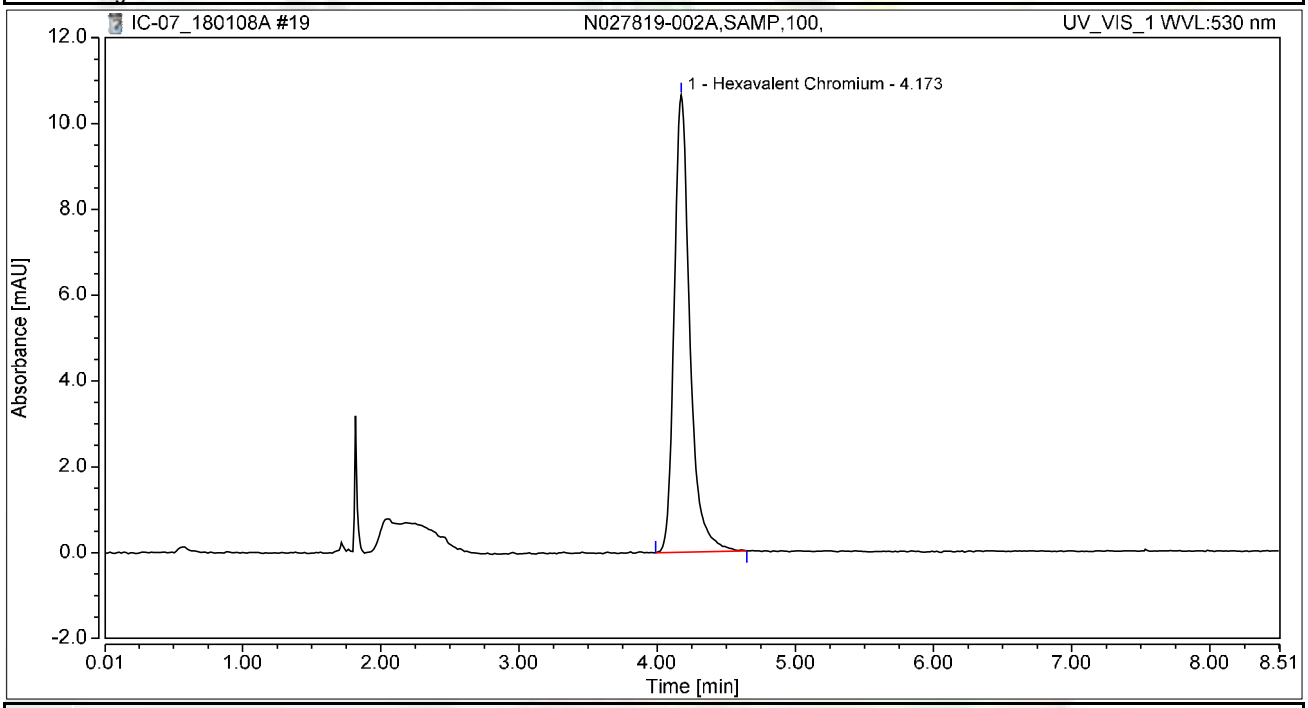
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.287	2.126	100.00	100.00	1.1207
Total:			**0.287**	**2.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

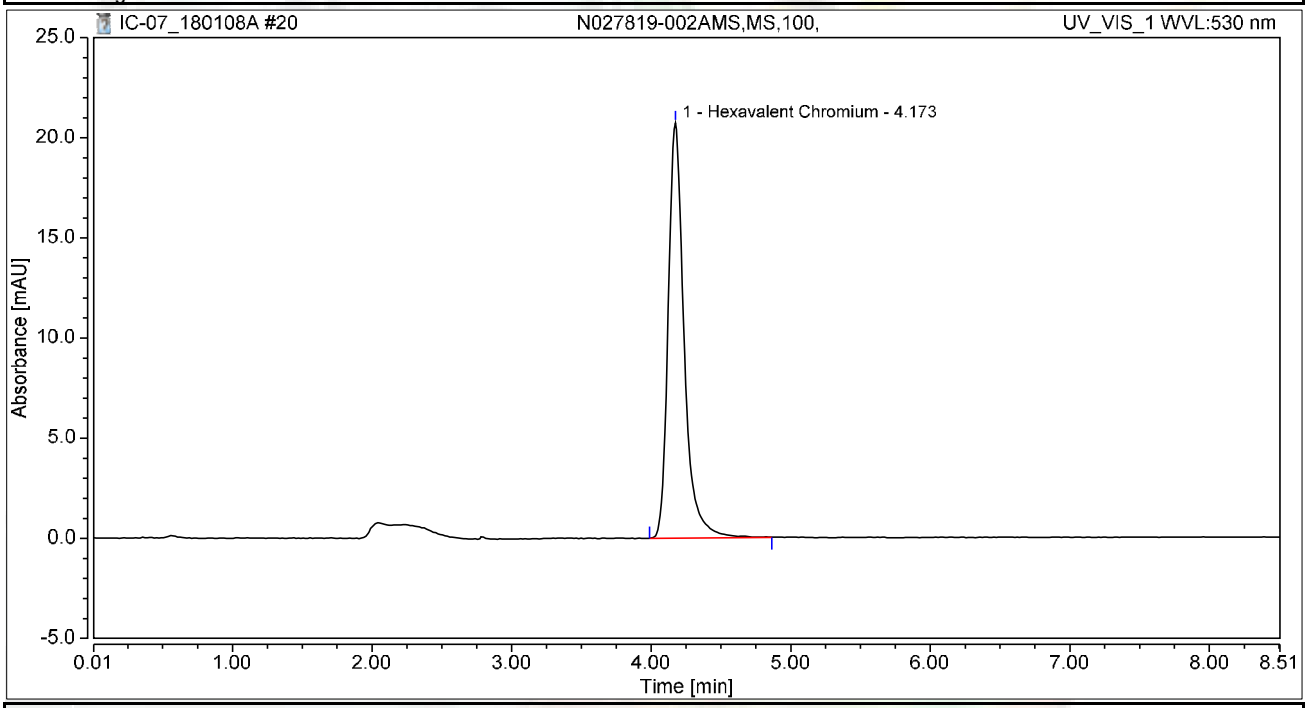
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.401	10.655	100.00	100.00	5.4805
Total:			**1.401**	**10.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

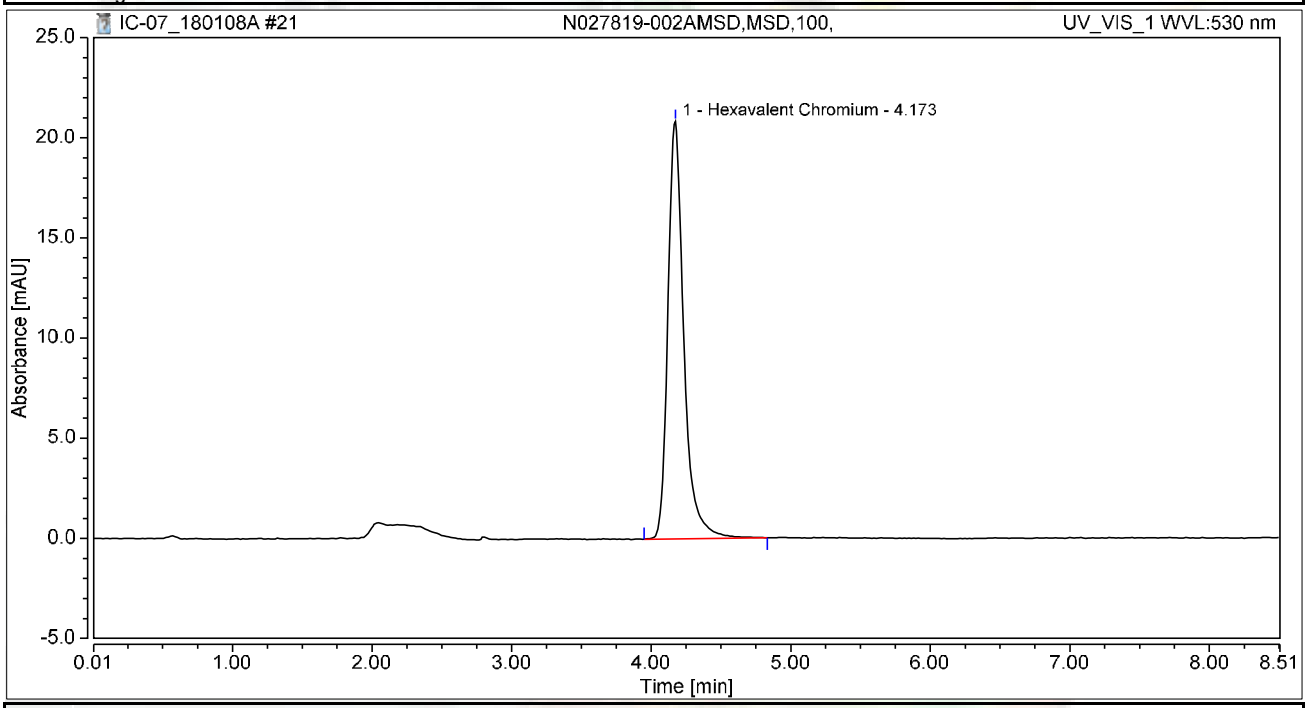
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.747	20.732	100.00	100.00	10.7445
Total:			**2.747**	**20.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

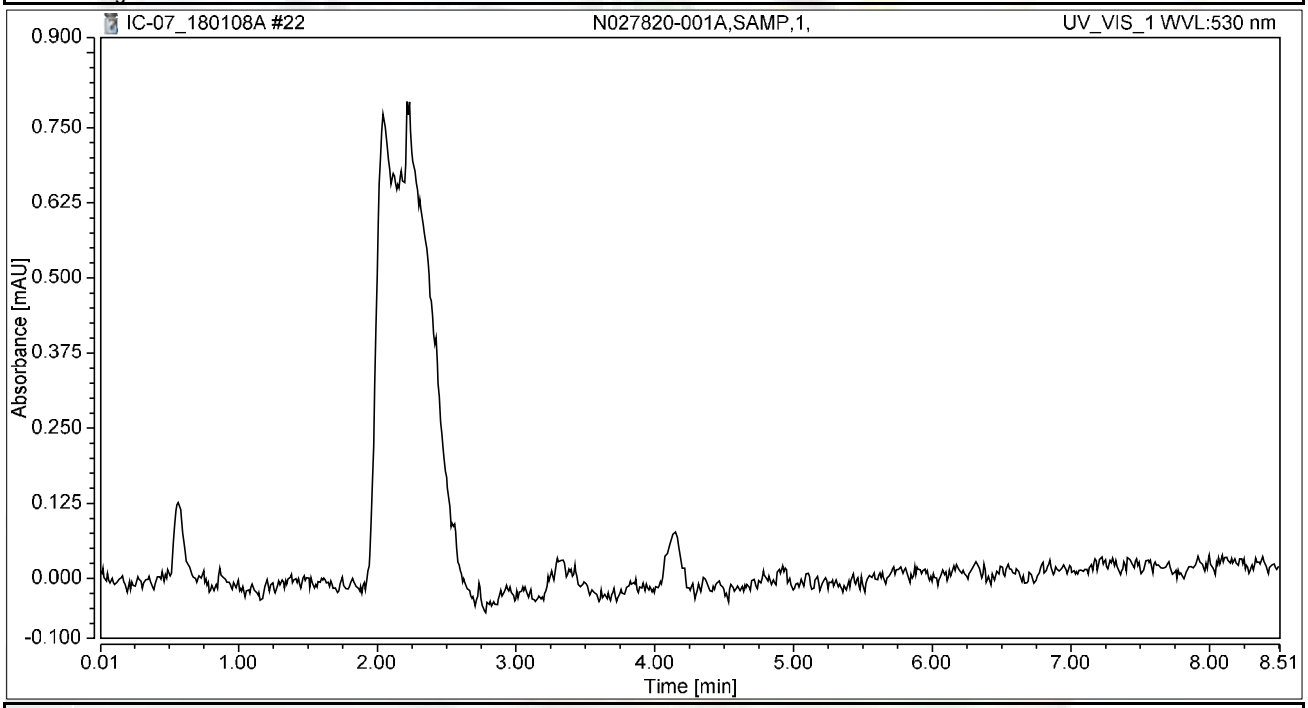
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.766	20.845	100.00	100.00	10.8163
Total:			**2.766**	**20.845**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

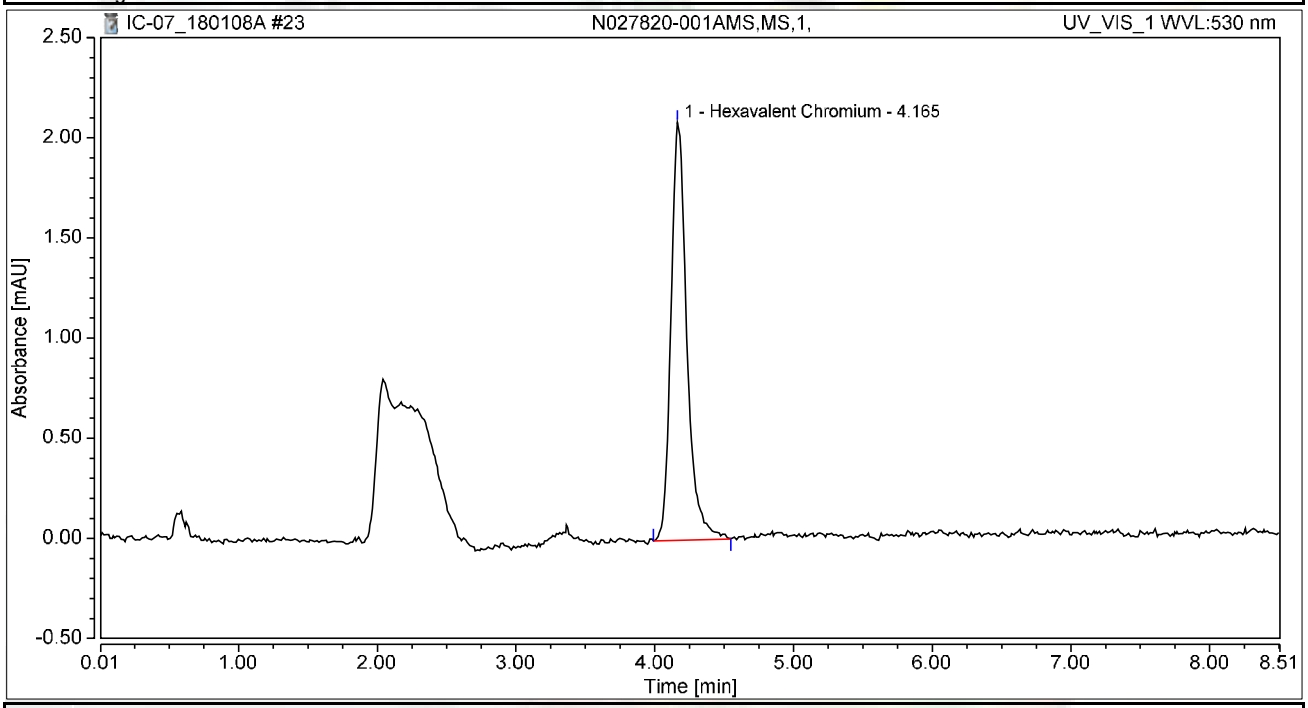
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

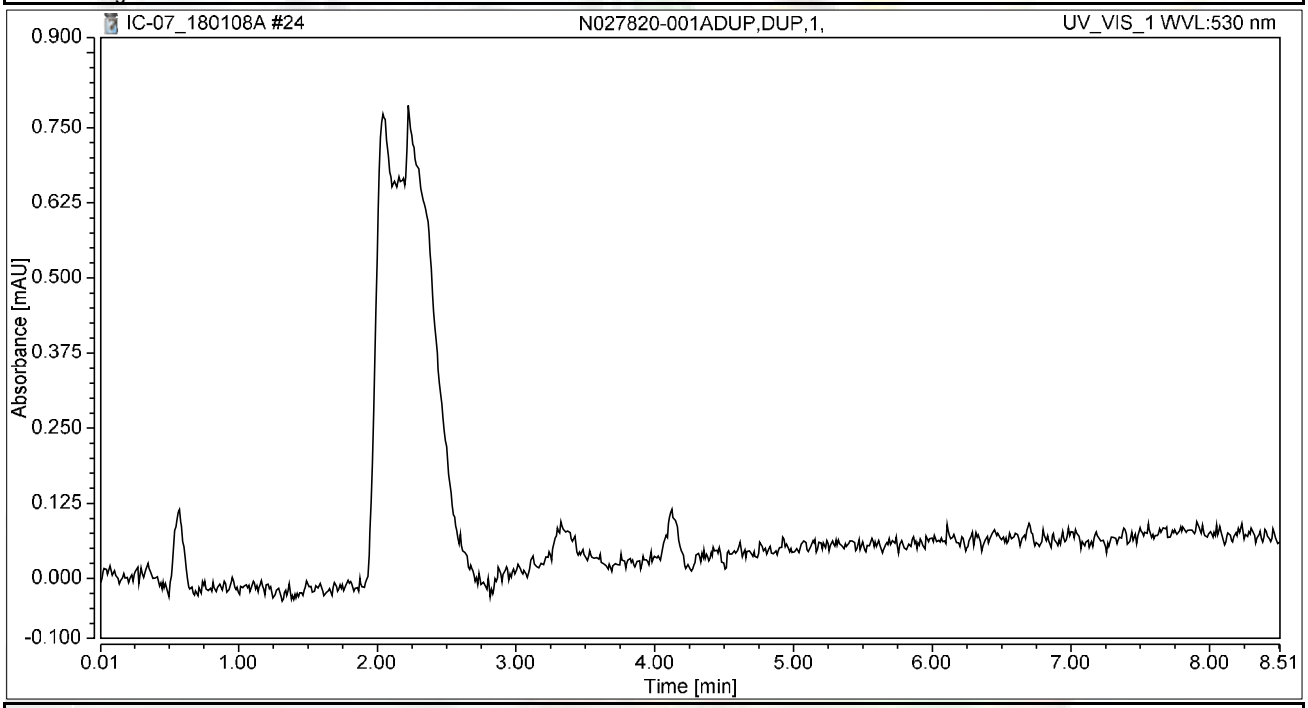
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.278	2.086	100.00	100.00	1.0876
Total:			**0.278**	**2.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

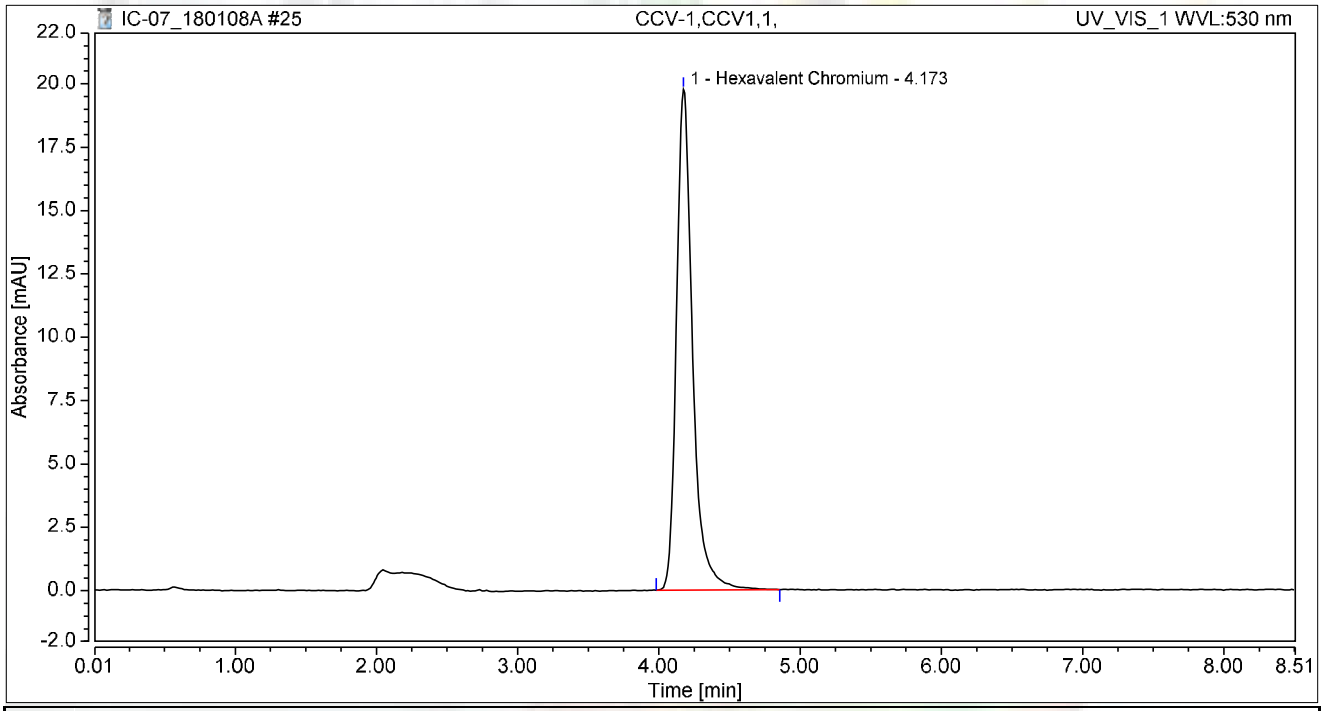
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

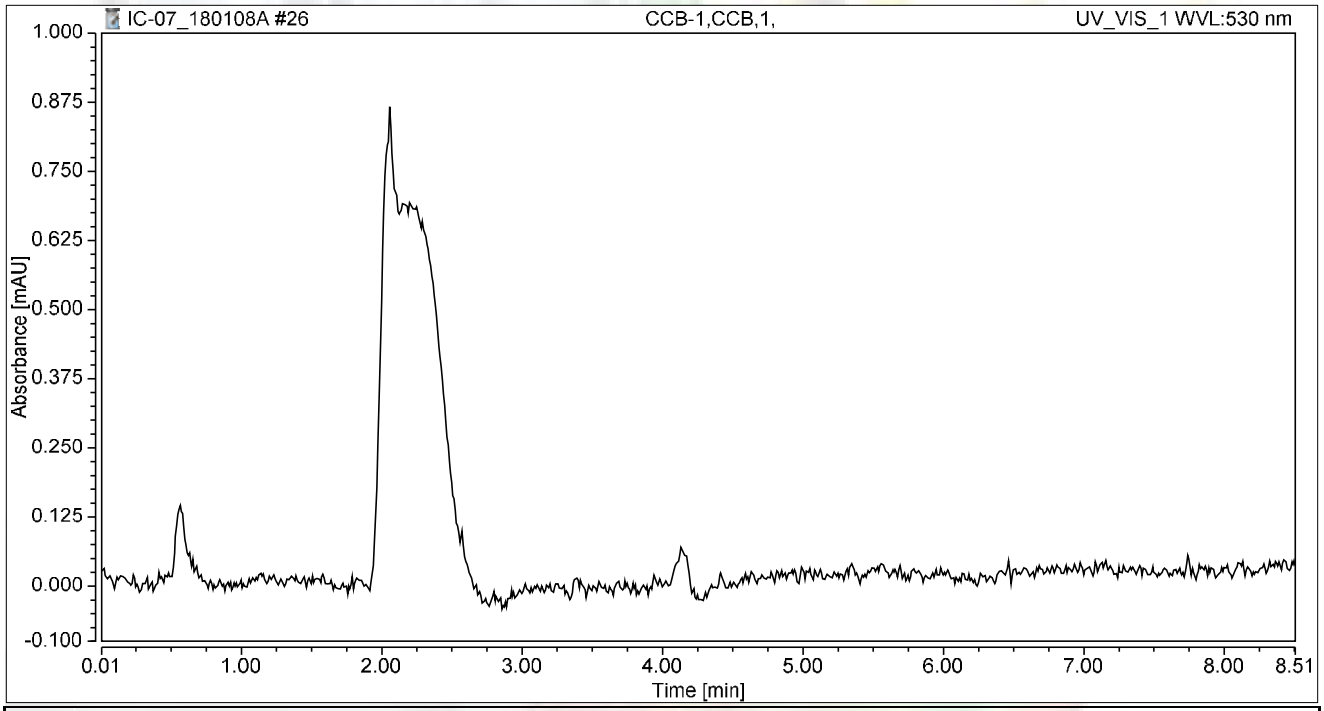
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.622	19.758	100.00	100.00	10.2530
Total:			**2.622**	**19.758**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

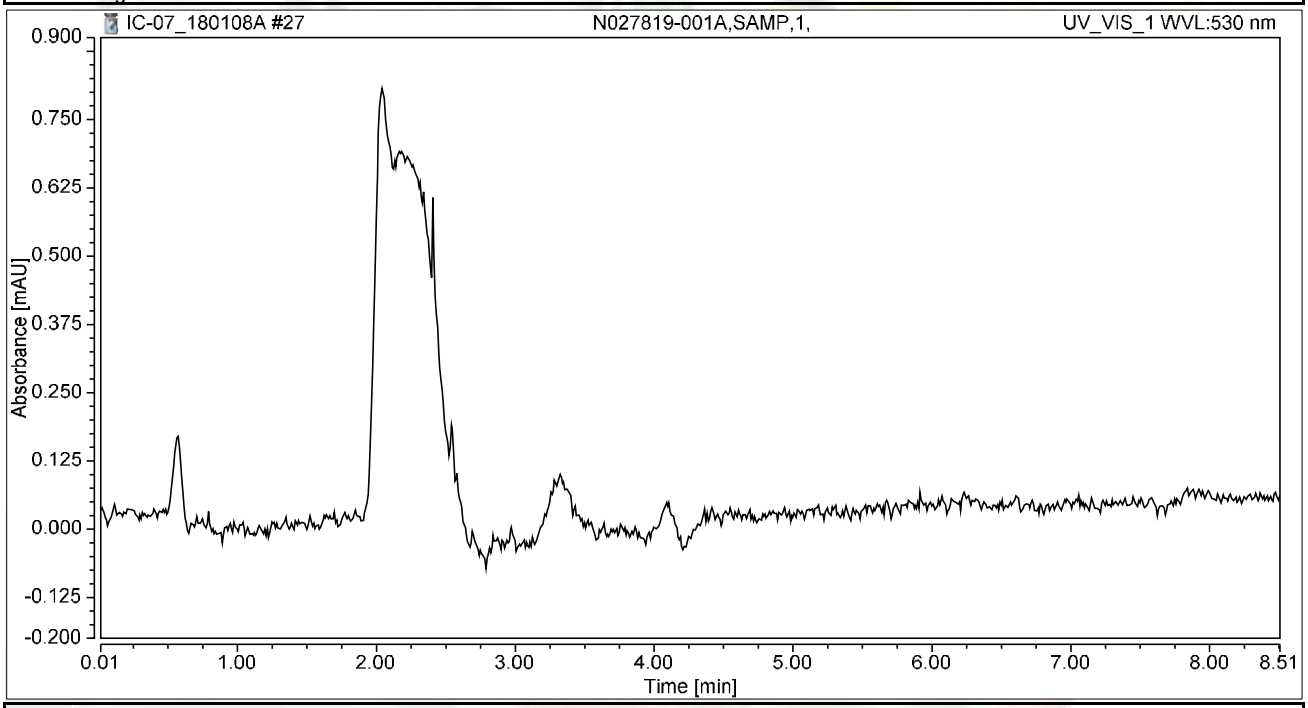
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

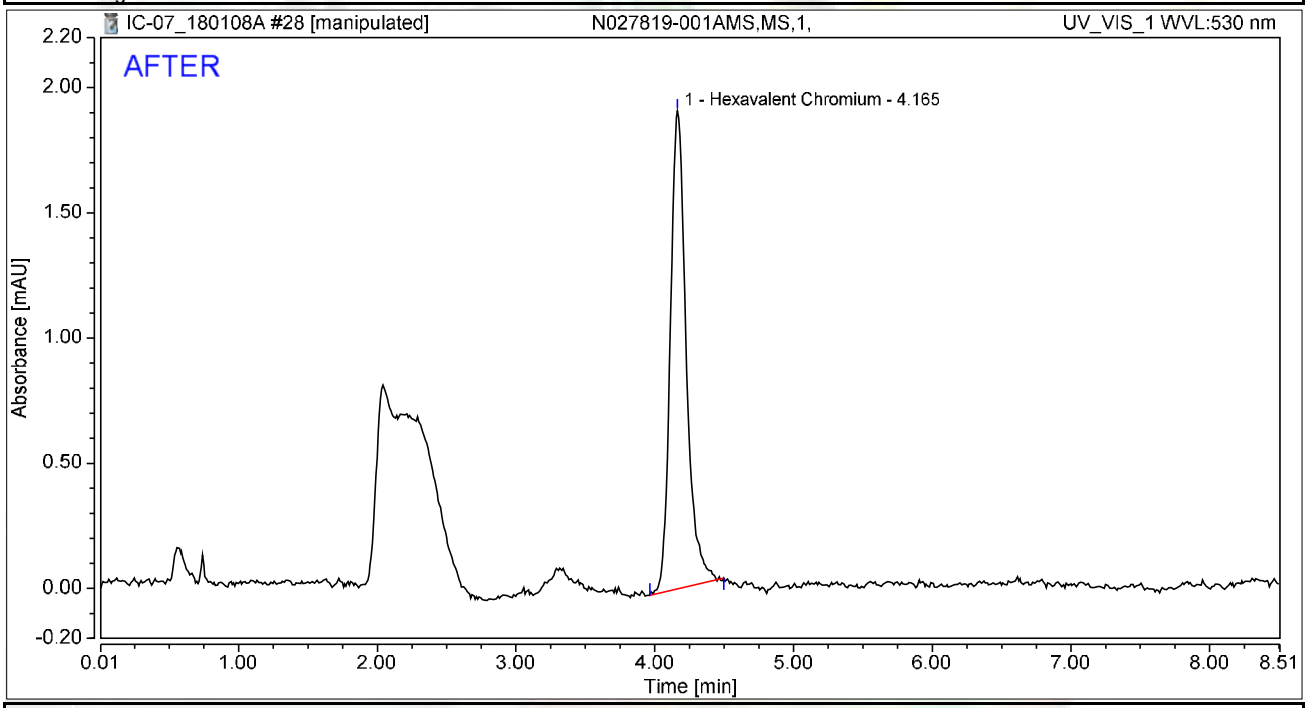
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.254	1.909	100.00	100.00	0.9940
Total:			**0.254**	**1.909**	**100.00**	**100.00**	

rba 1/10/2018

Reviewed by: Nancy 01/12/2018
MJ first report/Integration

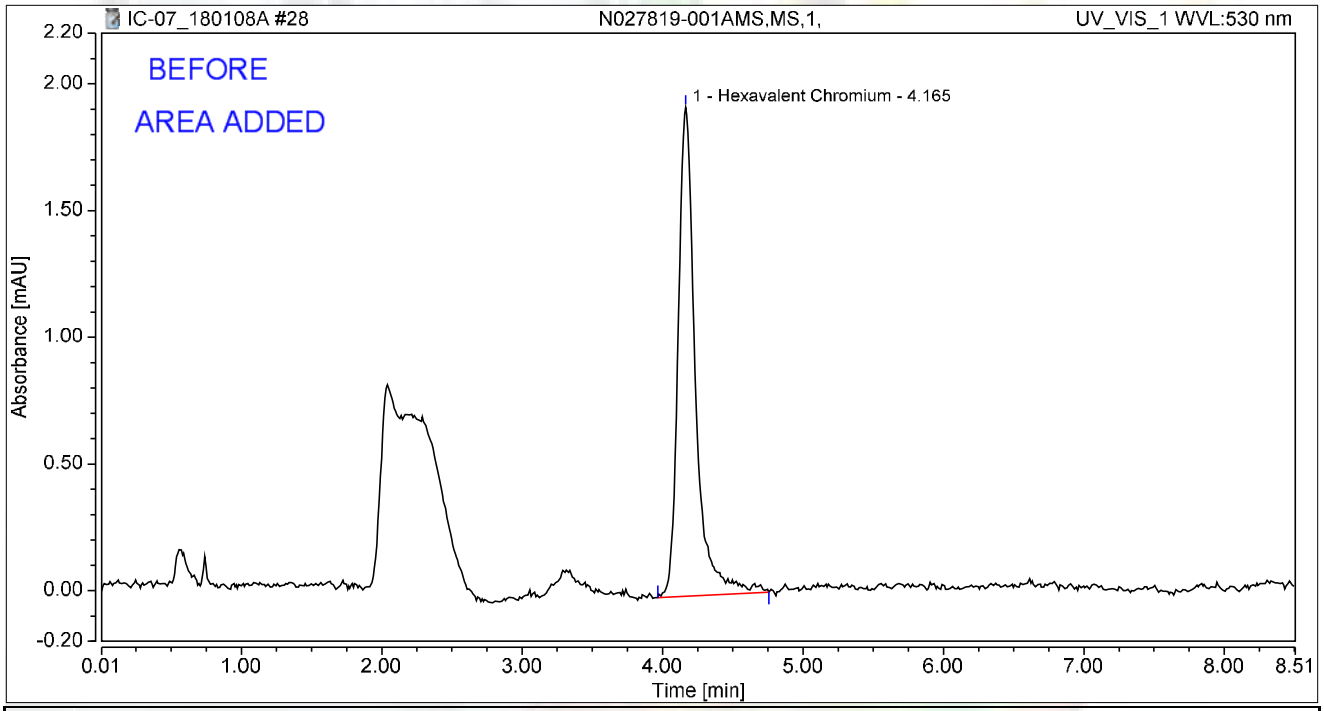
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	1.930	100.00	100.00	1.0637
Total:			**0.275**	**1.930**	**100.00**	**100.00**	

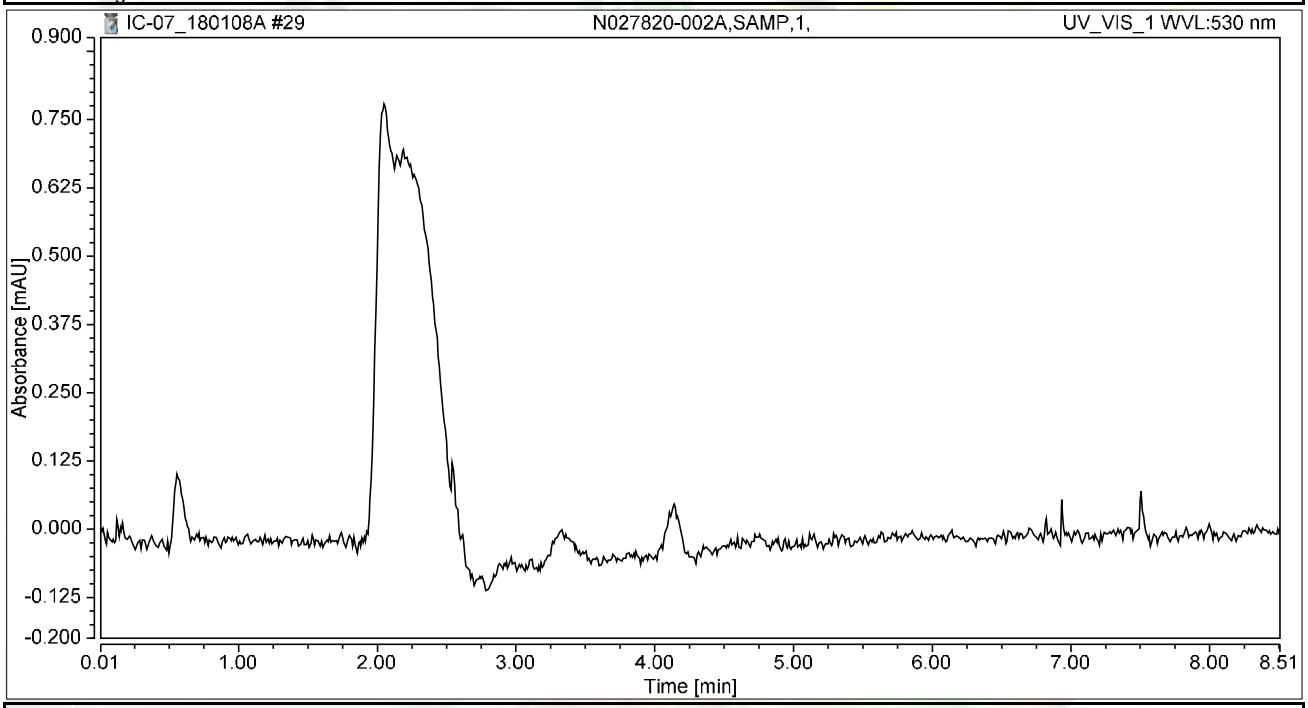
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

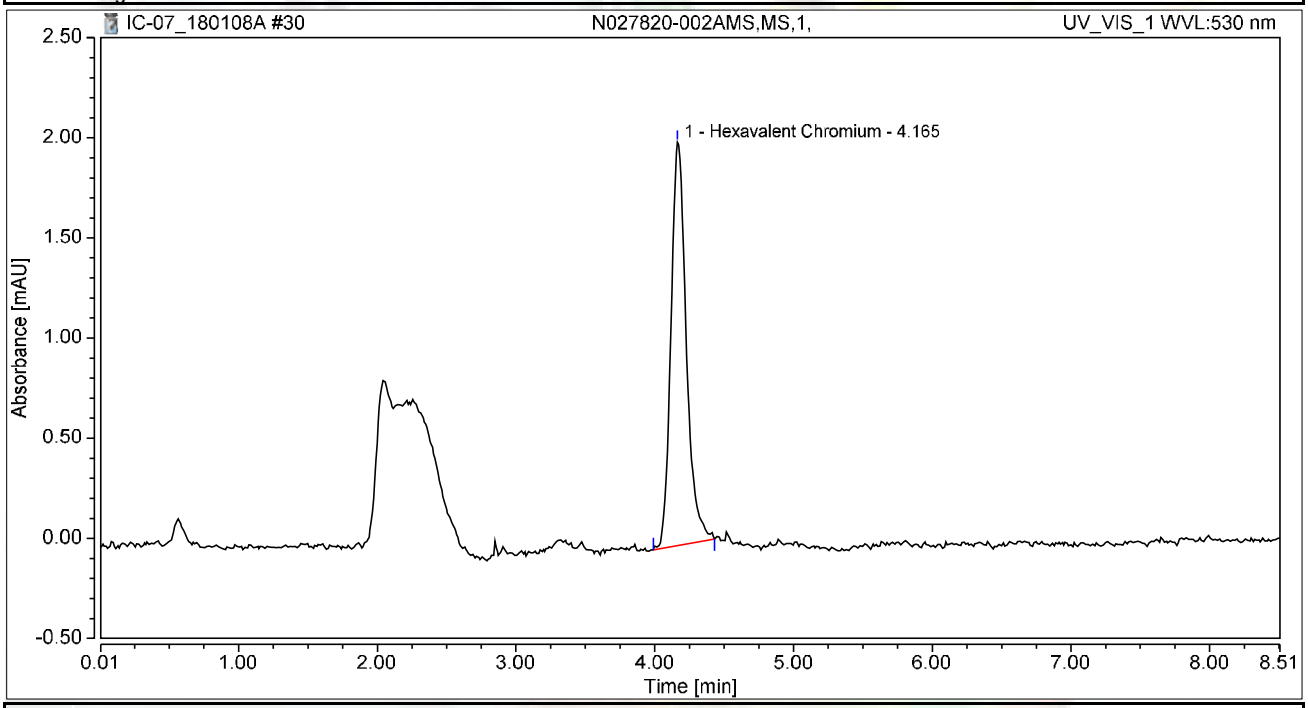
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

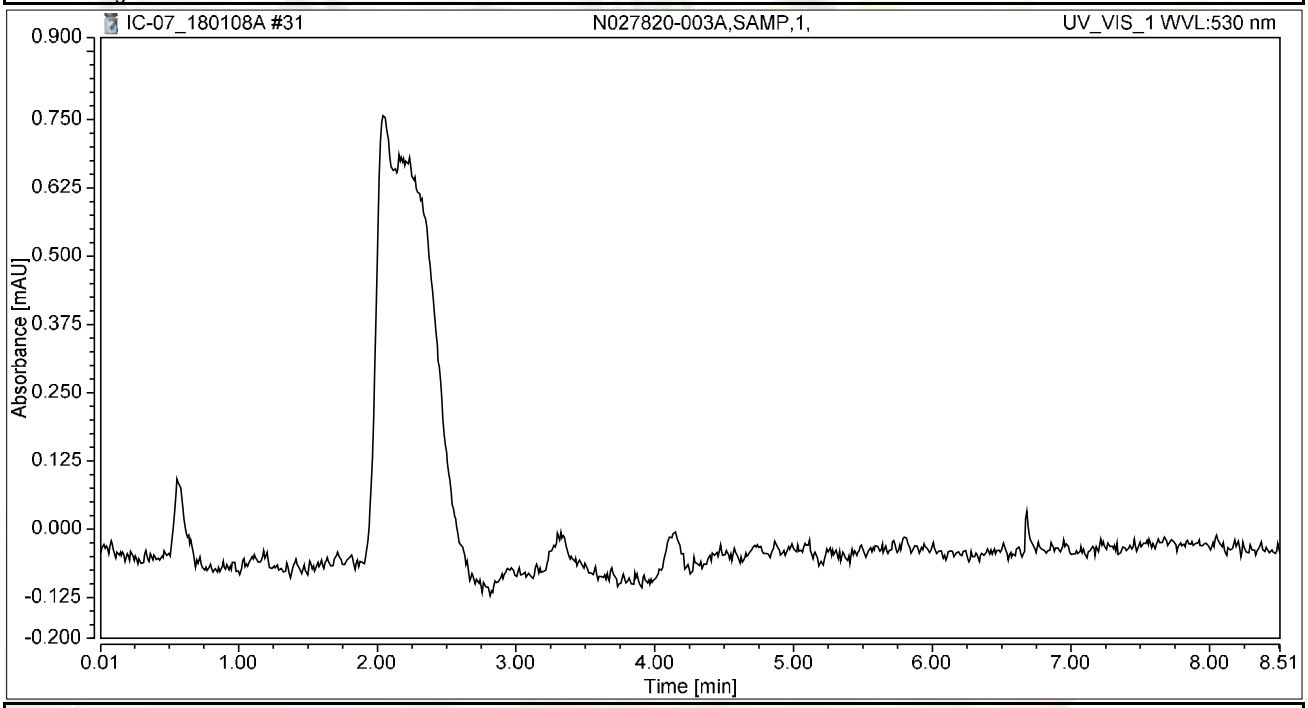
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.259	2.012	100.00	100.00	1.0115
Total:			**0.259**	**2.012**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

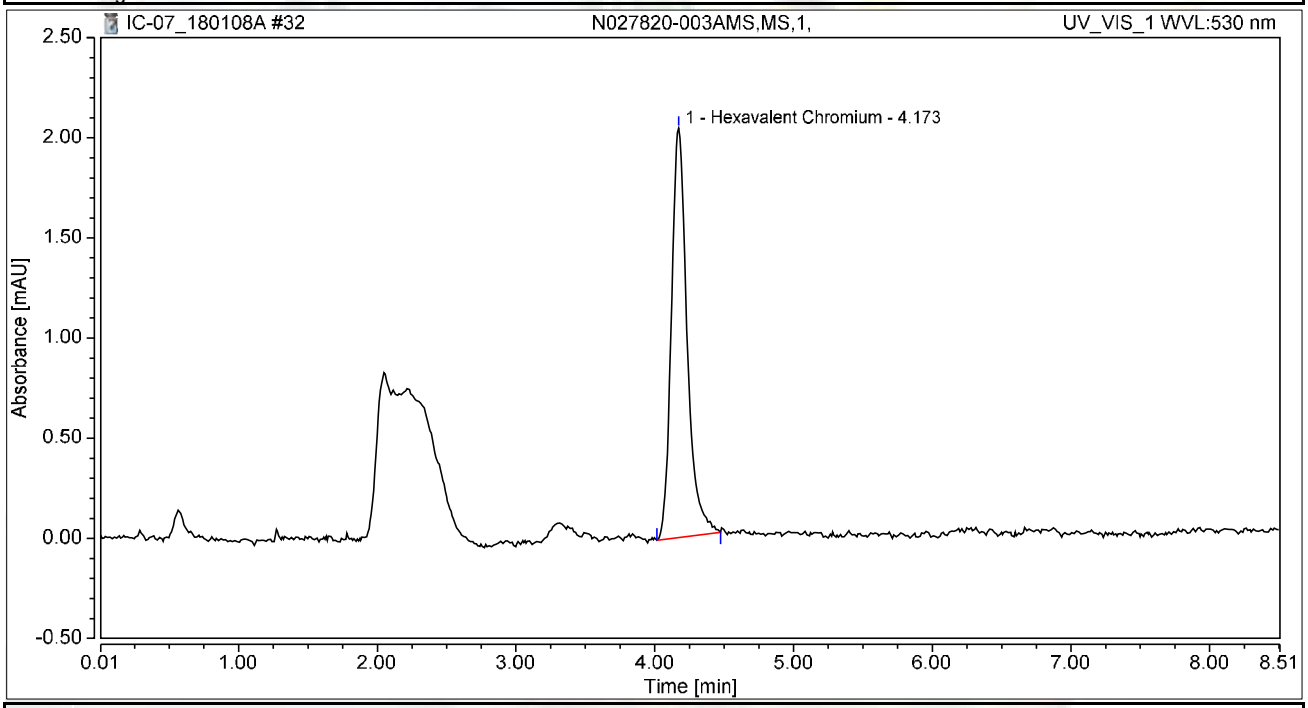
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

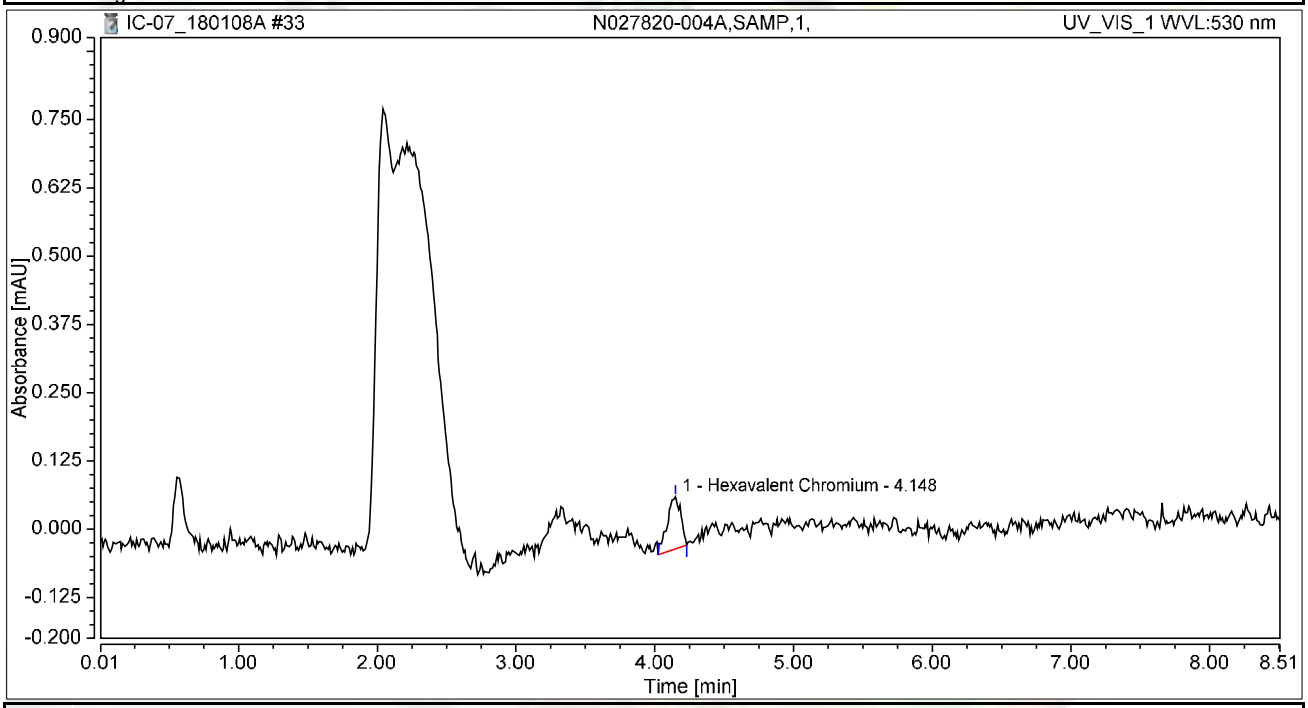
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.268	2.043	100.00	100.00	1.0498
Total:			**0.268**	**2.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

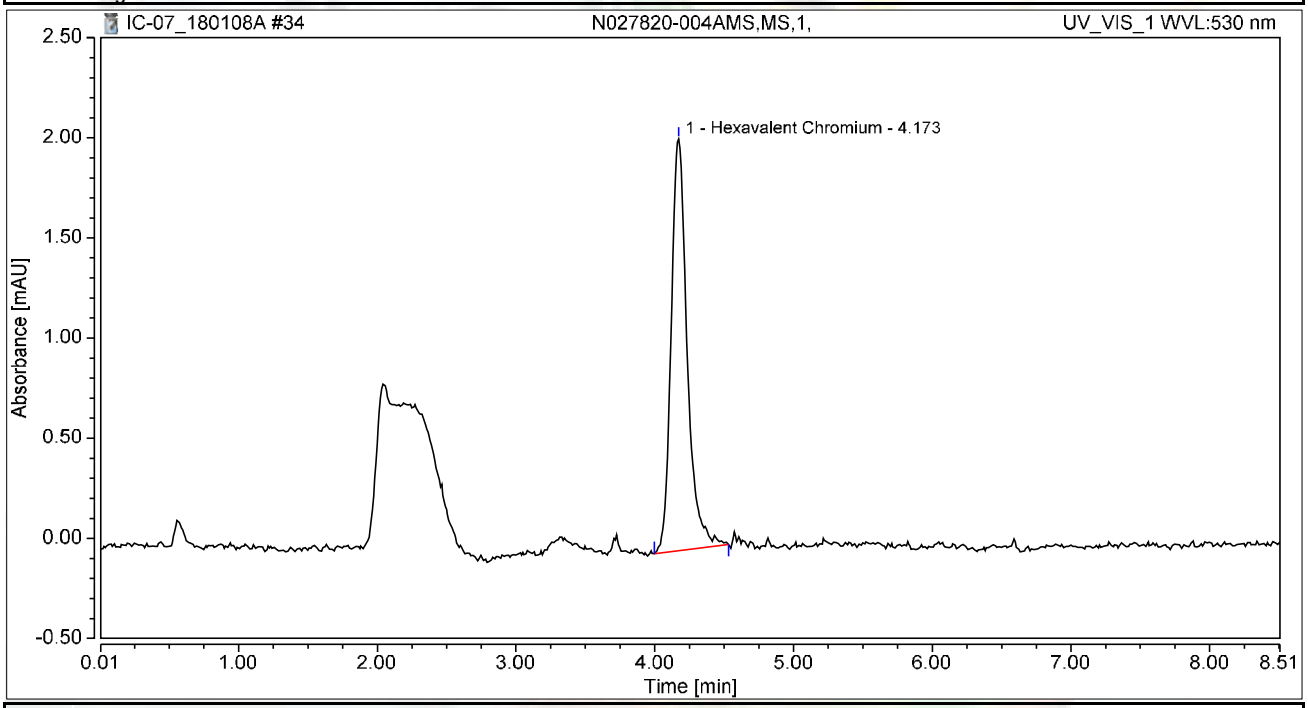
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.011	0.095	100.00	100.00	0.0418
Total:			**0.011**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

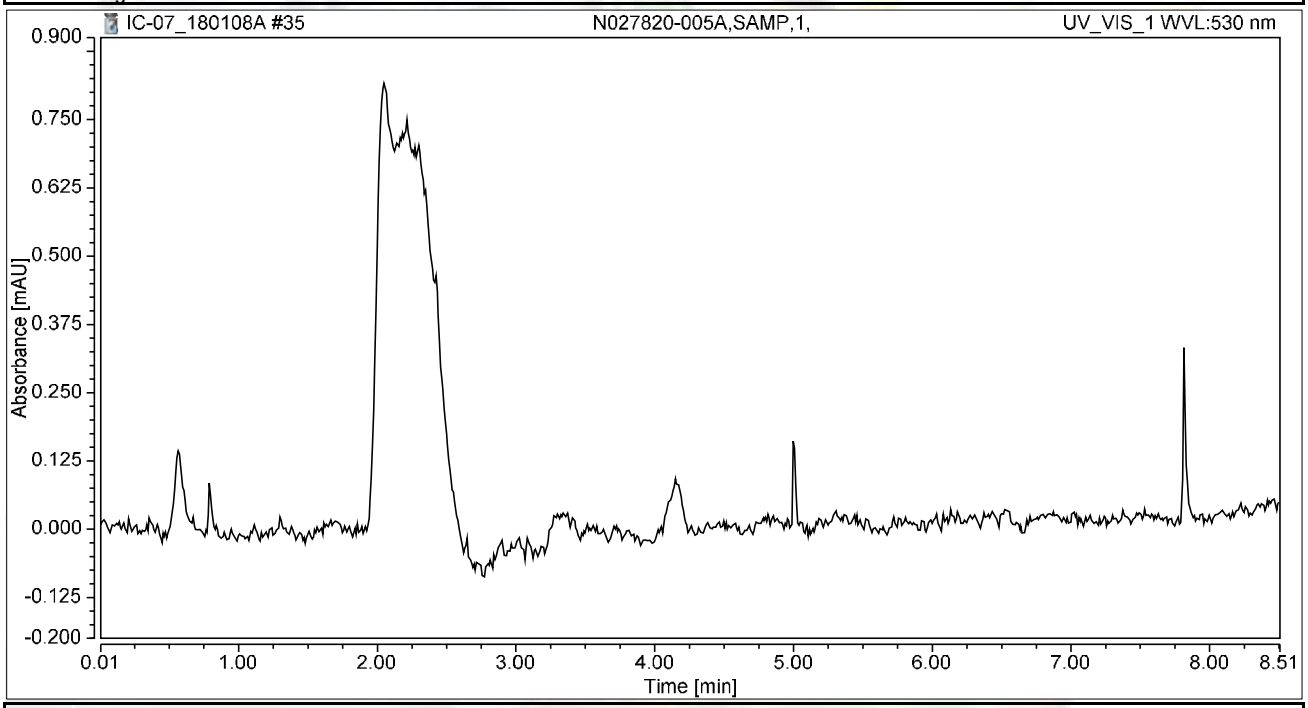
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.054	100.00	100.00	1.0786
Total:			**0.276**	**2.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

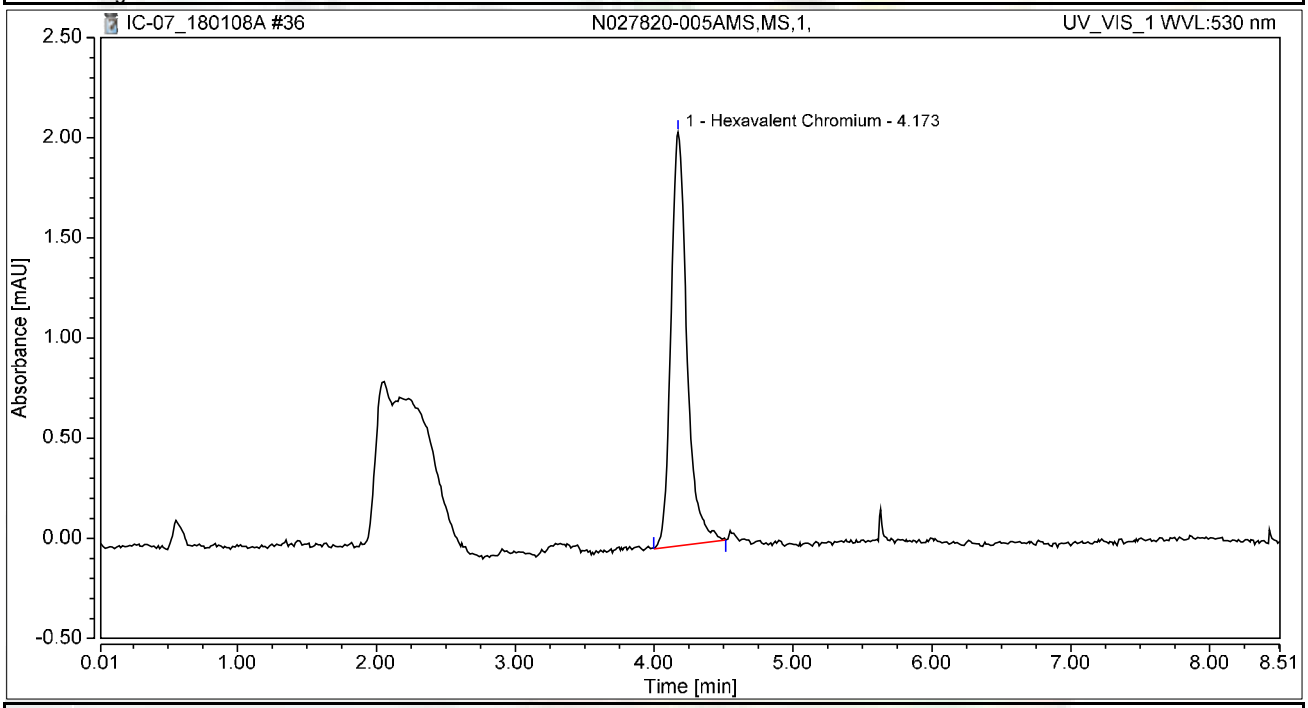
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

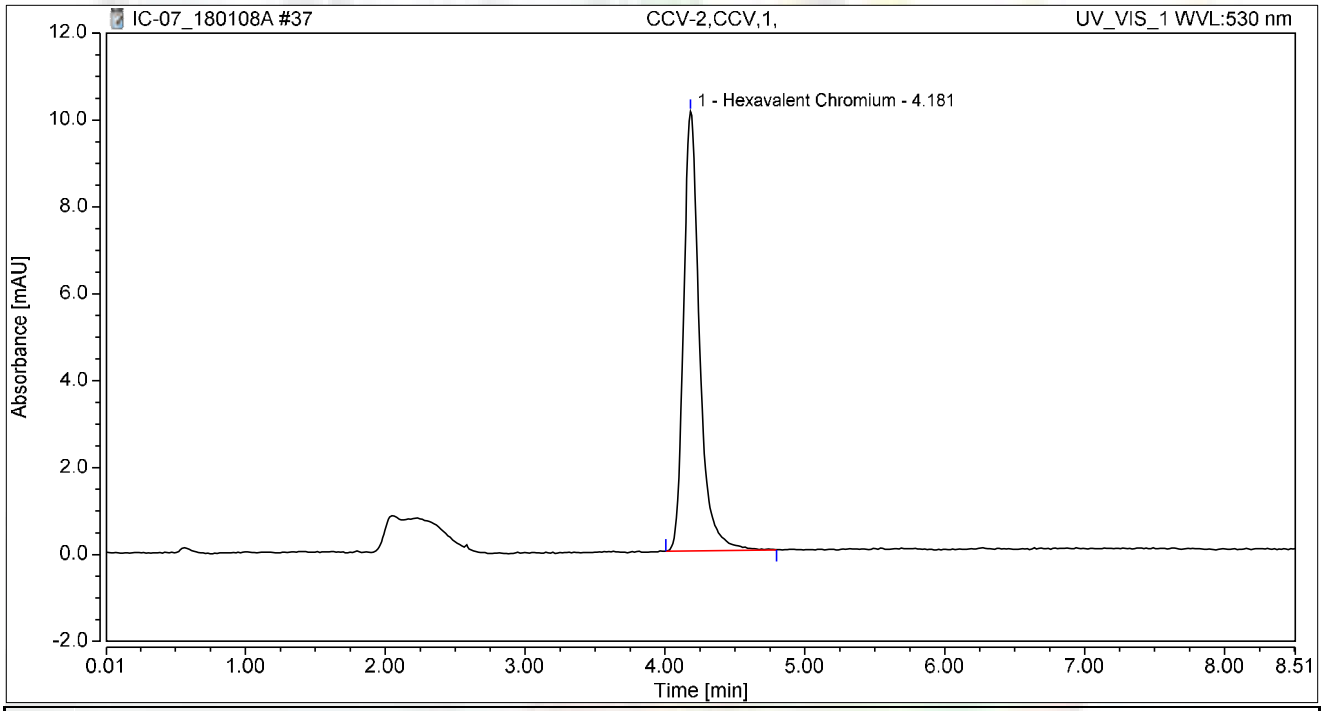
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.066	100.00	100.00	1.0782
Total:			**0.276**	**2.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

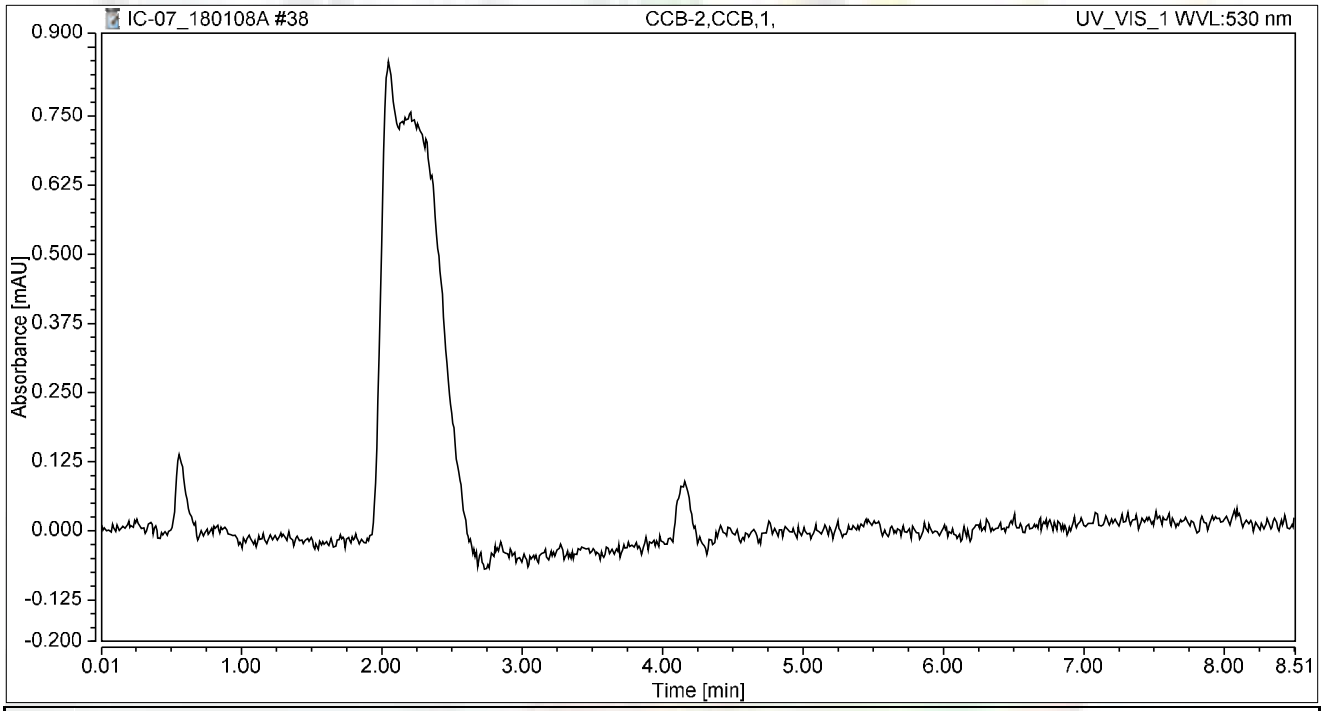
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.338	10.114	100.00	100.00	5.2328
Total:			**1.338**	**10.114**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

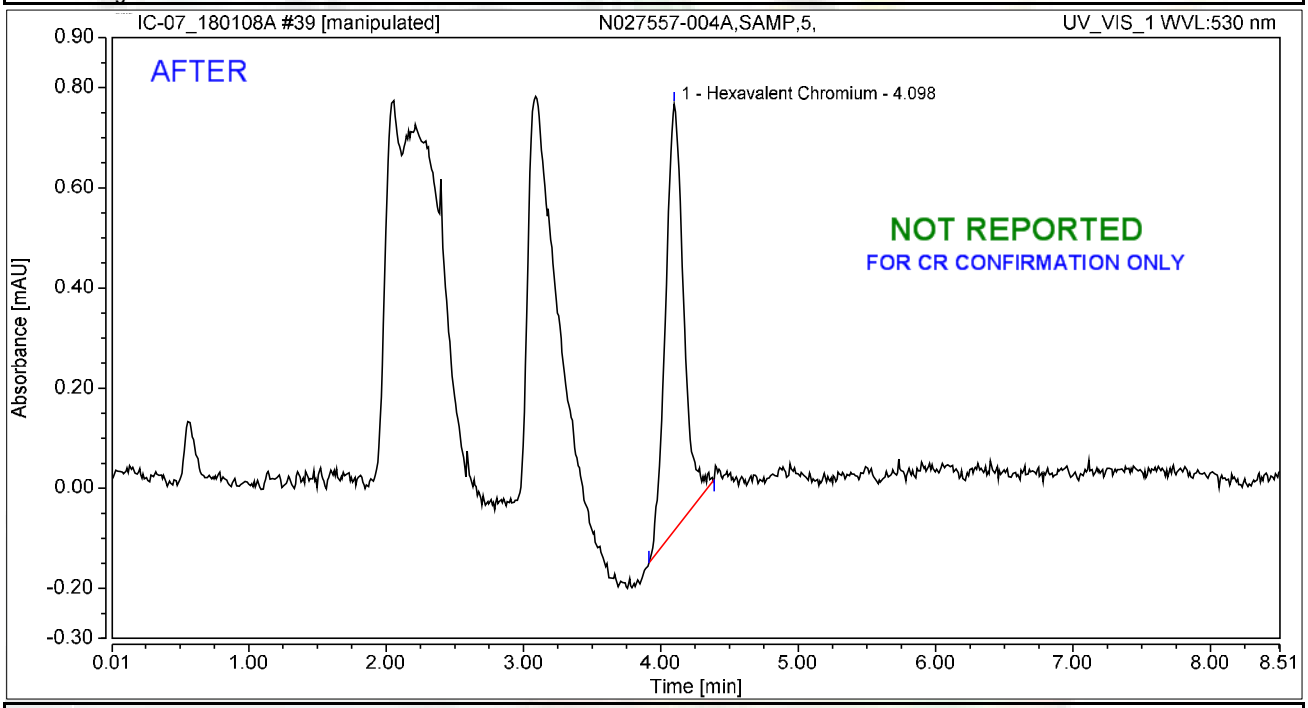
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.130	0.852	100.00	100.00	0.5084
Total:			**0.130**	**0.852**	**100.00**	**100.00**	

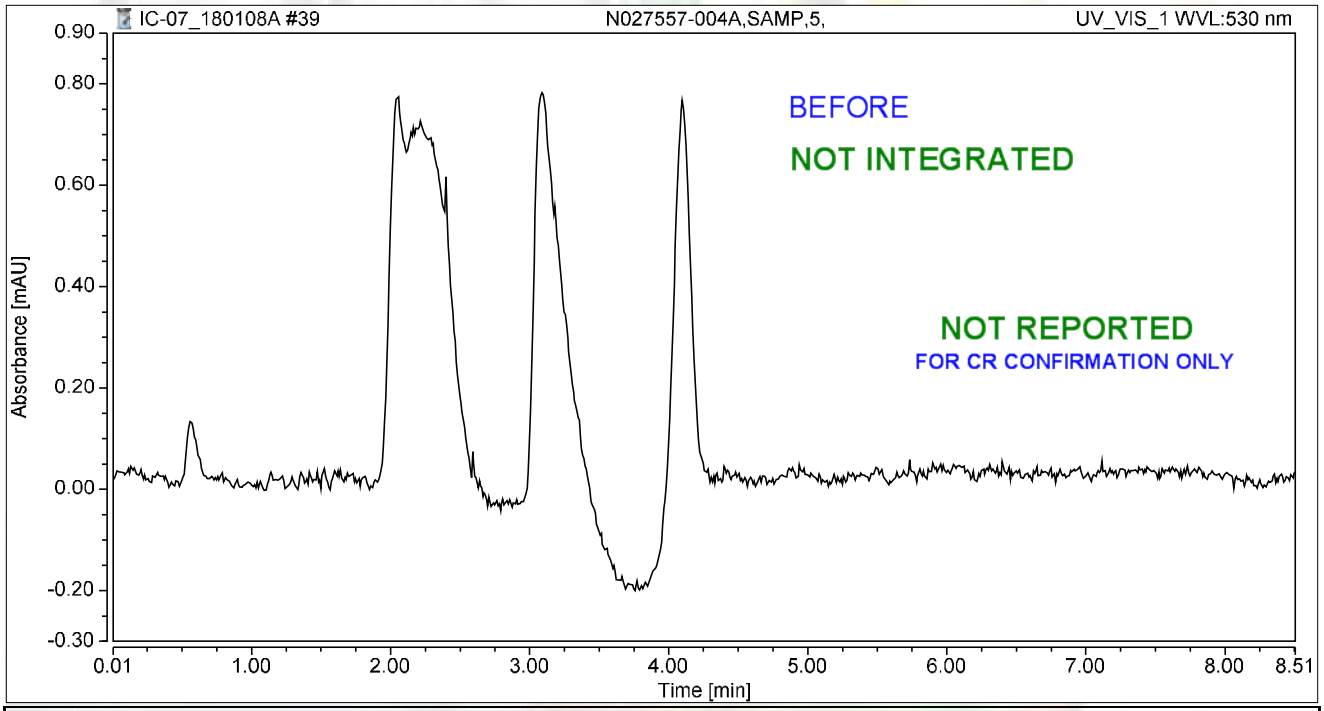
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

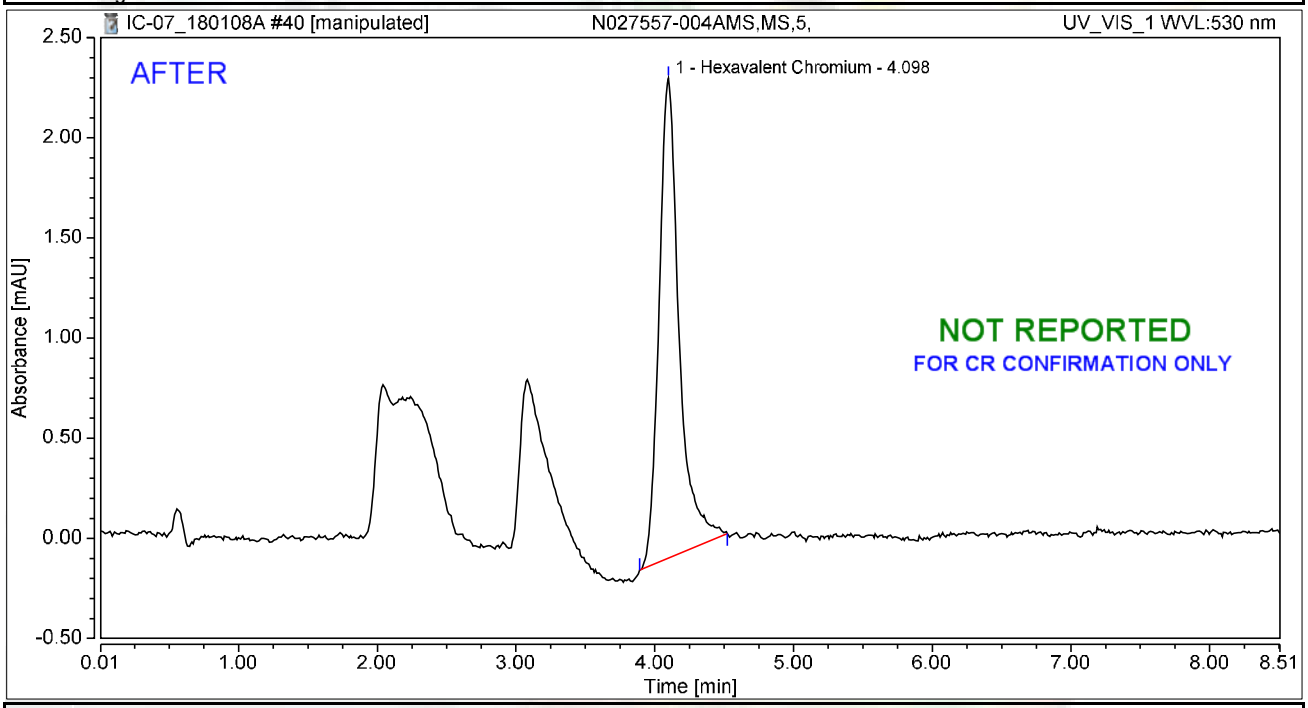
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.403	2.396	100.00	100.00	1.5776
Total:			**0.403**	**2.396**	**100.00**	**100.00**	

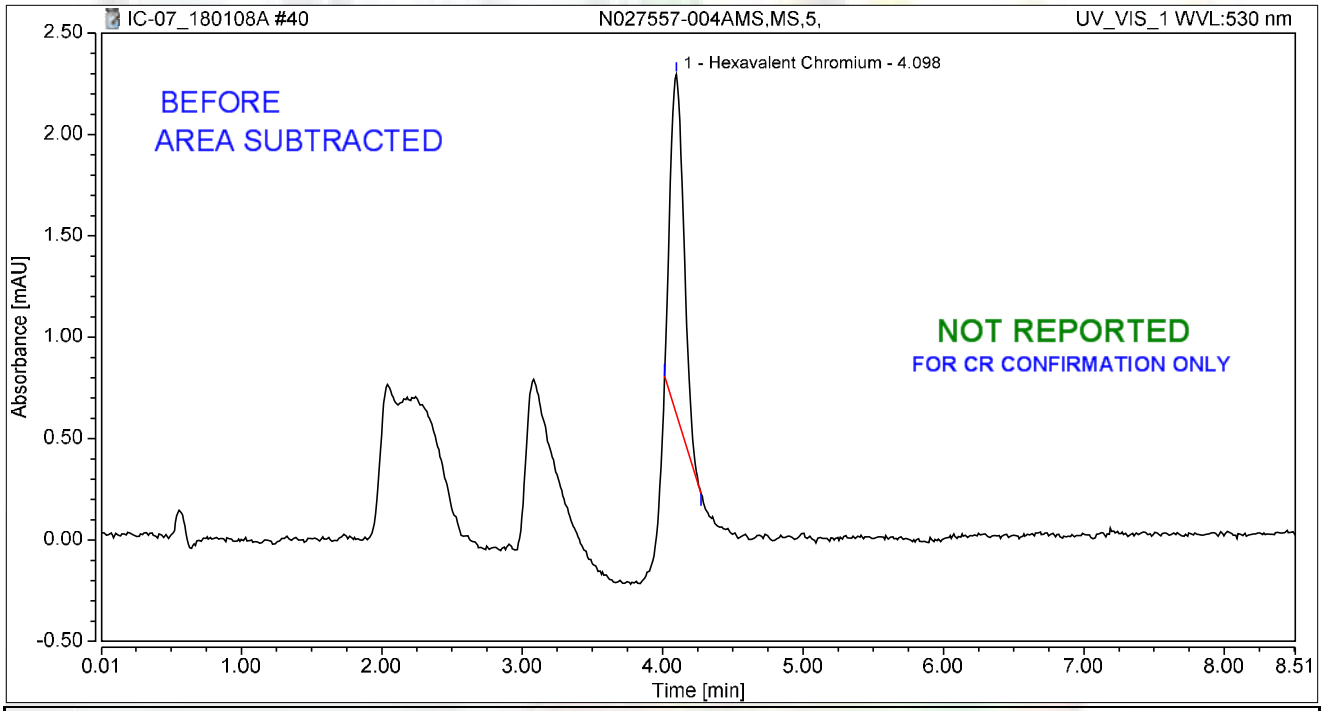
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.192	1.676	100.00	100.00	0.7404
Total:			**0.192**	**1.676**	**100.00**	**100.00**	

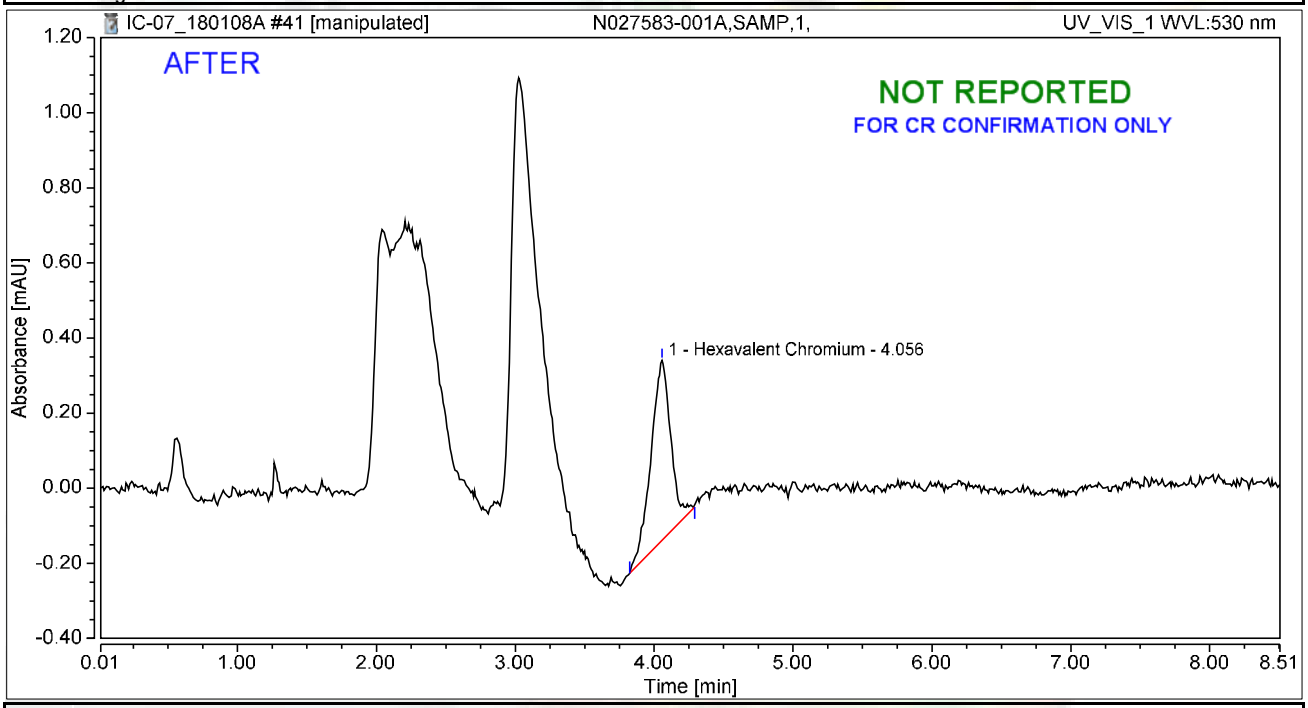
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.079	0.479	100.00	100.00	0.3088
Total:			**0.079**	**0.479**	**100.00**	**100.00**	

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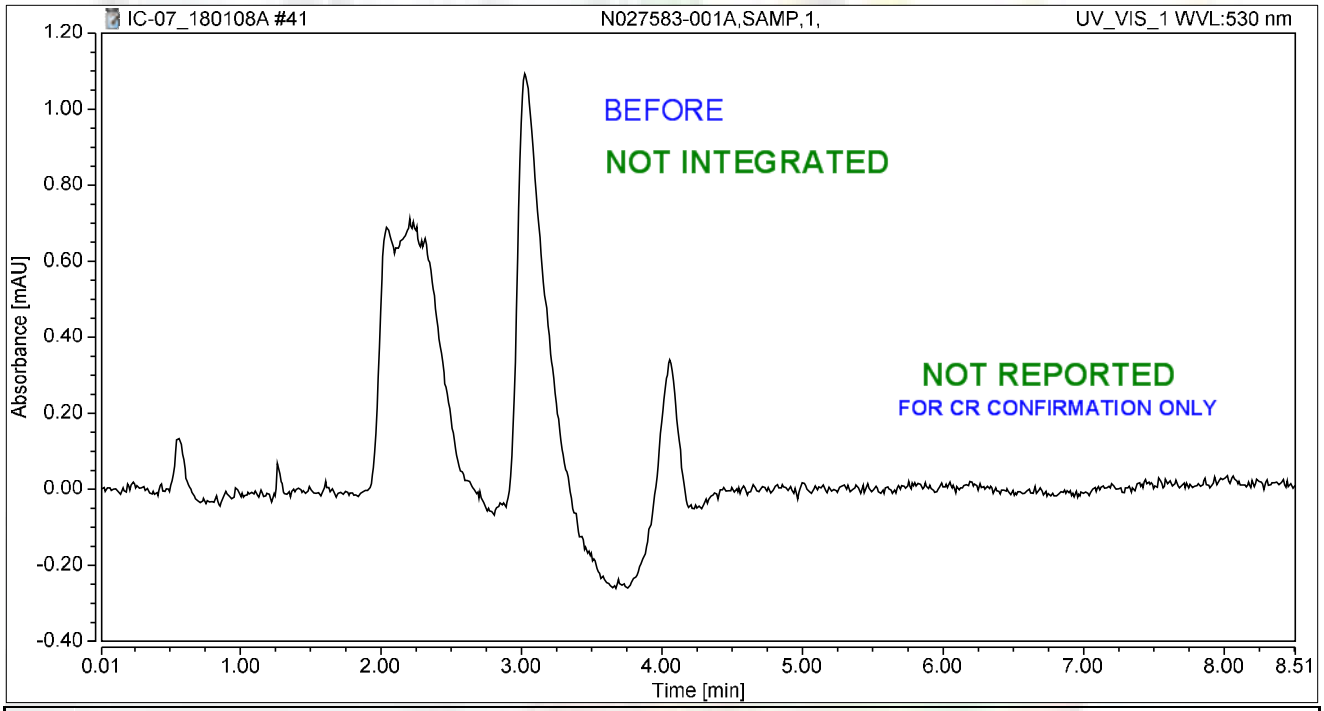
Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

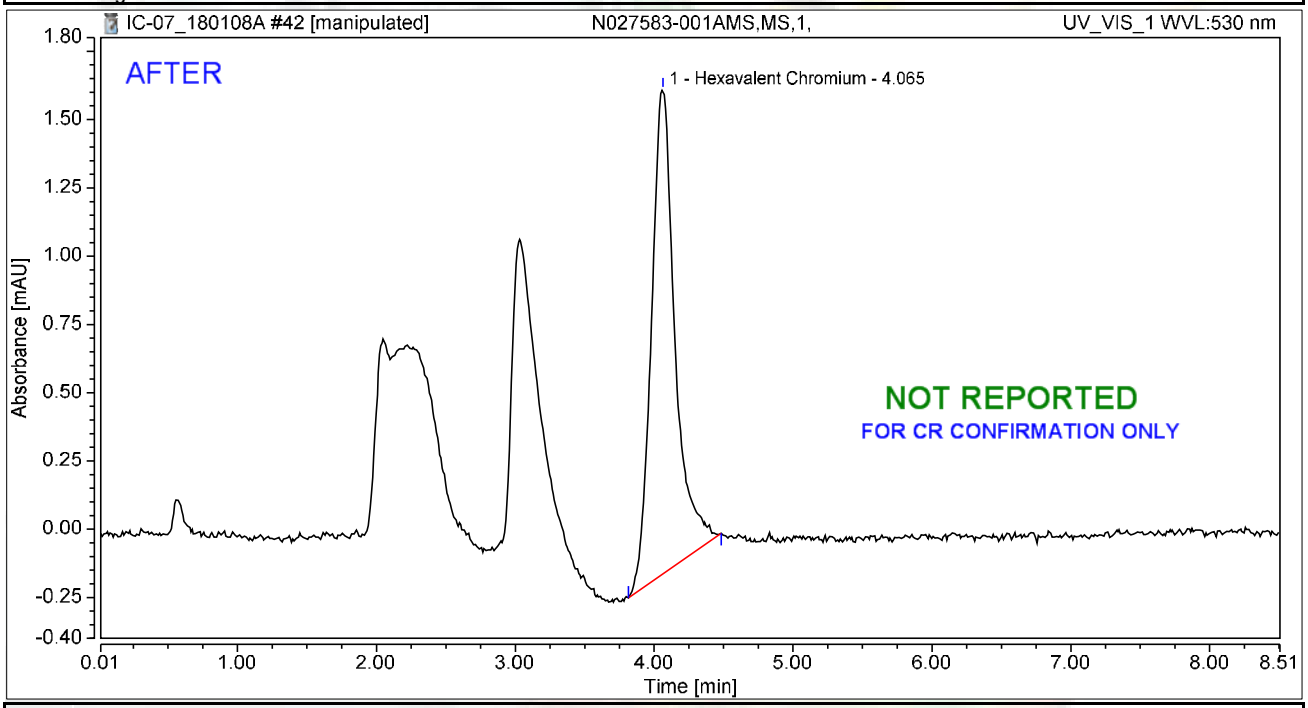
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.350	1.773	100.00	100.00	1.3670
Total:			**0.350**	**1.773**	**100.00**	**100.00**	

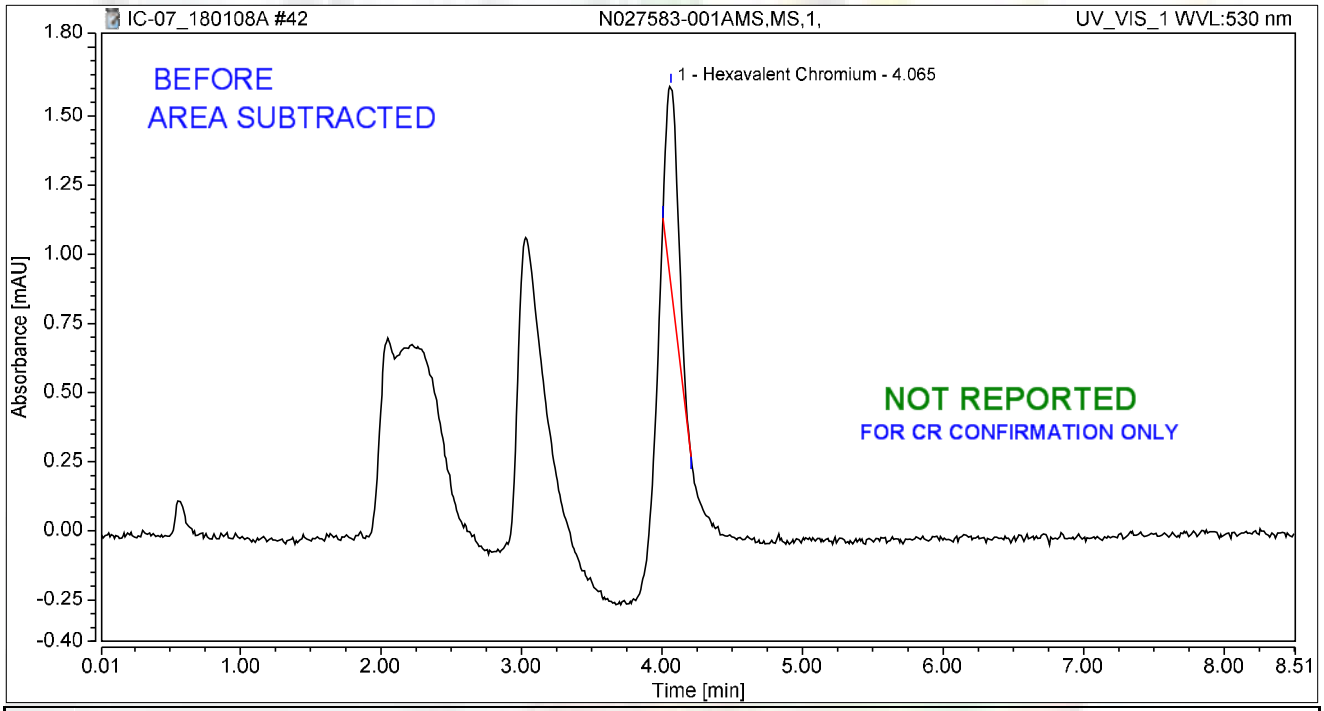
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.073	0.730	100.00	100.00	0.2831
Total:			**0.073**	**0.730**	**100.00**	**100.00**	

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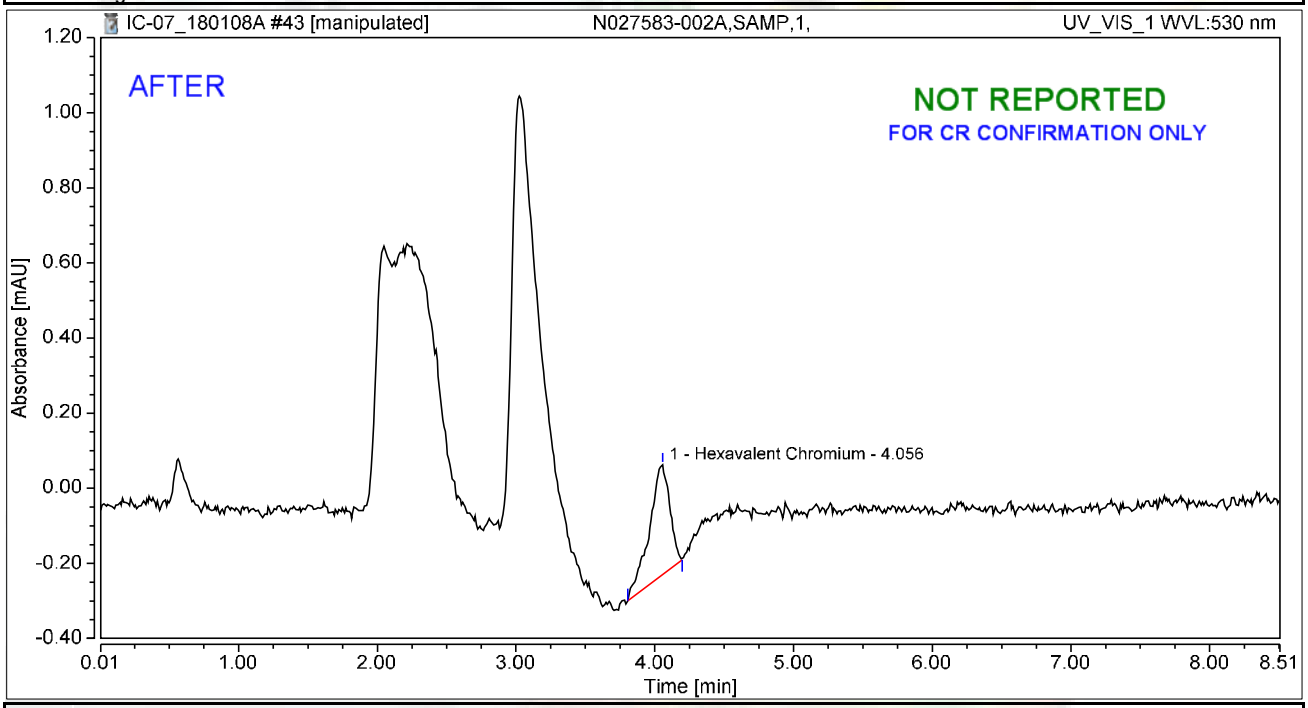
Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.050	0.292	100.00	100.00	0.1973
Total:			**0.050**	**0.292**	**100.00**	**100.00**	

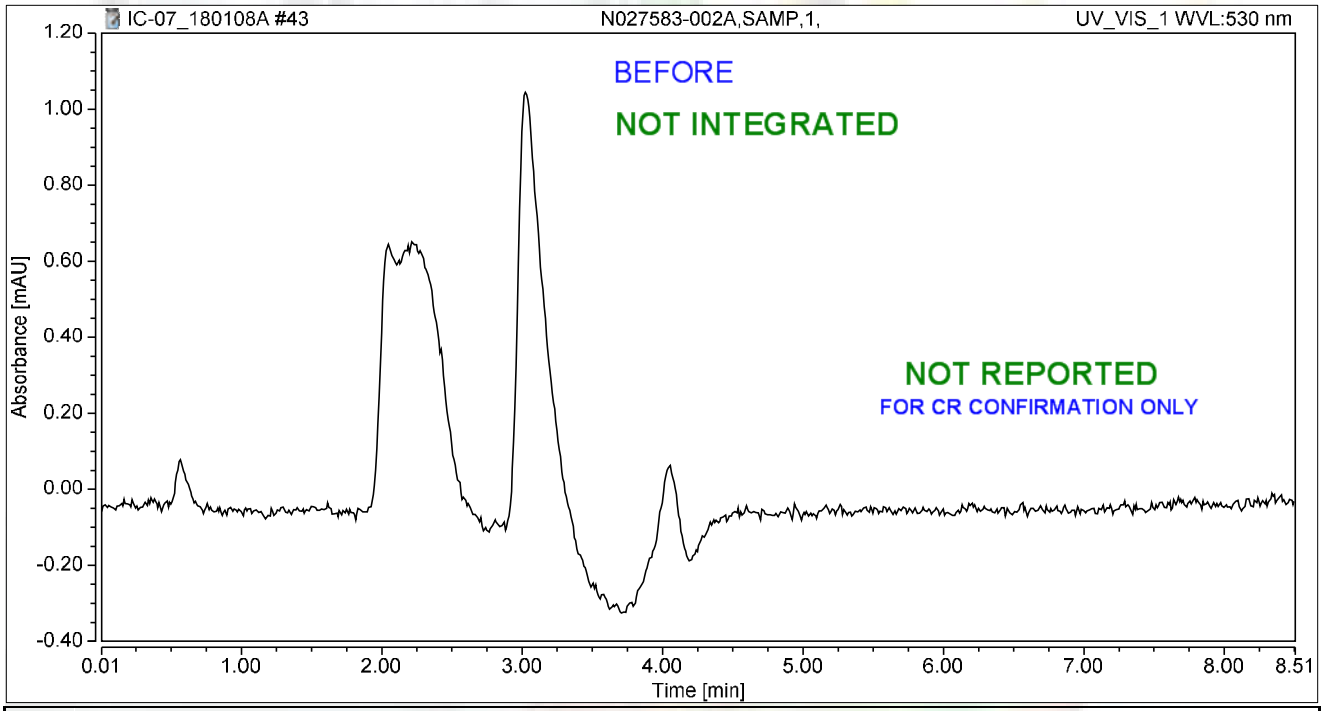
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

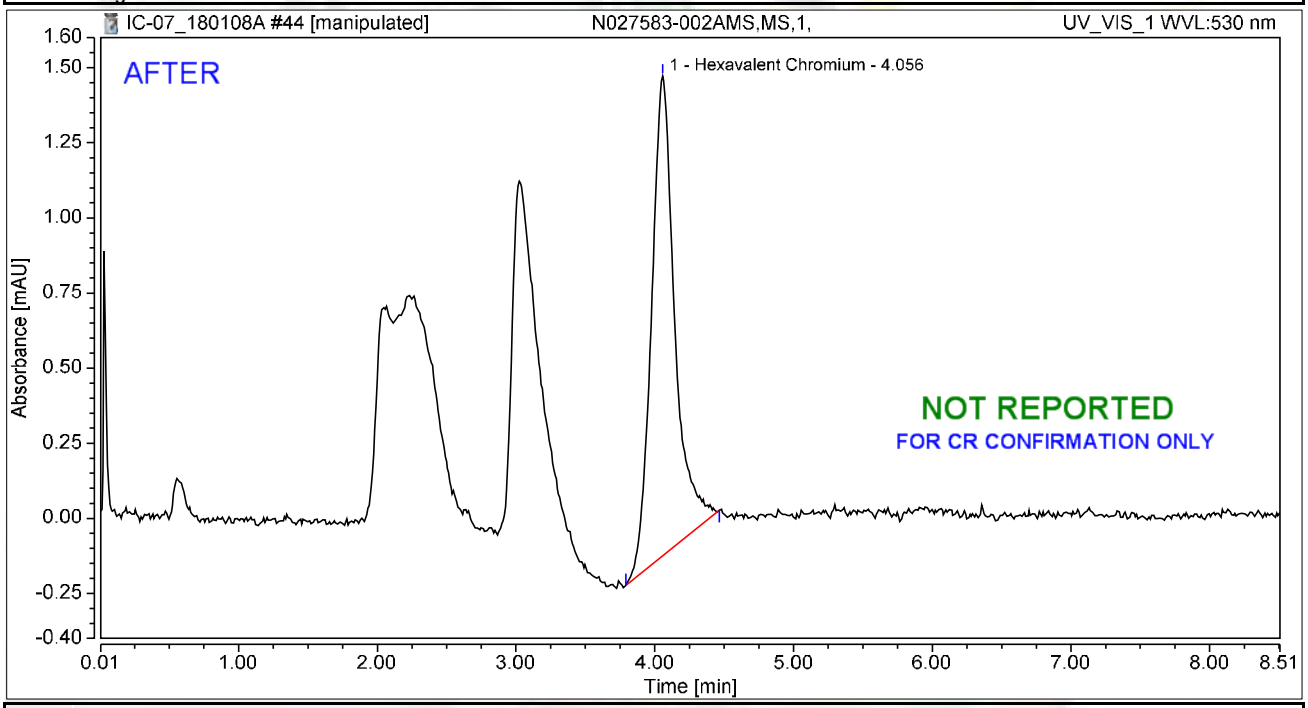
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.310	1.597	100.00	100.00	1.2138
Total:			**0.310**	**1.597**	**100.00**	**100.00**	

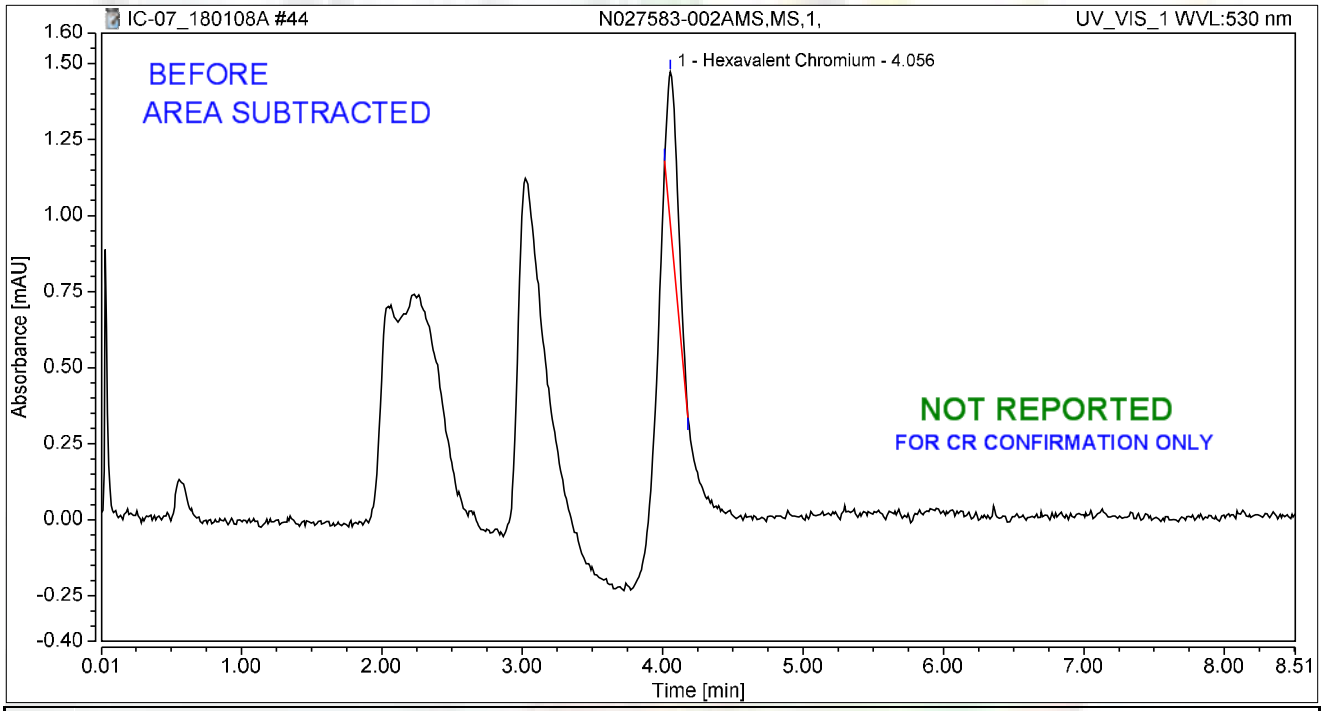
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.047	0.503	100.00	100.00	0.1810
Total:			**0.047**	**0.503**	**100.00**	**100.00**	

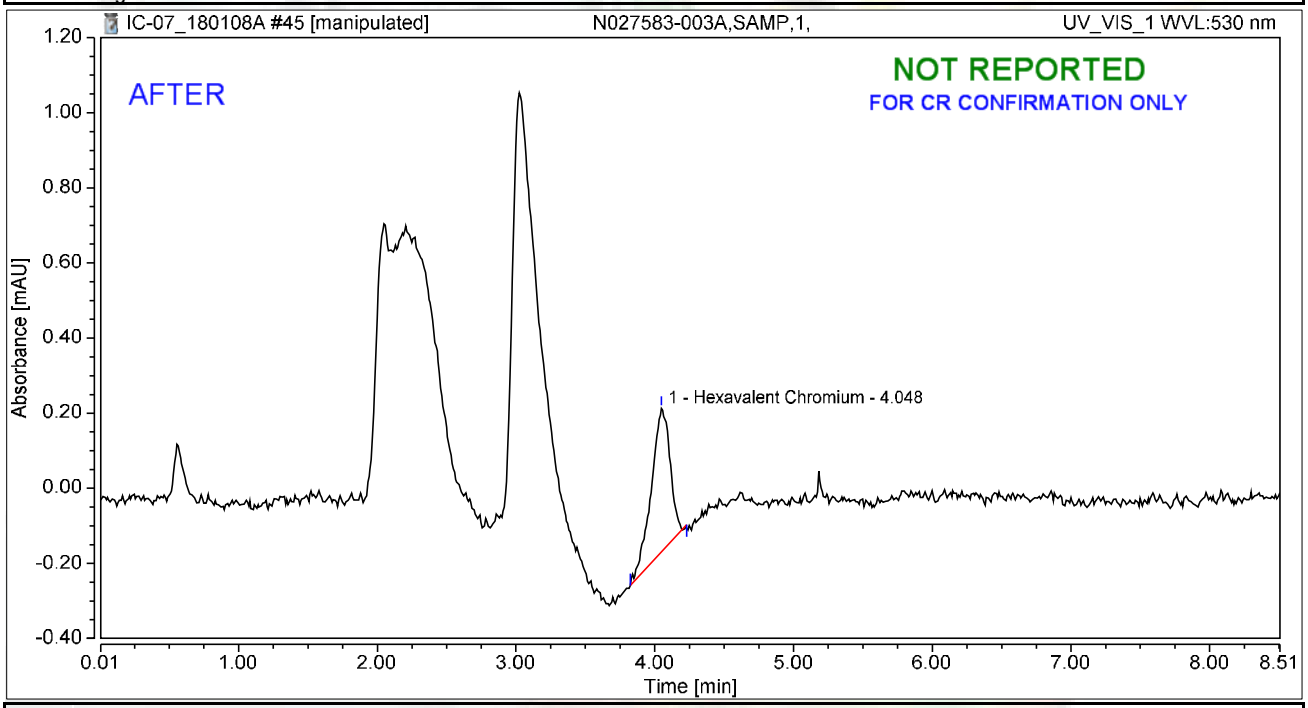
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.060	0.383	100.00	100.00	0.2344
Total:			**0.060**	**0.383**	**100.00**	**100.00**	

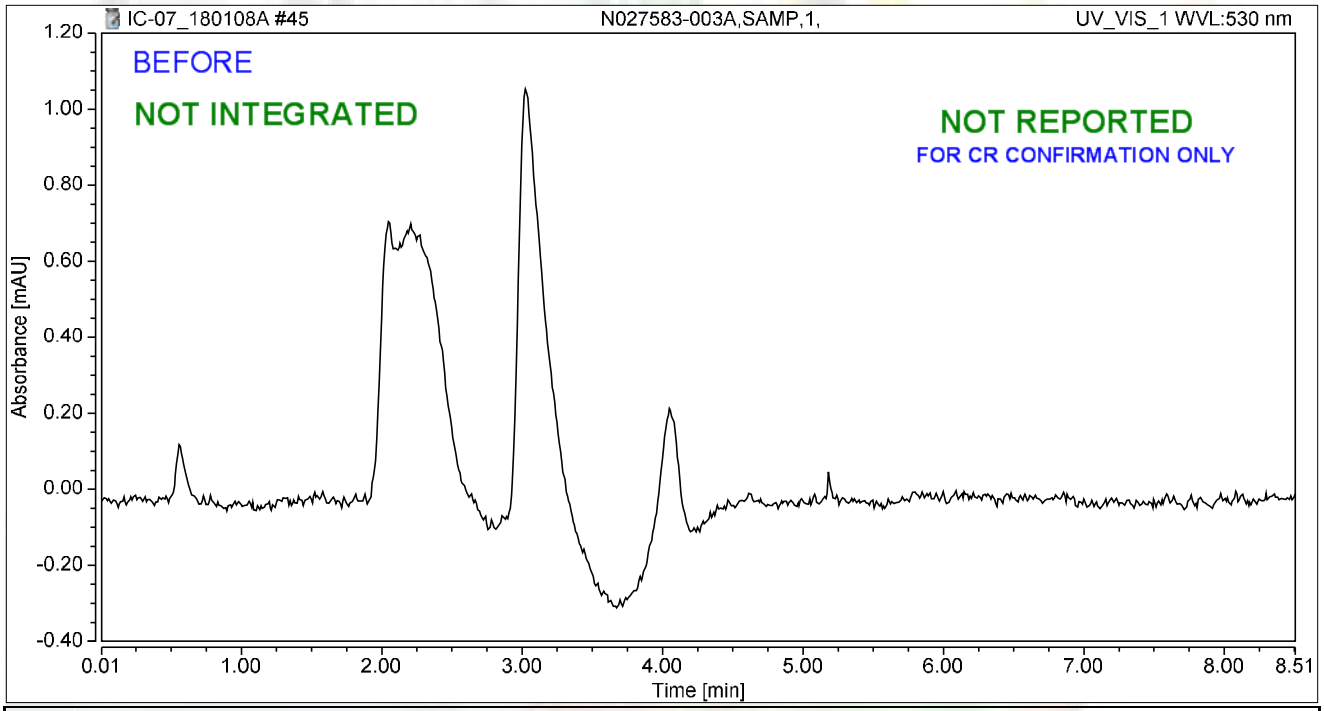
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

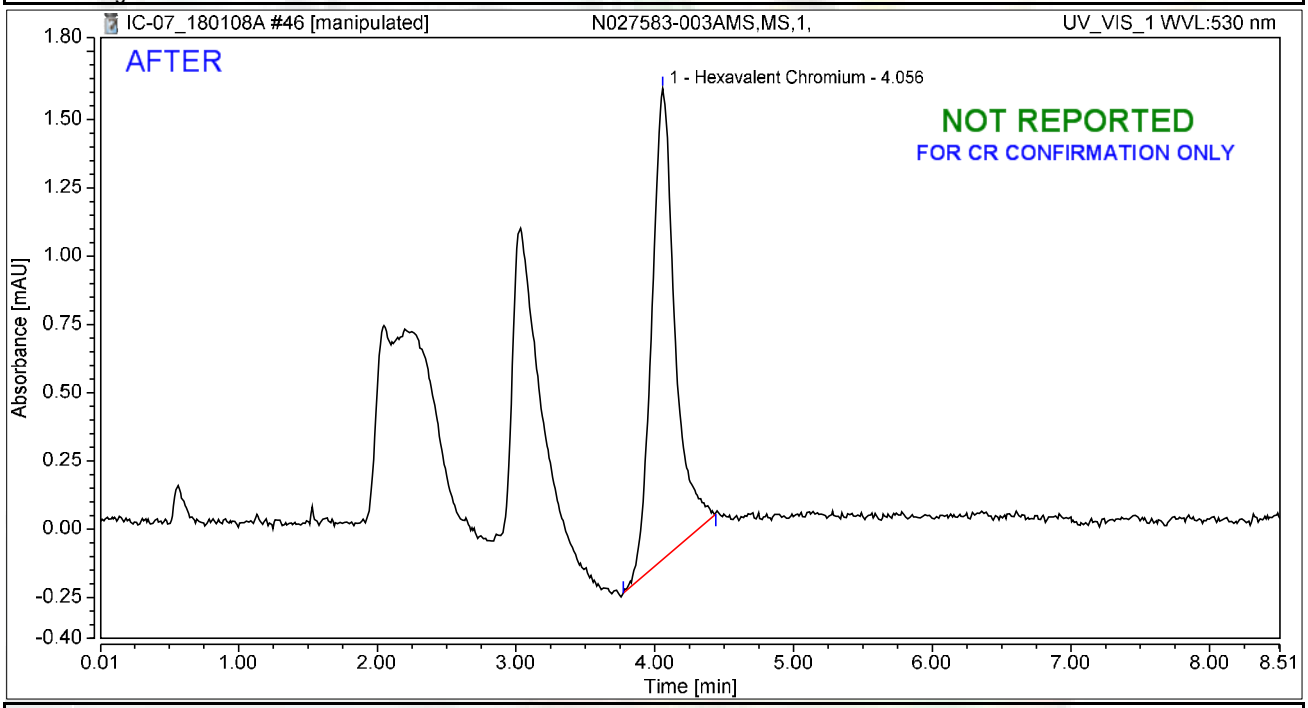
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.335	1.726	100.00	100.00	1.3100
Total:			**0.335**	**1.726**	**100.00**	**100.00**	

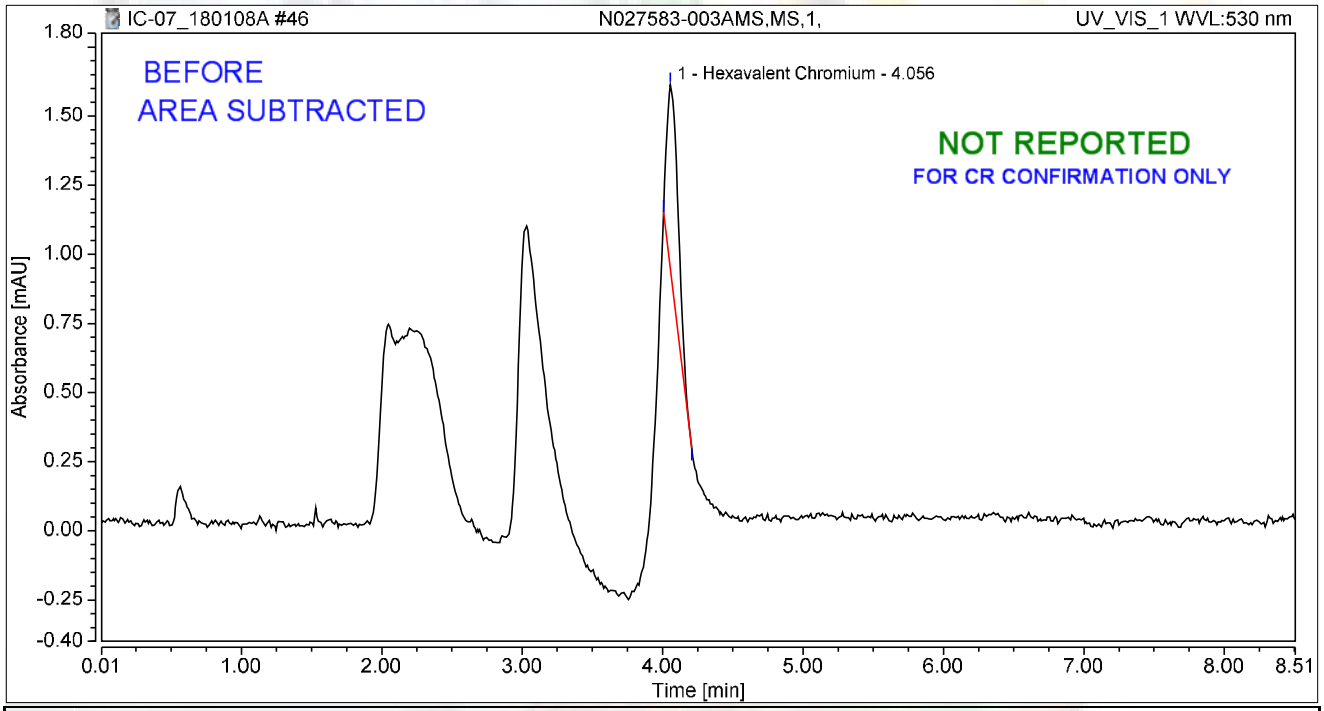
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.066	0.675	100.00	100.00	0.2558
Total:			**0.066**	**0.675**	**100.00**	**100.00**	

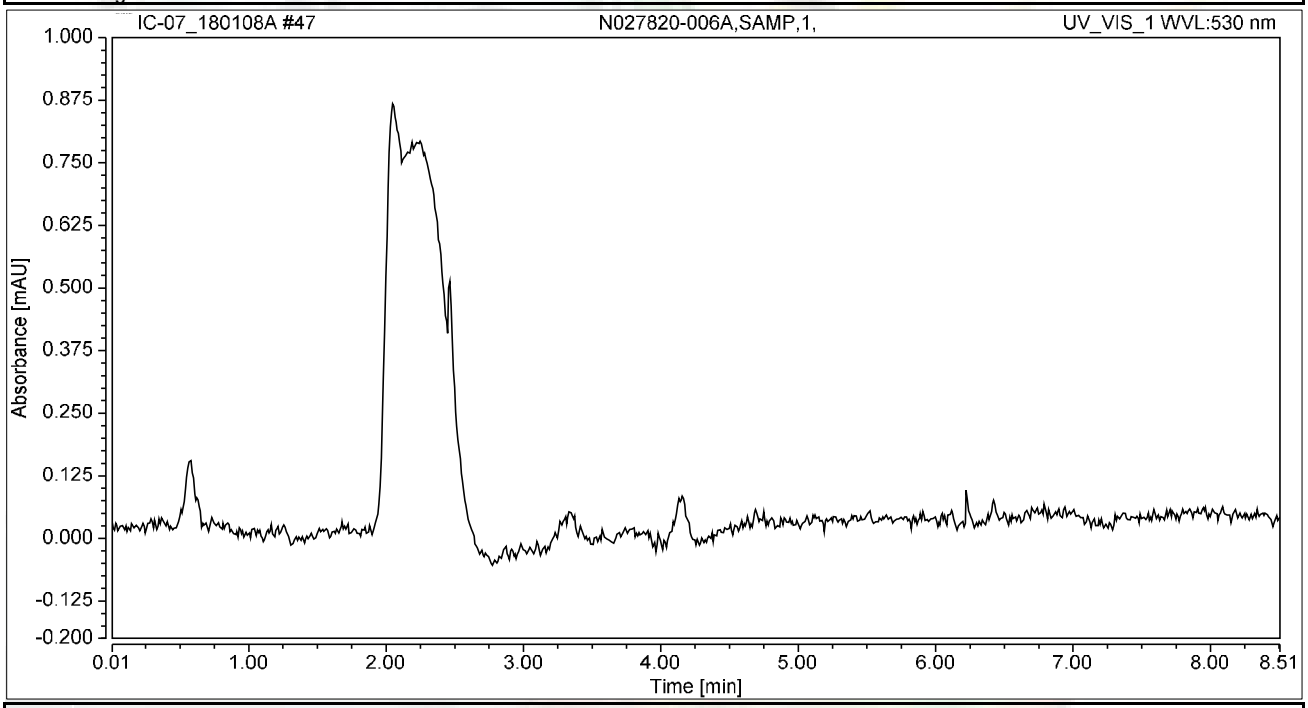
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

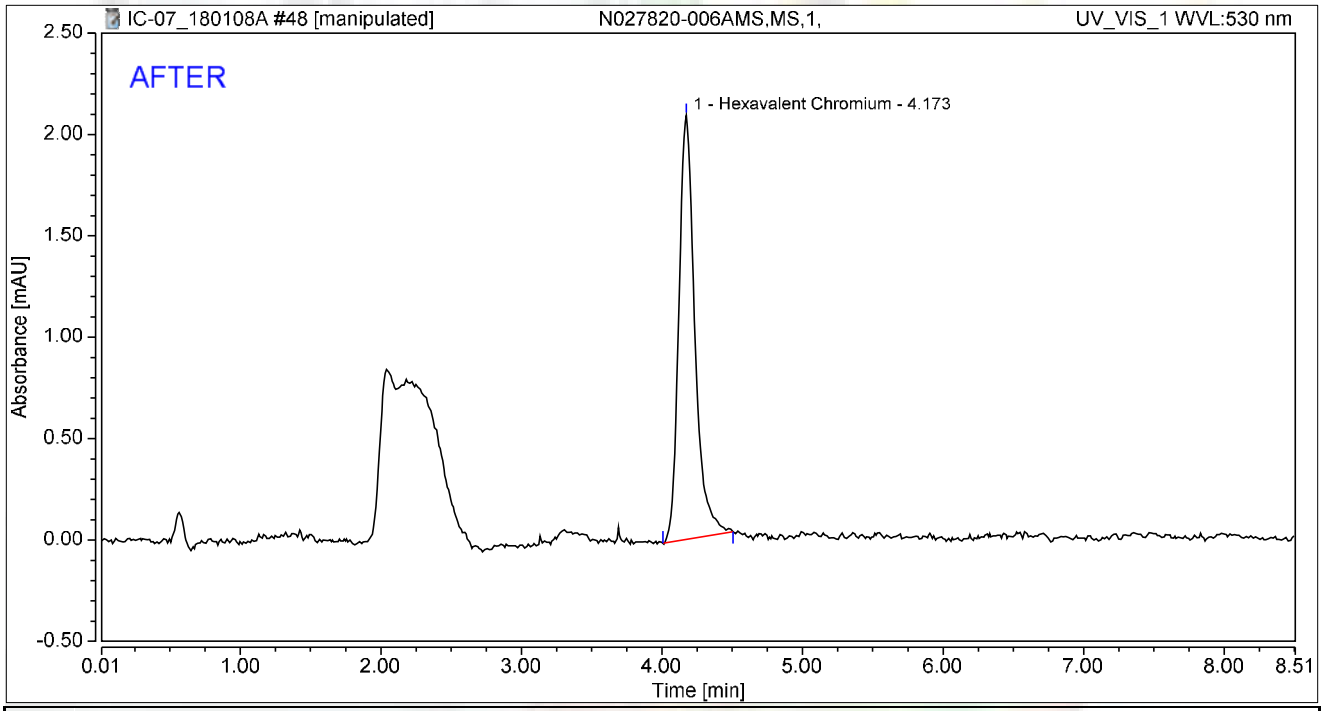
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.090	100.00	100.00	1.0786
Total:			**0.276**	**2.090**	**100.00**	**100.00**	

rba 1/10/2018

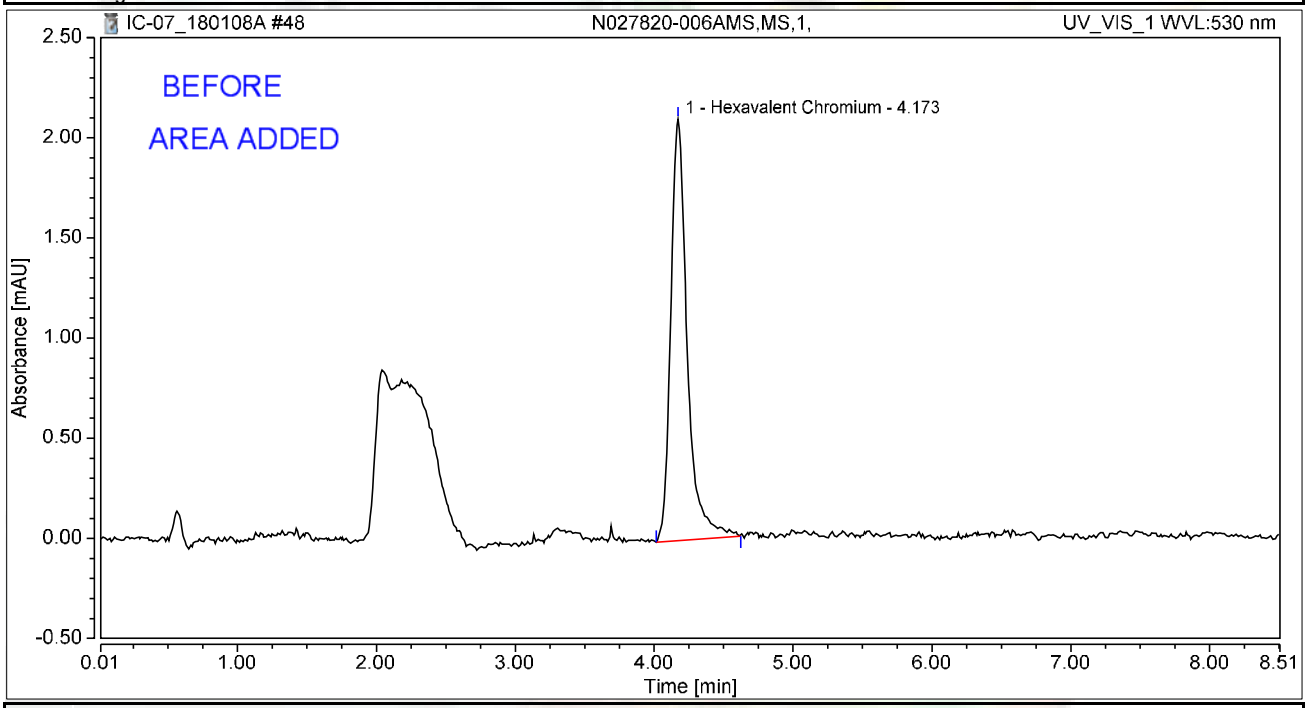
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.289	2.105	100.00	100.00	1.1287
Total:			**0.289**	**2.105**	**100.00**	**100.00**	

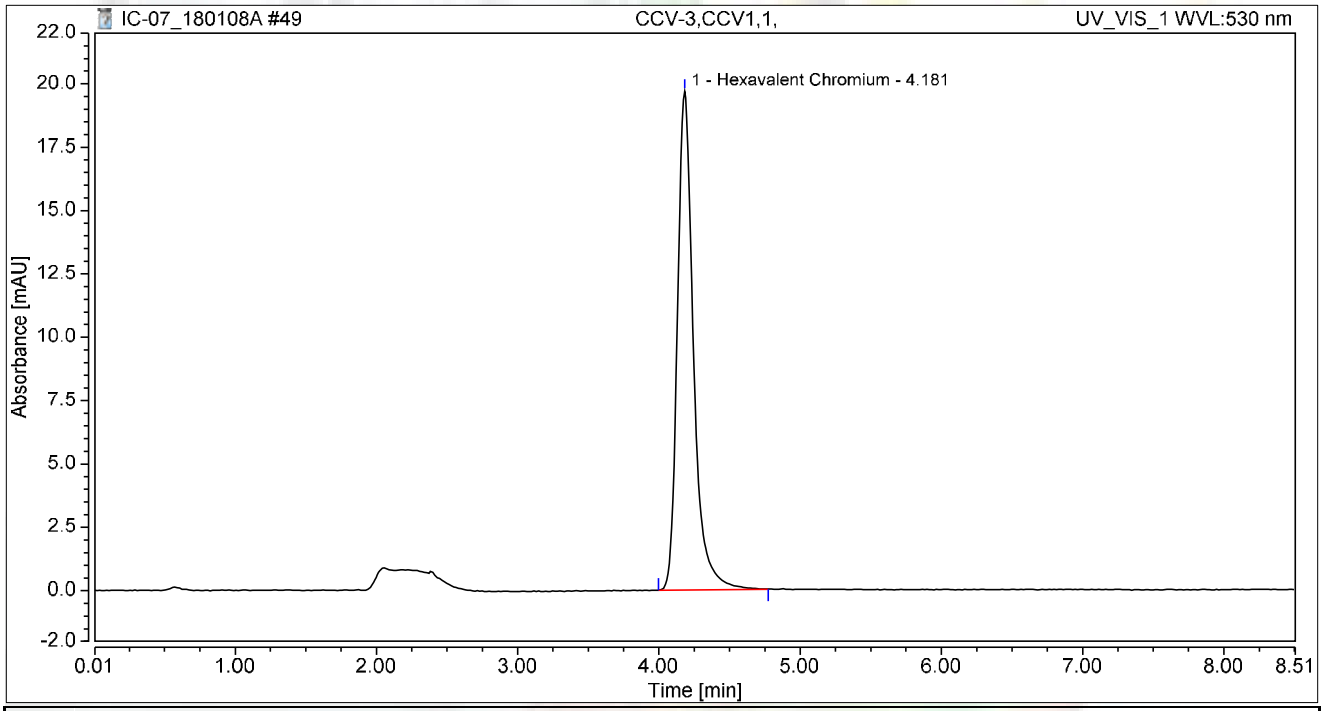
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

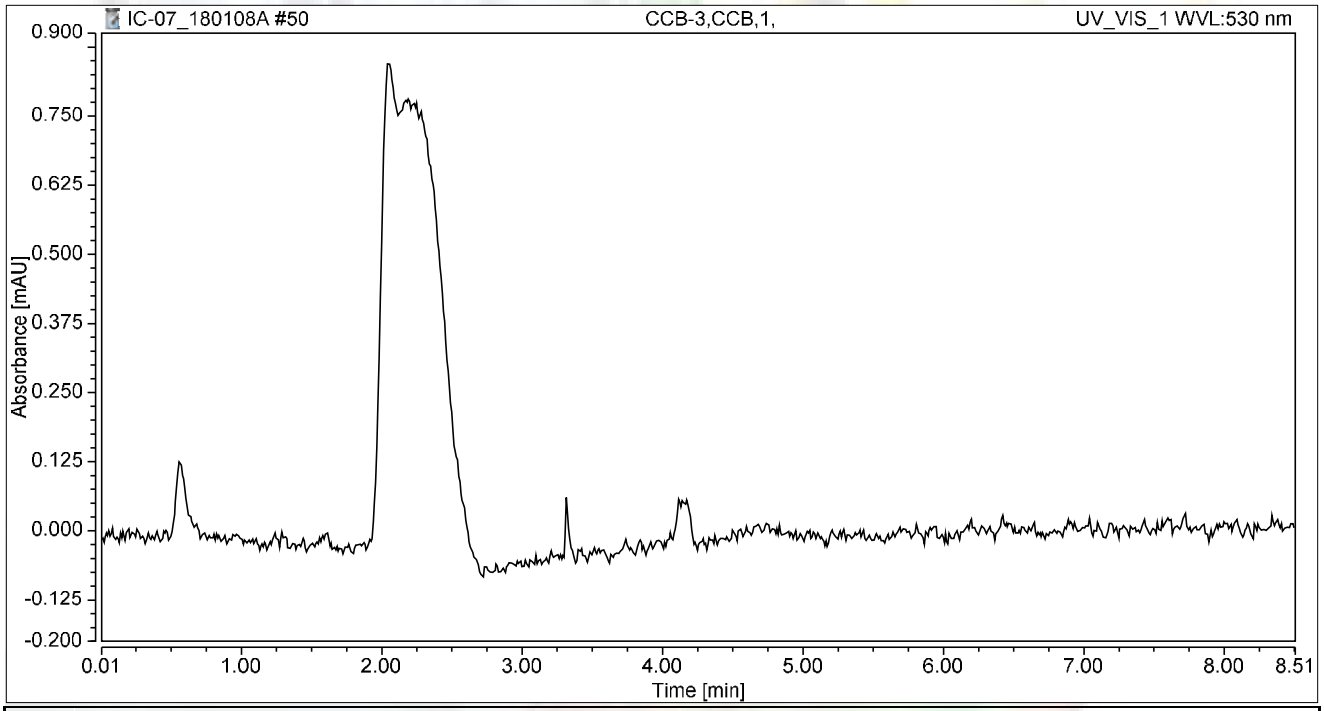
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.598	19.677	100.00	100.00	10.1608
Total:			**2.598**	**19.677**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

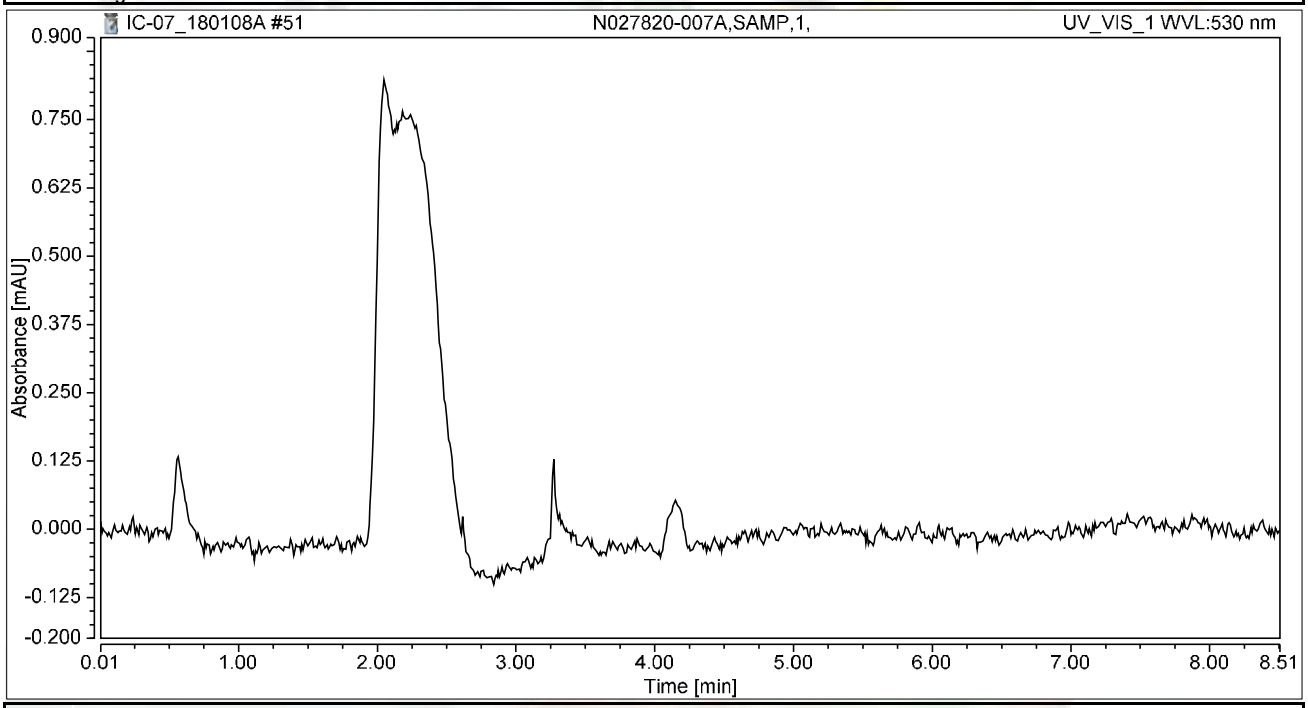
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

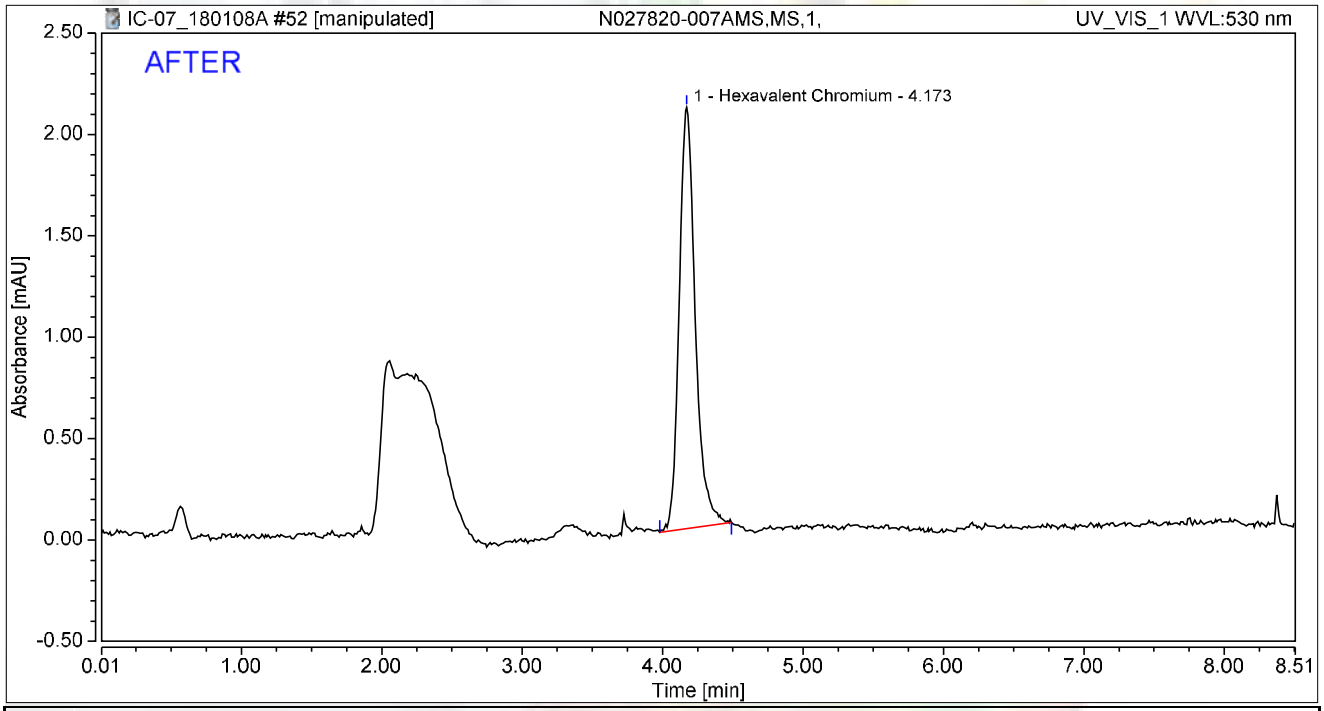
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.077	100.00	100.00	1.0767
Total:			**0.275**	**2.077**	**100.00**	**100.00**	

rba 1/10/2018

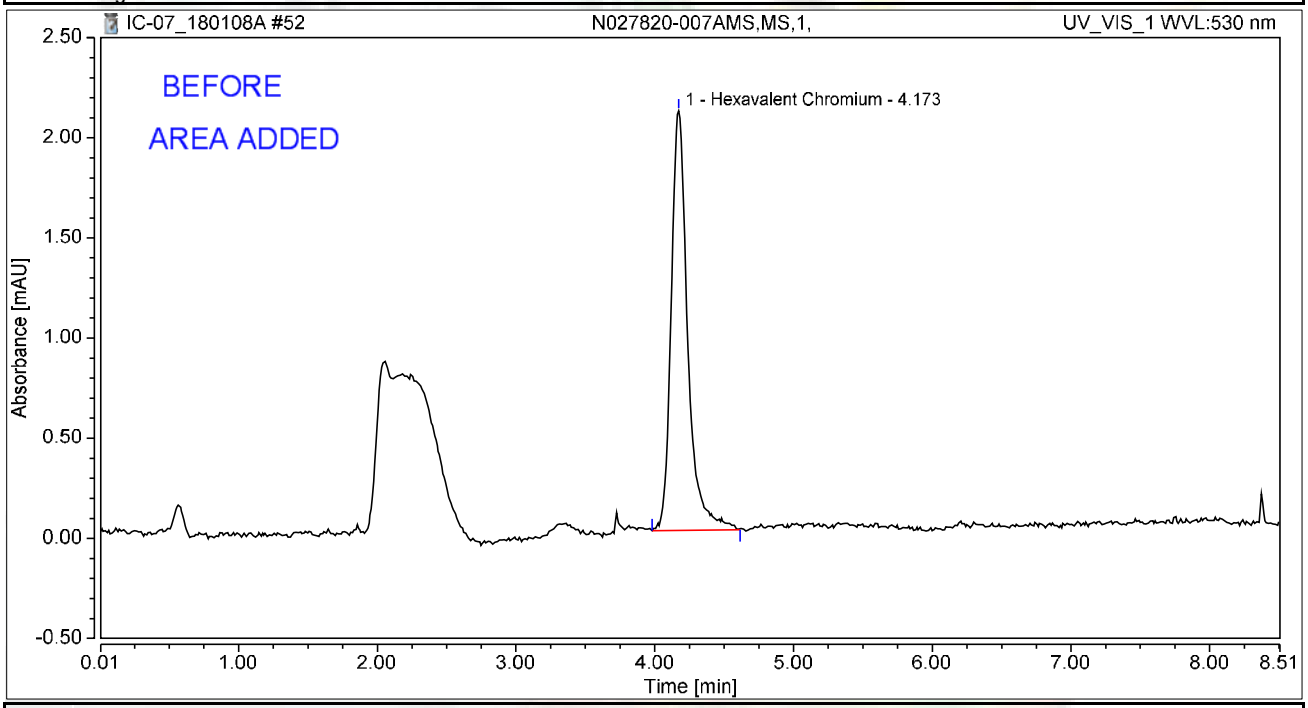
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.290	2.094	100.00	100.00	1.1336
Total:			**0.290**	**2.094**	**100.00**	**100.00**	

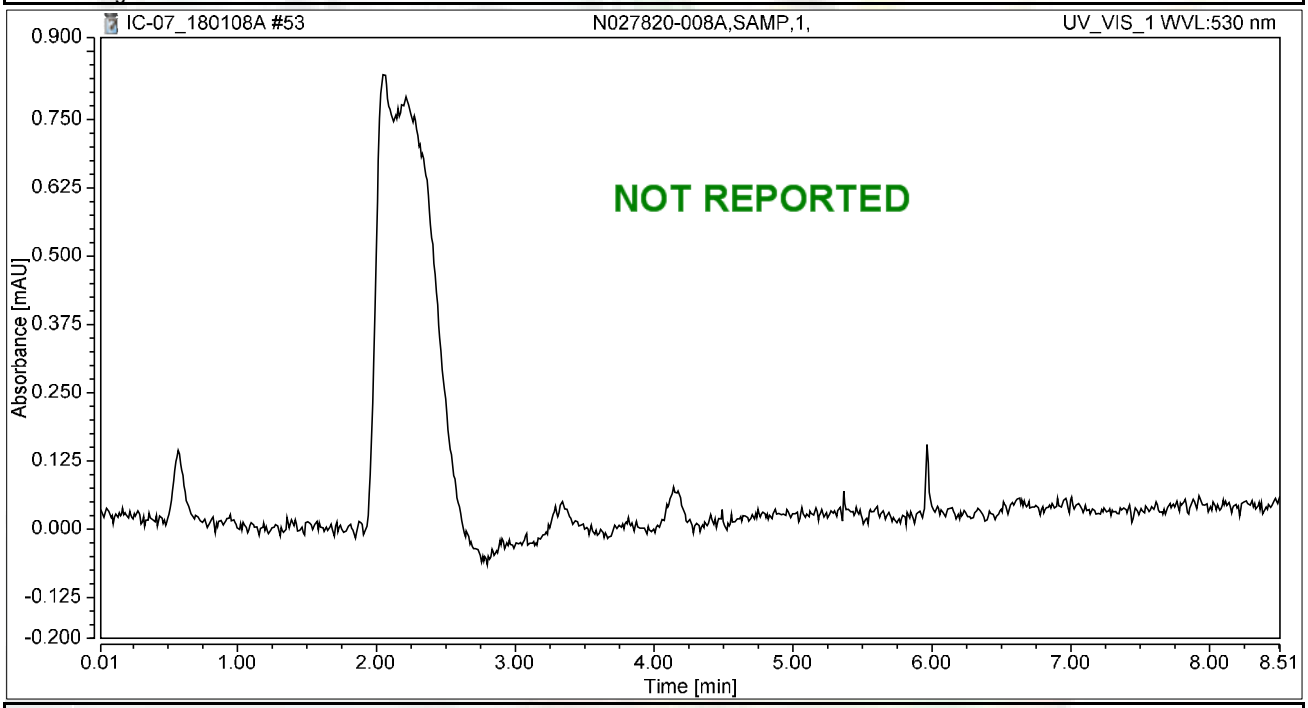
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

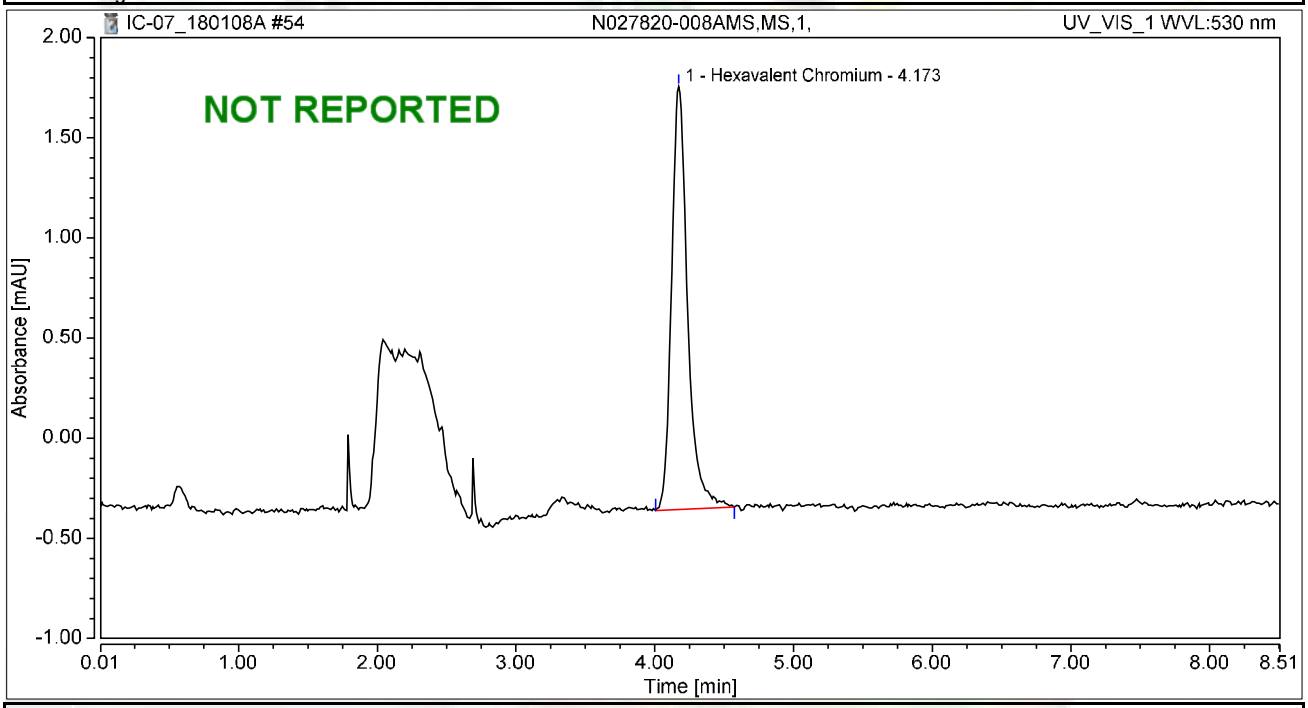
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

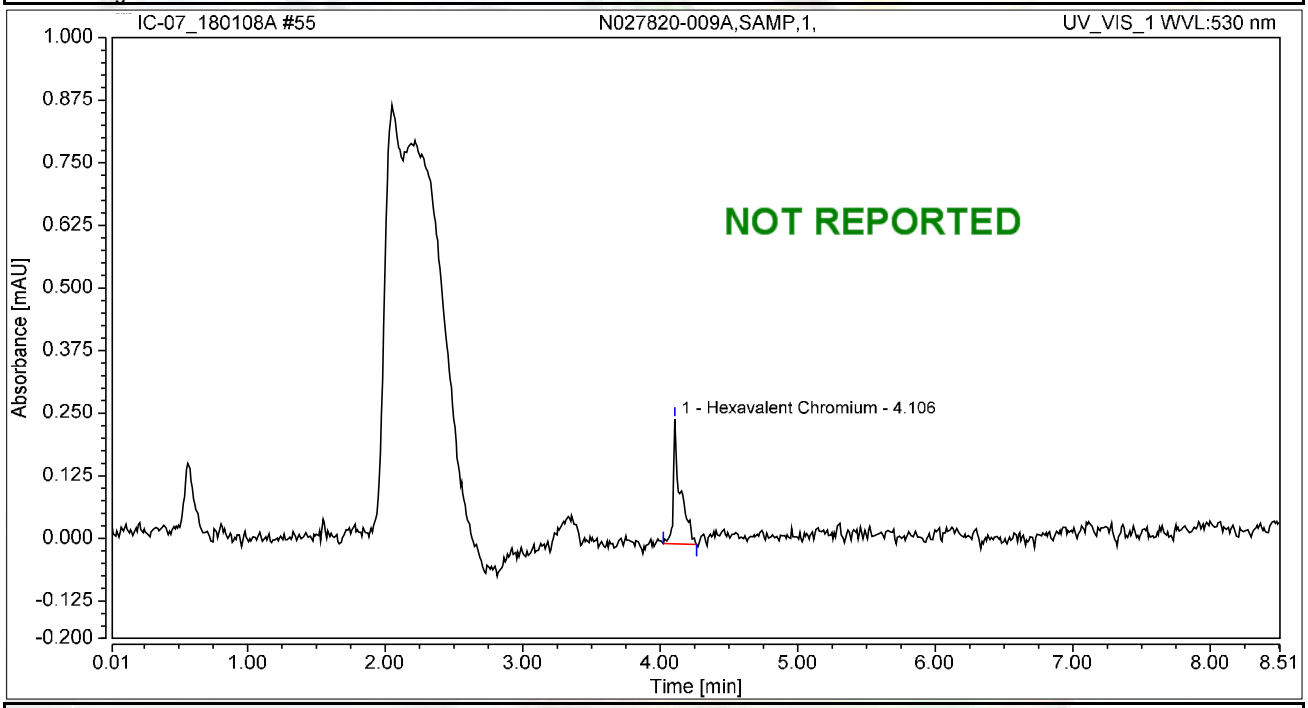
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.113	100.00	100.00	1.1081
Total:			**0.283**	**2.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

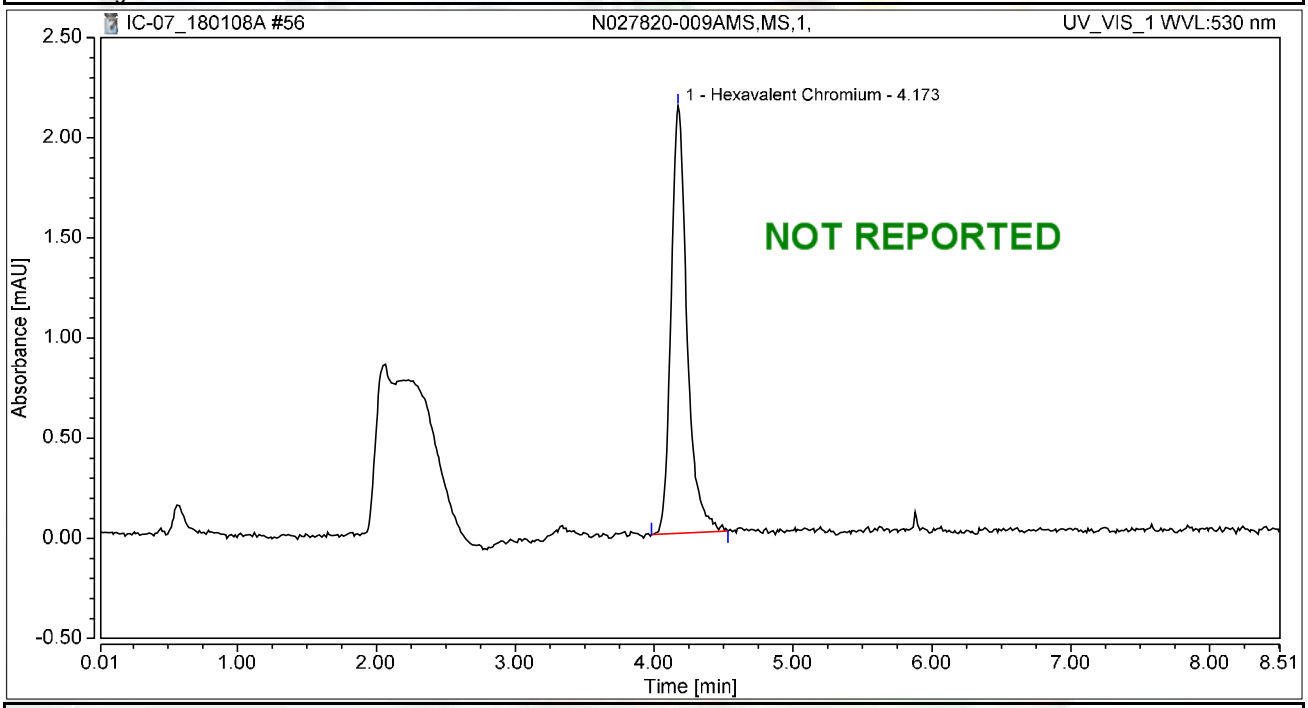
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.015	0.249	100.00	100.00	0.0568
Total:			**0.015**	**0.249**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

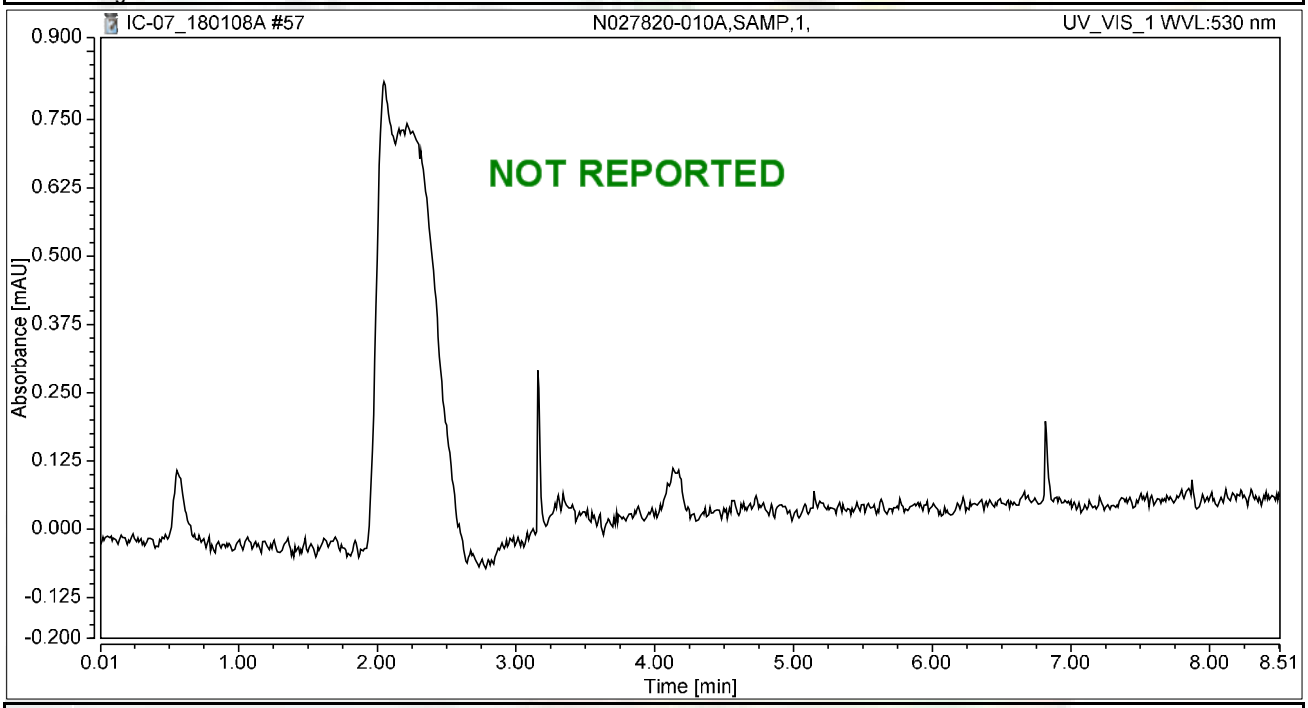
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.134	100.00	100.00	1.1118
Total:			**0.284**	**2.134**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

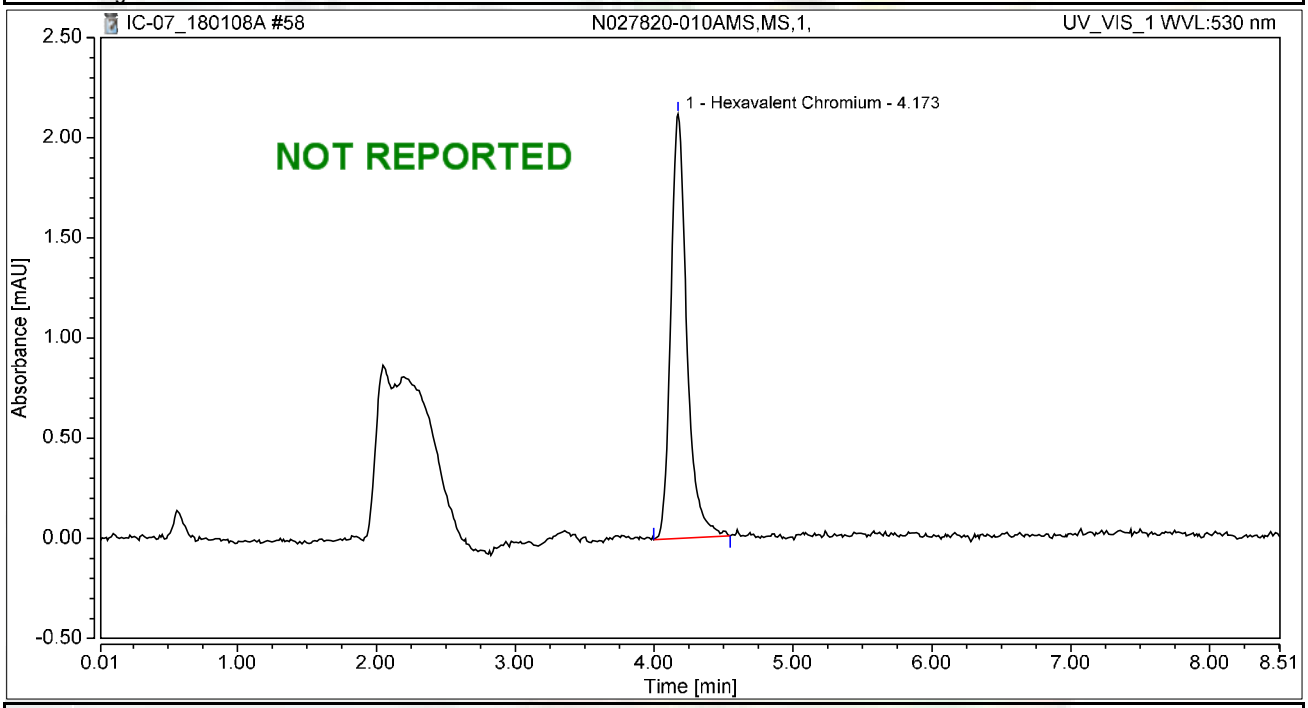
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

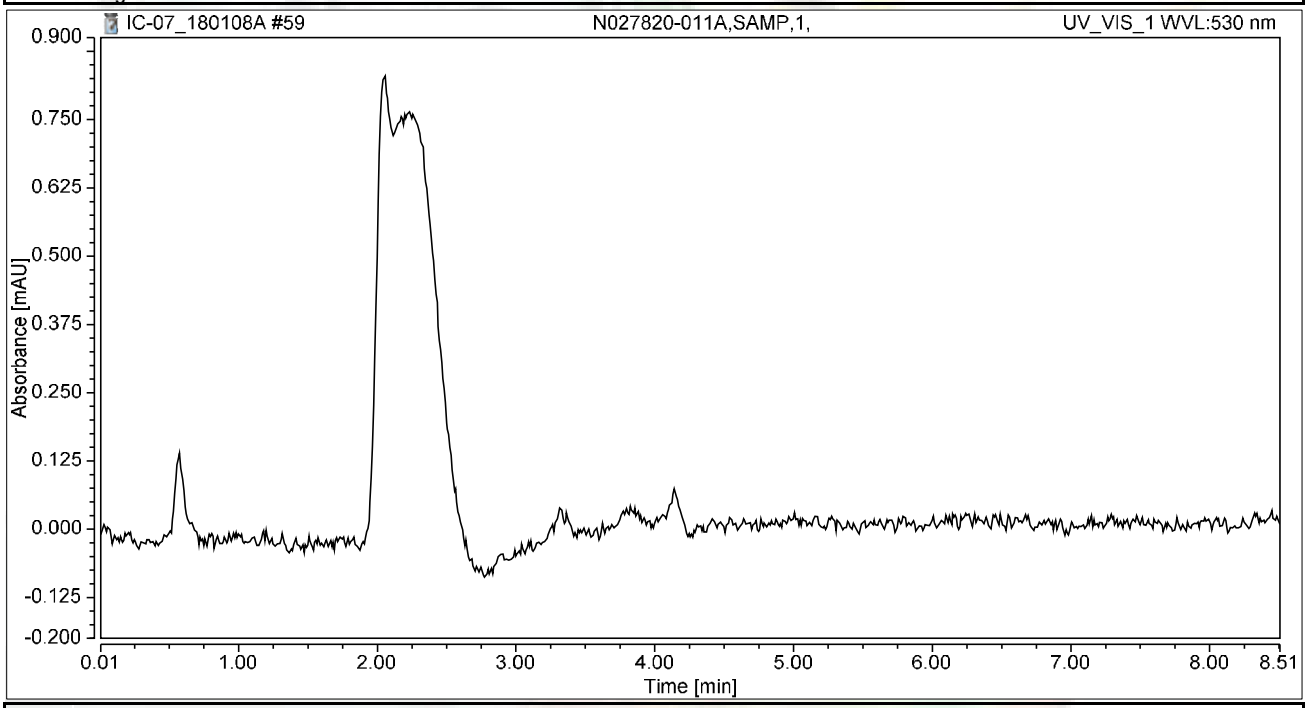
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.118	100.00	100.00	1.1083
Total:			**0.283**	**2.118**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

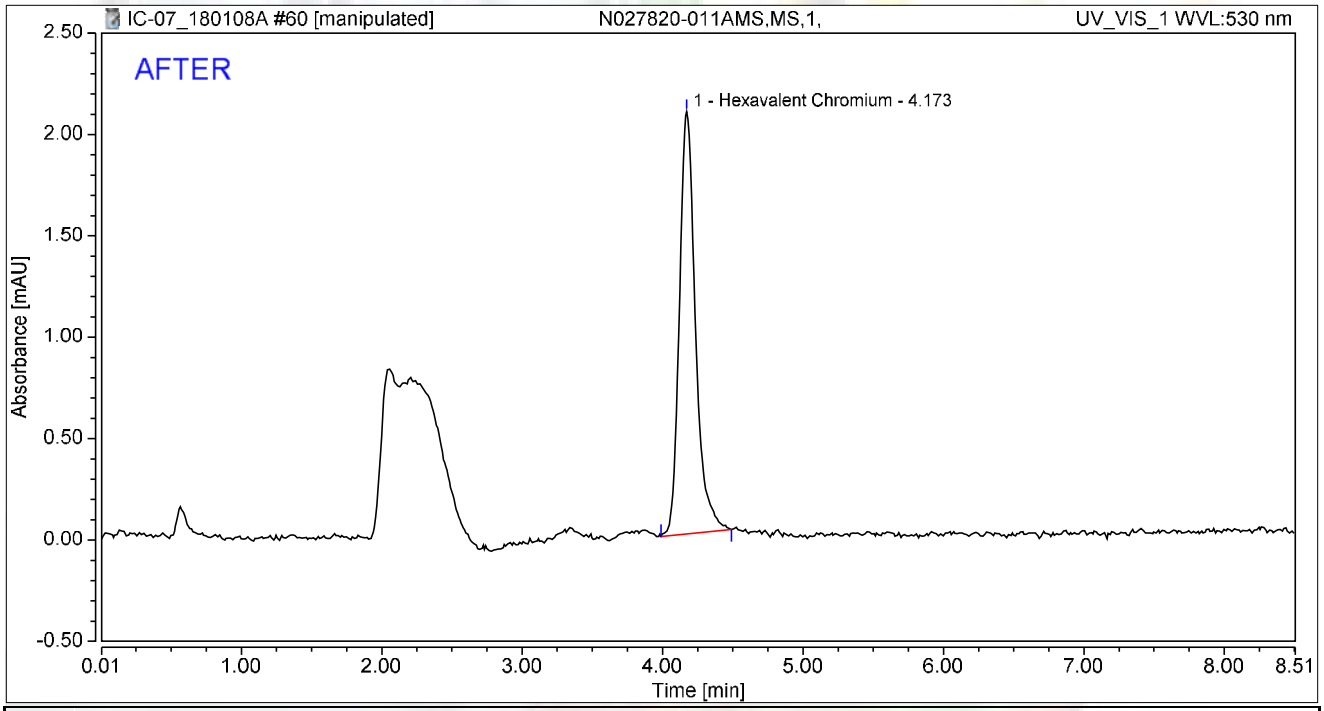
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.083	100.00	100.00	1.0774
Total:			**0.275**	**2.083**	**100.00**	**100.00**	

rba 1/10/2018

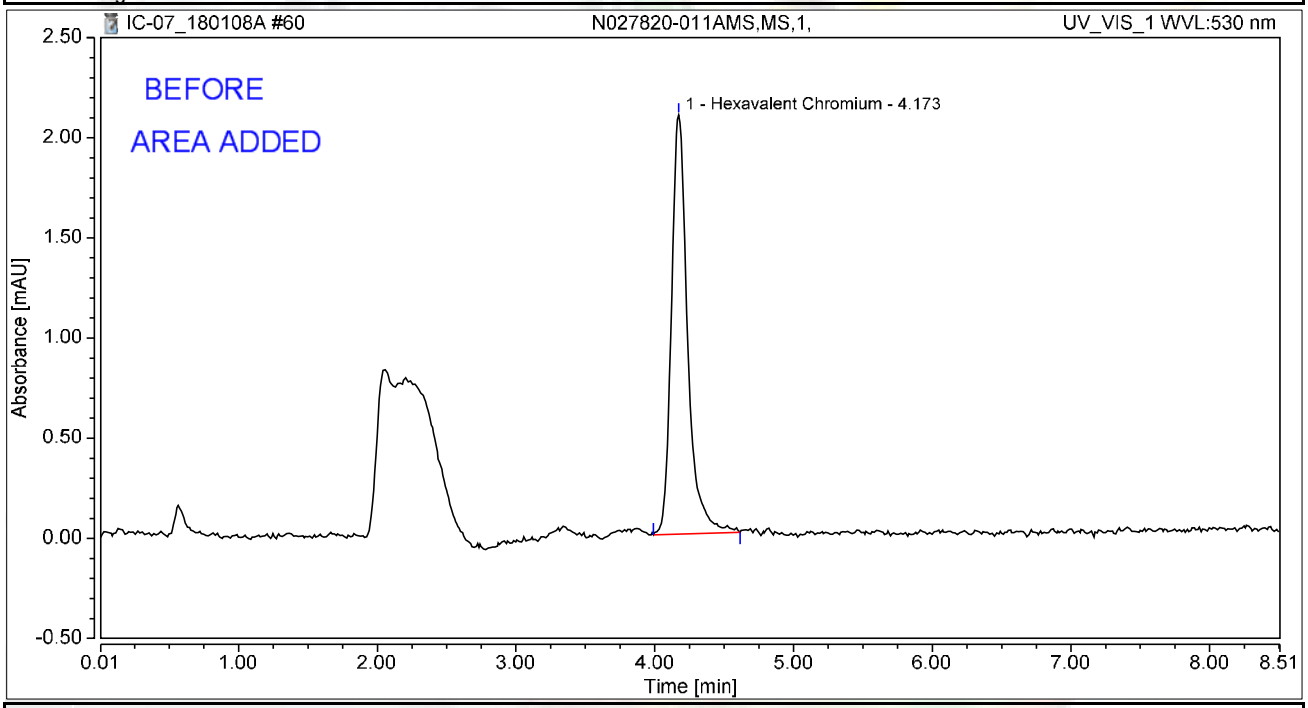
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.092	100.00	100.00	1.1105
Total:			**0.284**	**2.092**	**100.00**	**100.00**	

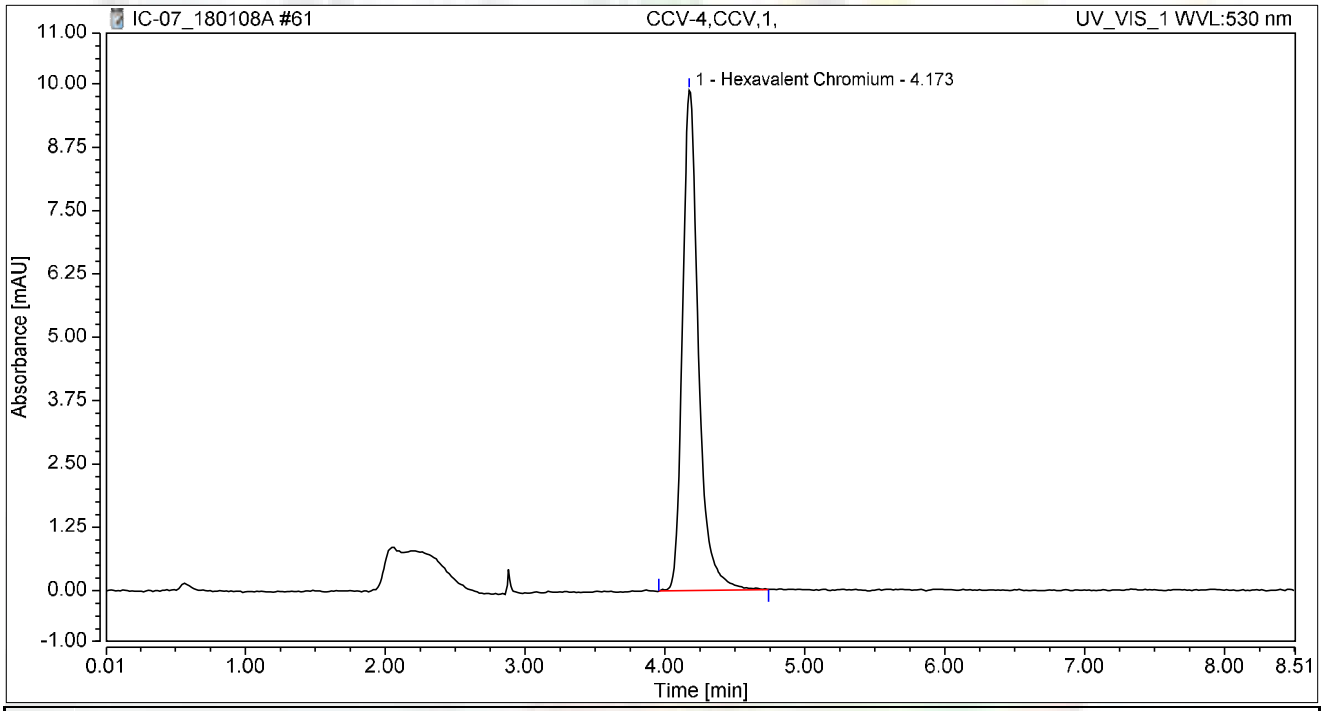
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

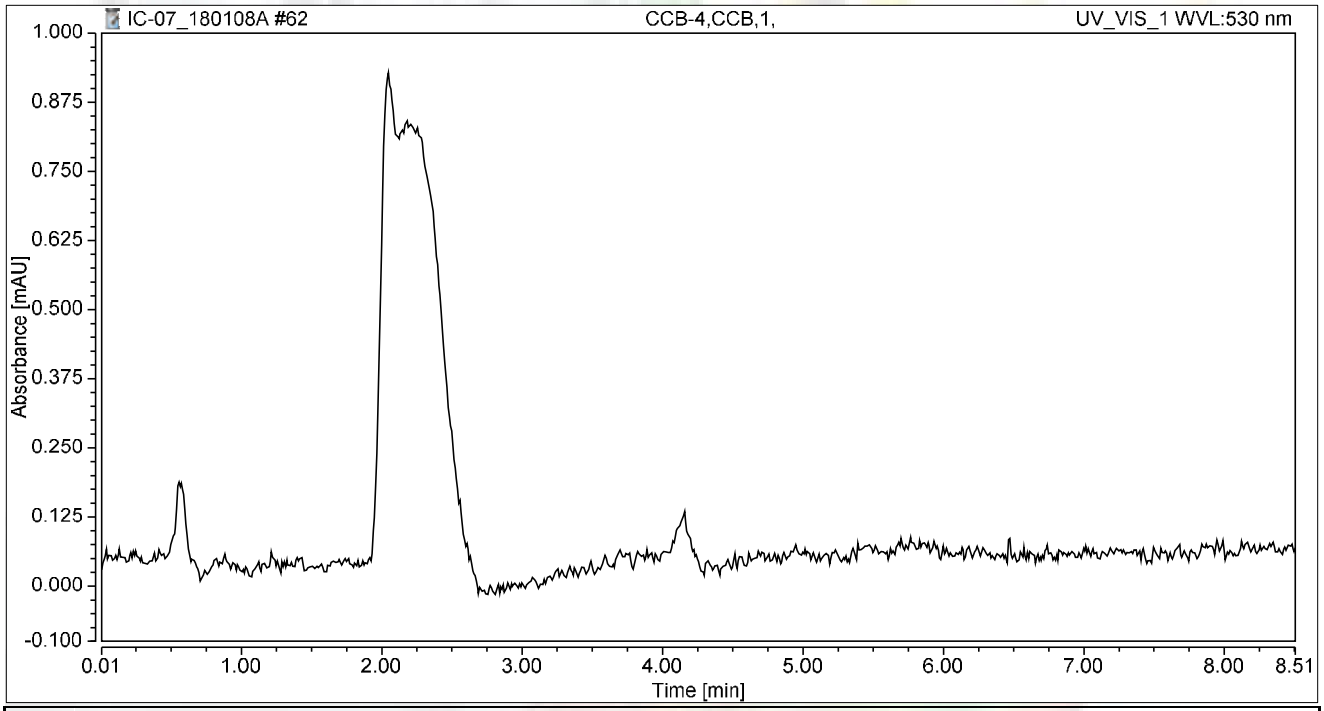
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.308	9.867	100.00	100.00	5.1168
Total:			**1.308**	**9.867**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

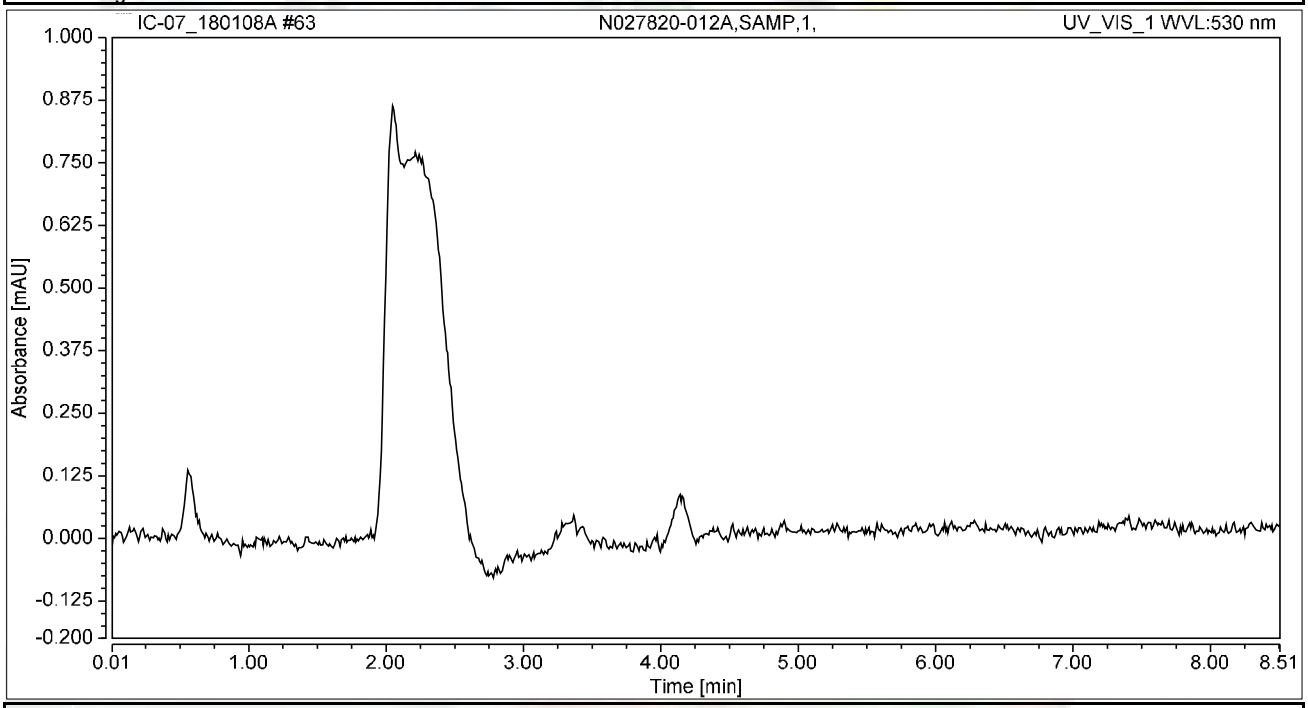
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

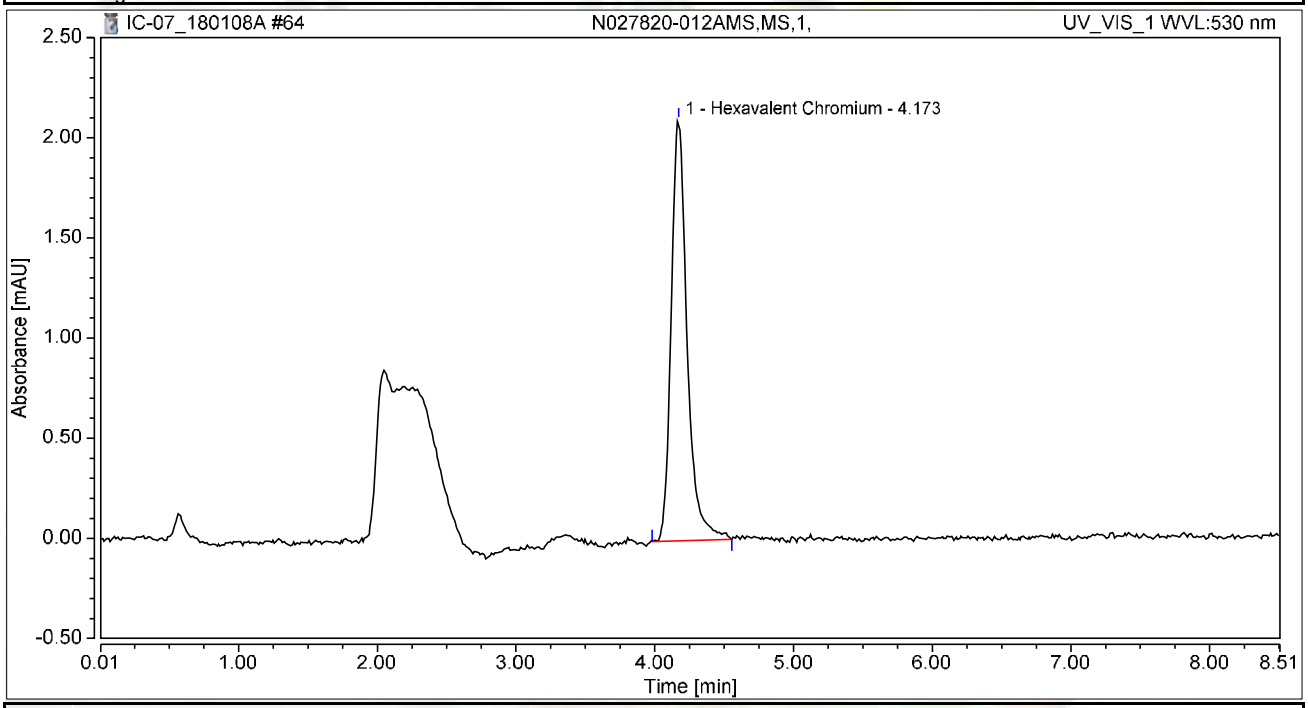
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

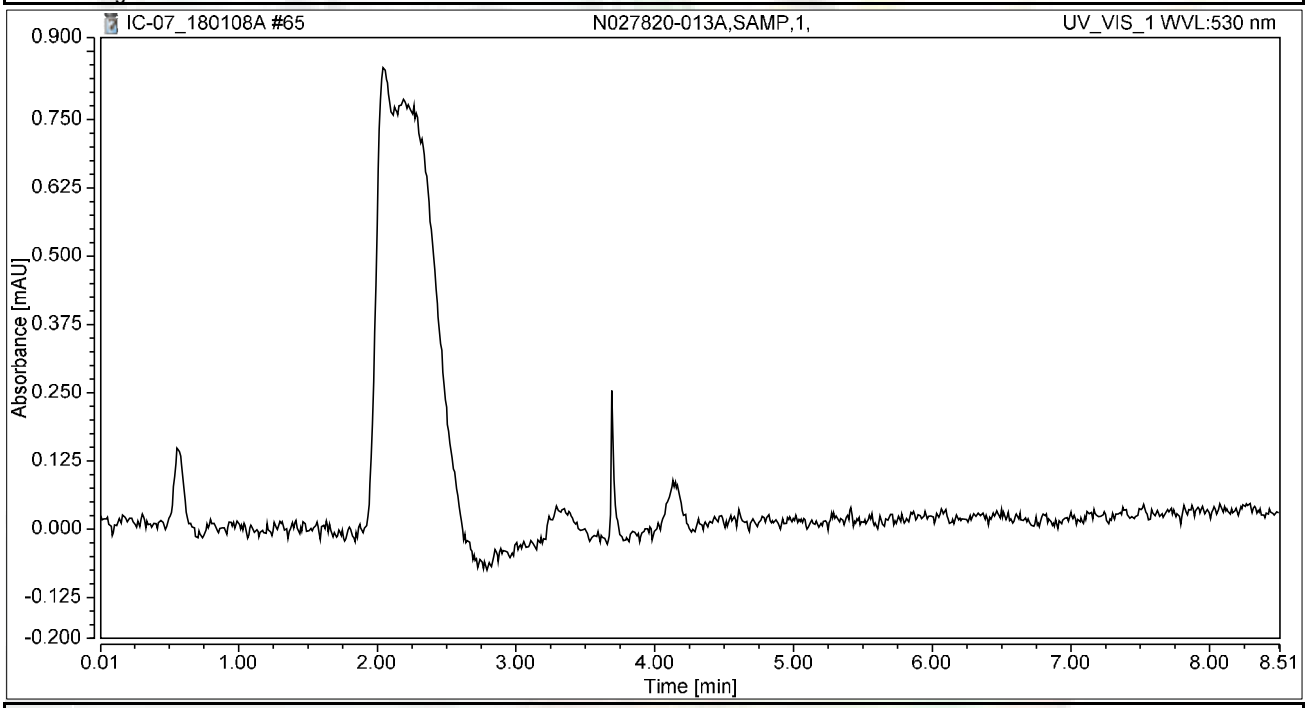
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.280	2.103	100.00	100.00	1.0962
Total:			**0.280**	**2.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

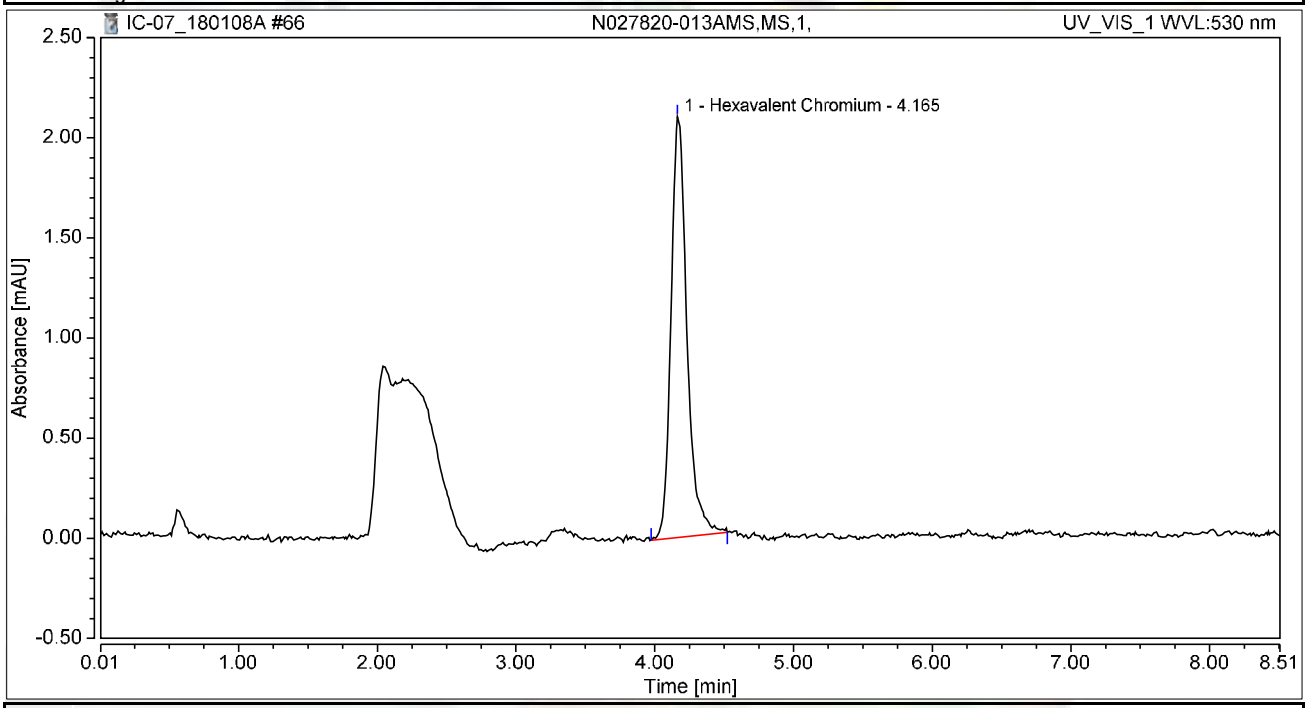
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

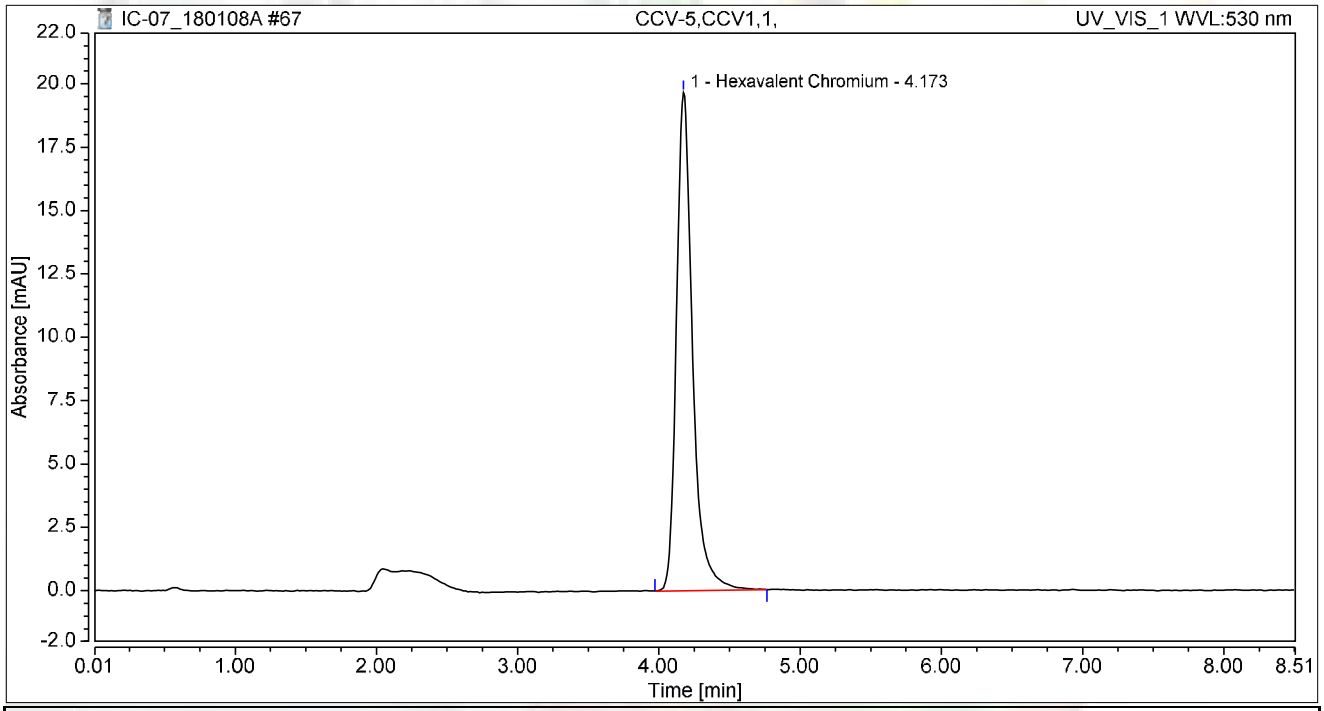
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.280	2.101	100.00	100.00	1.0947
Total:			**0.280**	**2.101**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

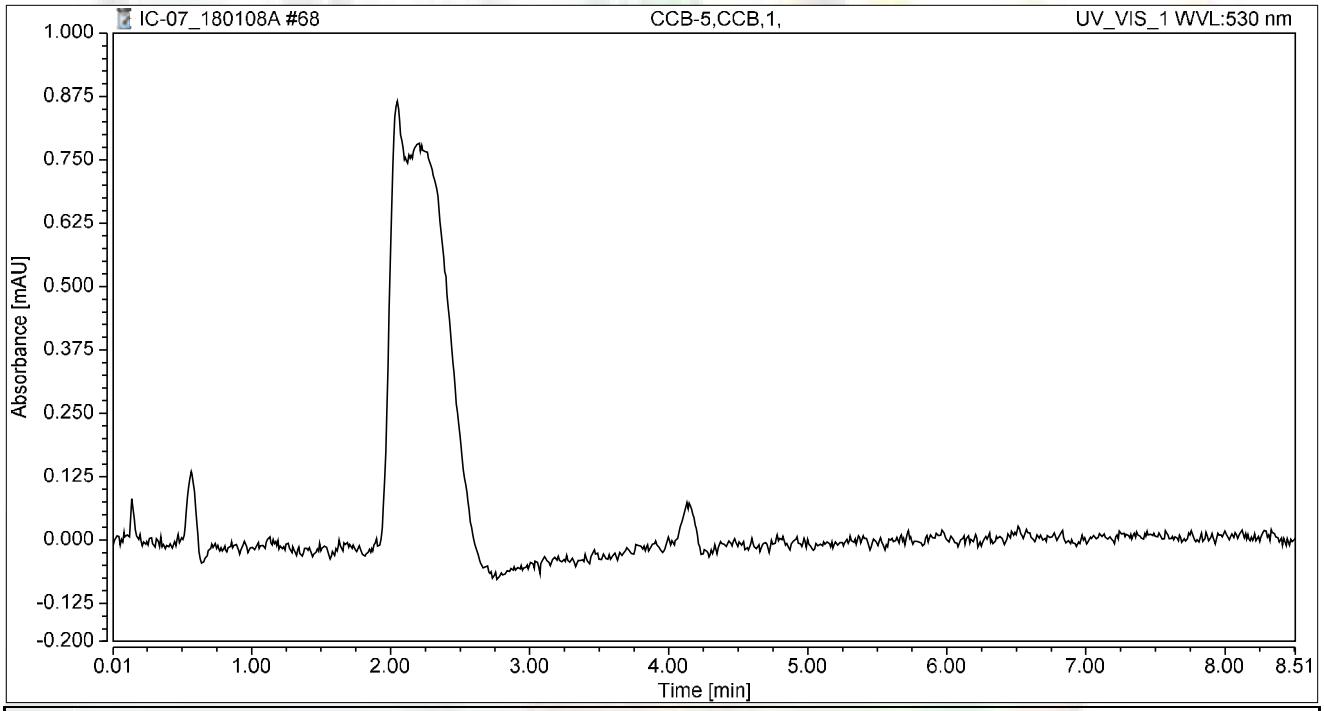
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.601	19.666	100.00	100.00	10.1741
Total:			**2.601**	**19.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121268 **Analyst:** LSR

ASSET #: N027819 **Date Analyzed:** 1/8/2018

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 1/10/2018

2nd Level Reviewer RLB 01/12/2018 Date:

SAMPLE CALCULATION

Sample ID: **N027819-001C @ pH 7.80**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (12.10 mL)

= **0.02066 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (8.0) (0.02066 N) (1) * 1000

= 165.2800 mg**/L**

Reporting results in two significant figures,

= **170 mg/L** as CaCO3

Silvia Ramit 1/10/2018

RLB 01/12/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02066 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (8.0 mL) (0.02066) (1) * 1000

= 165.2800 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 165.2800 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **170 mg/L**

Julia Ramit 1/10/2018
RB 01/12/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.32	50	0.00	0.050	MBLK
LCS-1	8.18	50	0.00	4.70	LCS
N027819-001C	7.80	50	0.00	8.00	SAMP
N027819-002C	7.71	50	0.00	7.10	SAMP
N027819-002CDUP	7.64	50	0.00	7.30	DUP
N027819-001CMS	8.09	50	0.00	12.50	MS
N027819-001CMSD	8.08	50	0.00	12.50	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**12.100**	ml
N H2SO4	**0.02066**	Normal
Date Analyzed:	**1/8/18**	
Time:	**9:00 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R180108A**	

Silica Ramit 1/10/2018

RB 01/12/2018

Date Analyzed:	1/8/18		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	9:00 AM			Sodium Carbonate:	CINV-161205A				Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:	0				Titrant used:	12.1	**mL**		**P = 1/2 T**
				Sulfuric Acid:	R180108A								**P > 1/2 T**
									N H2SO4	0.02066	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.32				0.02066	0.00	0.05	0.05	1	0.00	1.03	
LCS-1	50	8.18				0.02066	0.00	4.70	4.70	1	0.00	97.11	
N027819-001C	50	7.8				0.02066	0.00	8.00	8.00	1	0.00	165.29	
N027819-002C	50	7.71				0.02066	0.00	7.10	7.10	1	0.00	146.69	
N027819-002CDU	50	7.64				0.02066	0.00	7.30	7.30	1	0.00	150.83	
N027819-001CMS	50	8.09				0.02066	0.00	12.50	12.50	1	0.00	258.26	
N027819-001CMS	50	8.08				0.02066	0.00	12.50	12.50	1	0.00	258.26	

Julia Ramit 1/10/2018

RLB 01/12/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	1/8/18
Time:	9:00 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.03	1.03	1.03		P = 0
LCS-1	0.00	0.00	97.11	97.11	97.11		P = 0
N027819-001C	0.00	0.00	165.29	165.29	165.29		P = 0
N027819-002C	0.00	0.00	146.69	146.69	146.69		P = 0
N027819-002CDUP	0.00	0.00	150.83	150.83	150.83		P = 0
N027819-001CMS	0.00	0.00	258.26	258.26	258.26		P = 0
N027819-001CMSD	0.00	0.00	258.26	258.26	258.26		P = 0

Julia Ramit 1/10/2018

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 1/8/18
Time Extracted:
Extracted By: LSR

Date Analyzed: 1/8/18
Time Analyzed: 960
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV 161205A
Hydrochloric Acid: —
Sulfuric Acid: R180108A
Sodium Bicarbonate: CINV 150601A

pH meter Calibration:
SLOPE: 98.1%
pH 7 - 7.03 - CINV 170615F
4 - 4.01 — 170615E
10 - 10.03 — 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.68	IWST180108A	5 mL	0.05 N	-	-	12.10	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.02066 1157
	#2	↓	10.69	↓	↓	↓	-	-	12.10	↓		
1)	MBLK	50 mL	5.32	-	-	-	0.02066	0	0.05	50/50		
2)	LCS		8.18	IWST180108B	1 mL	0.05N		0	4.70			
3)	NO2 7819-IC		7.80	-	-	-		0	8.0			
4)	2C		7.71	-	-	-		0	7.10			
5)	2CDUP		7.64	-	-	-		0	7.30			
6)	ICMS		8.09	IWST180108B	1 mL	0.05N		0	12.50			
7)	ICMSD		8.08	↓	↓	↓	↓	0	12.50	↓		
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{VSx}$								
17)												
18)												
19)				$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{VSx}$								
20)												
	MS											
	MSD											
	LCS											

Julia Ramit 1/10/2018

RB 01/12/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121259
ASSET #: N027819

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 1/5/2018

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 1/9/2018

2nd Level Reviewer: RLB 01/16/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N027819-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 5.0389 * 50

= 251.945

Reporting result in two significant values,

Sulfate, mg/L = 250

rba 1/16/2018

01/16/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	N027459-001E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027459-002E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027459-003C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027459-004C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027459-005C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027459-006C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027459-007C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
20	N027459-008E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	N027459-001EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
24	N027459-001EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
25	N027459-008EMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
26	N027459-004CDUP,DUP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
27	N027459-009C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
28	N027459-010C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
29	N027459-011C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
30	N027459-012C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
31	N027459-013C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
32	N027459-014C,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
35	N027459-015C,SAMP,2	Unknown	1000.0	Anions Default	Anions_171219	Finished
36	N027459-016E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
37	N027459-017E,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
38	N027459-018C,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
39	N027459-019C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
40	LCS-2,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
41	MB-2,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	ICV,ICV,1	12/19/2017 12:03:52 PM	ICV
10	ICB,ICB,1	12/19/2017 12:19:10 PM	ICB
11	MB-H2O,MBLK,1	12/19/2017 12:34:28 PM	METHOD BLANK
12	LCS-H2O,LCS,1	12/19/2017 12:49:45 PM	LCS
13	N027459-001E,SAMP,5	12/19/2017 1:05:03 PM	SAMP,2>10mL
14	N027459-002E,SAMP,5	12/19/2017 1:20:21 PM	SAMP,2>10mL
15	N027459-003C,SAMP,10	12/19/2017 1:35:39 PM	SAMP,1>10mL
16	N027459-004C,SAMP,10	12/19/2017 1:50:57 PM	SAMP,1>10mL
17	N027459-005C,SAMP,5	12/19/2017 2:06:15 PM	SAMP,2>10mL
18	N027459-006C,SAMP,5	12/19/2017 2:21:33 PM	SAMP,2>10mL
19	N027459-007C,SAMP,1	12/19/2017 2:36:51 PM	SAMP,10mL
20	N027459-008E,SAMP,5	12/19/2017 2:52:08 PM	SAMP,2>10mL
21	CCV-1,CCV,1	12/19/2017 3:07:26 PM	CCV
22	CCB-1,CCB,1	12/19/2017 3:22:44 PM	CCB
23	N027459-001EMS,MS,5	12/19/2017 3:38:02 PM	MS,2>10mL
24	N027459-001EMSD,MSD,5	12/19/2017 3:53:20 PM	MSD,2>10mL
25	N027459-008EMS,MS,5	12/19/2017 4:08:38 PM	MS,2>10mL
26	N027459-004CDUP,DUP,10	12/19/2017 4:23:56 PM	DUP,1>10mL
27	N027459-009C,SAMP,5	12/19/2017 4:39:14 PM	SAMP,2>10mL
28	N027459-010C,SAMP,5	12/19/2017 4:54:31 PM	SAMP,2>10mL
29	N027459-011C,SAMP,1	12/19/2017 5:09:49 PM	SAMP,10mL
30	N027459-012C,SAMP,1	12/19/2017 5:25:07 PM	SAMP,10mL
31	N027459-013C,SAMP,5	12/19/2017 5:40:25 PM	SAMP,2>10mL
32	N027459-014C,SAMP,5	12/19/2017 5:55:43 PM	SAMP,2>10mL
33	CCV-2,CCV,1	12/19/2017 6:11:01 PM	CCV
34	CCB-2,CCB,1	12/19/2017 6:26:19 PM	CCB
35	N027459-015C,SAMP,2	12/19/2017 6:41:37 PM	SAMP,5>10mL
36	N027459-016E,SAMP,1	12/19/2017 6:56:54 PM	SAMP,10mL
37	N027459-017E,SAMP,1	12/19/2017 7:12:13 PM	SAMP,10mL
38	N027459-018C,SAMP,10	12/19/2017 7:27:30 PM	SAMP,1>10mL
39	N027459-019C,SAMP,1	12/19/2017 7:42:48 PM	SAMP,10mL
40	LCS-2,LCS,1	12/19/2017 7:58:06 PM	LCS
41	MB-2,MBLK,1	12/19/2017 8:13:24 PM	METHOD BLANK

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N027485-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
43	N027485-008DMS,MS,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
44	N027485-008DMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
47	N027523-001C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
48	N027523-001CMS,MS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
49	N027523-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
50	N027523-002CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
51	N027485-001D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
52	N027485-002D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
53	N027485-003D,SAMP,10	Unknown	1000.0	Anions Default	Anions_171219	Finished
54	N027485-004D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
55	N027485-005D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
56	N027485-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
59	N027485-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
60	N027485-009D,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
61	N027485-010D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
62	N027485-011E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
63	N027485-012E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
64	N027523-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
65	N027523-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
66	N027523-005E,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
67	N027523-006D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
68	N027523-007D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
69	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
70	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
71	N027523-008D,SAMP,5	Unknown	1000.0	Anions Default	Anions_171219	Finished
72	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
73	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 73
Created: 12/19/2017 9:53:44 AM by IC-05
Last Update: 12/20/2017 8:57:58 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N027485-008D,SAMP,5	12/19/2017 8:28:42 PM	SAMP,2>10mL
43	N027485-008DMS,MS,5	12/19/2017 8:43:59 PM	MS,2>10mL
44	N027485-008DMSD,MSD,5	12/19/2017 8:59:17 PM	MSD,2>10mL
45	CCV-3,CCV,1	12/19/2017 9:14:35 PM	CCV
46	CCB-3,CCB,1	12/19/2017 9:29:53 PM	CCB
47	N027523-001C,SAMP,1	12/19/2017 9:45:11 PM	SAMP,10mL
48	N027523-001CMS,MS,1	12/19/2017 10:00:28 PM	MS,10mL
49	N027523-002C,SAMP,1	12/19/2017 10:15:46 PM	SAMP,10mL
50	N027523-002CDUP,DUP,1	12/19/2017 10:31:04 PM	DUP,10mL
51	N027485-001D,SAMP,1	12/19/2017 10:46:22 PM	SAMP,10mL
52	N027485-002D,SAMP,10	12/19/2017 11:01:39 PM	SAMP,1>10mL
53	N027485-003D,SAMP,10	12/19/2017 11:16:57 PM	SAMP,1>10mL
54	N027485-004D,SAMP,5	12/19/2017 11:32:15 PM	SAMP,2>10mL
55	N027485-005D,SAMP,5	12/19/2017 11:47:33 PM	SAMP,2>10mL
56	N027485-006D,SAMP,5	12/20/2017 12:02:51 AM	SAMP,2>10mL
57	CCV-4,CCV,1	12/20/2017 12:18:09 AM	CCV
58	CCB-4,CCB,1	12/20/2017 12:33:27 AM	CCB
59	N027485-007D,SAMP,5	12/20/2017 12:48:44 AM	SAMP,2>10mL
60	N027485-009D,SAMP,1	12/20/2017 1:04:02 AM	SAMP,10mL
61	N027485-010D,SAMP,5	12/20/2017 1:19:20 AM	SAMP,2>10mL
62	N027485-011E,SAMP,5	12/20/2017 1:34:38 AM	SAMP,2>10mL
63	N027485-012E,SAMP,5	12/20/2017 1:49:56 AM	SAMP,2>10mL
64	N027523-003C,SAMP,1	12/20/2017 2:05:14 AM	SAMP,10mL
65	N027523-004C,SAMP,1	12/20/2017 2:20:32 AM	SAMP,10mL
66	N027523-005E,SAMP,5	12/20/2017 2:35:49 AM	SAMP,2>10mL
67	N027523-006D,SAMP,5	12/20/2017 2:51:08 AM	SAMP,2>10mL
68	N027523-007D,SAMP,5	12/20/2017 3:06:26 AM	SAMP,2>10mL
69	CCV-5,CCV,1	12/20/2017 3:21:44 AM	CCV
70	CCB-5,CCB,1	12/20/2017 3:37:02 AM	CCB
71	N027523-008D,SAMP,5	12/20/2017 3:52:19 AM	SAMP,2>10mL
72	CCV-6,CCV,1	12/20/2017 4:07:37 AM	CCV
73	CCB-6,CCB,1	12/20/2017 4:22:55 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 23
Created: 1/5/2018 8:40:37 AM by IC-05
Last Update: 1/5/2018 11:42:07 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_171219	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_171219	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_171219	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_171219	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_171219	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_171219	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
14	N027819-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_171219	Finished
15	N027819-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
16	N027819-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
17	N027819-001CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
18	N027819-001CMS,MS,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
19	N027819-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171219	Interrupted
20	N027819-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_171219	Finished
21	N027819-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_171219	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_171219	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_171219	Finished

jrba 1/9/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 23
Created: 1/5/2018 8:40:37 AM by IC-05
Last Update: 1/5/2018 11:42:07 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	12/19/2017 9:54:19 AM	BLANK
2	BLANK,BLANK,1	12/19/2017 10:09:37 AM	BLANK
3	Std - 0	12/19/2017 10:24:55 AM	IBLANK
4	Std - 1	12/19/2017 10:45:27 AM	STD-LOW
5	Std - 2	12/19/2017 11:00:45 AM	STD
6	Std - 3	12/19/2017 11:16:03 AM	STD
7	Std - 4	12/19/2017 11:31:21 AM	STD
8	Std - 5	12/19/2017 11:46:39 AM	STD-HIGH
9	BLANK,BLANK,1	1/5/2018 8:41:10 AM	BLANK
10	CCV-1,CCV,1	1/5/2018 8:56:27 AM	CCV
11	CCB-1,CCB,1	1/5/2018 9:11:45 AM	CCB
12	MB-H2O,MBLK,1	1/5/2018 9:27:04 AM	METHOD BLANK
13	LCS-H2O,LCS,1	1/5/2018 9:42:22 AM	LCS
14	N027819-001C,SAMP,200	1/5/2018 10:11:58 AM	SAMP,0.05>10mL
15	N027819-002C,SAMP,50	1/5/2018 10:28:26 AM	SAMP,0.2>10mL
16	N027819-001C,SAMP,50	1/5/2018 10:43:44 AM	SAMP,0.2>10mL
17	N027819-001CDUP,DUP,50	1/5/2018 10:59:02 AM	DUP,0.2>10mL
18	N027819-001CMS,MS,50	1/5/2018 11:14:19 AM	MS,0.2>10mL
19	N027819-001CMSD,MSD,50	1/5/2018 11:29:38 AM	MSD,0.2>10mL
20	N027819-001CMSD,MSD,50	1/5/2018 11:42:12 AM	MSD,0.2>10mL
21	N027819-002C,SAMP,500	1/5/2018 11:57:30 AM	SAMP,0.02>10mL
22	CCV-2,CCV,1	1/5/2018 12:12:48 PM	CCV
23	CCB-2,CCB,1	1/5/2018 12:28:06 PM	CCB

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0744	0.1486	0.2949	0.7826	1.6401	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/16/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 12/19/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0529	0.2187	0.4526	1.1609	2.4307	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 01/16/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **ICV**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2888245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCV**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.924	0.50	2.000	0	96.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCV**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.915	0.50	2.000	0	95.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **ICV**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2888258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.950	0.50	4.000	0	98.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCV**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.937	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCV**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.030	0.50	4.000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **ICB**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2888246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCB**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCB**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **ICB**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **12/19/2017**	SeqNo: **2888259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCB**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121259**
Client ID: **CCB**	Batch ID: **R121259**	TestNo: **EPA 300.0**		Analysis Date: **1/5/2018**	SeqNo: **2888270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 1/5/2018

Sample Name		Retention Time	Evaluation
ICV	Chloride	4.253	
CCV-1	Chloride	4.260	
CCV-2	Chloride	4.257	
Average		4.259	
Applied RT Window		4.059 - 4.459	
MB-R121259_CL	Chloride	N.A.	N.A.
LCS-R121259_CL	Chloride	4.257	PASS
N027819-001C	Chloride	4.257	PASS
N027819-001CDUP	Chloride	4.260	PASS
N027819-001CMS	Chloride	4.257	PASS
N027819-001CMSD	Chloride	4.257	PASS
N027819-002C	Chloride	4.257	PASS

rba 1/16/2018

RB 01/16/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 1/5/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	9.933	
CCV-1	Sulfate	9.893	
CCV-2	Sulfate	9.890	
Average		9.892	
Applied RT Window		9.692 - 10.092	
MB-R121259_SO4	Sulfate	N.A.	N.A.
LCS-R121259_SO4	Sulfate	9.887	PASS
N027819-002C	Sulfate	9.883	PASS
N027819-001C	Sulfate	9.880	PASS
N027819-001CDUP	Sulfate	9.880	PASS
N027819-001CMS	Sulfate	9.883	PASS
N027819-001CMSD	Sulfate	9.884	PASS

rba 1/16/2018

RB 01/16/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121323 **Analyst:** QBM

ASSET #: N027819, N027820 **Date Analyzed:** 1/10/2018

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/12/2018

2nd Level Reviewer RB 01/12/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027819-001D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.0966	*	1
	=	0.0966	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.097 mg/L

RLB 01/12/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

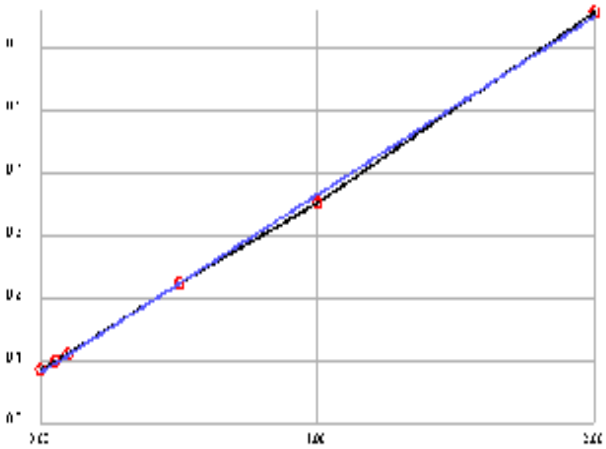
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2839x + 0.0819
Correlation	.999397

Calibrant	Energy	Set	Conc
1	0.0849	0.0000	0.0106
2	0.0994	0.0500	0.0617
3	0.1123	0.1000	0.1071
4	0.2227	0.5000	0.4960
5	0.3511	1.0000	0.9483
6	0.6571	2.0000	2.0262

Notes:

01/12/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **ICV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.490	0.050	0.5000	0	98.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.463	0.050	0.5000	0	92.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.503	0.050	0.5000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027819
Project: PG&E Topock - PMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **ICB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 01-10-2018 14:33
Time end: 01-10-2018 17:21

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:42:18	0.0170		0.0867
2	<BLANK>	16:43:17	0.0082		0.0842
3	<CAL1>	16:44:12	0.0106	[0]	0.0849
4	<CAL2>	16:45:14	0.0617	[0.05]	0.0994
5	<CAL3>	16:46:09	0.1071	[0.1]	0.1123
6	<CAL4>	16:47:09	0.4960	[0.5]	0.2227
7	<CAL5>	16:48:05	0.9483	[1]	0.3511
8	<CAL6>	16:49:01	2.0262	[2]	0.6571
9	,BLANK,BLANK,1, NOT REPORTED	16:50:01	0.0550		0.0975
10	,ICV,ICV,1,	16:50:56	0.5020		0.2244
11	,ICB,ICB,1,	16:51:52	0.0205		0.0877
12	,MB-H2O,MBLK,1,	16:52:47	0.0099		0.0847
13	,LCS-H2O,LCS,1,	16:53:47	0.4738		0.2164
14	,N027819-001D,SAMP,1,	16:54:43	0.0966		0.1093
15	,N027819-002D,SAMP,5,	16:55:45	0.5675		0.2430
16	,N027819-002DDUP,DUP,5,	16:56:39	0.5947		0.2507
17	,N027819-002DMS,MS,5,	16:57:34	1.1142		0.3982
18	,N027819-002DMSD,MSD,5,	16:58:36	1.1540		0.4095
19	,N027820-001E,SAMP,1,	16:59:32	0.4428		0.2076
20	,N027820-002E,SAMP,1,	17:00:26	0.3833		0.1907
21	,BLANK, NOT REPORTED	17:01:22	0.0289		0.0901
22	,CCV-1,CCV,1,	17:02:23	0.4904		0.2211
23	,CCB-1,CCB,1,	17:03:17	0.0089		0.0844
24	,N027820-003E,SAMP,1,	17:04:19	0.3488		0.1809
25	,N027820-004E,SAMP,1,	17:05:14	0.3481		0.1807
26	,N027820-005E,SAMP,1,	17:06:04	0.3787		0.1894

RLB 01/12/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027820-006E,SAMP,1,	17:06:46	0.3745		0.1882
28	,N027820-007E,SAMP,1,	17:07:30	0.3601		0.1841
29	,N027820-008E,SAMP,1,	17:08:18	0.3403		0.1785
30	,N027820-009E,SAMP,1,	17:09:01	0.3583		0.1836
31	,N027820-010E,SAMP,1,	17:09:49	0.3833		0.1907
32	,N027820-011E,SAMP,1,	17:10:33	0.4249		0.2025
33	,BLANK, NOT REPORTED	17:11:15	0.0096		0.0846
34	,CCV-2,CCV,1,	17:12:04	0.4626		0.2132
35	,CCB-2,CCB,1,	17:12:47	0.0018		0.0824
36	,N027820-012E,SAMP,1,	17:13:29	0.3523		0.1819
37	,N027820-013E,SAMP,1,	17:14:19	0.3632		0.1850
38	,N027869-001D,SAMP,10,	17:15:01	0.9229		0.3439
39	,N027869-002D,SAMP,5,	17:15:44	0.5337		0.2334
40	,N027869-003D,SAMP,10,	17:16:32	0.4080		0.1977
41	,BLANK, NOT REPORTED	17:17:16	0.0015		0.0823
42	,CCV-3,CCV,1, NOT REPORTED	17:17:59	0.4714		0.2157
43	,CCV-3,CCV,1,	17:18:47	0.5034		0.2248
44	,CCB-3,CCB,1,	17:19:31	-0.0013		0.0815

RB 01/12/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 1/10/2018
Time Analyzed: 2:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027819-001D		8.37							
N027819-002D		7.99							
N027820-001E		7.94							
N027820-002E		8.00							
N027820-003E		7.77							
N027820-004E		7.70							
N027820-005E		6.60							
N027820-006E		7.75							
N027820-007E		7.67							
N027820-008E		7.93							
N027820-009E		6.52							
N027820-010E		7.92							
N027820-011E		7.99							
N027820-012E		7.59							
N027820-013E		7.28							
N027869-001D		8.44							
N027869-002D		8.61							
N027869-003D		8.24							

Advanced Technology Laboratories, Inc.
Book # 1

RB 01/12/2018

January 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027820

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Barium in QC samples N027820-001B-MS and N027820-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027820-001A	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001B	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001C	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001D	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001E	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-002A	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002B	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002C	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002D	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002E	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-003A	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003B	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003C	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003D	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003E	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-004A	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004B	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004C	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004D	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004E	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-005A	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005B	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005C	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005D	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005E	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-006A	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-006B	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-006C	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-006D	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027820-006E	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-007A	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007B	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007C	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007D	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007E	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-008A	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008B	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008C	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008D	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008E	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-009A	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009B	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009C	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009D	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009E	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-010A	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010B	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010C	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010D	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010E	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-011A	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011B	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011C	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011D	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011E	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-012A	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-012B	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-012C	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-012D	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027820-012E	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-013A	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013B	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013C	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013D	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013E	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-014A	AB3-Q118LL	Groundwater	1/4/2018 1:40:00 PM	1/4/2018	1/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N027819-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121236**
Client ID:	**ZZZZZZ**	Batch ID: **R121236**	TestNo: **EPA 120.1**		Analysis Date: **1/5/2018**	SeqNo: **2885927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7630.000	0.10						7650	0.262	2	

Sample ID	**N027820-009DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **121236**
Client ID:	**ZZZZZZ**	Batch ID: **R121236**	TestNo: **EPA 120.1**		Analysis Date: **1/5/2018**	SeqNo: **2885938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	912.000	0.10						911.0	0.110	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-006

Client Sample ID: C-NR1-S-Q118LL
Collection Date: 1/4/2018 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-011

Client Sample ID: C-NR4-S-Q118LL
Collection Date: 1/4/2018 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027819-001CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121235**
Client ID: **ZZZZZZ**	Batch ID: **R121235**	TestNo: **SM4500-H+B**		Analysis Date: **1/5/2018**	SeqNo: **2885908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.690	0.10						7.690	0	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027820-009DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121235**
Client ID: **ZZZZZZ**	Batch ID: **R121235**	TestNo: **SM4500-H+B**		Analysis Date: **1/5/2018**	SeqNo: **2885919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.360	0.10						8.370	0.120	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E** QC Batch: **66286**				PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	14	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E** QC Batch: **66286**				PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	13	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**			PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108F**	QC Batch: **66287**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180108F**	QC Batch: **66287**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108F** QC Batch: **66287**				PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	18	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-66286**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/8/2018**	RunNo:	**121272**
Client ID:	**LCSW**	Batch ID:	**66286**	TestNo:	**SM2540D**			Analysis Date:	**1/8/2018**	SeqNo:	**2889081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	951.000	10	1000	0	95.1	80	120				

Sample ID	**MB-66286**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/8/2018**	RunNo:	**121272**
Client ID:	**PBW**	Batch ID:	**66286**	TestNo:	**SM2540D**			Analysis Date:	**1/8/2018**	SeqNo:	**2889082**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N027820-001DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**1/8/2018**	RunNo:	**121272**
Client ID:	**ZZZZZZ**	Batch ID:	**66286**	TestNo:	**SM2540D**			Analysis Date:	**1/8/2018**	SeqNo:	**2889084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66287	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121273
Client ID:	LCSW	Batch ID:	66287	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889094

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	943.000	10	1000	0	94.3	80	120				

Sample ID	MB-66287	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121273
Client ID:	PBW	Batch ID:	66287	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027820-011DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121273
Client ID:	ZZZZZZ	Batch ID:	66287	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 01:14 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 04:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:20 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 04:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:39 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 04:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:58 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 03:17 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 05:26 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 06:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180110A**	QC Batch: **R121348**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/10/2018 09:19 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180109A**	QC Batch: **R121295**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/9/2018 02:27 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180109A** QC Batch: **R121295**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/9/2018 01:21 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 07:42 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A**	QC Batch: **R121296**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 08:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 08:39 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121295	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295		
Client ID:	PBW	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889145		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R121295	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295		
Client ID:	LCSW	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889146		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.107	0.20	5.000	0	102	90	110						

Sample ID	N027864-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295		
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889148		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2.754	0.20	1.000	1.711	104	90	110						

Sample ID	N027864-011AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295		
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889149		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2.763	0.20	1.000	1.711	105	90	110	2.754	0.312	20			

Sample ID	N027865-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295		
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889151		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2.262	0.20						2.255	0.310	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.024	0.20	1.000	0	102	90	110				

Sample ID	N027820-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889258

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121296	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	PBW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121296	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	LCSW	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID	N027812-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889185

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID	N027819-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID	N027819-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889188

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N027820-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N027820-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N027819-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N027820-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID **N027820-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID	N027820-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889203

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027820-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID	N027820-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID	N027820-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889213

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121348	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	PBW	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891675

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121348	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	LCSW	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.135	0.20	5.000	0	103	90	110				

Sample ID	N027820-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891678

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	103	90	110				

Sample ID	N027891-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.143	0.20						4.183	0.951	20	

Sample ID	N027890-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891702

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.393	1.0	25.00	30.82	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027890-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891703

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.706	1.0	25.00	30.82	104	90	110	56.39	0.554	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66270	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	PBW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66270	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	LCSW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888158

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.654	1.0	10.00	0	96.5	85	115				

Sample ID	N027820-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888162

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.446	1.0	10.00	0	104	75	125				

Sample ID	N027820-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888163

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.337	1.0	10.00	0	103	75	125	10.45	1.05	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121323	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	PBW	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121323	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	LCSW	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	N027819-002DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890439

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.974	0.25						2.838	4.68	20	

Sample ID	N027819-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890440

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.571	0.25	2.500	2.838	109	75	125				

Sample ID	N027819-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890441

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.770	0.25	2.500	2.838	117	75	125	5.571	3.51	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:29 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/10/2018 04:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 06:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/10/2018 04:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	45	1.8	20		ug/L	1	1/10/2018 06:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	550	1.8	20		ug/L	1	1/10/2018 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-004

Client Sample ID: C-MAR-S-Q118LL
Collection Date: 1/4/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	89	1.8	20		ug/L	1	1/10/2018 06:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	390	1.8	20		ug/L	1	1/10/2018 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 06:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 04:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:33 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 05:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/10/2018 06:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	23	1.8	20		ug/L	1	1/10/2018 05:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-008

Client Sample ID: C-NR3-S-Q118LL
Collection Date: 1/4/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:38 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	29	1.8	20		ug/L	1	1/10/2018 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:43 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-010

Client Sample ID: C-NR4-D-Q118LL
Collection Date: 1/4/2018 1:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:48 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/10/2018 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-011

Client Sample ID: C-NR4-S-Q118LL
Collection Date: 1/4/2018 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 07:19 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 05:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 07:23 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/10/2018 05:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	1/10/2018 07:28 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	1/10/2018 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66278**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **PBW**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66278**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **LCSW**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.564	20	100.0	0	108	85	115				

Sample ID **N027820-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	141.904	20	100.0	28.39	114	75	125				

Sample ID **N027820-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	152.533	20	100.0	28.39	124	75	125	141.9	7.22	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-66334	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	PBW	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.954	20									

Sample ID	LCS-66334	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	LCSW	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.373	20	100.0	0	101	85	115				

Sample ID	N027922-001B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	ZZZZZZ	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.564	20	100.0	12.13	104	75	125				

Sample ID	N027922-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	ZZZZZZ	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.541	20	100.0	12.13	104	75	125	116.6	0.0196	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66271	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	PBW	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66271	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	LCSW	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.723	20	100.0	0	107	85	115				

Sample ID	N027820-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	ZZZZZZ	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.992	20	100.0	20.19	103	75	125				

Sample ID	N027820-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	ZZZZZZ	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.138	20	100.0	20.19	102	75	125	123.0	0.696	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 04:18 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 04:18 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 04:18 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/6/2018 04:18 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 12:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 04:46 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 04:46 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 04:46 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/6/2018 04:46 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.4	0.025	0.10		µg/L	1	1/6/2018 04:51 PM
Barium	140	0.070	1.0		µg/L	1	1/6/2018 04:51 PM
Manganese	24	0.056	0.50		µg/L	1	1/6/2018 04:51 PM
Molybdenum	5.7	0.039	0.50		µg/L	1	1/6/2018 04:51 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-004

Client Sample ID: C-MAR-S-Q118LL
Collection Date: 1/4/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:08 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:08 PM
Manganese	20	0.056	0.50		µg/L	1	1/6/2018 05:08 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/6/2018 05:08 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:14 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:14 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:14 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 05:14 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 01:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**				PrepDate	**1/5/2018**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:19 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:19 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:19 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 05:19 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:25 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:25 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:25 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 05:25 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 01:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-008

Client Sample ID: C-NR3-S-Q118LL
Collection Date: 1/4/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.5	0.025	0.10		µg/L	1	1/6/2018 05:30 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:30 PM
Manganese	0.50	0.056	0.50		µg/L	1	1/6/2018 05:30 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/6/2018 05:30 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-009

Client Sample ID: MW-920-Q118LL
Collection Date: 1/4/2018 11:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:36 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:36 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:36 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	1/6/2018 05:36 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-010

Client Sample ID: C-NR4-D-Q118LL
Collection Date: 1/4/2018 1:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:41 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:41 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:41 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	1/6/2018 05:41 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**				PrepDate	**1/5/2018**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:47 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:47 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:47 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 05:47 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 02:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:53 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:53 PM
Manganese	1.7	0.056	0.50		µg/L	1	1/6/2018 05:53 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/6/2018 05:53 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:58 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:58 PM
Manganese	23	0.056	0.50		µg/L	1	1/6/2018 05:58 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/6/2018 05:58 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 02:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66270**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **PBW**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **LCS-66270**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **LCSW**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.900	0.10	10.00	0	99.0	85	115				
Barium	10.110	1.0	10.00	0	101	85	115				
Manganese	98.406	0.50	100.0	0	98.4	85	115				
Molybdenum	9.873	0.50	10.00	0	98.7	85	115				

Sample ID **N027820-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.078	0.10	10.00	2.333	107	75	125				
Barium	127.471	1.0	10.00	126.1	14.0	75	125				S
Manganese	105.779	0.50	100.0	0.06106	106	75	125				
Molybdenum	15.765	0.50	10.00	5.253	105	75	125				

Sample ID **N027820-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.062	0.10	10.00	2.333	107	75	125	13.08	0.126	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027820-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	127.145	1.0	10.00	126.1	10.8	75	125	127.5	0.256	20	S
Manganese	105.043	0.50	100.0	0.06106	105	75	125	105.8	0.698	20	
Molybdenum	15.631	0.50	10.00	5.253	104	75	125	15.77	0.855	20	

Sample ID	MB-66270	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	PBW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888706

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	N027820-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888711

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.922	0.50	10.00	1.609	103	75	125				

Sample ID	N027820-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888714

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.748	0.50	10.00	1.609	101	75	125	11.92	1.47	20	

Sample ID	LCS-66270	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	LCSW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.545	0.50	10.00	0	95.5	85	115				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement / QA/QC
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD / RTNE
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker / RWQCB ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec / CalTrans
Submitted By: Nava Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Others ✓ / LEVEL III
Title: sample tech			Specify: RWQCB / LEVEL IV
Signature: Date: 1/4/18	Sampled By: Nava Tep		Global ID: / Regulatory
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Specify State:
Project Name: PG&E Topock - RMP	Signature: Date: 1/4/18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Sample Receipt Condition

	Y	N
1. Chilled	—	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	Ice	

Sample Temp: 1.9°C / 2.6°C / 2.9°C

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	3x250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	3x500mL poly: Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr	3x500mL poly: Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B	3x500mL poly: Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba	500 mL poly: Total metals (SW6010B); HNO3 Fe	1 liter poly: Anions (E300.0); Br, Cl, SO4	1 liter poly: Specific Conductance (E120.1)	1 liter poly: pH (SM4500HB)	1 liter poly: TDS (SM2540C)	1 liter poly: Alkalinity (Total, reported as CaCO3) (SM2320B)	1 liter poly: TSS (SM2540)	125 mL poly: Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-BNS-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
2	N027820 - 01	C-CON-D-Q118LL	1/4/18	1010		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
3	- 02	C-CON-S-Q118LL	1/4/18	1030		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
4		~~C-I-3-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
5		~~MW-921-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
6		~~C-I-3-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
7	- 03	C-MAR-D-Q118LL	1/4/18	0815		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
8	- 04	C-MAR-S-Q118LL	1/4/18	0830		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
9	- 05	C-NR1-D-Q118LL	1/4/18	1100		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
10	- 06	C-NR1-S-Q118LL	1/4/18	1130		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
11	- 07	C-NR3-D-Q118LL	1/4/18	1215		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
12	- 08	C-NR3-S-Q118LL	1/4/18	1235		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
13	- 09	MW-920-Q118LL 1/4/18 ~~1/4/18~~		1110		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	
14	- 10	C-NR4-D-Q118LL	1/4/18	1310		X		X		X	X		X	X			X	X	E	7~~9~~	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Nava Tep	1/4/18 1600	Jung alang	1/4/18 1600
Jung alang	1/4/18 1820	Jung alang	1/4/18 1820

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Preservatives: H=HCL; N=HNO_3; S=H_2SO_4; C=4°C; Z=$Zn(AC)_2$; O=NaOH; T=$Na_2S_2O_3$; Others/Specify: B (NH4)2SO4/NH4OH

Container Type: T=Tube; V=VOA; P=Pint; J=Jar; B=Tedlar; G=Glass; M=Metal; M=Metal; C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
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P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Address: Roseville, CA 95661	Email:	Address:	Geotracker / Lasscec / Others ✓ Specify: RWQCB / Global ID:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mdd@sgdivox.com	P.O.#
Submitted By: Nara Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Sampled By: Nara Tep		
Signature: Date: 1/4/18	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
I hereby authorize ASSET Labs to perform the tests indicated below.	Signature: Date: 1/4/18		
Project Name: PG&E Topock - RMP			
Project Number: RC000753.0801			

RWQCB ✓ | CalTrans | LEVEL III | LEVEL IV | Regulatory | Specify State:

1. Chilled ✓
2. Headspace
3. Container Intact
4. Seal Present
5. IR number 3
6. Method of Cooling: Ice

Sample Temp: 1.9°C/2.6°C/2.9°C

Courier:

Tracking No.:

Matrix: Ground x Sediment | Potable Soil | NPDES Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Oxygen and deuterium stable isotopes (CFIRM) (1 250 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N027820 - 11	C-NR4-S-Q118LL	1/4/18	1330		X		X		X	X		X	X			X	X		E	7/9	P	BNS	
2		~~C-R22A-D-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
3		~~C-R22A-S-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
4		~~C-R27-D-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
5		~~C-R27-S-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
		~~C-TAZ-D-Q118LL~~				X		X		X	X		X	X			X	X		E	7	P	BNS	M
7		~~MW-922-Q118LL~~				X		X					X	X						E	9	P	BNS	M
8		~~C-TAZ-S-Q118LL~~				X		X		X	X		X	X			X	X		E	7/9	P	BNS	
9	- 12	R-19-Q118LL	1/4/18	0905		X		X		X	X		X	X			X	X		E	16	P	BNS	M
10		~~R-28-Q118LL~~				X		X	X	X	X	X	X	X	X	X	X	X	X	E	9	P	BNS	M
11		~~R63-Q118LL~~				X		X		X	X		X	X			X	X		E	9	P	BNS	M
12	- 13	RRB-Q118LL	1/4/18	0935		X		X		X	X		X	X			X	X		E	7/9	P	BNS	
13		~~SW1-Q118LL~~				X		X					X	X						E	7	P	BNS	M
14		~~SW2-Q118LL~~				X		X					X	X						E	7	P	BNS	M

Remarks

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	1/4/18 1600	Dung Vang	1/4/18 1600
Dung Vang	1/4/18 1820	Dung Vang	1/4/18 1820

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
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- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
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8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy
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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Geotracker		RWQCB	✓	1. Chilled	✓				
Lancaster		CalTrans		2. Headspace					
Others	✓	LEVEL III		3. Container Intact					
Specify: RWQCB		LEVEL IV		4. Seal Present					
		Regulatory		5. IR number	2				
Global ID:		Specify State:		6. Method of Cooling:	ice				
				Sample Temp:	1.9°C/2.6°C/2.9°C				

Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 Fax:		
Signature: Date: 1/4/18	Sampled By: Nara Tep	Courier:	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	Tracking No.:	
Project Name: PG&E Topock - RMP	Signature: Date: 1/4/18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly	250 ml Poly	3x500mL poly	3x500mL poly	3x500mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
		~~AB1-Q118LL~~					X												E	1	P	BN	Hold
		~~AB2-Q118LL~~					X												E	1	P	BN	Hold
	N027820 - 14	AB3-Q118LL	1/4/18	1340			X												E	1	P	BN	Hold

Reliquished by (Signature and Printed Name): Nara Tep 1/4/18 1600	Date/Time:	Reliquished by (Signature and Printed Name): Pongalang 1/4/18 1650	Date/Time:
Reliquished by (Signature and Printed Name): Pongalang 1/4/18 1820	Date/Time:	Reliquished by (Signature and Printed Name): Pongalang 1/4/18 1820	Date/Time:
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/5/2018	Workorder:	N027820
Rep sample Temp (Deg C):	1.9/2.6/2.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	Bubble Wrap
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 1/5/2018

Reviewed By: 01/12/2018

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-001A	C-CON-D-Q118LL	1/4/2018 10:10:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-001C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-001D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-001E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-002A	C-CON-S-Q118LL	1/4/2018 10:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-002C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-002D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-002D	C-CON-S-Q118LL	1/4/2018 10:30:00 AM	1/18/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-002E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-003A	C-MAR-D-Q118LL	1/4/2018 8:15:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-003B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-003C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-003D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-003E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-004A	C-MAR-S-Q118LL	1/4/2018 8:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-004B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-004B	C-MAR-S-Q118LL	1/4/2018 8:30:00 AM	1/18/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-004C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-004D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-004E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-005A	C-NR1-D-Q118LL	1/4/2018 11:00:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-005B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-005C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-005D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-005E	C-NR1-D-Q118LL	1/4/2018 11:00:00 AM	1/18/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-006A	C-NR1-S-Q118LL	1/4/2018 11:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-006B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-006C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-006D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-006E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-007A	C-NR3-D-Q118LL	1/4/2018 12:15:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-007B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-007C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-007C	C-NR3-D-Q118LL	1/4/2018 12:15:00 PM	1/18/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-007D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-007E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-008A	C-NR3-S-Q118LL	1/4/2018 12:35:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-008B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-008C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-008D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-008E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-009A	MW-920-Q118LL	1/4/2018 11:10:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-009B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-009B	MW-920-Q118LL	1/4/2018 11:10:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-009C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-009D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-009E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-010A	C-NR4-D-Q118LL	1/4/2018 1:10:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-010B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-010C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-010D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-010D	C-NR4-D-Q118LL	1/4/2018 1:10:00 PM	1/18/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-010E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-011A	C-NR4-S-Q118LL	1/4/2018 1:30:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-011B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-011C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-011D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-011E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-012A	R-19-Q118LL	1/4/2018 9:05:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-012B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-012C	R-19-Q118LL	1/4/2018 9:05:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-012D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-012E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-013A	RRB-Q118LL	1/4/2018 9:35:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-013B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-013C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-013D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-013E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-014A	AB3-Q118LL	1/4/2018 1:40:00 PM					☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-015A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N027820

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N027820

Item	Page
Cover Page	1-7
Analytical Result/QC Summary Reports	8-117
Sample Receiving Items	118-131
List of Analysts	132
Raw Data	
EPA 120.1	133-136
SM 4500-H+B	137-141
SM 2540D	142-155
EPA 218.6	156-410
SM 4500-NO3F	411-424
EPA 6010B_Dissolved	425-470
EPA 6010B	471-502
EPA 6020_Dissolved	503-571

January 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N027820

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on January 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Barium in QC samples N027820-001B-MS and N027820-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *15-Jan-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027820-001A	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001B	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001C	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001D	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-001E	C-CON-D-Q118LL	Groundwater	1/4/2018 10:10:00 AM	1/4/2018	1/15/2018
N027820-002A	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002B	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002C	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002D	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-002E	C-CON-S-Q118LL	Groundwater	1/4/2018 10:30:00 AM	1/4/2018	1/15/2018
N027820-003A	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003B	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003C	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003D	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-003E	C-MAR-D-Q118LL	Groundwater	1/4/2018 8:15:00 AM	1/4/2018	1/15/2018
N027820-004A	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004B	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004C	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004D	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-004E	C-MAR-S-Q118LL	Groundwater	1/4/2018 8:30:00 AM	1/4/2018	1/15/2018
N027820-005A	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005B	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005C	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005D	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-005E	C-NR1-D-Q118LL	Groundwater	1/4/2018 11:00:00 AM	1/4/2018	1/15/2018
N027820-006A	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-006B	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-006C	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-006D	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027820-006E	C-NR1-S-Q118LL	Groundwater	1/4/2018 11:30:00 AM	1/4/2018	1/15/2018
N027820-007A	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007B	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007C	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007D	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-007E	C-NR3-D-Q118LL	Groundwater	1/4/2018 12:15:00 PM	1/4/2018	1/15/2018
N027820-008A	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008B	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008C	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008D	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-008E	C-NR3-S-Q118LL	Groundwater	1/4/2018 12:35:00 PM	1/4/2018	1/15/2018
N027820-009A	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009B	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009C	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009D	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-009E	MW-920-Q118LL	Groundwater	1/4/2018 11:10:00 AM	1/4/2018	1/15/2018
N027820-010A	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010B	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010C	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010D	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-010E	C-NR4-D-Q118LL	Groundwater	1/4/2018 1:10:00 PM	1/4/2018	1/15/2018
N027820-011A	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011B	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011C	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011D	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-011E	C-NR4-S-Q118LL	Groundwater	1/4/2018 1:30:00 PM	1/4/2018	1/15/2018
N027820-012A	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-012B	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-012C	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-012D	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N027820
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N027820-012E	R-19-Q118LL	Groundwater	1/4/2018 9:05:00 AM	1/4/2018	1/15/2018
N027820-013A	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013B	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013C	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013D	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-013E	RRB-Q118LL	Groundwater	1/4/2018 9:35:00 AM	1/4/2018	1/15/2018
N027820-014A	AB3-Q118LL	Groundwater	1/4/2018 1:40:00 PM	1/4/2018	1/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**				PrepDate		Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-006

Client Sample ID: C-NR1-S-Q118LL
Collection Date: 1/4/2018 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-008

Client Sample ID: C-NR3-S-Q118LL
Collection Date: 1/4/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180105D**	QC Batch: **R121236**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	1/5/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N027819-002CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	121236
Client ID:	ZZZZZZ	Batch ID:	R121236	TestNo:	EPA 120.1			Analysis Date:	1/5/2018	SeqNo:	2885927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7630.000	0.10						7650	0.262	2	

Sample ID	N027820-009DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	121236
Client ID:	ZZZZZZ	Batch ID:	R121236	TestNo:	EPA 120.1			Analysis Date:	1/5/2018	SeqNo:	2885938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	912.000	0.10						911.0	0.110	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-004

Client Sample ID: C-MAR-S-Q118LL
Collection Date: 1/4/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-006

Client Sample ID: C-NR1-S-Q118LL
Collection Date: 1/4/2018 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-008

Client Sample ID: C-NR3-S-Q118LL
Collection Date: 1/4/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-009

Client Sample ID: MW-920-Q118LL
Collection Date: 1/4/2018 11:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-010

Client Sample ID: C-NR4-D-Q118LL
Collection Date: 1/4/2018 1:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180105C**	QC Batch: **R121235**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	1/5/2018 11:10 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	1/5/2018 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N027819-001CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121235**
Client ID: **ZZZZZZ**	Batch ID: **R121235**	TestNo: **SM4500-H+B**		Analysis Date: **1/5/2018**	SeqNo: **2885908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.690	0.10						7.690	0	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N027820-009DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **121235**
Client ID: **ZZZZZZ**	Batch ID: **R121235**	TestNo: **SM4500-H+B**		Analysis Date: **1/5/2018**	SeqNo: **2885919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.360	0.10						8.370	0.120	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E** QC Batch: **66286**				PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	14	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**			PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	13	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**			PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108E**	QC Batch: **66286**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180108F**	QC Batch: **66287**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180108F**	QC Batch: **66287**				PrepDate	**1/8/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180108F** QC Batch: **66287**				PrepDate	**1/8/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	18	10	10		mg/L	1	1/8/2018 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66286	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121272
Client ID:	LCSW	Batch ID:	66286	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889081

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	951.000	10	1000	0	95.1	80	120				

Sample ID	MB-66286	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121272
Client ID:	PBW	Batch ID:	66286	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889082

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027820-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121272
Client ID:	ZZZZZZ	Batch ID:	66286	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66287	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121273
Client ID:	LCSW	Batch ID:	66287	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889094

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	943.000	10	1000	0	94.3	80	120				

Sample ID	MB-66287	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121273
Client ID:	PBW	Batch ID:	66287	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N027820-011DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	1/8/2018	RunNo:	121273
Client ID:	ZZZZZZ	Batch ID:	66287	TestNo:	SM2540D			Analysis Date:	1/8/2018	SeqNo:	2889097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 01:14 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 04:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:20 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 04:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:39 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 04:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-004

Client Sample ID: C-MAR-S-Q118LL
Collection Date: 1/4/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 02:58 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 03:17 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 05:26 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 06:27 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180110A**	QC Batch: **R121348**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/10/2018 09:19 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-009

Client Sample ID: MW-920-Q118LL
Collection Date: 1/4/2018 11:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180109A** QC Batch: **R121295**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/9/2018 02:27 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180109A** QC Batch: **R121295**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/9/2018 01:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 07:42 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 08:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180108A** QC Batch: **R121296**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	1/8/2018 08:39 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180106B** QC Batch: **66270**				PrepDate	**1/5/2018**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	1/6/2018 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121295**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **PBW**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121295**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **LCSW**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.107	0.20	5.000	0	102	90	110				

Sample ID **N027864-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ZZZZZZ**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.754	0.20	1.000	1.711	104	90	110				

Sample ID **N027864-011AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ZZZZZZ**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.763	0.20	1.000	1.711	105	90	110	2.754	0.312	20	

Sample ID **N027865-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ZZZZZZ**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.262	0.20						2.255	0.310	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.024	0.20	1.000	0	102	90	110				

Sample ID	N027820-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121295
Client ID:	ZZZZZZ	Batch ID:	R121295	TestNo:	EPA 218.6			Analysis Date:	1/9/2018	SeqNo:	2889258

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121296**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **PBW**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121296**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **LCSW**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	90	110				

Sample ID **N027812-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.121	0.20	1.000	0.06600	105	90	110				

Sample ID **N027819-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1074.450	20	500.0	548.1	105	90	110				

Sample ID **N027819-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1081.630	20	500.0	548.1	107	90	110	1074	0.666	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID	N027820-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N027819-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID	N027820-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.012	0.20	1.000	0	101	90	110				

Sample ID	N027820-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.050	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0.04180	104	90	110				

Sample ID	N027820-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889203

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N027820-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID	N027820-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID	N027820-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889213

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027820-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N027820-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121296
Client ID:	ZZZZZZ	Batch ID:	R121296	TestNo:	EPA 218.6			Analysis Date:	1/8/2018	SeqNo:	2889219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R121348	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	PBW	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891675

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R121348	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	LCSW	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891676

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.135	0.20	5.000	0	103	90	110				

Sample ID	N027820-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891678

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.035	0.20	1.000	0	103	90	110				

Sample ID	N027891-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.143	0.20						4.183	0.951	20	

Sample ID	N027890-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891702

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.393	1.0	25.00	30.82	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N027890-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121348
Client ID:	ZZZZZZ	Batch ID:	R121348	TestNo:	EPA 218.6			Analysis Date:	1/10/2018	SeqNo:	2891703

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.706	1.0	25.00	30.82	104	90	110	56.39	0.554	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66270	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	PBW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66270	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	LCSW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888158

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.654	1.0	10.00	0	96.5	85	115				

Sample ID	N027820-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888162

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.446	1.0	10.00	0	104	75	125				

Sample ID	N027820-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888163

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.337	1.0	10.00	0	103	75	125	10.45	1.05	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-006

Client Sample ID: C-NR1-S-Q118LL
Collection Date: 1/4/2018 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.37	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.34	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-920-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 11:10:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_180110E**	QC Batch: **R121323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.022	0.050		mg/L	1	1/10/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R121323	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	PBW	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R121323	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	LCSW	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890436

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	N027819-002DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890439

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.974	0.25						2.838	4.68	20	

Sample ID	N027819-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890440

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.571	0.25	2.500	2.838	109	75	125				

Sample ID	N027819-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	121323
Client ID:	ZZZZZZ	Batch ID:	R121323	TestNo:	SM4500-NO3			Analysis Date:	1/10/2018	SeqNo:	2890441

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.770	0.25	2.500	2.838	117	75	125	5.571	3.51	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:29 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/10/2018 04:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 06:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/10/2018 04:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	45	1.8	20		ug/L	1	1/10/2018 06:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	550	1.8	20		ug/L	1	1/10/2018 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-004

Client Sample ID: C-MAR-S-Q118LL
Collection Date: 1/4/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	89	1.8	20		ug/L	1	1/10/2018 06:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	390	1.8	20		ug/L	1	1/10/2018 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 06:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 04:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-006

Client Sample ID: C-NR1-S-Q118LL
Collection Date: 1/4/2018 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:33 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 05:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	20	1.8	20		ug/L	1	1/10/2018 06:59 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	23	1.8	20		ug/L	1	1/10/2018 05:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:38 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	29	1.8	20		ug/L	1	1/10/2018 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-009

Client Sample ID: MW-920-Q118LL
Collection Date: 1/4/2018 11:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:43 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-010

Client Sample ID: C-NR4-D-Q118LL
Collection Date: 1/4/2018 1:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180111H**	QC Batch: **66334**			PrepDate	**1/11/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/12/2018 12:48 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	1/10/2018 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 07:19 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 05:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	1/10/2018 07:23 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	1/10/2018 05:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66278**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	1/10/2018 07:28 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180110E**	QC Batch: **66271**			PrepDate	**1/5/2018**		Analyst: **CEI**
Iron	110	1.8	20		ug/L	1	1/10/2018 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66278**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **PBW**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66278**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **LCSW**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.564	20	100.0	0	108	85	115				

Sample ID **N027820-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	141.904	20	100.0	28.39	114	75	125				

Sample ID **N027820-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **1/5/2018**	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	152.533	20	100.0	28.39	124	75	125	141.9	7.22	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-66334	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	PBW	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.954	20									

Sample ID	LCS-66334	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	LCSW	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.373	20	100.0	0	101	85	115				

Sample ID	N027922-001B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	ZZZZZZ	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.564	20	100.0	12.13	104	75	125				

Sample ID	N027922-001B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	1/11/2018	RunNo:	121376
Client ID:	ZZZZZZ	Batch ID:	66334	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/11/2018	SeqNo:	2892468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	116.541	20	100.0	12.13	104	75	125	116.6	0.0196	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66271	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	PBW	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66271	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	LCSW	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.723	20	100.0	0	107	85	115				

Sample ID	N027820-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	ZZZZZZ	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.992	20	100.0	20.19	103	75	125				

Sample ID	N027820-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	1/5/2018	RunNo:	121326
Client ID:	ZZZZZZ	Batch ID:	66271	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	1/10/2018	SeqNo:	2890605

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.138	20	100.0	20.19	102	75	125	123.0	0.696	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-001

Client Sample ID: C-CON-D-Q118LL
Collection Date: 1/4/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 04:18 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 04:18 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 04:18 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	1/6/2018 04:18 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 12:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-002

Client Sample ID: C-CON-S-Q118LL
Collection Date: 1/4/2018 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 04:46 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 04:46 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 04:46 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/6/2018 04:46 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-003

Client Sample ID: C-MAR-D-Q118LL
Collection Date: 1/4/2018 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.4	0.025	0.10		µg/L	1	1/6/2018 04:51 PM
Barium	140	0.070	1.0		µg/L	1	1/6/2018 04:51 PM
Manganese	24	0.056	0.50		µg/L	1	1/6/2018 04:51 PM
Molybdenum	5.7	0.039	0.50		µg/L	1	1/6/2018 04:51 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-004

Client Sample ID: C-MAR-S-Q118LL
Collection Date: 1/4/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:08 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:08 PM
Manganese	20	0.056	0.50		µg/L	1	1/6/2018 05:08 PM
Molybdenum	5.5	0.039	0.50		µg/L	1	1/6/2018 05:08 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-005

Client Sample ID: C-NR1-D-Q118LL
Collection Date: 1/4/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:14 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:14 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:14 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 05:14 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 01:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-006

Client Sample ID: C-NR1-S-Q118LL
Collection Date: 1/4/2018 11:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:19 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:19 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:19 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 05:19 PM
Selenium	1.7	0.028	0.50		µg/L	1	1/8/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-007

Client Sample ID: C-NR3-D-Q118LL
Collection Date: 1/4/2018 12:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:25 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:25 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:25 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	1/6/2018 05:25 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 01:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-008

Client Sample ID: C-NR3-S-Q118LL
Collection Date: 1/4/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.5	0.025	0.10		µg/L	1	1/6/2018 05:30 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:30 PM
Manganese	0.50	0.056	0.50		µg/L	1	1/6/2018 05:30 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	1/6/2018 05:30 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-009

Client Sample ID: MW-920-Q118LL
Collection Date: 1/4/2018 11:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:36 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:36 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:36 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	1/6/2018 05:36 PM
Selenium	1.4	0.028	0.50		µg/L	1	1/8/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-Jan-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118LL
Lab Order:	N027820	**Collection Date:**	1/4/2018 1:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N027820-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**				PrepDate	**1/5/2018**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:41 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:41 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:41 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	1/6/2018 05:41 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-011

Client Sample ID: C-NR4-S-Q118LL
Collection Date: 1/4/2018 1:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	1/6/2018 05:47 PM
Barium	120	0.070	1.0		µg/L	1	1/6/2018 05:47 PM
Manganese	ND	0.056	0.50		µg/L	1	1/6/2018 05:47 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	1/6/2018 05:47 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 02:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-012

Client Sample ID: R-19-Q118LL
Collection Date: 1/4/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:53 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:53 PM
Manganese	1.7	0.056	0.50		µg/L	1	1/6/2018 05:53 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/6/2018 05:53 PM
Selenium	1.5	0.028	0.50		µg/L	1	1/8/2018 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N027820
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N027820-013

Client Sample ID: RRB-Q118LL
Collection Date: 1/4/2018 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180106B**	QC Batch: **66270**			PrepDate	**1/5/2018**	Analyst: **CEI**	
Arsenic	2.3	0.025	0.10		µg/L	1	1/6/2018 05:58 PM
Barium	130	0.070	1.0		µg/L	1	1/6/2018 05:58 PM
Manganese	23	0.056	0.50		µg/L	1	1/6/2018 05:58 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	1/6/2018 05:58 PM
Selenium	1.6	0.028	0.50		µg/L	1	1/8/2018 02:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66270**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **PBW**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **LCS-66270**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **LCSW**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.900	0.10	10.00	0	99.0	85	115				
Barium	10.110	1.0	10.00	0	101	85	115				
Manganese	98.406	0.50	100.0	0	98.4	85	115				
Molybdenum	9.873	0.50	10.00	0	98.7	85	115				

Sample ID **N027820-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.078	0.10	10.00	2.333	107	75	125				
Barium	127.471	1.0	10.00	126.1	14.0	75	125				S
Manganese	105.779	0.50	100.0	0.06106	106	75	125				
Molybdenum	15.765	0.50	10.00	5.253	105	75	125				

Sample ID **N027820-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **1/5/2018**	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **66270**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **1/6/2018**	SeqNo: **2888089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.062	0.10	10.00	2.333	107	75	125	13.08	0.126	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027820-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888089

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	127.145	1.0	10.00	126.1	10.8	75	125	127.5	0.256	20	S
Manganese	105.043	0.50	100.0	0.06106	105	75	125	105.8	0.698	20	
Molybdenum	15.631	0.50	10.00	5.253	104	75	125	15.77	0.855	20	

Sample ID	MB-66270	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	PBW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888706

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	N027820-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888711

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.922	0.50	10.00	1.609	103	75	125				

Sample ID	N027820-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888714

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.748	0.50	10.00	1.609	101	75	125	11.92	1.47	20	

Sample ID	LCS-66270	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	1/5/2018	RunNo:	121282
Client ID:	LCSW	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.545	0.50	10.00	0	95.5	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement / QA/QC
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD / RTNE
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker / RWQCB ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec / CalTrans
Submitted By: Nava Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Others ✓ / LEVEL III
Title: sample tech			Specify: RWQCB / LEVEL IV
Signature: Date: 1/4/18	Sampled By: Nava Tep		Global ID: / Regulatory
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Specify State:
Project Name: PG&E Topock - RMP	Signature: Date: 1/4/18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition

	Y	N
1. Chilled	—	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	Ice	

Sample Temp: 1.9°C / 2.6°C / 2.9°C

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-BNS-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
2	N027820 - 01	C-CON-D-Q118LL	1/4/18	1010		X		X		X	X		X	X			X	X	E	7	P	BNS	
3	- 02	C-CON-S-Q118LL	1/4/18	1030		X		X		X	X		X	X			X	X	E	7	P	BNS	
4		~~C-I-3-D-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
5		~~MW-921-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
6		~~C-I-3-S-Q118LL~~				X		X		X	X		X	X			X	X	E	9	P	BNS	NT
7	- 03	C-MAR-D-Q118LL	1/4/18	0815		X		X		X	X		X	X			X	X	E	7	P	BNS	
8	- 04	C-MAR-S-Q118LL	1/4/18	0830		X		X		X	X		X	X			X	X	E	7	P	BNS	
9	- 05	C-NR1-D-Q118LL	1/4/18	1100		X		X		X	X		X	X			X	X	E	7	P	BNS	
10	- 06	C-NR1-S-Q118LL	1/4/18	1130		X		X		X	X		X	X			X	X	E	7	P	BNS	
11	- 07	C-NR3-D-Q118LL	1/4/18	1215		X		X		X	X		X	X			X	X	E	7	P	BNS	
12	- 08	C-NR3-S-Q118LL	1/4/18	1235		X		X		X	X		X	X			X	X	E	7	P	BNS	
13	- 09	MW-920-Q118LL 1/4/18 ~~1/4/18~~		1110		X		X		X	X		X	X			X	X	E	7	P	BNS	
14	- 10	C-NR4-D-Q118LL	1/4/18	1310		X		X		X	X		X	X			X	X	E	7	P	BNS	

Reliquished by (Signature and Printed Name): Nava Tep	Date/Time: 1/4/18 1600	Reliquished by (Signature and Printed Name):	Date/Time: 1/4/18 1600
Reliquished by (Signature and Printed Name):	Date/Time: 1/4/18 1820	Reliquished by (Signature and Printed Name):	Date/Time: 1/4/18 1820
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Geotracker		RWQCB	✓
Lakosec		CalTrans	
Others	✓	LEVEL III	
Specify	RWQCB	LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

1. Chilled	✓
2. Headspace	
3. Container Intact	
4. Seal Present	
5. IR number	3
6. Method of Cooling:	ice
Sample Temp:	1.9°C/2.6°C/2.9°C

Address:	Roseville, CA 95661	Email:	
Phone:	916-786-3302	Fax:	
Submitted By:	Nara Tep		
Title:	sample tech		
Signature:		Date:	1/4/18

I hereby authorize ASSET Labs to perform the tests indicated below.

Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to:	mdd@sqdivox.com
Phone:	916-786-3302	Fax:	
Sampled By:	Nara Tep		

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Signature:		Date:	1/4/18

Project Name:	PG&E Topock - RMP	P.O.#	
Project Number:	RC000753.0801	Phone:	949-727-1400, ext 200
		Fax:	

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

| Item No. | Laboratory Work Order No. | Sample ID/Location | Sample Date | Sample Time | Others | 3x250 mL poly | | 3x500mL poly | 3x500mL poly | 3x500mL poly | 500 mL poly | 1 liter poly | 1 liter poly | 1 liter poly | 1 liter poly | 1 liter poly | 1 liter poly | 125 mL poly | 1 250 mL poly | | |

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CHAIN OF CUSTODY RECORD

Geotracker		RWQCB	✓
Lat/Long		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
Specify State:			

1. Chilled ✓
2. Headspace
3. Container Intact
4. Seal Present
5. IR number 2
6. Method of Cooling: ice
Sample Temp: 1.9°C/2.6°C/2.9°C

Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 Fax:		
Signature: Date: 1/4/18	Sampled By: Nara Tep		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
Project Name: PG&E Topock - RMP	Signature: Date: 1/4/18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 ml Poly	Dissolved metals (SW6010B/SW6020Adis) FF: HNO3 Cr 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF: HNO3 Ca, Mg, K, Na, B 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba 3x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~AB1-Q118LL~~					X												E	1	P	BN	Hold
		~~AB2-Q118LL~~					X												E	1	P	BN	Hold
	N027820 - 14	• AB3-Q118LL	1/4/18	1340			X												E	1	P	BN	Hold

Courier:
Tracking No.:

Reliquished by (Signature and Printed Name): Nara Tep 1/4/18 1600	Date/Time:	Reliquished by (Signature and Printed Name): Pong Lang 1/4/18 1650	Date/Time:
Reliquished by (Signature and Printed Name): Pong Lang 1/4/18 1820	Date/Time:	Reliquished by (Signature and Printed Name): Pong Lang 1/4/18 1820	Date/Time:
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/5/2018	Workorder:	N027820
Rep sample Temp (Deg C):	1.9/2.6/2.9	IR Gun ID:	2
Temp Blank:	☐ Yes ☑ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	Bubble Wrap
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 1/5/2018

Reviewed By: 01/12/2018

ASSET Laboratories

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-001A	C-CON-D-Q118LL	1/4/2018 10:10:00 AM	1/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-001B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-001C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-001D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-001E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-002A	C-CON-S-Q118LL	1/4/2018 10:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-002B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-002C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-002D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-002D	C-CON-S-Q118LL	1/4/2018 10:30:00 AM	1/18/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-002E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-003A	C-MAR-D-Q118LL	1/4/2018 8:15:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-003B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-003C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-003D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-003E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-004A	C-MAR-S-Q118LL	1/4/2018 8:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-004B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-004B	C-MAR-S-Q118LL	1/4/2018 8:30:00 AM	1/18/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-004C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-004D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-004E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-005A	C-NR1-D-Q118LL	1/4/2018 11:00:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-005B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-005C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-005D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-005E	C-NR1-D-Q118LL	1/4/2018 11:00:00 AM	1/18/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-006A	C-NR1-S-Q118LL	1/4/2018 11:30:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-006B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-006C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-006D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-006E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-007A	C-NR3-D-Q118LL	1/4/2018 12:15:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-007B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-007C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-007C	C-NR3-D-Q118LL	1/4/2018 12:15:00 PM	1/18/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-007D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-007E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-008A	C-NR3-S-Q118LL	1/4/2018 12:35:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-008B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-008C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-008D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-008E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-009A	MW-920-Q118LL	1/4/2018 11:10:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-009B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-009B	MW-920-Q118LL	1/4/2018 11:10:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-009C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-009D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-009E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-010A	C-NR4-D-Q118LL	1/4/2018 1:10:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-010B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-010C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-010D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-010D	C-NR4-D-Q118LL	1/4/2018 1:10:00 PM	1/18/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-010E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-011A	C-NR4-S-Q118LL	1/4/2018 1:30:00 PM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-011B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-011C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-011D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-011E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-012A	R-19-Q118LL	1/4/2018 9:05:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-012B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-012C	R-19-Q118LL	1/4/2018 9:05:00 AM	1/18/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-012D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-012E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-013A	RRB-Q118LL	1/4/2018 9:35:00 AM	1/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N027820-013B			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			1/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N027820-013C			1/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			1/18/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N027820-013D			1/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			1/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			1/18/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			1/18/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N027820-013E			1/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N027820-014A	AB3-Q118LL	1/4/2018 1:40:00 PM					☐	☐	☐	WW

WORK ORDER Summary

05-Jan-18

WorkOrder: N027820

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 1/4/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N027820-015A	FOLDER	1/18/2018	1/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB
			1/18/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N027820

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121236 **Analyst:** LSR

ASSET #: N027820 **Date Analyzed:** 1/5/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 1/9/2018

2nd Level Reviewer: RLB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 1/5/18 1340

Analyst: LSR

	Standard	Std ID	Reading	Comments
	9.43 uS/cm	CINV-171018A	9.60 @ 22.0°C	% Rec: (90-110%)
	1412	171121A	1430 @ 22.9°C	
	9986	171018B	10020 @ 22.7°C	
	99842	171121B	10000 @ 22.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO27819-001C	H2O	1449 @ 21.6°C	
2	2C		7650 @ 21.1°C	
3	NO27820-001D		949 @ 20.4°C	
4	2D		935 @ 21.1°C	
5	3D		1054 @ 20.6°C	
6	4D		1043 @ 20.5°C	
7	5D		938 @ 20.3°C	
8	6D		943 @ 20.3°C	
9	7D		934 @ 20.8°C	
10	8D		936 @ 20.9°C	
Dup	NO27819-002C DUP		7630 @ 20.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: CONTD

Analyst:

Julia Ramit 1/9/2018

RB 01/12/2018

	Standard	Std ID	Reading	Comments
	1413 uS/cm	CINV-170615G	1467 @ 22.6°C	% Rec: (90-110%)
	10000	170822F	10040 @ 22.6°C	
	99672	170831B	99900 @ 22.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO27820-009D	H2O	911 @ 21.1°C	
2	10D		932 @ 20.9°C	
3	11D		934 @ 20.8°C	
4	12D		958 @ 20.7°C	
5	13D		984 @ 20.8°C	
6	9D DUP		912 @ 20.9°C	
7				
8				
9	1413 uS/cm	CINV-170615G	1464 @ 22.7°C	
10	10000	170822F	10040 @ 22.7°C	
Dup	99672	170831B	99600 @ 22.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121235 **Analyst:** LSR

ASSET #: N027820 **Date Analyzed:** 1/5/2018

Method: EPA 150.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.		X		X	X	
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 1/8/2018

2nd Level Reviewer RB 01/12/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 1/4/18 920
Analyst: LSR

CONTD

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.00 @25.0°C	SLOPE: 98.2%
Buffer 4	170615E	4.02 @25.0°C	
Buffer 10	170822B	10.02 @25.0°C	

	Sample ID	Matrix	pH	Comments
1	N027812-011D	H_2O	8.20 @25.0°C	
2	12D		8.26 @25.0°C	
3	13D		8.19 @25.0°C	
4	14C		8.38 @25.0°C	
5	15C		7.19 @25.0°C	
6	15CDUP		7.21 @25.0°C	
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.02 @25.0°C	Accept: +/-0.1 pH units from expected value

Date: 1/5/18 1110
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.01 @25.0°C	SLOPE: 98.2%
Buffer 4	170615E	4.01 @25.0°C	
Buffer 10	170822B	10.02 @25.0°C	

	Sample ID	Matrix	pH	Comments
1	N027819-001C	H_2O	7.69 @25.0°C	
2	1CDUP		7.69 @25.0°C	
3	2C		7.32 @25.0°C	
4	N027820-001D		8.32 @25.0°C	
5	2D		8.33 @25.0°C	
6	3D		8.15 @25.0°C	
7	4D		8.19 @25.0°C	
8	5D		8.35 @25.0°C	
9	6D		8.34 @25.0°C	Julia Ramit 1/8/2018
10	7D		8.34 @25.0°C	RB 01/12/2018
Dup	8D		8.34 @25.0°C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.05 @25.0°C	Accept: +/-0.1 pH units from expected value

Logbook #12

pH Logbook

Date: 1/5/18 1110

Analyst: LR CONT'D

Standard	Std ID	pH	Comments
Buffer 7	GW-170615F	7.01 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.01 @ 25.0 C	
Buffer 10	170828B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	ND27820-009D	H2O	8.37 @ 25.0 C	
2	9DDup		8.36 @ 25.0 C	
3	10D		8.30 @ 25.0 C	
4	11D		8.30 @ 25.0 C	
5	12D		8.28 @ 25.0 C	
6	13D		8.29 @ 25.0 C	
7				
8				
9			Julia Ramit	1/8/2018
10			RLB	01/12/2018
Dup				Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	GW-171023A	7.04 @ 25.0 C	Accept: +/-0.1 pH units from expected value

Date: 1/5/18 1145

Analyst: LR

Standard	Std ID	pH	Comments
Buffer 7	GW-170615F	7.01 @ 25.0 C	SLOPE: 98.2%
Buffer 4	170615E	4.01 @ 25.0 C	
Buffer 10	170828B	10.02 @ 25.0 C	

	Sample ID	Matrix	pH	Comments
1	ND27914-002A	Soil	8.25 @ 25.0 C	
2	2ADup		8.21 @ 25.0 C	
3	7A		8.66 @ 25.0 C	
4	19A		8.29 @ 25.0 C	
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	GW-171023A	7.02 @ 25.0 C	Accept: +/-0.1 pH units from expected value

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66286/66287 **Analyst:** LSR

ASSET #: N027820 **Date Analyzed:** 1/8/2018

Method: EPA 160.2

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 1/9/2018

2nd Level Reviewer RLB 01/12/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N027820-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.3970- 1.3965) *1000000}{100}$$

= 5 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Divia Ramit 1/9/2018

RLB 01/12/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 8:09:05 A**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66286** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66286	Water	IWSI 171227A	100	☐	0	0	100	1.000		
MB-66286	Water		100	☐	0	0	100	1.000		
N027820-001D	Groundwater		100	☐	0	0	100	1.000		
N027820-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N027820-002D	Groundwater		100	☐	0	0	100	1.000		
N027820-003D	Groundwater		100	☐	0	0	100	1.000		
N027820-004D	Groundwater		100	☐	0	0	100	1.000		
N027820-005D	Groundwater		100	☐	0	0	100	1.000		
N027820-006D	Groundwater		100	☐	0	0	100	1.000		
N027820-007D	Groundwater		100	☐	0	0	100	1.000		
N027820-008D	Groundwater		100	☐	0	0	100	1.000		
N027820-009D	Groundwater		100	☐	0	0	100	1.000		
N027820-010D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 8:09:05 A**
Prep End Date: **1/8/2018 1:30:00 P**
Reviewed/ Date: RLB 01/12/2018
Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66286** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66286	Water		100	☐	0	0	100	1.000		
MB-66286	Water		100	☐	0	0	100	1.000		
N027820-001D	Groundwater		100	☐	0	0	100	1.000		
N027820-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N027820-002D	Groundwater		100	☐	0	0	100	1.000		
N027820-003D	Groundwater		100	☐	0	0	100	1.000		
N027820-004D	Groundwater		100	☐	0	0	100	1.000		
N027820-005D	Groundwater		100	☐	0	0	100	1.000		
N027820-006D	Groundwater		100	☐	0	0	100	1.000		
N027820-007D	Groundwater		100	☐	0	0	100	1.000		
N027820-008D	Groundwater		100	☐	0	0	100	1.000		
N027820-009D	Groundwater		100	☐	0	0	100	1.000		
N027820-010D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171227A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 8:09:08 A**
Prep End Date:

Reviewed/ Date: RB 01/12/2018

Initials/ Date: Lilia Ramit 1/9/2018

Prep Batch **66287** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66287	Water	INST17122	100	☐	0	0	100	1.000		
MB-66287	Water		100	☐	0	0	100	1.000		
N027820-011D	Groundwater		100	☐	0	0	100	1.000		
N027820-011D-DU	Groundwater		100	☐	0	0	100	1.000		
N027820-012D	Groundwater		100	☐	0	0	100	1.000		
N027820-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9668

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/8/2018 8:09:08 A**
Prep End Date: **1/8/2018 1:30:00 P**
Reviewed/ Date: RLB 01/12/2018
Initials/ Date: Lilia Ramit 1/9/2018
Prep Batch **66287** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66287	Water		100	☐	0	0	100	1.000		
MB-66287	Water		100	☐	0	0	100	1.000		
N027820-011D	Groundwater		100	☐	0	0	100	1.000		
N027820-011D-DU	Groundwater		100	☐	0	0	100	1.000		
N027820-012D	Groundwater		100	☐	0	0	100	1.000		
N027820-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9668	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST171227A	1000 ppm Talc	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST: TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/8/18 809 14	MB 62286	100	1.3945 1.3946	1.3945 1.3944	
15	LCS 62286	100	1.4014 1.4015	1.4967 1.4966	
1	NO27820-001D	100	1.3967 1.3965	1.3970 1.3970	
D1	1D DUP	100	1.4070 1.4071	1.4076 1.4074	
2	2D	100	1.4068 1.4069	1.4068 1.4070	
3	3D	100	1.4060 1.4061	1.4076 1.4075	
4	4D	100	1.4025 1.4026	1.4038 1.4034	
5	5D	100	1.4025 1.4025	1.4031 1.4028	
6	6D	100	1.4010 1.4010	1.4011 1.4013	
7	7D	100	1.4085 1.4082	1.4085 1.4087	

Julia Ramit 1/9/2018
RB 01/12/2018

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert
ORELAP/NELAP Cert 4046

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
1/8/18 8	NO27820-008D	100	1.3988 1.3988	1.3992 1.3990	
9	9D	100	1.4038 1.4040	1.4044 1.4042	
10	10D	100	1.3997 1.3996	1.4002 1.3999	
11	MB 66287	100	1.4024 1.4022	1.4020 1.4020	
17	LCS 66287	100	1.4147 1.4148	1.5093 1.5091	
11	NO27820-011D	100	1.3932 1.3931	1.3933 1.3934	
12	11D DUP	100	1.4067 1.4066	1.4069 1.4069	
12	12D	100	1.4001 1.4002	1.4005 1.4004	
13	13D	100	1.3984 1.3985	1.4005 1.4003	
N				Julia Ramit 1/9/2018	

Closing wt: 0.9999 1/8/18 @ 1330 ASSET Laboratories Logbook#9

RB 01/12/2018

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/8/2018							
MB-66286	100	1.3946	1.3944	-2.0000	1.00	-2	MBLK
LCS-66286	100	1.4015	1.4966	951.0000	1.00	951	LCS
N027820-001D	100	1.3965	1.397	5.0000	1.00	5	SAMP
N027820-001DDUP	100	1.4071	1.4074	3.0000	1.00	3	DUP
N027820-002D	100	1.4069	1.407	1.0000	1.00	1	SAMP
N027820-003D	100	1.4061	1.4075	14.0000	1.00	14	SAMP
N027820-004D	100	1.4026	1.4039	13.0000	1.00	13	SAMP
N027820-005D	100	1.4025	1.4028	3.0000	1.00	3	SAMP
N027820-006D	100	1.401	1.4013	3.0000	1.00	3	SAMP
N027820-007D	100	1.4086	1.4087	1.0000	1.00	1	SAMP
N027820-008D	100	1.3988	1.399	2.0000	1.00	2	SAMP
N027820-009D	100	1.404	1.4042	2.0000	1.00	2	SAMP
N027820-010D	100	1.3996	1.3999	3.0000	1.00	3	SAMP

Silvia Ramit 1/9/2018

RLB 01/12/2018

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
1/8/2018							
MB-66287	100	1.4022	1.4020	-2.0000	1.00	-2	MBLK
LCS-66287	100	1.4148	1.5091	943.0000	1.00	943	LCS
N027820-011D	100	1.3931	1.3934	3.0000	1.00	3	SAMP
N027820-011DDUP	100	1.4066	1.4069	3.0000	1.00	3	DUP
N027820-012D	100	1.4002	1.4004	2.0000	1.00	2	SAMP
N027820-013D	100	1.3985	1.4003	18.0000	1.00	18	SAMP

Julia Ramit 1/9/2018

RLB 01/12/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121296
ASSET #: N027820

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

~~N027820-008A/009A/010A for rerun due to matrix interference~~.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 1/15/2018

2nd Level Reviewer [signature] 01/15/2018 Date: ~

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121295
ASSET #: N027820

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/9/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 1/15/2018

2nd Level Reviewer 01/15/2018 Date: —

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121348
ASSET #: N027820

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 1/10/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			X		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X			X		
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?	X			X		
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 1/15/2018

2nd Level Reviewer 01/15/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N027820-004A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0418 * 1$$

$$Cr^{+6}, \mu g/L = 0.04$$

Since PQL is 0.2 µg/L,

$$\mathbf{Cr^{+6}, \mu g/L = ND}$$

rba 1/14/2018

ANALYSIS RUN LOG

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-6	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-6	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Jan/18 08:55:04**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-2,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-3,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-4,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

61	CCV-5,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-6,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-6,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 8:57 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 9:07 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/18 9:17 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:26 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:36 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:45 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:55 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:04 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:14 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/18 10:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/18 10:32 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/18 10:42 AM	Reported
13	MB-R121295	MBLK	1	Hexavalent Chromium	01/09/18 10:51 AM	Reported
14	LCS-R121295	LCS	1	Hexavalent Chromium	01/09/18 11:01 AM	Reported
15	N027864-011A	SAMP	1	Hexavalent Chromium	01/09/18 11:10 AM	Reported
16	N027864-011AMS	MS	1	Hexavalent Chromium	01/09/18 11:20 AM	Reported
17	N027864-011AMSD	MSD	1	Hexavalent Chromium	01/09/18 11:29 AM	Reported
18	N027865-003A	SAMP	1	Hexavalent Chromium	01/09/18 11:39 AM	Reported
19	N027865-003ADUP	DUP	1	Hexavalent Chromium	01/09/18 11:48 AM	Reported
20	N027865-001A	SAMP	1	Hexavalent Chromium	01/09/18 11:58 AM	Reported
21	N027865-002A	SAMP	1	Hexavalent Chromium	01/09/18 12:07 PM	Reported
22	N027865-004A	SAMP	1	Hexavalent Chromium	01/09/18 12:17 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	01/09/18 12:26 PM	Not Reported
24	CCB-1	CCB	1	Hexavalent Chromium	01/09/18 12:26 PM	Not Reported
25	N027820-008A	SAMP	1	Hexavalent Chromium	01/09/18 12:37 PM	Not Reported
26	N027820-008AMS	MS	1	Hexavalent Chromium	01/09/18 12:46 PM	Not Reported
27	CCV-1	CCV1	1	Hexavalent Chromium	01/09/18 1:00 PM	Reported
28	CCB-1	CCB	1	Hexavalent Chromium	01/09/18 1:11 PM	Reported
29	N027820-010A	SAMP	1	Hexavalent Chromium	01/09/18 1:21 PM	Reported
30	N027820-010AMS	MS	1	Hexavalent Chromium	01/09/18 1:30 PM	Reported
31	N027864-001A	SAMP	1	Hexavalent Chromium	01/09/18 1:40 PM	Reported
32	N027864-007A	SAMP	1	Hexavalent Chromium	01/09/18 1:49 PM	Reported
33	N027864-008A	SAMP	1	Hexavalent Chromium	01/09/18 1:58 PM	Reported
34	N027864-009A	SAMP	1	Hexavalent Chromium	01/09/18 2:08 PM	Reported
35	N027864-010A	SAMP	1	Hexavalent Chromium	01/09/18 2:17 PM	Reported
36	N027820-009A	SAMP	1	Hexavalent Chromium	01/09/18 2:27 PM	Reported
37	N027820-009AMS	MS	1	Hexavalent Chromium	01/09/18 2:36 PM	Reported
38	CCV-2	CCV	1	Hexavalent Chromium	01/09/18 2:49 PM	Reported
39	CCB-2	CCB	1	Hexavalent Chromium	01/09/18 3:00 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Jan/18 15:30:54**
No. of Injections:	**42**	*Updated By:*	**ics 5000**

Injection Details

	No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
	1	BLANK	1	1000	Unknown		01/09/2018 08:57	Finished	BLANK
	2	BLANK	2	1000	Unknown		01/09/2018 09:07	Finished	BLANK
	3	iBLANK	3	1000	Unknown		01/09/2018 09:17	Finished	INSTRUMENT BLANK
	4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2018 09:26	Finished	0.2 ppb, IWST-171002A
	5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2018 09:36	Finished	1.0 ppb, IWST-171002A
	6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2018 09:45	Finished	5.0 ppb, IWST-171002A
	7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2018 09:55	Finished	10 ppb, IWST-171002A
	8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2018 10:04	Finished	15 ppb, IWST-171002A
	9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2018 10:14	Finished	20 ppb, IWST-171002A
	10	ICV,ICV,1,	10	1000	Unknown		01/09/2018 10:23	Finished	ICV @5ppb, IWST-171002A
	11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		01/09/2018 10:32	Finished	PQL @ 0.2ppb
	12	ICB,ICB,1,	12	1000	Unknown		01/09/2018 10:42	Finished	ICB R180102C
	13	MB-H2O,MBLK,1,	13	1000	Unknown		01/09/2018 10:51	Finished	MB R180102C
	14	LCS-H2O,LCS,1,	14	1000	Unknown		01/09/2018 11:01	Finished	LCS, IWST-171002B
	15	N027864-011A,SAMP	15	1000	Unknown		01/09/2018 11:10	Finished	SAMP,10mL
	16	N027864-011AMS,MS	16	1000	Unknown		01/09/2018 11:20	Finished	MS (1ppb), IWST-171002B,10
	17	N027864-011AMSD,M	17	1000	Unknown		01/09/2018 11:29	Finished	MSD (1ppb), IWST-171002B,10
	18	N027865-003A,SAMP	18	1000	Unknown		01/09/2018 11:39	Finished	SAMP,10mL
	19	N027865-003ADUP,D	19	1000	Unknown		01/09/2018 11:48	Finished	DUP,10mL
	20	N027865-001A,SAMP	20	1000	Unknown		01/09/2018 11:58	Finished	SAMP,10mL
	21	N027865-002A,SAMP	21	1000	Unknown		01/09/2018 12:07	Finished	SAMP,10mL
	22	N027865-004A,SAMP	22	1000	Unknown		01/09/2018 12:17	Finished	SAMP,10mL
	23	CCV-1,CCV1,1,	23	1000	Unknown		01/09/2018 12:26	Interrupted	CCV @10ppb, IWST-171002A
	24	CCB-1,CCB,1,	24	1000	Unknown		01/09/2018 12:26	Finished	CCB R180102C
	25	N027820-008A,SAMP	25	1000	Unknown		01/09/2018 12:37	Finished	SAMP,10mL
	26	N027820-008AMS,MS	26	1000	Unknown		01/09/2018 12:46	Finished	MS (1ppb), IWST-171002B,10
CCV,1,CCV,1,	27	~~CCV-2,CCV1,1~~,	27	1000	Unknown		01/09/2018 13:00	Finished	CCV @10ppb, IWST-171002A
CCB,1,CCB,1,	28	~~CCB-2,CCB,~~1,	28	1000	Unknown		01/09/2018 13:11	Finished	CCB R180102C
	29	N027820-010A,SAMP	29	1000	Unknown		01/09/2018 13:21	Finished	SAMP,10mL
	30	N027820-010AMS,MS	30	1000	Unknown		01/09/2018 13:30	Finished	MS (1ppb), IWST-171002B,10
	31	N027864-001A,SAMP	31	1000	Unknown		01/09/2018 13:40	Finished	SAMP,10mL
	32	N027864-007A,SAMP	32	1000	Unknown		01/09/2018 13:49	Finished	MS (1ppb), IWST-171002B,10
	33	N027864-008A,SAMP	33	1000	Unknown		01/09/2018 13:58	Finished	SAMP,10mL
	34	N027864-009A,SAMP	34	1000	Unknown		01/09/2018 14:08	Finished	SAMP,10mL
	35	N027864-010A,SAMP	35	1000	Unknown		01/09/2018 14:17	Finished	SAMP,10mL
	36	N027820-009A,SAMP	36	1000	Unknown		01/09/2018 14:27	Finished	SAMP,10mL
	37	N027820-009AMS,MS	37	1000	Unknown		01/09/2018 14:36	Finished	MS (1ppb), IWST-171002B,10
CCV,2,CCV,1,	38	~~CCV-3,CCV,1,~~	39	1000	Unknown		01/09/2018 14:49	Finished	CCV @5ppb, IWST-171002A
CCB,2,CCB,1,	39	~~CCB-3,CCB,1,~~	40	1000	Unknown		01/09/2018 15:00	Finished	CCB R180102C
	40	SHUTDOWN	41	1000	Unknown		01/09/2018 15:10	Finished	
	41	Eluent: R180108D	42	1000	Unknown		n.a.	Finished	Eluent
	42	PCR: R180109A	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 1/10/2018

INJECTION LOG: 180110A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 8:57 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 9:07 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/18 9:17 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:26 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:36 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:45 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:55 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:04 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:14 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/10/18 8:11 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/10/18 8:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/10/18 8:32 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/10/18 8:41 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/10/18 8:51 AM	Reported
15	MB-R121348	MBLK	1	Hexavalent Chromium	01/10/18 9:00 AM	Reported
16	LCS-R121348	LCS	1	Hexavalent Chromium	01/10/18 9:09 AM	Reported
17	N027820-008A	SAMP	1	Hexavalent Chromium	01/10/18 9:19 AM	Reported
18	N027820-008AMS	MS	1	Hexavalent Chromium	01/10/18 9:28 AM	Reported
19	N027890-001A	SAMP	1	Hexavalent Chromium	01/10/18 9:38 AM	Reported
20	N027890-002A	SAMP	1	Hexavalent Chromium	01/10/18 9:47 AM	Reported
21	N027890-003A	SAMP	1	Hexavalent Chromium	01/10/18 9:57 AM	Reported
22	N027890-004A	SAMP	1	Hexavalent Chromium	01/10/18 10:06 AM	Reported
23	N027890-005A	SAMP	1	Hexavalent Chromium	01/10/18 10:16 AM	Reported
24	N027890-006A	SAMP	1	Hexavalent Chromium	01/10/18 10:25 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/10/18 10:35 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/10/18 10:44 AM	Reported
27	N027890-007A	SAMP	1	Hexavalent Chromium	01/10/18 10:54 AM	Not Reported
28	N027890-008A	SAMP	1	Hexavalent Chromium	01/10/18 11:03 AM	Not Reported
29	N027890-009A	SAMP	1	Hexavalent Chromium	01/10/18 11:12 AM	Reported
30	N027891-001A	SAMP	1	Hexavalent Chromium	01/10/18 11:22 AM	Reported
31	N027891-002A	SAMP	1	Hexavalent Chromium	01/10/18 11:31 AM	Reported
32	N027891-003A	SAMP	1	Hexavalent Chromium	01/10/18 11:41 AM	Reported
33	N027891-004A	SAMP	1	Hexavalent Chromium	01/10/18 11:50 AM	Reported
34	N027891-005A	SAMP	1	Hexavalent Chromium	01/10/18 12:00 PM	Reported
35	N027891-006A	SAMP	1	Hexavalent Chromium	01/10/18 12:09 PM	Reported
36	N027891-007A	SAMP	1	Hexavalent Chromium	01/10/18 12:19 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/10/18 12:28 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/10/18 12:38 PM	Reported
39	N027891-008A	SAMP	1	Hexavalent Chromium	01/10/18 12:47 PM	Not Reported
40	N027891-009A	SAMP	1	Hexavalent Chromium	01/10/18 12:57 PM	Reported
41	N027891-010A	SAMP	1	Hexavalent Chromium	01/10/18 1:06 PM	Reported
42	N027891-011A	SAMP	1	Hexavalent Chromium	01/10/18 1:15 PM	Reported

INJECTION LOG: 180110A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027891-001ADUP	DUP	1	Hexavalent Chromium	01/10/18 1:25 PM	Reported
44	N027890-007A	SAMP	5	Hexavalent Chromium	01/10/18 1:34 PM	Reported
45	N027890-007AMS	MS	5	Hexavalent Chromium	01/10/18 1:44 PM	Reported
46	N027890-007AMSD	MSD	5	Hexavalent Chromium	01/10/18 1:53 PM	Reported
47	N027890-008A	SAMP	5	Hexavalent Chromium	01/10/18 2:03 PM	Reported
48	N027891-008A	SAMP	1	Hexavalent Chromium	01/10/18 2:12 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/10/18 2:22 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/10/18 2:31 PM	Reported
51	LCS-R121349	LCS	1	Hexavalent Chromium	01/10/18 2:43 PM	Reported
52	MB-R121349	MBLK	1	Hexavalent Chromium	01/10/18 2:54 PM	Reported
53	N027892-004A	SAMP	1	Hexavalent Chromium	01/10/18 3:03 PM	Reported
54	N027892-004AMS	MS	1	Hexavalent Chromium	01/10/18 3:13 PM	Reported
55	N027892-004AMSD	MSD	1	Hexavalent Chromium	01/10/18 3:22 PM	Reported
56	N027892-011A	SAMP	1	Hexavalent Chromium	01/10/18 3:32 PM	Reported
57	N027892-011AMS	MS	1	Hexavalent Chromium	01/10/18 3:41 PM	Reported
58	N027892-007A	SAMP	1	Hexavalent Chromium	01/10/18 3:51 PM	Reported
59	N027892-007ADUP	DUP	1	Hexavalent Chromium	01/10/18 4:00 PM	Reported
60	N027892-001A	SAMP	1	Hexavalent Chromium	01/10/18 4:10 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/10/18 4:19 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/10/18 4:29 PM	Reported
63	N027892-002A	SAMP	1	Hexavalent Chromium	01/10/18 4:38 PM	Reported
64	N027892-003A	SAMP	1	Hexavalent Chromium	01/10/18 4:47 PM	Reported
65	N027892-005A	SAMP	1	Hexavalent Chromium	01/10/18 4:57 PM	Reported
66	N027892-006A	SAMP	1	Hexavalent Chromium	01/10/18 5:06 PM	Reported
67	N027892-008A	SAMP	1	Hexavalent Chromium	01/10/18 5:16 PM	Reported
68	N027892-009A	SAMP	1	Hexavalent Chromium	01/10/18 5:25 PM	Reported
69	N027892-010A	SAMP	1	Hexavalent Chromium	01/10/18 5:35 PM	Reported
70	N027892-012A	SAMP	1	Hexavalent Chromium	01/10/18 5:44 PM	Reported
71	N027892-013A	SAMP	1	Hexavalent Chromium	01/10/18 5:54 PM	Reported
72	N027892-014A	SAMP	1	Hexavalent Chromium	01/10/18 6:03 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	01/10/18 6:13 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	01/10/18 6:22 PM	Reported
75	MB-R121350	MBLK	1	Hexavalent Chromium	01/10/18 6:32 PM	Reported
76	LCS-R121350	LCS	1	Hexavalent Chromium	01/10/18 6:41 PM	Reported
77	N027916-007A	SAMP	2000	Hexavalent Chromium	01/10/18 6:50 PM	Reported
78	N027916-007AMS	MS	2000	Hexavalent Chromium	01/10/18 7:00 PM	Reported
79	N027916-007AMSD	MSD	2000	Hexavalent Chromium	01/10/18 7:09 PM	Reported
80	N027916-005A	SAMP	2000	Hexavalent Chromium	01/10/18 7:19 PM	Reported
81	N027916-005ADUP	DUP	2000	Hexavalent Chromium	01/10/18 7:28 PM	Reported
82	N027916-001A	SAMP	200	Hexavalent Chromium	01/10/18 7:38 PM	Reported
83	N027916-002A	SAMP	200	Hexavalent Chromium	01/10/18 7:47 PM	Reported
84	N027916-003A	SAMP	200	Hexavalent Chromium	01/10/18 7:57 PM	Reported

INJECTION LOG: 180110A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	01/10/18 8:06 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	01/10/18 8:16 PM	Reported
87	N027916-004A	SAMP	500	Hexavalent Chromium	01/10/18 8:25 PM	Reported
88	N027916-006A	SAMP	2000	Hexavalent Chromium	01/10/18 8:35 PM	Reported
89	N027916-008A	SAMP	1	Hexavalent Chromium	01/10/18 8:44 PM	Reported
90	N027916-009A	SAMP	2000	Hexavalent Chromium	01/10/18 8:54 PM	Reported
91	N027902-001A	SAMP	10	Hexavalent Chromium	01/10/18 9:03 PM	Not Reported
92	N027902-001A	SAMP	5	Hexavalent Chromium	01/10/18 9:12 PM	Not Reported
93	N027902-001A	SAMP	1	Hexavalent Chromium	01/10/18 9:22 PM	Not Reported
94	BLANK	BLANK	1	Hexavalent Chromium	01/10/18 9:32 PM	Not Reported
95	CCV-8	CCV1	1	Hexavalent Chromium	01/10/18 9:41 PM	Reported
96	CCB-8	CCB	1	Hexavalent Chromium	01/10/18 9:50 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180110A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 22:21:08**
No. of Injections:	**99**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2018 08:57	Finished	BLANK
2	BLANK	2	1000	Unknown		01/09/2018 09:07	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/09/2018 09:17	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2018 09:26	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2018 09:36	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2018 09:45	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2018 09:55	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2018 10:04	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2018 10:14	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		01/10/2018 08:11	Finished	20 ppb, IWST-171002A
11	BLANK	2	1000	Unknown		01/10/2018 08:22	Finished	20 ppb, IWST-171002A
12	CCV-1,CCV,1,	3	1000	Unknown		01/10/2018 08:32	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/10/2018 08:41	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/10/2018 08:51	Finished	CCB R180102C
15	MB-H2O,MBLK,1,	6	1000	Unknown		01/10/2018 09:00	Finished	MB R180102C
16	LCS-H2O,LCS,1,	7	1000	Unknown		01/10/2018 09:09	Finished	LCS, IWST-171002B
17	N027820-008A,SAMP	8	1000	Unknown		01/10/2018 09:19	Finished	SAMP,10mL
18	N027820-008AMS,MS	9	1000	Unknown		01/10/2018 09:28	Finished	MS (1ppb), IWST-171002B,10
19	N027890-001A,SAMP	10	1000	Unknown		01/10/2018 09:38	Finished	SAMP,10mL
20	N027890-002A,SAMP	11	1000	Unknown		01/10/2018 09:47	Finished	SAMP,10mL
21	N027890-003A,SAMP	12	1000	Unknown		01/10/2018 09:57	Finished	SAMP,10mL
22	N027890-004A,SAMP	13	1000	Unknown		01/10/2018 10:06	Finished	SAMP,10mL
23	N027890-005A,SAMP	14	1000	Unknown		01/10/2018 10:16	Finished	SAMP,10mL
24	N027890-006A,SAMP	15	1000	Unknown		01/10/2018 10:25	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		01/10/2018 10:35	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		01/10/2018 10:44	Finished	CCB R180102C
27	N027890-007A,SAMP	18	1000	Unknown		01/10/2018 10:54	Finished	SAMP,10mL
28	N027890-008A,SAMP	19	1000	Unknown		01/10/2018 11:03	Finished	SAMP,10mL
29	N027890-009A,SAMP	20	1000	Unknown		01/10/2018 11:12	Finished	SAMP,10mL
30	N027891-001A,SAMP	21	1000	Unknown		01/10/2018 11:22	Finished	SAMP,10mL
31	N027891-002A,SAMP	22	1000	Unknown		01/10/2018 11:31	Finished	SAMP,10mL
32	N027891-003A,SAMP	23	1000	Unknown		01/10/2018 11:41	Finished	SAMP,10mL
33	N027891-004A,SAMP	24	1000	Unknown		01/10/2018 11:50	Finished	SAMP,10mL
34	N027891-005A,SAMP	25	1000	Unknown		01/10/2018 12:00	Finished	SAMP,10mL
35	N027891-006A,SAMP	26	1000	Unknown		01/10/2018 12:09	Finished	SAMP,10mL
36	N027891-007A,SAMP	27	1000	Unknown		01/10/2018 12:19	Finished	SAMP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		01/10/2018 12:28	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		01/10/2018 12:38	Finished	CCB R180102C
39	N027891-008A,SAMP	30	1000	Unknown		01/10/2018 12:47	Finished	SAMP,10mL
40	N027891-009A,SAMP	31	1000	Unknown		01/10/2018 12:57	Finished	SAMP,10mL
41	N027891-010A,SAMP	32	1000	Unknown		01/10/2018 13:06	Finished	SAMP,10mL
42	N027891-011A,SAMP	33	1000	Unknown		01/10/2018 13:15	Finished	SAMP,10mL
43	N027891-001ADUP,D	34	1000	Unknown		01/10/2018 13:25	Finished	DUP,10mL
44	N027890-007A,SAMP	35	1000	Unknown		01/10/2018 13:34	Finished	SAMP,2>10mL
45	N027890-007AMS,MS	36	1000	Unknown		01/10/2018 13:44	Finished	MS (5ppb), IWST-171002B,2>1
46	N027890-007AMSD,M	37	1000	Unknown		01/10/2018 13:53	Finished	MSD (5ppb), IWST-171002B,2>
47	N027890-008A,SAMP	38	1000	Unknown		01/10/2018 14:03	Finished	SAMP,2>10mL
48	N027891-008A,SAMP	39	1000	Unknown		01/10/2018 14:12	Finished	SAMP,10mL
49	CCV-4,CCV1,1,	40	1000	Unknown		01/10/2018 14:22	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		01/10/2018 14:31	Finished	CCB R180102C
51	LCS-2,LCS,1,	1	1000	Unknown		01/10/2018 14:43	Finished	LCS, IWST-171002B
52	MB-2,MBLK,1,	2	1000	Unknown		01/10/2018 14:54	Finished	MB R180102C
53	N027892-004A,SAMP	3	1000	Unknown		01/10/2018 15:03	Finished	SAMP,10mL
54	N027892-004AMS,MS	4	1000	Unknown		01/10/2018 15:13	Finished	MS (5ppb), IWST-171002B,10
55	N027892-004AMSD,M	5	1000	Unknown		01/10/2018 15:22	Finished	MSD (5ppb), IWST-171002B,1
56	N027892-011A,SAMP	6	1000	Unknown		01/10/2018 15:32	Finished	SAMP,10mL
57	N027892-011AMS,MS	7	1000	Unknown		01/10/2018 15:41	Finished	MS (5ppb), IWST-171002B,10
58	N027892-007A,SAMP	8	1000	Unknown		01/10/2018 15:51	Finished	SAMP,10mL
59	N027892-007ADUP,D	9	1000	Unknown		01/10/2018 16:00	Finished	DUP,10mL
60	N027892-001A,SAMP	10	1000	Unknown		01/10/2018 16:10	Finished	SAMP,10mL

61	CCV-5,CCV,1,	11	1000	Unknown		01/10/2018 16:19	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	12	1000	Unknown		01/10/2018 16:29	Finished	CCB R180102C
63	N027892-002A,SAMF	13	1000	Unknown		01/10/2018 16:38	Finished	SAMP,10mL
64	N027892-003A,SAMF	14	1000	Unknown		01/10/2018 16:47	Finished	SAMP,10mL
65	N027892-005A,SAMF	15	1000	Unknown		01/10/2018 16:57	Finished	SAMP,10mL
66	N027892-006A,SAMF	16	1000	Unknown		01/10/2018 17:06	Finished	SAMP,10mL
67	N027892-008A,SAMF	17	1000	Unknown		01/10/2018 17:16	Finished	SAMP,10mL
68	N027892-009A,SAMF	18	1000	Unknown		01/10/2018 17:25	Finished	SAMP,10mL
69	N027892-010A,SAMF	19	1000	Unknown		01/10/2018 17:35	Finished	SAMP,10mL
70	N027892-012A,SAMF	20	1000	Unknown		01/10/2018 17:44	Finished	SAMP,10mL
71	N027892-013A,SAMF	21	1000	Unknown		01/10/2018 17:54	Finished	SAMP,10mL
72	N027892-014A,SAMF	22	1000	Unknown		01/10/2018 18:03	Finished	SAMP,10mL
73	CCV-6,CCV1,1,	23	1000	Unknown		01/10/2018 18:13	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	24	1000	Unknown		01/10/2018 18:22	Finished	CCB R180102C
75	MB-3,MBLK,1,	25	1000	Unknown		01/10/2018 18:32	Finished	CCB R180102C
76	LCS-3,LCS,1,	26	1000	Unknown		01/10/2018 18:41	Finished	CCB R180102C
77	N027916-007A,SAMF	27	1000	Unknown		01/10/2018 18:50	Finished	SAMP,0.005>10mL
78	N027916-007AMS,MS	28	1000	Unknown		01/10/2018 19:00	Finished	MS (5ppb), IWST-171002B,0.0
79	N027916-007AMSD,M	29	1000	Unknown		01/10/2018 19:09	Finished	MSD (5ppb), IWST-171002B,0.
80	N027916-005A,SAMF	30	1000	Unknown		01/10/2018 19:19	Finished	SAMP,0.005>10mL
81	N027916-005ADUP,D	31	1000	Unknown		01/10/2018 19:28	Finished	DUP,0.005>10mL
82	N027916-001A,SAMF	32	1000	Unknown		01/10/2018 19:38	Finished	SAMP,0.05>10mL
83	N027916-002A,SAMF	33	1000	Unknown		01/10/2018 19:47	Finished	SAMP,0.05>10mL
84	N027916-003A,SAMF	34	1000	Unknown		01/10/2018 19:57	Finished	SAMP,0.05>10mL
85	CCV-7,CCV,1,	35	1000	Unknown		01/10/2018 20:06	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	36	1000	Unknown		01/10/2018 20:16	Finished	CCB R180102C
87	N027916-004A,SAMF	37	1000	Unknown		01/10/2018 20:25	Finished	SAMP,0.02>10mL
88	N027916-006A,SAMF	38	1000	Unknown		01/10/2018 20:35	Finished	SAMP,0.005>10mL
89	N027916-008A,SAMF	39	1000	Unknown		01/10/2018 20:44	Finished	CCB R180102C
90	N027916-009A,SAMF	40	1000	Unknown		01/10/2018 20:54	Finished	SAMP,0.005>10mL
91	N027902-001A,SAMF	41	1000	Unknown		01/10/2018 21:03	Finished	SAMP,1>10mL
92	N027902-001A,SAMF	42	1000	Unknown		01/10/2018 21:12	Finished	SAMP,2>10mL
93	N027902-001A,SAMF	43	1000	Unknown		01/10/2018 21:22	Finished	SAMP,10mL
94	BLANK	44	1000	Unknown		01/10/2018 21:32	Finished	BLANK
95	CCV-8,CCV1,1,	45	1000	Unknown		01/10/2018 21:41	Finished	CCV @10ppb, IWST-171002A
96	CCB-8,CCB,1,	46	1000	Unknown		01/10/2018 21:50	Finished	CCB R180102C
97	SHUTDOWN	47	1000	Unknown		01/10/2018 22:00	Finished	
98	Eluent: R180109C	48	1000	Unknown		n.a.	Finished	Eluent
99	PCR: R180109A	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 1/8/18
Time Prepared: 1038A
Prepared By: RSA

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CRW-170620A
NH4OH + NH4SO4 eluent: M801080
NH4OH + NH4SO4 buffer: M801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	MW27819-10A	9.42	-	~250mL	~250mL		M801020
2)	2A	9.21	-				
3)	MW27820-1A	9.41	-				1/3
4)	1A	9.41	-				2/3
5)	1A	9.40	-				3/3
6)	2A	9.39	-				1/3
7)	2A	9.37	-				2/3
8)	2A	9.45	-				3/3
9)	3A	9.40	-				1/3
10)	3A	9.39	-				2/3
11)	3A	9.36	-				3/3
12)	4A	9.38	-				1/3
13)	4A	9.41	-				2/3
14)	4A	9.42	-				3/3
15)	5A	9.36	-				1/3
	5A	9.33	-				2/3

Sample Preparation

Date Prepared: 1/8/18
Time Prepared: 1038A
Prepared By: RSA

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CRW-170620A
NH4OH + NH4SO4 eluent: M801080 / M801020
NH4OH + NH4SO4 buffer: M801020

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	MW27820-5A	9.38	-	~250mL	~250mL		3/3 M801020
2)	6A	9.35	-				1/3
3)	6A	9.34	-				2/3
4)	6A	9.34	-				3/3
5)	7A	9.40	-				1/3
6)	7A	9.43	-				2/3
7)	7A	9.45	-				3/3
8)	8A	9.41	-				1/3
9)	8A	9.40	-				2/3
10)	8A	9.38	-				3/3
11)	9A	9.37	-				1/3
12)	9A	9.38	-				2/3
13)	9A	9.43	-				3/3
14)	10A	9.38	-				1/3
15)	10A	9.42	-				2/3
	10A	9.41	-				3/3

rba 1/15/2018

Logbook No. 13

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 1/8/18
Time Prepared: 1038H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CLNV-170620A
NH4OH + NH4SO4 eluent: M80108D ~~M801096~~
NH4OH + NH4SO4 buffer: M80102C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027820-11A	9.32	–	~250ml	~250ml		1/3 M80102C
2)	11A	9.30	–				2/3
3)	11A	9.34	–				3/3
4)	12A	9.29	–				1/3
5)	12A	9.35	–				2/3
6)	12A	9.36	–				3/3
7)	13A	9.38	–				1/3
8)	13A	9.34	–				2/3
9)	13A	9.33	–				3/3
10)	14A	9.50	–				1/1 HOLD
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 1/9/18
Time Prepared: 0930H
Prepared By: MSA

slope: 97.8%
pH 4: 4.03 @ 25.0°C
7: 7.03 @ 25.0°C
10: 9.99 @ 25.0°C
LA: 6.98 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9665
Diphenylcarbazide: CLNV-171116A
NH4OH + NH4SO4 eluent: M80108D
NH4OH + NH4SO4 buffer: M80102C

6N NaOH: M71229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N027864-11A	9.48	–	~250ml	~250ml		M80102C
2)	1A	9.61	–				
3)	7A	9.58	–				
4)	8A	9.56	–				
5)	9A	9.49	–				
6)	10A	9.59	–				
7)	N027865-001A	9.39	–				
8)	2A	9.40	–				
9)	3A	8.58	9.48			+8 dpr NaOH	
10)	4A	9.64	–				
11)							
12)							
13)							
14)							
15)							

Logbook No. 13

rba 1/15/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/8/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0622	0.2487	1.2856	2.5688	3.8263	5.1131	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 1/9/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0563	0.2587	1.3120	2.6191	3.9625	5.2386	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-171002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ICV**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ZZZZZZ**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.234	0.20	0.2000	0	117	80	120				

Sample ID **CCV-1**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ZZZZZZ**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.894	0.20	10.00	0	98.9	95	105				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **CCV**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.986	0.20	5.000	0	99.7	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.204	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.225	0.20	0.2000	0	113	80	120				

Sample ID **CCV-1**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.253	0.20	10.00	0	103	95	105				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.233	0.20	5.000	0	105	95	105				

Sample ID **CCV-3**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.161	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCV**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.117	0.20	5.000	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ZZZZZZ**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.174	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **ICV**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2891669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **ZZZZZZ**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2891670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.234	0.20	0.2000	0	117	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **CCV**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.997	0.20	5.000	0	99.9	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **ZZZZZZ**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.222	0.20	0.2000	0	111	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **ZZZZZZ**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.970	0.20	10.00	0	99.7	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **CCV**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.006	0.20	5.000	0	100	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **ZZZZZZ**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.993	0.20	10.00	0	99.9	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **ICB**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **CCB**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121295**
Client ID: **CCB**	Batch ID: **R121295**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2889260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **ICB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121296**
Client ID: **CCB**	Batch ID: **R121296**	TestNo: **EPA 218.6**		Analysis Date: **1/8/2018**	SeqNo: **2889221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **ICB**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/9/2018**	SeqNo: **2891671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **CCB**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **CCB**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **CCB**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121348**
Client ID: **CCB**	Batch ID: **R121348**	TestNo: **EPA 218.6**		Analysis Date: **1/10/2018**	SeqNo: **2891707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	

Average	4.176	
Actual RT Window	4.096 -	4.256
Applied RT Window	3.976 -	4.376

MB-R121296	N.A.	N.A.
LCS-R121296	4.173	PASS
N027812-014A	4.156	PASS
N027812-014AMS	4.173	PASS
N027819-002A	4.173	PASS
N027819-002AMS	4.173	PASS
N027819-002AMSD	4.173	PASS
N027820-001A	N.A.	N.A.
N027820-001AMS	4.165	PASS
N027820-001ADUP	N.A.	N.A.
N027819-001A	N.A.	N.A.
N027819-001AMS	4.165	PASS
N027820-002A	N.A.	N.A.
N027820-002AMS	4.165	PASS
N027820-003A	N.A.	N.A.
N027820-003AMS	4.173	PASS
N027820-004A	4.148	PASS
N027820-004AMS	4.173	PASS
N027820-005A	N.A.	N.A.
N027820-005AMS	4.173	PASS
N027557-004A	4.098	PASS
N027557-004AMS	4.098	PASS
N027583-001A	4.056	PASS
N027583-001AMS	4.065	PASS
N027583-002A	4.056	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.181	
CCV-3	4.181	
CCV-4	4.173	
CCV-5	4.173	
Average	4.176	
Actual RT Window	4.096 - 4.256	
Applied RT Window	3.976 - 4.376	
N027583-002AMS	4.056	PASS
N027583-003A	4.048	PASS
N027583-003AMS	4.056	PASS
N027820-006A	N.A.	N.A.
N027820-006AMS	4.173	PASS
N027820-007A	N.A.	N.A.
N027820-007AMS	4.173	PASS
N027820-008A	N.A.	N.A.
N027820-008AMS	4.173	PASS
N027820-009A	4.106	PASS
N027820-009AMS	4.173	PASS
N027820-010A	N.A.	N.A.
N027820-010AMS	4.173	PASS
N027820-011A	N.A.	N.A.
N027820-011AMS	4.173	PASS
N027820-012A	N.A.	N.A.
N027820-012AMS	4.173	PASS
N027820-013A	N.A.	N.A.
N027820-013AMS	4.165	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/9/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.173	
CCV-2	4.173	
Average	4.173	
Actual RT Window	4.093 - 4.253	
Applied RT Window	3.973 - 4.373	
MB-R121295	N.A.	N.A.
LCS-R121295	4.173	PASS
N027864-011A	4.156	PASS
N027864-011AMS	4.156	PASS
N027864-011AMSD	4.156	PASS
N027865-003A	4.081	PASS
N027865-003ADUP	4.081	PASS
N027865-001A	4.148	PASS
N027865-002A	4.148	PASS
N027865-004A	N.A.	N.A.
N027820-008A	N.A.	N.A.
N027820-008AMS	4.165	PASS
N027820-010A	N.A.	N.A.
N027820-010AMS	4.165	PASS
N027864-001A	4.165	PASS
N027864-007A	4.173	PASS
N027864-008A	N.A.	N.A.
N027864-009A	N.A.	N.A.
N027864-010A	N.A.	N.A.
N027820-009A	N.A.	N.A.
N027820-009AMS	4.165	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/10/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
CCV-7	4.173	
CCV-8	4.165	

Average	4.172
Actual RT Window	4.092 - 4.252
Applied RT Window	3.972 - 4.372

MB-R121348	N.A.	N.A.
LCS-R121348	4.165	PASS
N027820-008A	N.A.	N.A.
N027820-008AMS	4.165	PASS
N027890-001A	4.148	PASS
N027890-002A	4.165	PASS
N027890-003A	4.165	PASS
N027890-004A	4.165	PASS
N027890-005A	4.165	PASS
N027890-006A	4.156	PASS
N027890-007A	4.156	PASS
N027890-008A	4.156	PASS
N027890-009A	4.115	PASS
N027891-001A	4.173	PASS
N027891-002A	4.173	PASS
N027891-003A	N.A.	N.A.
N027891-004A	4.173	PASS
N027891-005A	4.156	PASS
N027891-006A	N.A.	N.A.
N027891-007A	N.A.	N.A.
N027891-008A	3.890	FAIL

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/10/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
CCV-7	4.173	
CCV-8	4.165	
Average	4.172	
Actual RT Window	4.092 - 4.252	
Applied RT Window	3.972 - 4.372	
N027891-009A	4.165	PASS
N027891-010A	4.148	PASS
N027891-011A	4.165	PASS
N027891-001ADUP	4.173	PASS
N027890-007A	4.165	PASS
N027890-007AMS	4.173	PASS
N027890-007AMSD	4.173	PASS
N027890-008A	4.173	PASS
N027891-008A	N.A.	N.A.
LCS-R121349	4.173	PASS
MB-R121349	N.A.	N.A.
N027892-004A	4.156	PASS
N027892-004AMS	4.156	PASS
N027892-004AMSD	4.156	PASS
N027892-011A	4.098	PASS
N027892-011AMS	4.098	PASS
N027892-007A	4.090	PASS
N027892-007ADUP	4.081	PASS
N027892-001A	4.131	PASS
N027892-002A	4.131	PASS
N027892-003A	4.131	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/10/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
CCV-7	4.173	
CCV-8	4.165	
Average	4.172	
Actual RT Window	4.092 - 4.252	
Applied RT Window	3.972 - 4.372	
N027892-005A	4.115	PASS
N027892-006A	4.106	PASS
N027892-008A	4.106	PASS
N027892-009A	4.115	PASS
N027892-010A	3.981	PASS
N027892-012A	N.A.	N.A.
N027892-013A	N.A.	N.A.
N027892-014A	4.115	PASS
MB-R121350	4.131	PASS
LCS-R121350	4.173	PASS
N027916-007A	4.173	PASS
N027916-007AMS	4.173	PASS
N027916-007AMSD	4.173	PASS
N027916-005A	4.173	PASS
N027916-005ADUP	4.173	PASS
N027916-001A	4.173	PASS
N027916-002A	4.173	PASS
N027916-003A	4.173	PASS
N027916-004A	4.173	PASS
N027916-006A	4.173	PASS
N027916-008A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 1/10/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
CCV-4	4.173	
CCV-5	4.173	
CCV-6	4.173	
CCV-7	4.173	
CCV-8	4.165	
Average	4.172	
Actual RT Window	4.092 - 4.252	
Applied RT Window	3.972 - 4.372	
N027916-009A	4.173	PASS
N027902-001A	N.A.	N.A.
N027902-001A	N.A.	N.A.
N027902-001A	N.A.	N.A.

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

	Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte		**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium		0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

01/12/2018

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

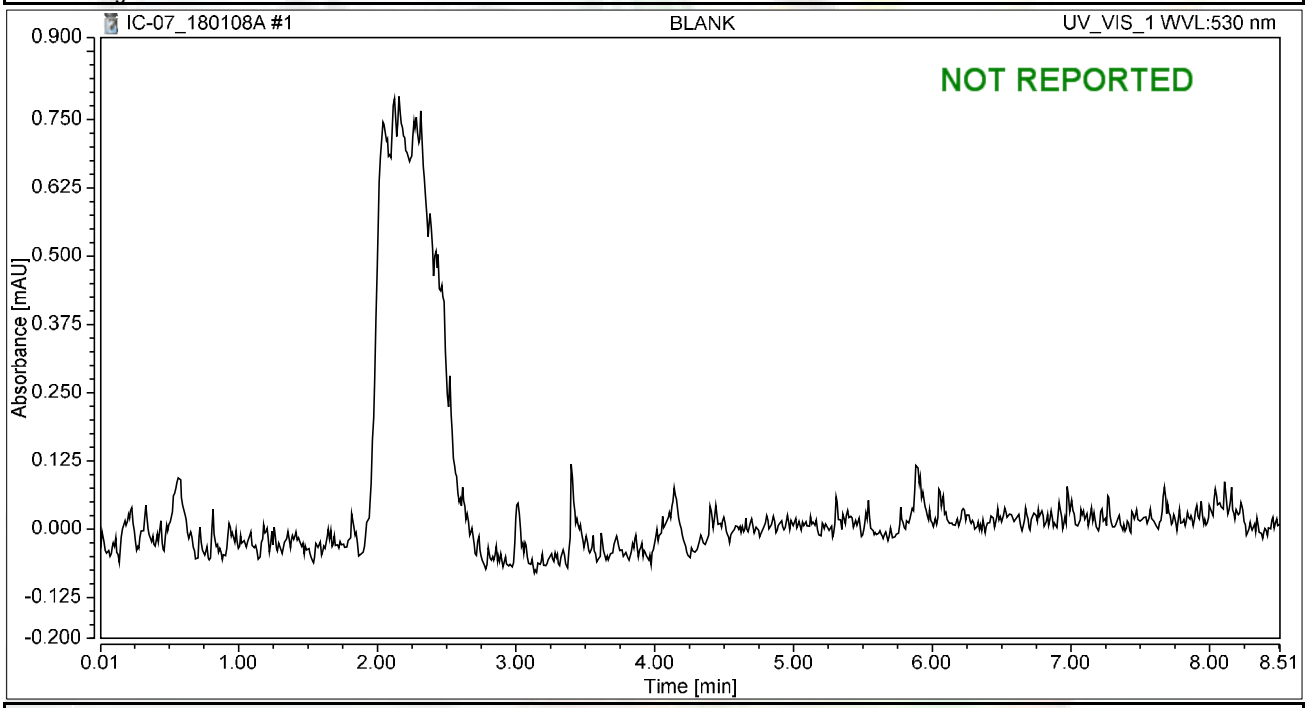
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

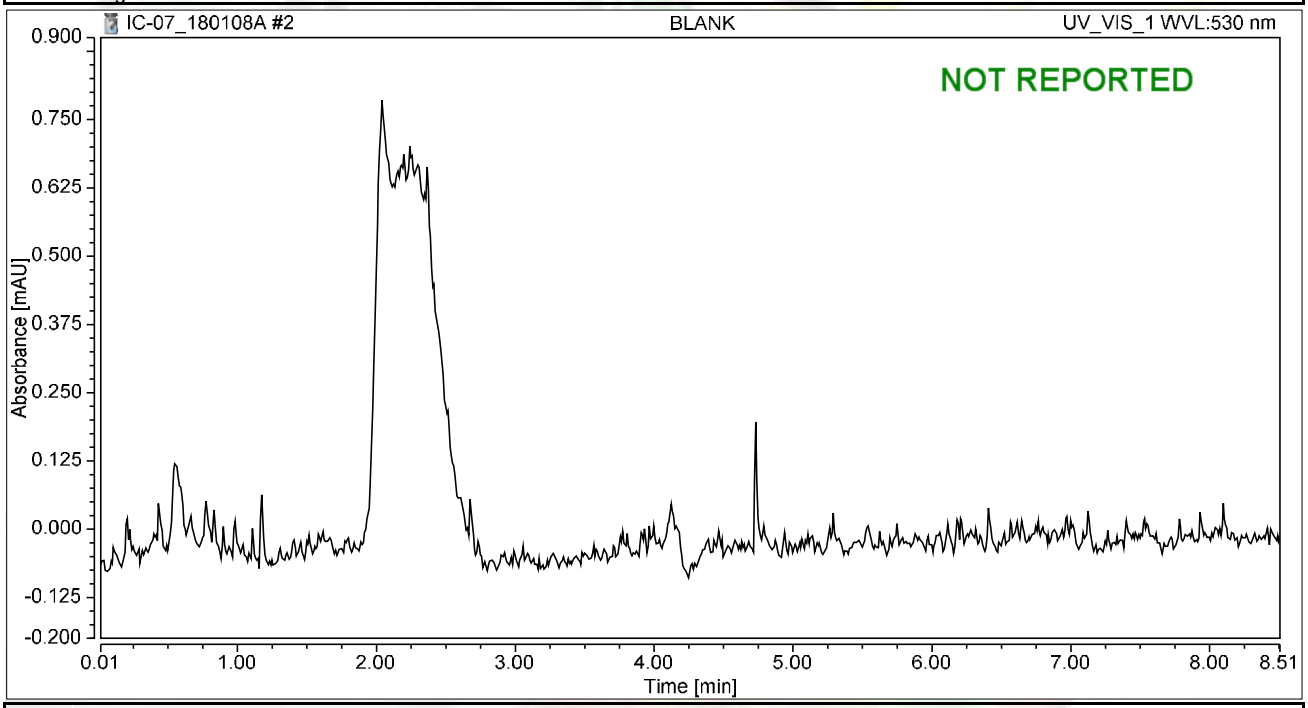
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

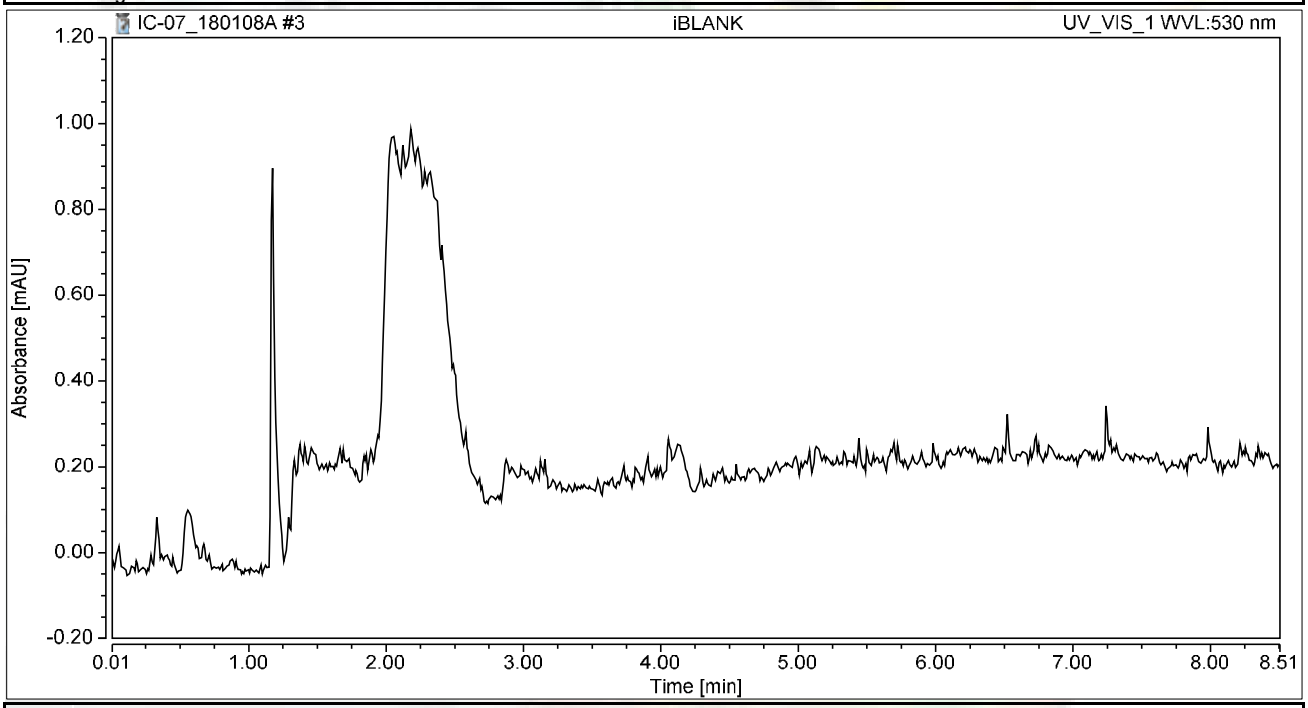
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

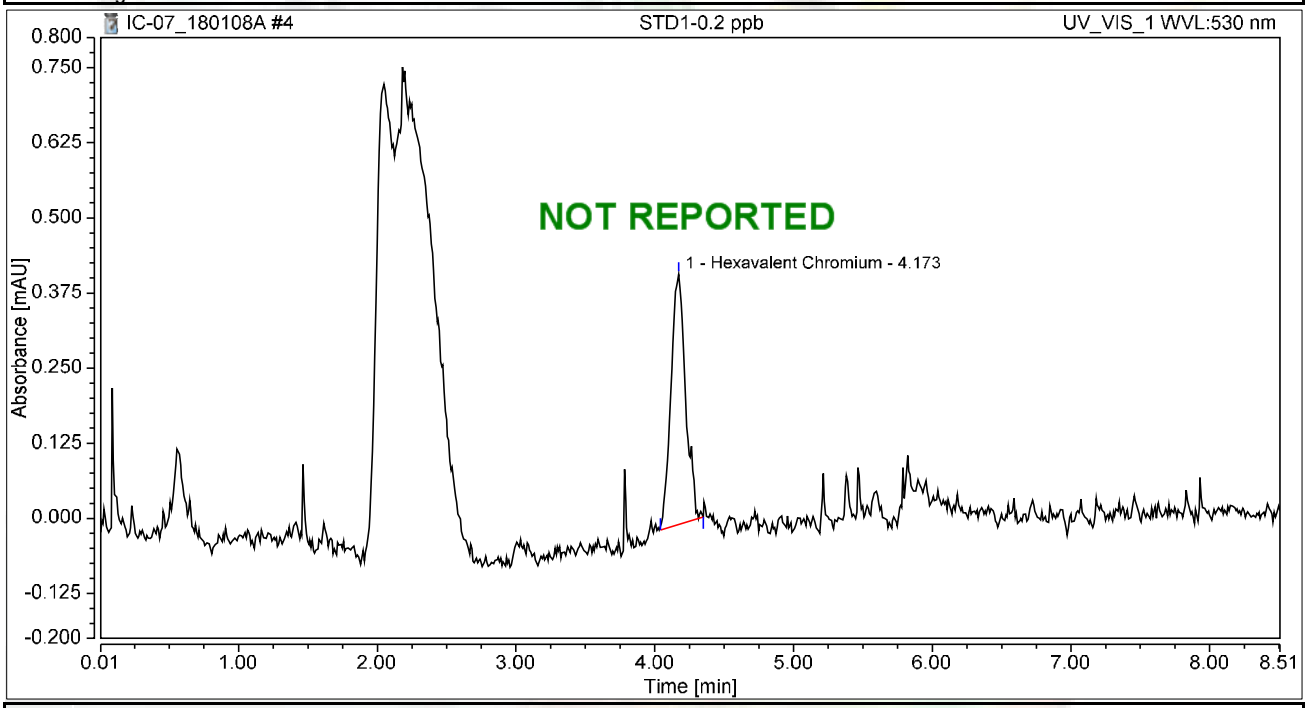
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

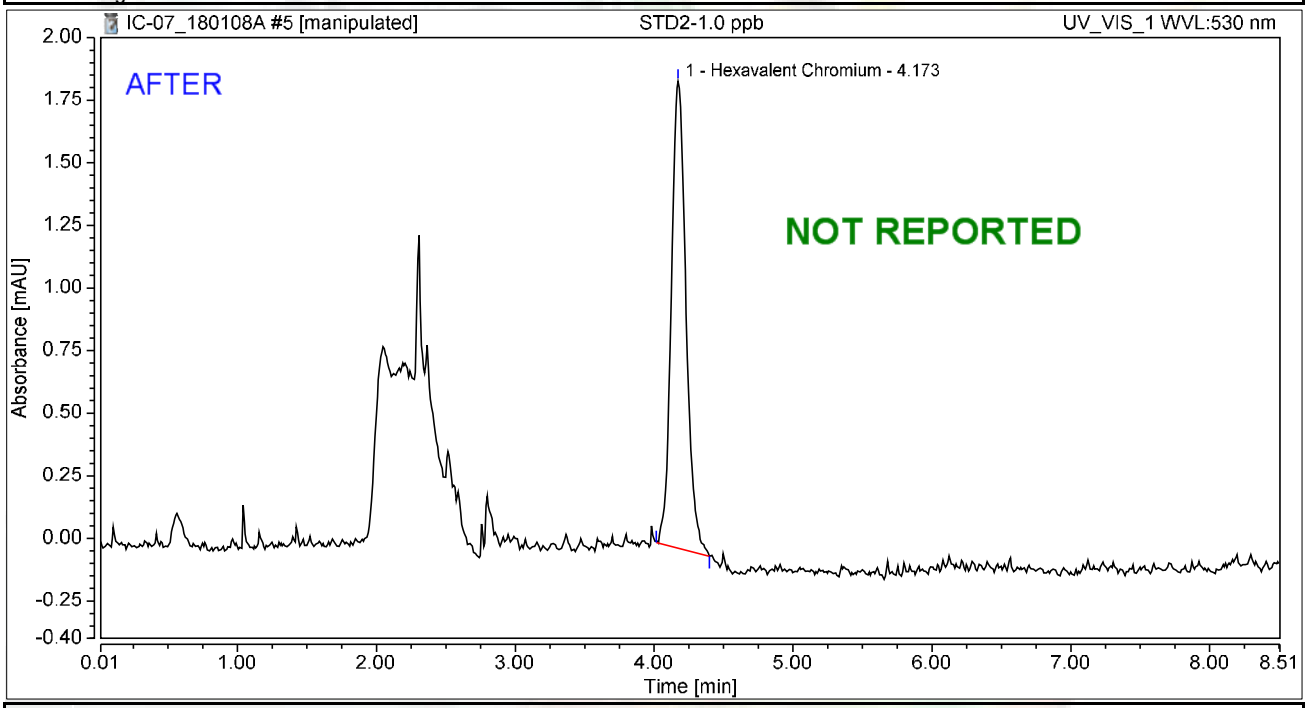
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.051	0.416	100.00	100.00	0.1983
Total:			**0.051**	**0.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.229	1.865	100.00	100.00	0.8962
Total:			**0.229**	**1.865**	**100.00**	**100.00**	

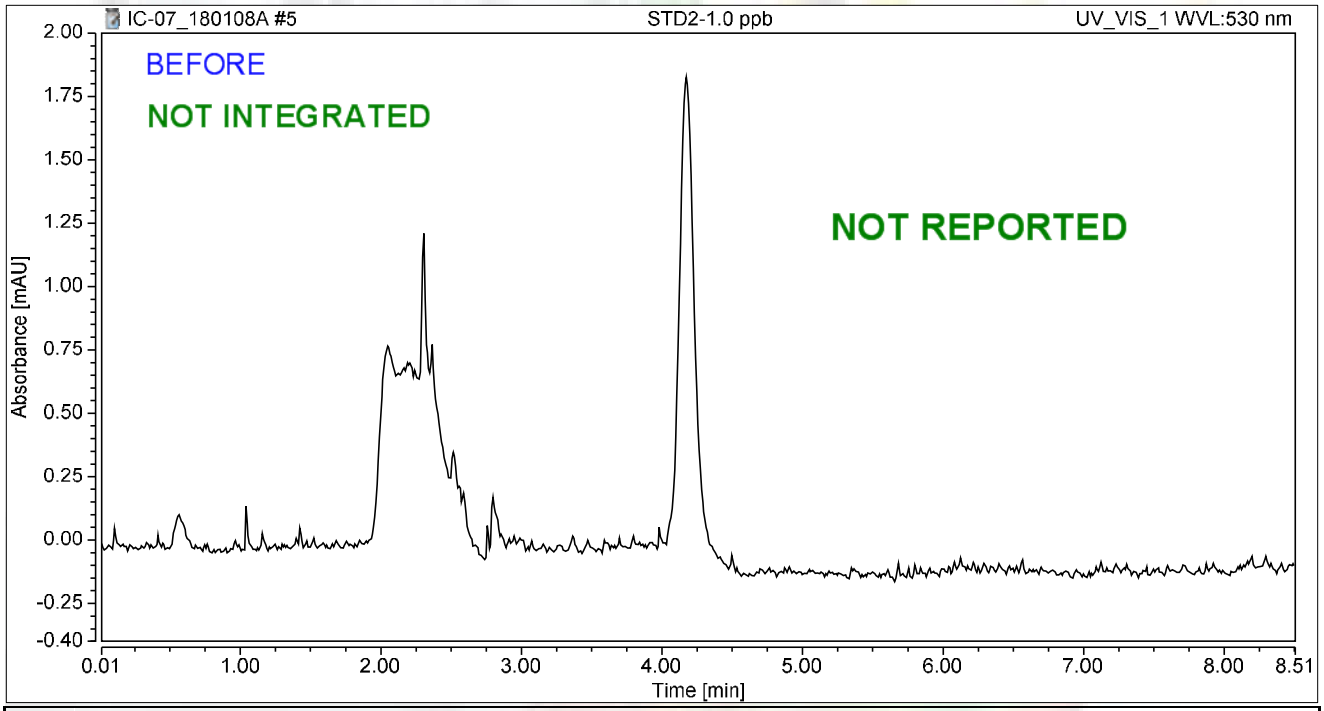
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

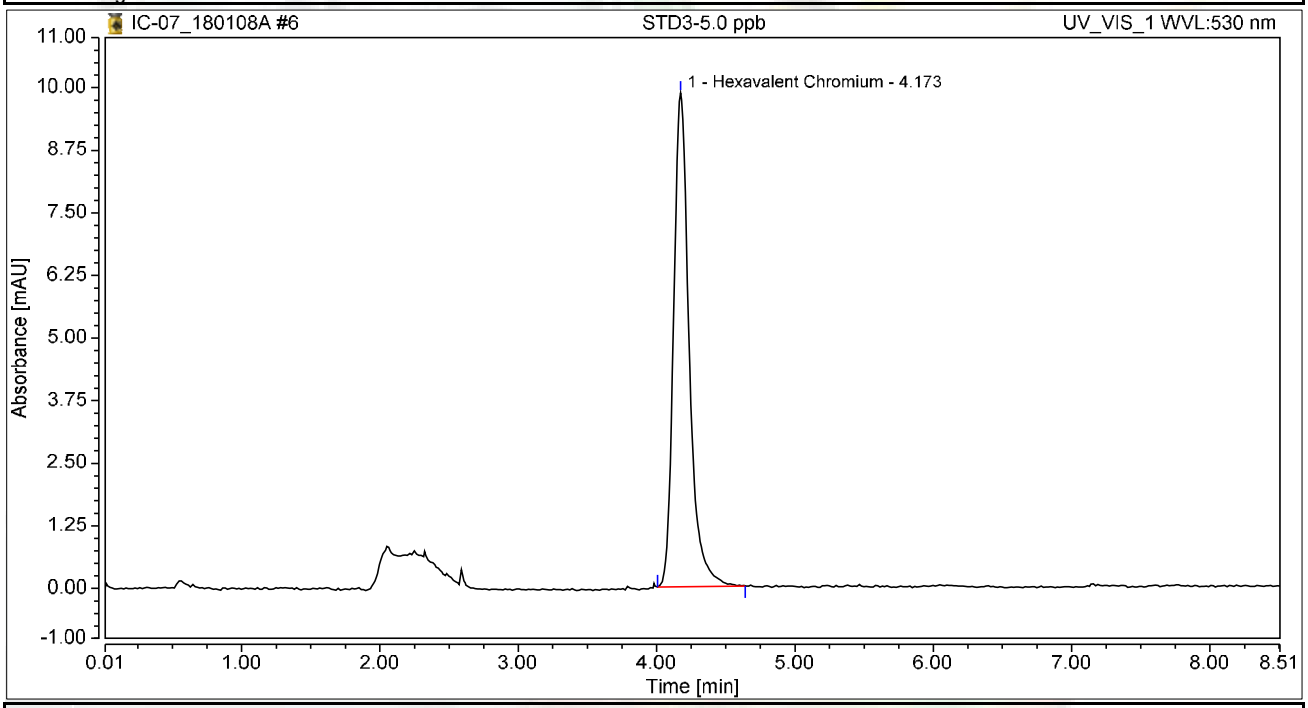
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

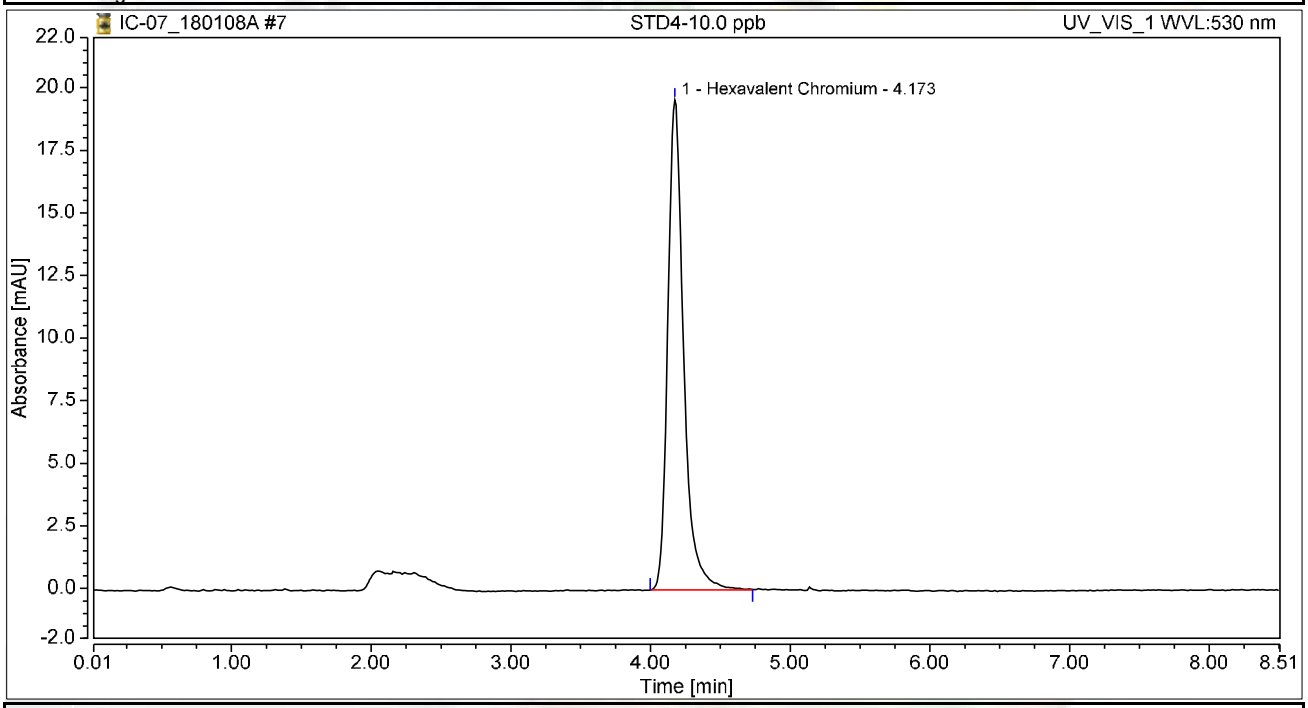
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.286	9.861	100.00	100.00	5.0280
Total:			**1.286**	**9.861**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

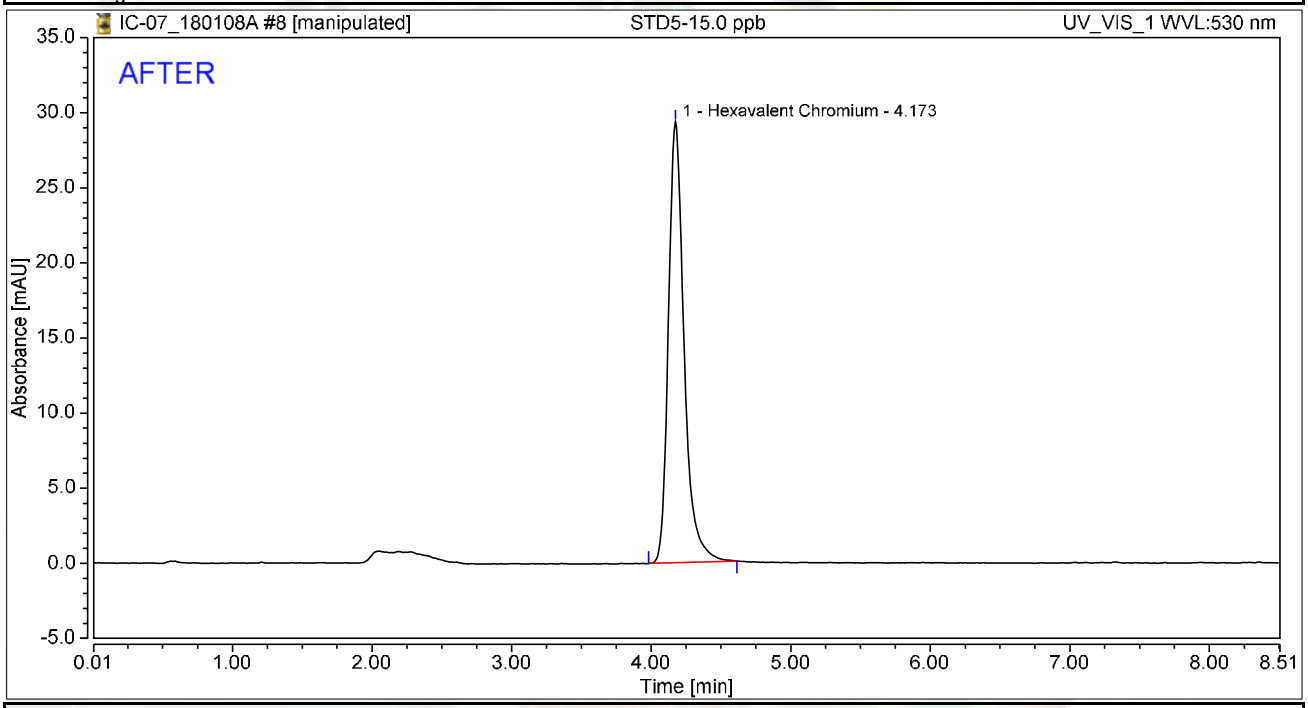
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.569	19.568	100.00	100.00	10.0465
Total:			**2.569**	**19.568**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.826	29.356	100.00	100.00	14.9645
Total:			**3.826**	**29.356**	**100.00**	**100.00**	

rba 1/10/2018

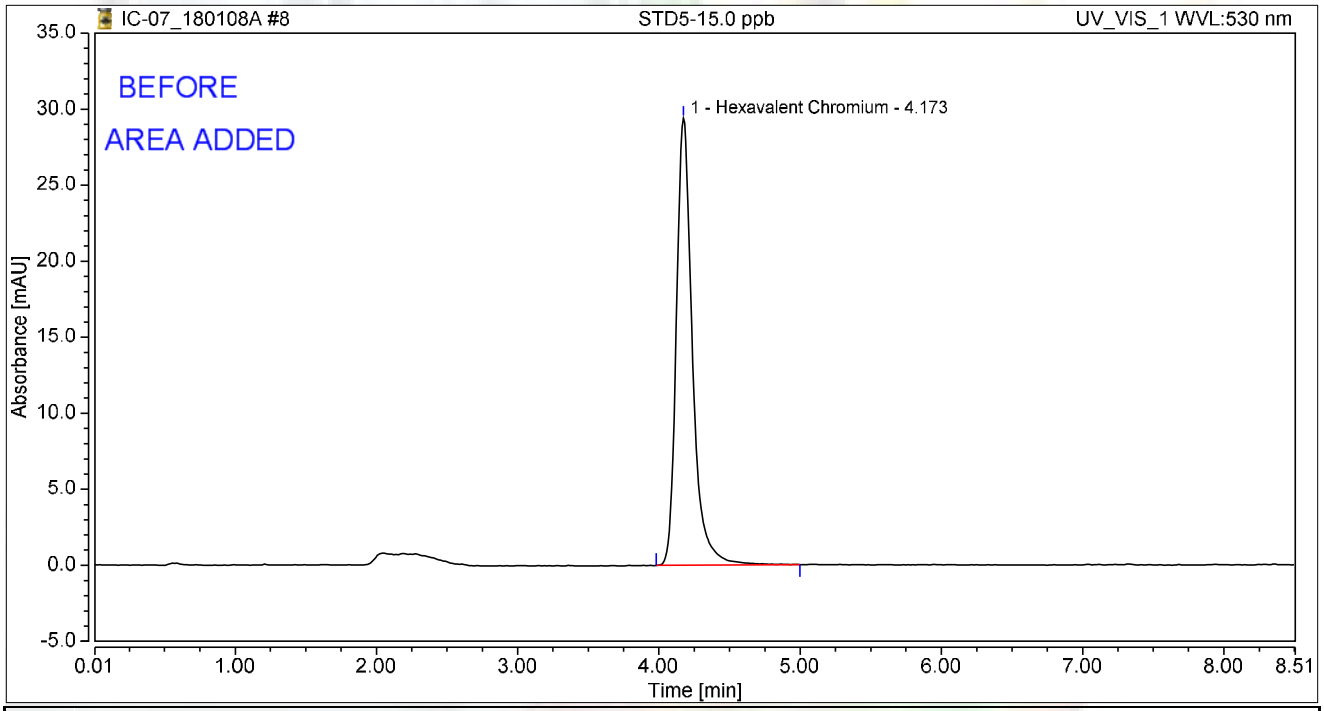
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.876	29.388	100.00	100.00	14.9767
Total:			**3.876**	**29.388**	**100.00**	**100.00**	

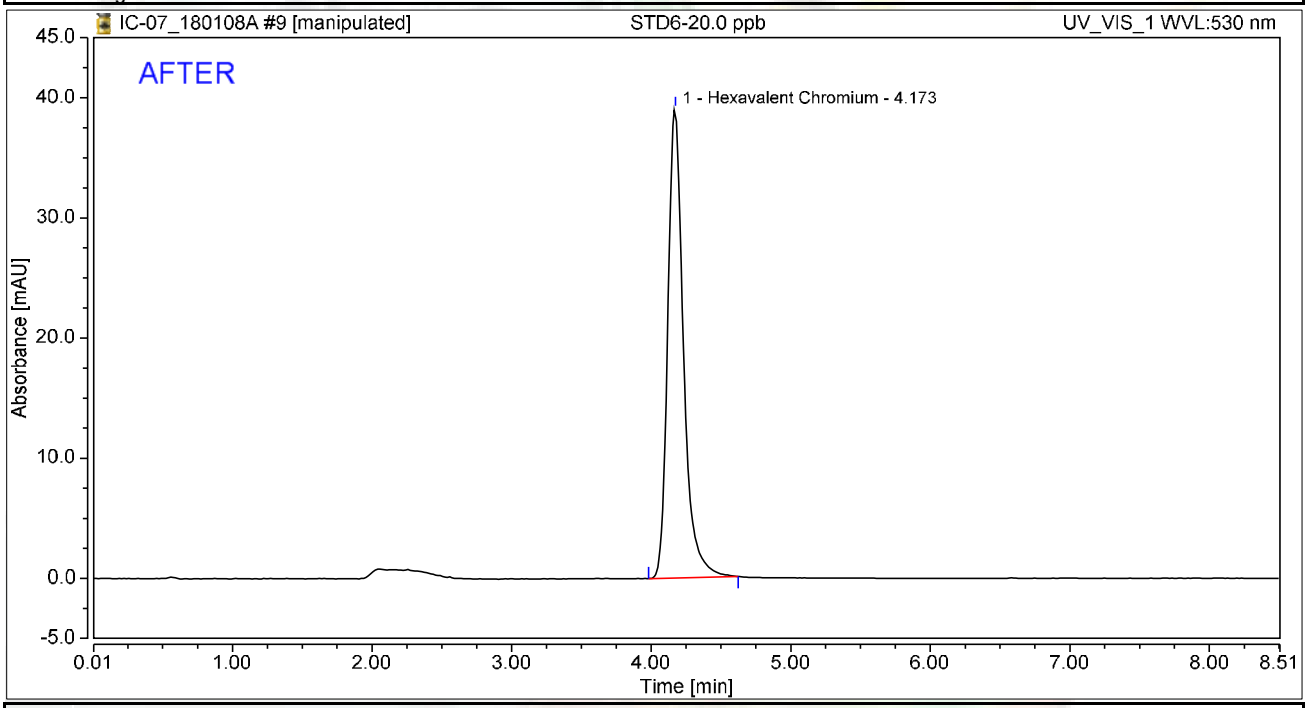
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.113	39.057	100.00	100.00	19.9973
Total:			**5.113**	**39.057**	**100.00**	**100.00**	

rba 1/10/2018

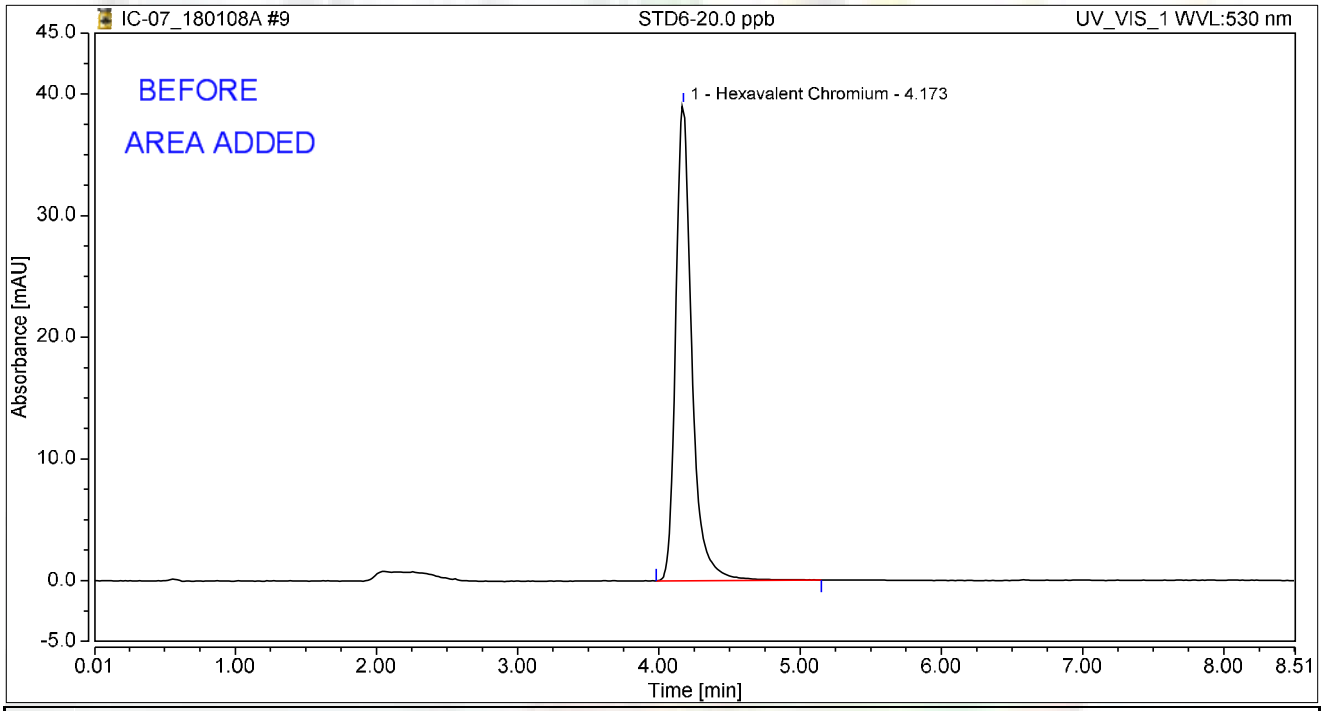
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.193	39.103	100.00	100.00	20.0648
Total:			**5.193**	**39.103**	**100.00**	**100.00**	

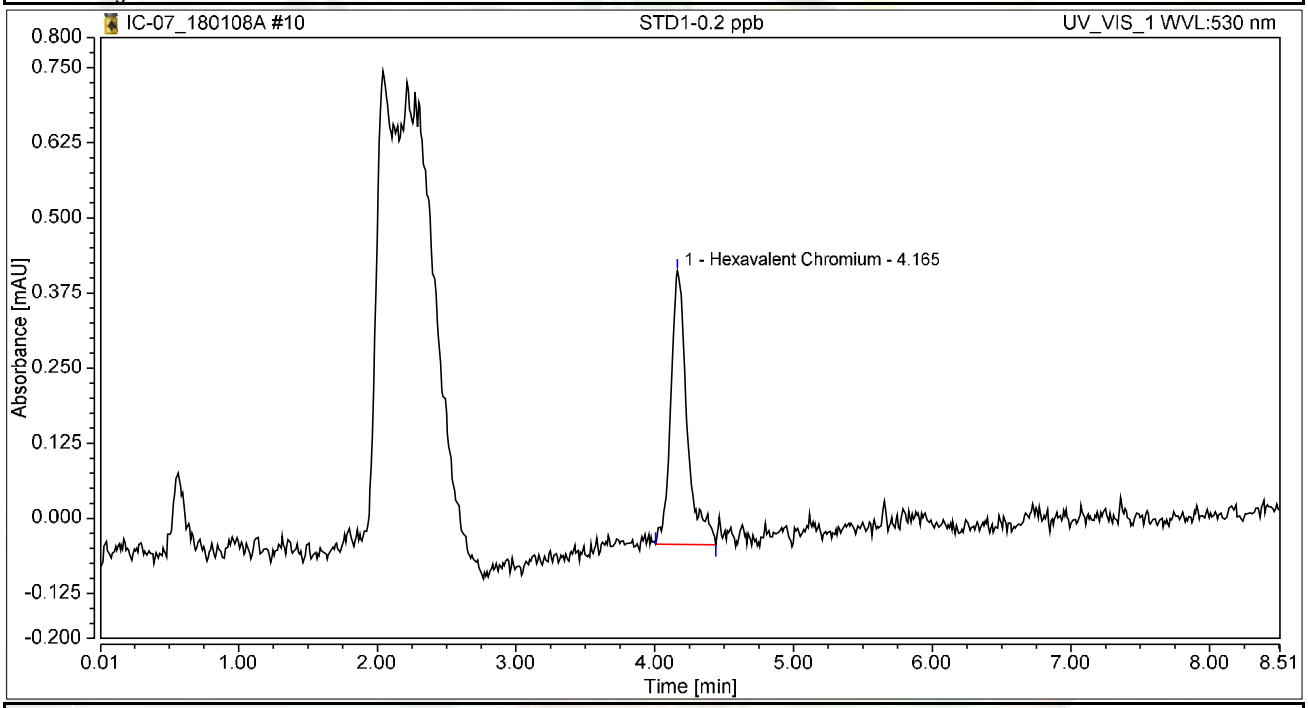
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

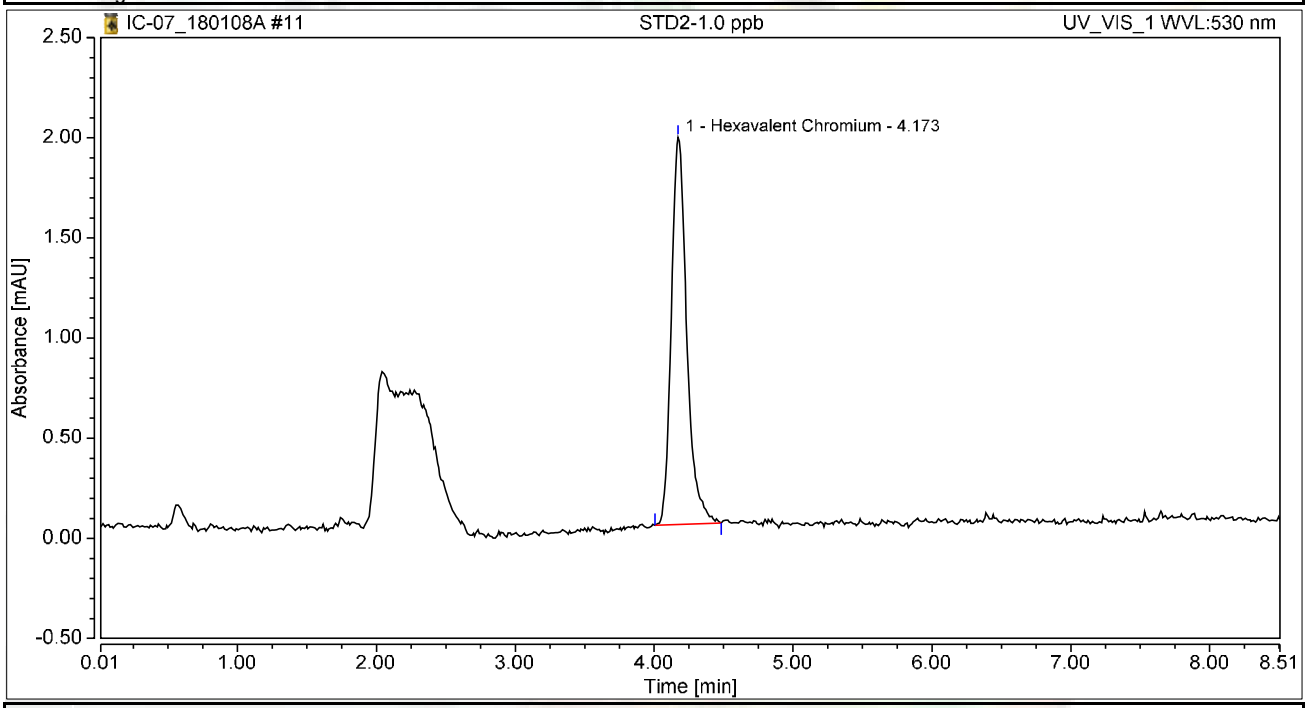
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.062	0.455	100.00	100.00	0.2434
Total:			**0.062**	**0.455**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



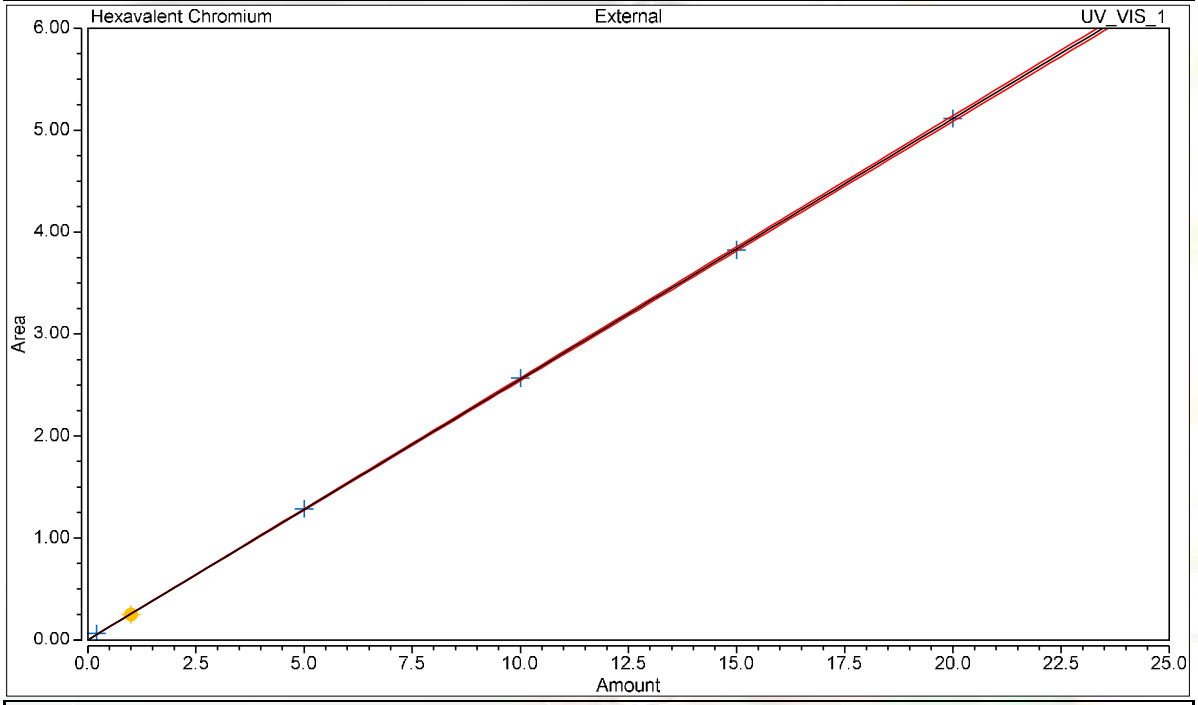
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.249	1.933	100.00	100.00	0.9728
Total:			**0.249**	**1.933**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2557
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

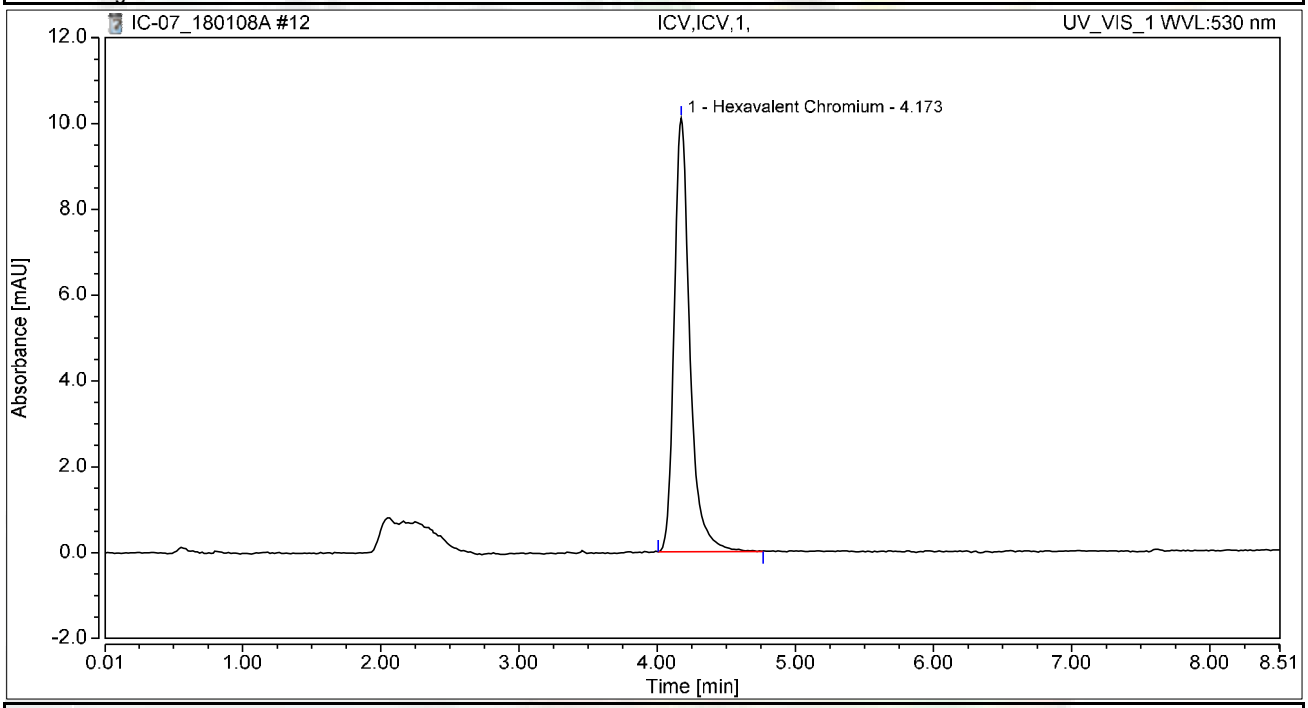
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD3-5.0 ppb	03	5.0000	1.2856	1.286	9.861
7	STD4-10.0 ppb	04	10.0000	2.5688	2.569	19.568
8	STD5-15.0 ppb	05	15.0000	3.8263	3.826	29.356
9	STD6-20.0 ppb	06	20.0000	5.1131	5.113	39.057
10	STD1-0.2 ppb	01	0.2000	0.0622	0.062	0.455
11	STD2-1.0 ppb	02	1.0000	0.2487	0.249	1.933

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

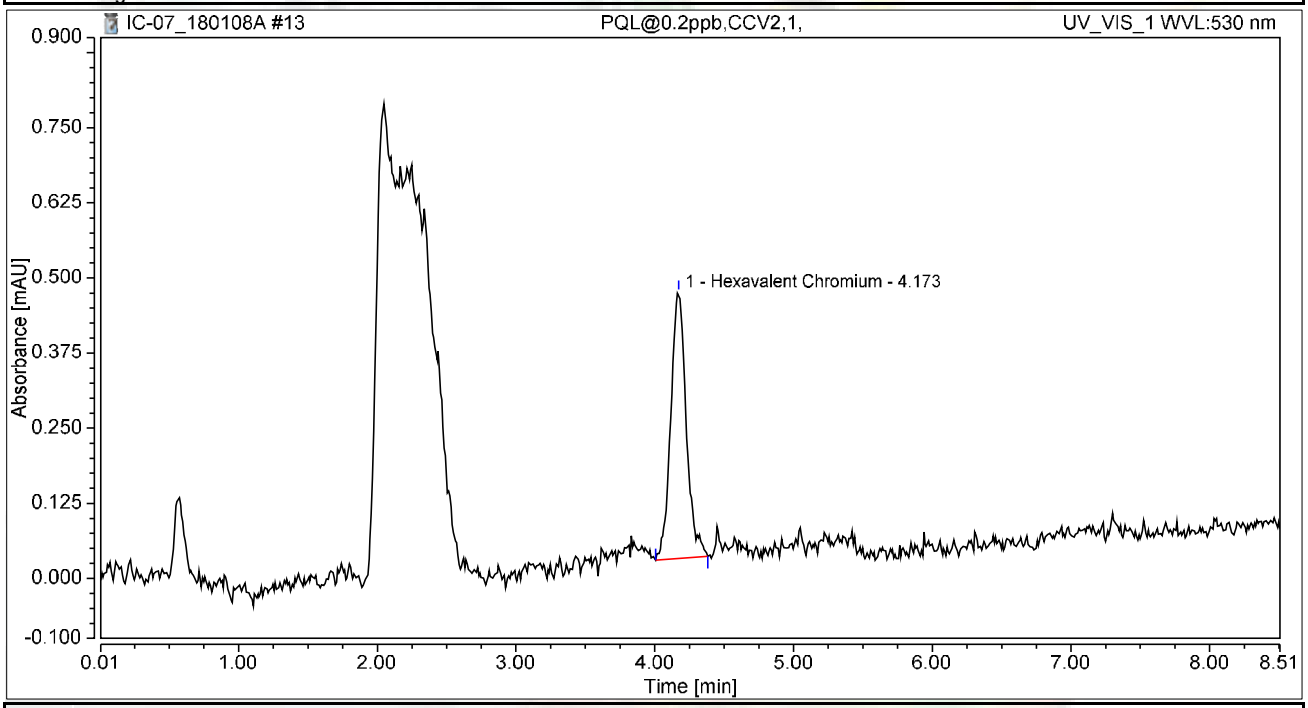
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

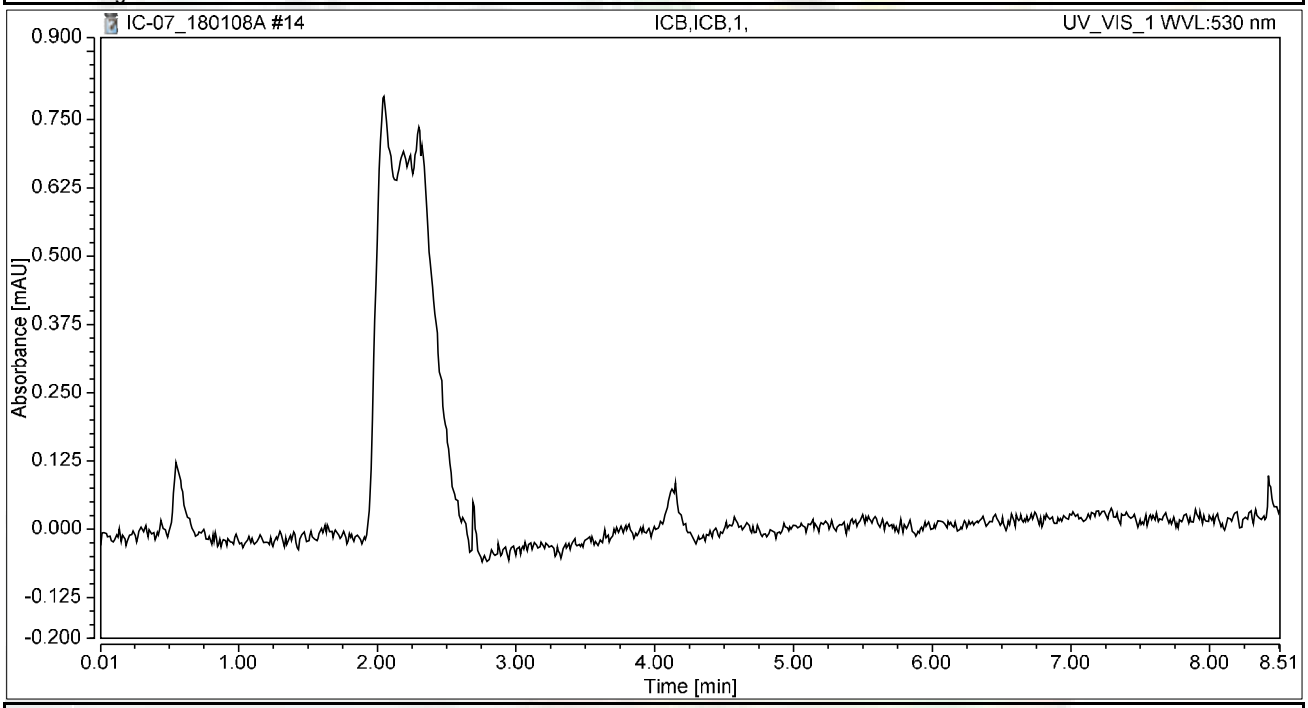
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 9:54 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/08/18 10:05 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/08/18 10:14 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:24 AM	Not Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:33 AM	Not Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:43 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 10:52 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:02 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:11 AM	Reported
10	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:21 AM	Reported
11	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/08/18 11:30 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	01/08/18 11:40 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/08/18 11:49 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	01/08/18 11:59 AM	Reported
15	MB-R121296	MBLK	1	Hexavalent Chromium	01/08/18 12:08 PM	Reported
16	LCS-R121296	LCS	1	Hexavalent Chromium	01/08/18 12:17 PM	Reported
17	N027812-014A	SAMP	1	Hexavalent Chromium	01/08/18 12:27 PM	Reported
18	N027812-014AMS	MS	1	Hexavalent Chromium	01/08/18 12:36 PM	Reported
19	N027819-002A	SAMP	100	Hexavalent Chromium	01/08/18 12:46 PM	Reported
20	N027819-002AMS	MS	100	Hexavalent Chromium	01/08/18 12:55 PM	Reported
21	N027819-002AMSD	MSD	100	Hexavalent Chromium	01/08/18 1:05 PM	Reported
22	N027820-001A	SAMP	1	Hexavalent Chromium	01/08/18 1:14 PM	Reported
23	N027820-001AMS	MS	1	Hexavalent Chromium	01/08/18 1:24 PM	Reported
24	N027820-001ADUP	DUP	1	Hexavalent Chromium	01/08/18 1:33 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	01/08/18 1:43 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	01/08/18 1:52 PM	Reported
27	N027819-001A	SAMP	1	Hexavalent Chromium	01/08/18 2:02 PM	Reported
28	N027819-001AMS	MS	1	Hexavalent Chromium	01/08/18 2:11 PM	Reported
29	N027820-002A	SAMP	1	Hexavalent Chromium	01/08/18 2:20 PM	Reported
30	N027820-002AMS	MS	1	Hexavalent Chromium	01/08/18 2:30 PM	Reported
31	N027820-003A	SAMP	1	Hexavalent Chromium	01/08/18 2:39 PM	Reported
32	N027820-003AMS	MS	1	Hexavalent Chromium	01/08/18 2:49 PM	Reported
33	N027820-004A	SAMP	1	Hexavalent Chromium	01/08/18 2:58 PM	Reported
34	N027820-004AMS	MS	1	Hexavalent Chromium	01/08/18 3:08 PM	Reported
35	N027820-005A	SAMP	1	Hexavalent Chromium	01/08/18 3:17 PM	Reported
36	N027820-005AMS	MS	1	Hexavalent Chromium	01/08/18 3:27 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	01/08/18 3:49 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	01/08/18 4:00 PM	Reported
39	N027557-004A	SAMP	5	Hexavalent Chromium	01/08/18 4:10 PM	Not Reported
40	N027557-004AMS	MS	5	Hexavalent Chromium	01/08/18 4:20 PM	Not Reported
41	N027583-001A	SAMP	1	Hexavalent Chromium	01/08/18 4:29 PM	Not Reported
42	N027583-001AMS	MS	1	Hexavalent Chromium	01/08/18 4:39 PM	Not Reported
43	N027583-002A	SAMP	1	Hexavalent Chromium	01/08/18 4:48 PM	Not Reported
44	N027583-002AMS	MS	1	Hexavalent Chromium	01/08/18 4:58 PM	Not Reported
45	N027583-003A	SAMP	1	Hexavalent Chromium	01/08/18 5:07 PM	Not Reported
46	N027583-003AMS	MS	1	Hexavalent Chromium	01/08/18 5:17 PM	Not Reported
47	N027820-006A	SAMP	1	Hexavalent Chromium	01/08/18 5:26 PM	Reported
48	N027820-006AMS	MS	1	Hexavalent Chromium	01/08/18 5:36 PM	Reported
49	CCV-3	CCV1	1	Hexavalent Chromium	01/08/18 6:06 PM	Reported

INJECTION LOG: 180108A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
50	CCB-3	CCB	1	Hexavalent Chromium	01/08/18 6:17 PM	Reported
51	N027820-007A	SAMP	1	Hexavalent Chromium	01/08/18 6:27 PM	Reported
52	N027820-007AMS	MS	1	Hexavalent Chromium	01/08/18 6:36 PM	Reported
53	N027820-008A	SAMP	1	Hexavalent Chromium	01/08/18 6:45 PM	Not Reported
54	N027820-008AMS	MS	1	Hexavalent Chromium	01/08/18 6:55 PM	Not Reported
55	N027820-009A	SAMP	1	Hexavalent Chromium	01/08/18 7:04 PM	Not Reported
56	N027820-009AMS	MS	1	Hexavalent Chromium	01/08/18 7:14 PM	Not Reported
57	N027820-010A	SAMP	1	Hexavalent Chromium	01/08/18 7:24 PM	Not Reported
58	N027820-010AMS	MS	1	Hexavalent Chromium	01/08/18 7:33 PM	Not Reported
59	N027820-011A	SAMP	1	Hexavalent Chromium	01/08/18 7:42 PM	Reported
60	N027820-011AMS	MS	1	Hexavalent Chromium	01/08/18 7:52 PM	Reported
61	CCV-4	CCV	1	Hexavalent Chromium	01/08/18 8:01 PM	Reported
62	CCB-4	CCB	1	Hexavalent Chromium	01/08/18 8:11 PM	Reported
63	N027820-012A	SAMP	1	Hexavalent Chromium	01/08/18 8:20 PM	Reported
64	N027820-012AMS	MS	1	Hexavalent Chromium	01/08/18 8:30 PM	Reported
65	N027820-013A	SAMP	1	Hexavalent Chromium	01/08/18 8:39 PM	Reported
66	N027820-013AMS	MS	1	Hexavalent Chromium	01/08/18 8:48 PM	Reported
67	CCV-5	CCV1	1	Hexavalent Chromium	01/08/18 8:58 PM	Reported
68	CCB-5	CCB	1	Hexavalent Chromium	01/08/18 9:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180108A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 12:06:59**
No. of Injections:	**71**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/08/2018 09:54	Finished	BLANK
2	BLANK	2	1000	Unknown		01/08/2018 10:05	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/08/2018 10:14	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Unknown		01/08/2018 10:24	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Unknown		01/08/2018 10:33	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/08/2018 10:43	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/08/2018 10:52	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/08/2018 11:02	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/08/2018 11:11	Finished	20 ppb, IWST-171002A
10	STD1-0.2 ppb	10	1000	Calibration Standard	01	01/08/2018 11:21	Finished	0.2 ppb, IWST-171002A
11	STD2-1.0 ppb	11	1000	Calibration Standard	02	01/08/2018 11:30	Finished	1.0 ppb, IWST-171002A
12	ICV,ICV,1,	12	1000	Unknown		01/08/2018 11:40	Finished	ICV @5ppb, IWST-171002B
13	PQL@0.2ppb,CCV2,1	13	1000	Unknown		01/08/2018 11:49	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	14	1000	Unknown		01/08/2018 11:59	Finished	ICB R180102C
15	MB-H2O,MBLK,1,	15	1000	Unknown		01/08/2018 12:08	Finished	MB R171129A
16	LCS-H2O,LCS,1,	16	1000	Unknown		01/08/2018 12:17	Finished	LCS, IWST-171002B
17	N027812-014A,SAMP	17	1000	Unknown		01/08/2018 12:27	Finished	SAMP,10mL
18	N027812-014AMS,MS	18	1000	Unknown		01/08/2018 12:36	Finished	MS (1ppb), IWST-171002B,10
19	N027819-002A,SAMP	19	1000	Unknown		01/08/2018 12:46	Finished	SAMP,0.1>10mL
20	N027819-002AMS,MS	20	1000	Unknown		01/08/2018 12:55	Finished	MS (5ppb), IWST-171002B,0.1
21	N027819-002AMSD,M	21	1000	Unknown		01/08/2018 13:05	Finished	MSD (5ppb), IWST-171002B,0
22	N027820-001A,SAMP	22	1000	Unknown		01/08/2018 13:14	Finished	SAMP,10mL
23	N027820-001AMS,MS	23	1000	Unknown		01/08/2018 13:24	Finished	MS (1ppb), IWST-171002B,10
24	N027820-001ADUP,D	24	1000	Unknown		01/08/2018 13:33	Finished	DUP,10mL
25	CCV-1,CCV1,1,	25	1000	Unknown		01/08/2018 13:43	Finished	CCV @10ppb, IWST-171002A
26	CCB-1,CCB,1,	26	1000	Unknown		01/08/2018 13:52	Finished	CCB R180102C
27	N027819-001A,SAMP	27	1000	Unknown		01/08/2018 14:02	Finished	SAMP,10mL
28	N027819-001AMS,MS	28	1000	Unknown		01/08/2018 14:11	Finished	MS (1ppb), IWST-171002B,10
29	N027820-002A,SAMP	29	1000	Unknown		01/08/2018 14:20	Finished	SAMP,10mL
30	N027820-002AMS,MS	30	1000	Unknown		01/08/2018 14:30	Finished	MS (1ppb), IWST-171002B,10
31	N027820-003A,SAMP	31	1000	Unknown		01/08/2018 14:39	Finished	SAMP,10mL
32	N027820-003AMS,MS	32	1000	Unknown		01/08/2018 14:49	Finished	MS (1ppb), IWST-171002B,10
33	N027820-004A,SAMP	33	1000	Unknown		01/08/2018 14:58	Finished	SAMP,10mL
34	N027820-004AMS,MS	34	1000	Unknown		01/08/2018 15:08	Finished	MS (1ppb), IWST-171002B,10
35	N027820-005A,SAMP	35	1000	Unknown		01/08/2018 15:17	Finished	SAMP,10mL
36	N027820-005AMS,MS	36	1000	Unknown		01/08/2018 15:27	Finished	MS (1ppb), IWST-171002B,10
37	CCV-2,CCV,1,	37	1000	Unknown		01/08/2018 15:49	Finished	CCV @5ppb, IWST-171002A
38	CCB-2,CCB,1,	38	1000	Unknown		01/08/2018 16:00	Finished	CCB R180102C
39	N027557-004A,SAMP	39	1000	Unknown		01/08/2018 16:10	Finished	SAMP,10mL
40	N027557-004AMS,MS	40	1000	Unknown		01/08/2018 16:20	Finished	MS (1ppb), IWST-171002B,10
41	N027583-001A,SAMP	41	1000	Unknown		01/08/2018 16:29	Finished	SAMP,10mL
42	N027583-001AMS,MS	42	1000	Unknown		01/08/2018 16:39	Finished	MS (1ppb), IWST-171002B,10
43	N027583-002A,SAMP	43	1000	Unknown		01/08/2018 16:48	Finished	SAMP,10mL
44	N027583-002AMS,MS	44	1000	Unknown		01/08/2018 16:58	Finished	MS (1ppb), IWST-171002B,10
45	N027583-003A,SAMP	45	1000	Unknown		01/08/2018 17:07	Finished	SAMP,10mL
46	N027583-003AMS,MS	46	1000	Unknown		01/08/2018 17:17	Finished	MS (1ppb), IWST-171002B,10
47	N027820-006A,SAMP	47	1000	Unknown		01/08/2018 17:26	Finished	SAMP,10mL
48	N027820-006AMS,MS	48	1000	Unknown		01/08/2018 17:36	Finished	MS (1ppb), IWST-171002B,10
49	CCV-3,CCV1,1,	1	1000	Unknown		01/08/2018 18:06	Finished	CCV @10ppb, IWST-171002A
50	CCB-3,CCB,1,	2	1000	Unknown		01/08/2018 18:17	Finished	CCB R180102C
51	N027820-007A,SAMP	3	1000	Unknown		01/08/2018 18:27	Finished	SAMP,10mL
52	N027820-007AMS,MS	4	1000	Unknown		01/08/2018 18:36	Finished	MS (1ppb), IWST-171002B,10
53	N027820-008A,SAMP	5	1000	Unknown		01/08/2018 18:45	Finished	SAMP,10mL
54	N027820-008AMS,MS	6	1000	Unknown		01/08/2018 18:55	Finished	MS (1ppb), IWST-171002B,10
55	N027820-009A,SAMP	7	1000	Unknown		01/08/2018 19:04	Finished	SAMP,10mL
56	N027820-009AMS,MS	8	1000	Unknown		01/08/2018 19:14	Finished	MS (1ppb), IWST-171002B,10
57	N027820-010A,SAMP	9	1000	Unknown		01/08/2018 19:24	Finished	SAMP,10mL
58	N027820-010AMS,MS	10	1000	Unknown		01/08/2018 19:33	Finished	MS (1ppb), IWST-171002B,10
59	N027820-011A,SAMP	11	1000	Unknown		01/08/2018 19:42	Finished	SAMP,10mL
60	N027820-011AMS,MS	12	1000	Unknown		01/08/2018 19:52	Finished	MS (1ppb), IWST-171002B,10

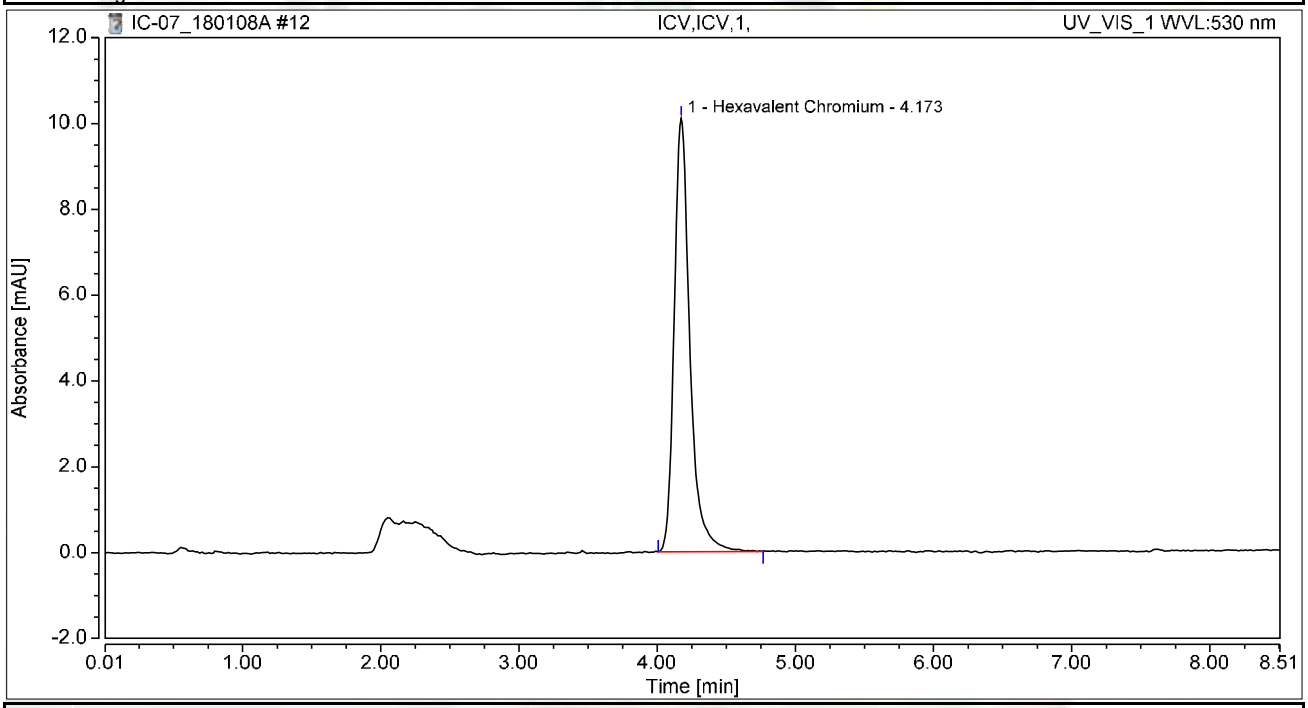
61	CCV-4,CCV,1,	13	1000	Unknown		01/08/2018 20:01	Finished	CCV @5ppb, IWST-171002A
62	CCB-4,CCB,1,	14	1000	Unknown		01/08/2018 20:11	Finished	CCB R180102C
63	N027820-012A,SAMP	15	1000	Unknown		01/08/2018 20:20	Finished	SAMP,10mL
64	N027820-012AMS,MS	16	1000	Unknown		01/08/2018 20:30	Finished	MS (1ppb), IWST-171002B,10
65	N027820-013A,SAMP	17	1000	Unknown		01/08/2018 20:39	Finished	SAMP,10mL
66	N027820-013AMS,MS	18	1000	Unknown		01/08/2018 20:48	Finished	MS (1ppb), IWST-171002B,10
67	CCV-5,CCV1,1,	19	1000	Unknown		01/08/2018 20:58	Finished	CCV @10ppb, IWST-171002A
68	CCB-5,CCB,1,	20	1000	Unknown		01/08/2018 21:07	Finished	CCB R180102C
69	SHUTDOWN	21	1000	Unknown		01/08/2018 21:17	Finished	
70	Eluent: R180108D	22	1000	Unknown		n.a.	Finished	Eluent
71	PCR: R180104C	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

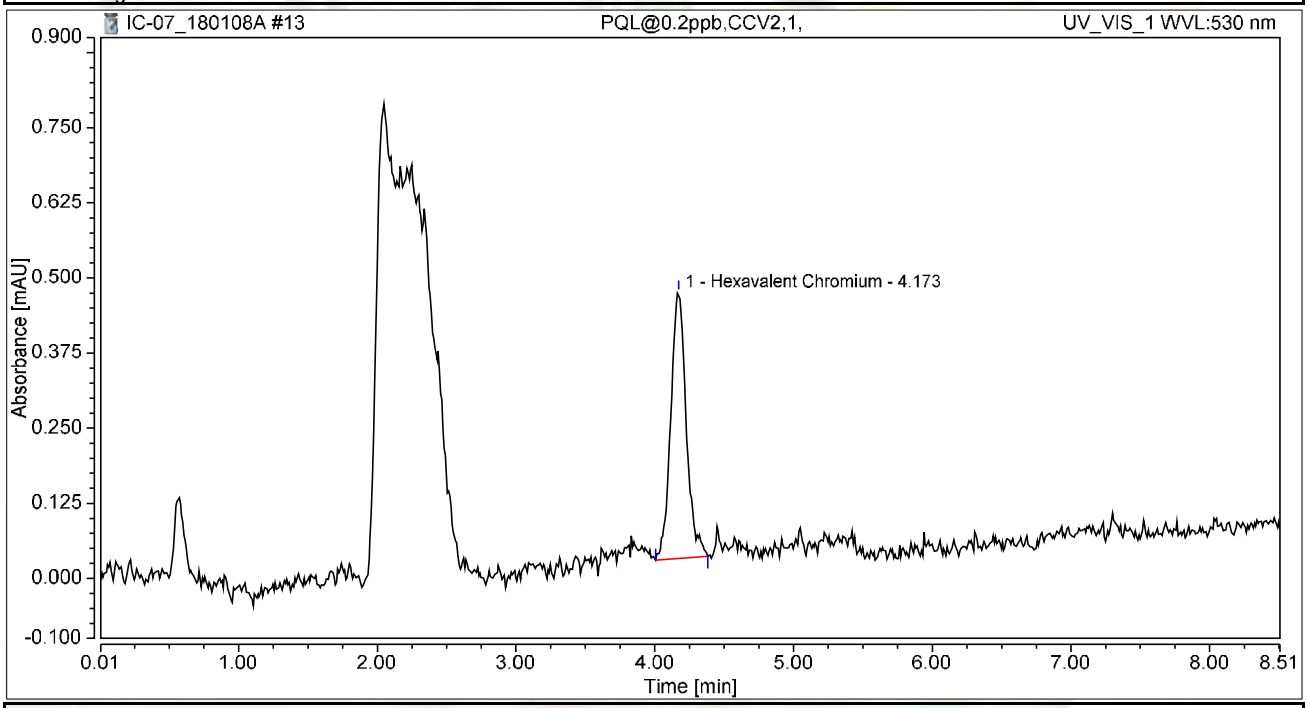
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.331	10.103	100.00	100.00	5.2041
Total:			**1.331**	**10.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

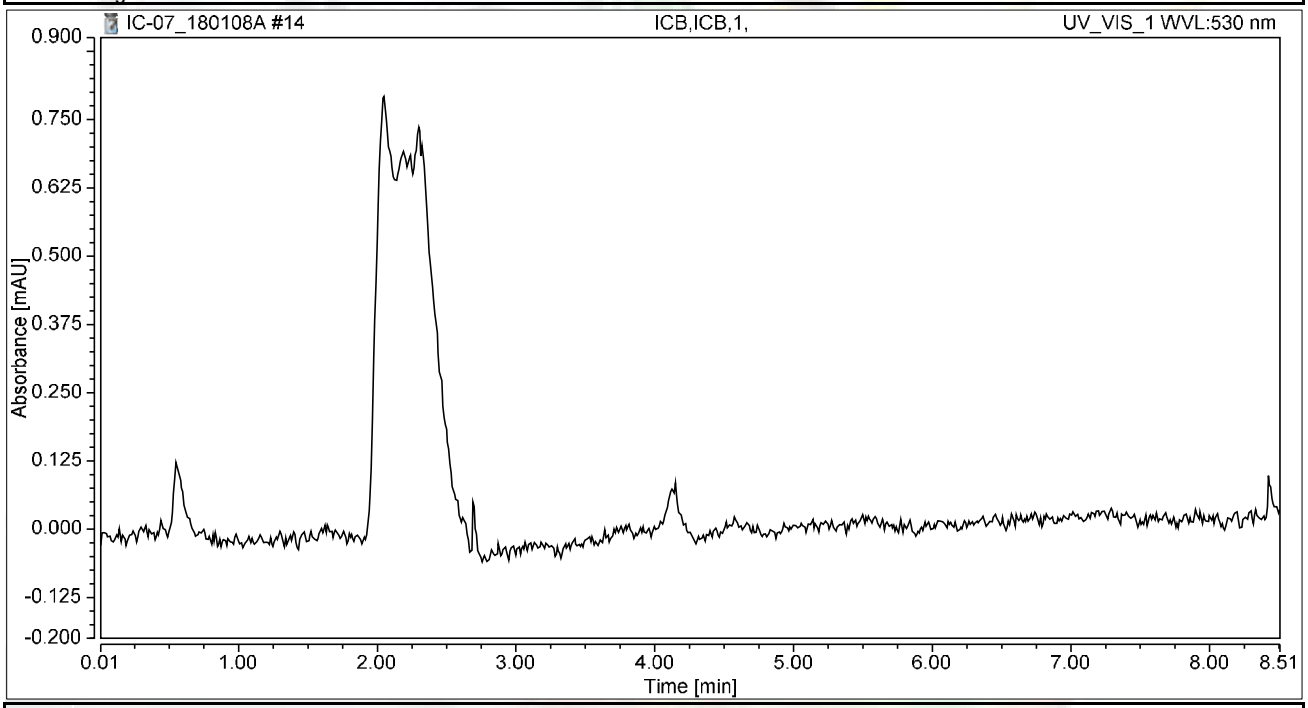
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.443	100.00	100.00	0.2254
Total:			**0.058**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

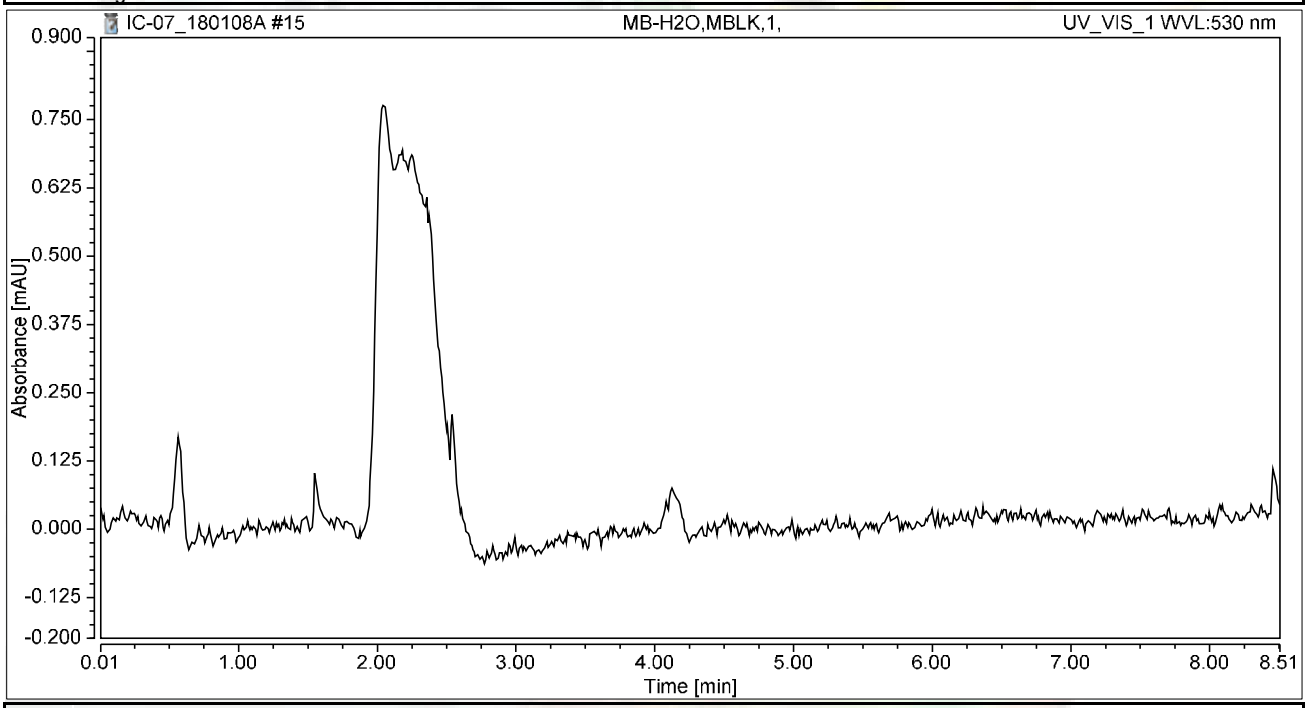
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

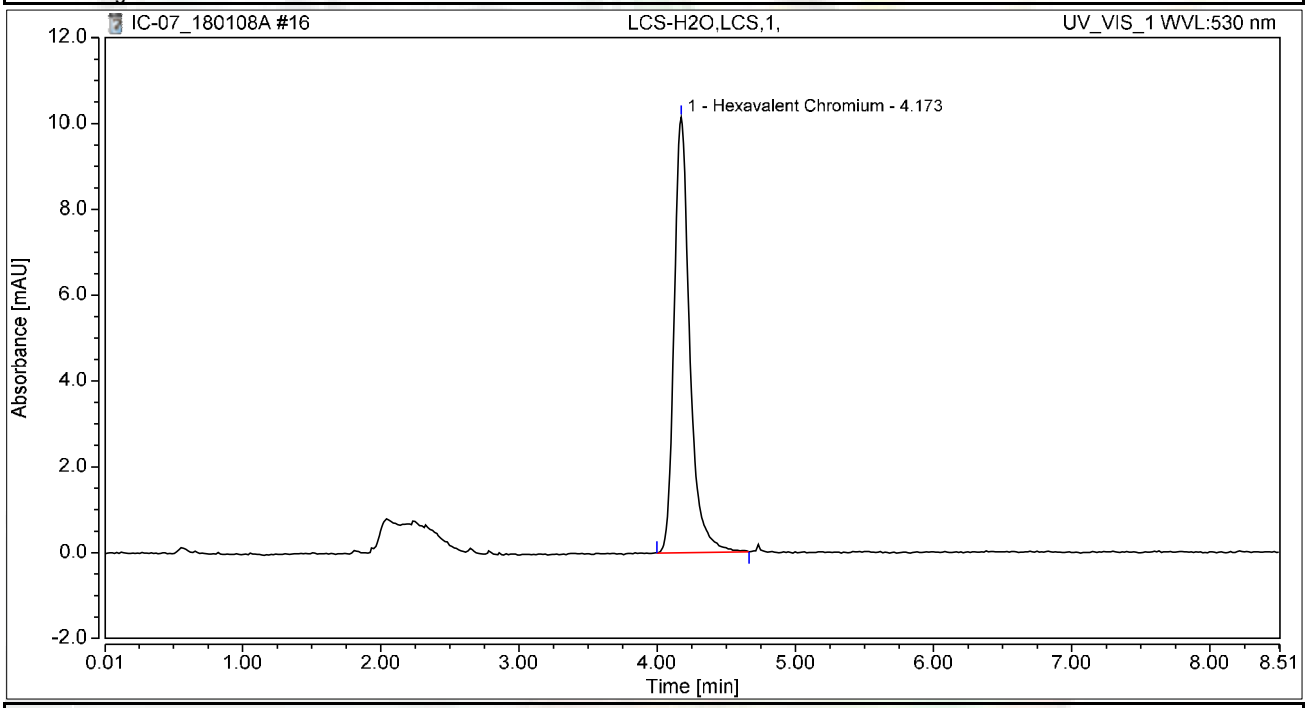
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

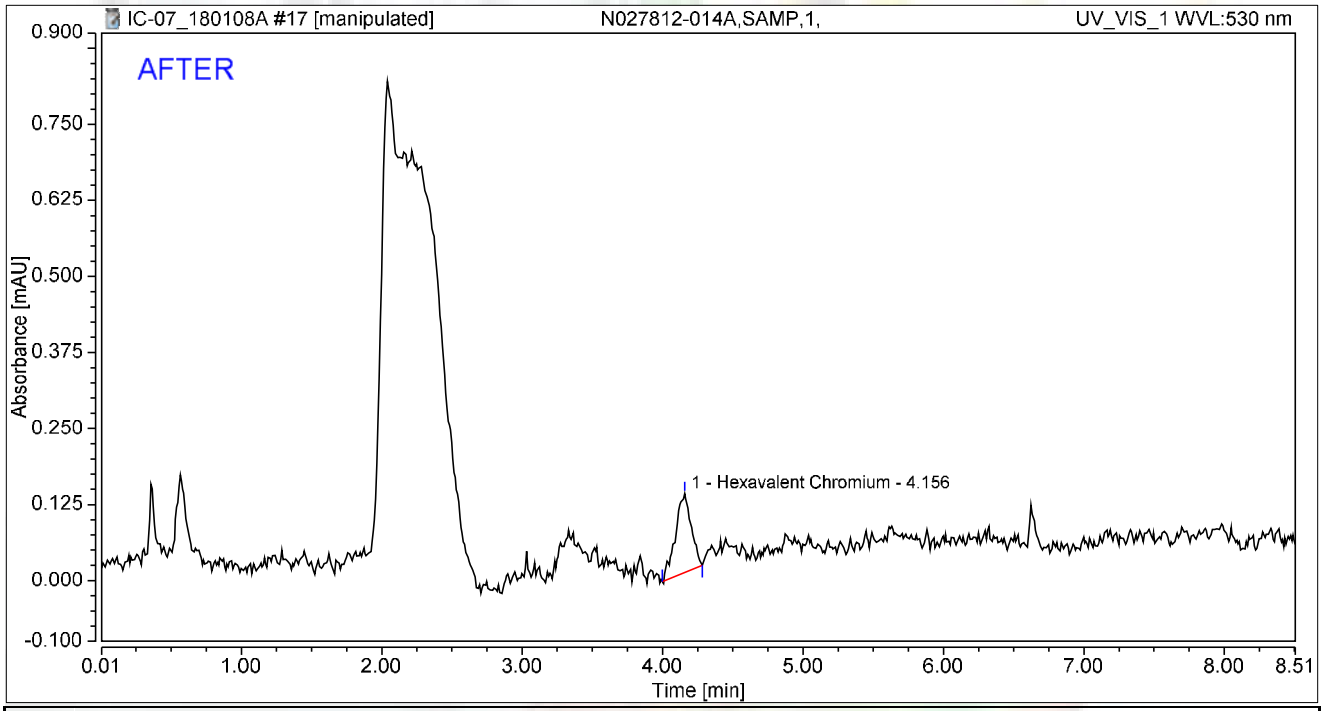
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.330	10.147	100.00	100.00	5.2014
Total:			**1.330**	**10.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.017	0.129	100.00	100.00	0.0660
Total:			**0.017**	**0.129**	**100.00**	**100.00**	

rba 1/10/2018

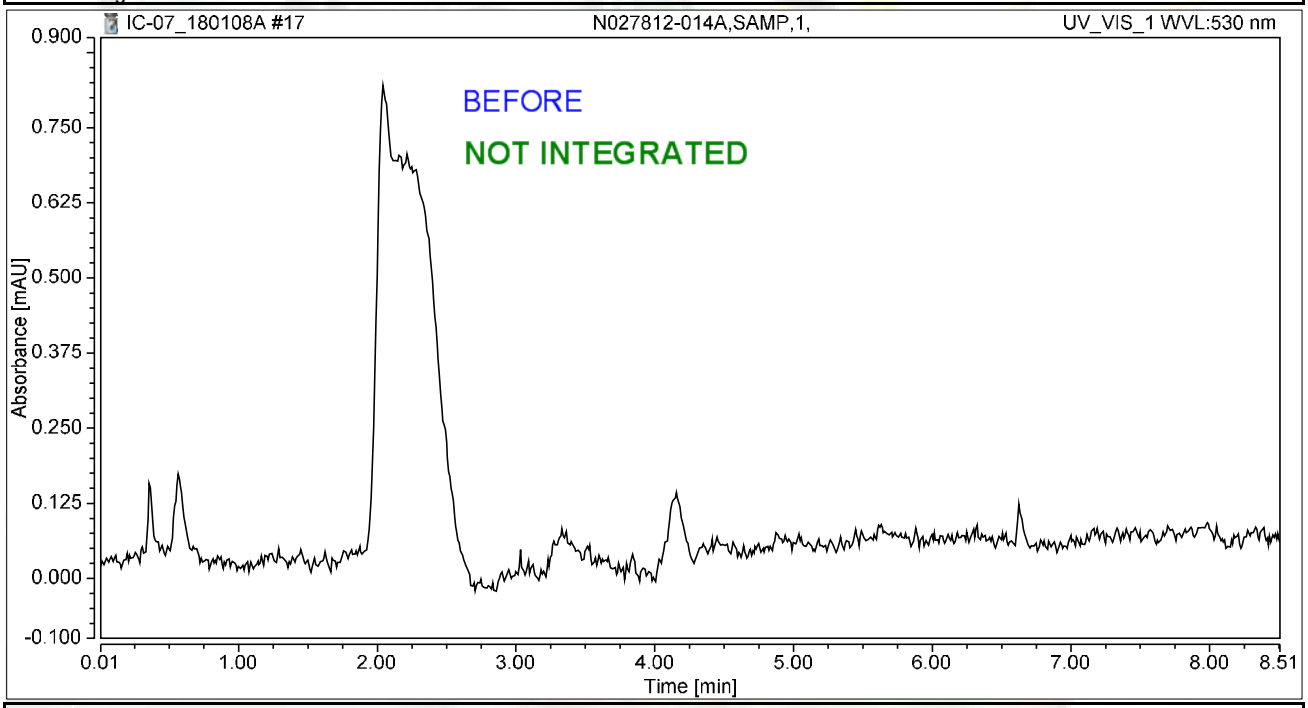
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

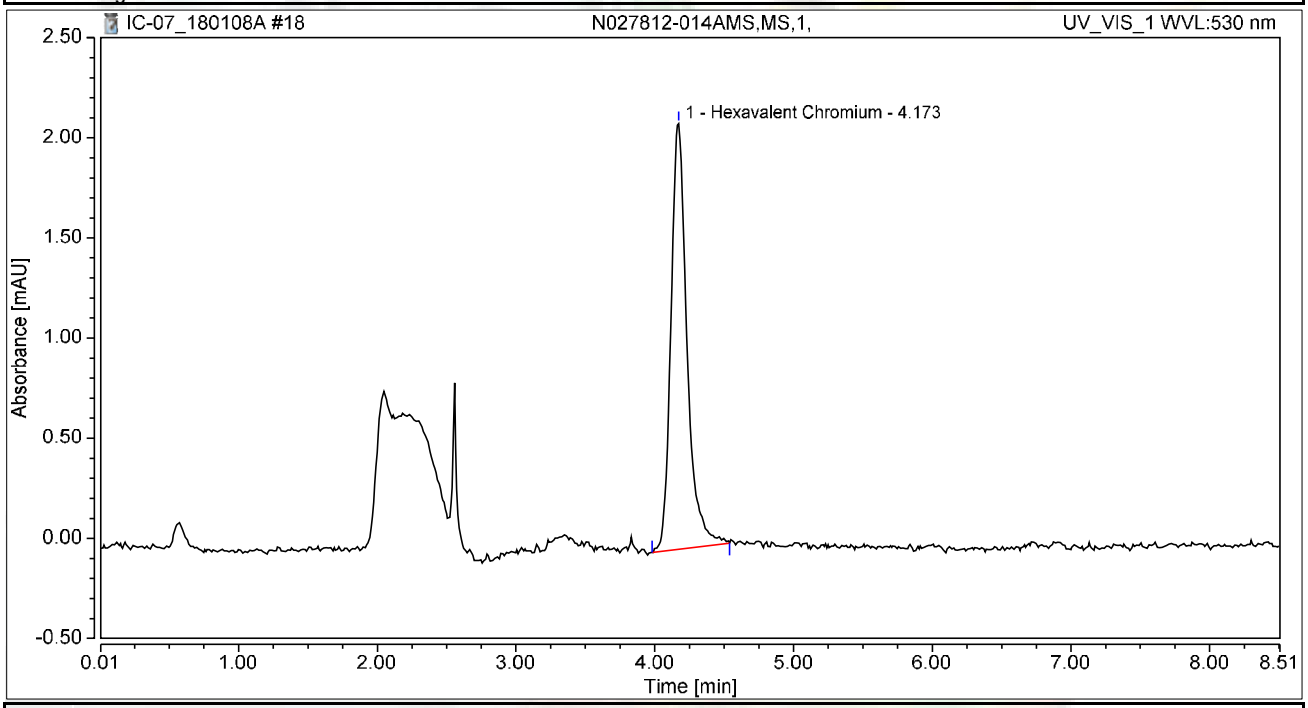
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027812-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

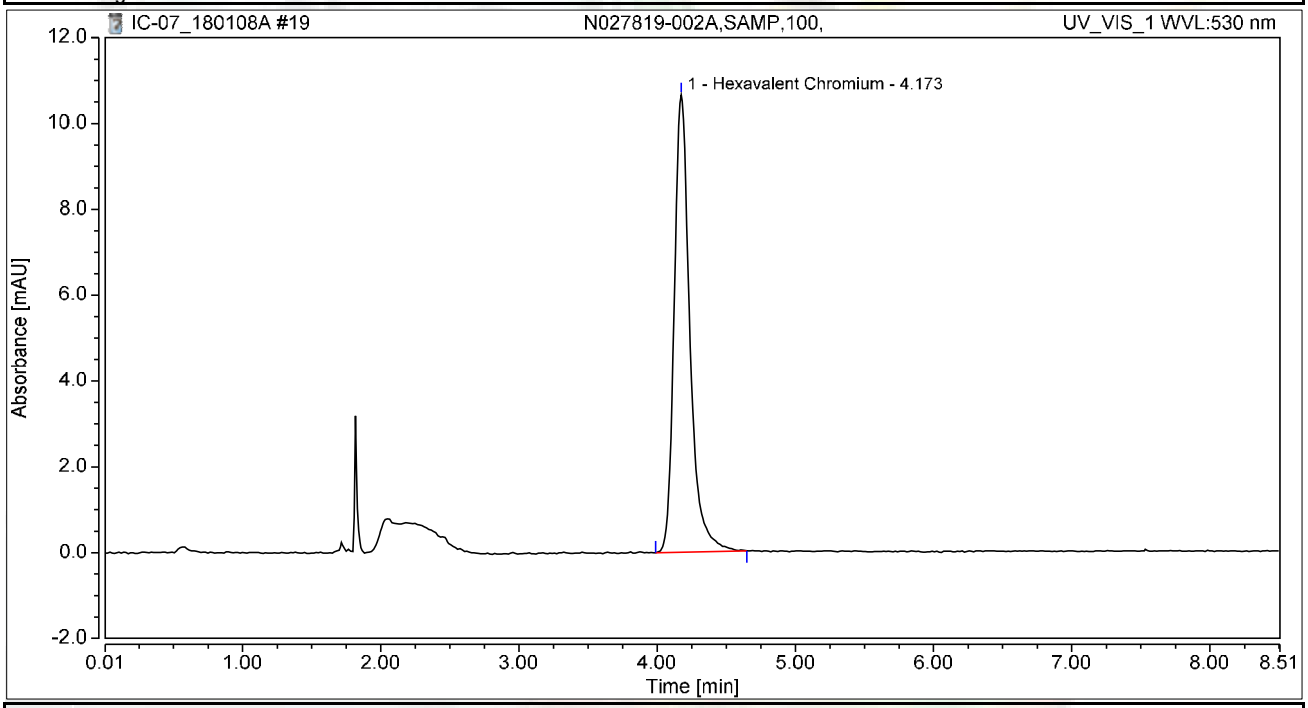
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.287	2.126	100.00	100.00	1.1207
Total:			**0.287**	**2.126**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

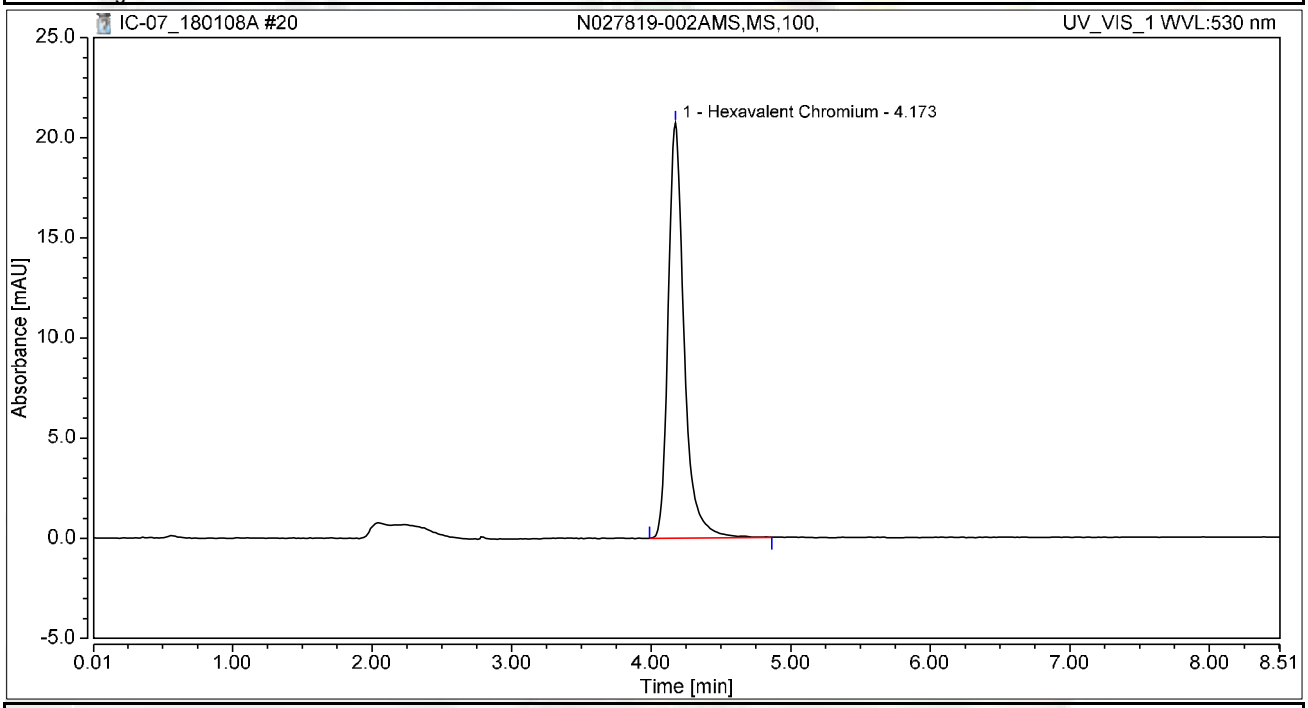
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.401	10.655	100.00	100.00	5.4805
Total:			**1.401**	**10.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

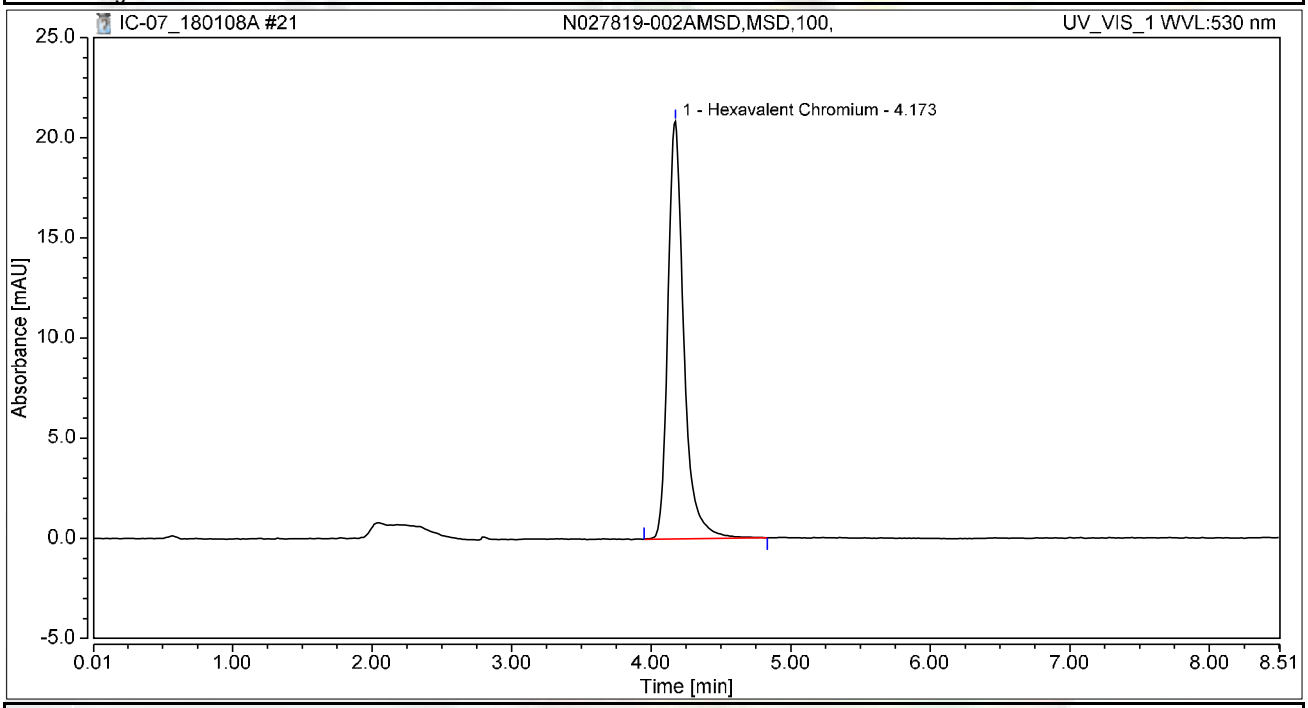
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.747	20.732	100.00	100.00	10.7445
Total:			**2.747**	**20.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

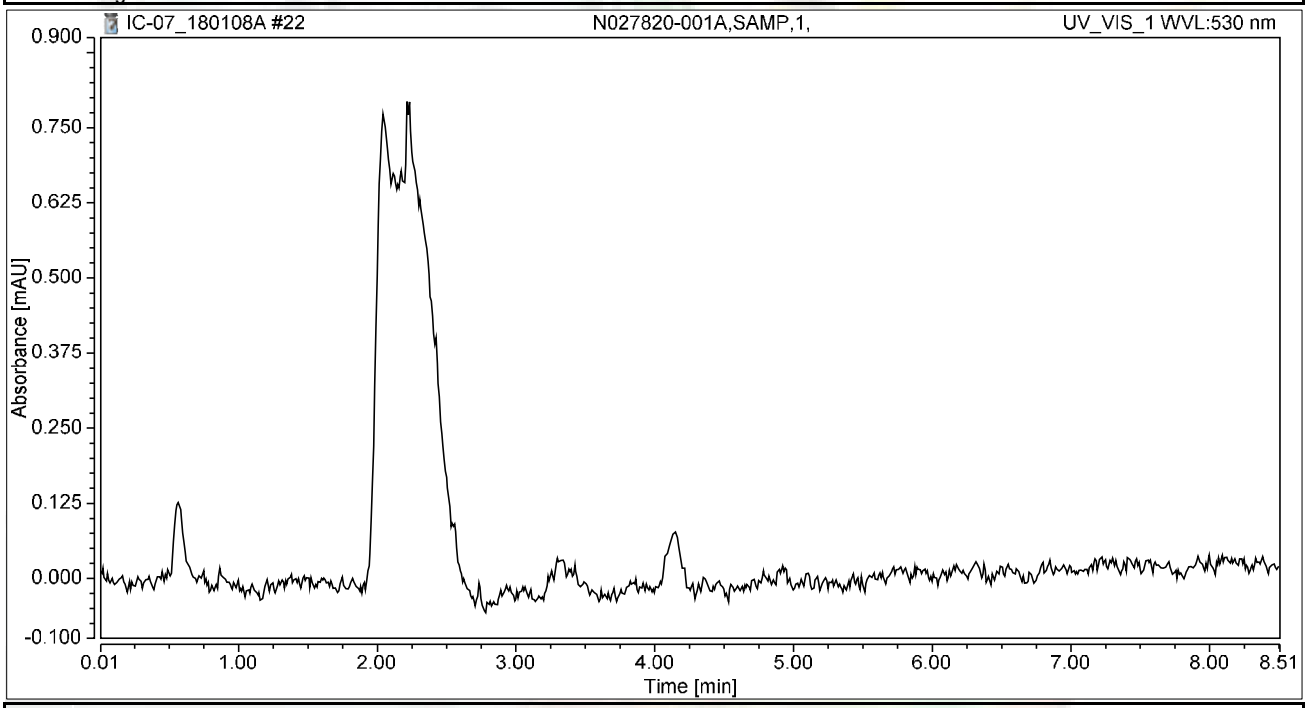
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.766	20.845	100.00	100.00	10.8163
Total:			**2.766**	**20.845**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

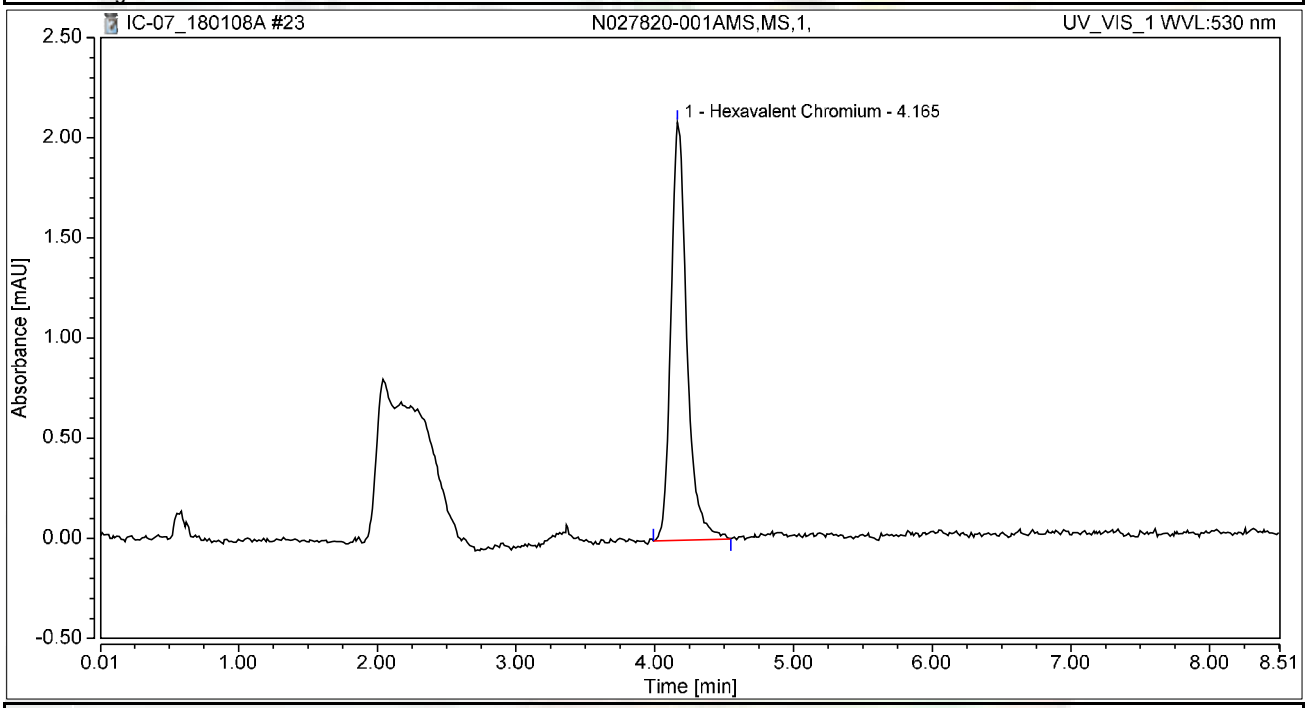
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

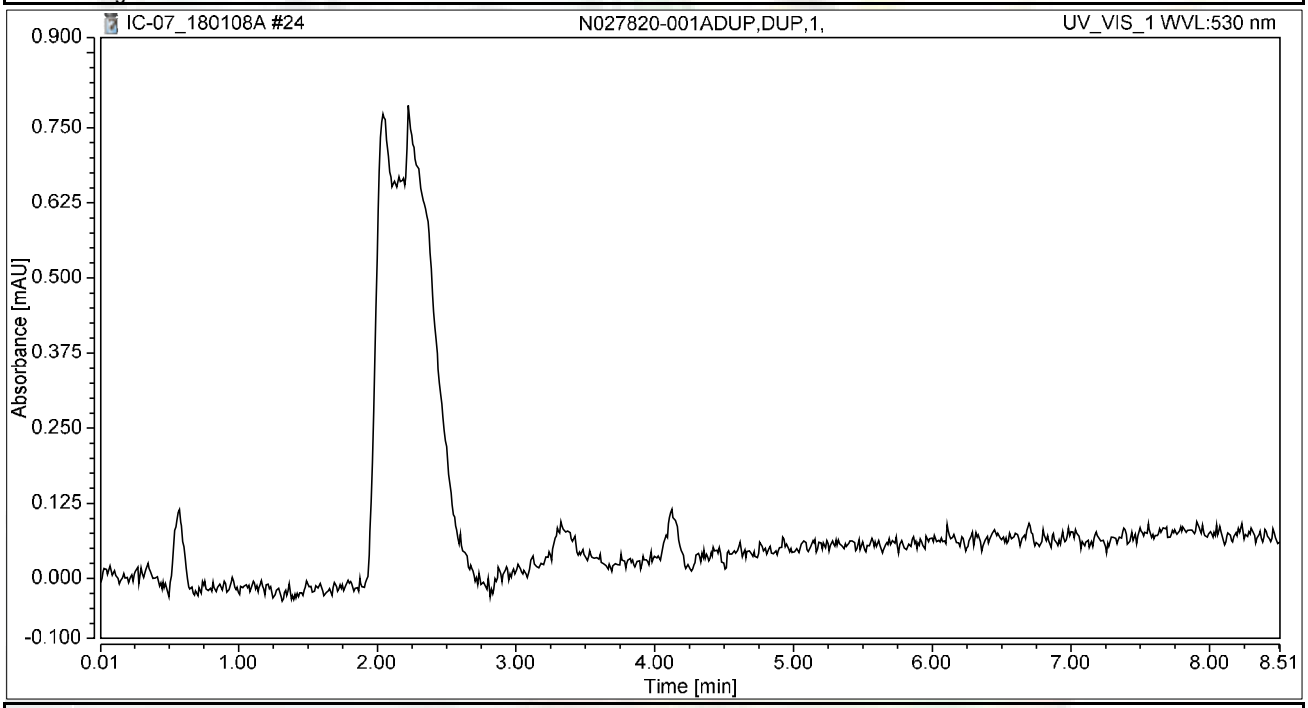
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.278	2.086	100.00	100.00	1.0876
Total:			**0.278**	**2.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

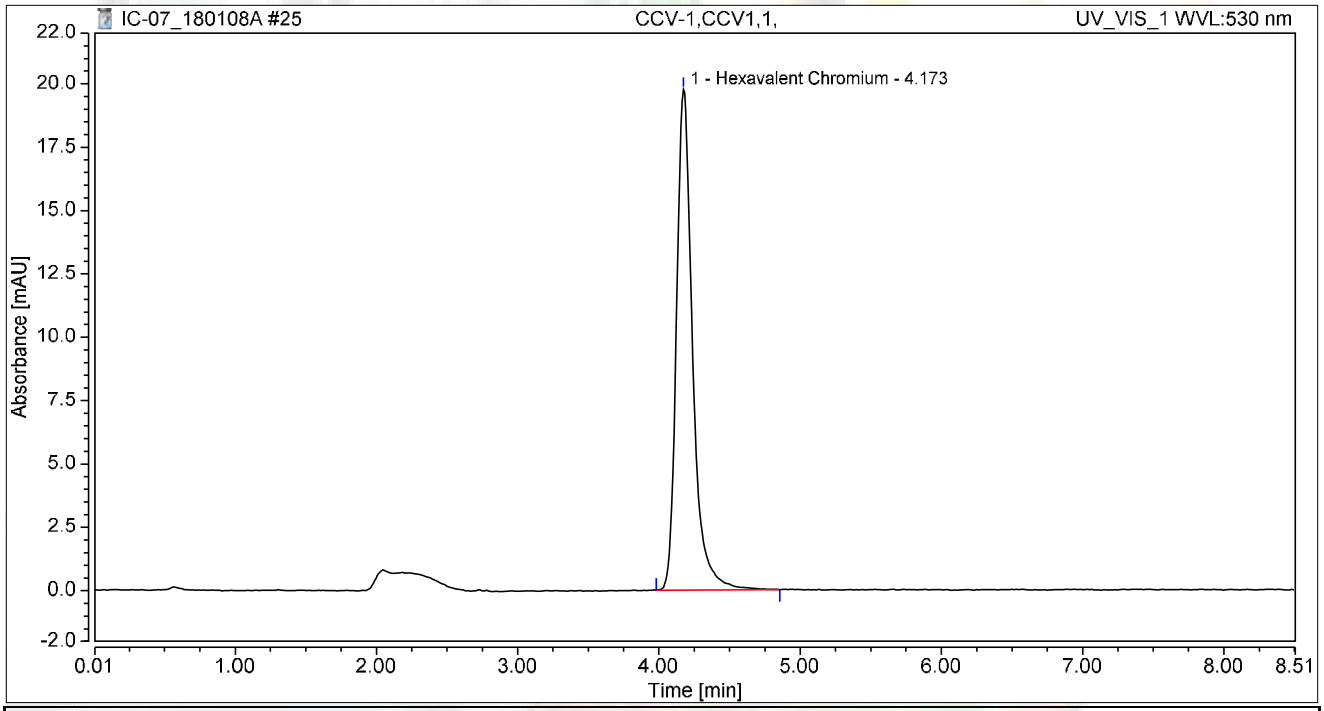
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

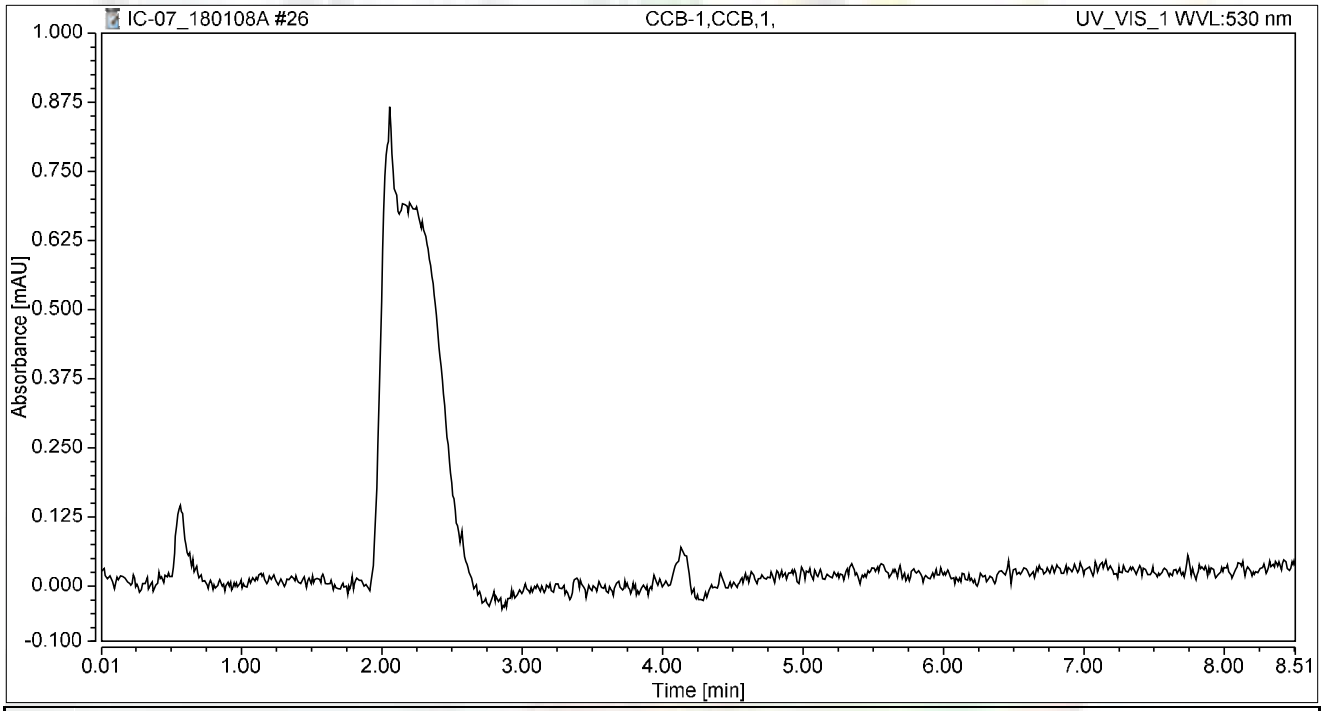
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.622	19.758	100.00	100.00	10.2530
Total:			**2.622**	**19.758**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

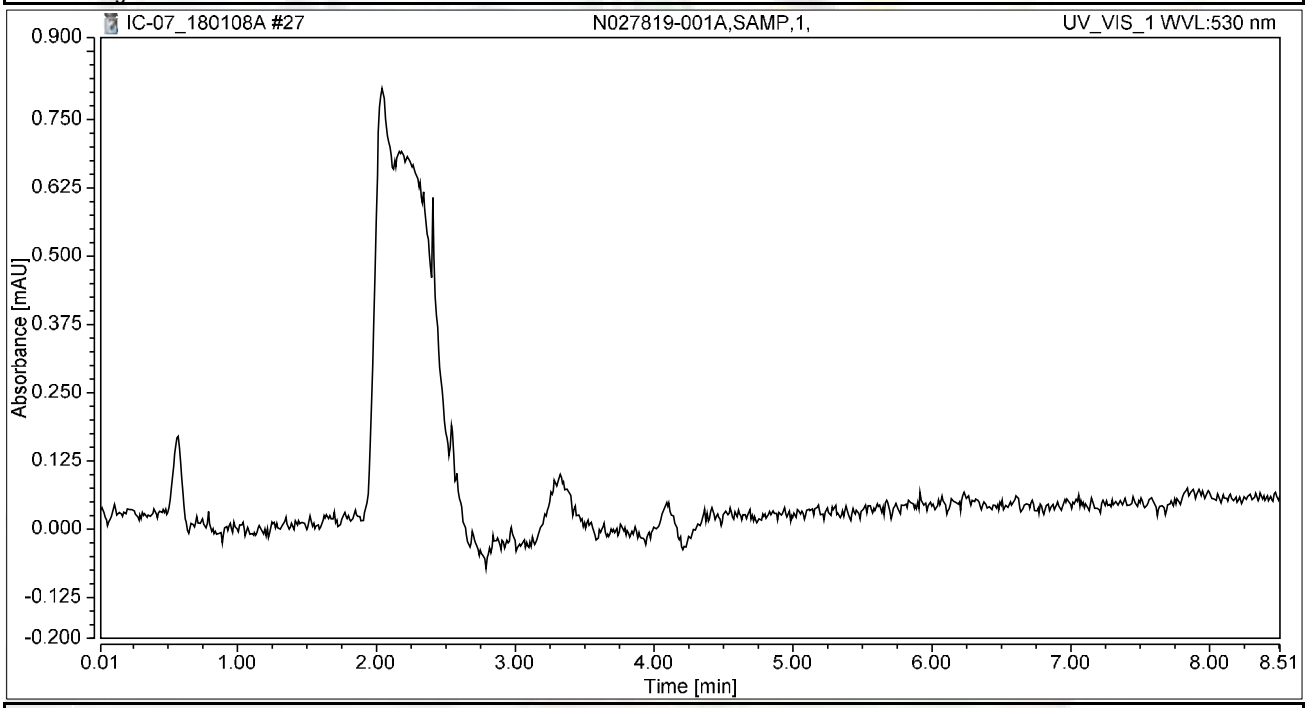
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

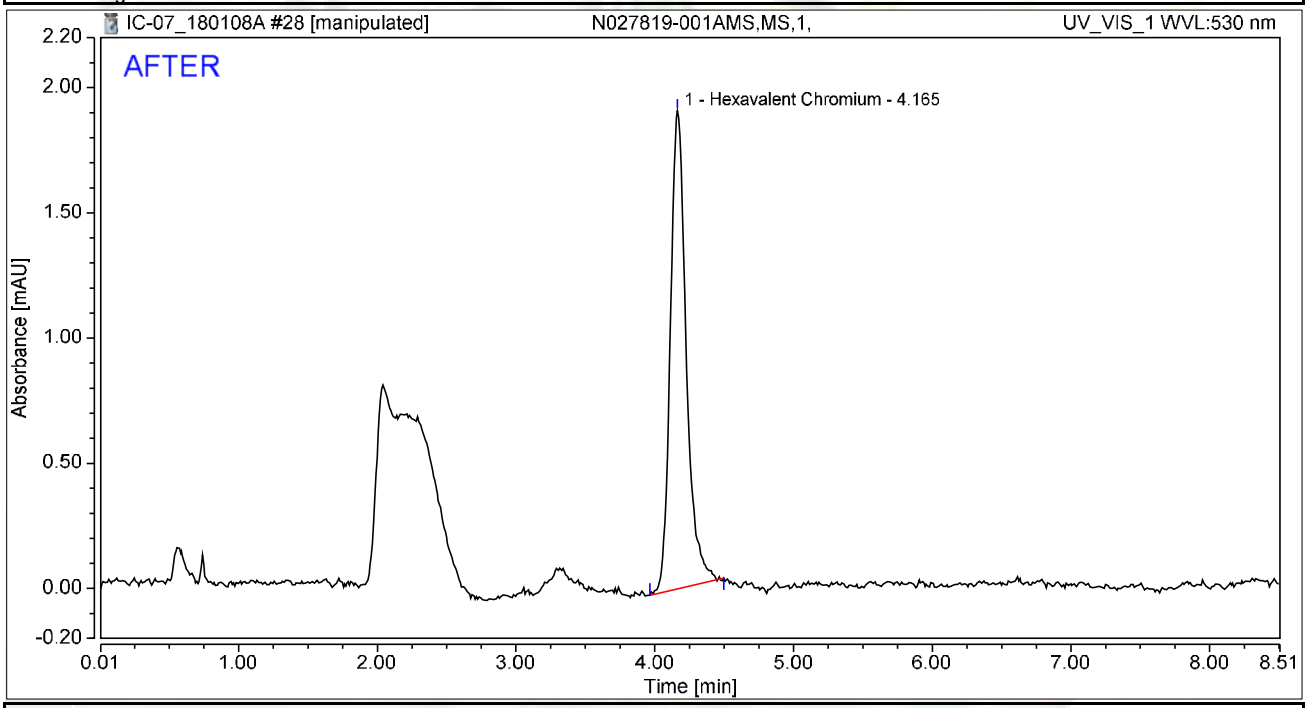
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.254	1.909	100.00	100.00	0.9940
Total:			**0.254**	**1.909**	**100.00**	**100.00**	

rba 1/10/2018

Reviewed by: Nancy 01/12/2018
M/ first report/Integration

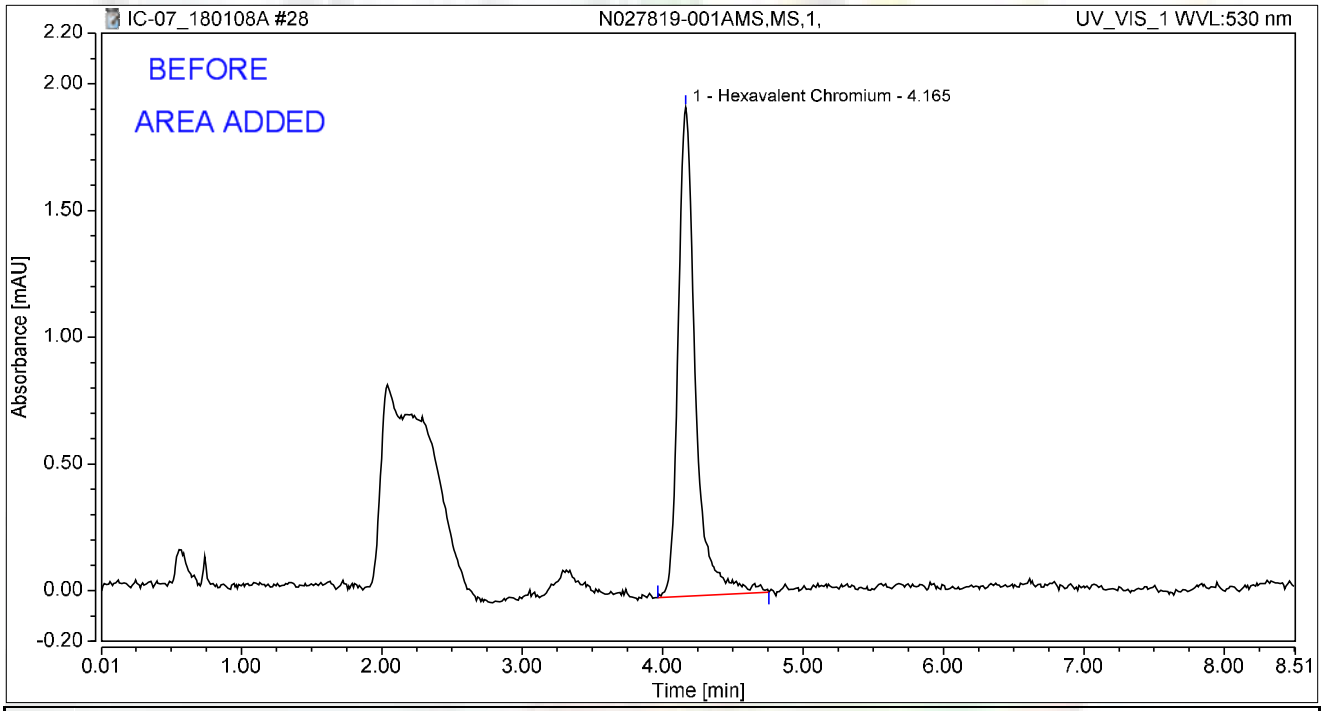
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N027819-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	1.930	100.00	100.00	1.0637
Total:			**0.275**	**1.930**	**100.00**	**100.00**	

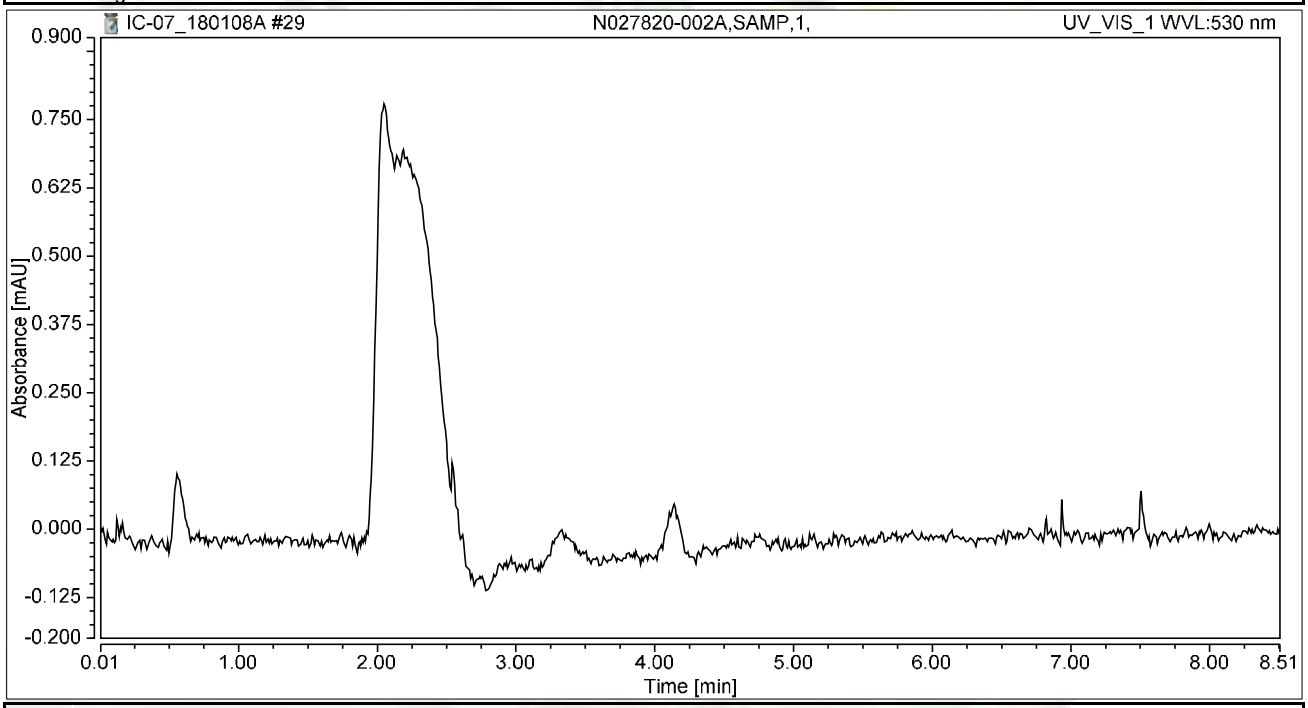
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

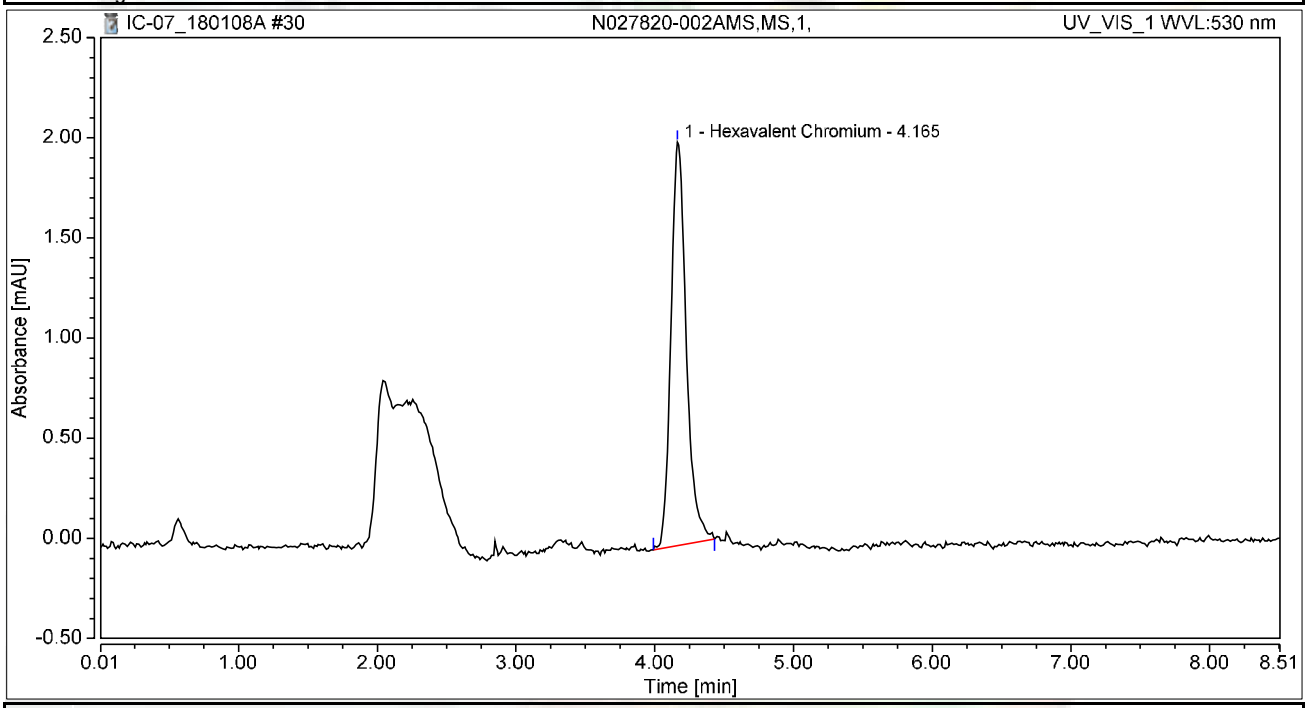
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

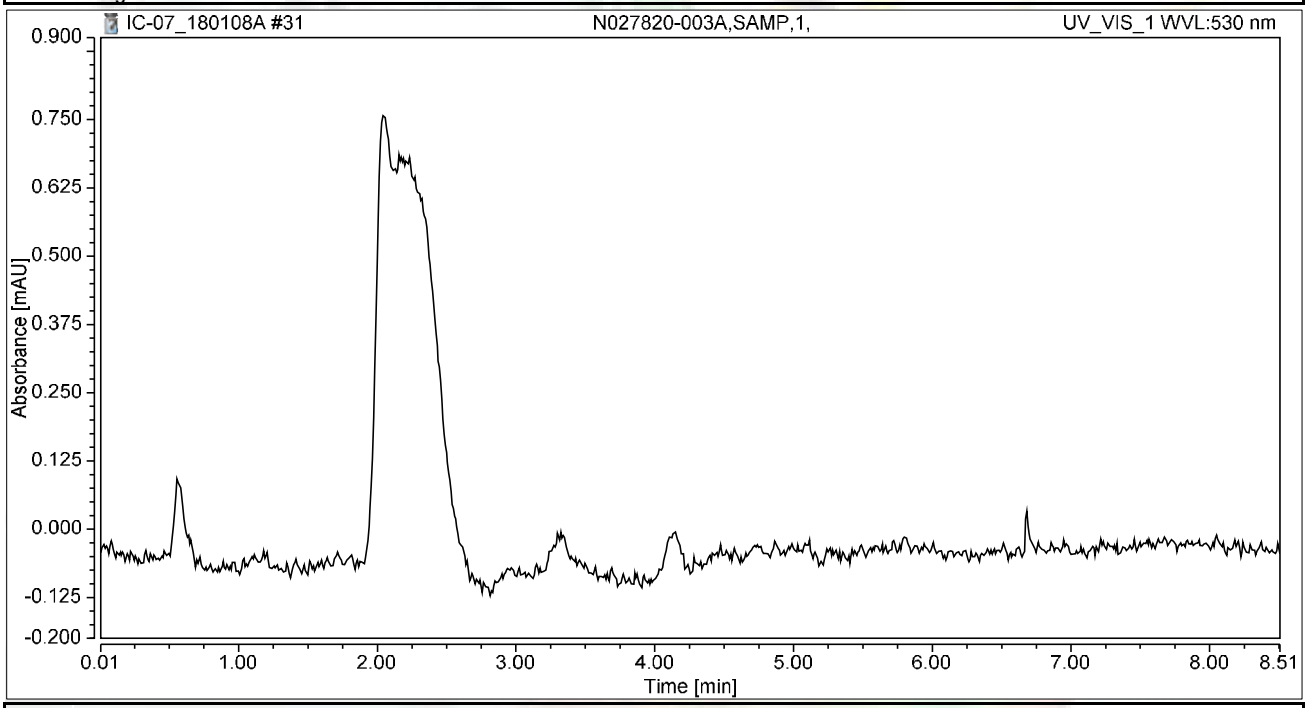
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.259	2.012	100.00	100.00	1.0115
Total:			**0.259**	**2.012**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

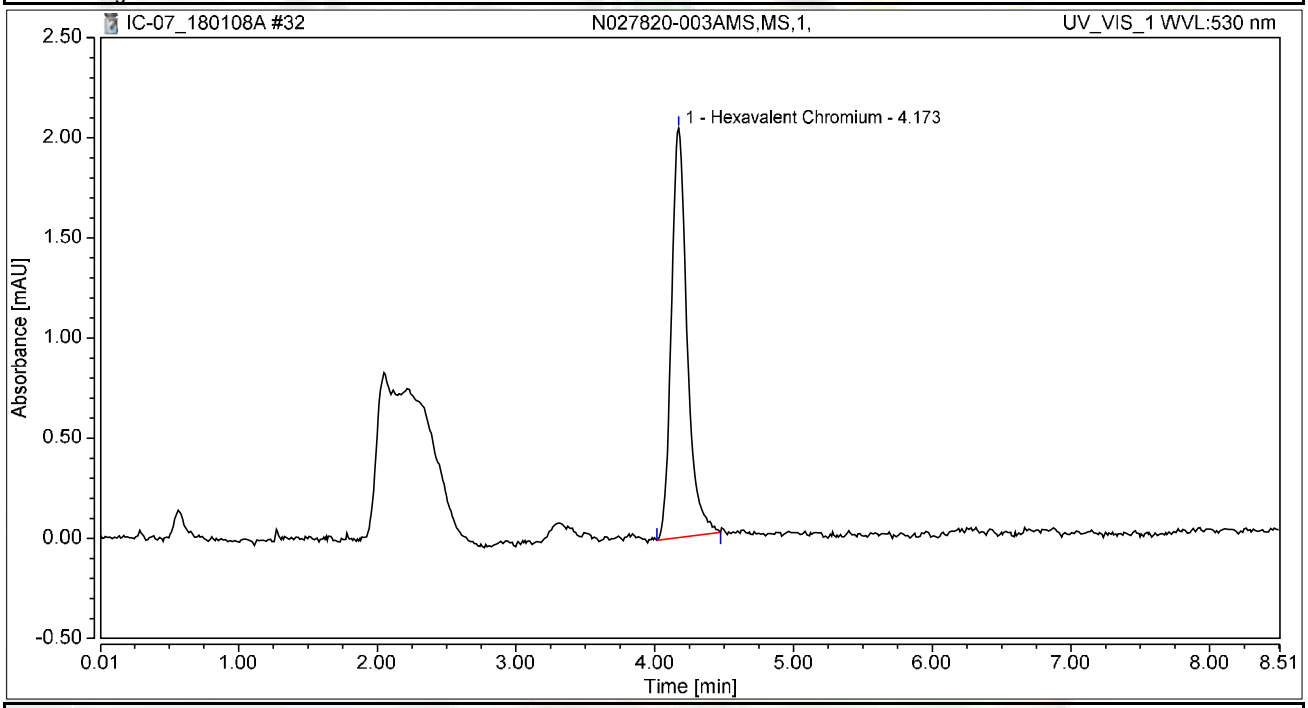
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

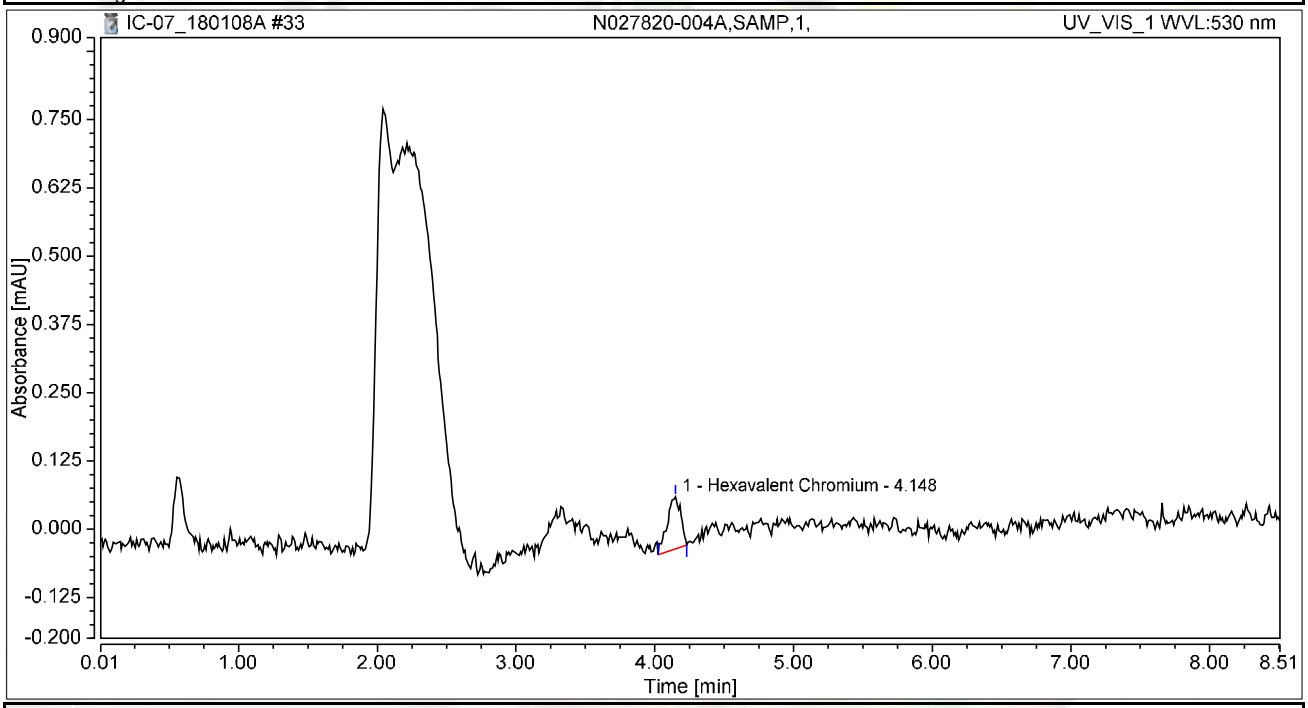
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.268	2.043	100.00	100.00	1.0498
Total:			**0.268**	**2.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 14:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

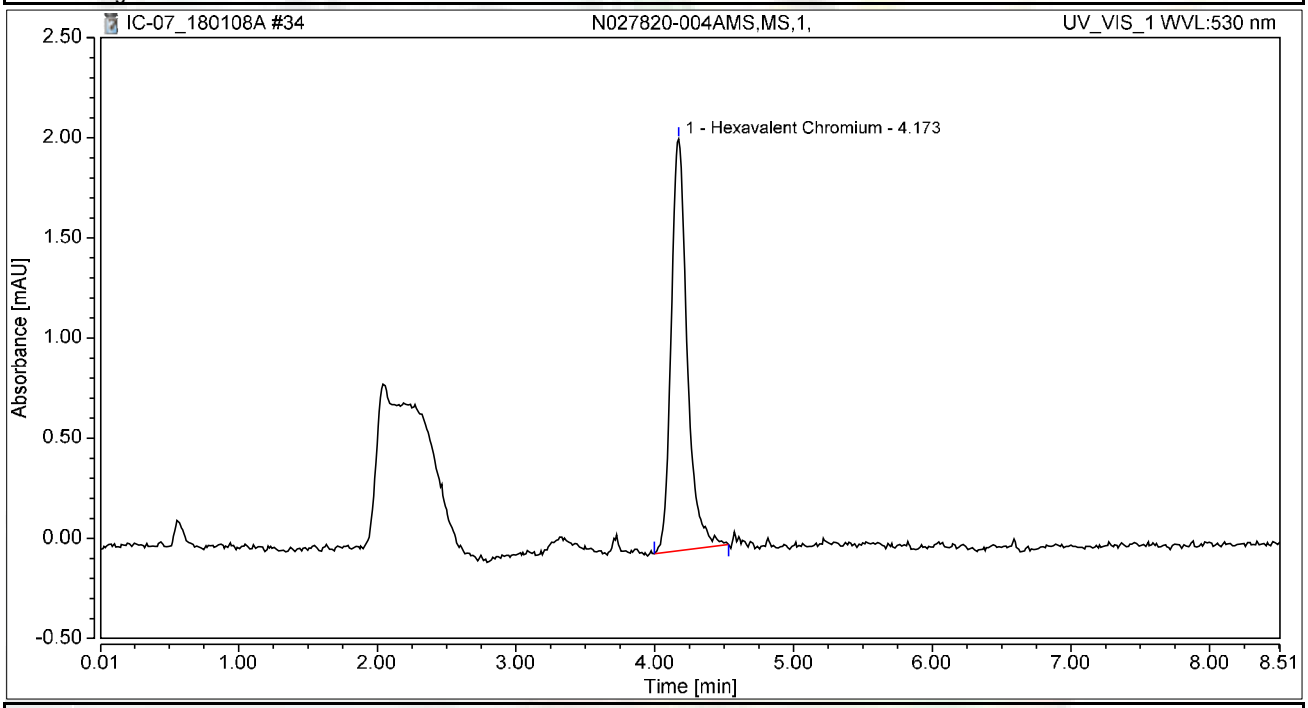
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.011	0.095	100.00	100.00	0.0418
Total:			**0.011**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

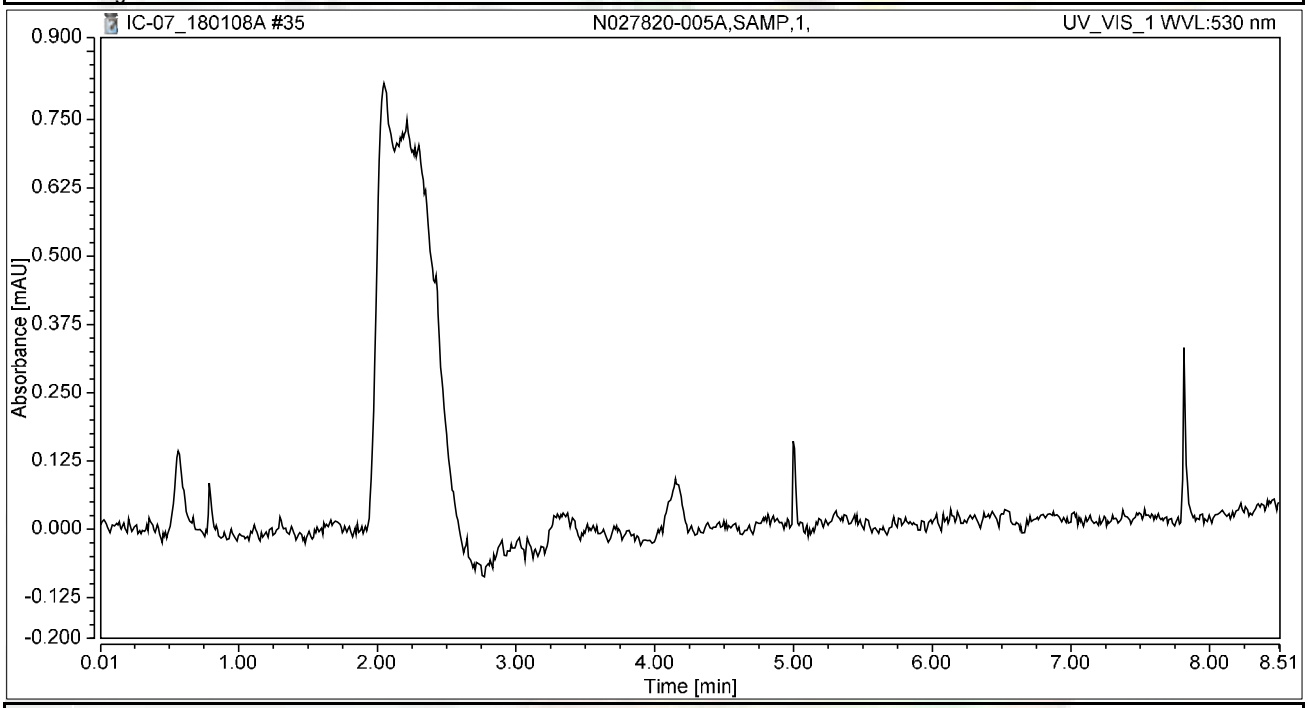
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.054	100.00	100.00	1.0786
Total:			**0.276**	**2.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

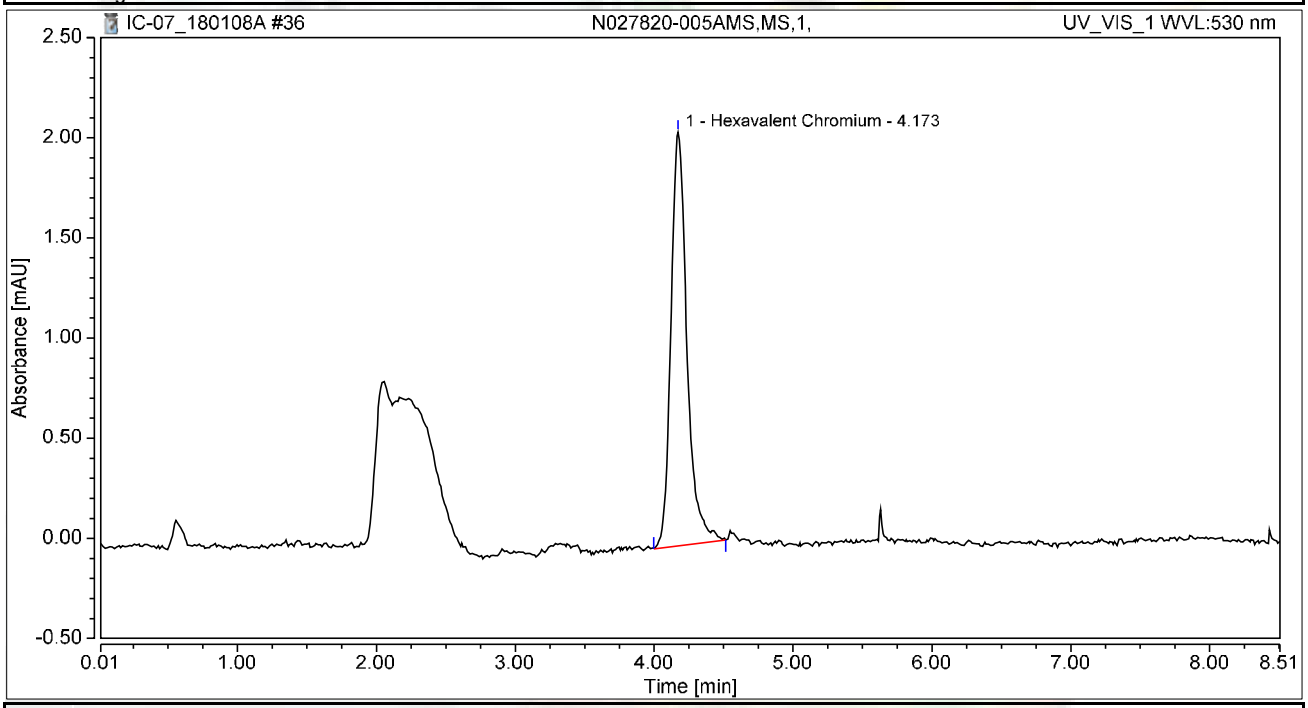
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

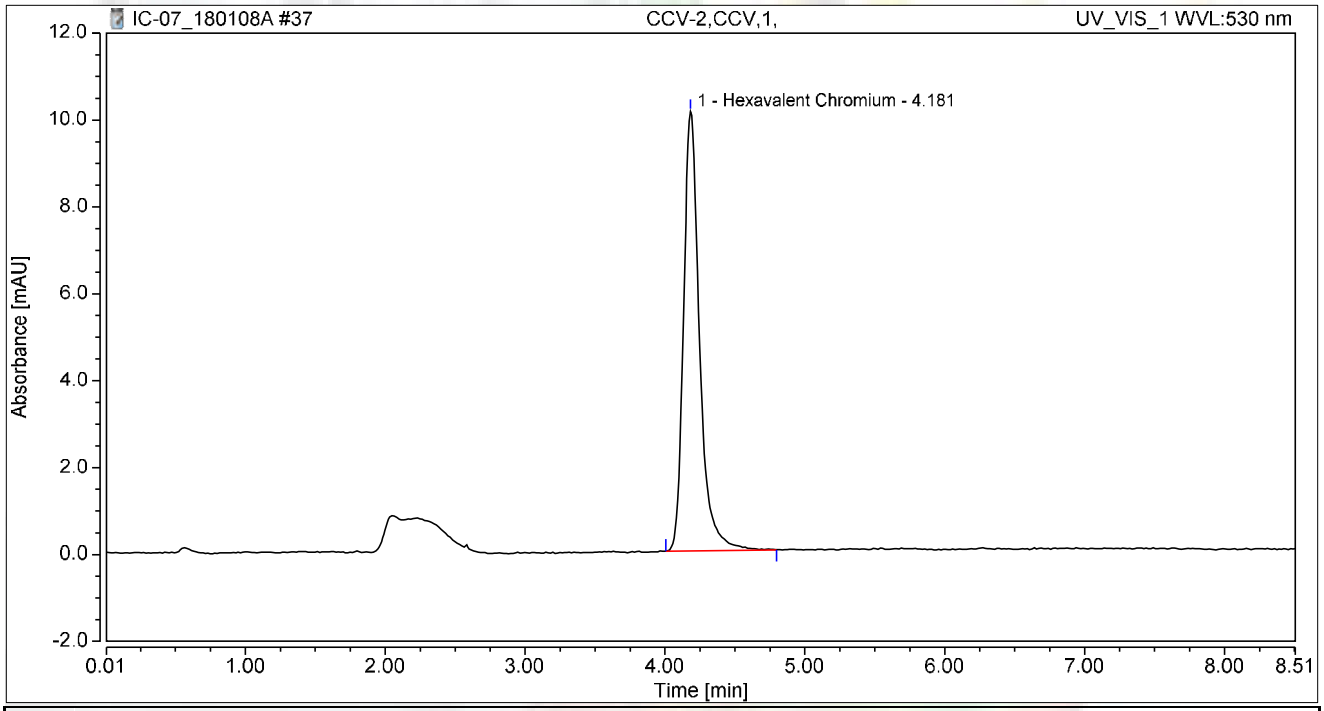
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.066	100.00	100.00	1.0782
Total:			**0.276**	**2.066**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

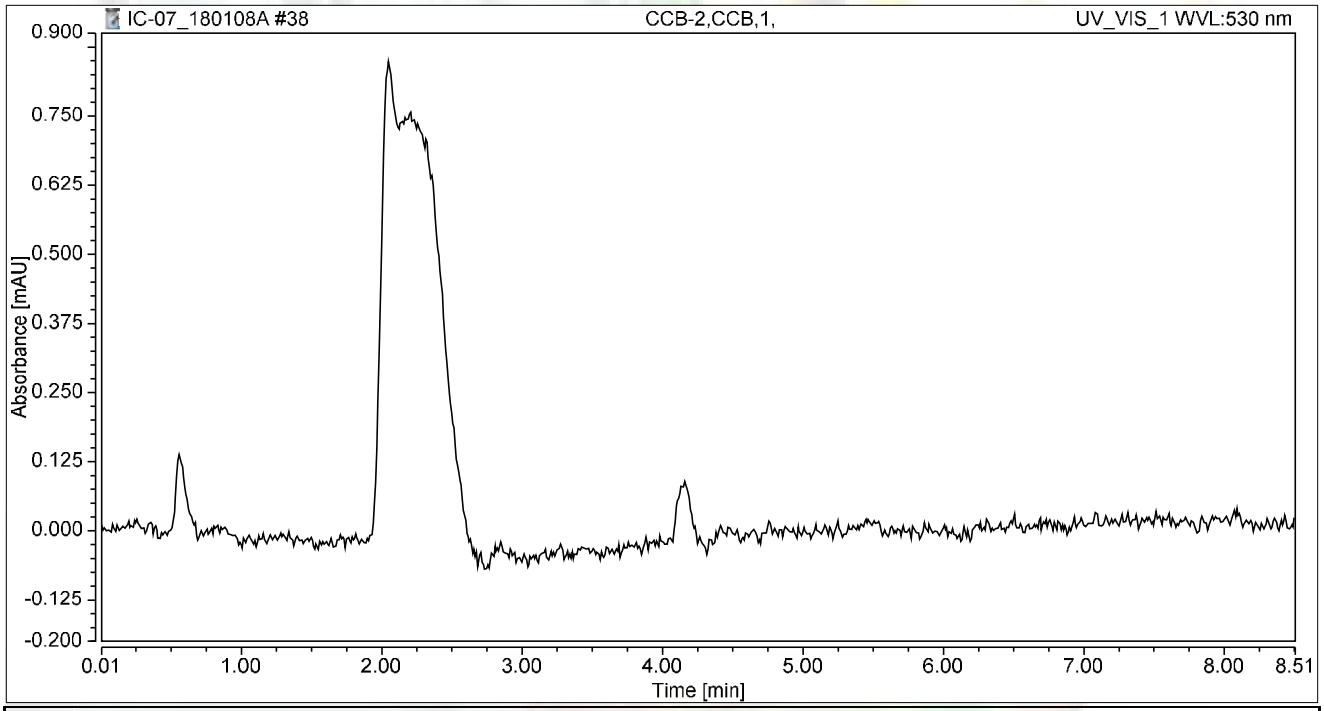
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.338	10.114	100.00	100.00	5.2328
Total:			**1.338**	**10.114**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

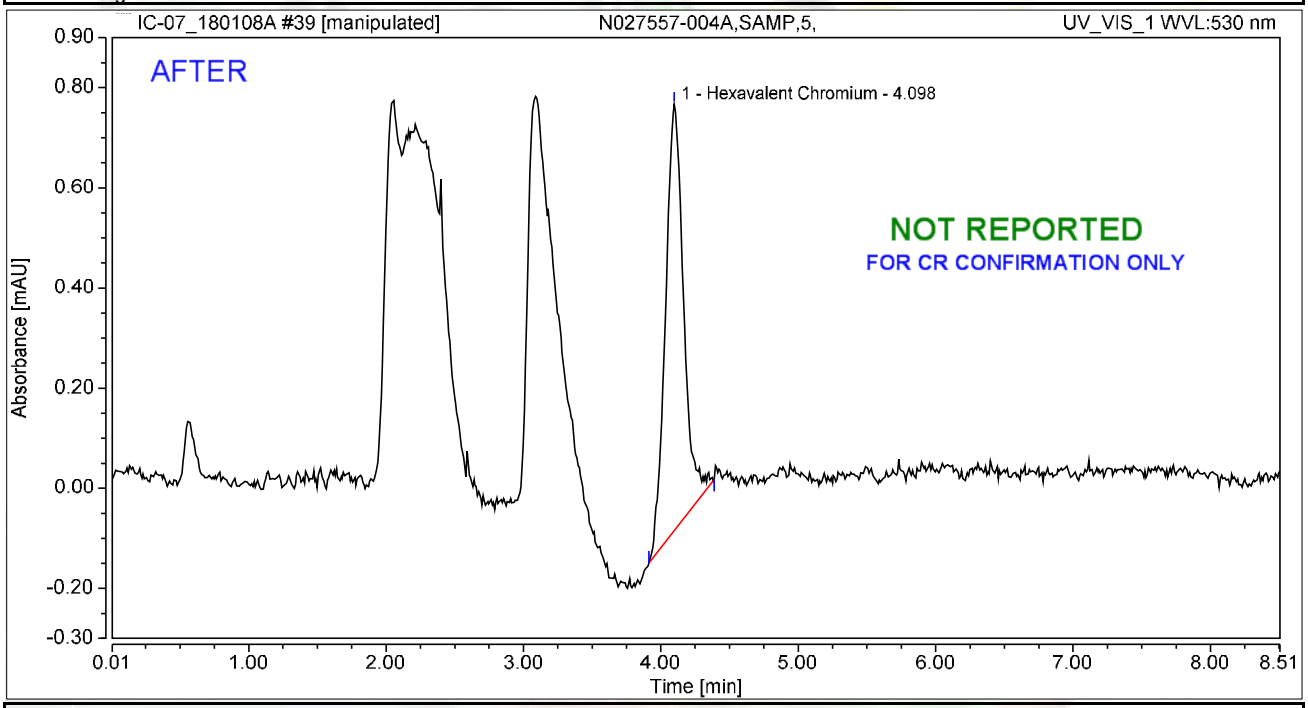
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.130	0.852	100.00	100.00	0.5084
Total:			**0.130**	**0.852**	**100.00**	**100.00**	

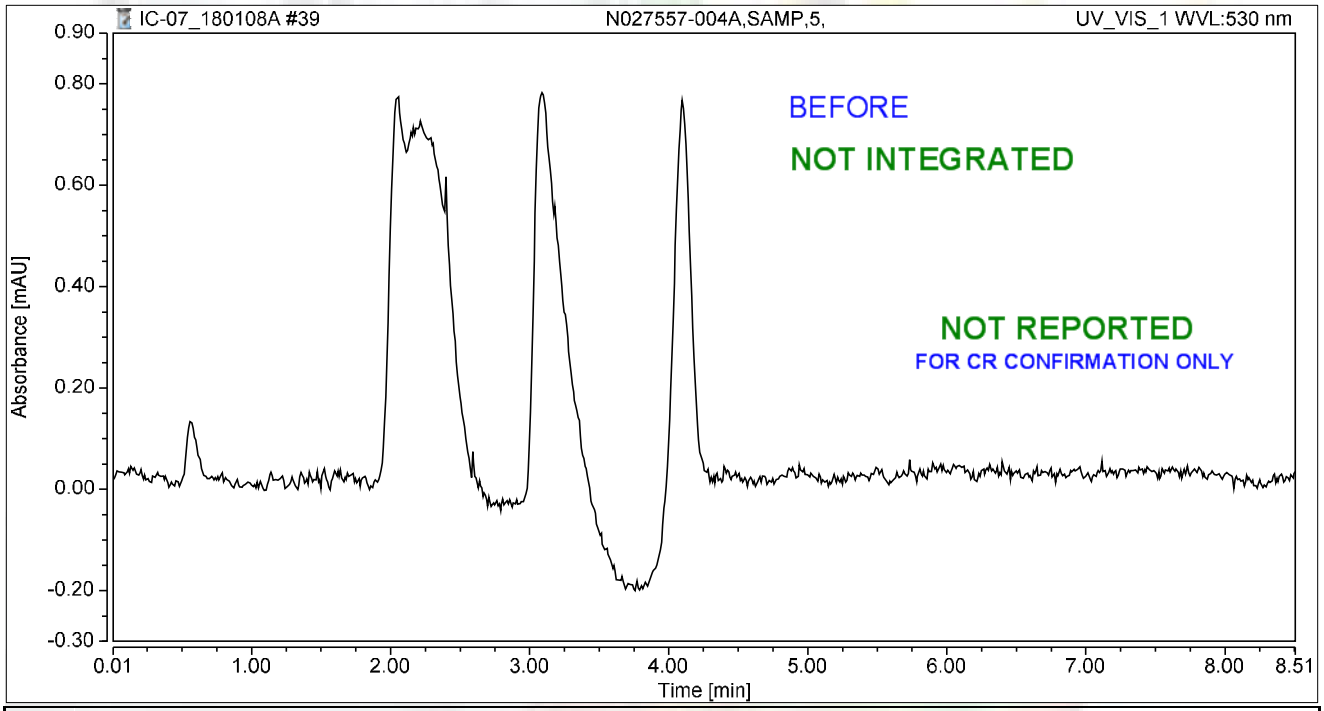
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

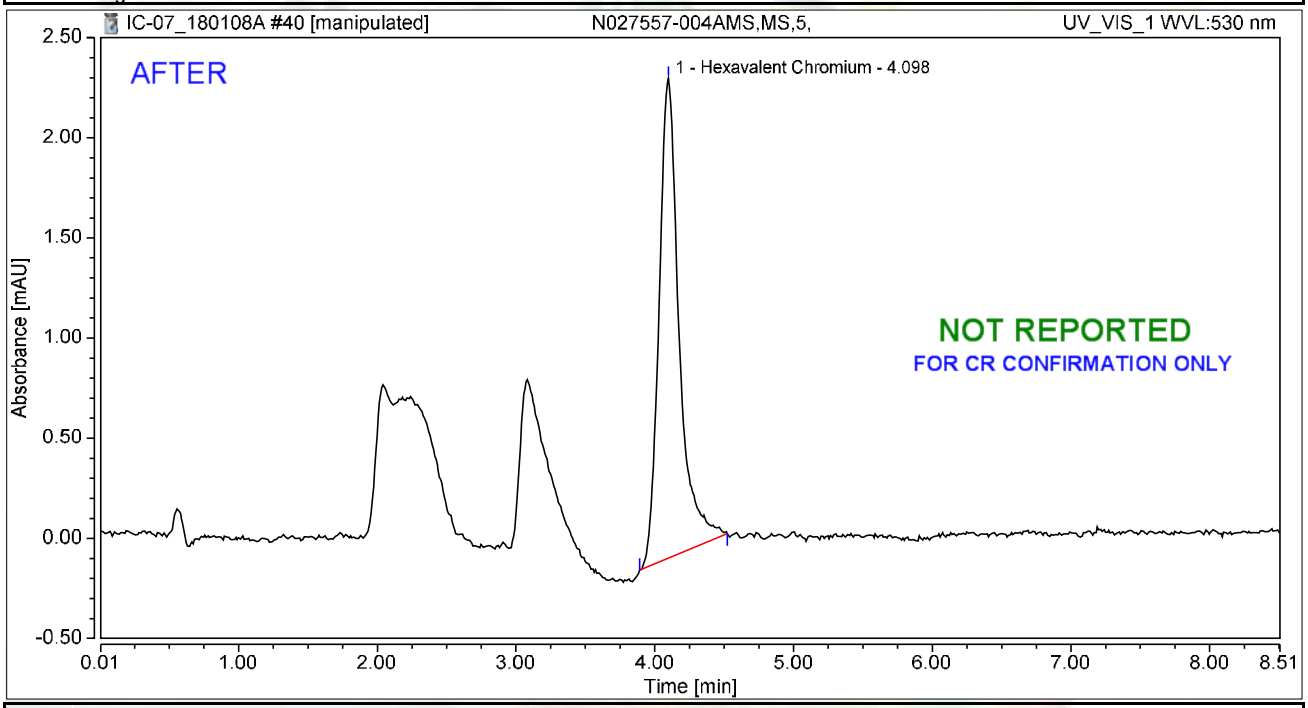
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.403	2.396	100.00	100.00	1.5776
Total:			**0.403**	**2.396**	**100.00**	**100.00**	

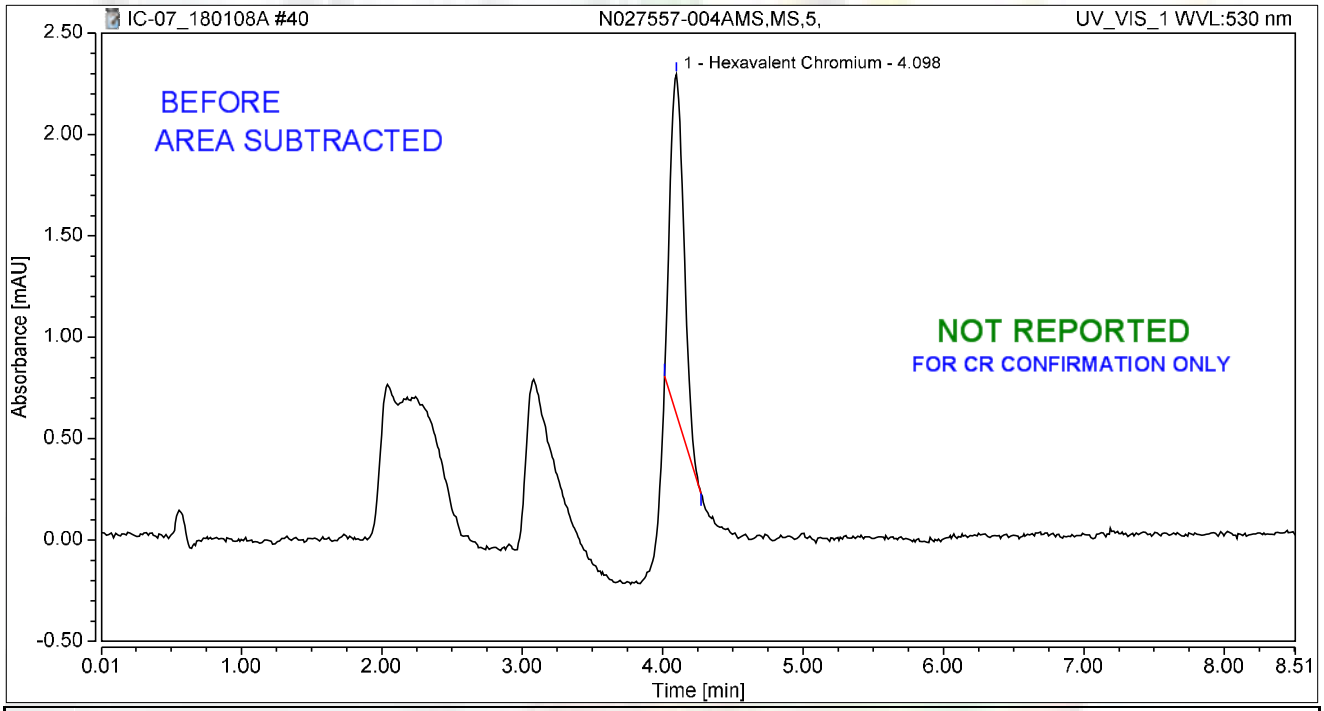
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027557-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.192	1.676	100.00	100.00	0.7404
Total:			**0.192**	**1.676**	**100.00**	**100.00**	

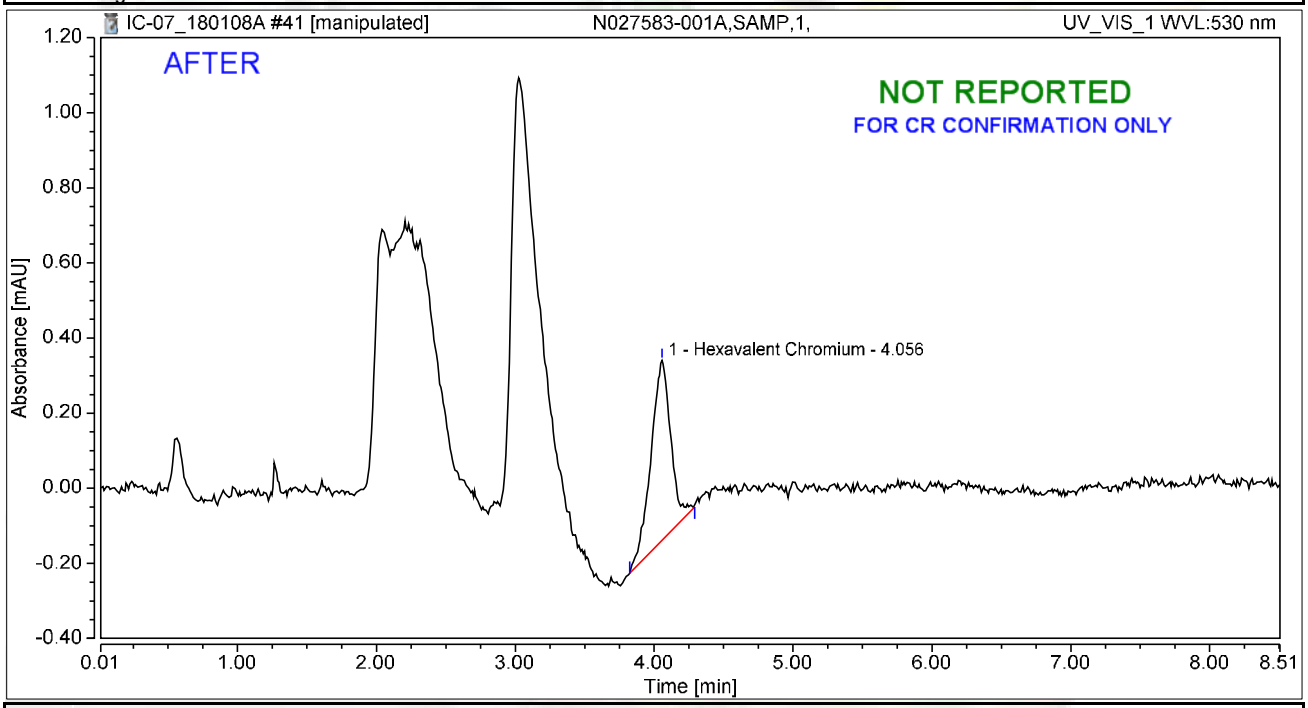
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.079	0.479	100.00	100.00	0.3088
Total:			**0.079**	**0.479**	**100.00**	**100.00**	

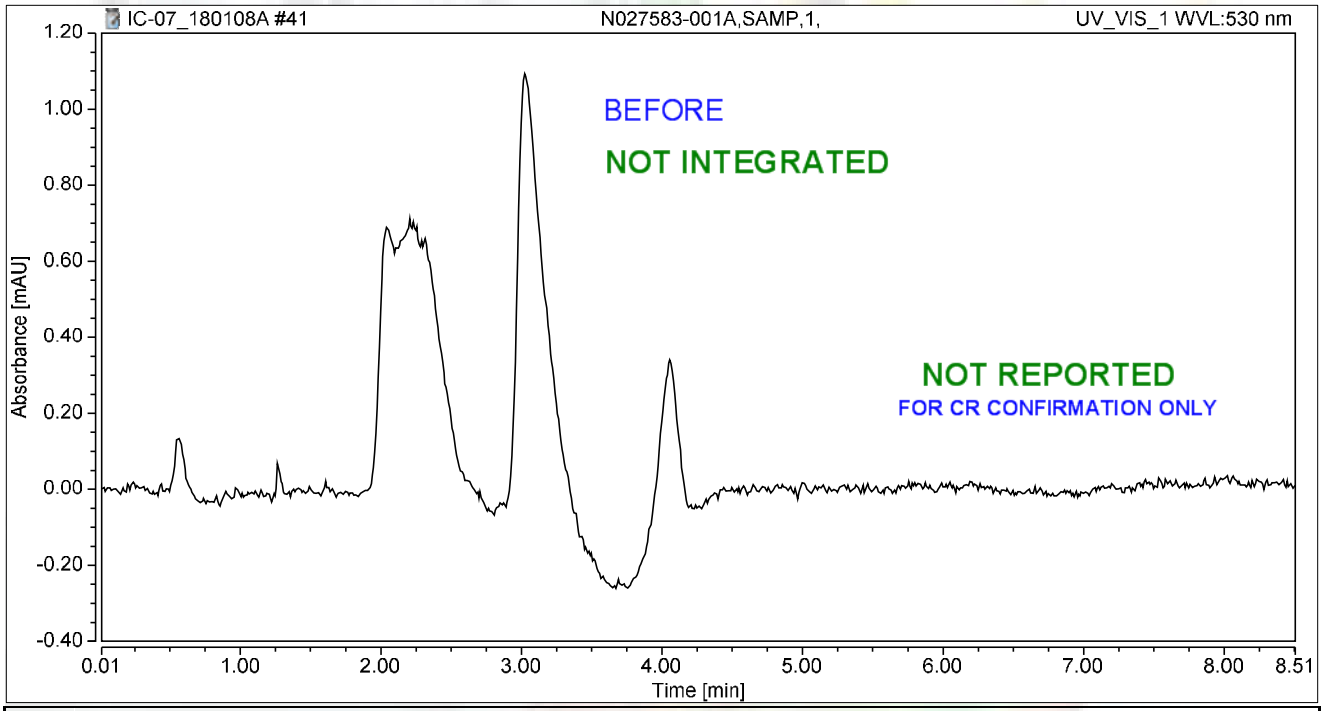
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

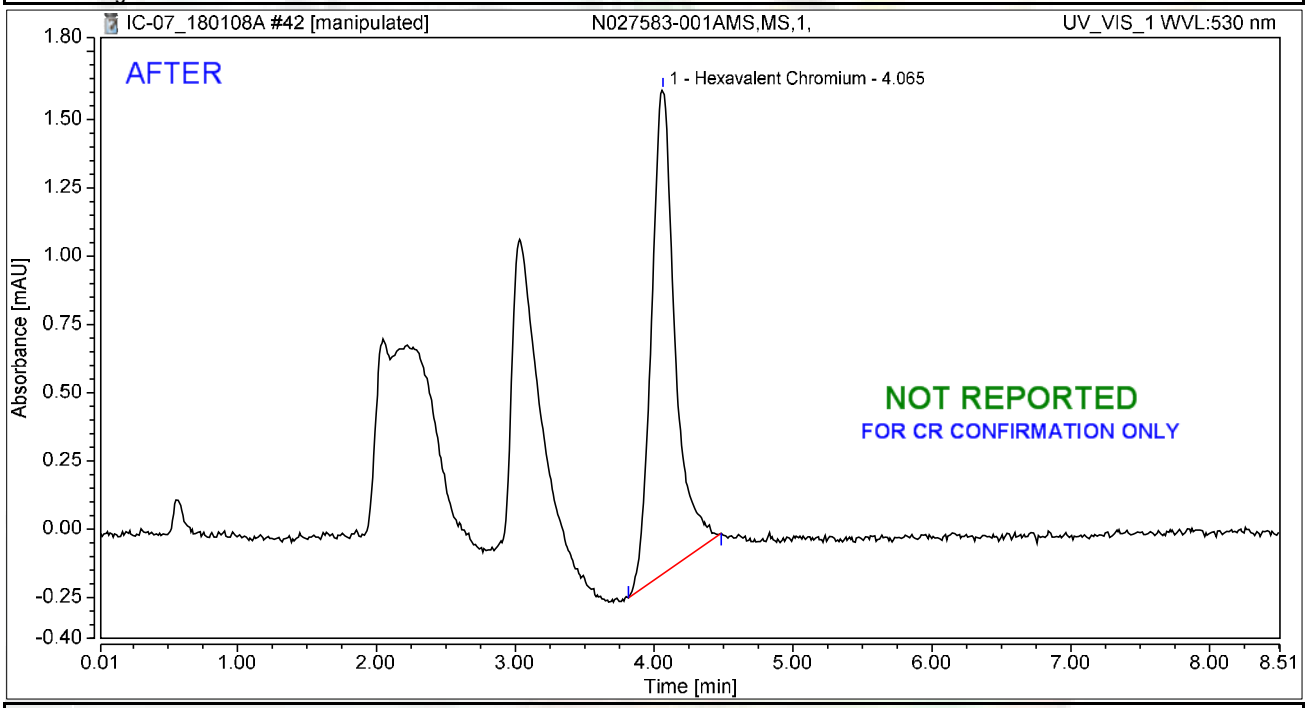
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.350	1.773	100.00	100.00	1.3670
Total:			**0.350**	**1.773**	**100.00**	**100.00**	

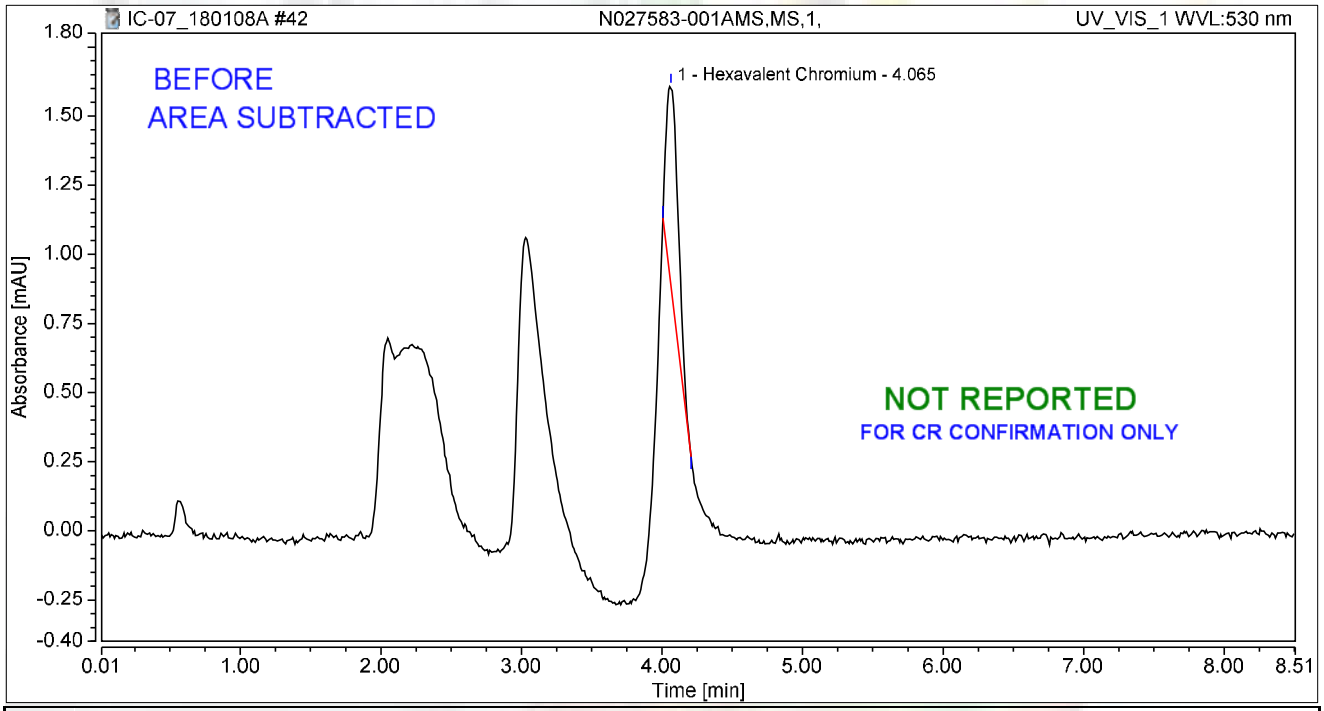
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.073	0.730	100.00	100.00	0.2831
Total:			**0.073**	**0.730**	**100.00**	**100.00**	

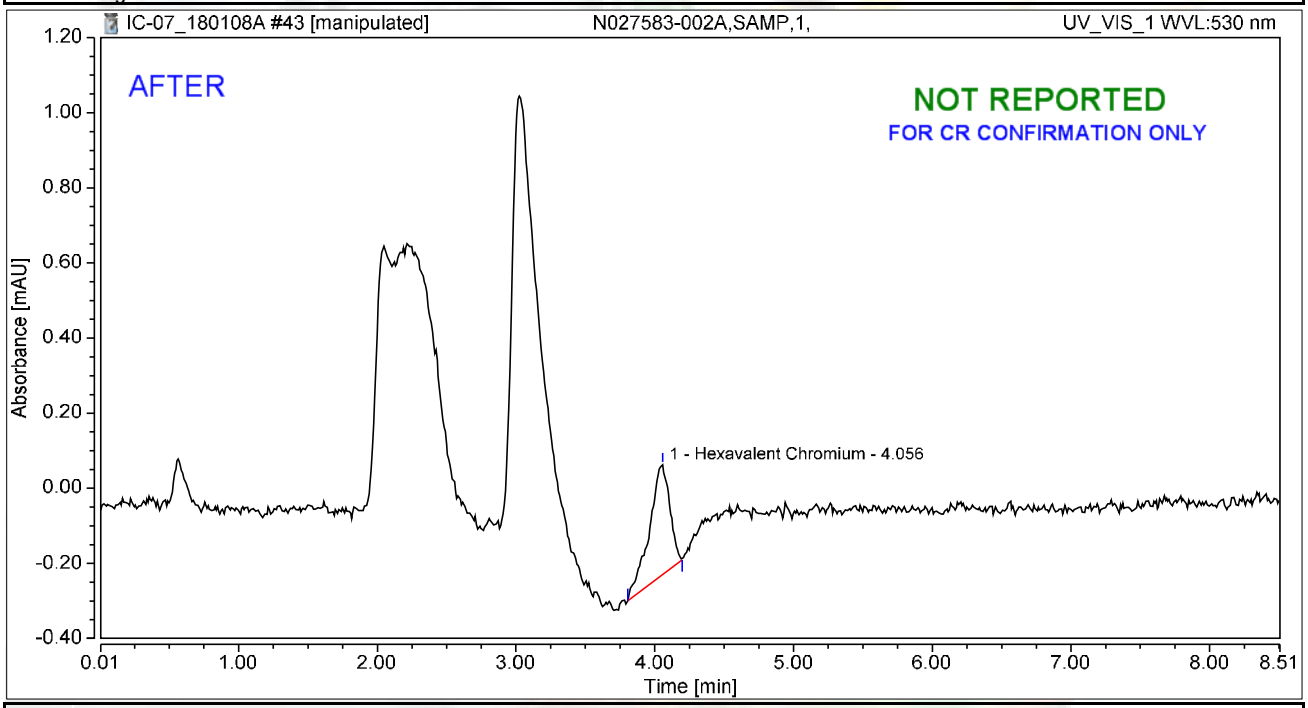
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.050	0.292	100.00	100.00	0.1973
Total:			**0.050**	**0.292**	**100.00**	**100.00**	

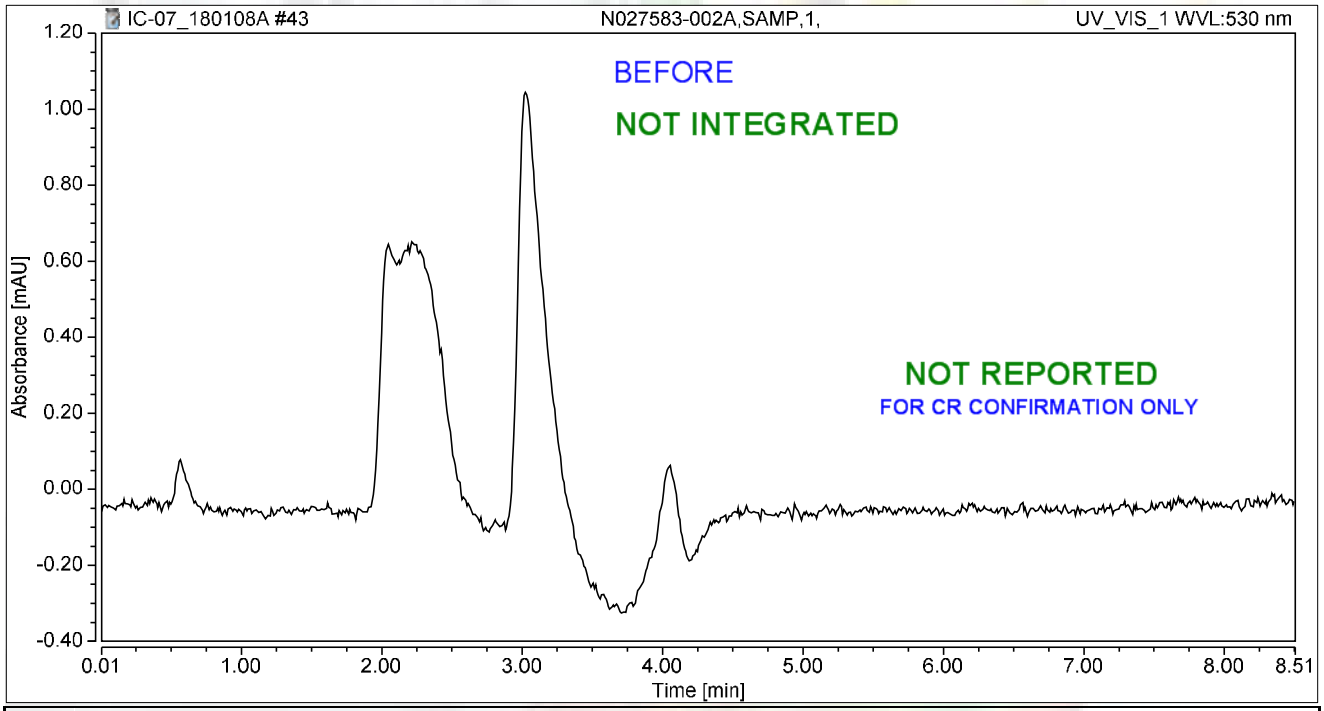
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

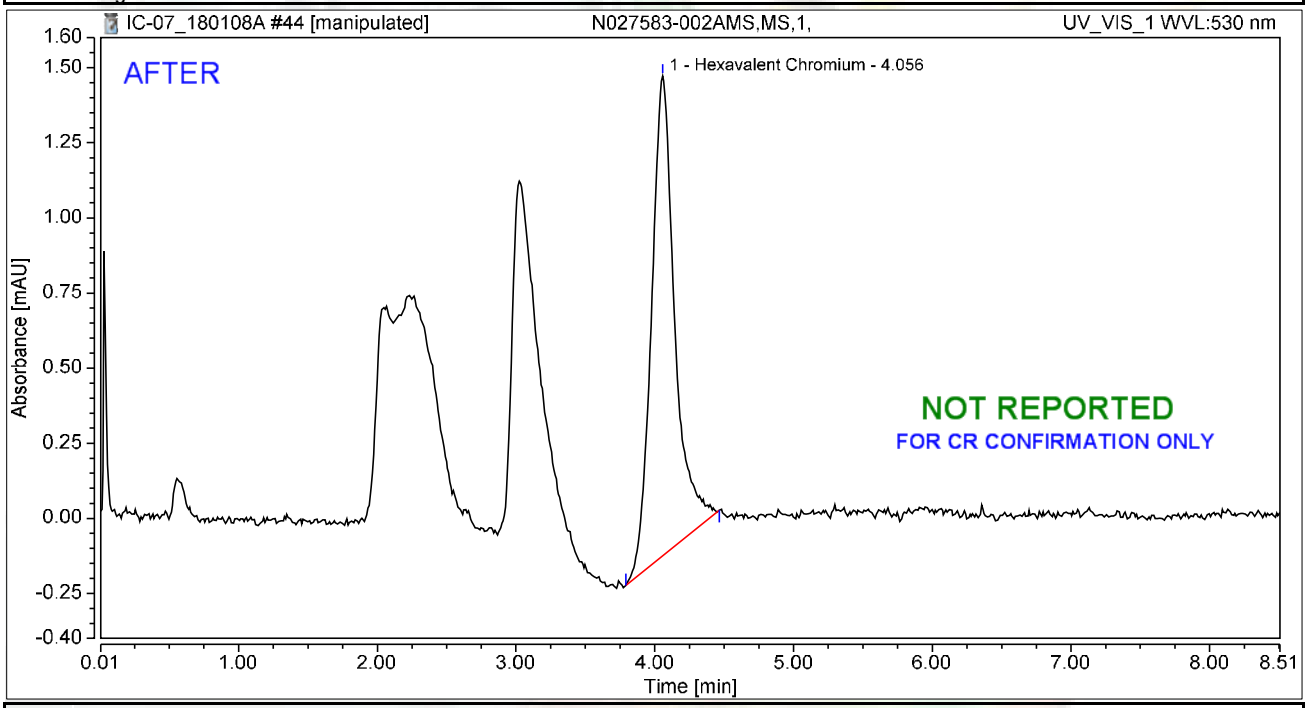
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.310	1.597	100.00	100.00	1.2138
Total:			**0.310**	**1.597**	**100.00**	**100.00**	

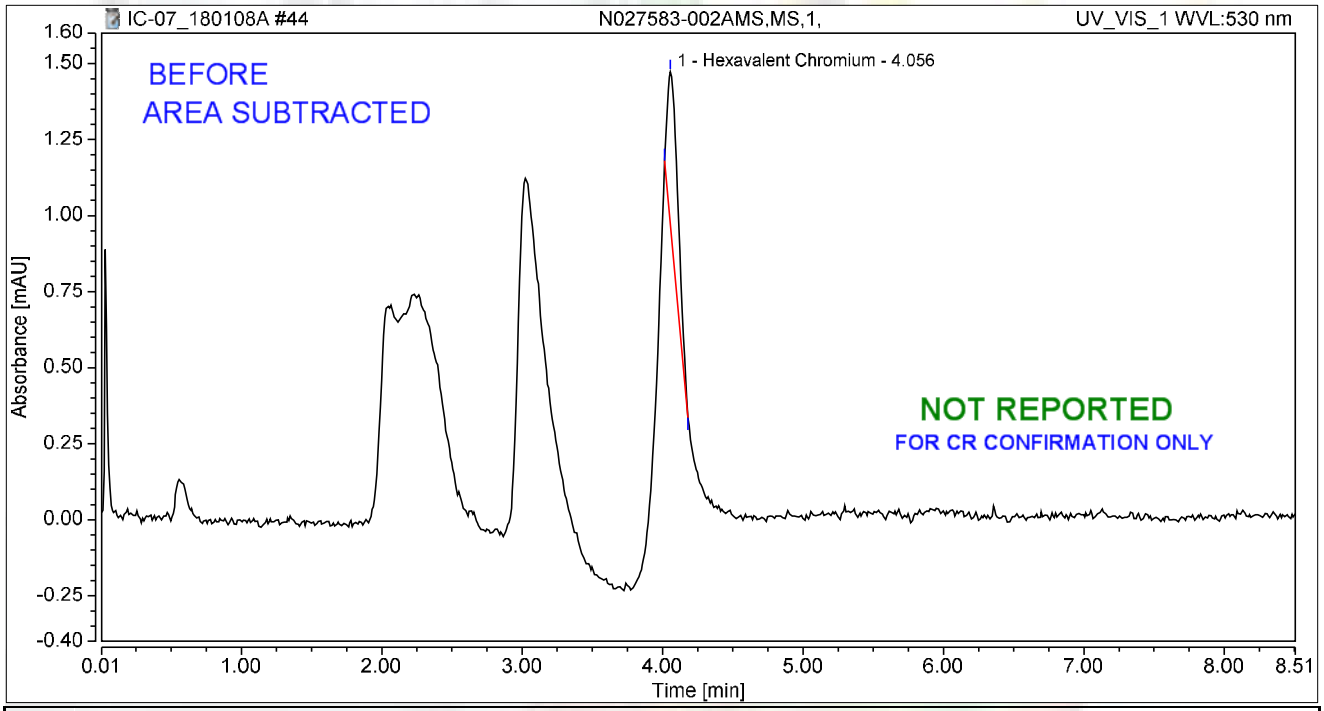
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.047	0.503	100.00	100.00	0.1810
Total:			**0.047**	**0.503**	**100.00**	**100.00**	

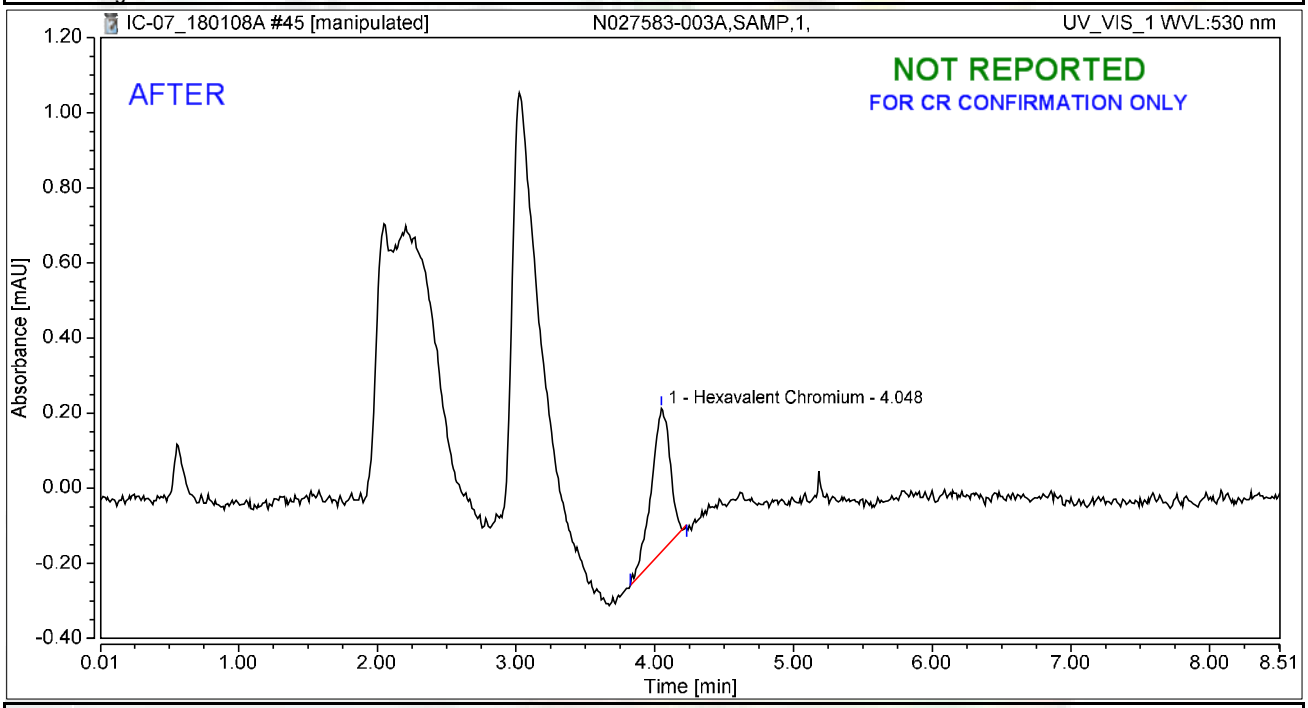
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.060	0.383	100.00	100.00	0.2344
Total:			**0.060**	**0.383**	**100.00**	**100.00**	

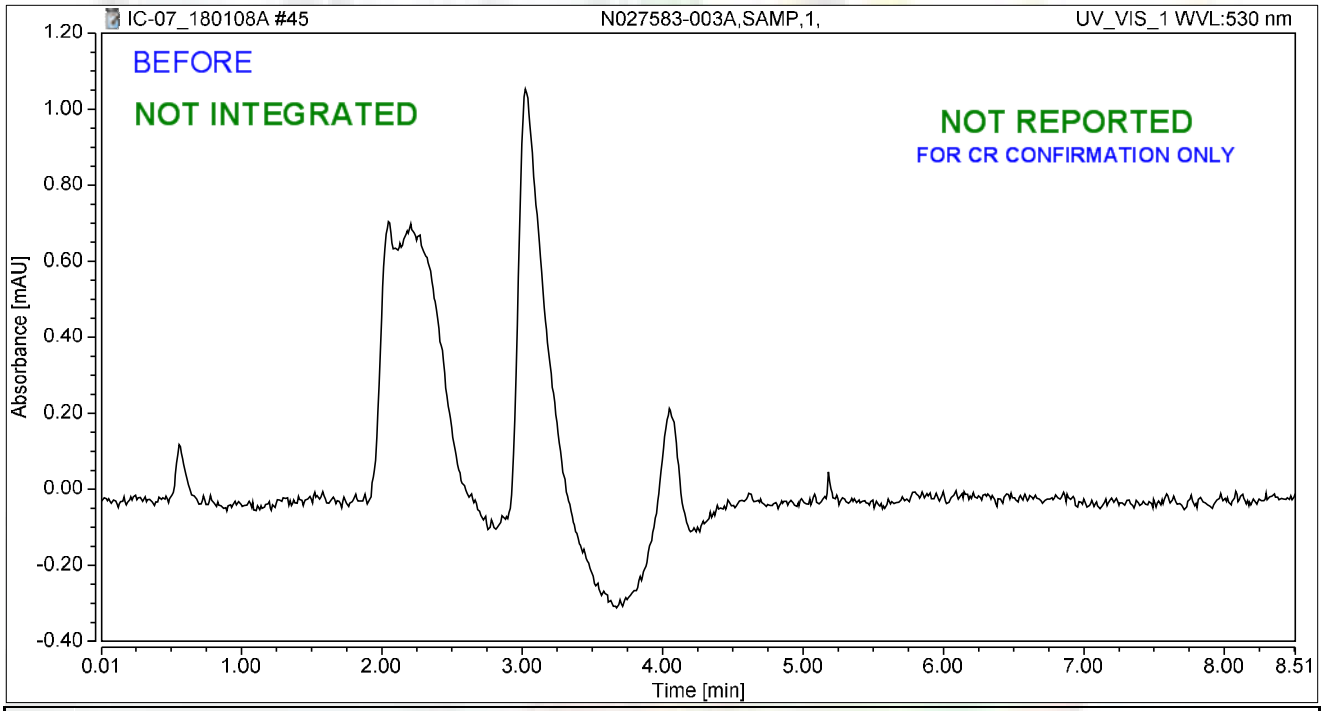
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

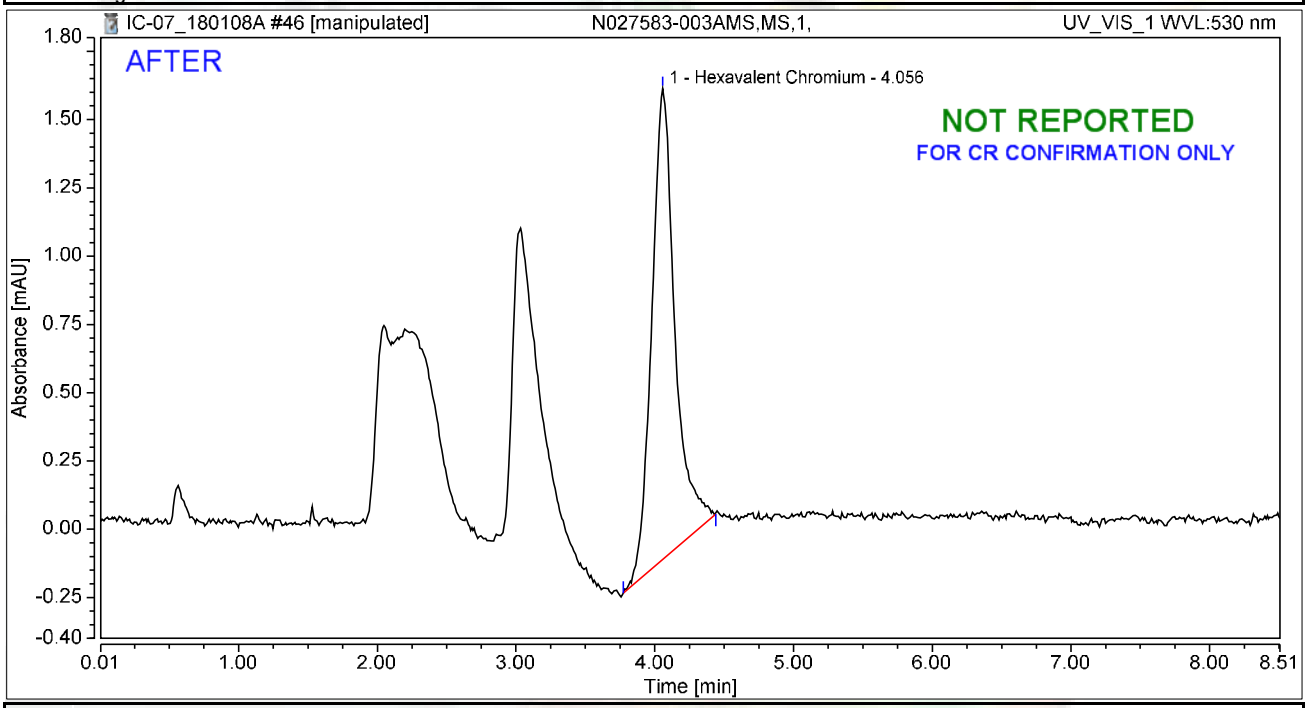
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.335	1.726	100.00	100.00	1.3100
Total:			**0.335**	**1.726**	**100.00**	**100.00**	

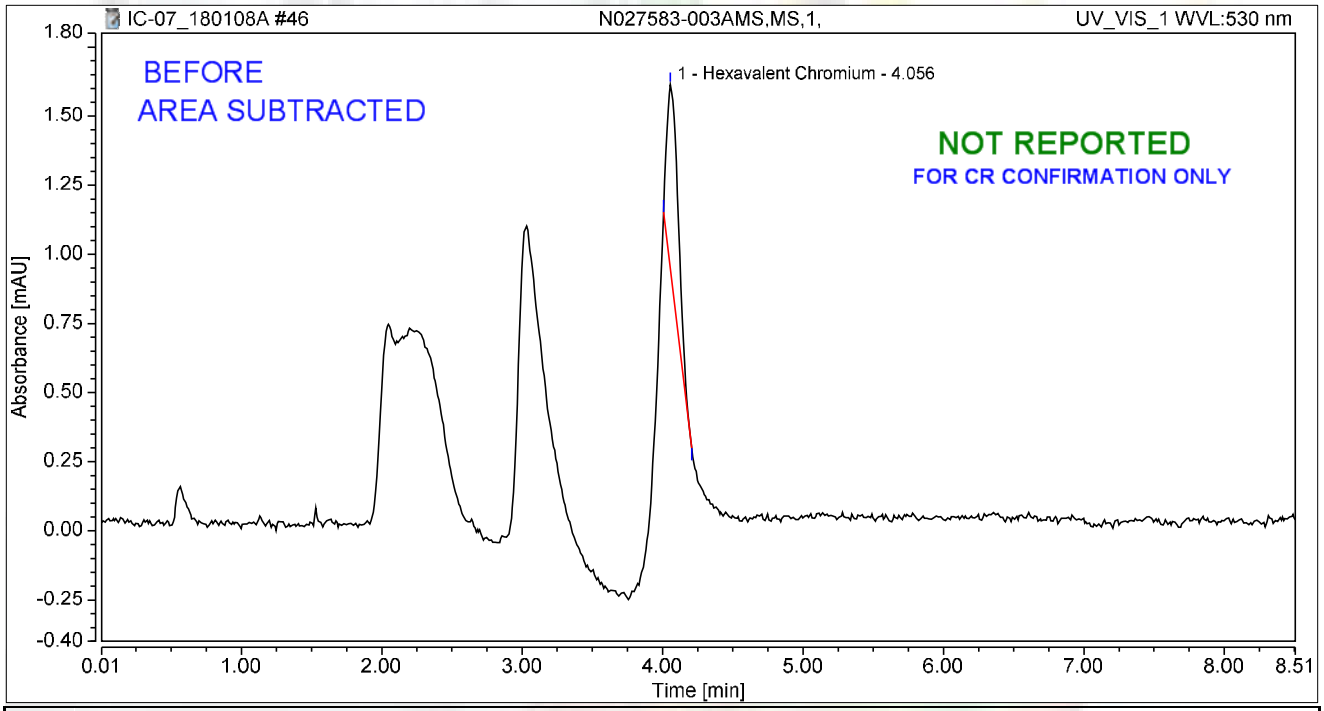
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027583-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.066	0.675	100.00	100.00	0.2558
Total:			**0.066**	**0.675**	**100.00**	**100.00**	

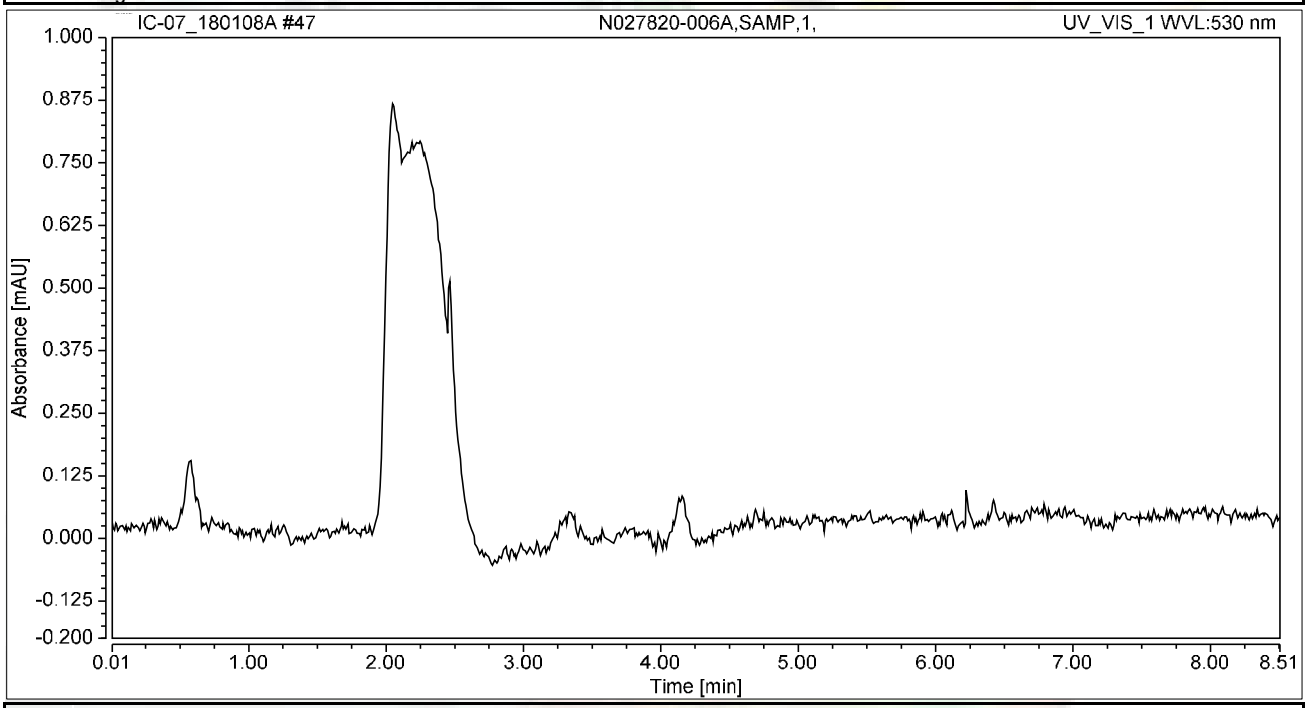
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

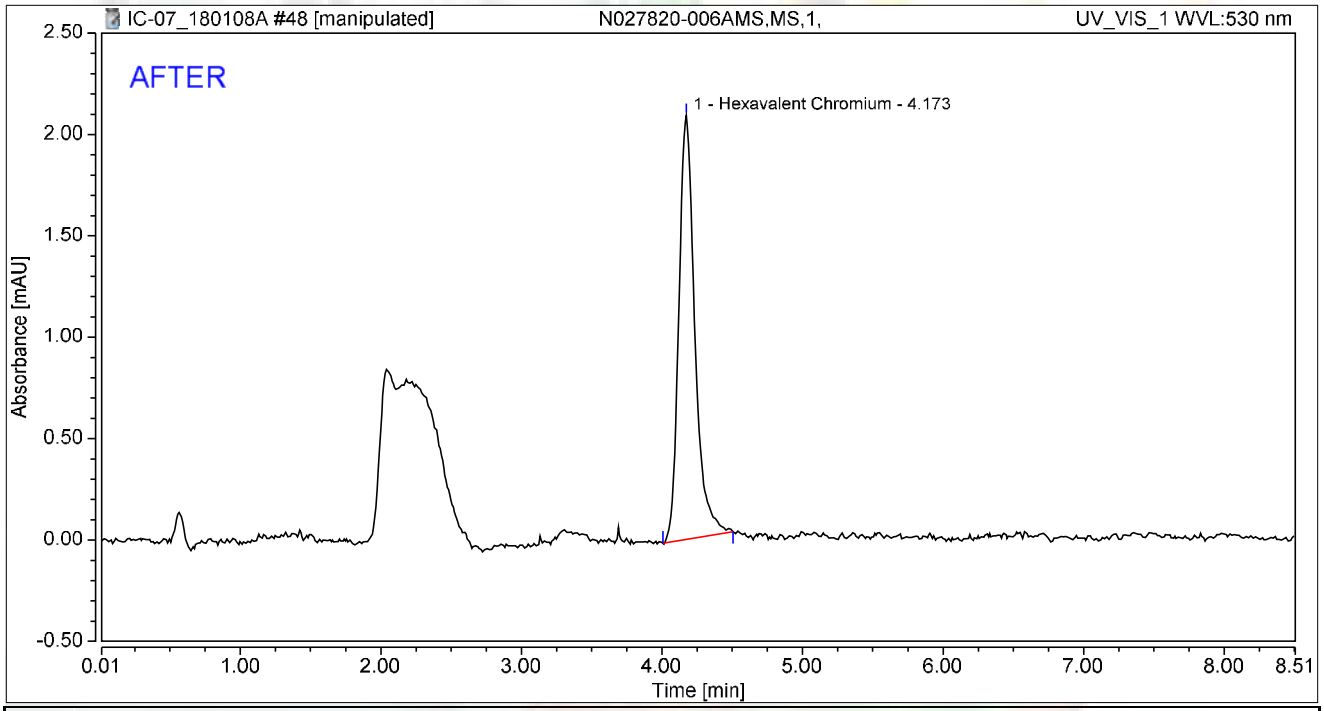
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.276	2.090	100.00	100.00	1.0786
Total:			**0.276**	**2.090**	**100.00**	**100.00**	

rba 1/10/2018

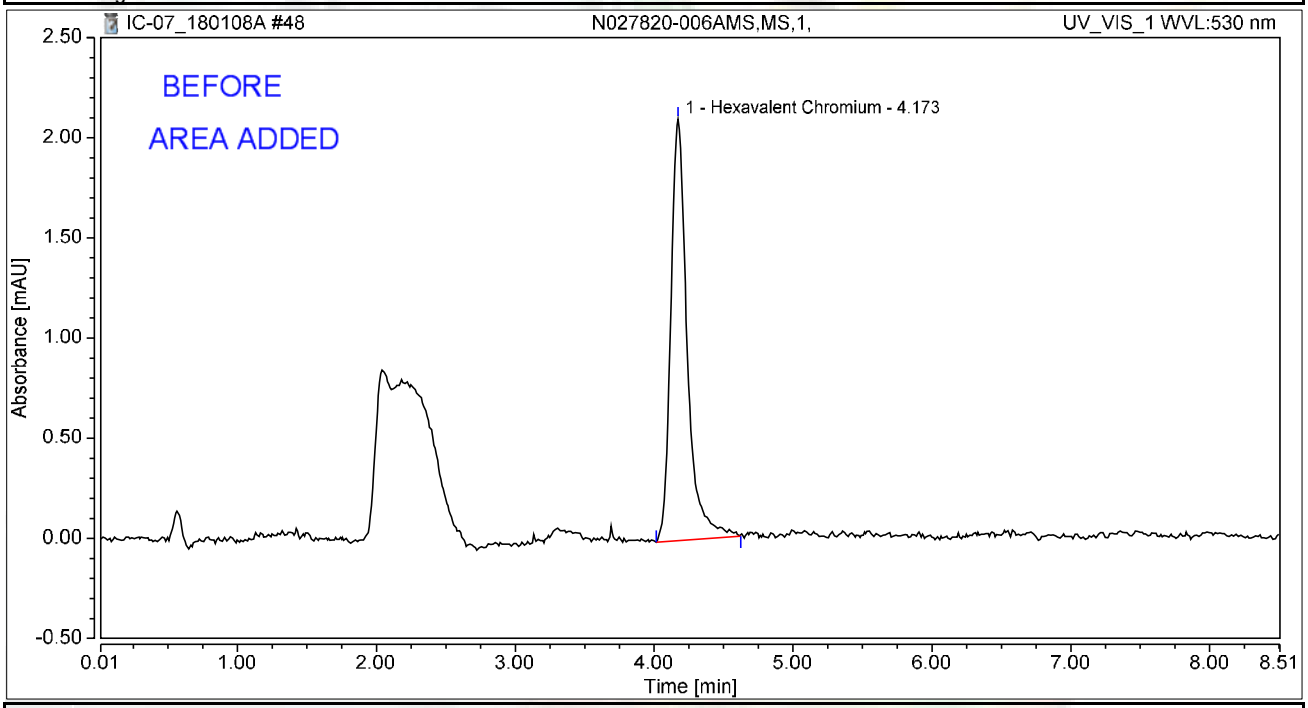
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.289	2.105	100.00	100.00	1.1287
Total:			**0.289**	**2.105**	**100.00**	**100.00**	

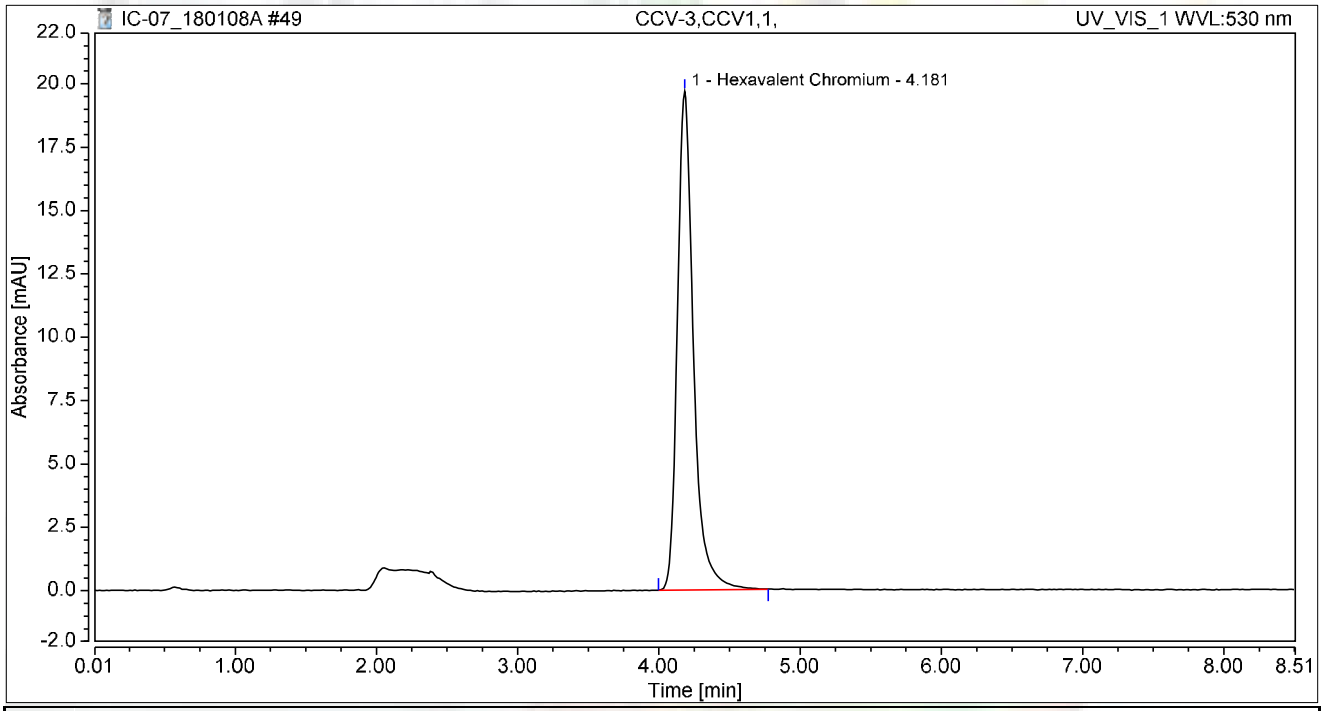
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

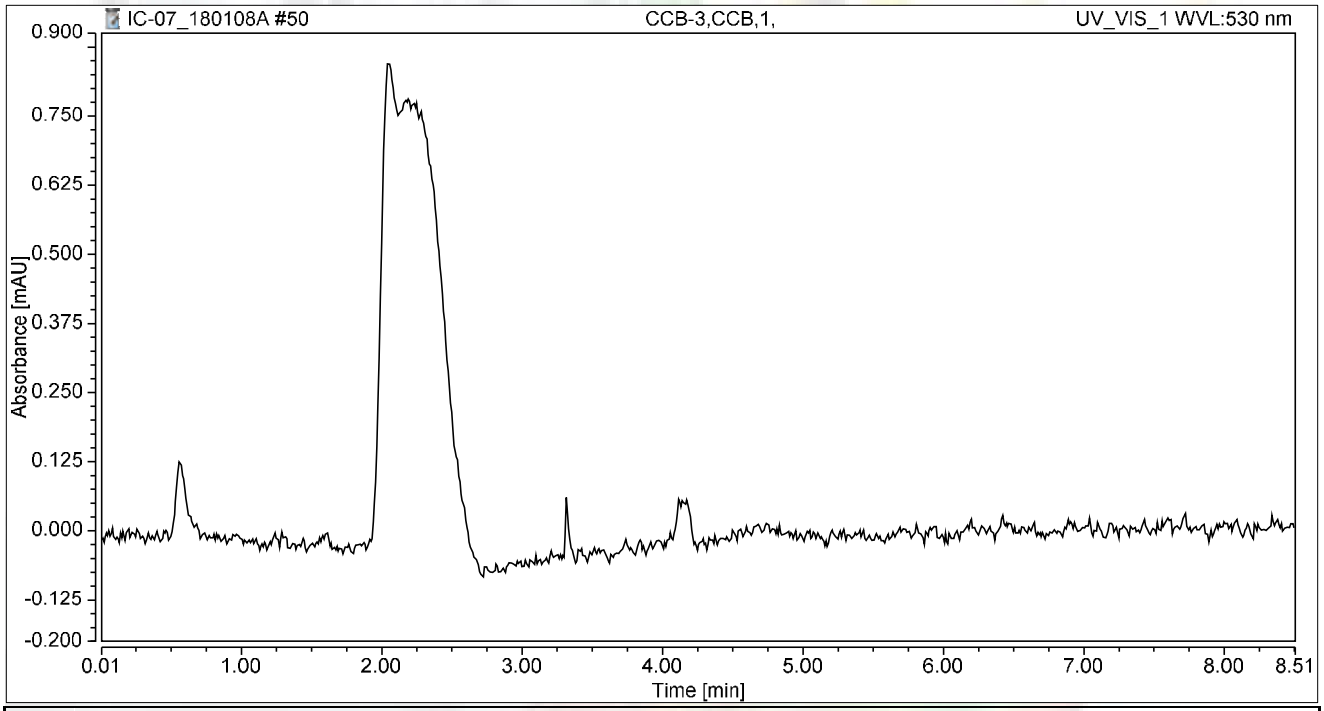
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.598	19.677	100.00	100.00	10.1608
Total:			**2.598**	**19.677**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

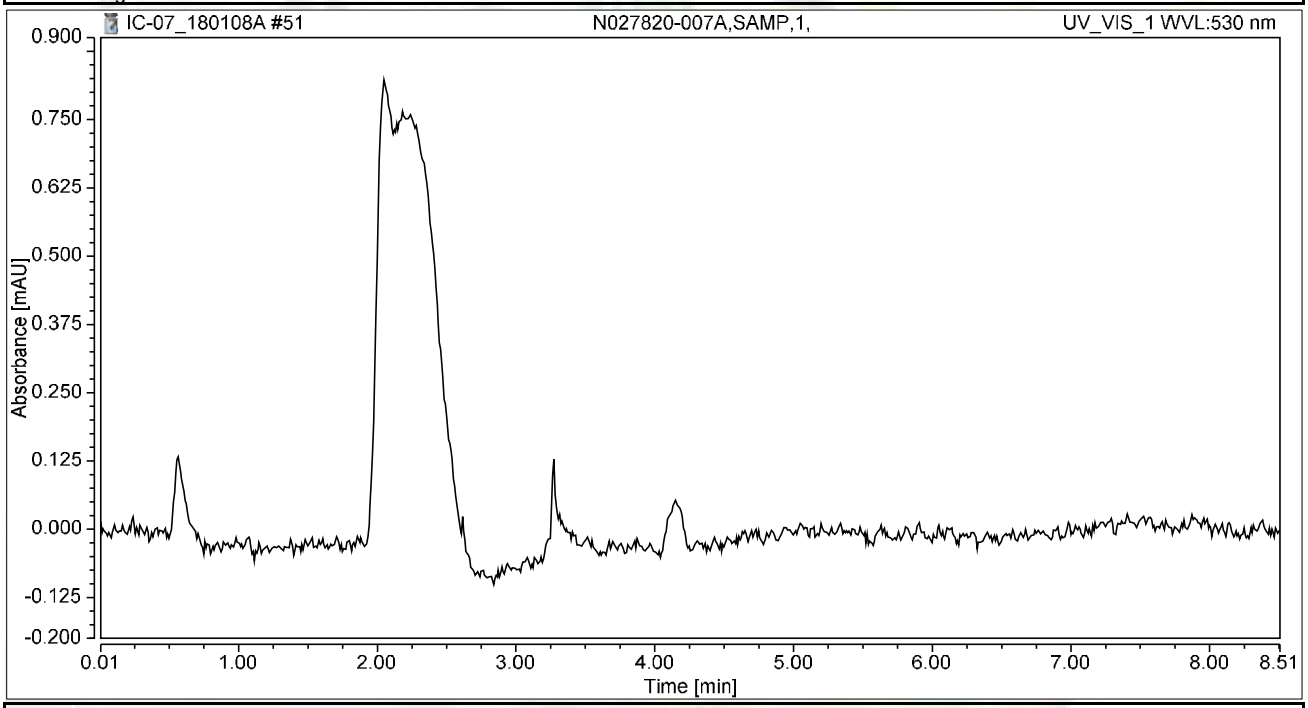
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

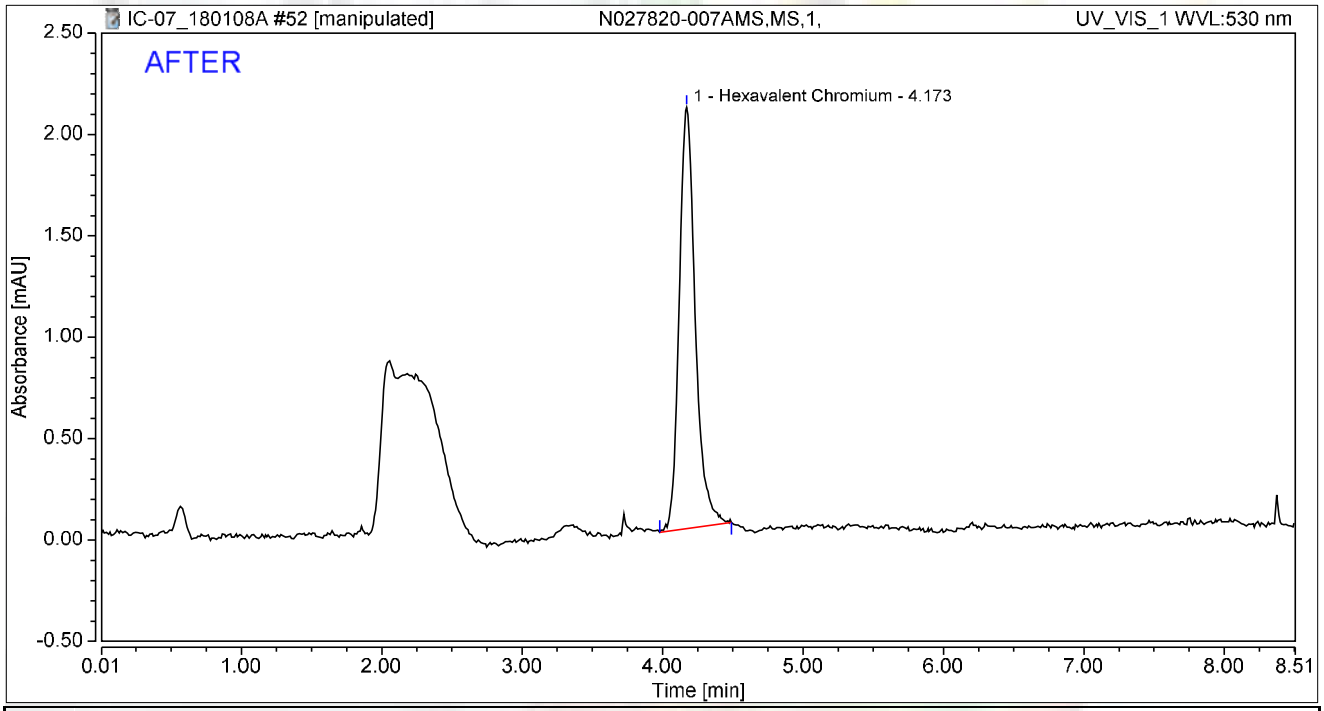
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.077	100.00	100.00	1.0767
Total:			**0.275**	**2.077**	**100.00**	**100.00**	

rba 1/10/2018

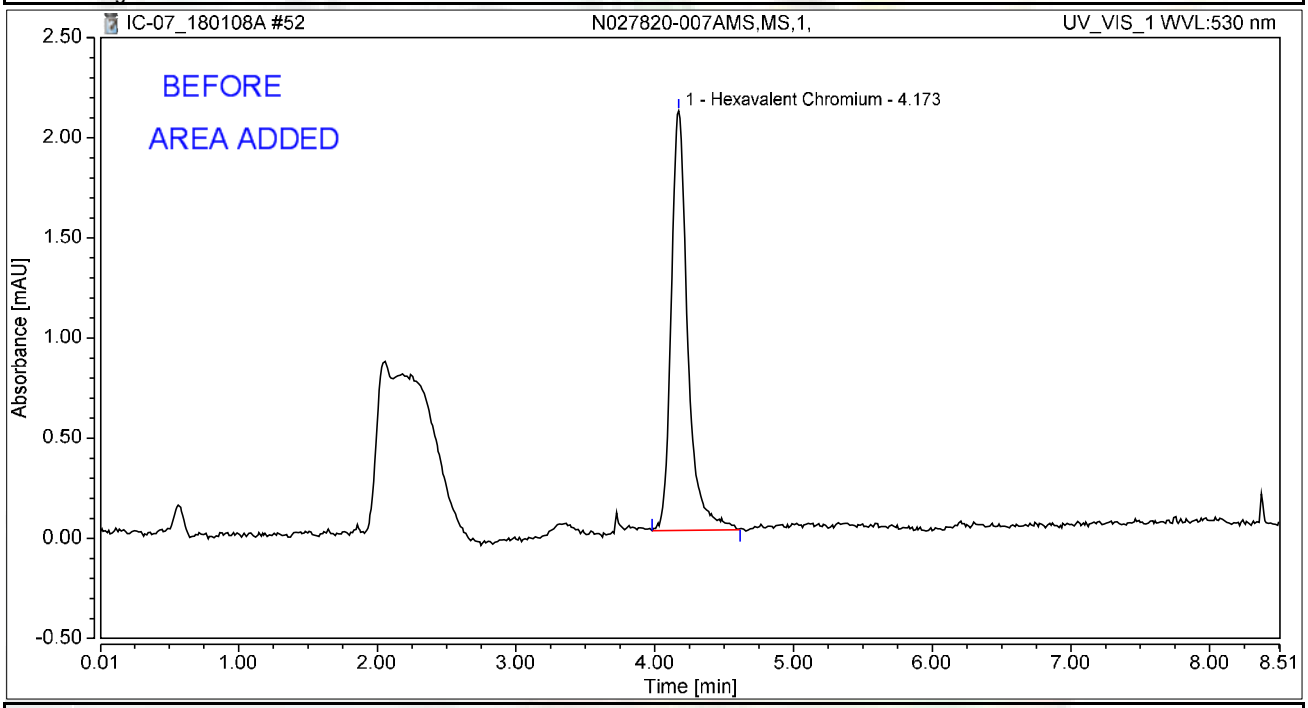
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.290	2.094	100.00	100.00	1.1336
Total:			**0.290**	**2.094**	**100.00**	**100.00**	

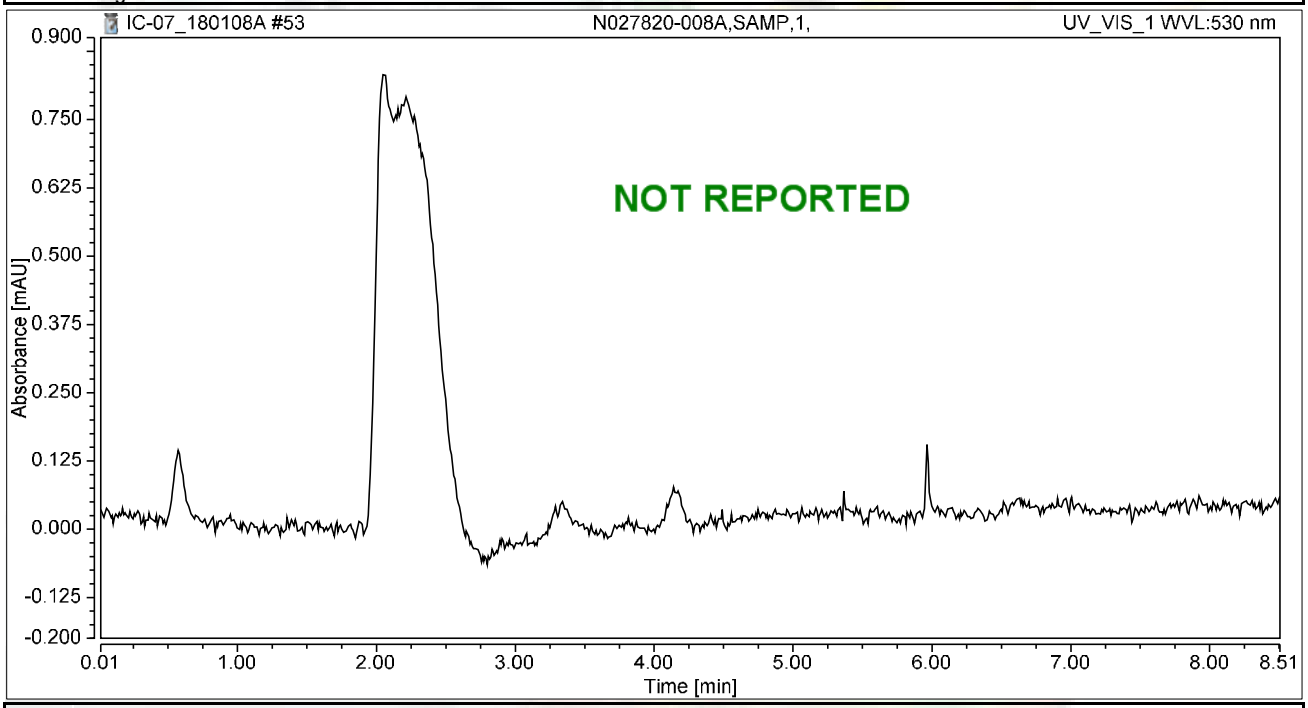
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

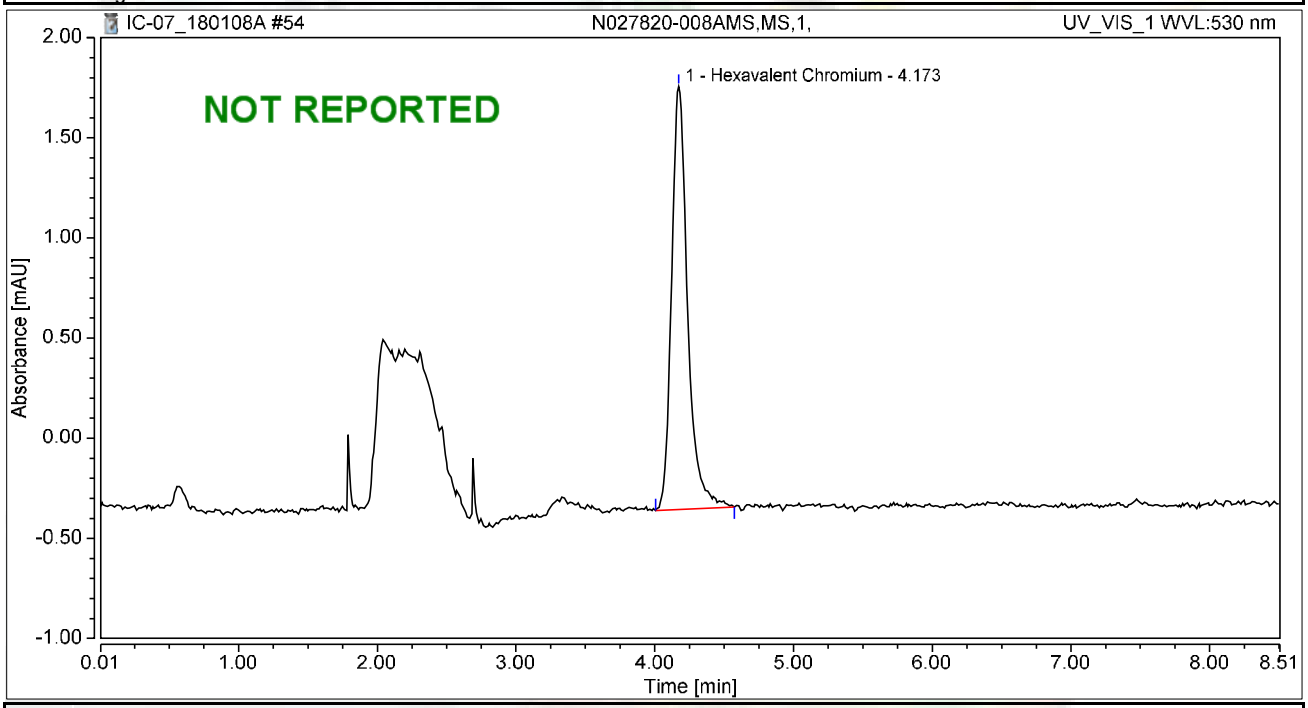
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

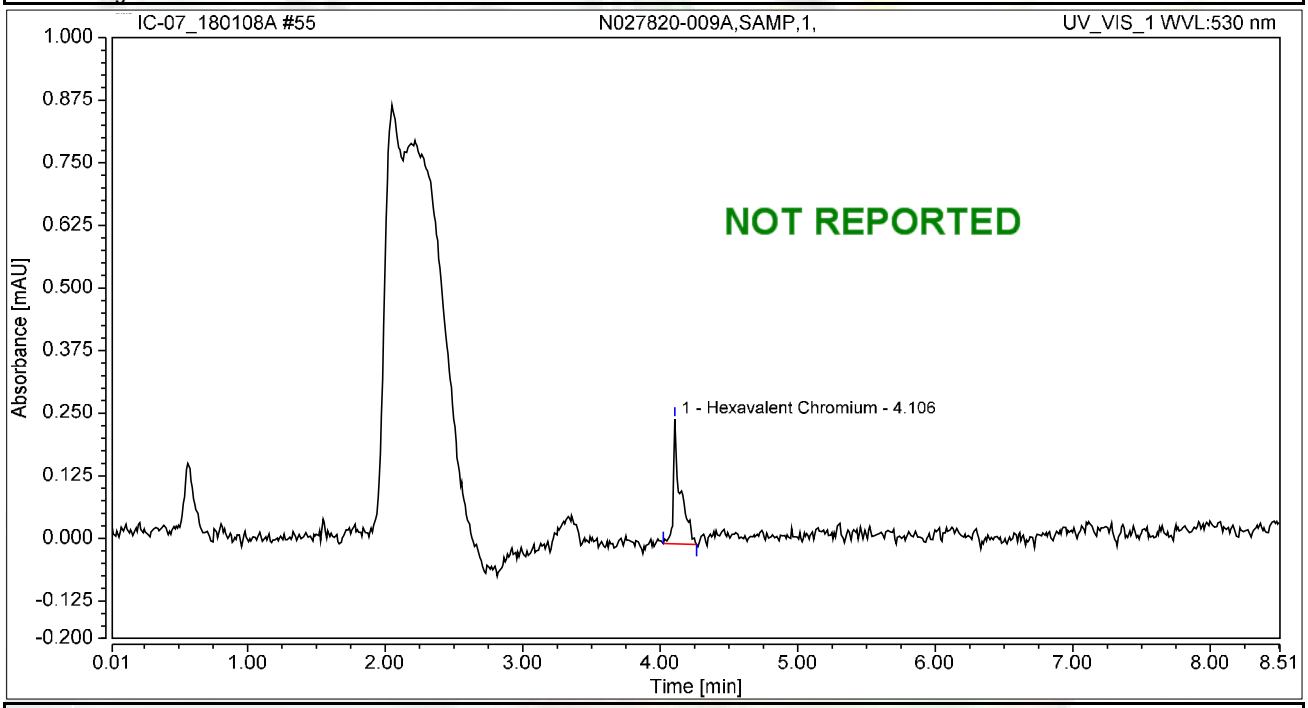
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.113	100.00	100.00	1.1081
Total:			**0.283**	**2.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

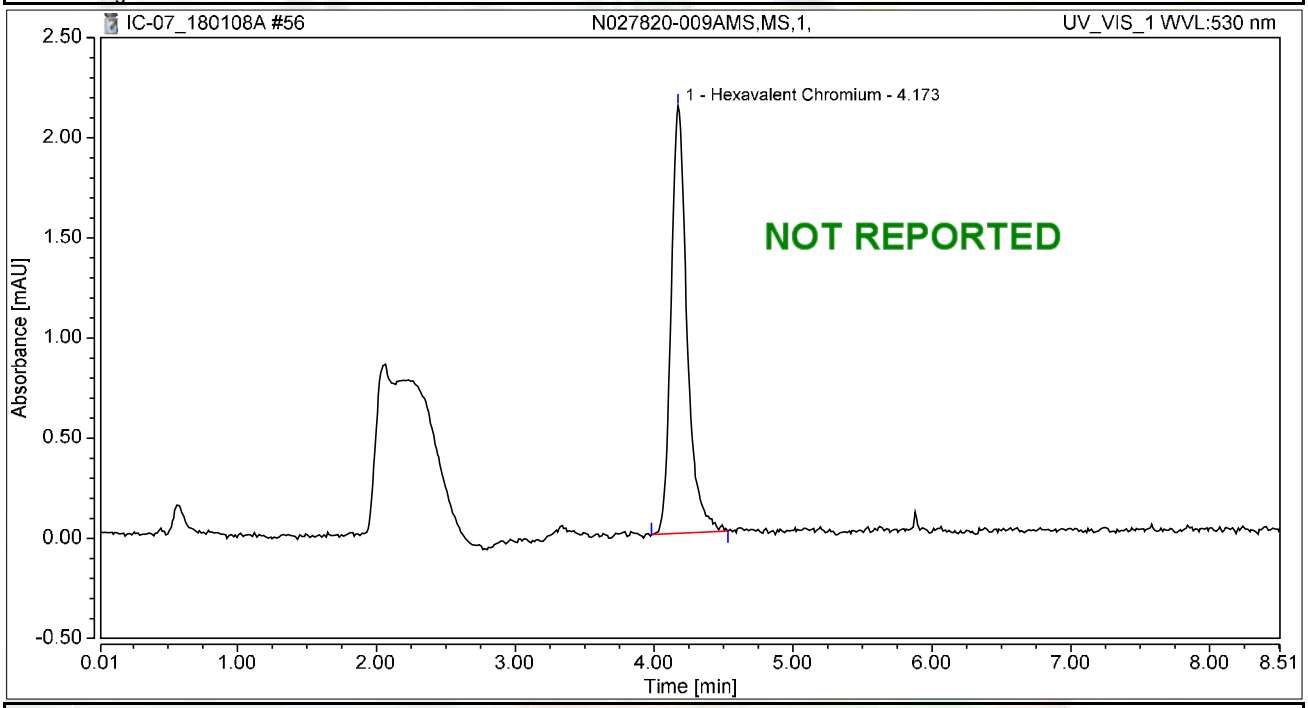
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.015	0.249	100.00	100.00	0.0568
Total:			**0.015**	**0.249**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

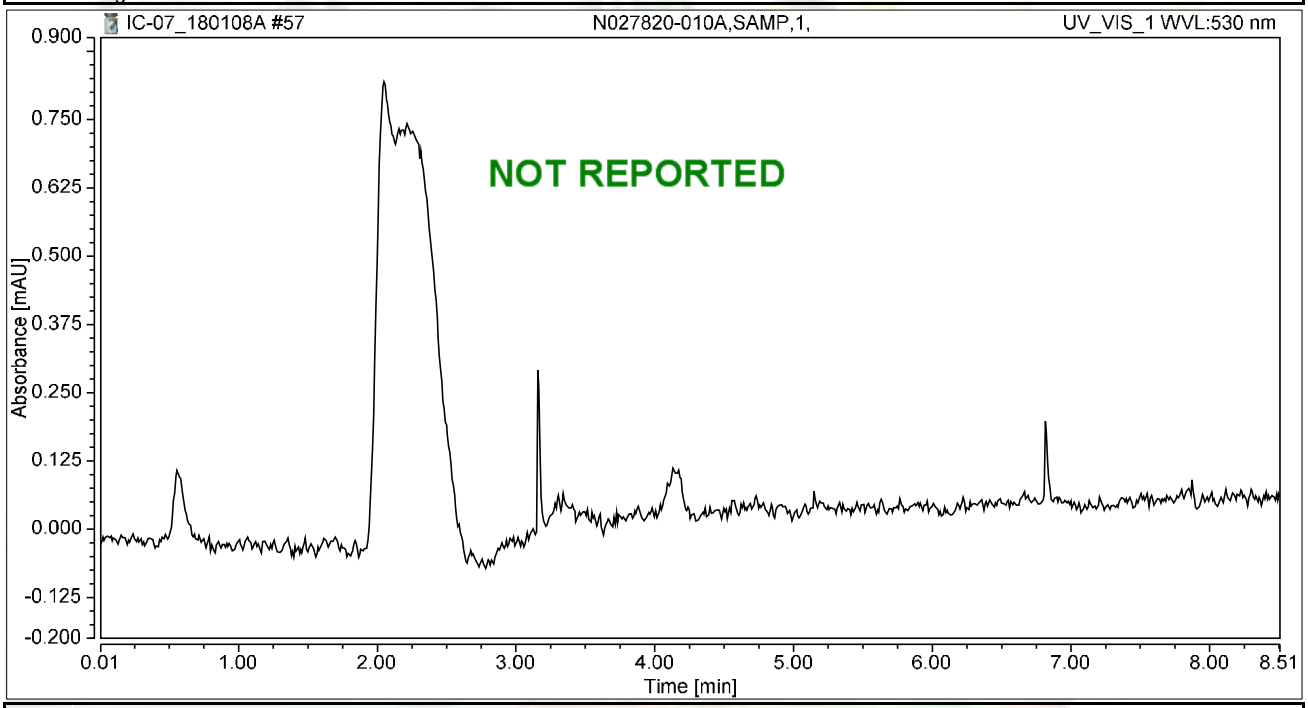
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.134	100.00	100.00	1.1118
Total:			**0.284**	**2.134**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

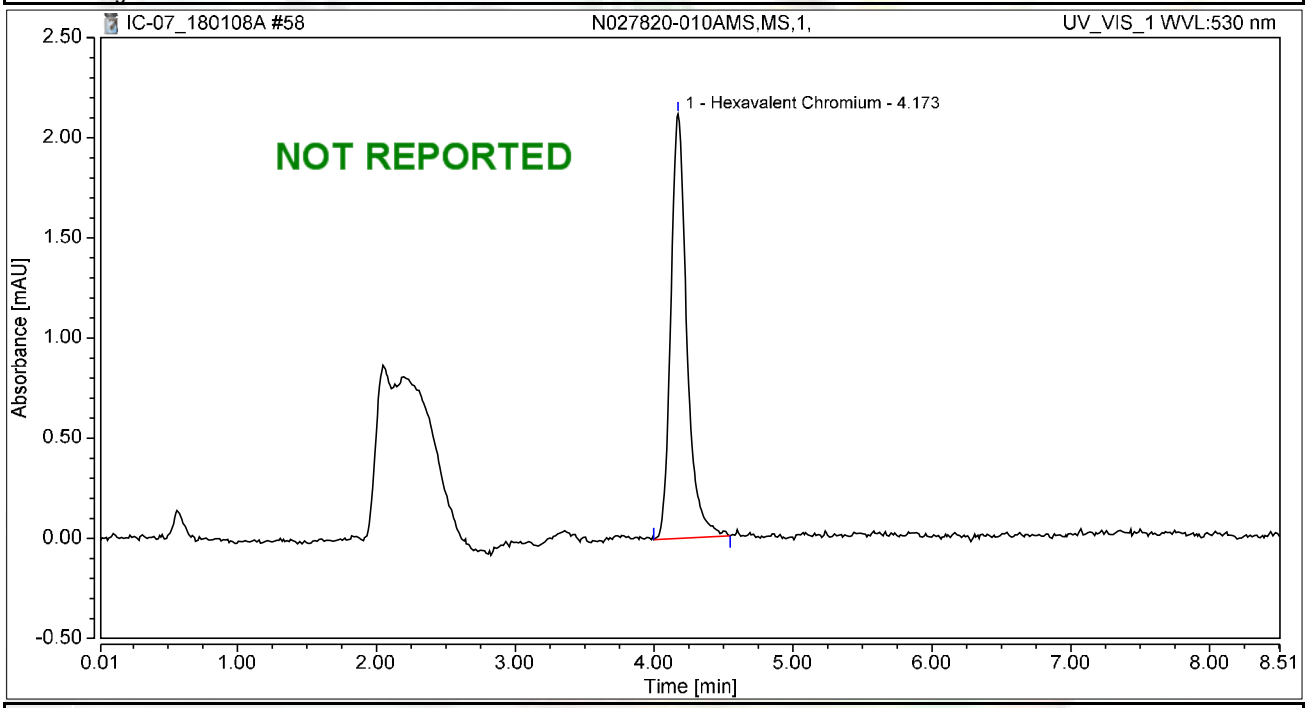
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

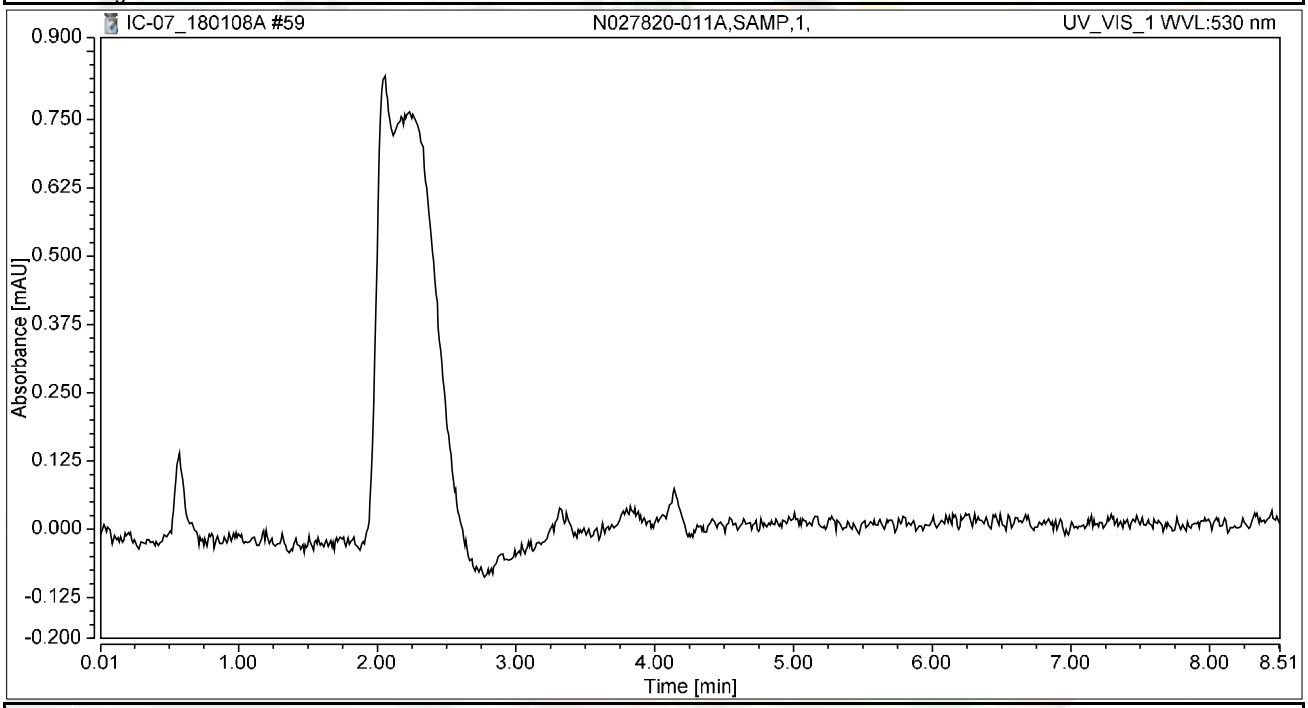
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.283	2.118	100.00	100.00	1.1083
Total:			**0.283**	**2.118**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

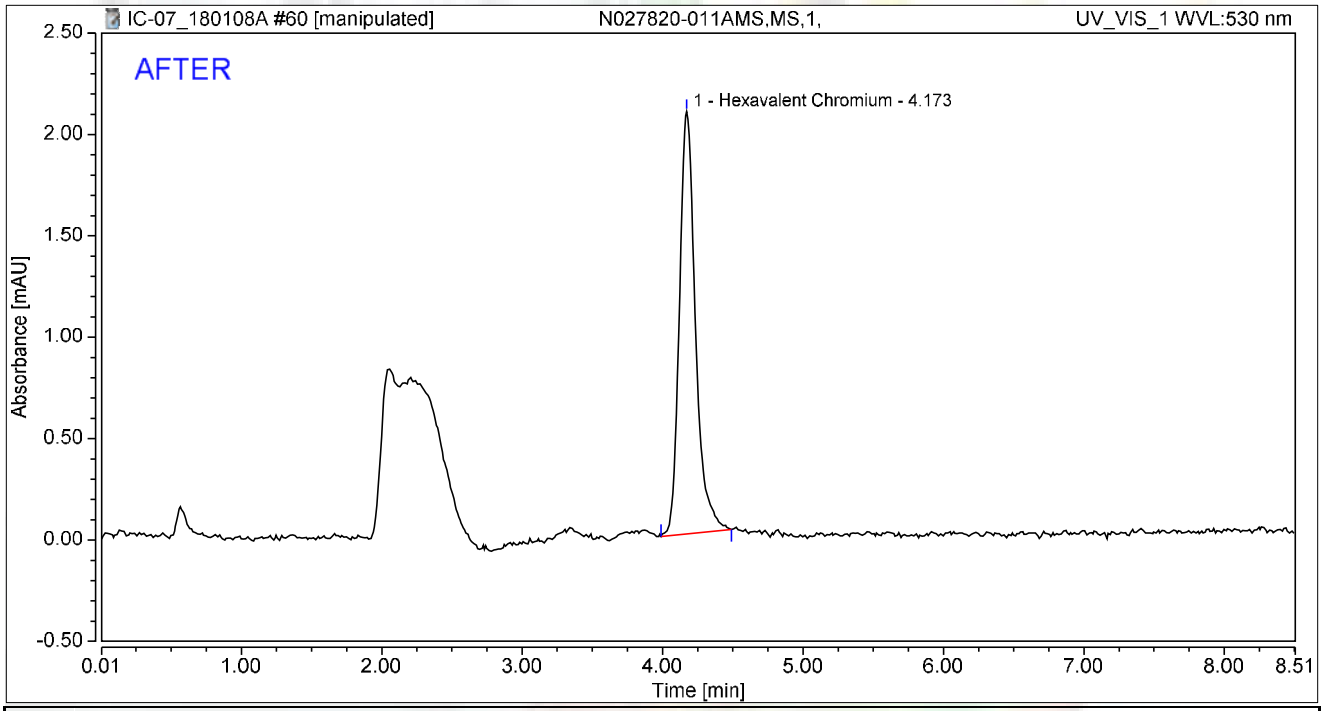
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.275	2.083	100.00	100.00	1.0774
Total:			**0.275**	**2.083**	**100.00**	**100.00**	

rba 1/10/2018

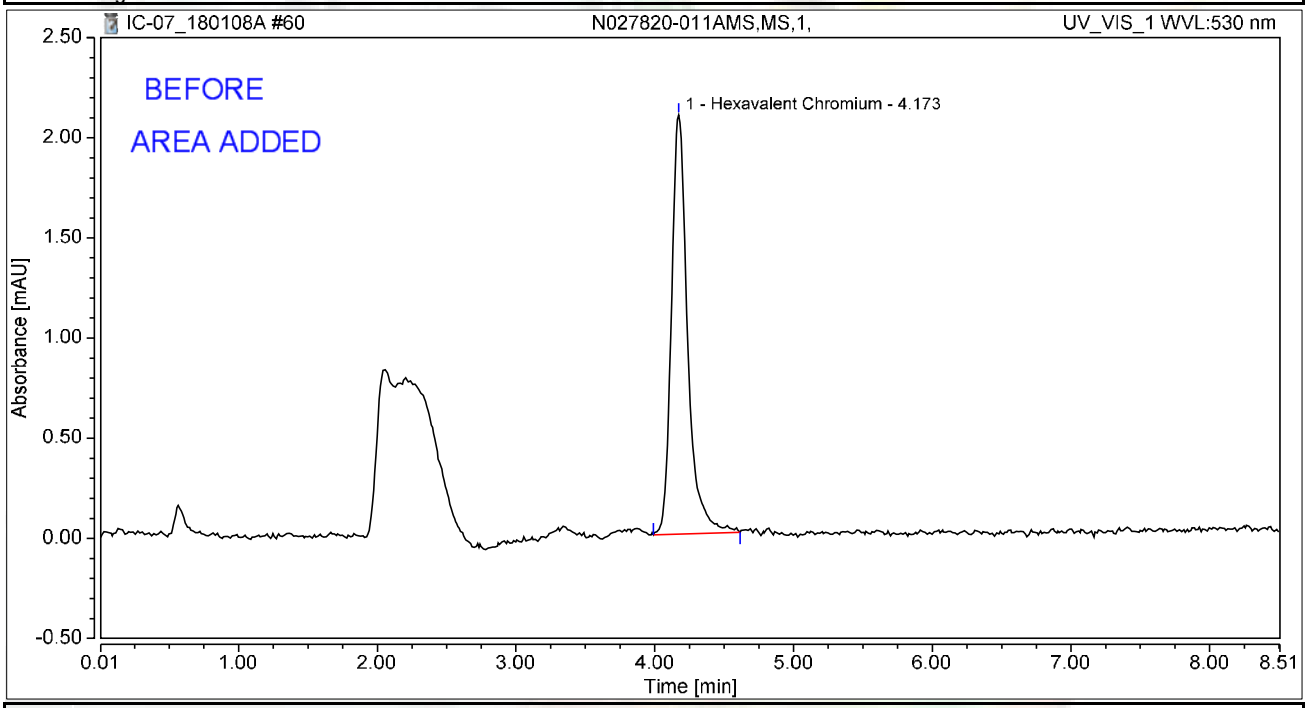
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027820-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	2.092	100.00	100.00	1.1105
Total:			**0.284**	**2.092**	**100.00**	**100.00**	

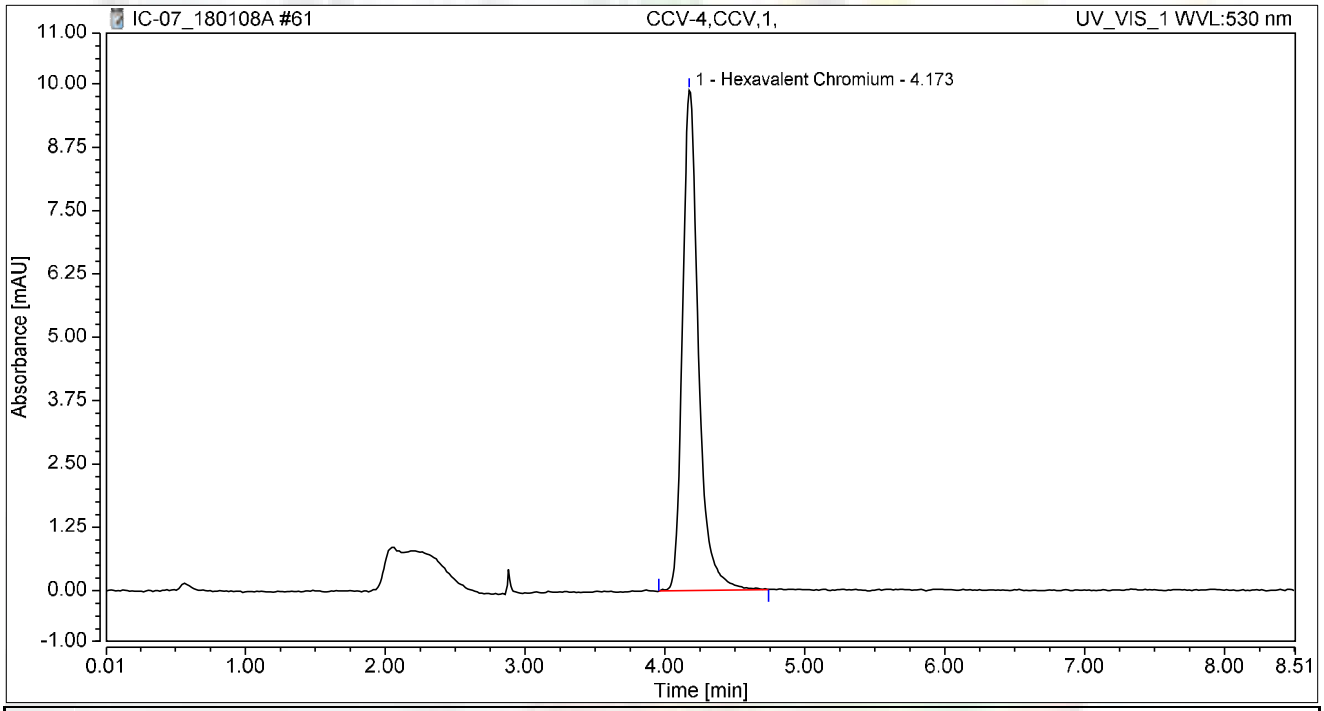
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

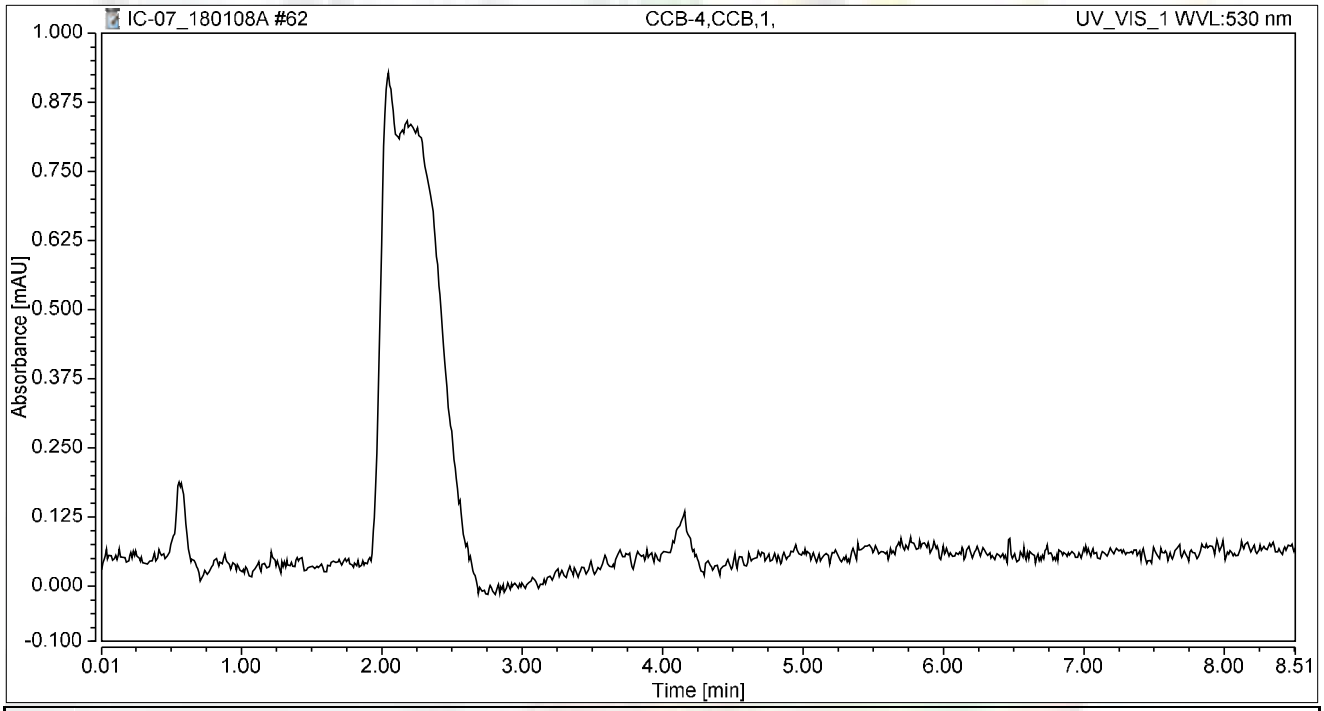
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.308	9.867	100.00	100.00	5.1168
Total:			**1.308**	**9.867**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

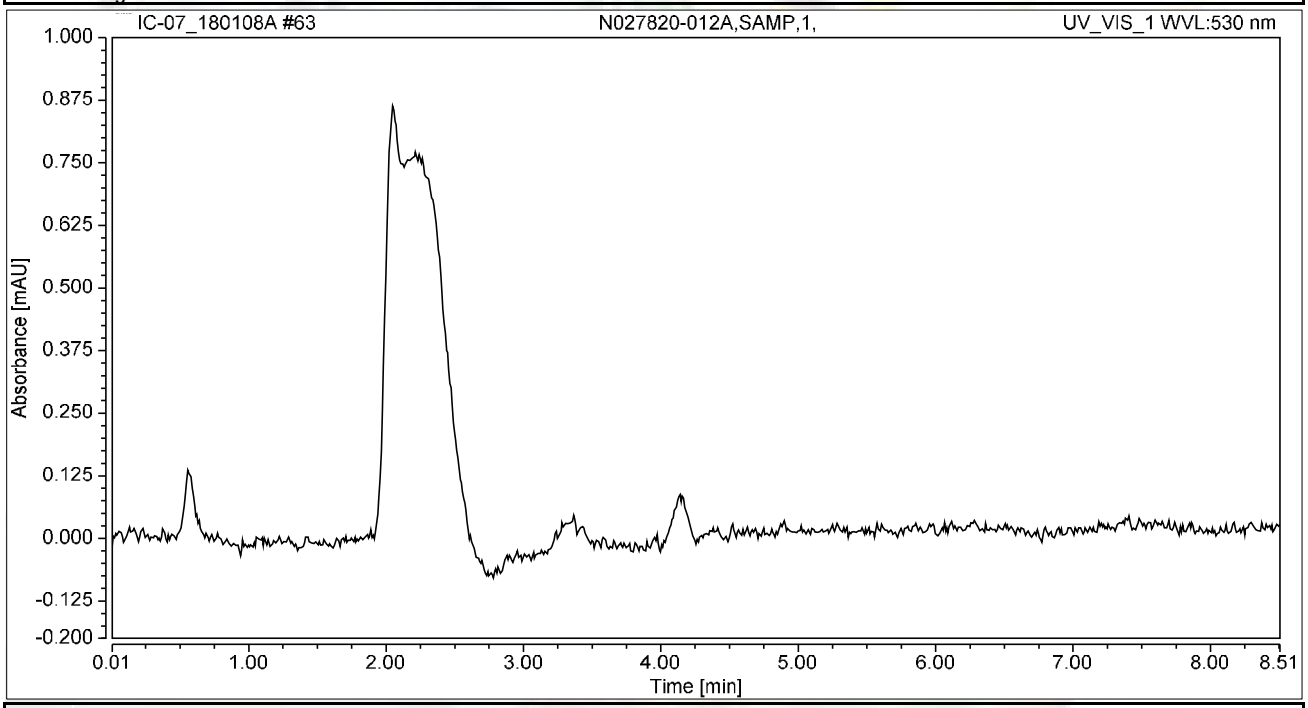
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

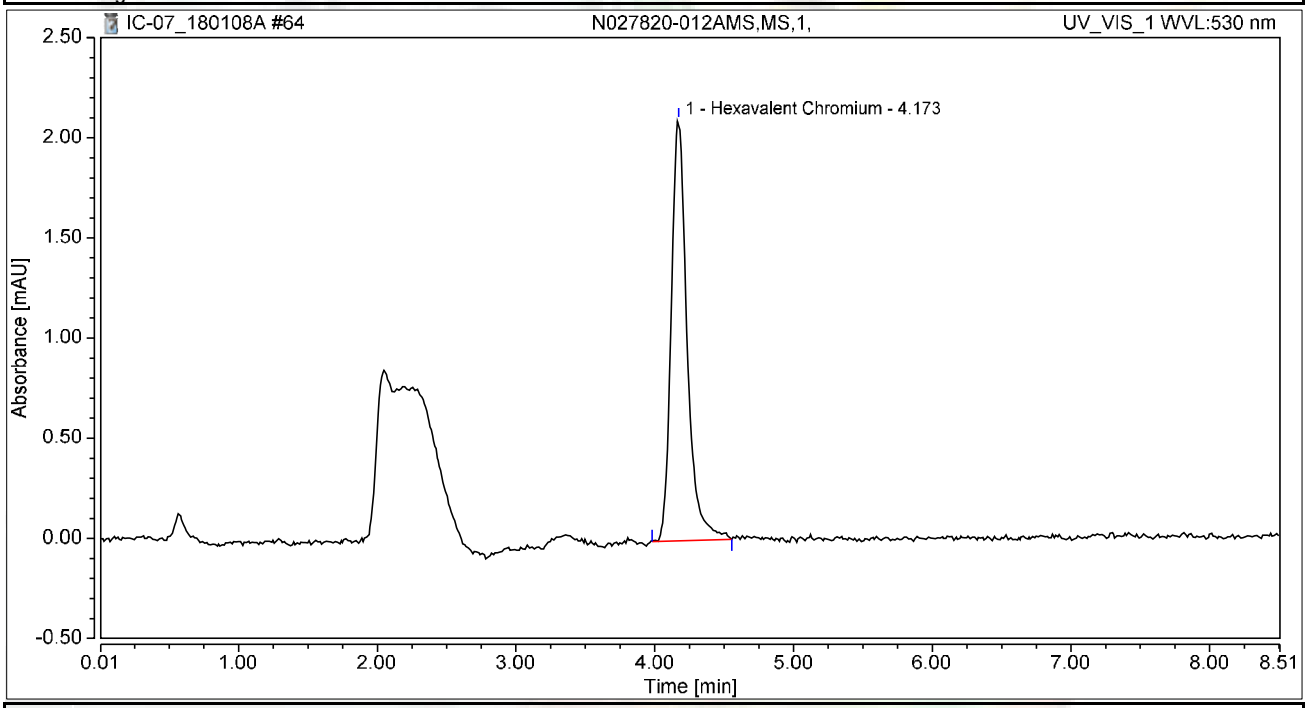
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

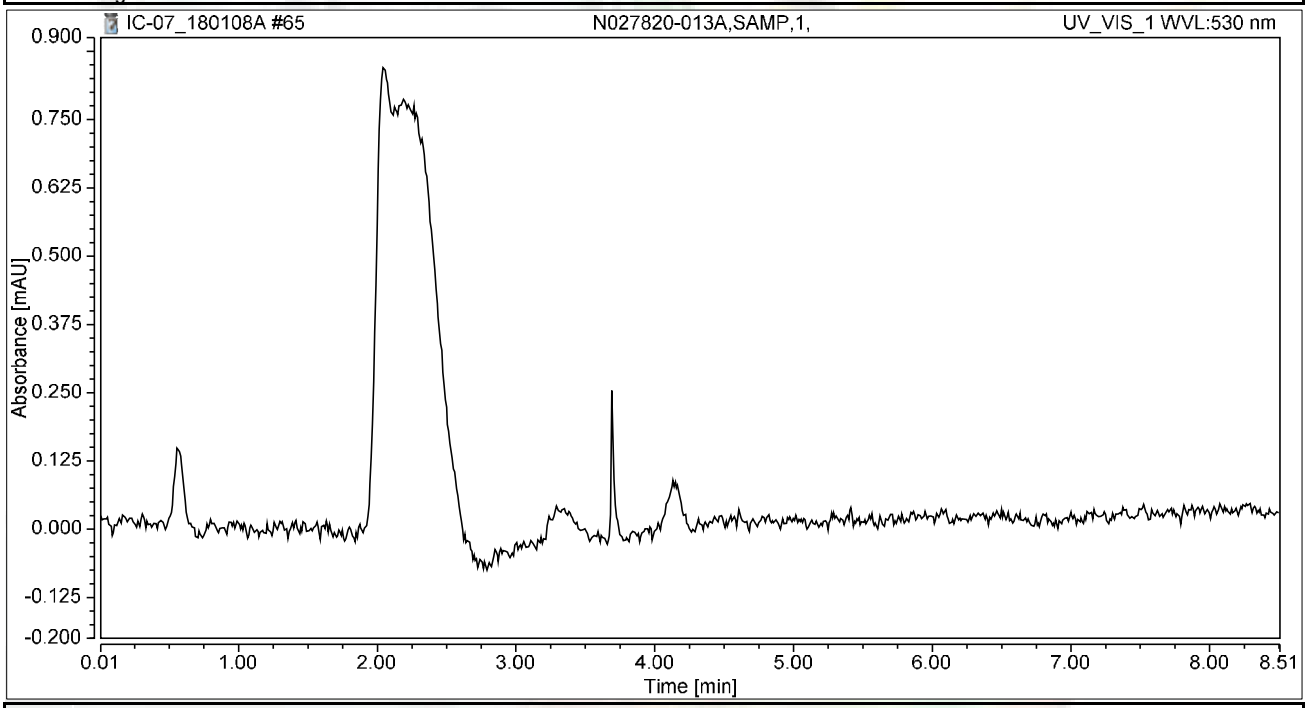
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.280	2.103	100.00	100.00	1.0962
Total:			**0.280**	**2.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

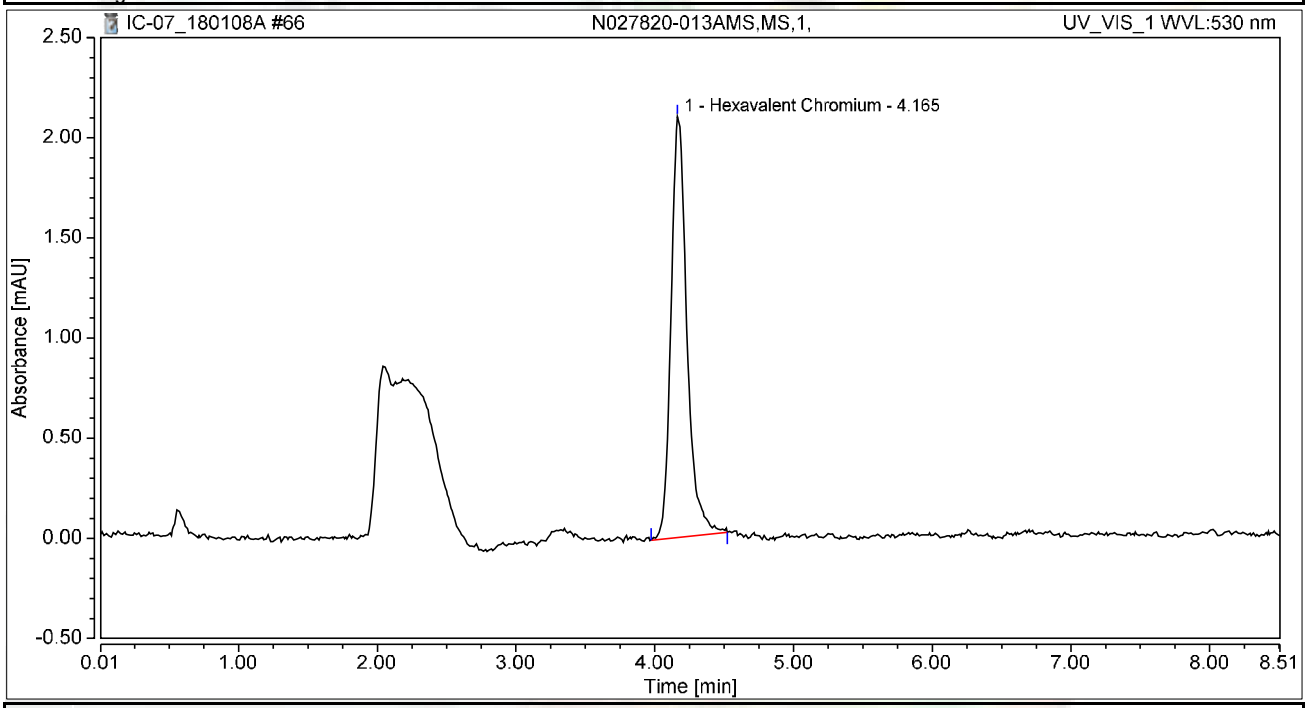
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

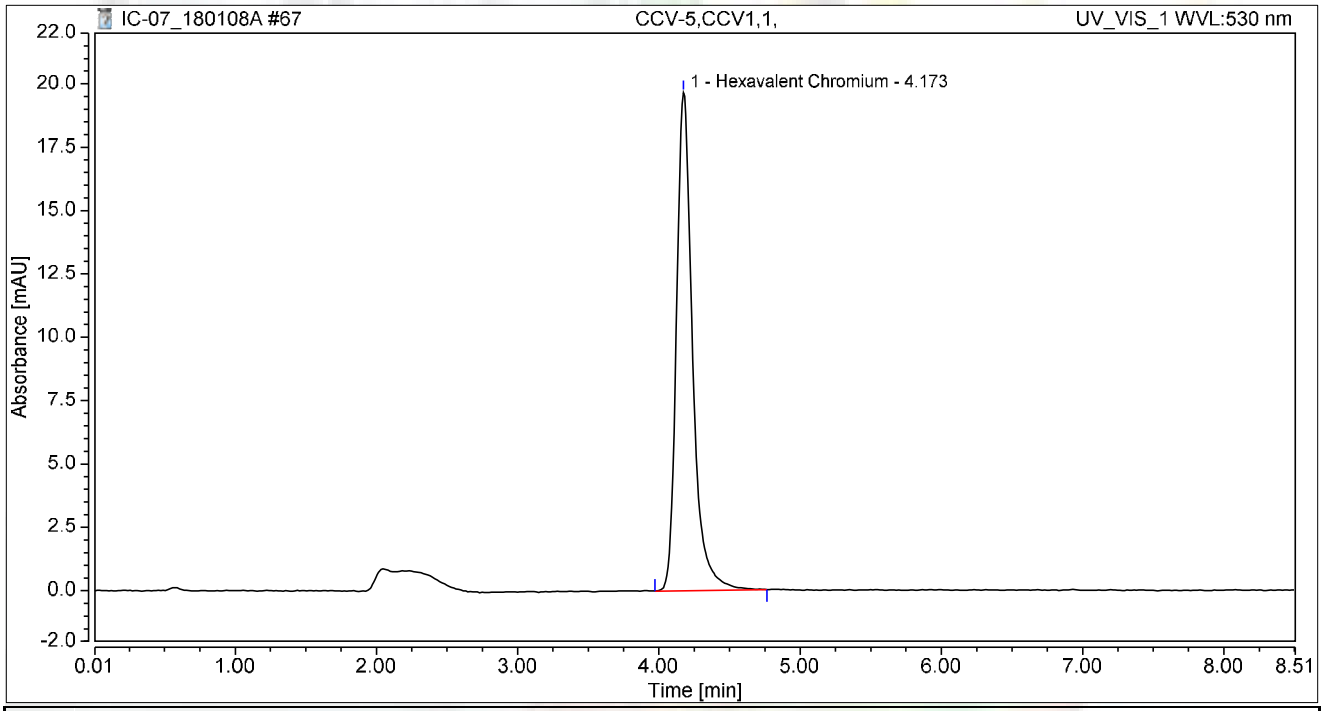
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.280	2.101	100.00	100.00	1.0947
Total:			**0.280**	**2.101**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

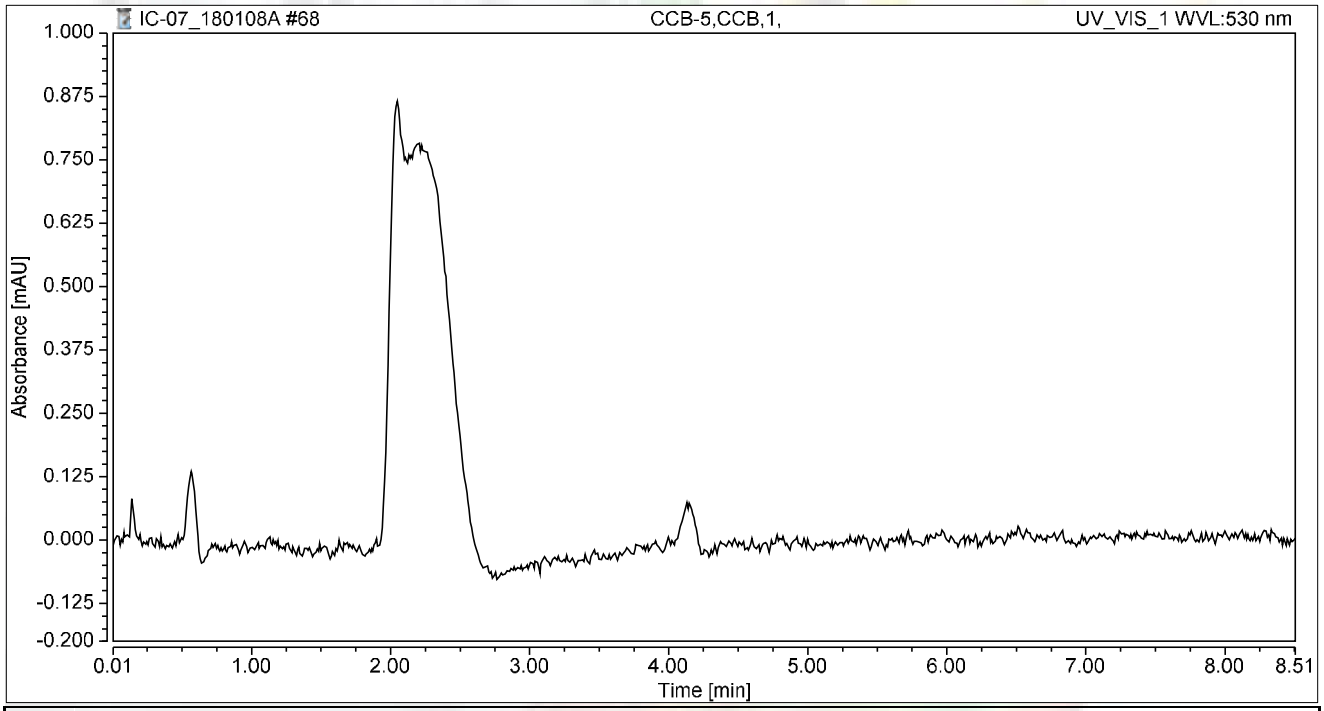
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.601	19.666	100.00	100.00	10.1741
Total:			**2.601**	**19.666**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180108_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jan/18 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 8:57 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 9:07 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/18 9:17 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:26 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:36 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:45 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:55 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:04 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:14 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/18 10:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/18 10:32 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/18 10:42 AM	Reported
13	MB-R121295	MBLK	1	Hexavalent Chromium	01/09/18 10:51 AM	Reported
14	LCS-R121295	LCS	1	Hexavalent Chromium	01/09/18 11:01 AM	Reported
15	N027864-011A	SAMP	1	Hexavalent Chromium	01/09/18 11:10 AM	Reported
16	N027864-011AMS	MS	1	Hexavalent Chromium	01/09/18 11:20 AM	Reported
17	N027864-011AMSD	MSD	1	Hexavalent Chromium	01/09/18 11:29 AM	Reported
18	N027865-003A	SAMP	1	Hexavalent Chromium	01/09/18 11:39 AM	Reported
19	N027865-003ADUP	DUP	1	Hexavalent Chromium	01/09/18 11:48 AM	Reported
20	N027865-001A	SAMP	1	Hexavalent Chromium	01/09/18 11:58 AM	Reported
21	N027865-002A	SAMP	1	Hexavalent Chromium	01/09/18 12:07 PM	Reported
22	N027865-004A	SAMP	1	Hexavalent Chromium	01/09/18 12:17 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	01/09/18 12:26 PM	Not Reported
24	CCB-1	CCB	1	Hexavalent Chromium	01/09/18 12:26 PM	Not Reported
25	N027820-008A	SAMP	1	Hexavalent Chromium	01/09/18 12:37 PM	Not Reported
26	N027820-008AMS	MS	1	Hexavalent Chromium	01/09/18 12:46 PM	Not Reported
27	CCV-1	CCV1	1	Hexavalent Chromium	01/09/18 1:00 PM	Reported
28	CCB-1	CCB	1	Hexavalent Chromium	01/09/18 1:11 PM	Reported
29	N027820-010A	SAMP	1	Hexavalent Chromium	01/09/18 1:21 PM	Reported
30	N027820-010AMS	MS	1	Hexavalent Chromium	01/09/18 1:30 PM	Reported
31	N027864-001A	SAMP	1	Hexavalent Chromium	01/09/18 1:40 PM	Reported
32	N027864-007A	SAMP	1	Hexavalent Chromium	01/09/18 1:49 PM	Reported
33	N027864-008A	SAMP	1	Hexavalent Chromium	01/09/18 1:58 PM	Reported
34	N027864-009A	SAMP	1	Hexavalent Chromium	01/09/18 2:08 PM	Reported
35	N027864-010A	SAMP	1	Hexavalent Chromium	01/09/18 2:17 PM	Reported
36	N027820-009A	SAMP	1	Hexavalent Chromium	01/09/18 2:27 PM	Reported
37	N027820-009AMS	MS	1	Hexavalent Chromium	01/09/18 2:36 PM	Reported
38	CCV-2	CCV	1	Hexavalent Chromium	01/09/18 2:49 PM	Reported
39	CCB-2	CCB	1	Hexavalent Chromium	01/09/18 3:00 PM	Reported

01/12/2018

rba 1/10/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Jan/18 15:30:54**
No. of Injections:	**42**	*Updated By:*	**ics 5000**

Injection Details

	No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
	1	BLANK	1	1000	Unknown		01/09/2018 08:57	Finished	BLANK
	2	BLANK	2	1000	Unknown		01/09/2018 09:07	Finished	BLANK
	3	iBLANK	3	1000	Unknown		01/09/2018 09:17	Finished	INSTRUMENT BLANK
	4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2018 09:26	Finished	0.2 ppb, IWST-171002A
	5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2018 09:36	Finished	1.0 ppb, IWST-171002A
	6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2018 09:45	Finished	5.0 ppb, IWST-171002A
	7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2018 09:55	Finished	10 ppb, IWST-171002A
	8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2018 10:04	Finished	15 ppb, IWST-171002A
	9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2018 10:14	Finished	20 ppb, IWST-171002A
	10	ICV,ICV,1,	10	1000	Unknown		01/09/2018 10:23	Finished	ICV @5ppb, IWST-171002A
	11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		01/09/2018 10:32	Finished	PQL @ 0.2ppb
	12	ICB,ICB,1,	12	1000	Unknown		01/09/2018 10:42	Finished	ICB R180102C
	13	MB-H2O,MBLK,1,	13	1000	Unknown		01/09/2018 10:51	Finished	MB R180102C
	14	LCS-H2O,LCS,1,	14	1000	Unknown		01/09/2018 11:01	Finished	LCS, IWST-171002B
	15	N027864-011A,SAMP	15	1000	Unknown		01/09/2018 11:10	Finished	SAMP,10mL
	16	N027864-011AMS,MS	16	1000	Unknown		01/09/2018 11:20	Finished	MS (1ppb), IWST-171002B,10
	17	N027864-011AMSD,M	17	1000	Unknown		01/09/2018 11:29	Finished	MSD (1ppb), IWST-171002B,1(
	18	N027865-003A,SAMP	18	1000	Unknown		01/09/2018 11:39	Finished	SAMP,10mL
	19	N027865-003ADUP,D	19	1000	Unknown		01/09/2018 11:48	Finished	DUP,10mL
	20	N027865-001A,SAMP	20	1000	Unknown		01/09/2018 11:58	Finished	SAMP,10mL
	21	N027865-002A,SAMP	21	1000	Unknown		01/09/2018 12:07	Finished	SAMP,10mL
	22	N027865-004A,SAMP	22	1000	Unknown		01/09/2018 12:17	Finished	SAMP,10mL
	23	CCV-1,CCV1,1,	23	1000	Unknown		01/09/2018 12:26	Interrupted	CCV @10ppb, IWST-171002A
	24	CCB-1,CCB,1,	24	1000	Unknown		01/09/2018 12:26	Finished	CCB R180102C
	25	N027820-008A,SAMP	25	1000	Unknown		01/09/2018 12:37	Finished	SAMP,10mL
	26	N027820-008AMS,MS	26	1000	Unknown		01/09/2018 12:46	Finished	MS (1ppb), IWST-171002B,10
CCV,1,CCV,1,	27	~~CCV-2,CCV1,1~~,	27	1000	Unknown		01/09/2018 13:00	Finished	CCV @10ppb, IWST-171002A
CCB,1,CCB,1,	28	~~CCB-2,CCB,~~1,	28	1000	Unknown		01/09/2018 13:11	Finished	CCB R180102C
	29	N027820-010A,SAMP	29	1000	Unknown		01/09/2018 13:21	Finished	SAMP,10mL
	30	N027820-010AMS,MS	30	1000	Unknown		01/09/2018 13:30	Finished	MS (1ppb), IWST-171002B,10
	31	N027864-001A,SAMP	31	1000	Unknown		01/09/2018 13:40	Finished	SAMP,10mL
	32	N027864-007A,SAMP	32	1000	Unknown		01/09/2018 13:49	Finished	MS (1ppb), IWST-171002B,10
	33	N027864-008A,SAMP	33	1000	Unknown		01/09/2018 13:58	Finished	SAMP,10mL
	34	N027864-009A,SAMP	34	1000	Unknown		01/09/2018 14:08	Finished	SAMP,10mL
	35	N027864-010A,SAMP	35	1000	Unknown		01/09/2018 14:17	Finished	SAMP,10mL
	36	N027820-009A,SAMP	36	1000	Unknown		01/09/2018 14:27	Finished	SAMP,10mL
	37	N027820-009AMS,MS	37	1000	Unknown		01/09/2018 14:36	Finished	MS (1ppb), IWST-171002B,10
CCV,2,CCV,1,	38	~~CCV-3,CCV,1,~~	39	1000	Unknown		01/09/2018 14:49	Finished	CCV @5ppb, IWST-171002A
CCB,2,CCB,1,	39	~~CCB-3,CCB,1,~~	40	1000	Unknown		01/09/2018 15:00	Finished	CCB R180102C
	40	SHUTDOWN	41	1000	Unknown		01/09/2018 15:10	Finished	
	41	Eluent: R180108D	42	1000	Unknown		n.a.	Finished	Eluent
	42	PCR: R180109A	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

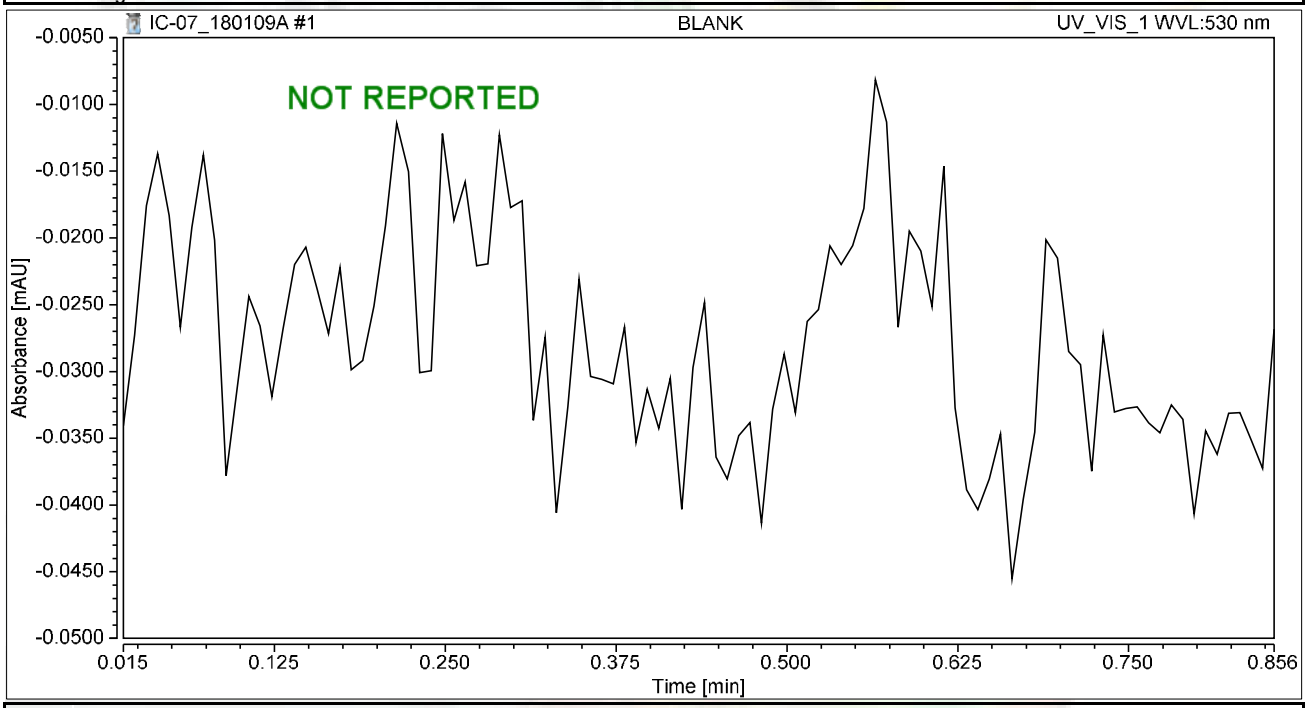
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.84**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

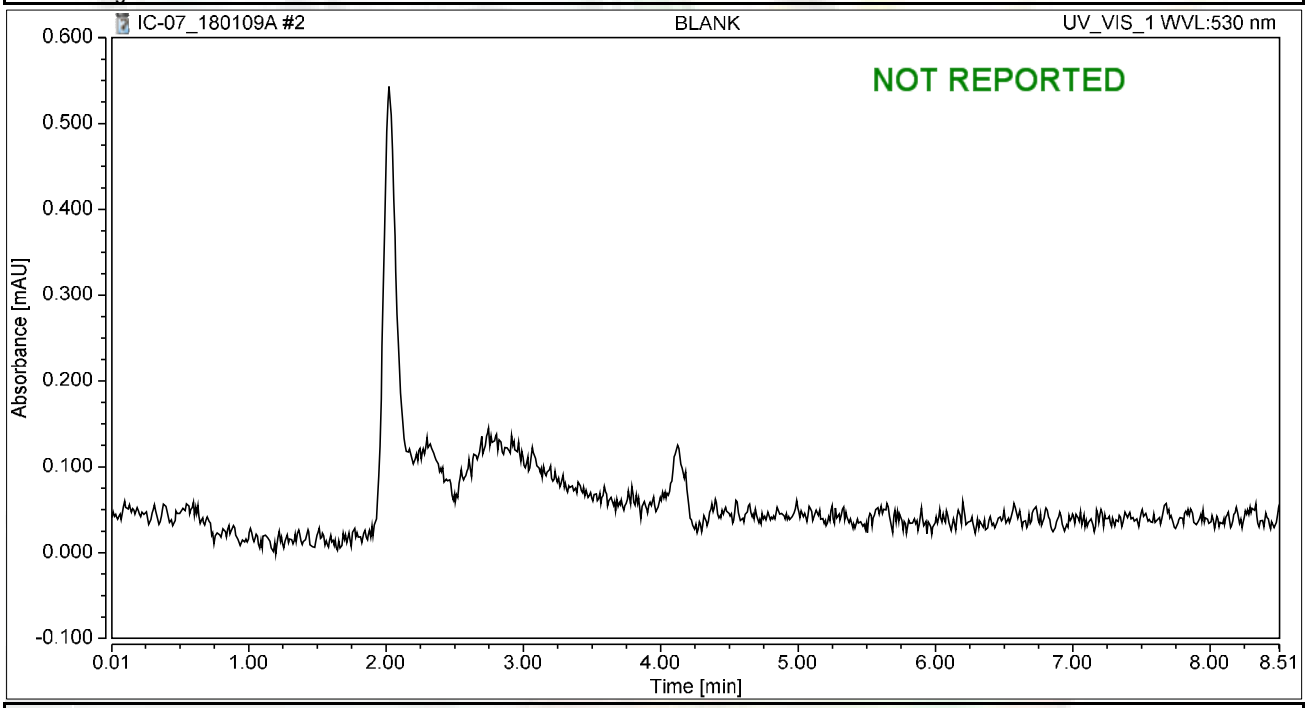
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

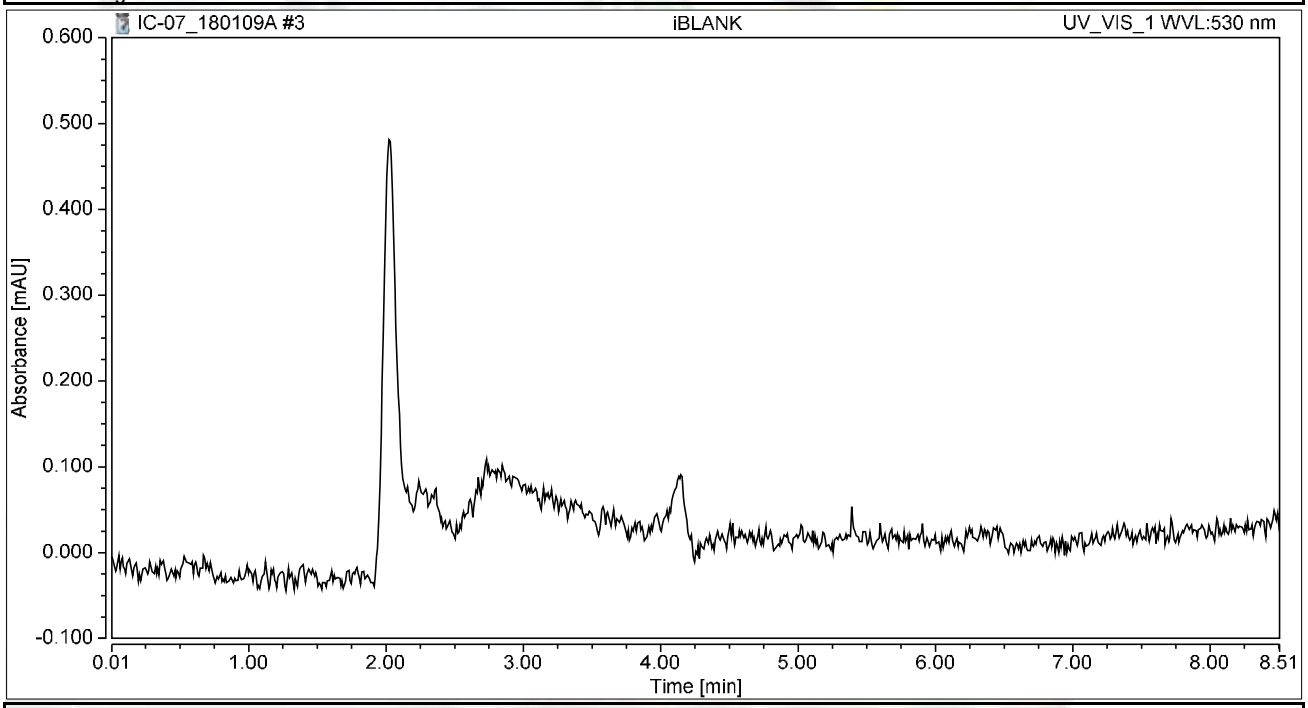
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

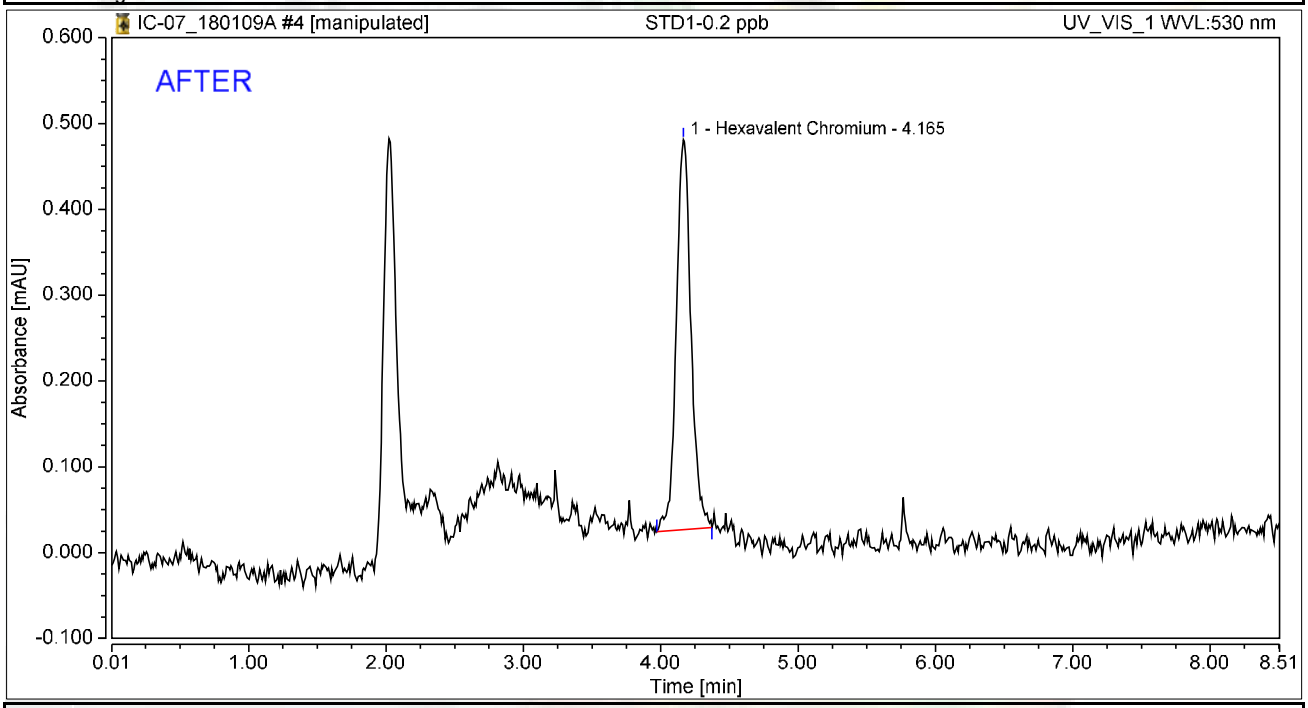
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.056	0.454	100.00	100.00	0.2143
Total:			**0.056**	**0.454**	**100.00**	**100.00**	

rba 1/10/2018

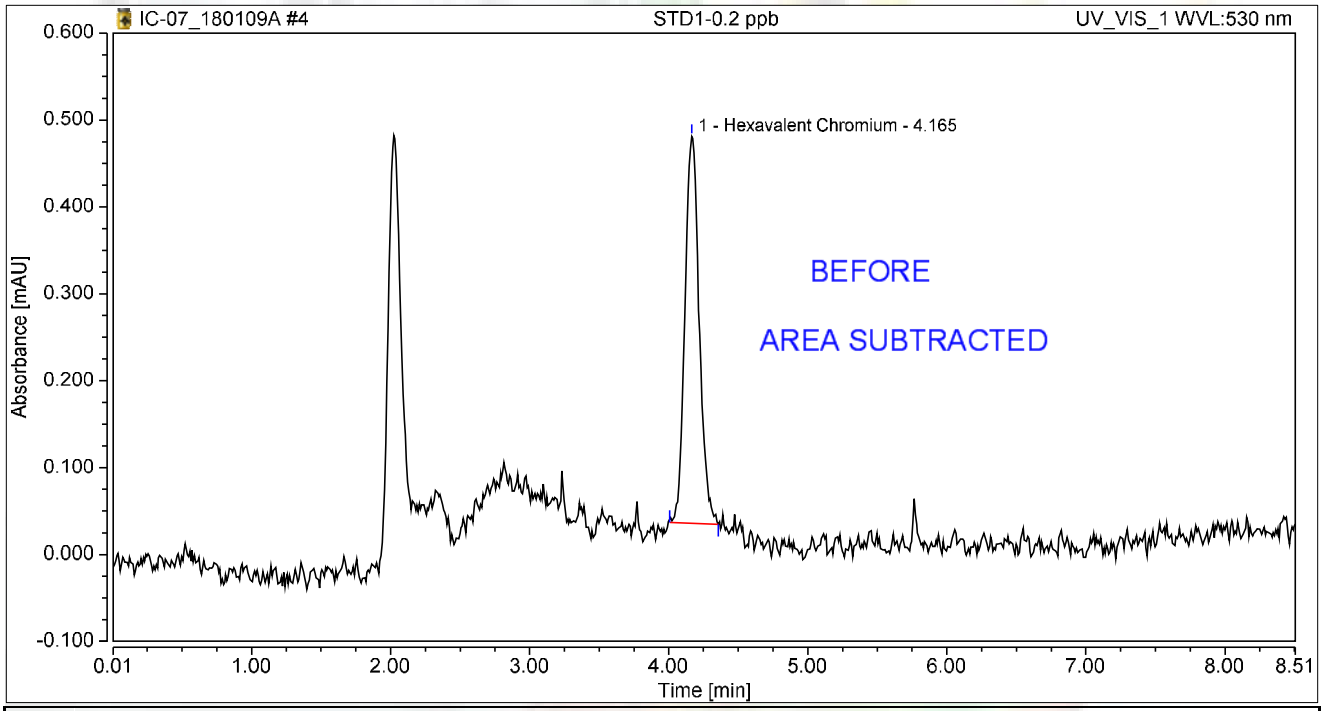
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.053	0.445	100.00	100.00	0.2018
Total:			**0.053**	**0.445**	**100.00**	**100.00**	

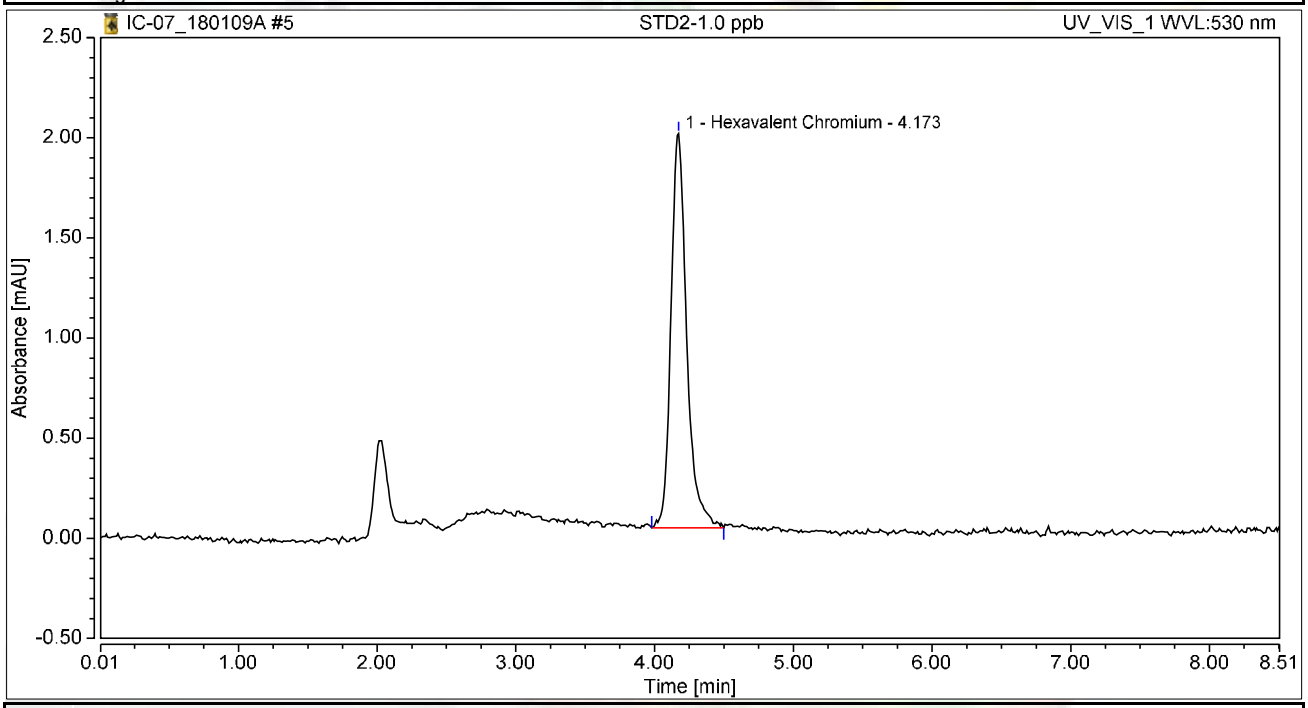
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

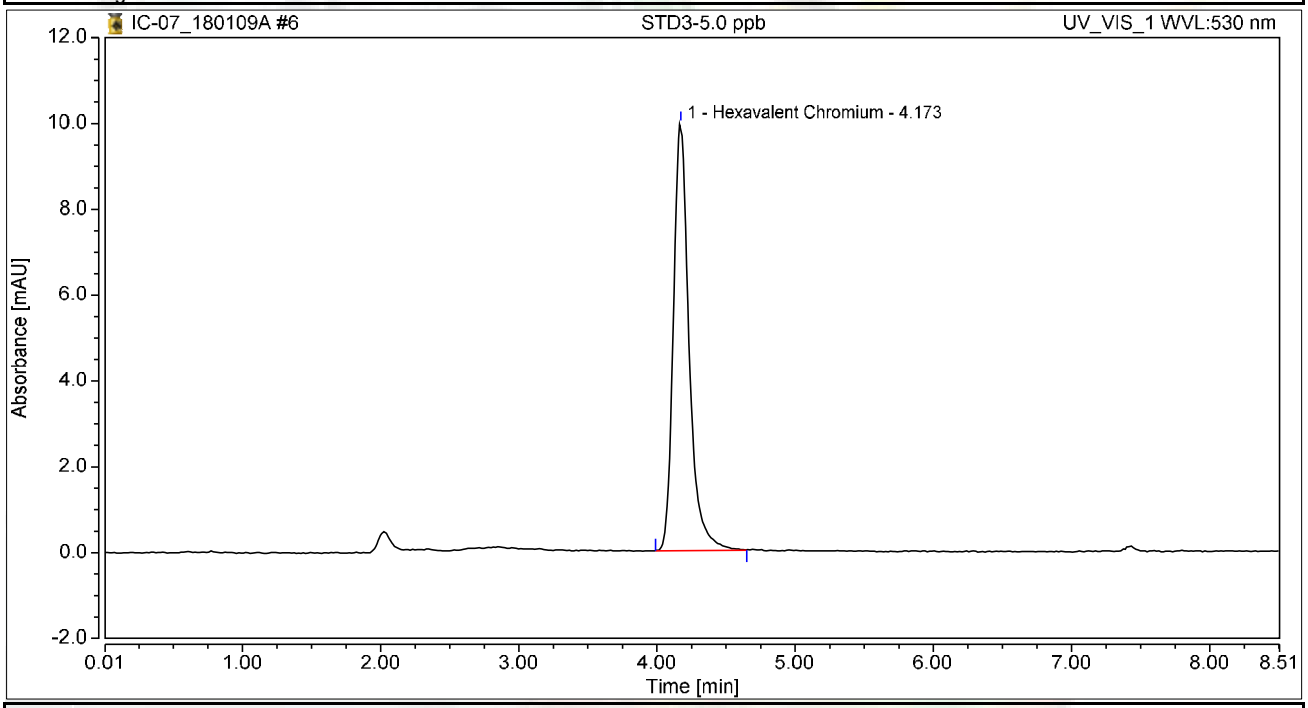
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.259	1.968	100.00	100.00	0.9853
Total:			**0.259**	**1.968**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

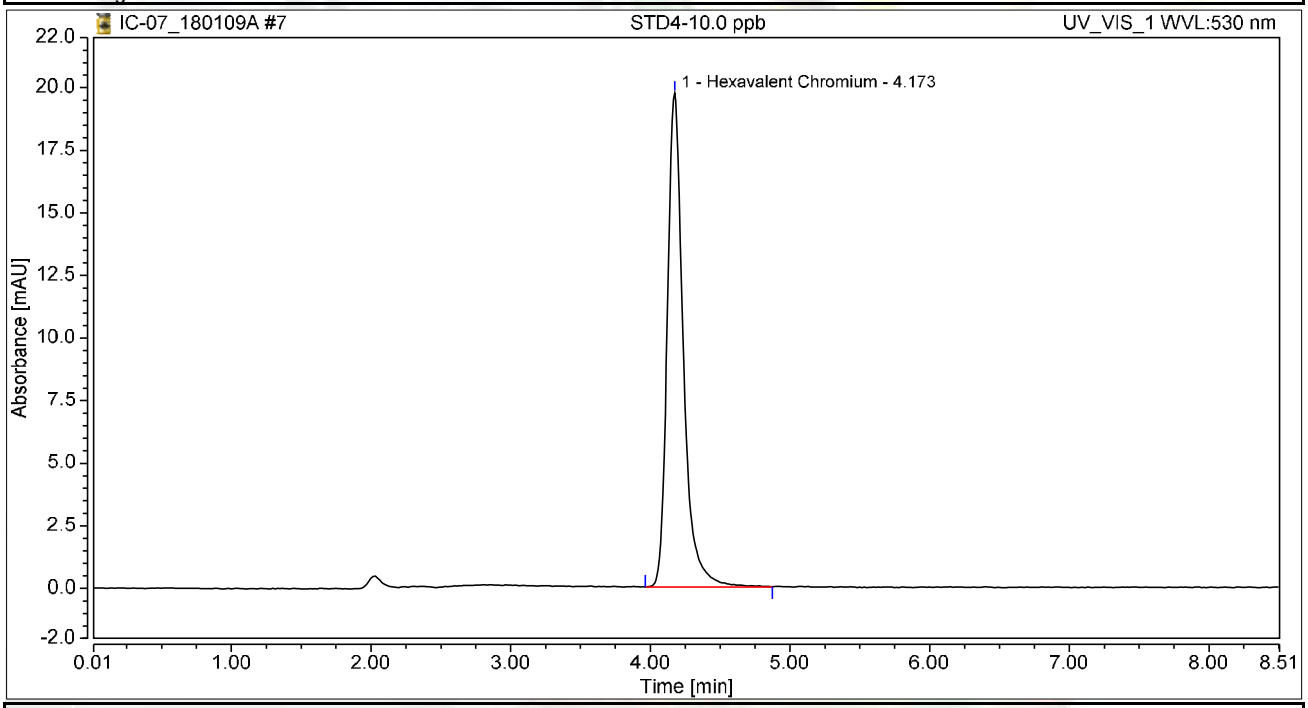
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.312	9.950	100.00	100.00	4.9961
Total:			**1.312**	**9.950**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

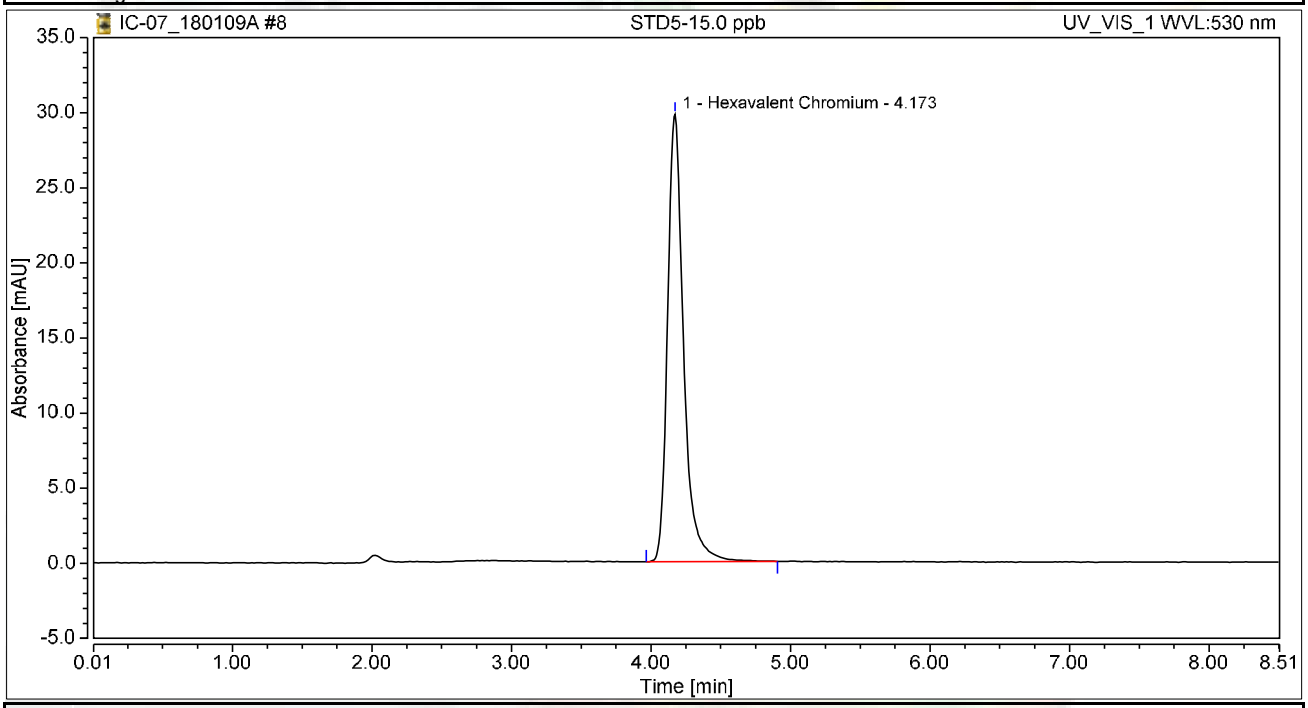
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.619	19.725	100.00	100.00	9.9734
Total:			**2.619**	**19.725**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

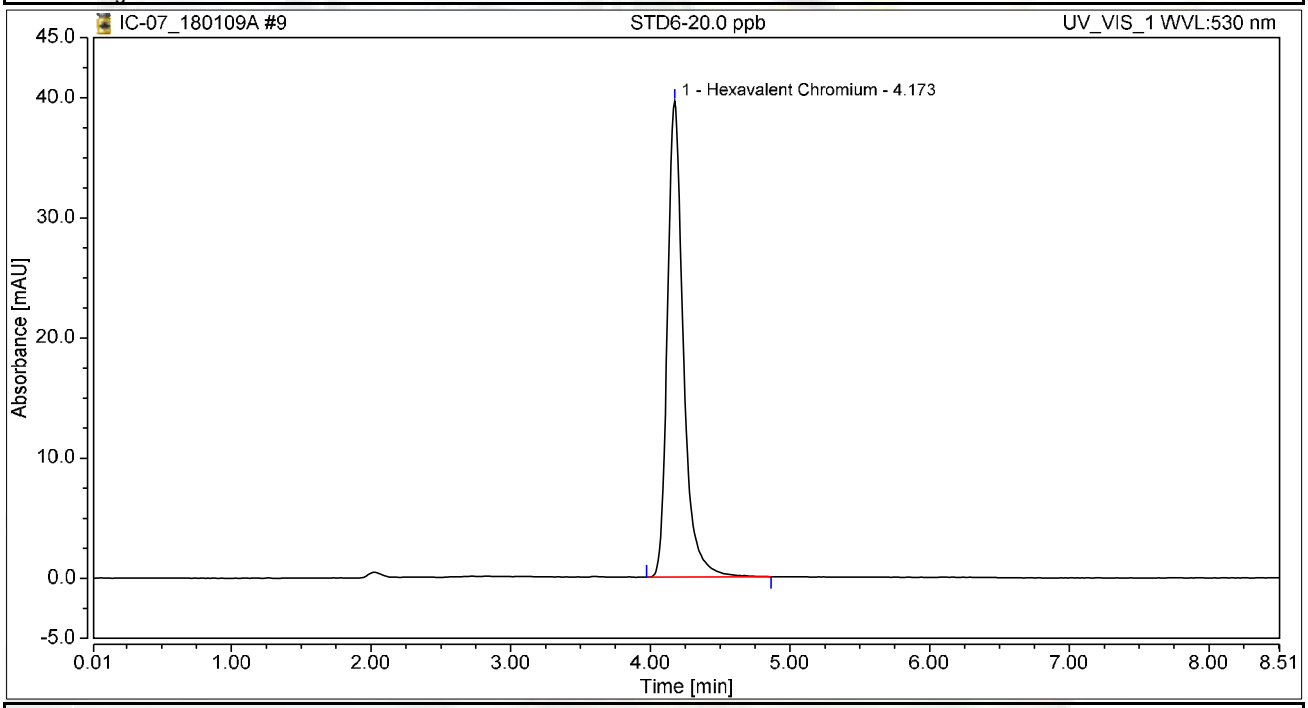
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.963	29.800	100.00	100.00	15.0890
Total:			**3.963**	**29.800**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



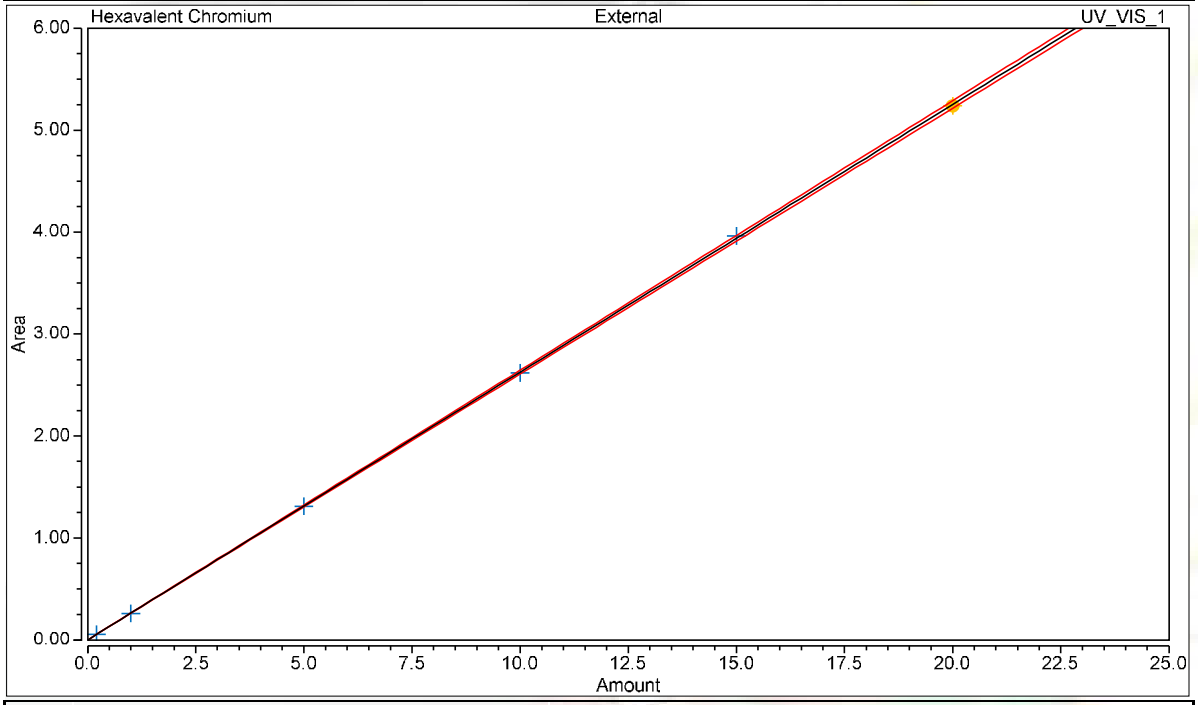
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.239	39.615	100.00	100.00	19.9481
Total:			**5.239**	**39.615**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2626
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

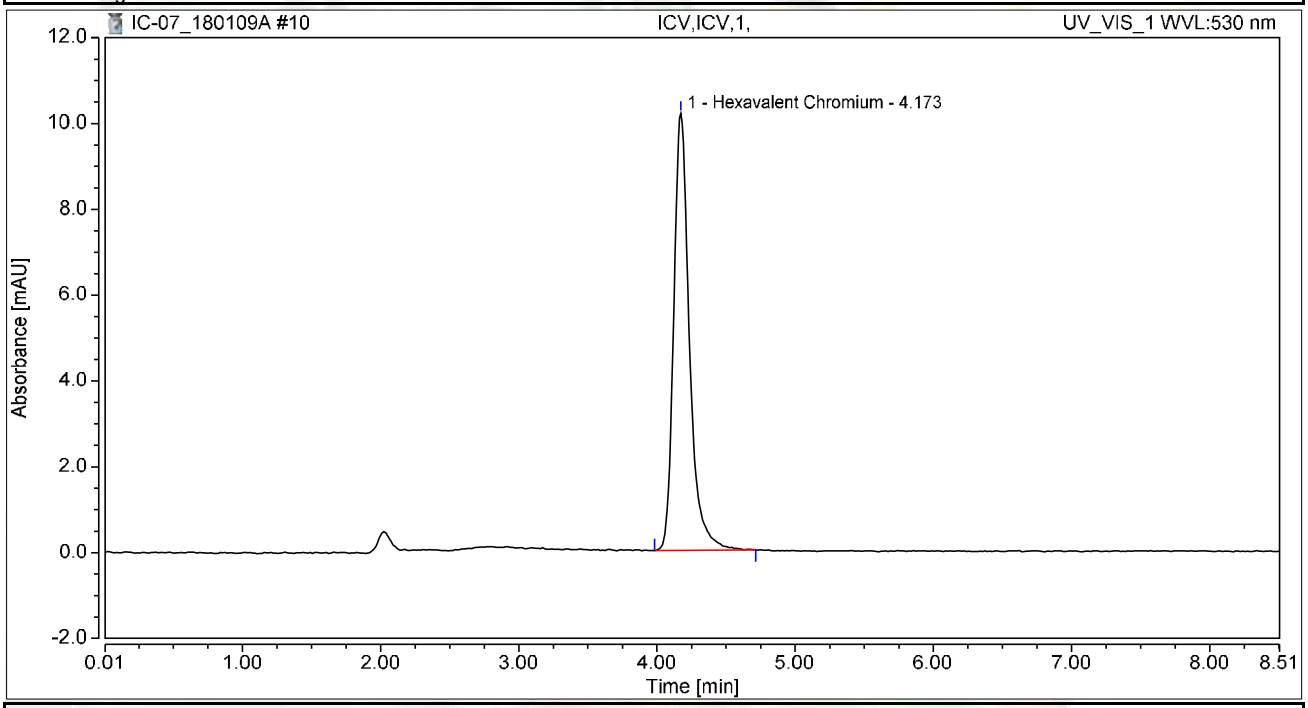
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0563	0.056	0.454
5	STD2-1.0 ppb	02	1.0000	0.2587	0.259	1.968
6	STD3-5.0 ppb	03	5.0000	1.3120	1.312	9.950
7	STD4-10.0 ppb	04	10.0000	2.6191	2.619	19.725
8	STD5-15.0 ppb	05	15.0000	3.9625	3.963	29.800
9	STD6-20.0 ppb	06	20.0000	5.2386	5.239	39.615

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

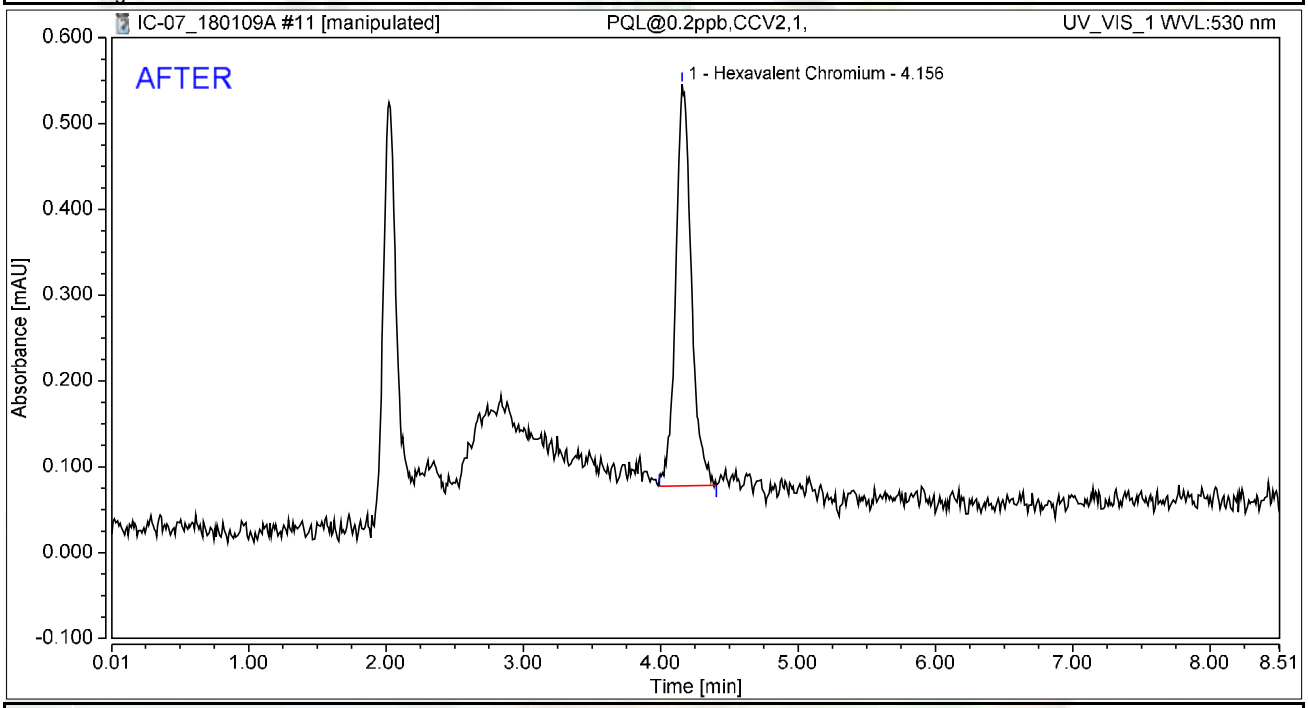
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.339	10.179	100.00	100.00	5.0989
Total:			**1.339**	**10.179**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.062	0.468	100.00	100.00	0.2343
Total:			**0.062**	**0.468**	**100.00**	**100.00**	

rba 1/10/2018

Reviewed by: 01/12/2018

My first report/Integration

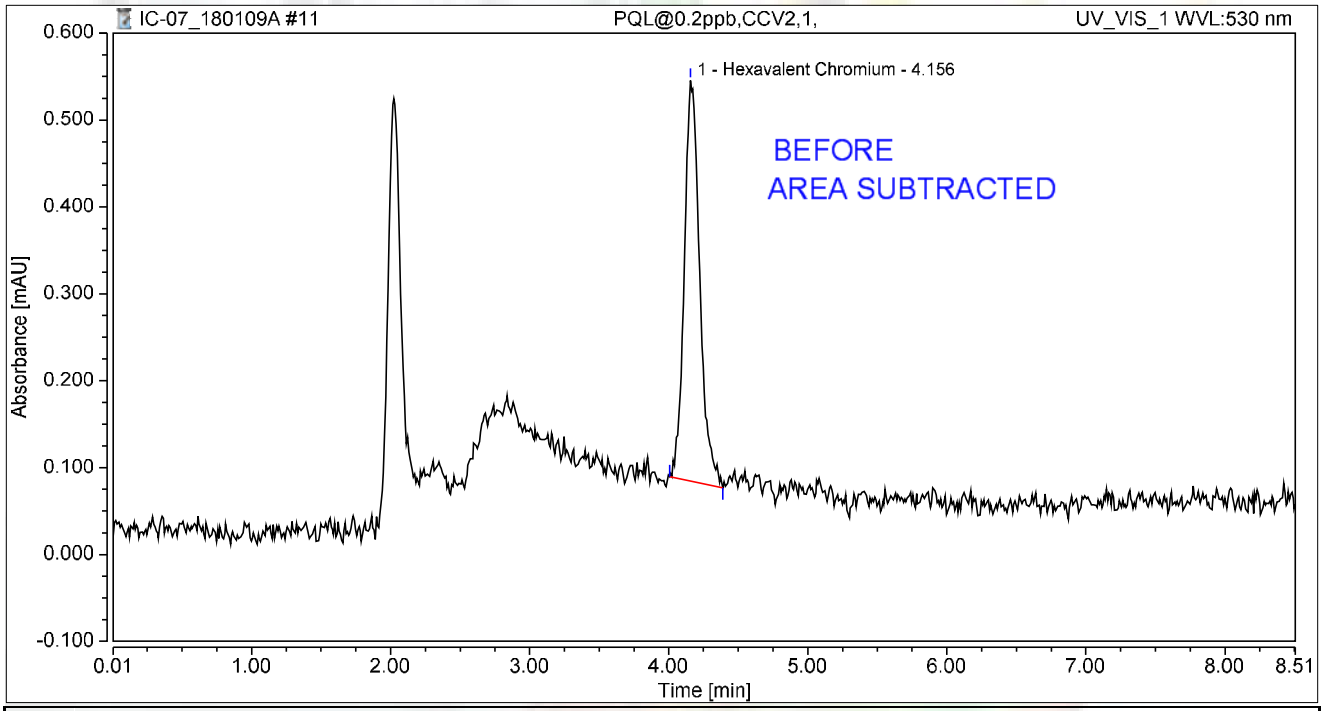
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.059	0.461	100.00	100.00	0.2262
Total:			**0.059**	**0.461**	**100.00**	**100.00**	

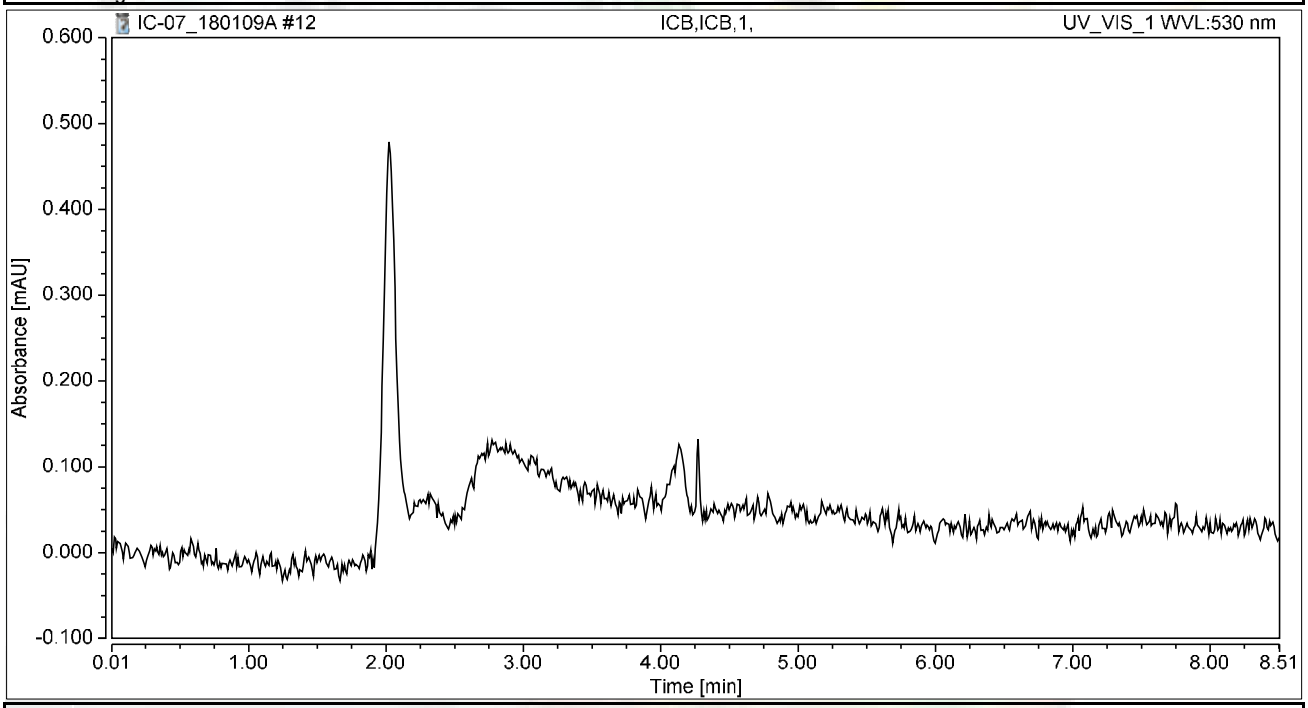
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA



INJECTION LOG: 180109A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 8:57 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 9:07 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/18 9:17 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:26 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:36 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:45 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:55 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:04 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:14 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	01/09/18 10:23 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/09/18 10:32 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	01/09/18 10:42 AM	Reported
13	MB-R121295	MBLK	1	Hexavalent Chromium	01/09/18 10:51 AM	Reported
14	LCS-R121295	LCS	1	Hexavalent Chromium	01/09/18 11:01 AM	Reported
15	N027864-011A	SAMP	1	Hexavalent Chromium	01/09/18 11:10 AM	Reported
16	N027864-011AMS	MS	1	Hexavalent Chromium	01/09/18 11:20 AM	Reported
17	N027864-011AMSD	MSD	1	Hexavalent Chromium	01/09/18 11:29 AM	Reported
18	N027865-003A	SAMP	1	Hexavalent Chromium	01/09/18 11:39 AM	Reported
19	N027865-003ADUP	DUP	1	Hexavalent Chromium	01/09/18 11:48 AM	Reported
20	N027865-001A	SAMP	1	Hexavalent Chromium	01/09/18 11:58 AM	Reported
21	N027865-002A	SAMP	1	Hexavalent Chromium	01/09/18 12:07 PM	Reported
22	N027865-004A	SAMP	1	Hexavalent Chromium	01/09/18 12:17 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	01/09/18 12:26 PM	Not Reported
24	CCB-1	CCB	1	Hexavalent Chromium	01/09/18 12:26 PM	Not Reported
25	N027820-008A	SAMP	1	Hexavalent Chromium	01/09/18 12:37 PM	Not Reported
26	N027820-008AMS	MS	1	Hexavalent Chromium	01/09/18 12:46 PM	Not Reported
27	CCV-1	CCV1	1	Hexavalent Chromium	01/09/18 1:00 PM	Reported
28	CCB-1	CCB	1	Hexavalent Chromium	01/09/18 1:11 PM	Reported
29	N027820-010A	SAMP	1	Hexavalent Chromium	01/09/18 1:21 PM	Reported
30	N027820-010AMS	MS	1	Hexavalent Chromium	01/09/18 1:30 PM	Reported
31	N027864-001A	SAMP	1	Hexavalent Chromium	01/09/18 1:40 PM	Reported
32	N027864-007A	SAMP	1	Hexavalent Chromium	01/09/18 1:49 PM	Reported
33	N027864-008A	SAMP	1	Hexavalent Chromium	01/09/18 1:58 PM	Reported
34	N027864-009A	SAMP	1	Hexavalent Chromium	01/09/18 2:08 PM	Reported
35	N027864-010A	SAMP	1	Hexavalent Chromium	01/09/18 2:17 PM	Reported
36	N027820-009A	SAMP	1	Hexavalent Chromium	01/09/18 2:27 PM	Reported
37	N027820-009AMS	MS	1	Hexavalent Chromium	01/09/18 2:36 PM	Reported
38	CCV-2	CCV	1	Hexavalent Chromium	01/09/18 2:49 PM	Reported
39	CCB-2	CCB	1	Hexavalent Chromium	01/09/18 3:00 PM	Reported

rba 1/10/2018

01/12/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180109A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Jan/18 15:30:54**
No. of Injections:	**42**	*Updated By:*	**ics 5000**

Injection Details

	No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
	1	BLANK	1	1000	Unknown		01/09/2018 08:57	Finished	BLANK
	2	BLANK	2	1000	Unknown		01/09/2018 09:07	Finished	BLANK
	3	iBLANK	3	1000	Unknown		01/09/2018 09:17	Finished	INSTRUMENT BLANK
	4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2018 09:26	Finished	0.2 ppb, IWST-171002A
	5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2018 09:36	Finished	1.0 ppb, IWST-171002A
	6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2018 09:45	Finished	5.0 ppb, IWST-171002A
	7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2018 09:55	Finished	10 ppb, IWST-171002A
	8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2018 10:04	Finished	15 ppb, IWST-171002A
	9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2018 10:14	Finished	20 ppb, IWST-171002A
	10	ICV,ICV,1,	10	1000	Unknown		01/09/2018 10:23	Finished	ICV @5ppb, IWST-171002A
	11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		01/09/2018 10:32	Finished	PQL @ 0.2ppb
	12	ICB,ICB,1,	12	1000	Unknown		01/09/2018 10:42	Finished	ICB R180102C
	13	MB-H2O,MBLK,1,	13	1000	Unknown		01/09/2018 10:51	Finished	MB R180102C
	14	LCS-H2O,LCS,1,	14	1000	Unknown		01/09/2018 11:01	Finished	LCS, IWST-171002B
	15	N027864-011A,SAMP	15	1000	Unknown		01/09/2018 11:10	Finished	SAMP,10mL
	16	N027864-011AMS,MS	16	1000	Unknown		01/09/2018 11:20	Finished	MS (1ppb), IWST-171002B,10
	17	N027864-011AMSD,M	17	1000	Unknown		01/09/2018 11:29	Finished	MSD (1ppb), IWST-171002B,1(
	18	N027865-003A,SAMP	18	1000	Unknown		01/09/2018 11:39	Finished	SAMP,10mL
	19	N027865-003ADUP,D	19	1000	Unknown		01/09/2018 11:48	Finished	DUP,10mL
	20	N027865-001A,SAMP	20	1000	Unknown		01/09/2018 11:58	Finished	SAMP,10mL
	21	N027865-002A,SAMP	21	1000	Unknown		01/09/2018 12:07	Finished	SAMP,10mL
	22	N027865-004A,SAMP	22	1000	Unknown		01/09/2018 12:17	Finished	SAMP,10mL
	23	CCV-1,CCV1,1,	23	1000	Unknown		01/09/2018 12:26	Interrupted	CCV @10ppb, IWST-171002A
	24	CCB-1,CCB,1,	24	1000	Unknown		01/09/2018 12:26	Finished	CCB R180102C
	25	N027820-008A,SAMP	25	1000	Unknown		01/09/2018 12:37	Finished	SAMP,10mL
	26	N027820-008AMS,MS	26	1000	Unknown		01/09/2018 12:46	Finished	MS (1ppb), IWST-171002B,10
CCV,1,CCV,1,	27	~~CCV-2,CCV1,1~~,	27	1000	Unknown		01/09/2018 13:00	Finished	CCV @10ppb, IWST-171002A
CCB,1,CCB,1,	28	~~CCB-2,CCB,1~~,	28	1000	Unknown		01/09/2018 13:11	Finished	CCB R180102C
	29	N027820-010A,SAMP	29	1000	Unknown		01/09/2018 13:21	Finished	SAMP,10mL
	30	N027820-010AMS,MS	30	1000	Unknown		01/09/2018 13:30	Finished	MS (1ppb), IWST-171002B,10
	31	N027864-001A,SAMP	31	1000	Unknown		01/09/2018 13:40	Finished	SAMP,10mL
	32	N027864-007A,SAMP	32	1000	Unknown		01/09/2018 13:49	Finished	MS (1ppb), IWST-171002B,10
	33	N027864-008A,SAMP	33	1000	Unknown		01/09/2018 13:58	Finished	SAMP,10mL
	34	N027864-009A,SAMP	34	1000	Unknown		01/09/2018 14:08	Finished	SAMP,10mL
	35	N027864-010A,SAMP	35	1000	Unknown		01/09/2018 14:17	Finished	SAMP,10mL
	36	N027820-009A,SAMP	36	1000	Unknown		01/09/2018 14:27	Finished	SAMP,10mL
	37	N027820-009AMS,MS	37	1000	Unknown		01/09/2018 14:36	Finished	MS (1ppb), IWST-171002B,10
CCV,2,CCV,1,	38	~~CCV-3,CCV,1,~~	39	1000	Unknown		01/09/2018 14:49	Finished	CCV @5ppb, IWST-171002A
CCB,2,CCB,1,	39	~~CCB-3,CCB,1,~~	40	1000	Unknown		01/09/2018 15:00	Finished	CCB R180102C
	40	SHUTDOWN	41	1000	Unknown		01/09/2018 15:10	Finished	
	41	Eluent: R180108D	42	1000	Unknown		n.a.	Finished	Eluent
	42	PCR: R180109A	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

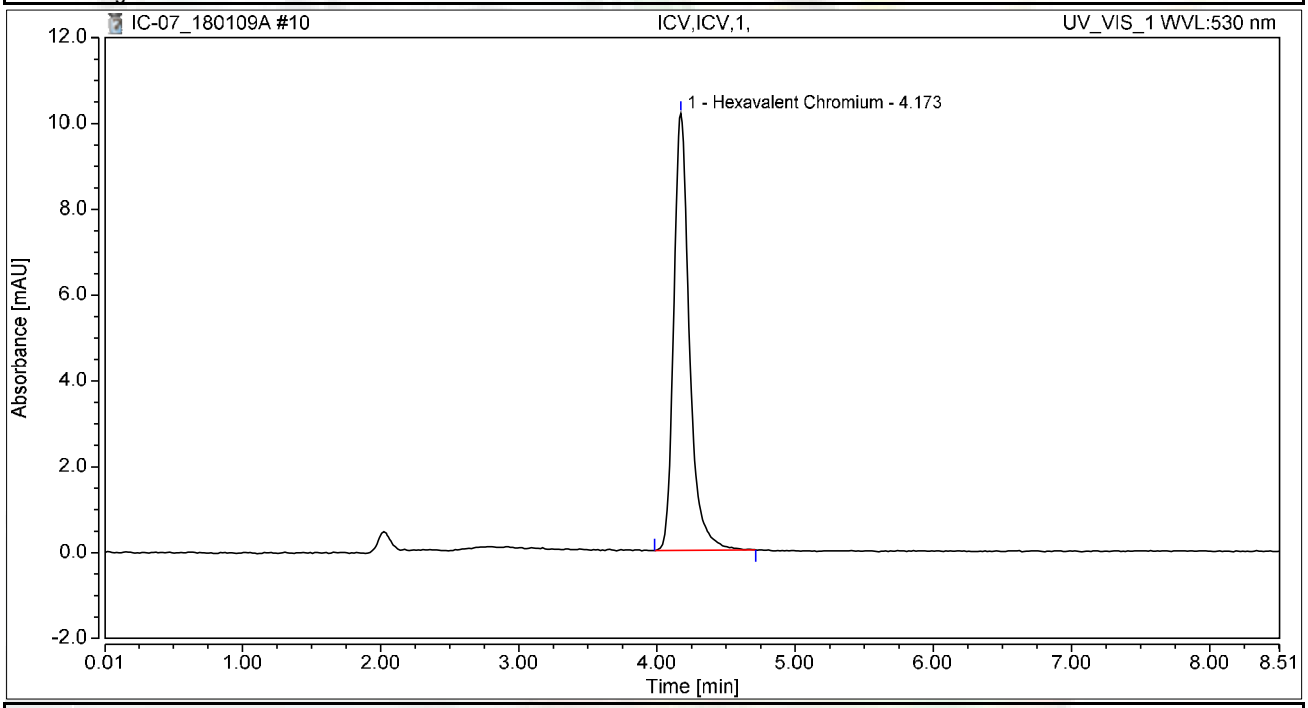
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

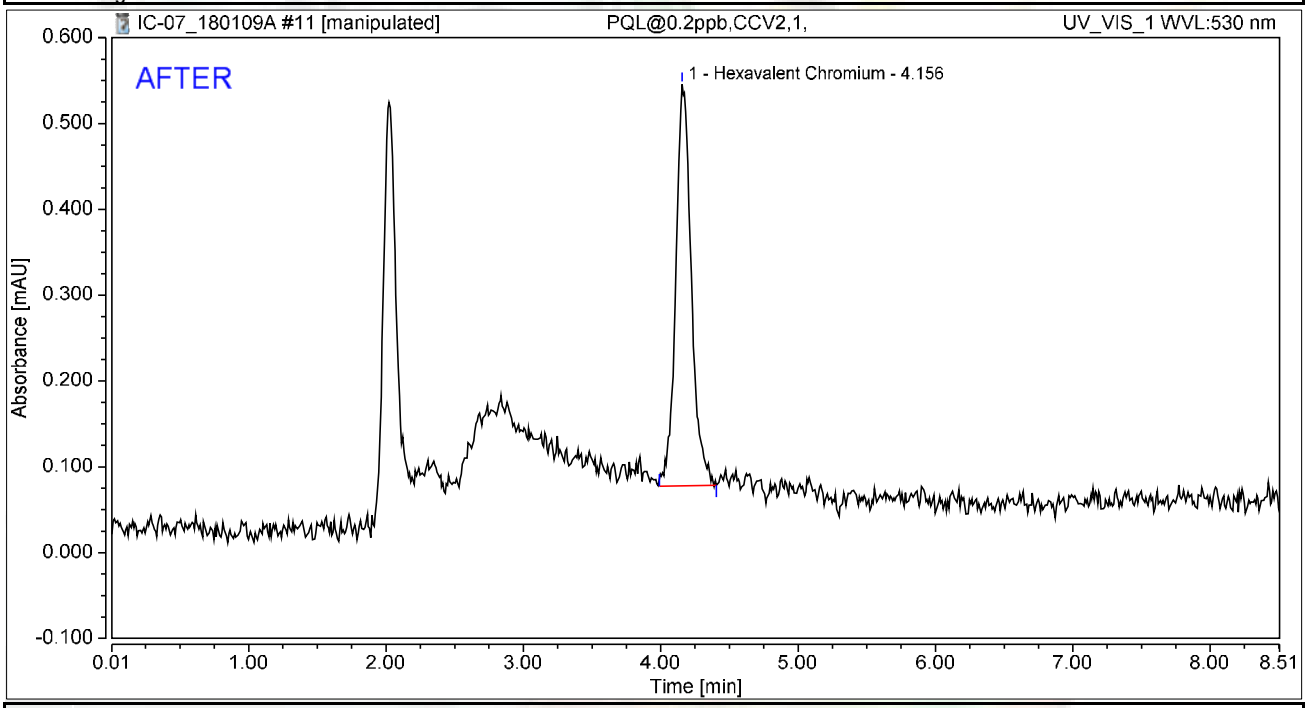
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.339	10.179	100.00	100.00	5.0989
Total:			**1.339**	**10.179**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.062	0.468	100.00	100.00	0.2343
Total:			**0.062**	**0.468**	**100.00**	**100.00**	

rba 1/10/2018

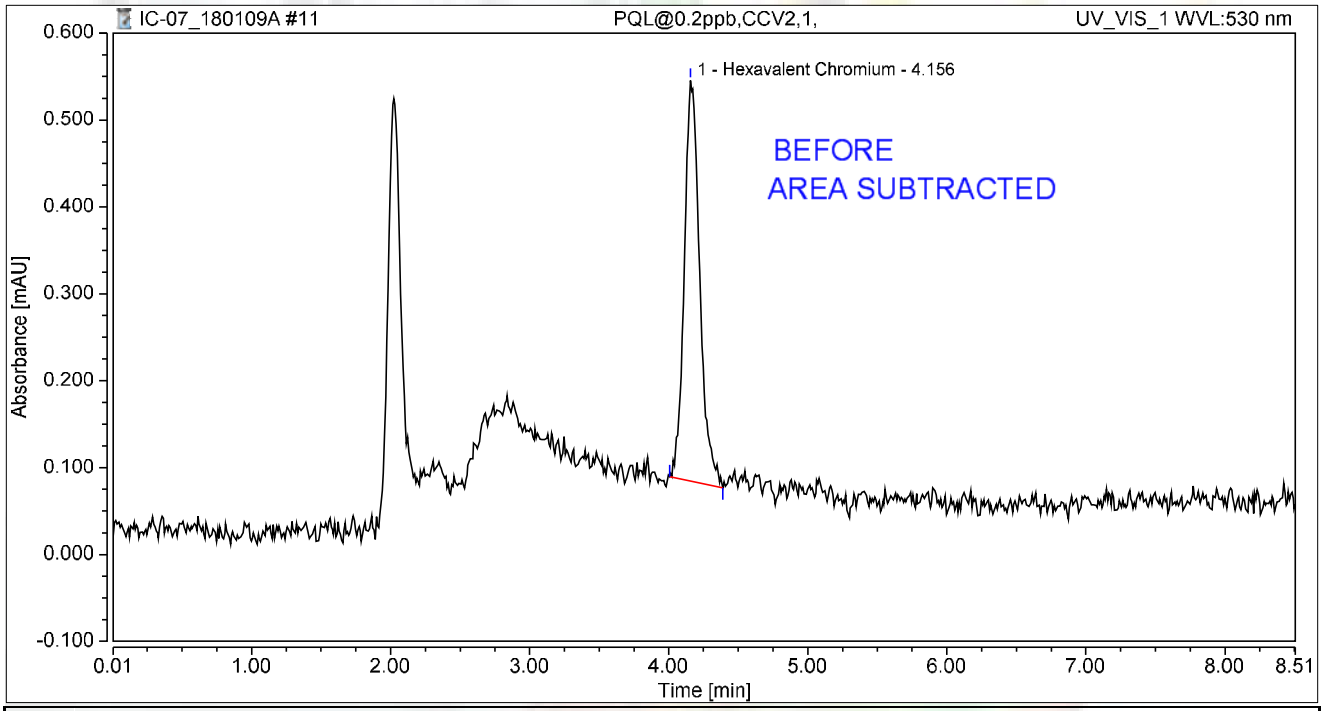
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.059	0.461	100.00	100.00	0.2262
Total:			**0.059**	**0.461**	**100.00**	**100.00**	

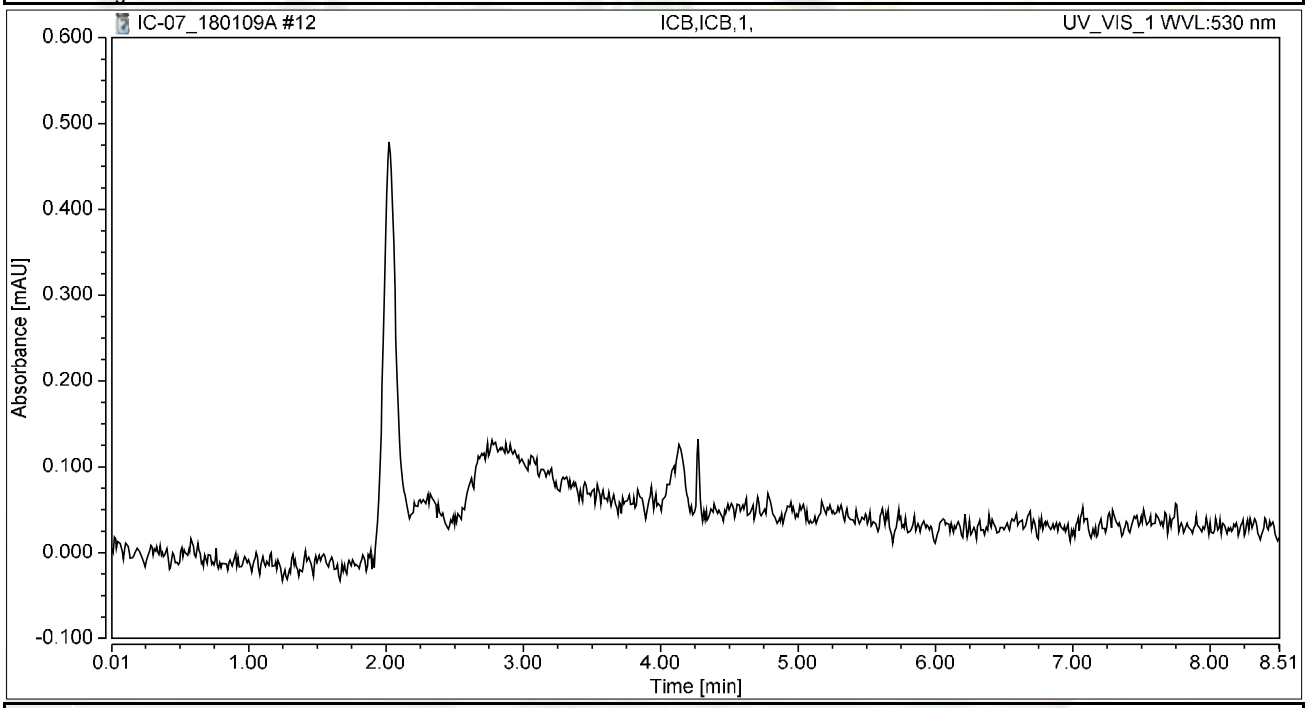
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

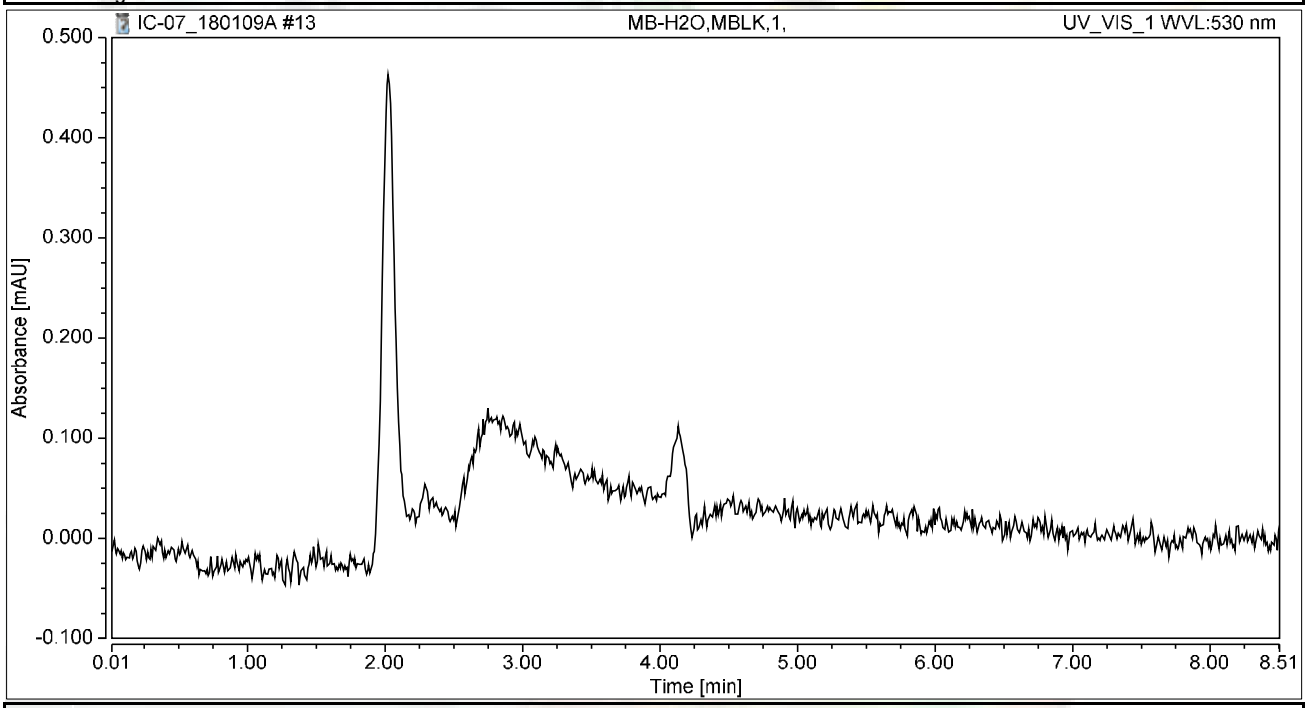
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

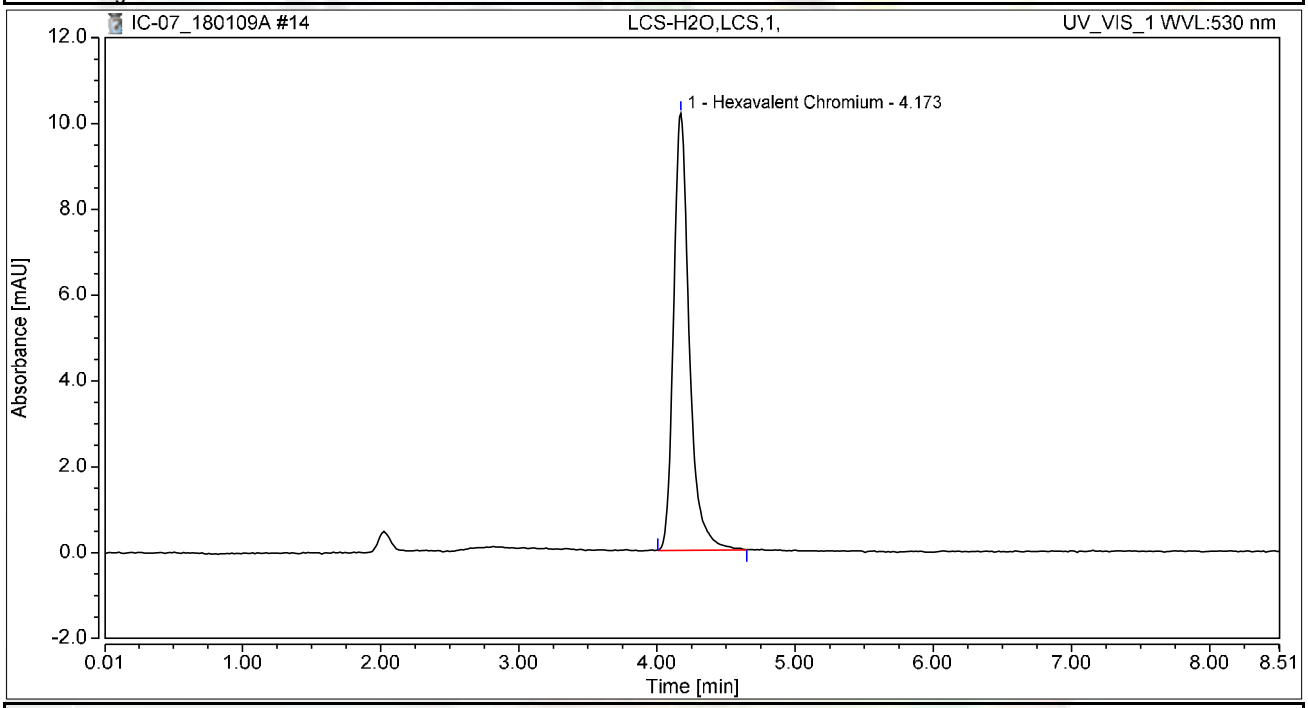
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

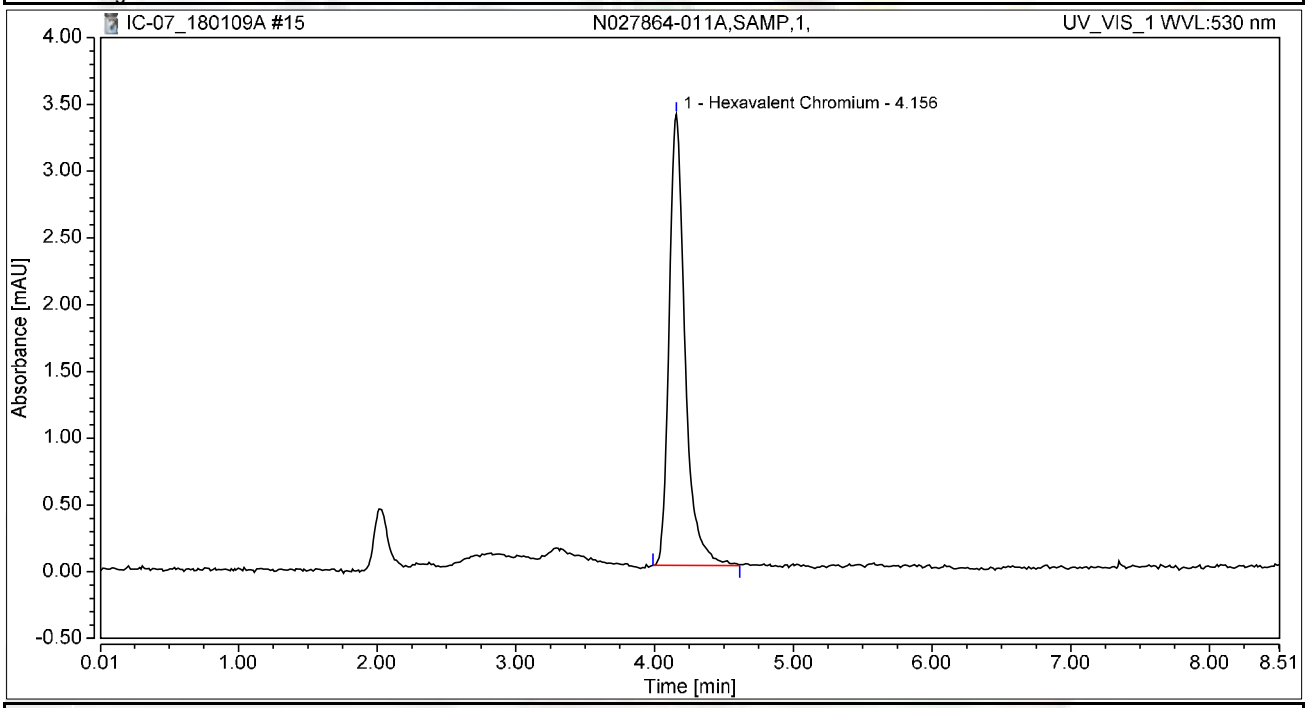
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.341	10.177	100.00	100.00	5.1073
Total:			**1.341**	**10.177**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

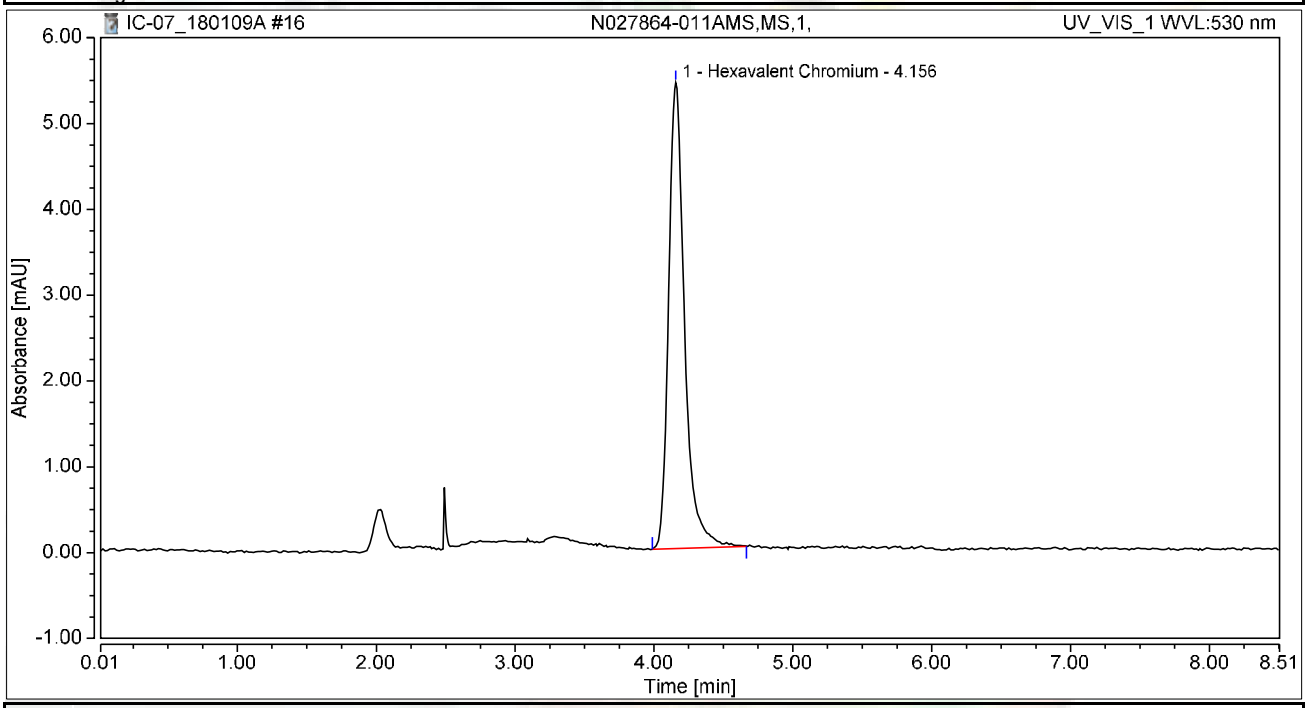
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.449	3.380	100.00	100.00	1.7111
Total:			**0.449**	**3.380**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

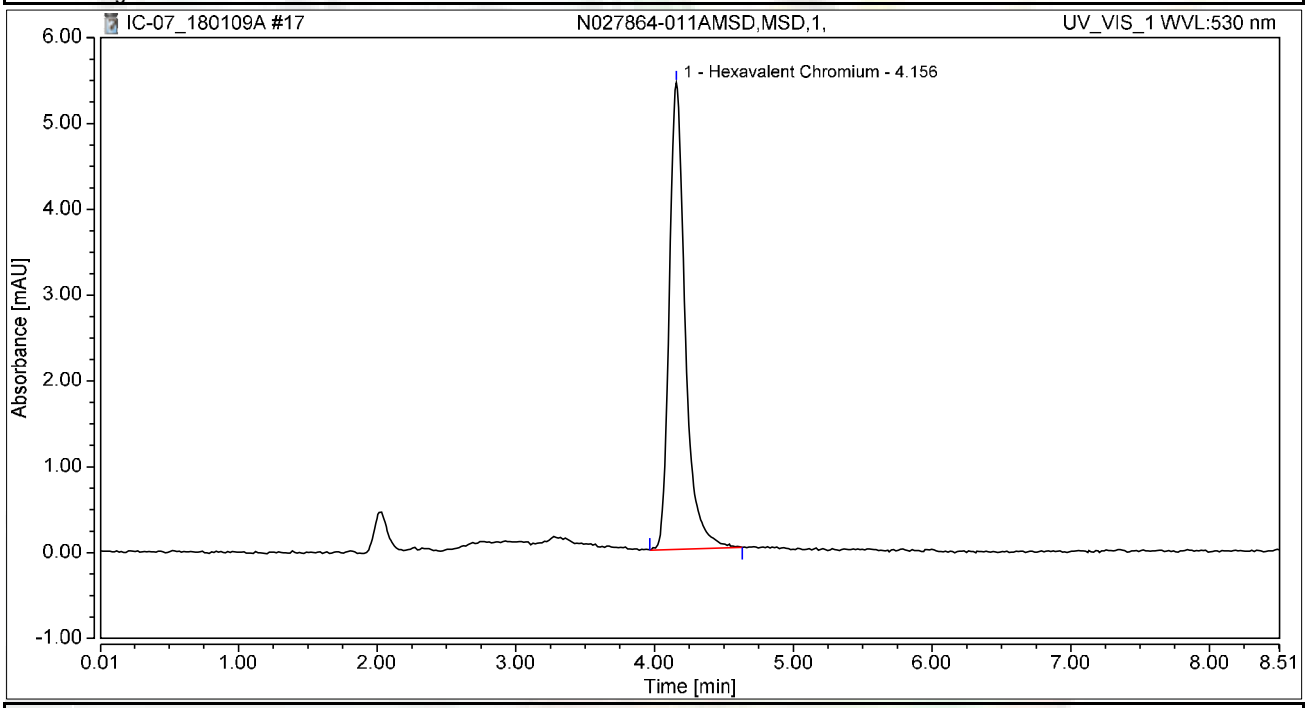
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.723	5.429	100.00	100.00	2.7541
Total:			**0.723**	**5.429**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-011AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

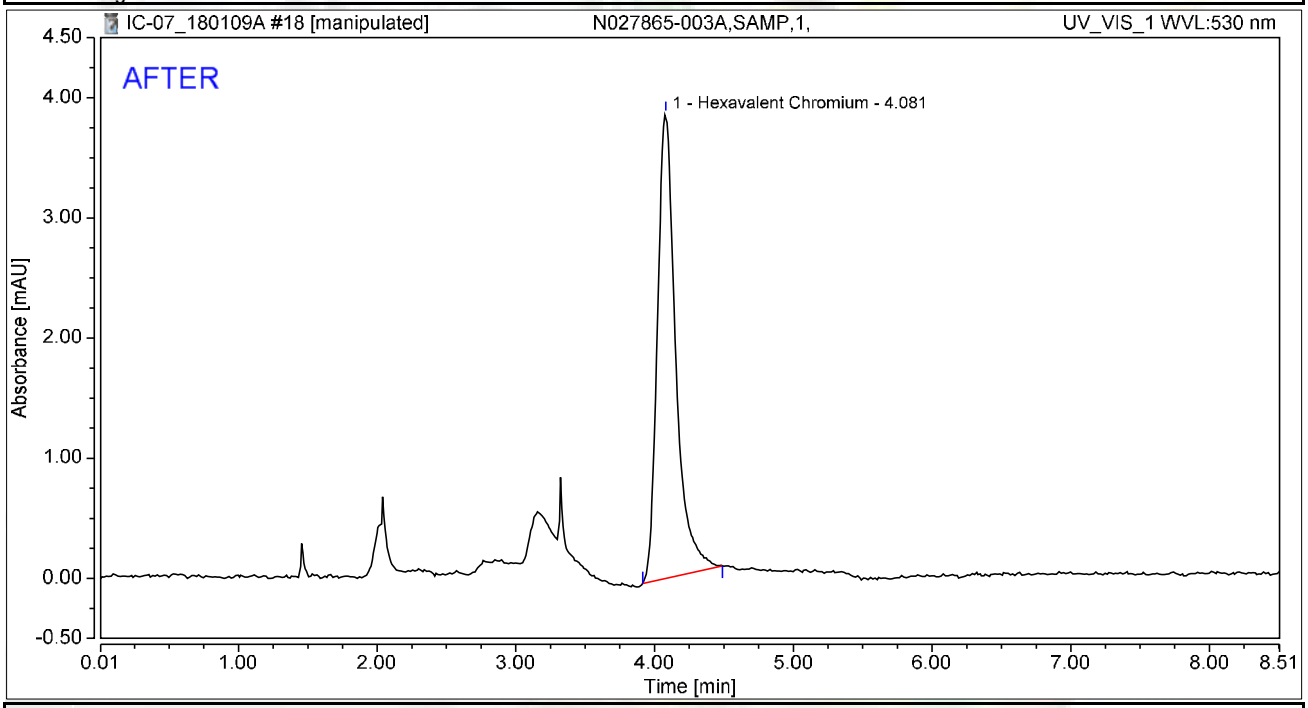
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.726	5.434	100.00	100.00	2.7627
Total:			**0.726**	**5.434**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027865-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.592	3.866	100.00	100.00	2.2554
Total:			**0.592**	**3.866**	**100.00**	**100.00**	

rba 1/10/2018

Reviewed
By: 01/12/2018

My first report integration

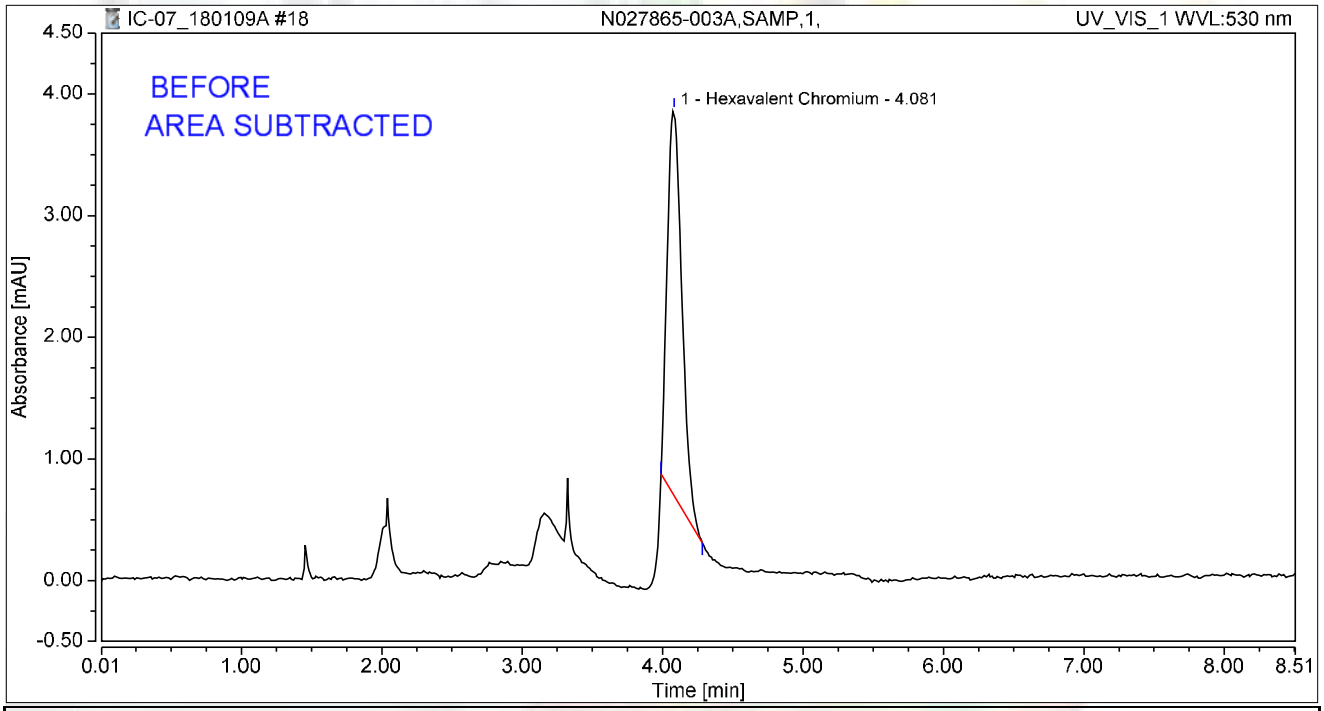
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N027865-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.385	3.167	100.00	100.00	1.4659
Total:			**0.385**	**3.167**	**100.00**	**100.00**	

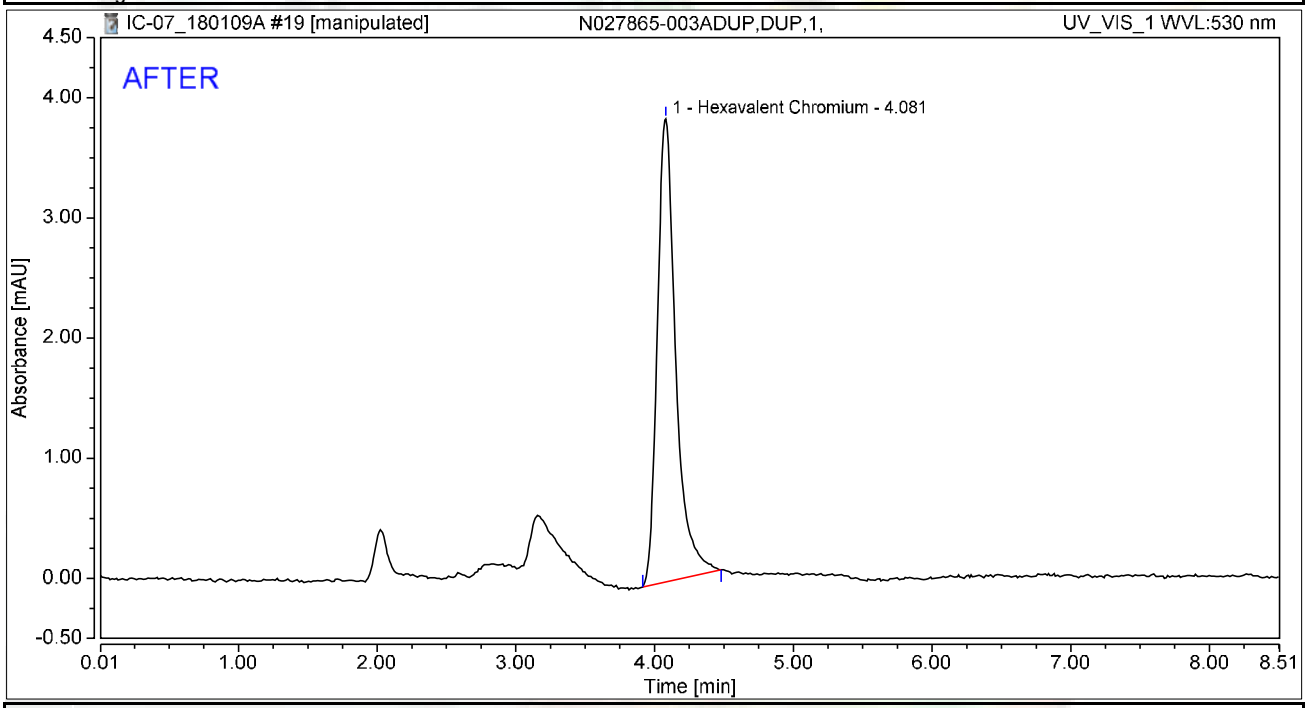
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-003ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.594	3.855	100.00	100.00	2.2624
Total:			**0.594**	**3.855**	**100.00**	**100.00**	

rba 1/10/2018

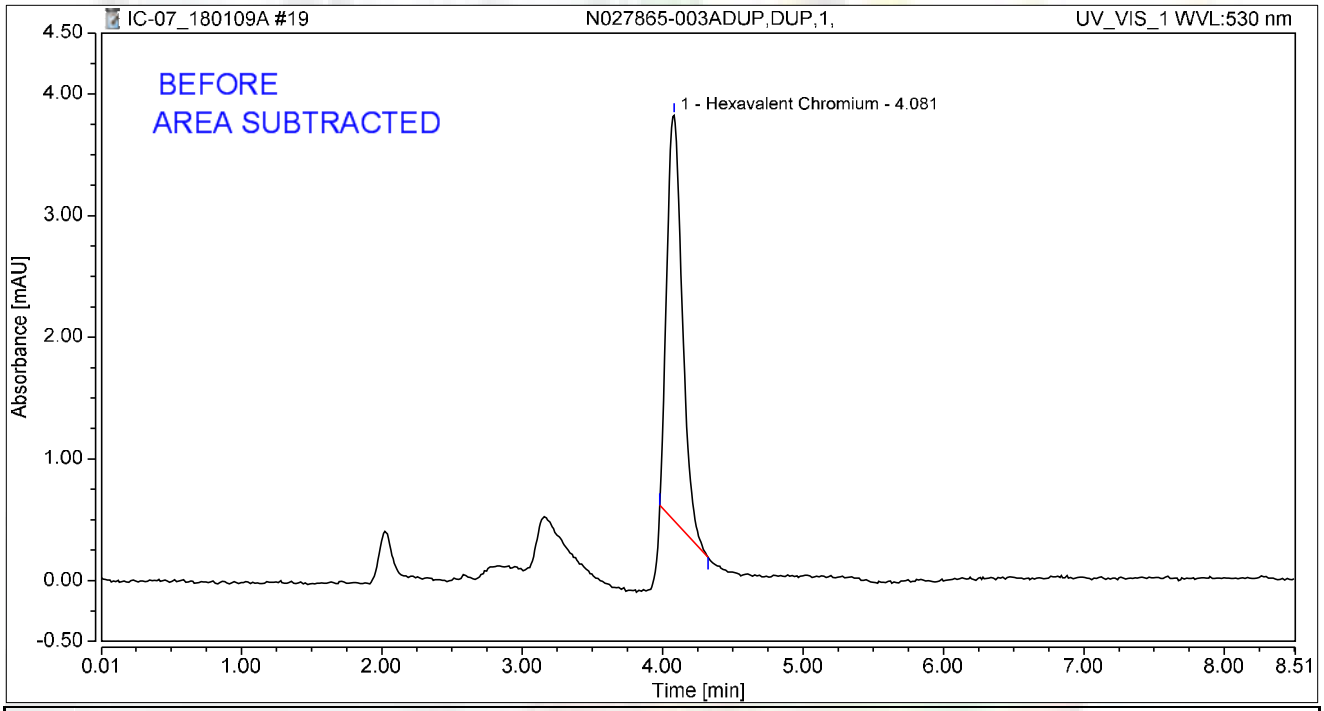
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-003ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.427	3.331	100.00	100.00	1.6275
Total:			**0.427**	**3.331**	**100.00**	**100.00**	

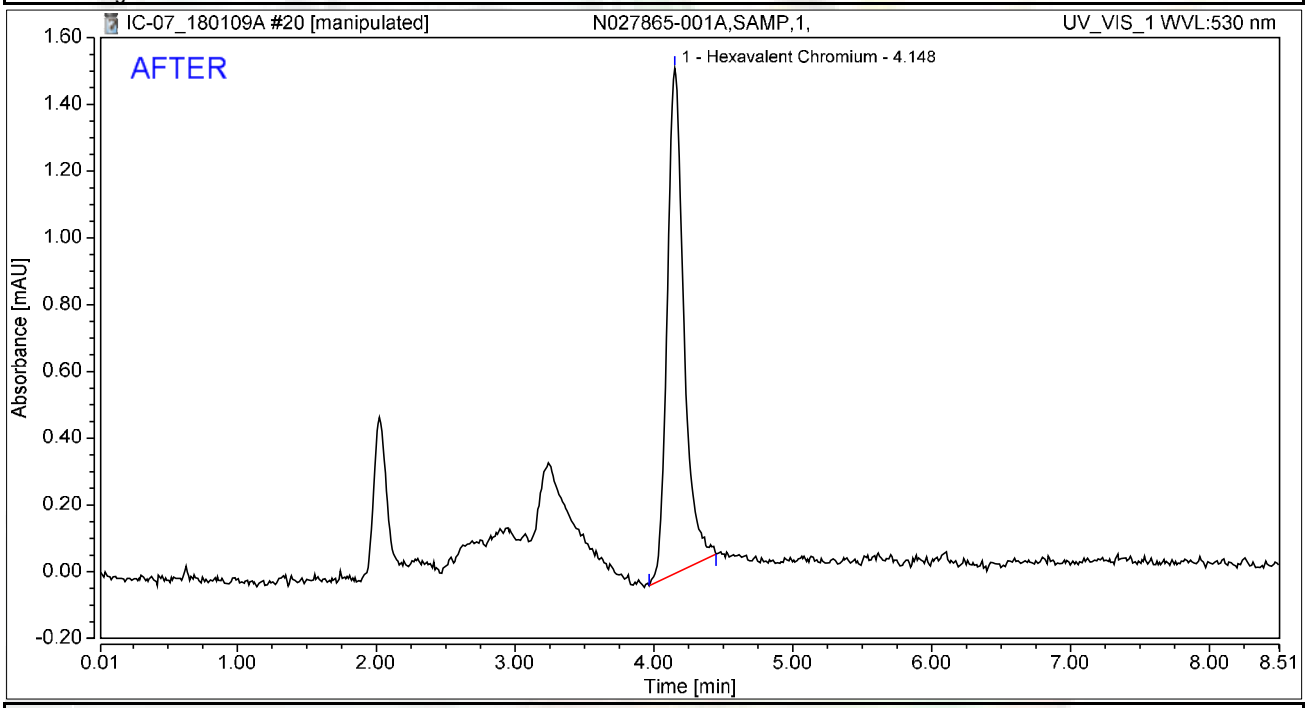
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.210	1.515	100.00	100.00	0.8008
Total:			**0.210**	**1.515**	**100.00**	**100.00**	

rba 1/10/2018

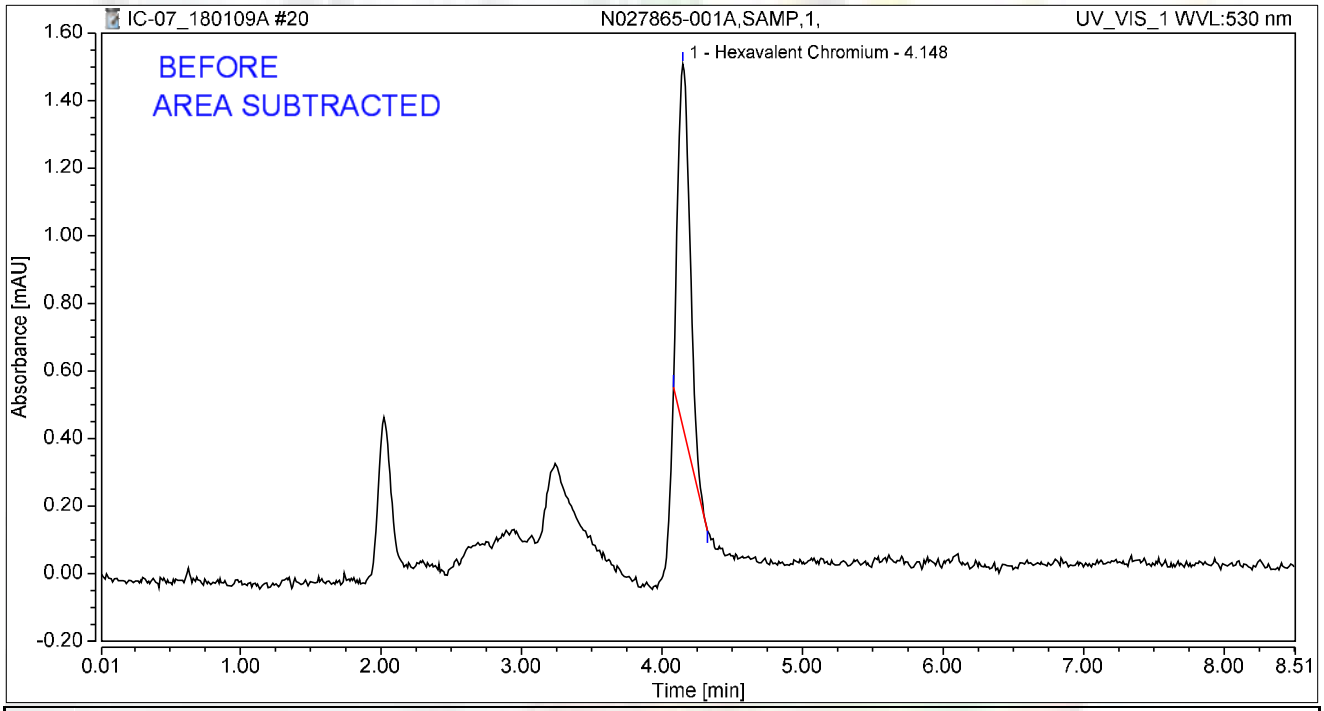
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.108	1.073	100.00	100.00	0.4106
Total:			**0.108**	**1.073**	**100.00**	**100.00**	

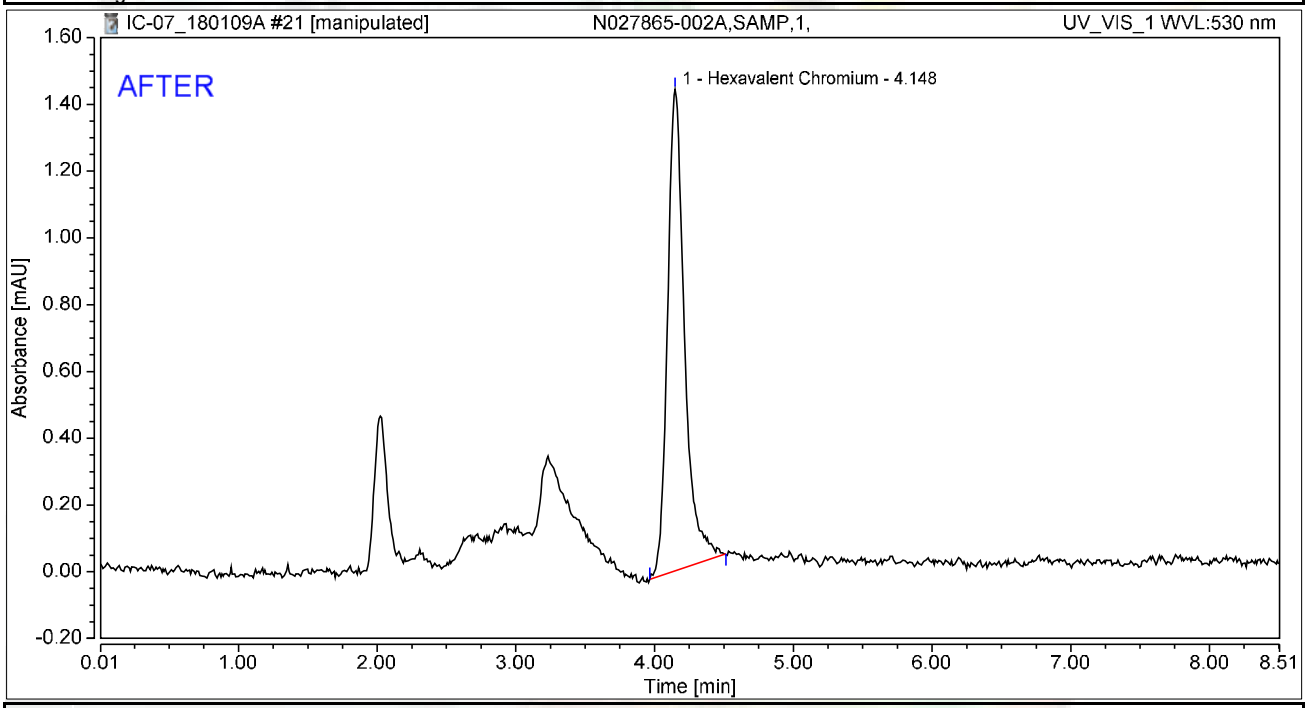
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.205	1.442	100.00	100.00	0.7799
Total:			**0.205**	**1.442**	**100.00**	**100.00**	

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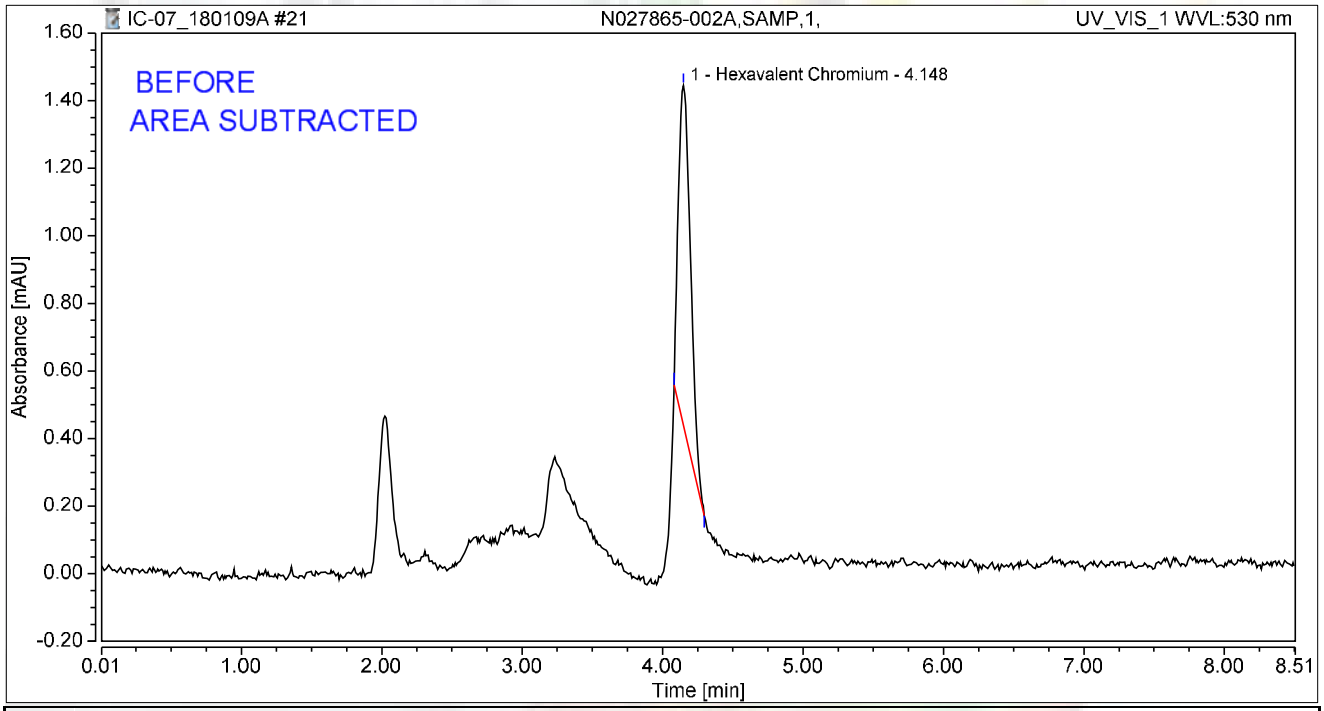
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.101	1.004	100.00	100.00	0.3835
Total:			**0.101**	**1.004**	**100.00**	**100.00**	

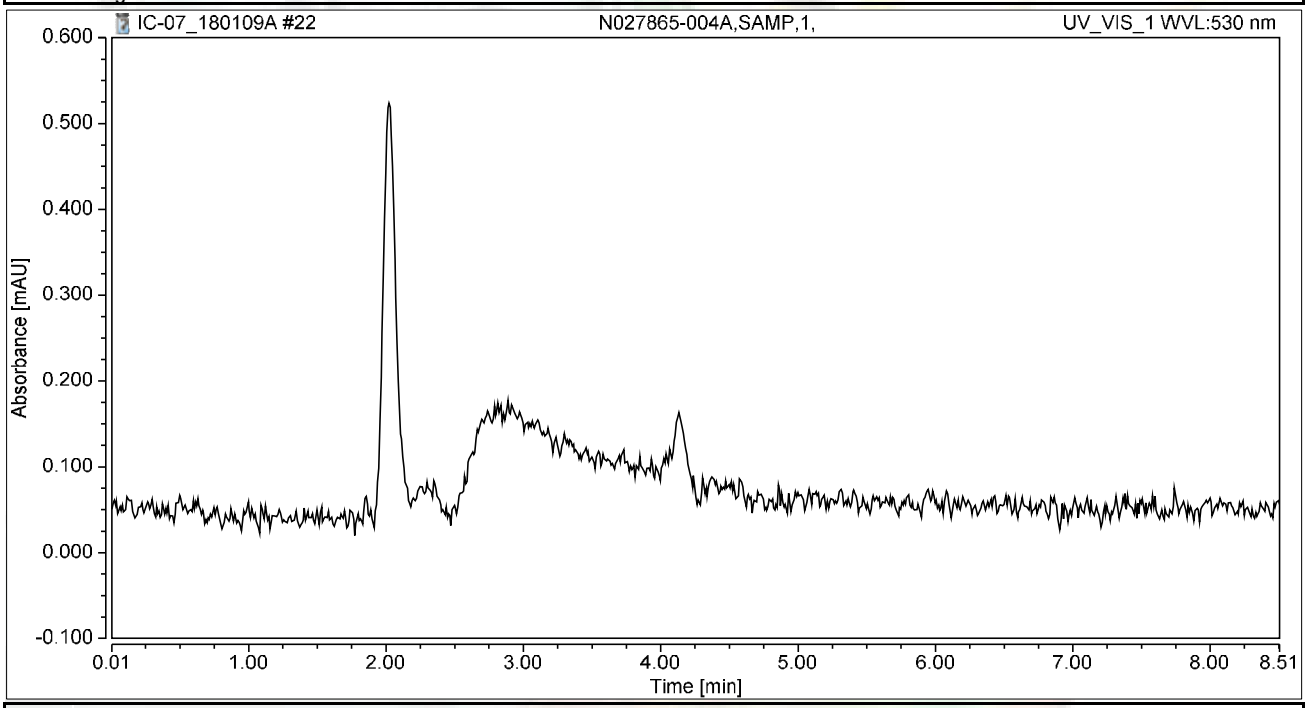
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027865-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV1,1,**	*Run Time (min):*	**n.a.**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**n.a.**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:26**	*Sample Weight:*	**1.0000**

Chromatogram

Can't read channel UV_VIS_1 from injection #23 - CCV-1,CCV1,1,.
Channel is not available.

NOT REPORTED

NO SAMPLE ON VIAL

Integration Results

No.	Peak Name	Retention Time min	Area n.a.	Height n.a.	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

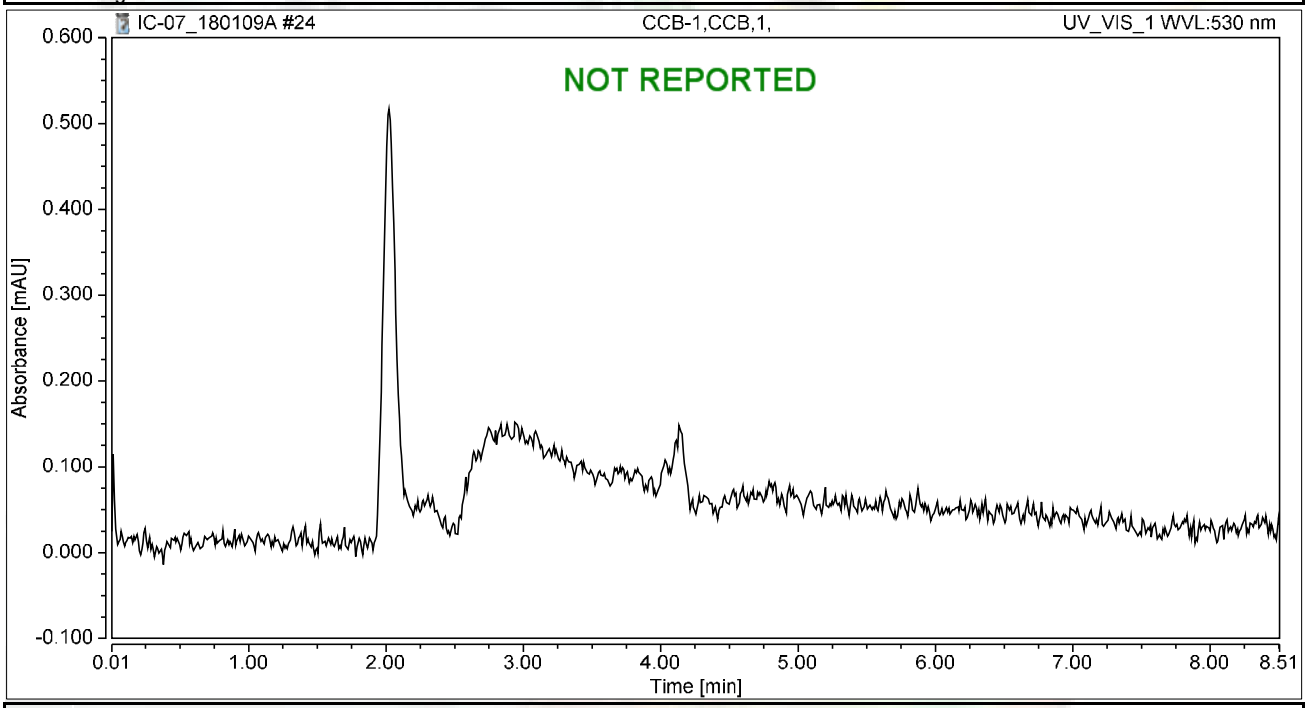
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

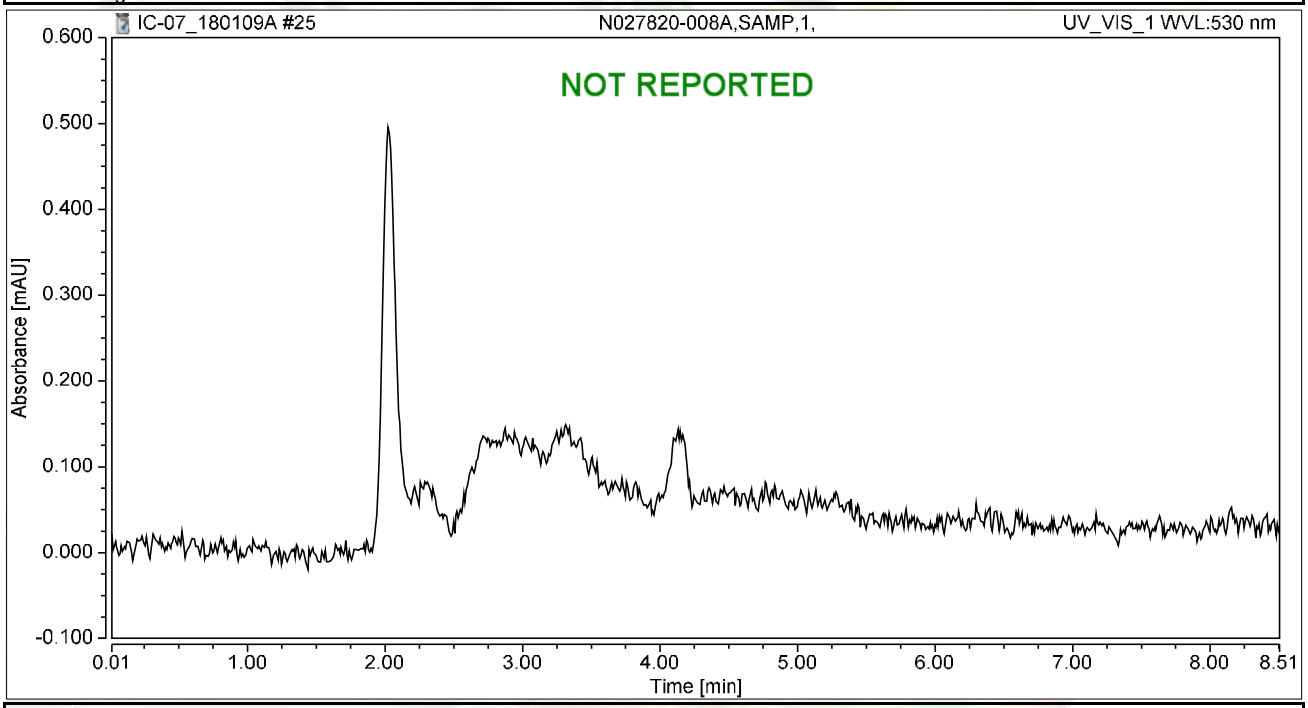
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

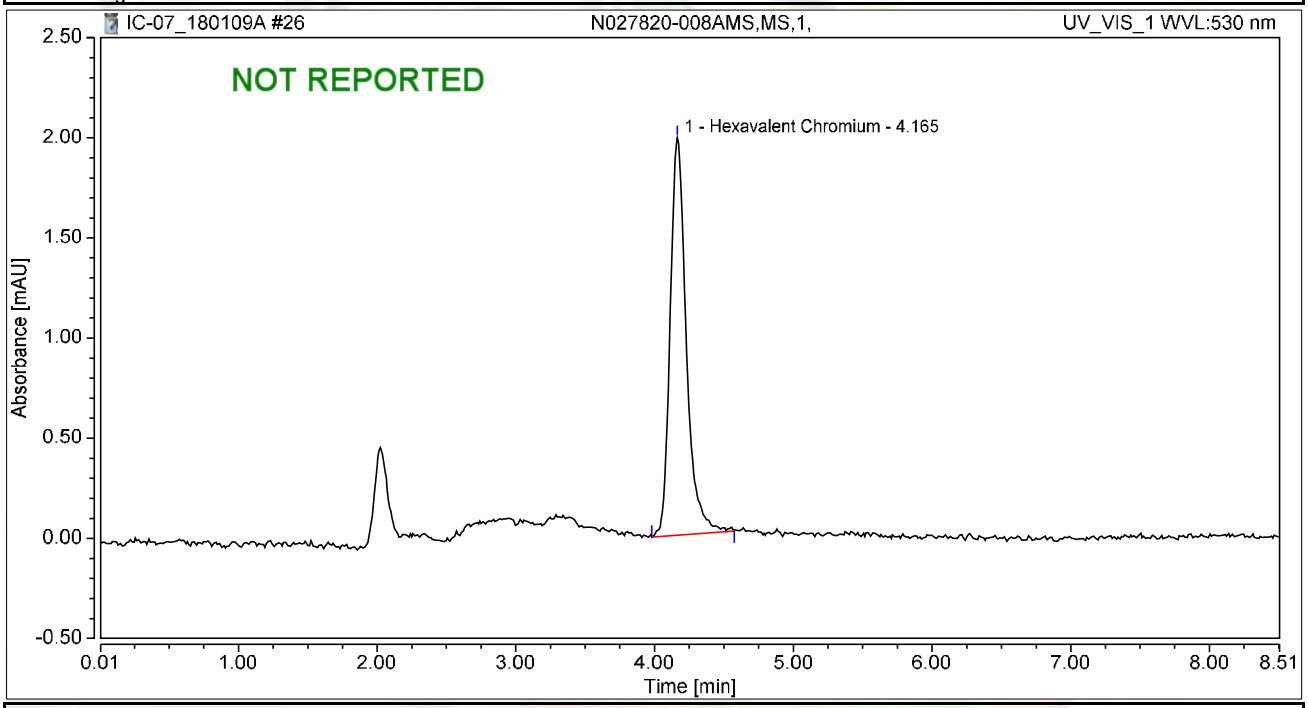
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

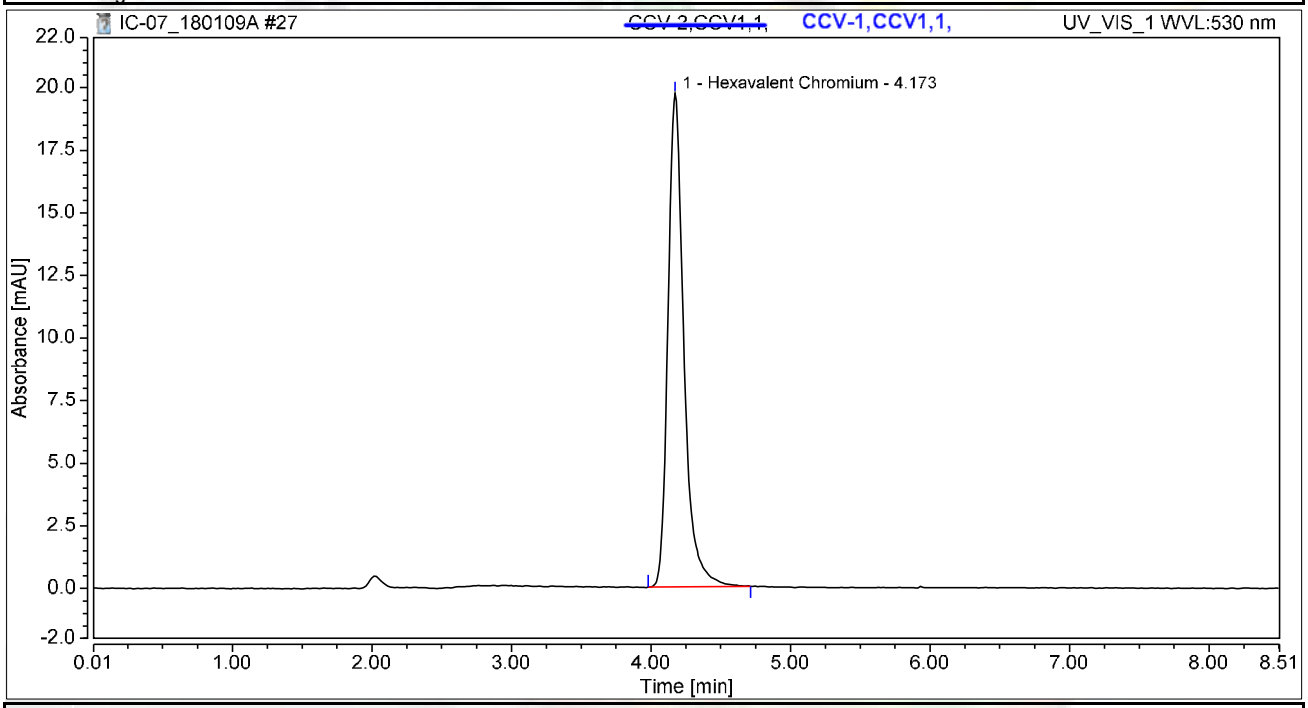
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.268	1.986	100.00	100.00	1.0196
Total:			**0.268**	**1.986**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	~~CCV-2,CCV1,1,~~ CCV-1,CCV1,1,	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.598	19.695	100.00	100.00	9.8941
Total:			**2.598**	**19.695**	**100.00**	**100.00**	

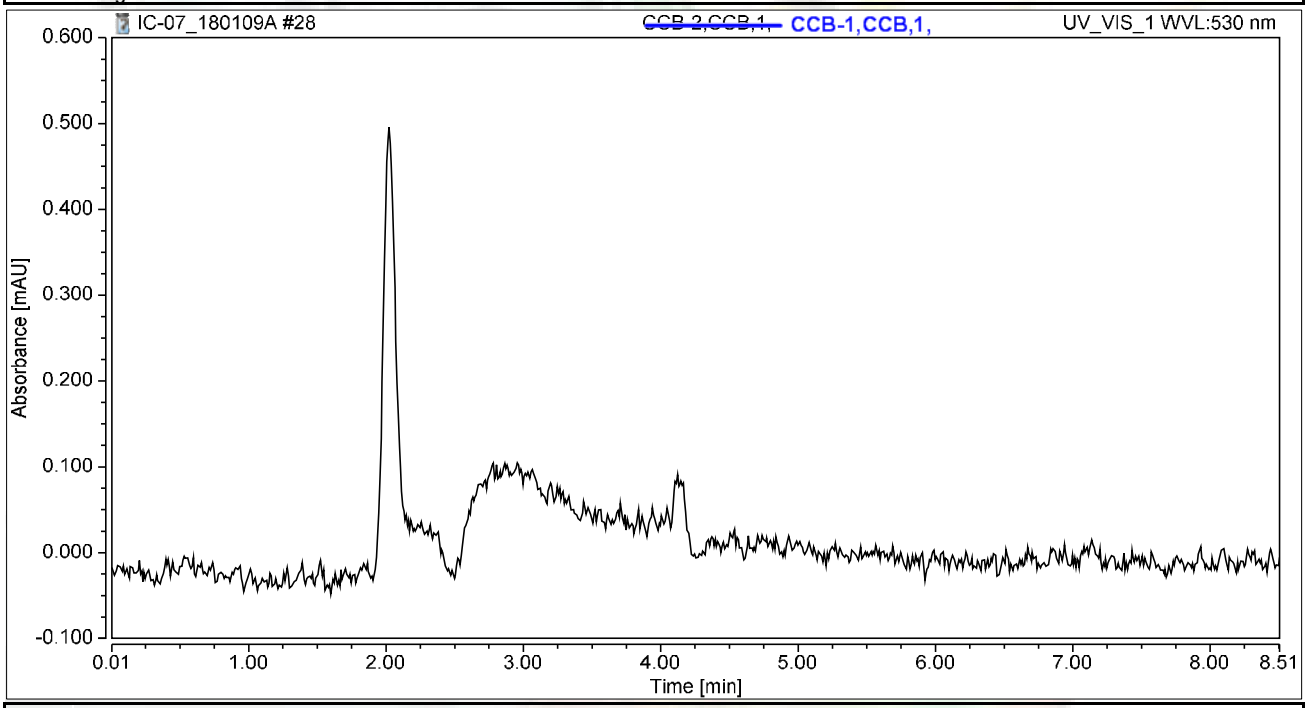
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	~~CCB-2,CCB,1,~~ CCB-1,CCB,1,	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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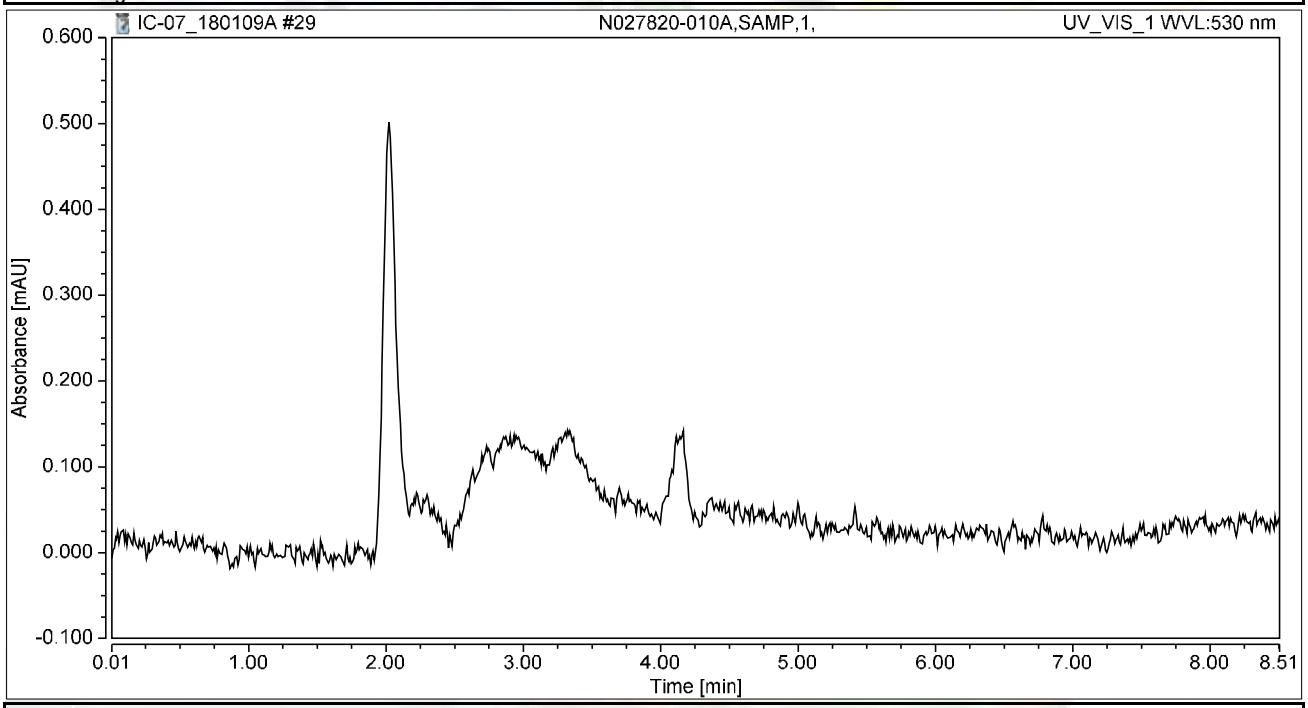
Chromatogram and Results

Injection Details

Injection Name:	**N027820-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

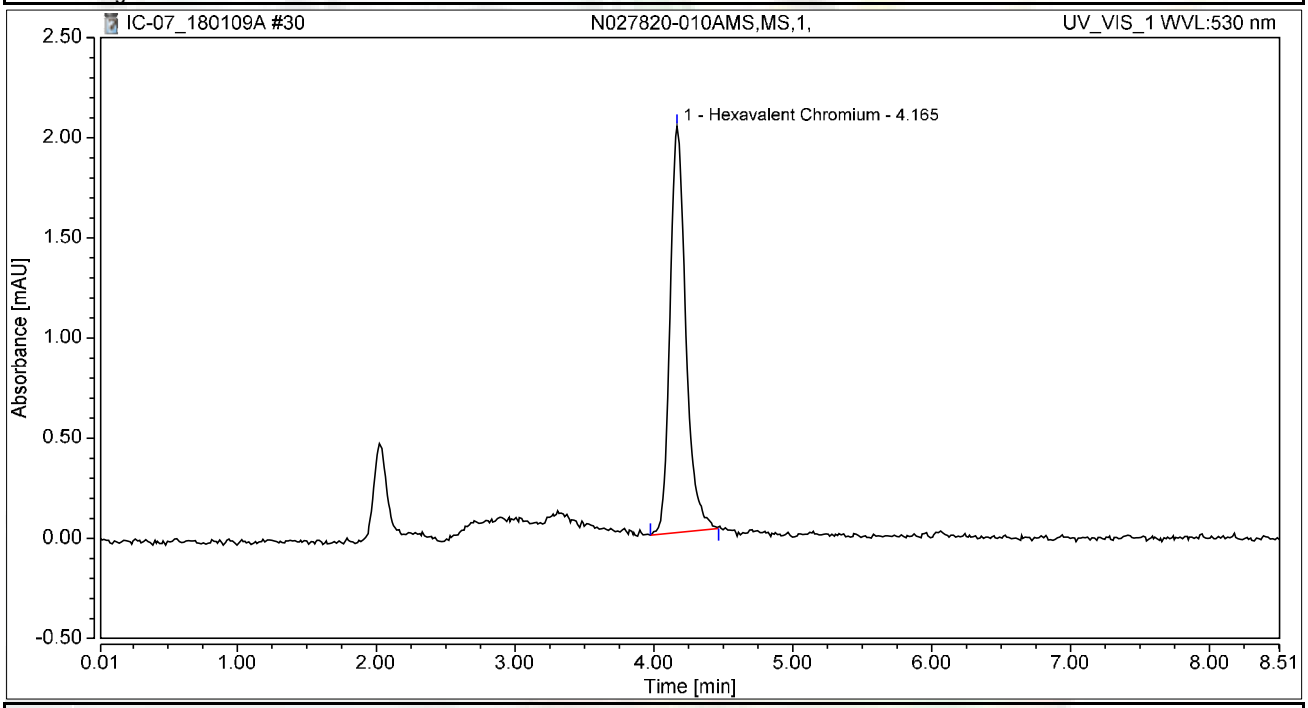
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

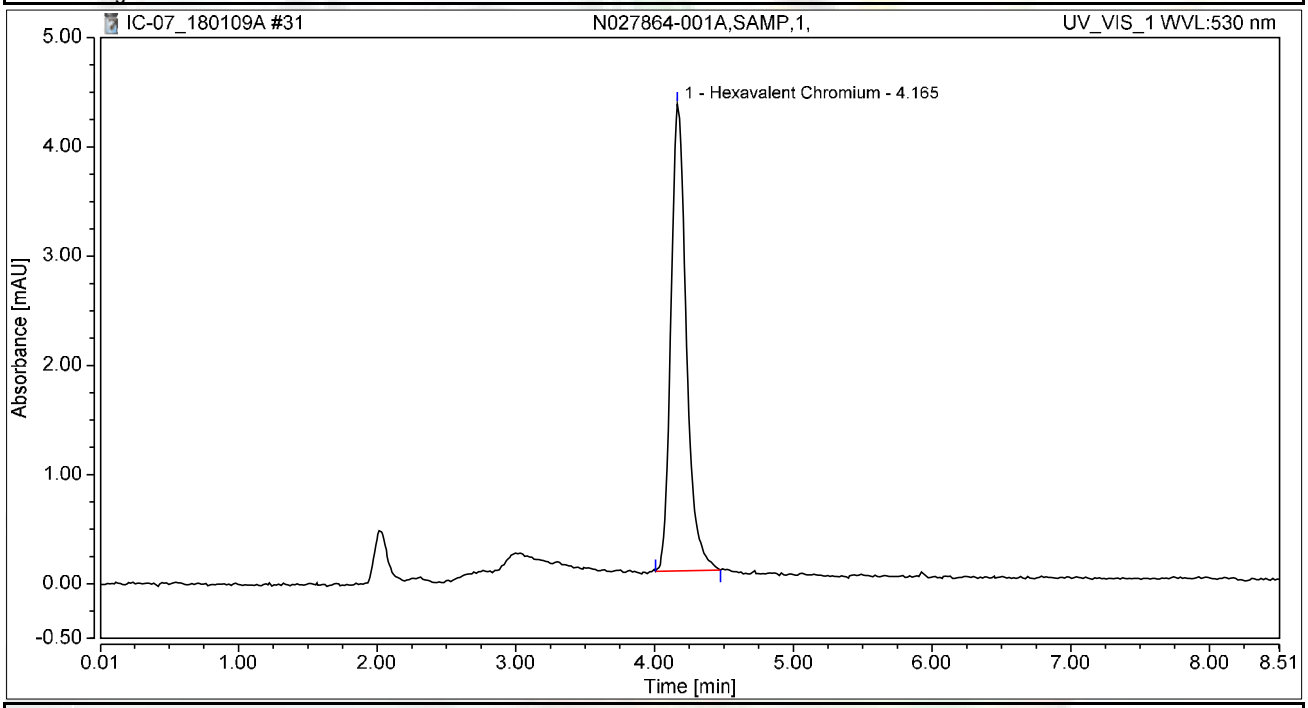
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.269	2.030	100.00	100.00	1.0239
Total:			**0.269**	**2.030**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

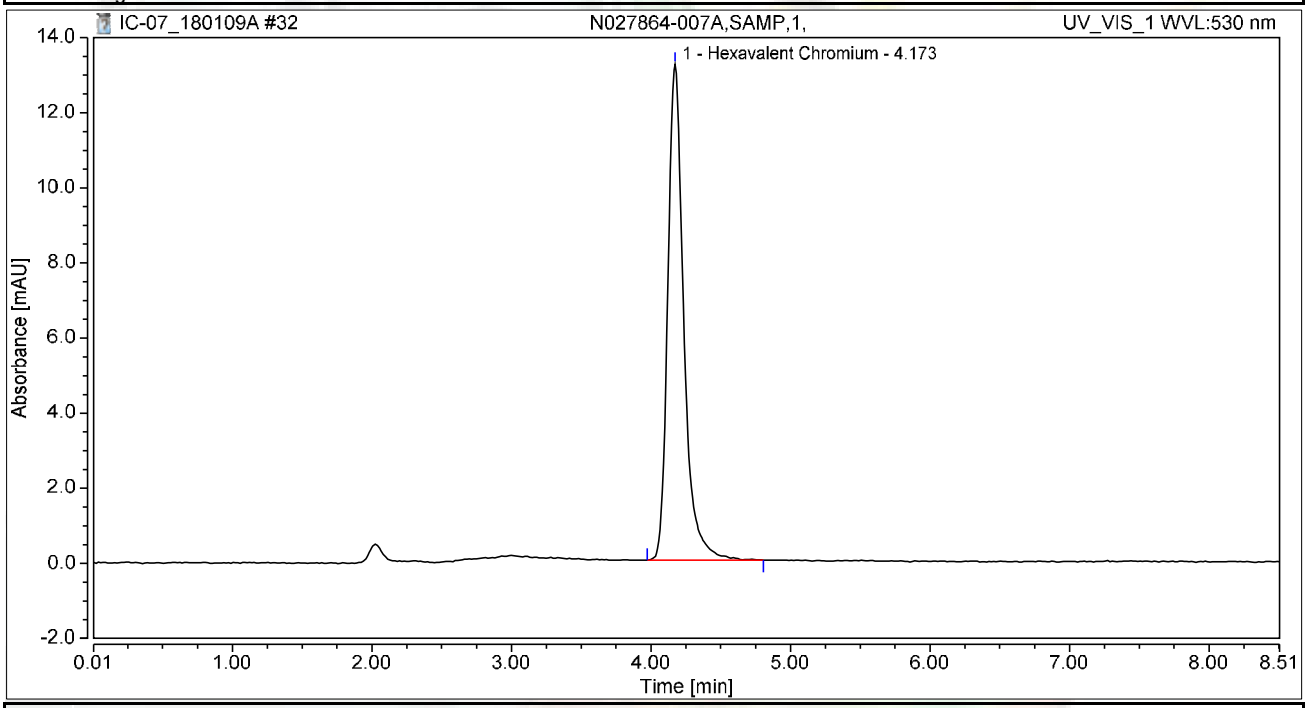
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.553	4.273	100.00	100.00	2.1046
Total:			**0.553**	**4.273**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

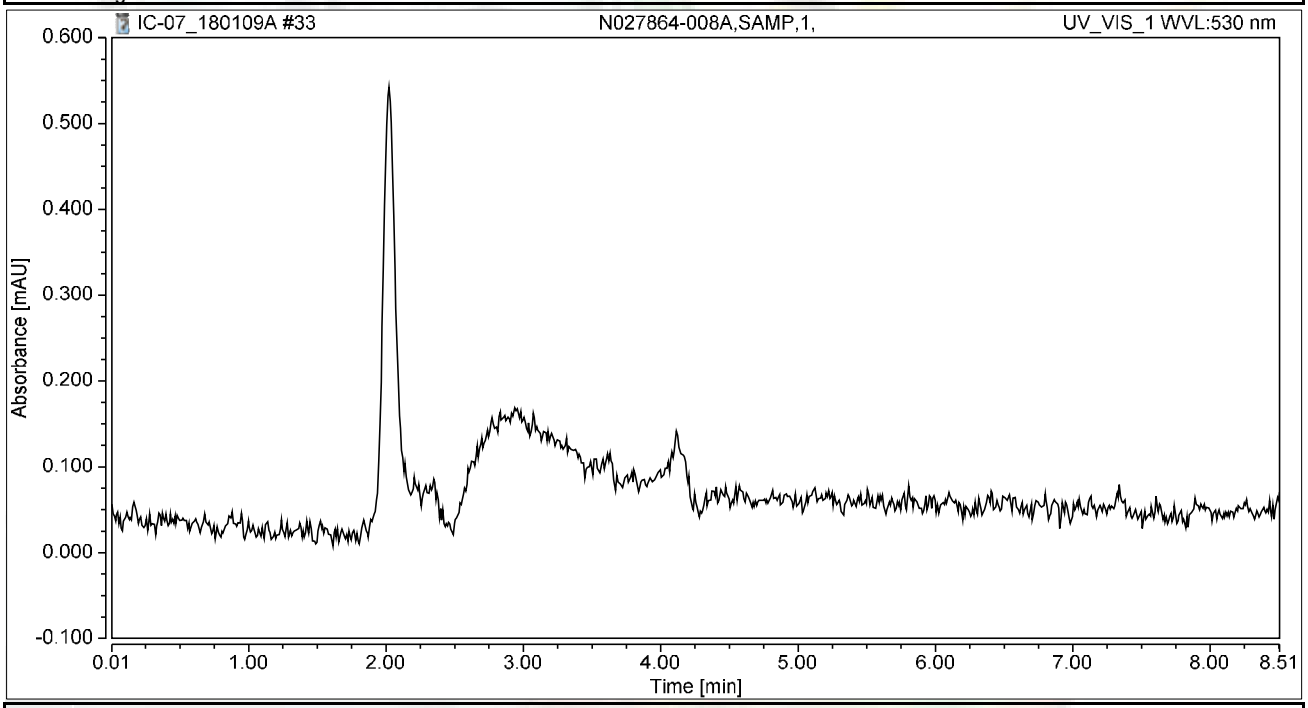
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.759	13.212	100.00	100.00	6.6967
Total:			**1.759**	**13.212**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

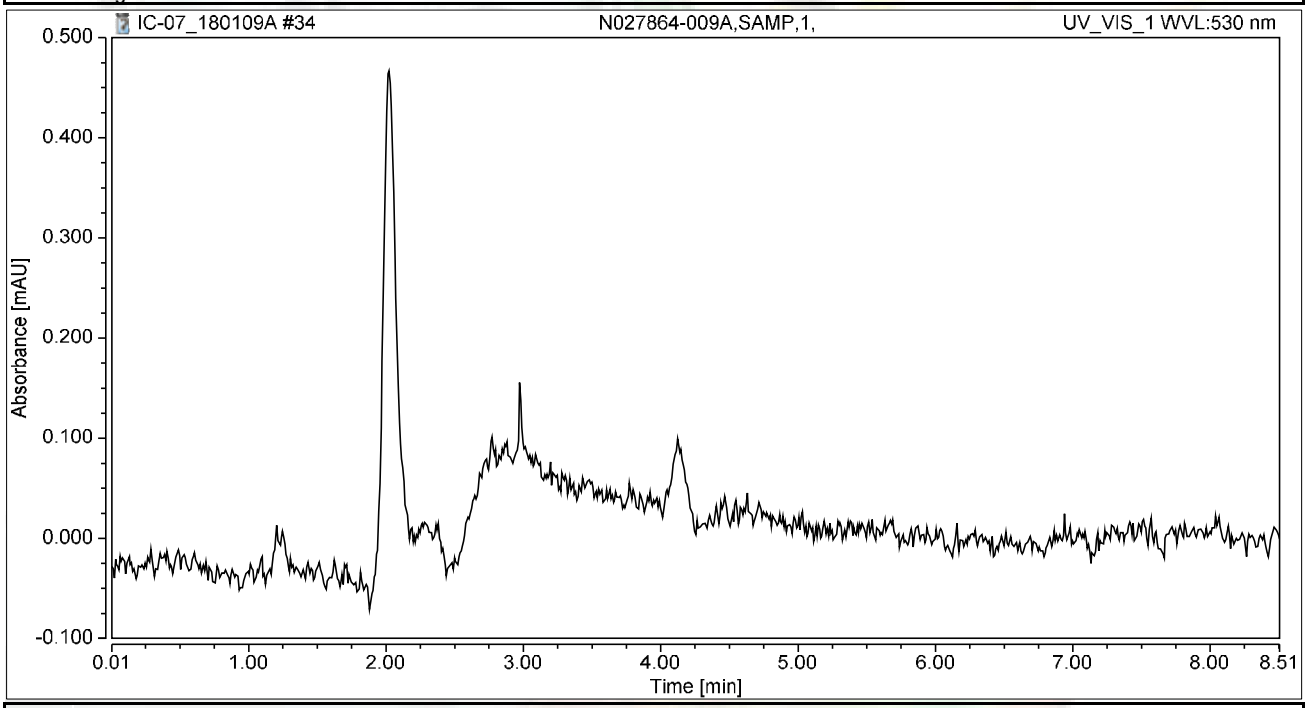
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

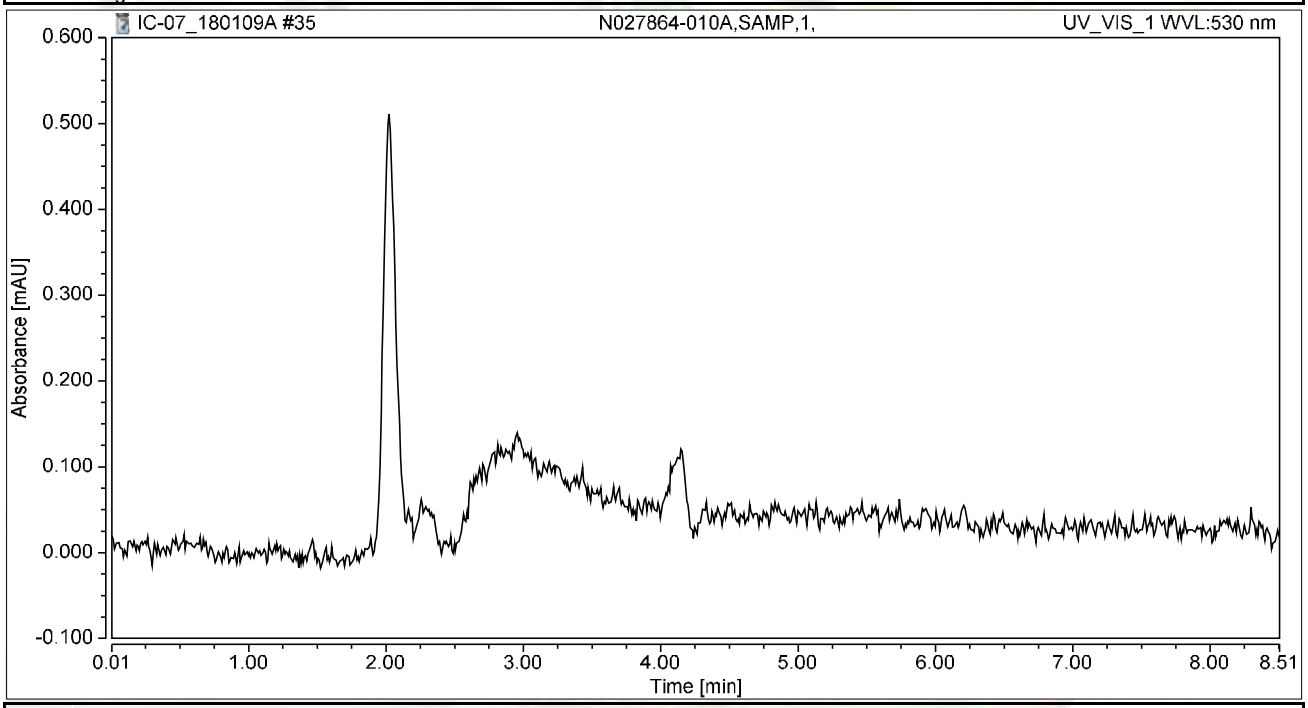
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027864-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

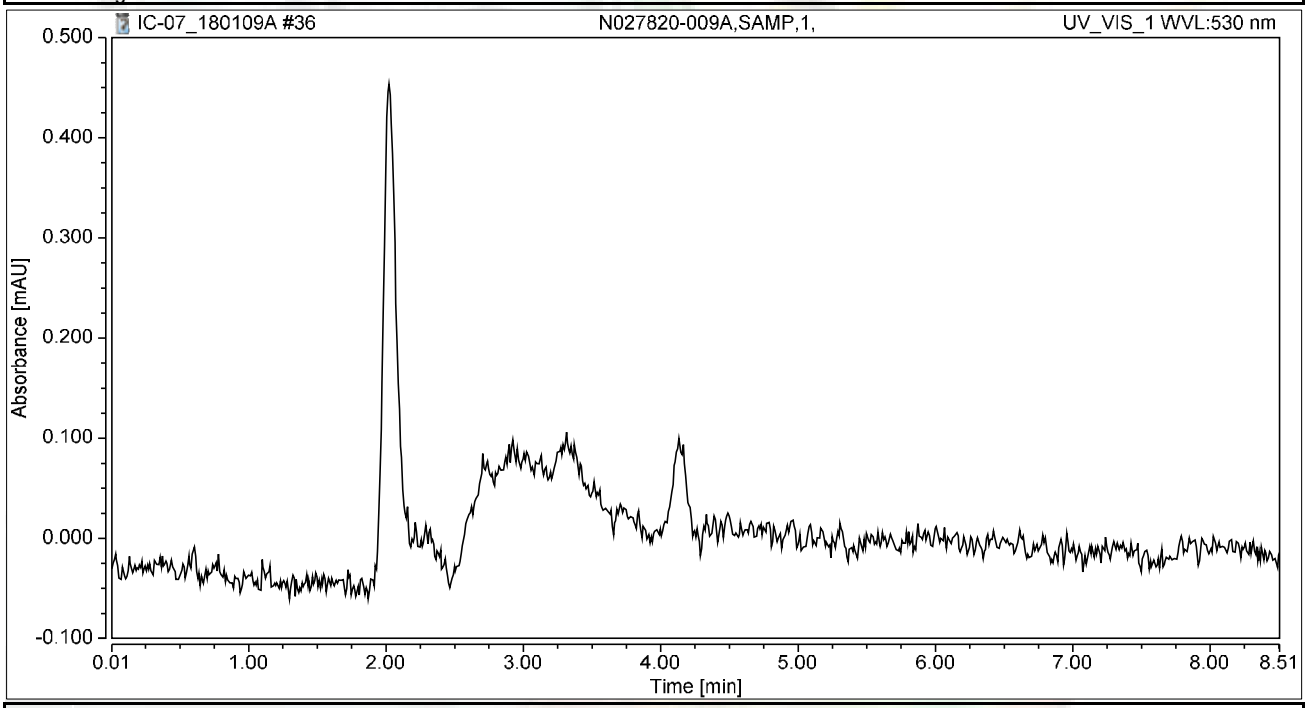
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

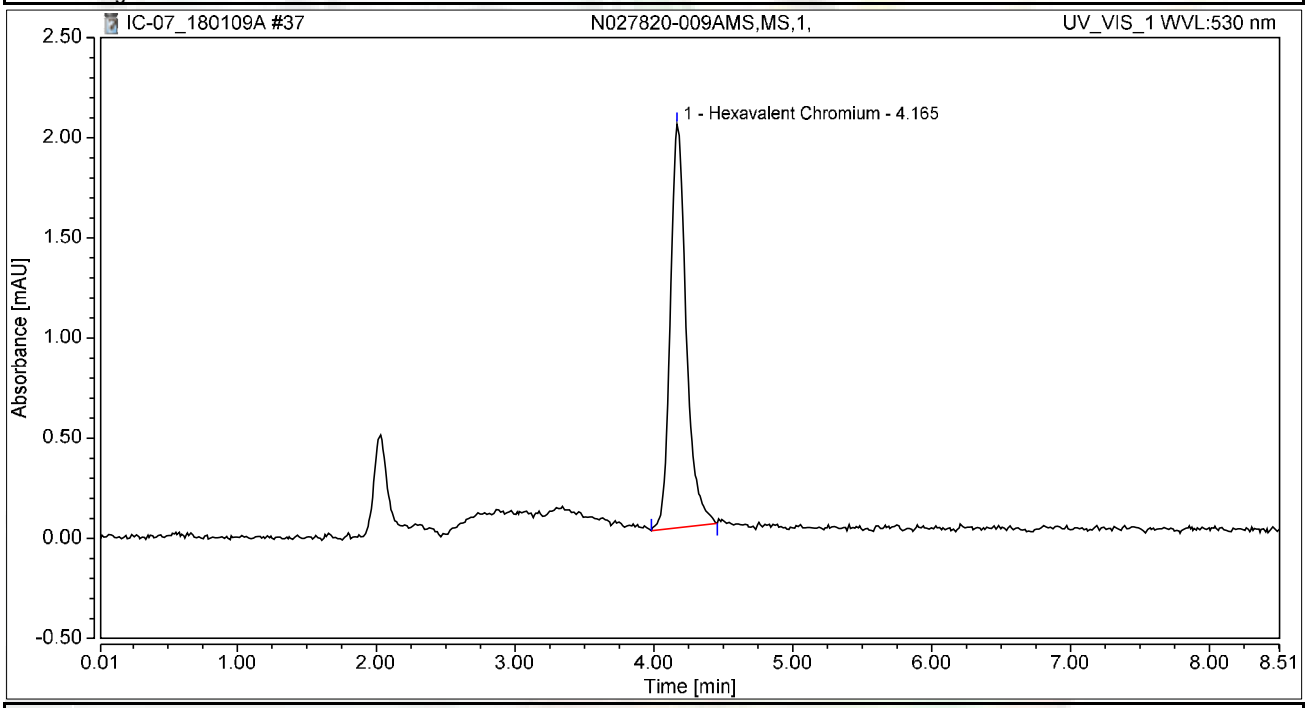
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 14:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

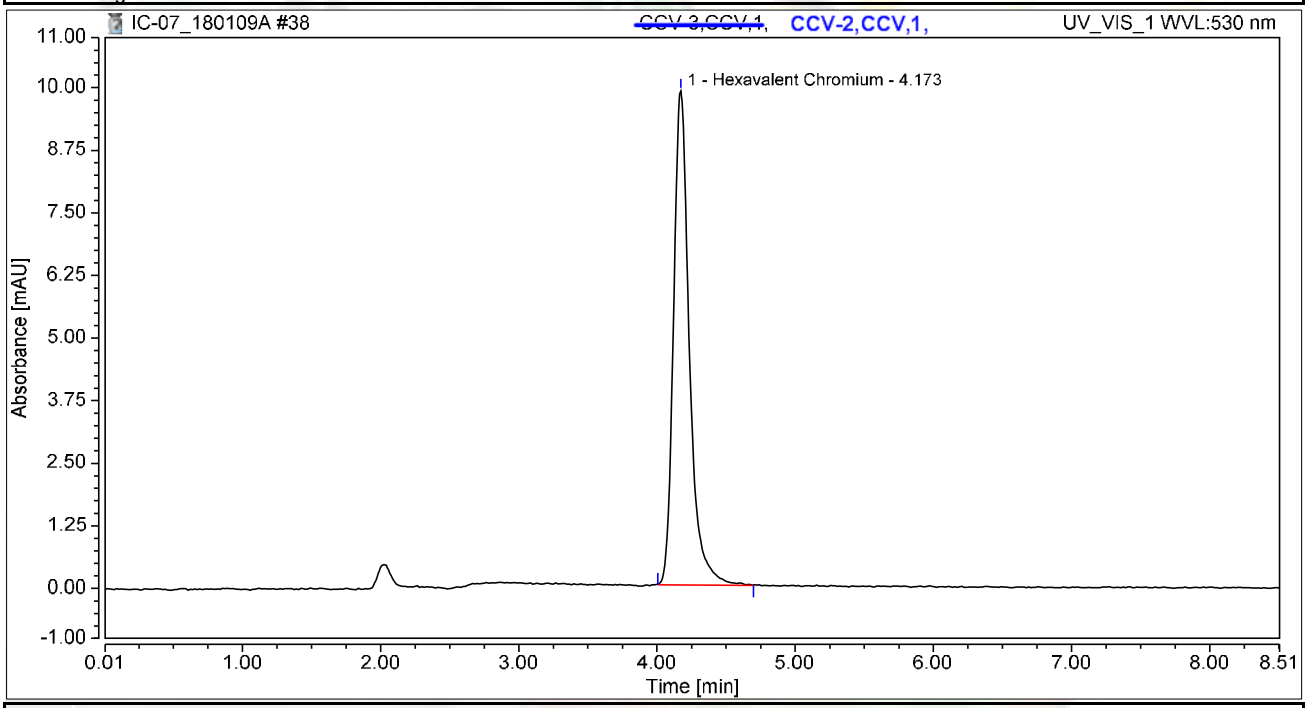
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.269	2.015	100.00	100.00	1.0260
Total:			**0.269**	**2.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	~~CCV-3,CCV,1~~, CCV-2,CCV,1,	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.309	9.865	100.00	100.00	4.9862
Total:			**1.309**	**9.865**	**100.00**	**100.00**	

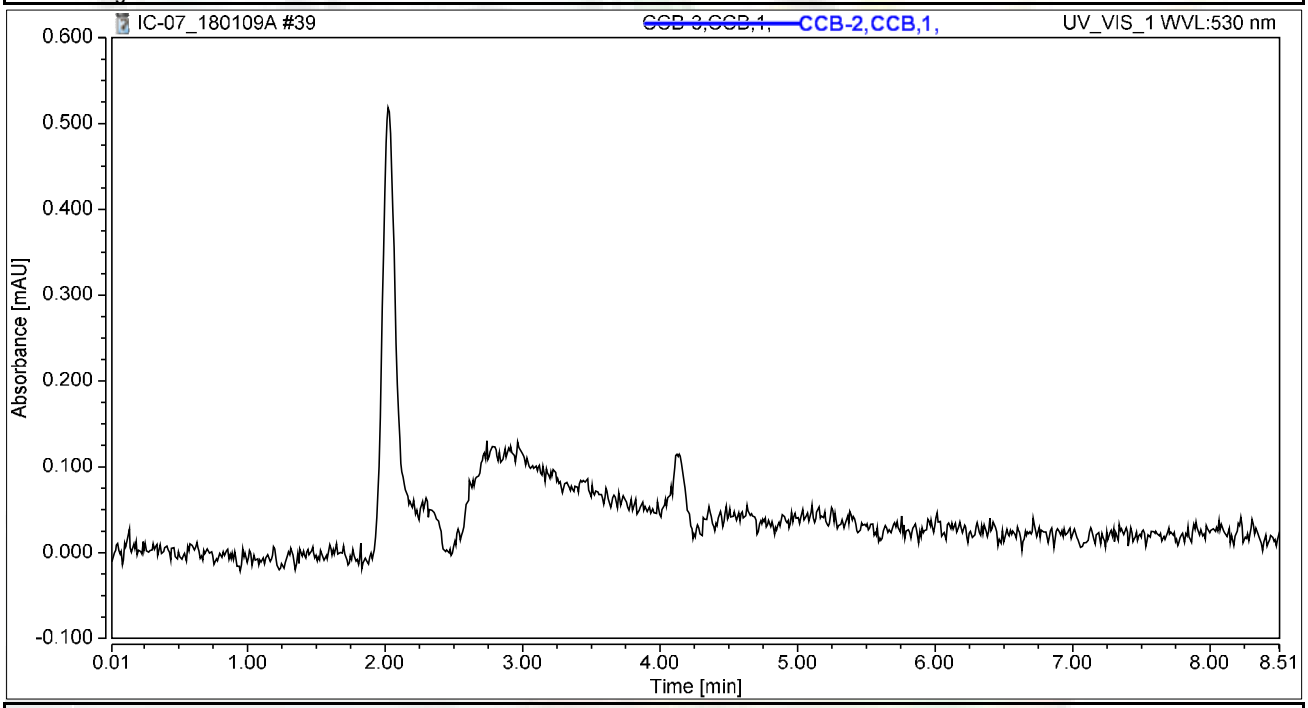
rba 1/10/2018

Chromatogram and Results

Injection Details

Injection Name:	~~CCB-3,CCB,1,~~ CCB-2,CCB,1,	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/Jan/18 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 1/10/2018

RAW DATA

INJECTION LOG: 180110A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 8:57 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	01/09/18 9:07 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	01/09/18 9:17 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:26 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:36 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:45 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 9:55 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:04 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	01/09/18 10:14 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	01/10/18 8:11 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	01/10/18 8:22 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	01/10/18 8:32 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	01/10/18 8:41 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	01/10/18 8:51 AM	Reported
15	MB-R121348	MBLK	1	Hexavalent Chromium	01/10/18 9:00 AM	Reported
16	LCS-R121348	LCS	1	Hexavalent Chromium	01/10/18 9:09 AM	Reported
17	N027820-008A	SAMP	1	Hexavalent Chromium	01/10/18 9:19 AM	Reported
18	N027820-008AMS	MS	1	Hexavalent Chromium	01/10/18 9:28 AM	Reported
19	N027890-001A	SAMP	1	Hexavalent Chromium	01/10/18 9:38 AM	Reported
20	N027890-002A	SAMP	1	Hexavalent Chromium	01/10/18 9:47 AM	Reported
21	N027890-003A	SAMP	1	Hexavalent Chromium	01/10/18 9:57 AM	Reported
22	N027890-004A	SAMP	1	Hexavalent Chromium	01/10/18 10:06 AM	Reported
23	N027890-005A	SAMP	1	Hexavalent Chromium	01/10/18 10:16 AM	Reported
24	N027890-006A	SAMP	1	Hexavalent Chromium	01/10/18 10:25 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	01/10/18 10:35 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	01/10/18 10:44 AM	Reported
27	N027890-007A	SAMP	1	Hexavalent Chromium	01/10/18 10:54 AM	Not Reported
28	N027890-008A	SAMP	1	Hexavalent Chromium	01/10/18 11:03 AM	Not Reported
29	N027890-009A	SAMP	1	Hexavalent Chromium	01/10/18 11:12 AM	Reported
30	N027891-001A	SAMP	1	Hexavalent Chromium	01/10/18 11:22 AM	Reported
31	N027891-002A	SAMP	1	Hexavalent Chromium	01/10/18 11:31 AM	Reported
32	N027891-003A	SAMP	1	Hexavalent Chromium	01/10/18 11:41 AM	Reported
33	N027891-004A	SAMP	1	Hexavalent Chromium	01/10/18 11:50 AM	Reported
34	N027891-005A	SAMP	1	Hexavalent Chromium	01/10/18 12:00 PM	Reported
35	N027891-006A	SAMP	1	Hexavalent Chromium	01/10/18 12:09 PM	Reported
36	N027891-007A	SAMP	1	Hexavalent Chromium	01/10/18 12:19 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	01/10/18 12:28 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	01/10/18 12:38 PM	Reported
39	N027891-008A	SAMP	1	Hexavalent Chromium	01/10/18 12:47 PM	Not Reported
40	N027891-009A	SAMP	1	Hexavalent Chromium	01/10/18 12:57 PM	Reported
41	N027891-010A	SAMP	1	Hexavalent Chromium	01/10/18 1:06 PM	Reported
42	N027891-011A	SAMP	1	Hexavalent Chromium	01/10/18 1:15 PM	Reported

INJECTION LOG: 180110A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N027891-001ADUP	DUP	1	Hexavalent Chromium	01/10/18 1:25 PM	Reported
44	N027890-007A	SAMP	5	Hexavalent Chromium	01/10/18 1:34 PM	Reported
45	N027890-007AMS	MS	5	Hexavalent Chromium	01/10/18 1:44 PM	Reported
46	N027890-007AMSD	MSD	5	Hexavalent Chromium	01/10/18 1:53 PM	Reported
47	N027890-008A	SAMP	5	Hexavalent Chromium	01/10/18 2:03 PM	Reported
48	N027891-008A	SAMP	1	Hexavalent Chromium	01/10/18 2:12 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	01/10/18 2:22 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	01/10/18 2:31 PM	Reported
51	LCS-R121349	LCS	1	Hexavalent Chromium	01/10/18 2:43 PM	Reported
52	MB-R121349	MBLK	1	Hexavalent Chromium	01/10/18 2:54 PM	Reported
53	N027892-004A	SAMP	1	Hexavalent Chromium	01/10/18 3:03 PM	Reported
54	N027892-004AMS	MS	1	Hexavalent Chromium	01/10/18 3:13 PM	Reported
55	N027892-004AMSD	MSD	1	Hexavalent Chromium	01/10/18 3:22 PM	Reported
56	N027892-011A	SAMP	1	Hexavalent Chromium	01/10/18 3:32 PM	Reported
57	N027892-011AMS	MS	1	Hexavalent Chromium	01/10/18 3:41 PM	Reported
58	N027892-007A	SAMP	1	Hexavalent Chromium	01/10/18 3:51 PM	Reported
59	N027892-007ADUP	DUP	1	Hexavalent Chromium	01/10/18 4:00 PM	Reported
60	N027892-001A	SAMP	1	Hexavalent Chromium	01/10/18 4:10 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	01/10/18 4:19 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	01/10/18 4:29 PM	Reported
63	N027892-002A	SAMP	1	Hexavalent Chromium	01/10/18 4:38 PM	Reported
64	N027892-003A	SAMP	1	Hexavalent Chromium	01/10/18 4:47 PM	Reported
65	N027892-005A	SAMP	1	Hexavalent Chromium	01/10/18 4:57 PM	Reported
66	N027892-006A	SAMP	1	Hexavalent Chromium	01/10/18 5:06 PM	Reported
67	N027892-008A	SAMP	1	Hexavalent Chromium	01/10/18 5:16 PM	Reported
68	N027892-009A	SAMP	1	Hexavalent Chromium	01/10/18 5:25 PM	Reported
69	N027892-010A	SAMP	1	Hexavalent Chromium	01/10/18 5:35 PM	Reported
70	N027892-012A	SAMP	1	Hexavalent Chromium	01/10/18 5:44 PM	Reported
71	N027892-013A	SAMP	1	Hexavalent Chromium	01/10/18 5:54 PM	Reported
72	N027892-014A	SAMP	1	Hexavalent Chromium	01/10/18 6:03 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	01/10/18 6:13 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	01/10/18 6:22 PM	Reported
75	MB-R121350	MBLK	1	Hexavalent Chromium	01/10/18 6:32 PM	Reported
76	LCS-R121350	LCS	1	Hexavalent Chromium	01/10/18 6:41 PM	Reported
77	N027916-007A	SAMP	2000	Hexavalent Chromium	01/10/18 6:50 PM	Reported
78	N027916-007AMS	MS	2000	Hexavalent Chromium	01/10/18 7:00 PM	Reported
79	N027916-007AMSD	MSD	2000	Hexavalent Chromium	01/10/18 7:09 PM	Reported
80	N027916-005A	SAMP	2000	Hexavalent Chromium	01/10/18 7:19 PM	Reported
81	N027916-005ADUP	DUP	2000	Hexavalent Chromium	01/10/18 7:28 PM	Reported
82	N027916-001A	SAMP	200	Hexavalent Chromium	01/10/18 7:38 PM	Reported
83	N027916-002A	SAMP	200	Hexavalent Chromium	01/10/18 7:47 PM	Reported
84	N027916-003A	SAMP	200	Hexavalent Chromium	01/10/18 7:57 PM	Reported

INJECTION LOG: 180110A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	01/10/18 8:06 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	01/10/18 8:16 PM	Reported
87	N027916-004A	SAMP	500	Hexavalent Chromium	01/10/18 8:25 PM	Reported
88	N027916-006A	SAMP	2000	Hexavalent Chromium	01/10/18 8:35 PM	Reported
89	N027916-008A	SAMP	1	Hexavalent Chromium	01/10/18 8:44 PM	Reported
90	N027916-009A	SAMP	2000	Hexavalent Chromium	01/10/18 8:54 PM	Reported
91	N027902-001A	SAMP	10	Hexavalent Chromium	01/10/18 9:03 PM	Not Reported
92	N027902-001A	SAMP	5	Hexavalent Chromium	01/10/18 9:12 PM	Not Reported
93	N027902-001A	SAMP	1	Hexavalent Chromium	01/10/18 9:22 PM	Not Reported
94	BLANK	BLANK	1	Hexavalent Chromium	01/10/18 9:32 PM	Not Reported
95	CCV-8	CCV1	1	Hexavalent Chromium	01/10/18 9:41 PM	Reported
96	CCB-8	CCB	1	Hexavalent Chromium	01/10/18 9:50 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180110A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**10/Jan/18 22:21:08**
No. of Injections:	**99**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		01/09/2018 08:57	Finished	BLANK
2	BLANK	2	1000	Unknown		01/09/2018 09:07	Finished	BLANK
3	iBLANK	3	1000	Unknown		01/09/2018 09:17	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	01/09/2018 09:26	Finished	0.2 ppb, IWST-171002A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	01/09/2018 09:36	Finished	1.0 ppb, IWST-171002A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	01/09/2018 09:45	Finished	5.0 ppb, IWST-171002A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	01/09/2018 09:55	Finished	10 ppb, IWST-171002A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	01/09/2018 10:04	Finished	15 ppb, IWST-171002A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	01/09/2018 10:14	Finished	20 ppb, IWST-171002A
10	BLANK	1	1000	Unknown		01/10/2018 08:11	Finished	20 ppb, IWST-171002A
11	BLANK	2	1000	Unknown		01/10/2018 08:22	Finished	20 ppb, IWST-171002A
12	CCV-1,CCV,1,	3	1000	Unknown		01/10/2018 08:32	Finished	CCV @5ppb, IWST-171002A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		01/10/2018 08:41	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		01/10/2018 08:51	Finished	CCB R180102C
15	MB-H2O,MBLK,1,	6	1000	Unknown		01/10/2018 09:00	Finished	MB R180102C
16	LCS-H2O,LCS,1,	7	1000	Unknown		01/10/2018 09:09	Finished	LCS, IWST-171002B
17	N027820-008A,SAMF	8	1000	Unknown		01/10/2018 09:19	Finished	SAMP,10mL
18	N027820-008AMS,MS	9	1000	Unknown		01/10/2018 09:28	Finished	MS (1ppb), IWST-171002B,10
19	N027890-001A,SAMF	10	1000	Unknown		01/10/2018 09:38	Finished	SAMP,10mL
20	N027890-002A,SAMF	11	1000	Unknown		01/10/2018 09:47	Finished	SAMP,10mL
21	N027890-003A,SAMF	12	1000	Unknown		01/10/2018 09:57	Finished	SAMP,10mL
22	N027890-004A,SAMF	13	1000	Unknown		01/10/2018 10:06	Finished	SAMP,10mL
23	N027890-005A,SAMF	14	1000	Unknown		01/10/2018 10:16	Finished	SAMP,10mL
24	N027890-006A,SAMF	15	1000	Unknown		01/10/2018 10:25	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		01/10/2018 10:35	Finished	CCV @10ppb, IWST-171002A
26	CCB-2,CCB,1,	17	1000	Unknown		01/10/2018 10:44	Finished	CCB R180102C
27	N027890-007A,SAMF	18	1000	Unknown		01/10/2018 10:54	Finished	SAMP,10mL
28	N027890-008A,SAMF	19	1000	Unknown		01/10/2018 11:03	Finished	SAMP,10mL
29	N027890-009A,SAMF	20	1000	Unknown		01/10/2018 11:12	Finished	SAMP,10mL
30	N027891-001A,SAMF	21	1000	Unknown		01/10/2018 11:22	Finished	SAMP,10mL
31	N027891-002A,SAMF	22	1000	Unknown		01/10/2018 11:31	Finished	SAMP,10mL
32	N027891-003A,SAMF	23	1000	Unknown		01/10/2018 11:41	Finished	SAMP,10mL
33	N027891-004A,SAMF	24	1000	Unknown		01/10/2018 11:50	Finished	SAMP,10mL
34	N027891-005A,SAMF	25	1000	Unknown		01/10/2018 12:00	Finished	SAMP,10mL
35	N027891-006A,SAMF	26	1000	Unknown		01/10/2018 12:09	Finished	SAMP,10mL
36	N027891-007A,SAMF	27	1000	Unknown		01/10/2018 12:19	Finished	SAMP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		01/10/2018 12:28	Finished	CCV @5ppb, IWST-171002A
38	CCB-3,CCB,1,	29	1000	Unknown		01/10/2018 12:38	Finished	CCB R180102C
39	N027891-008A,SAMF	30	1000	Unknown		01/10/2018 12:47	Finished	SAMP,10mL
40	N027891-009A,SAMF	31	1000	Unknown		01/10/2018 12:57	Finished	SAMP,10mL
41	N027891-010A,SAMF	32	1000	Unknown		01/10/2018 13:06	Finished	SAMP,10mL
42	N027891-011A,SAMF	33	1000	Unknown		01/10/2018 13:15	Finished	SAMP,10mL
43	N027891-001ADUP,D	34	1000	Unknown		01/10/2018 13:25	Finished	DUP,10mL
44	N027890-007A,SAMF	35	1000	Unknown		01/10/2018 13:34	Finished	SAMP,2>10mL
45	N027890-007AMS,MS	36	1000	Unknown		01/10/2018 13:44	Finished	MS (5ppb), IWST-171002B,2>1
46	N027890-007AMSD,M	37	1000	Unknown		01/10/2018 13:53	Finished	MSD (5ppb), IWST-171002B,2>
47	N027890-008A,SAMF	38	1000	Unknown		01/10/2018 14:03	Finished	SAMP,2>10mL
48	N027891-008A,SAMF	39	1000	Unknown		01/10/2018 14:12	Finished	SAMP,10mL
49	CCV-4,CCV1,1,	40	1000	Unknown		01/10/2018 14:22	Finished	CCV @10ppb, IWST-171002A
50	CCB-4,CCB,1,	41	1000	Unknown		01/10/2018 14:31	Finished	CCB R180102C
51	LCS-2,LCS,1,	1	1000	Unknown		01/10/2018 14:43	Finished	LCS, IWST-171002B
52	MB-2,MBLK,1,	2	1000	Unknown		01/10/2018 14:54	Finished	MB R180102C
53	N027892-004A,SAMF	3	1000	Unknown		01/10/2018 15:03	Finished	SAMP,10mL
54	N027892-004AMS,MS	4	1000	Unknown		01/10/2018 15:13	Finished	MS (5ppb), IWST-171002B,10
55	N027892-004AMSD,M	5	1000	Unknown		01/10/2018 15:22	Finished	MSD (5ppb), IWST-171002B,10
56	N027892-011A,SAMF	6	1000	Unknown		01/10/2018 15:32	Finished	SAMP,10mL
57	N027892-011AMS,MS	7	1000	Unknown		01/10/2018 15:41	Finished	MS (5ppb), IWST-171002B,10
58	N027892-007A,SAMF	8	1000	Unknown		01/10/2018 15:51	Finished	SAMP,10mL
59	N027892-007ADUP,D	9	1000	Unknown		01/10/2018 16:00	Finished	DUP,10mL
60	N027892-001A,SAMF	10	1000	Unknown		01/10/2018 16:10	Finished	SAMP,10mL

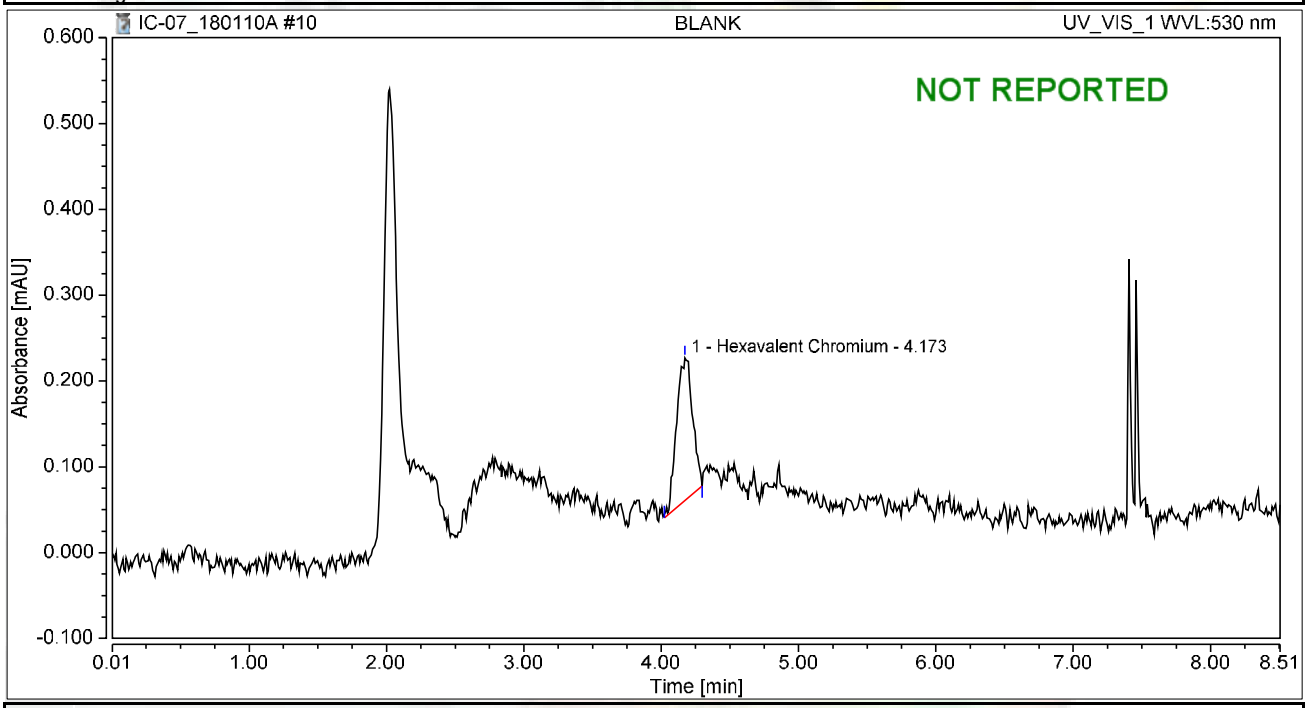
61	CCV-5,CCV,1,	11	1000	Unknown		01/10/2018 16:19	Finished	CCV @5ppb, IWST-171002A
62	CCB-5,CCB,1,	12	1000	Unknown		01/10/2018 16:29	Finished	CCB R180102C
63	N027892-002A,SAMP	13	1000	Unknown		01/10/2018 16:38	Finished	SAMP,10mL
64	N027892-003A,SAMP	14	1000	Unknown		01/10/2018 16:47	Finished	SAMP,10mL
65	N027892-005A,SAMP	15	1000	Unknown		01/10/2018 16:57	Finished	SAMP,10mL
66	N027892-006A,SAMP	16	1000	Unknown		01/10/2018 17:06	Finished	SAMP,10mL
67	N027892-008A,SAMP	17	1000	Unknown		01/10/2018 17:16	Finished	SAMP,10mL
68	N027892-009A,SAMP	18	1000	Unknown		01/10/2018 17:25	Finished	SAMP,10mL
69	N027892-010A,SAMP	19	1000	Unknown		01/10/2018 17:35	Finished	SAMP,10mL
70	N027892-012A,SAMP	20	1000	Unknown		01/10/2018 17:44	Finished	SAMP,10mL
71	N027892-013A,SAMP	21	1000	Unknown		01/10/2018 17:54	Finished	SAMP,10mL
72	N027892-014A,SAMP	22	1000	Unknown		01/10/2018 18:03	Finished	SAMP,10mL
73	CCV-6,CCV1,1,	23	1000	Unknown		01/10/2018 18:13	Finished	CCV @10ppb, IWST-171002A
74	CCB-6,CCB,1,	24	1000	Unknown		01/10/2018 18:22	Finished	CCB R180102C
75	MB-3,MBLK,1,	25	1000	Unknown		01/10/2018 18:32	Finished	CCB R180102C
76	LCS-3,LCS,1,	26	1000	Unknown		01/10/2018 18:41	Finished	CCB R180102C
77	N027916-007A,SAMP	27	1000	Unknown		01/10/2018 18:50	Finished	SAMP,0.005>10mL
78	N027916-007AMS,MS	28	1000	Unknown		01/10/2018 19:00	Finished	MS (5ppb), IWST-171002B,0.0
79	N027916-007AMSD,M	29	1000	Unknown		01/10/2018 19:09	Finished	MSD (5ppb), IWST-171002B,0.
80	N027916-005A,SAMP	30	1000	Unknown		01/10/2018 19:19	Finished	SAMP,0.005>10mL
81	N027916-005ADUP,D	31	1000	Unknown		01/10/2018 19:28	Finished	DUP,0.005>10mL
82	N027916-001A,SAMP	32	1000	Unknown		01/10/2018 19:38	Finished	SAMP,0.05>10mL
83	N027916-002A,SAMP	33	1000	Unknown		01/10/2018 19:47	Finished	SAMP,0.05>10mL
84	N027916-003A,SAMP	34	1000	Unknown		01/10/2018 19:57	Finished	SAMP,0.05>10mL
85	CCV-7,CCV,1,	35	1000	Unknown		01/10/2018 20:06	Finished	CCV @5ppb, IWST-171002A
86	CCB-7,CCB,1,	36	1000	Unknown		01/10/2018 20:16	Finished	CCB R180102C
87	N027916-004A,SAMP	37	1000	Unknown		01/10/2018 20:25	Finished	SAMP,0.02>10mL
88	N027916-006A,SAMP	38	1000	Unknown		01/10/2018 20:35	Finished	SAMP,0.005>10mL
89	N027916-008A,SAMP	39	1000	Unknown		01/10/2018 20:44	Finished	CCB R180102C
90	N027916-009A,SAMP	40	1000	Unknown		01/10/2018 20:54	Finished	SAMP,0.005>10mL
91	N027902-001A,SAMP	41	1000	Unknown		01/10/2018 21:03	Finished	SAMP,1>10mL
92	N027902-001A,SAMP	42	1000	Unknown		01/10/2018 21:12	Finished	SAMP,2>10mL
93	N027902-001A,SAMP	43	1000	Unknown		01/10/2018 21:22	Finished	SAMP,10mL
94	BLANK	44	1000	Unknown		01/10/2018 21:32	Finished	BLANK
95	CCV-8,CCV1,1,	45	1000	Unknown		01/10/2018 21:41	Finished	CCV @10ppb, IWST-171002A
96	CCB-8,CCB,1,	46	1000	Unknown		01/10/2018 21:50	Finished	CCB R180102C
97	SHUTDOWN	47	1000	Unknown		01/10/2018 22:00	Finished	
98	Eluent: R180109C	48	1000	Unknown		n.a.	Finished	Eluent
99	PCR: R180109A	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 08:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

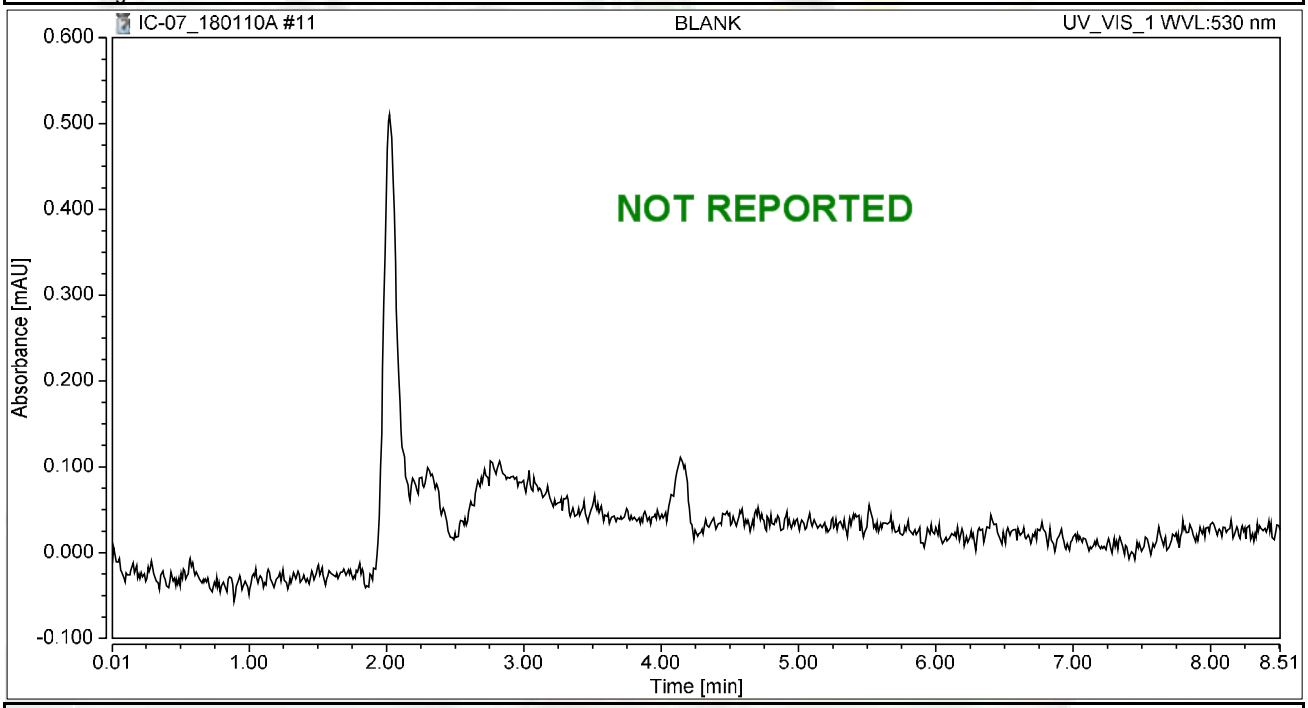
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.023	0.166	100.00	100.00	0.0859
Total:			**0.023**	**0.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 08:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

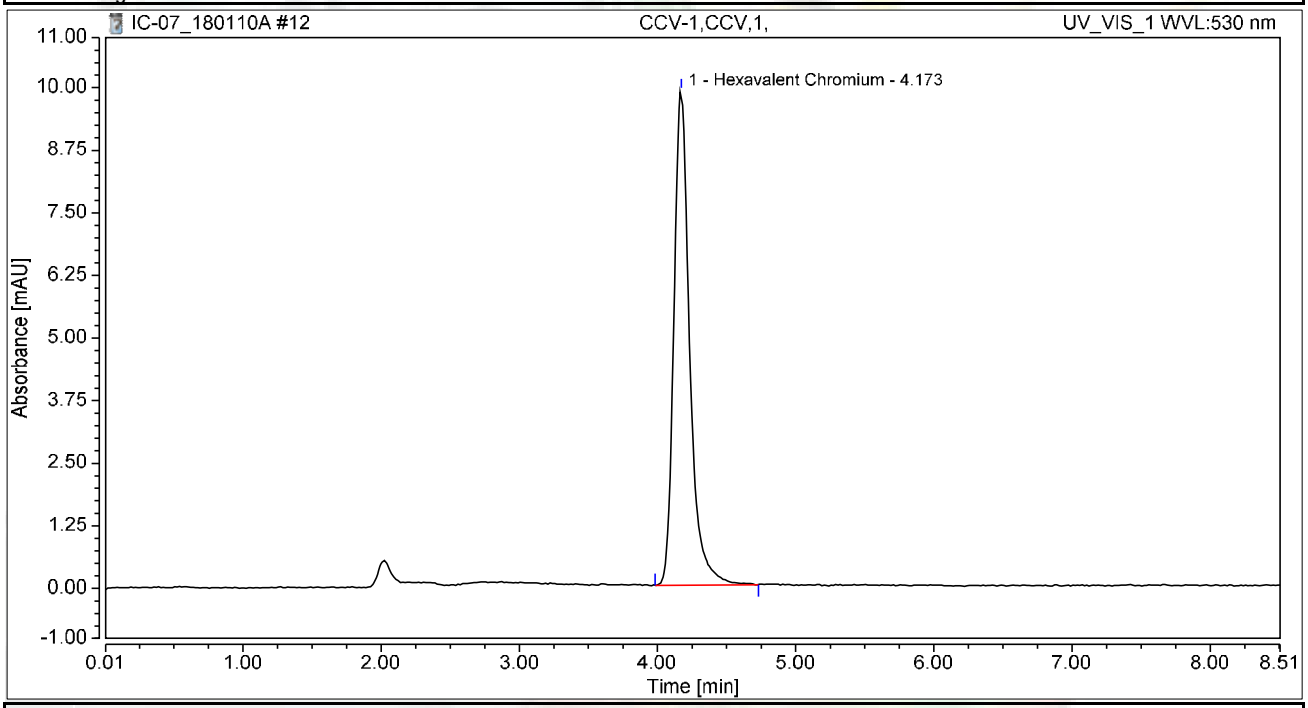
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 08:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

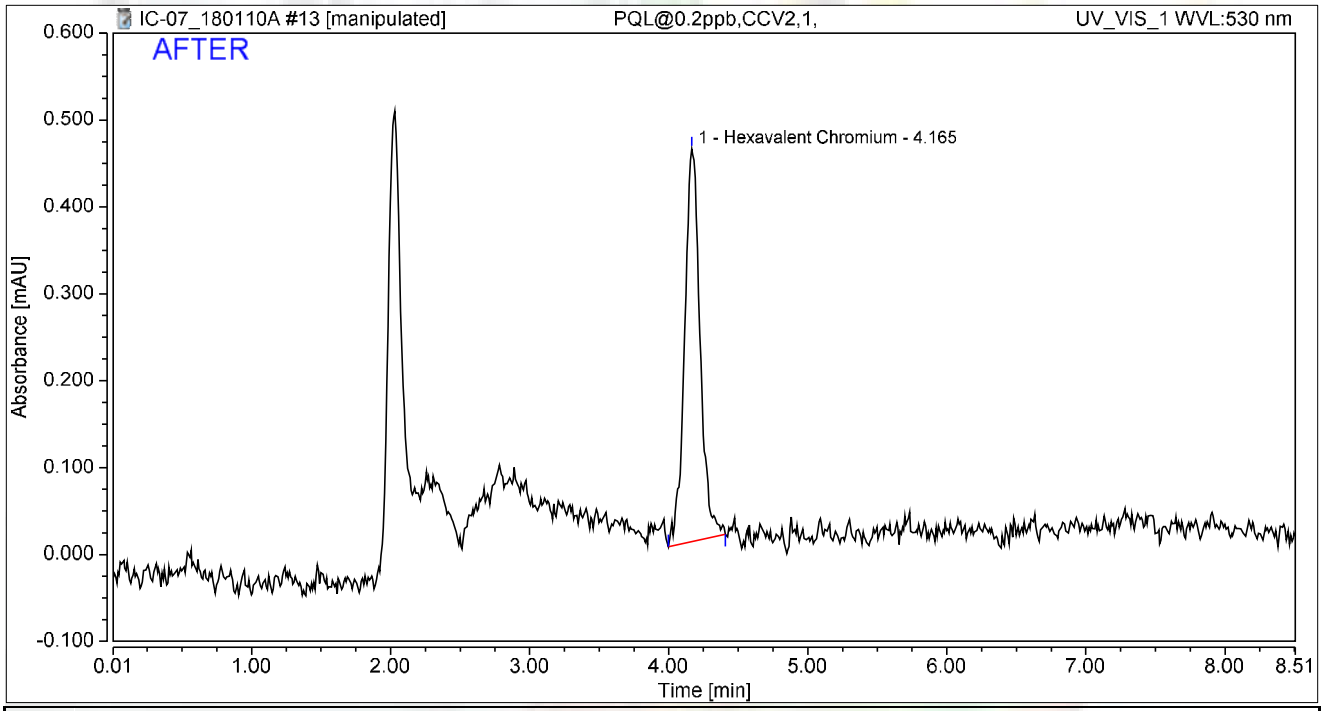
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.312	9.870	100.00	100.00	4.9965
Total:			**1.312**	**9.870**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 08:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.452	100.00	100.00	0.2219
Total:			**0.058**	**0.452**	**100.00**	**100.00**	

rba 1/12/2018

Reviewed by: Nancy 01/12/2018

My first report/Integration

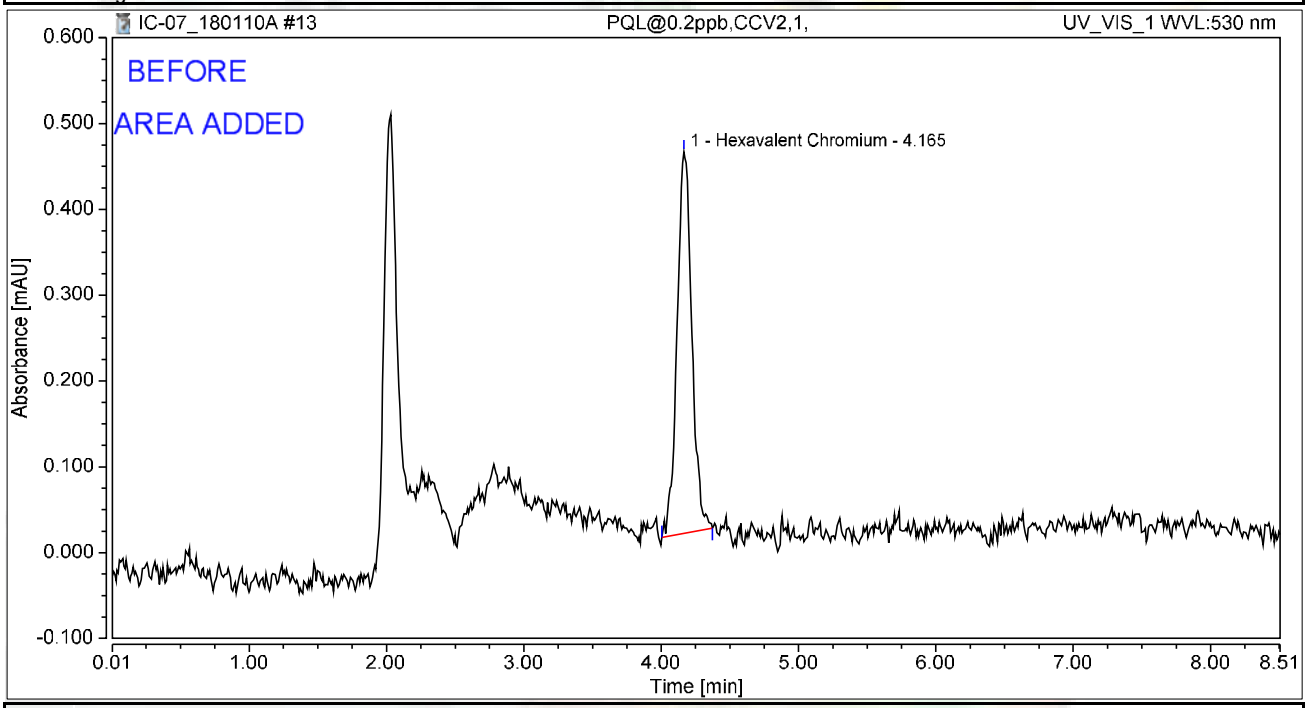
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 08:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.055	0.445	100.00	100.00	0.2105
Total:			**0.055**	**0.445**	**100.00**	**100.00**	

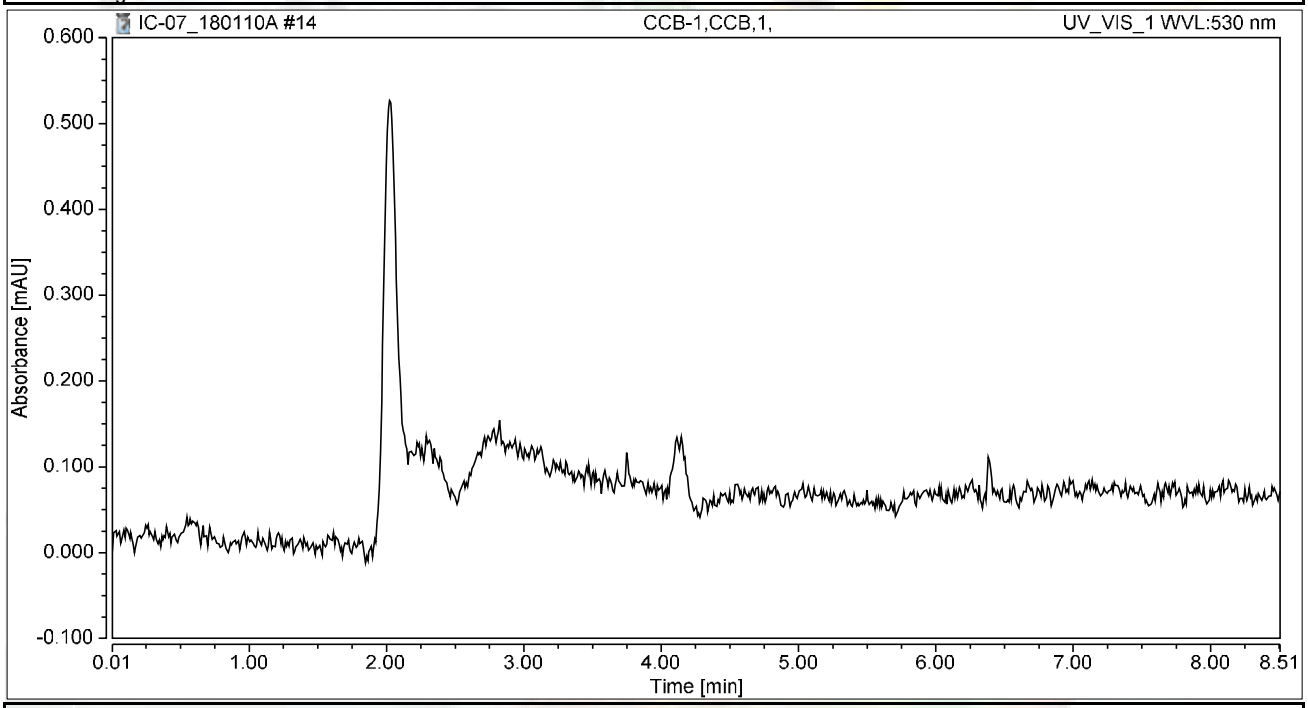
rba 1/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

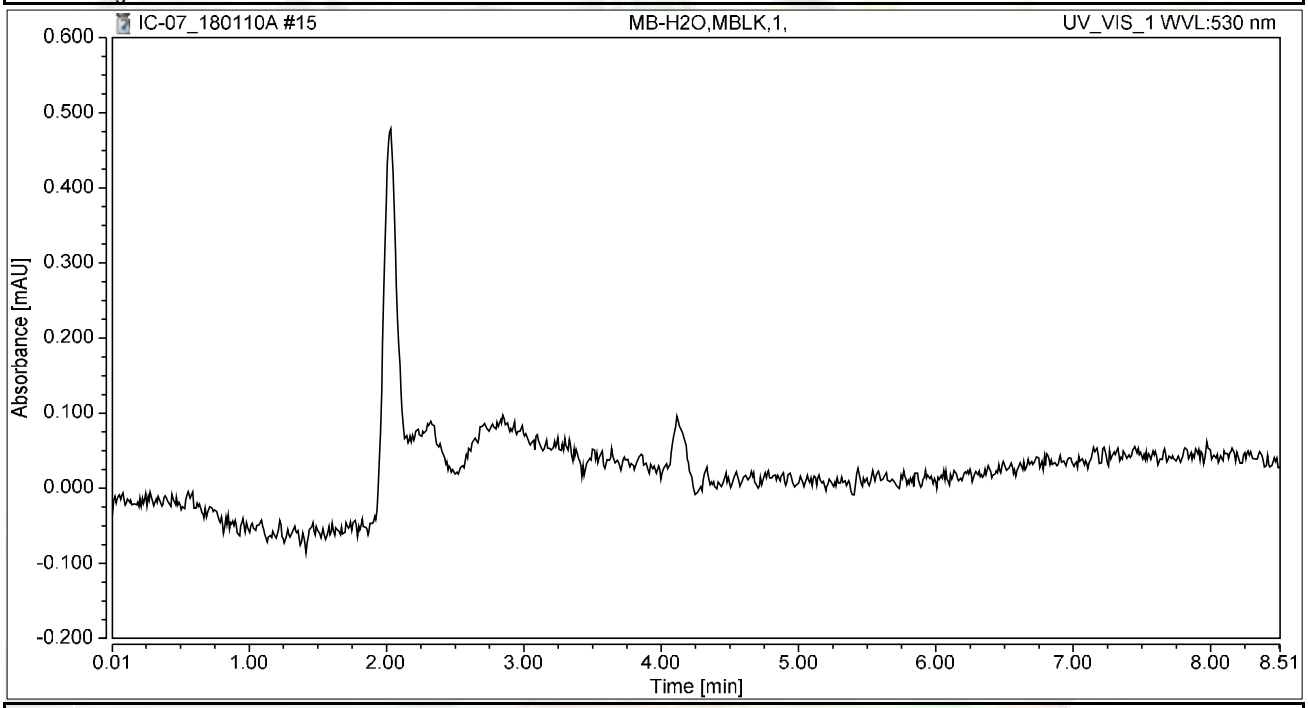
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

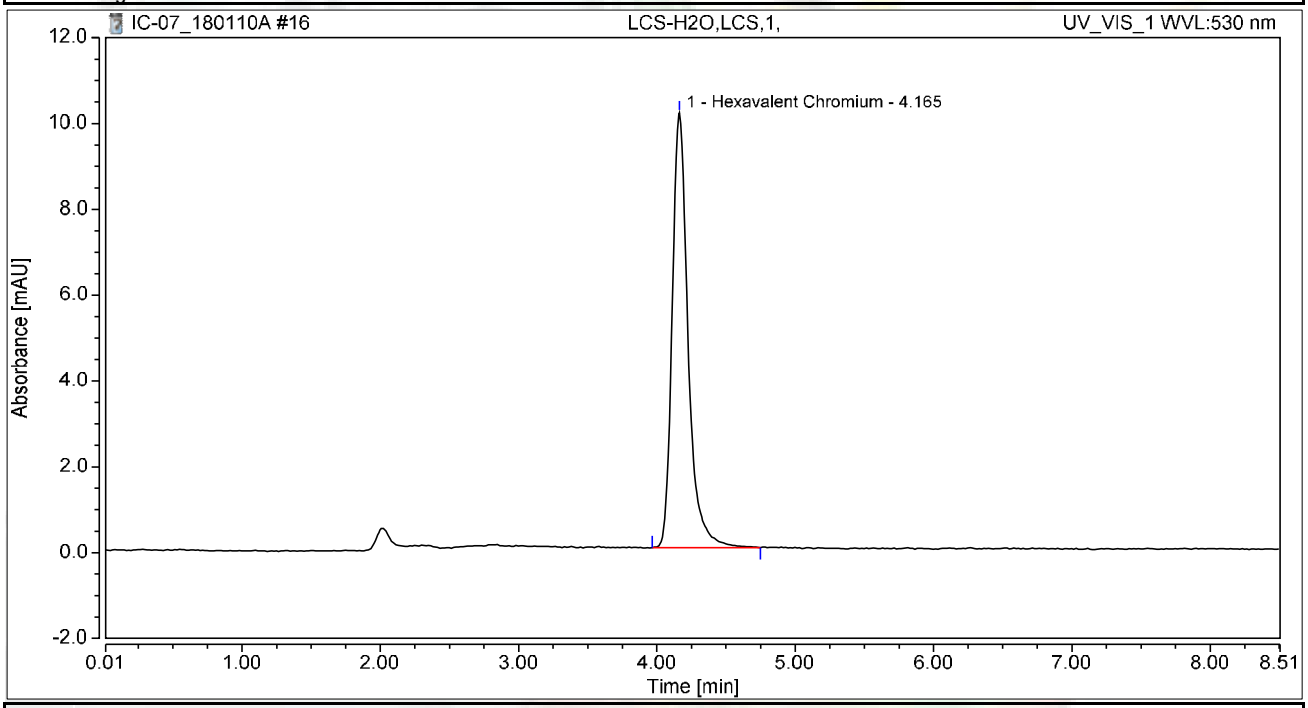
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

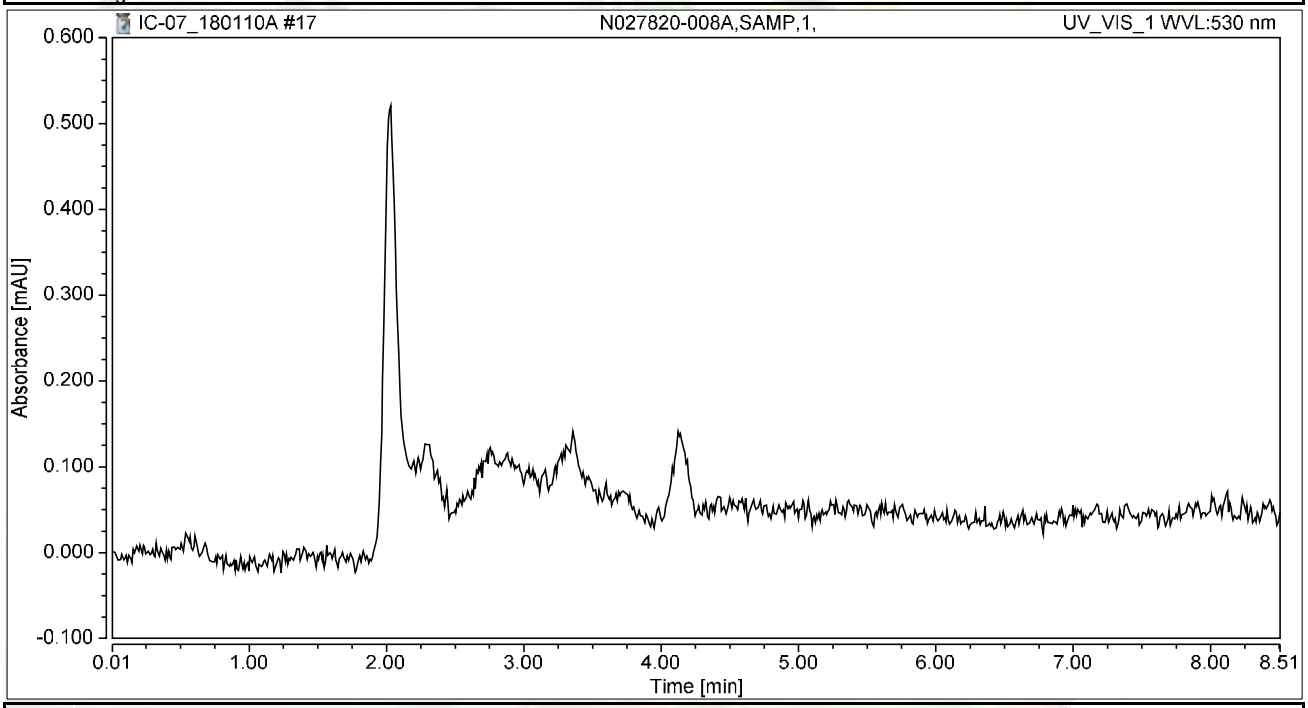
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.348	10.133	100.00	100.00	5.1348
Total:			**1.348**	**10.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

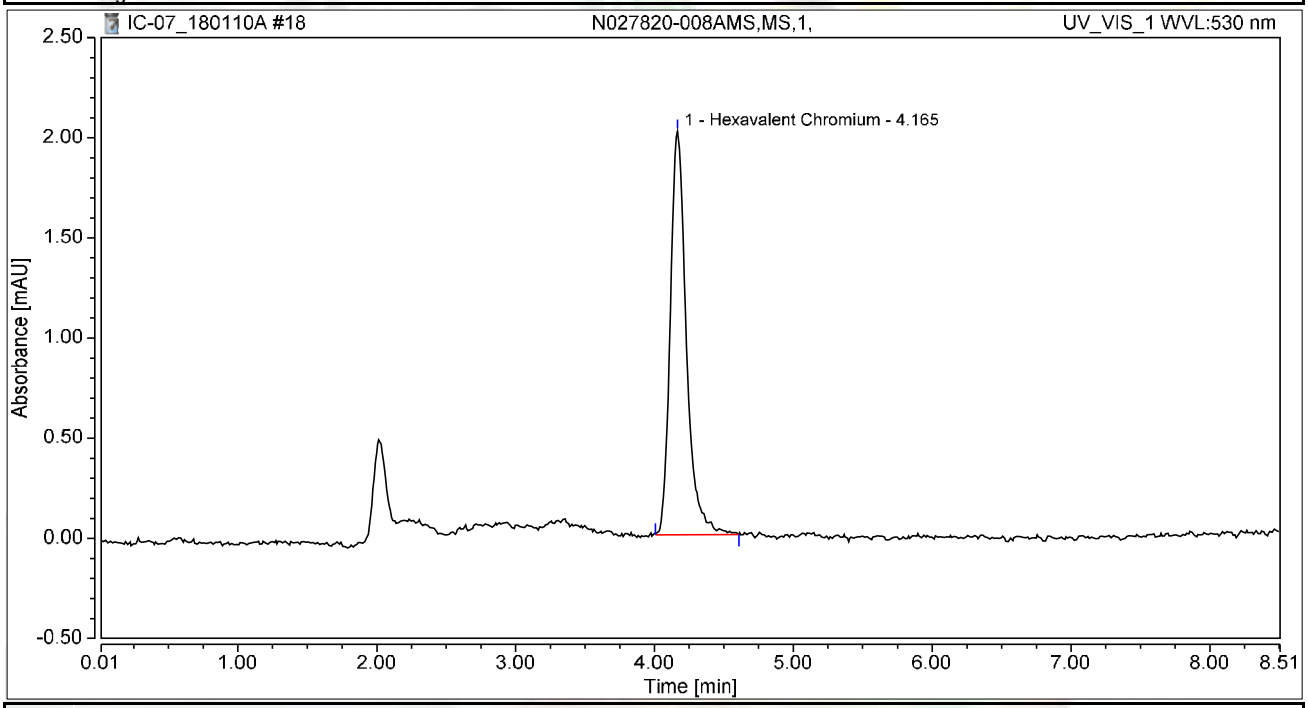
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027820-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

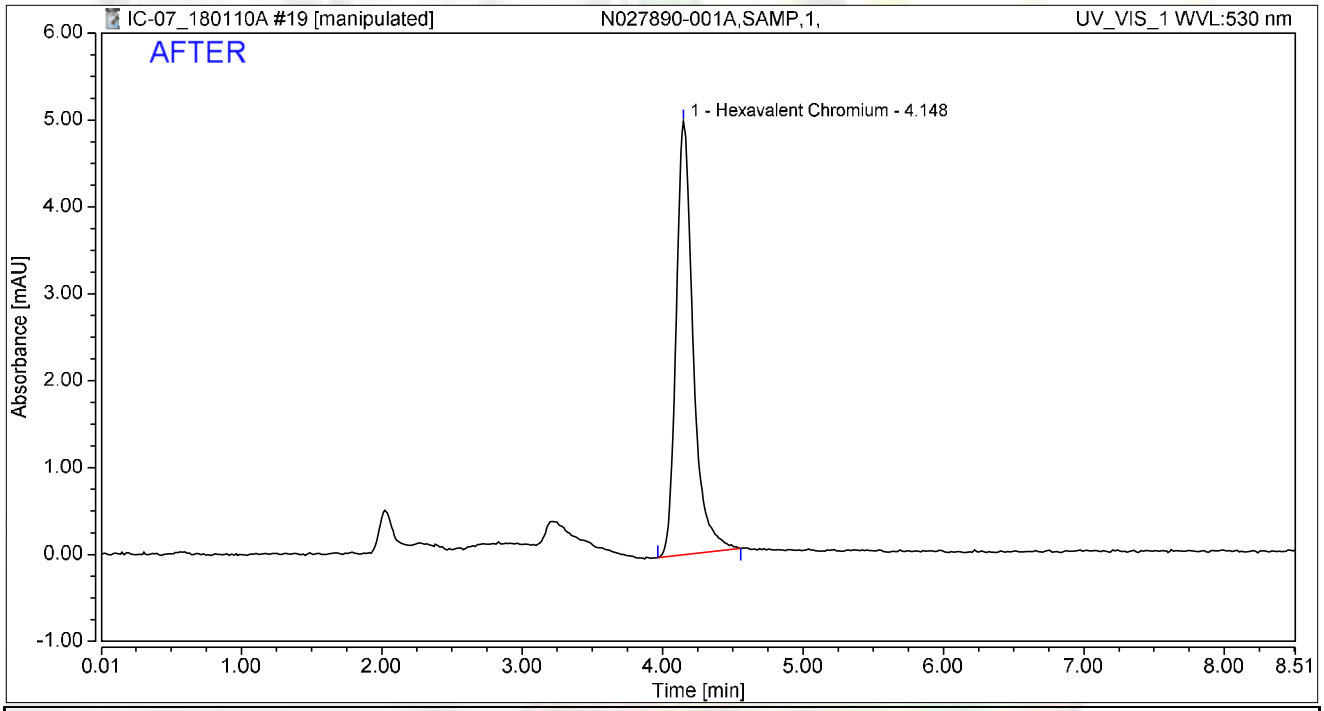
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.272	2.015	100.00	100.00	1.0349
Total:			**0.272**	**2.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.700	4.986	100.00	100.00	2.6670
Total:			**0.700**	**4.986**	**100.00**	**100.00**	

rba 1/12/2018

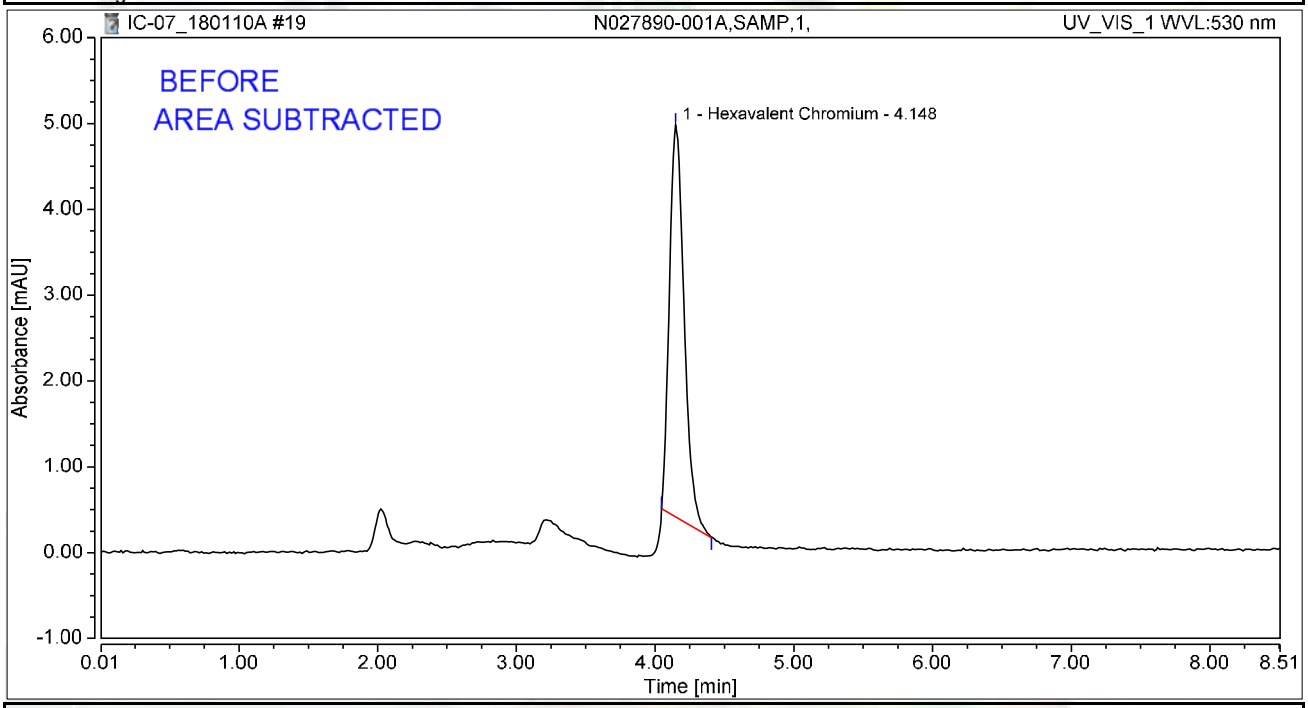
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027890-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.563	4.564	100.00	100.00	2.1421
Total:			**0.563**	**4.564**	**100.00**	**100.00**	

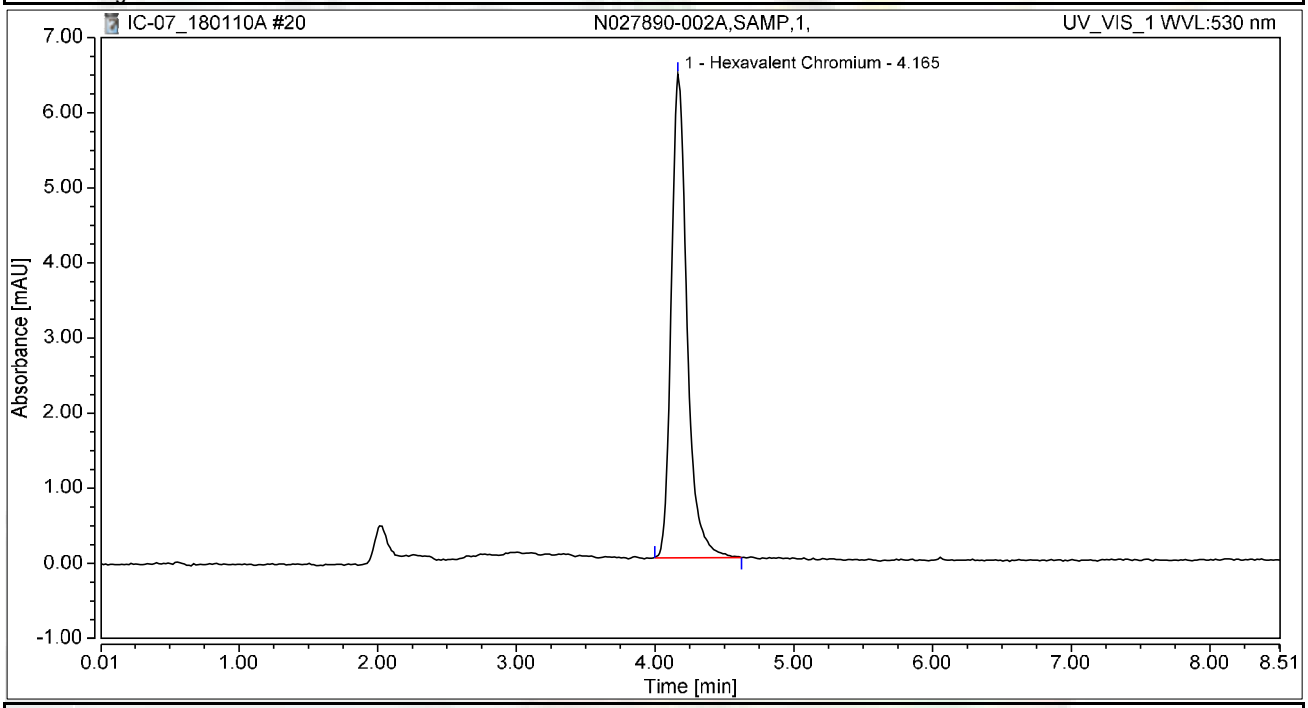
rba 1/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027890-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

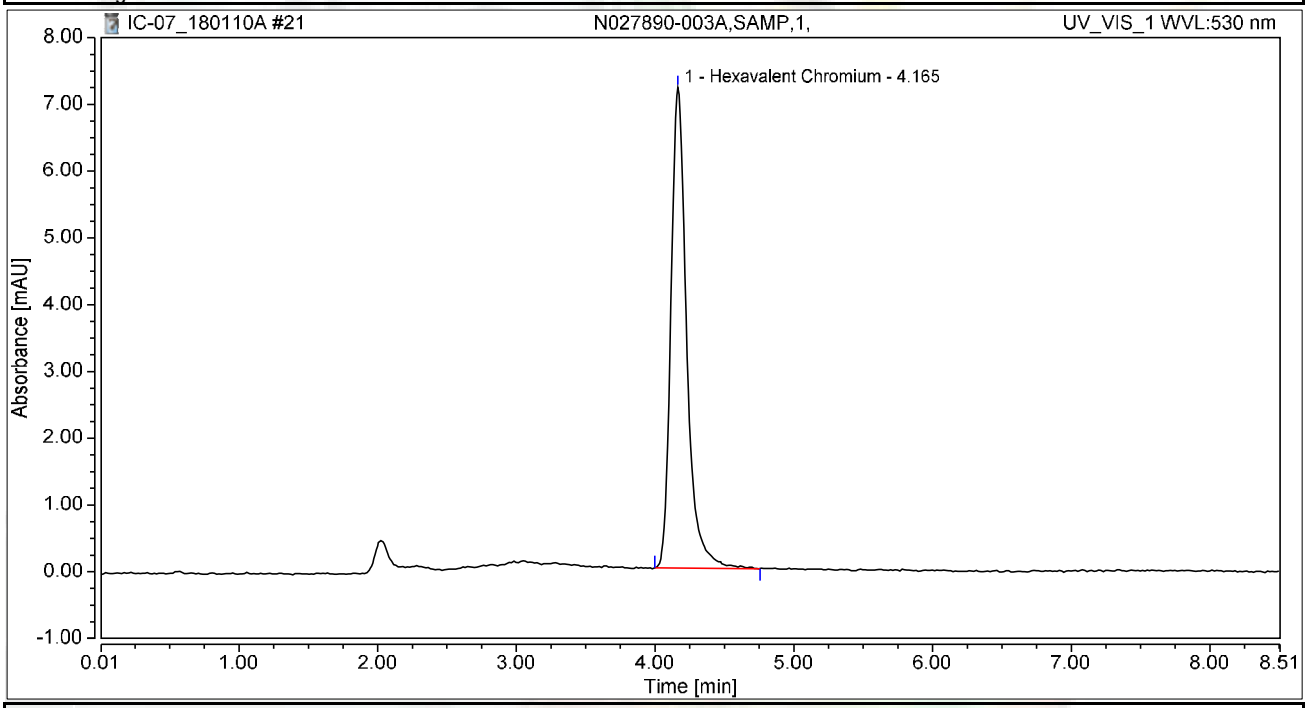
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.848	6.440	100.00	100.00	3.2300
Total:			**0.848**	**6.440**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

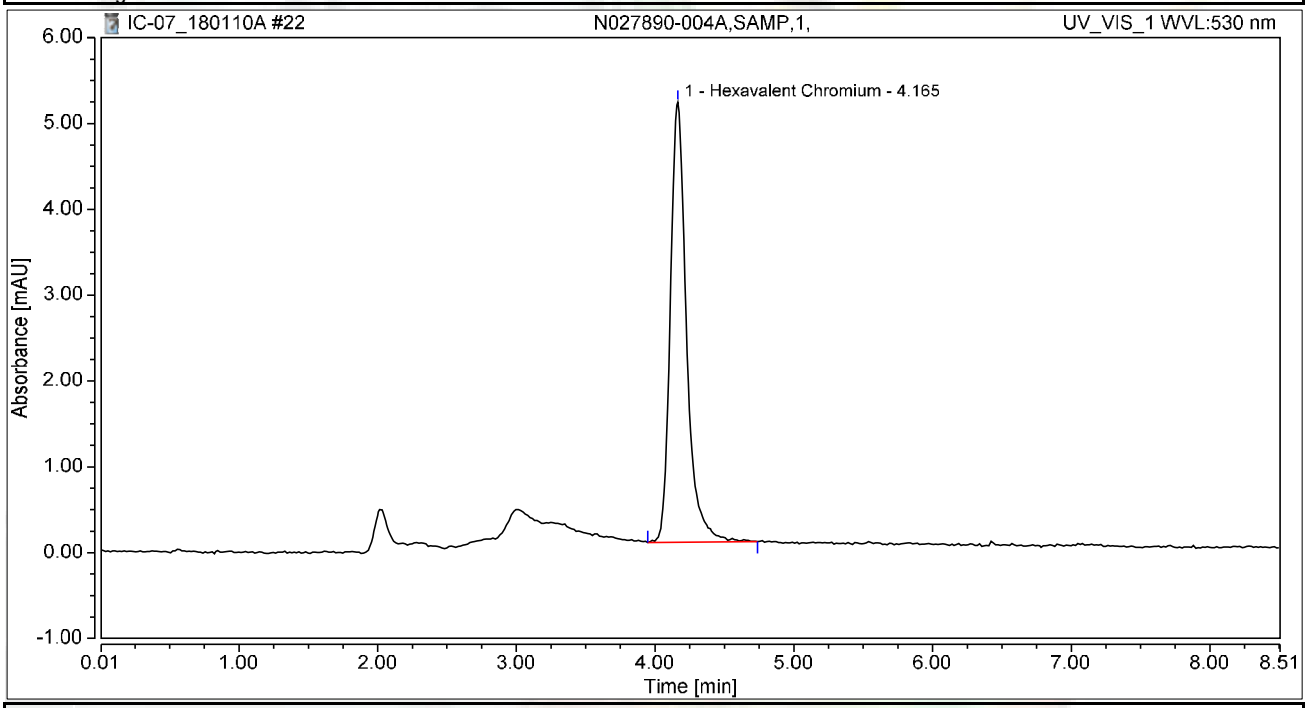
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.949	7.196	100.00	100.00	3.6122
Total:			**0.949**	**7.196**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 10:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

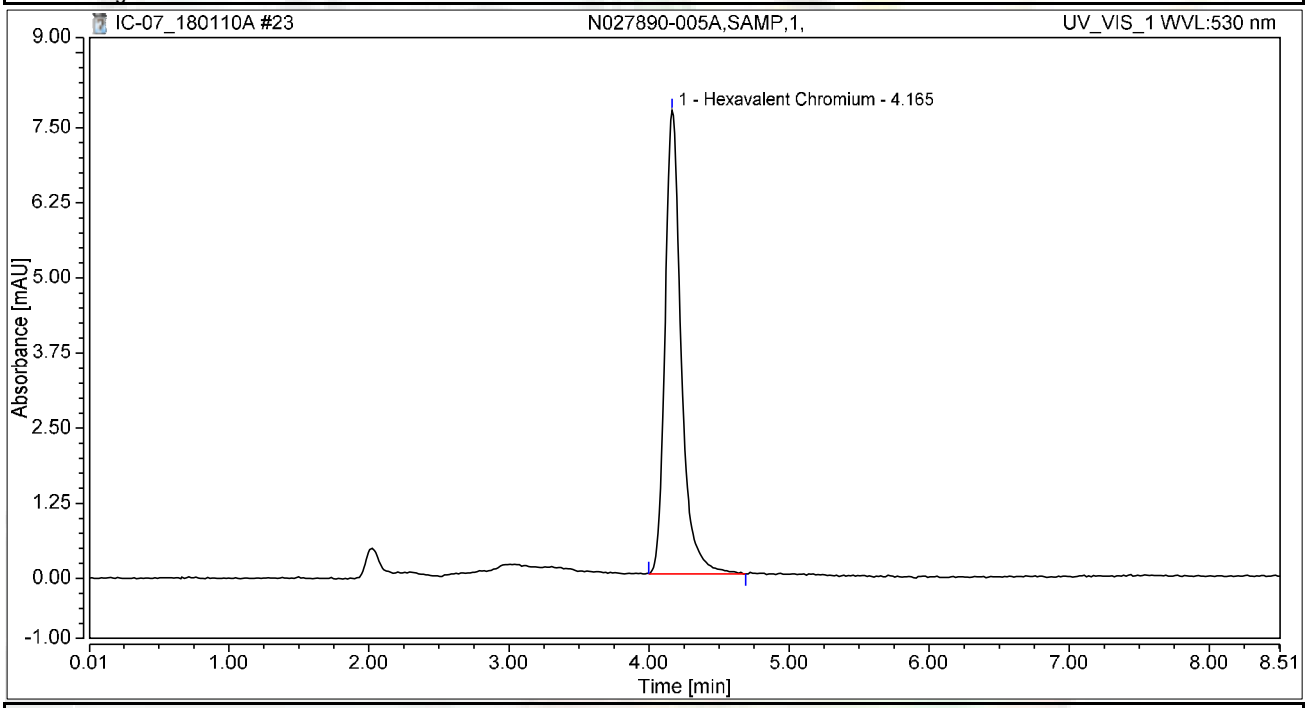
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.695	5.127	100.00	100.00	2.6451
Total:			**0.695**	**5.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

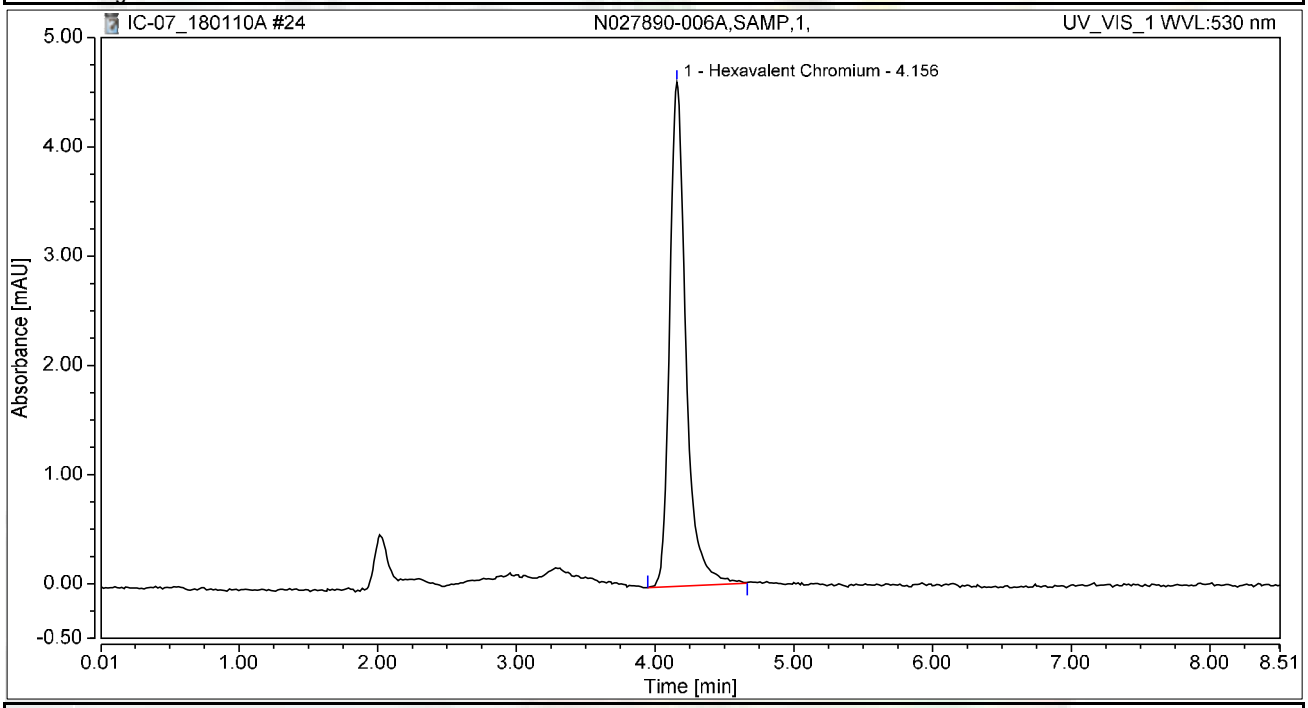
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.029	7.705	100.00	100.00	3.9171
Total:			**1.029**	**7.705**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 10:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

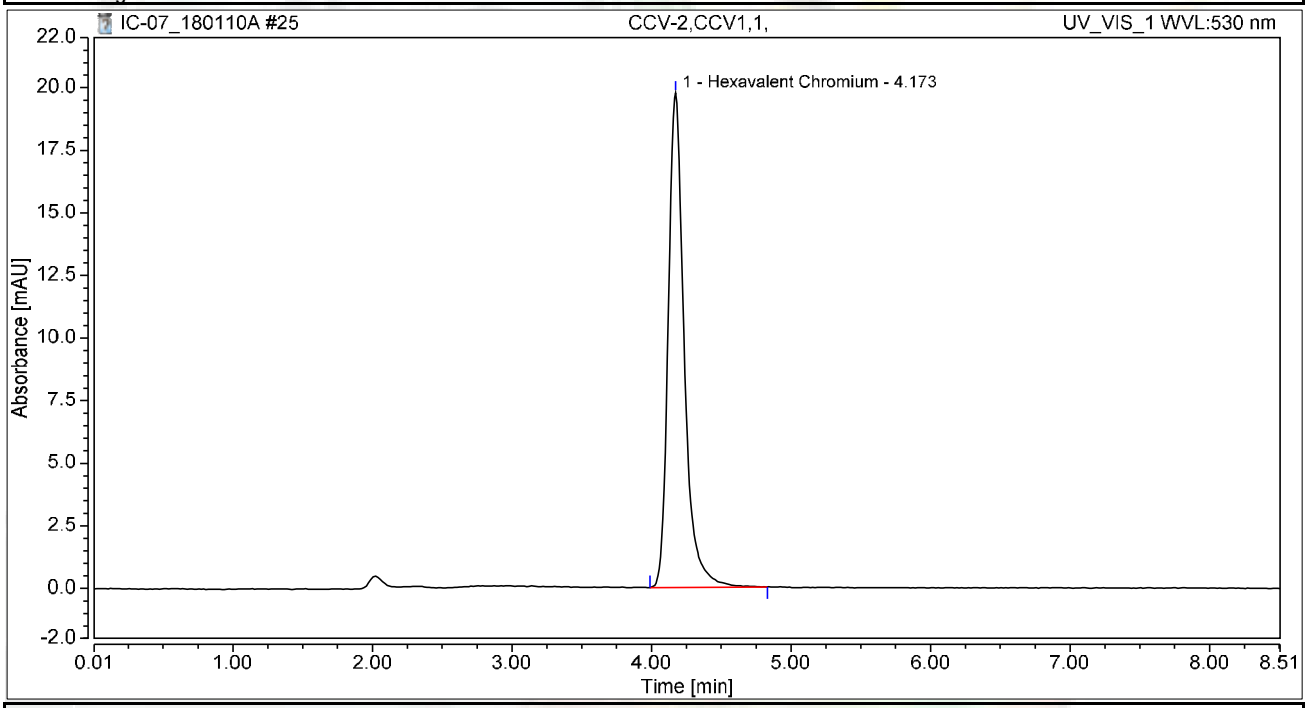
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.627	4.613	100.00	100.00	2.3893
Total:			**0.627**	**4.613**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

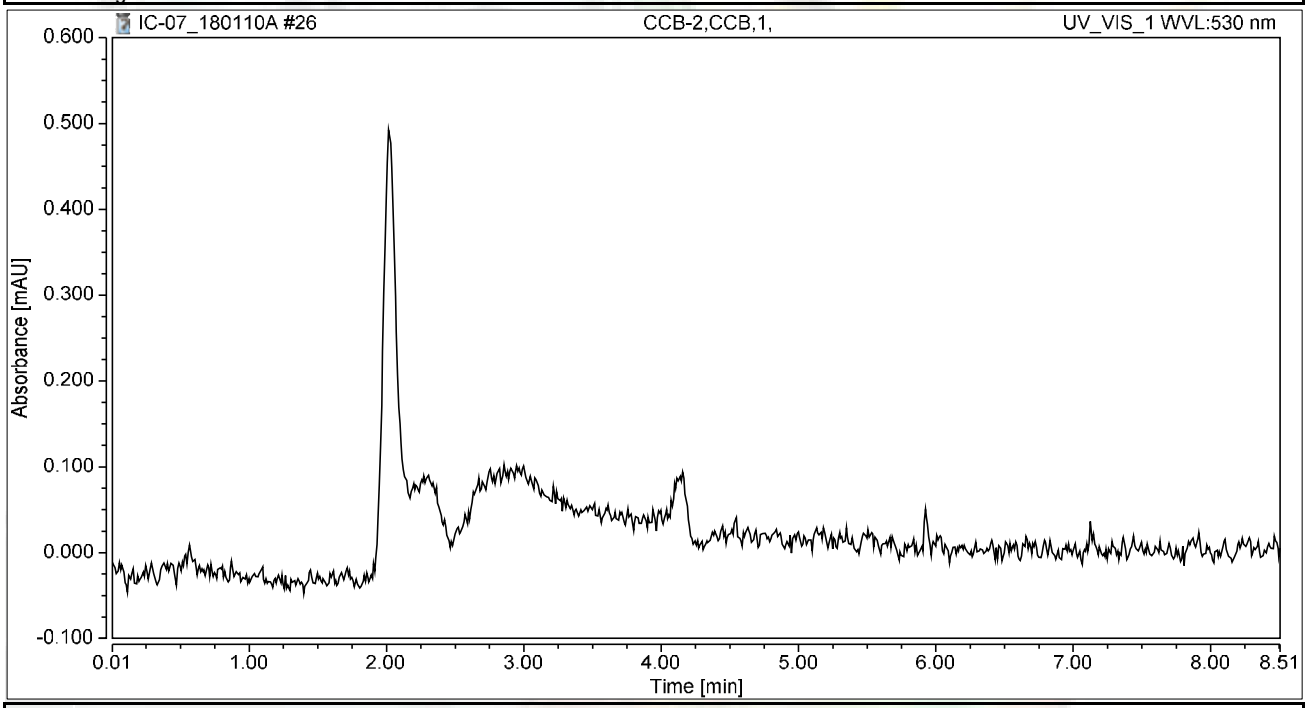
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.618	19.742	100.00	100.00	9.9704
Total:			**2.618**	**19.742**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

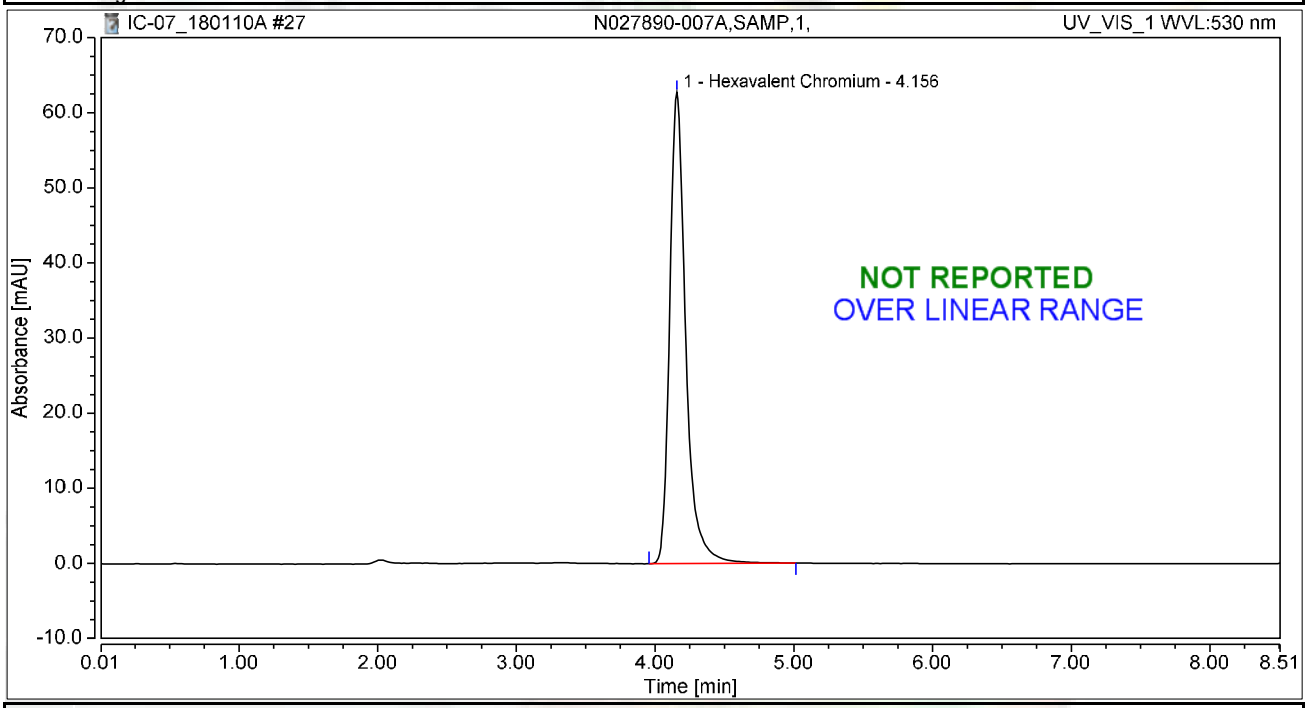
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

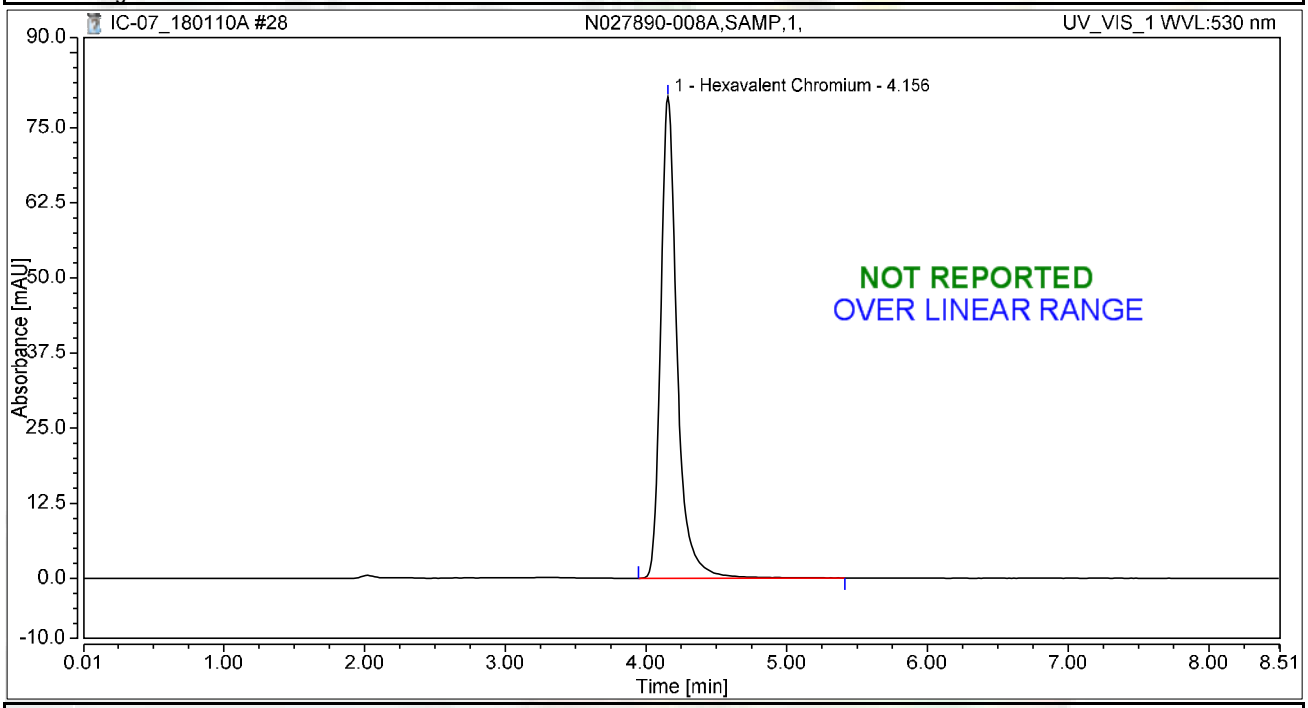
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	8.410	62.715	100.00	100.00	32.0255
Total:			**8.410**	**62.715**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

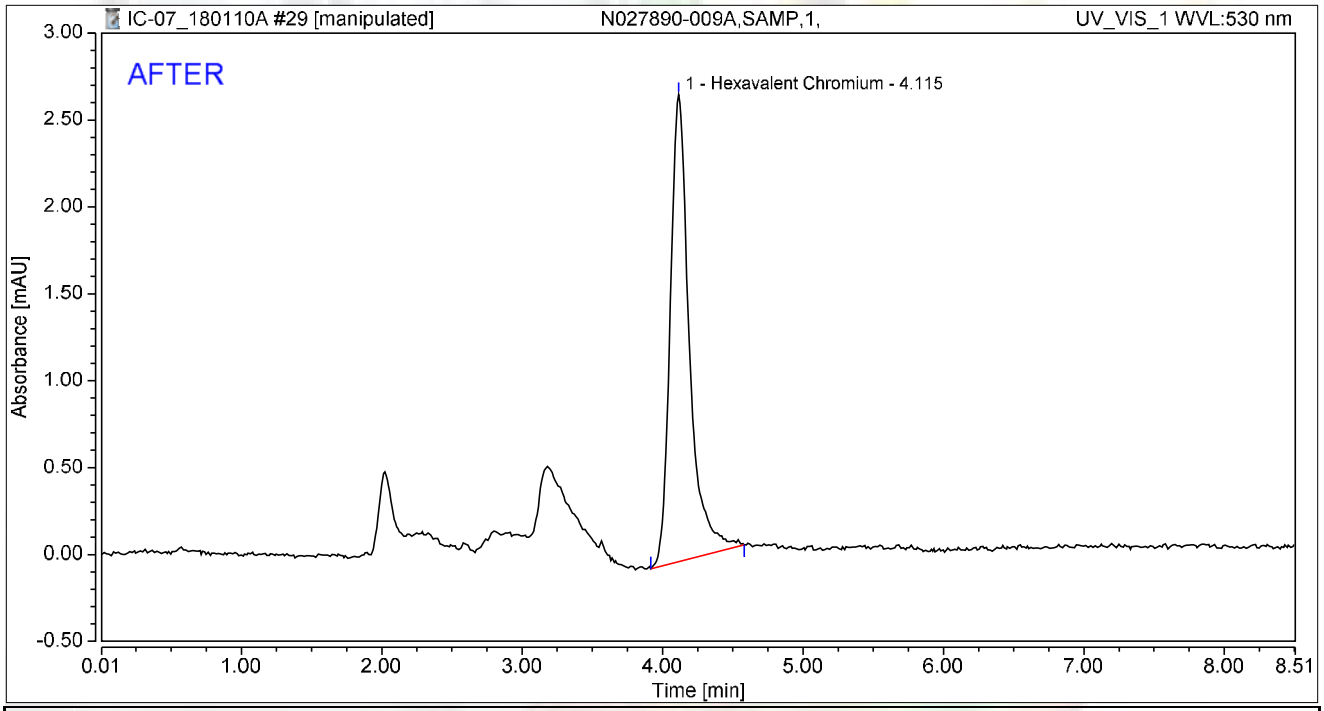
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	10.879	80.113	100.00	100.00	41.4249
Total:			**10.879**	**80.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.427	2.689	100.00	100.00	1.6249
Total:			**0.427**	**2.689**	**100.00**	**100.00**	

rba 1/12/2018

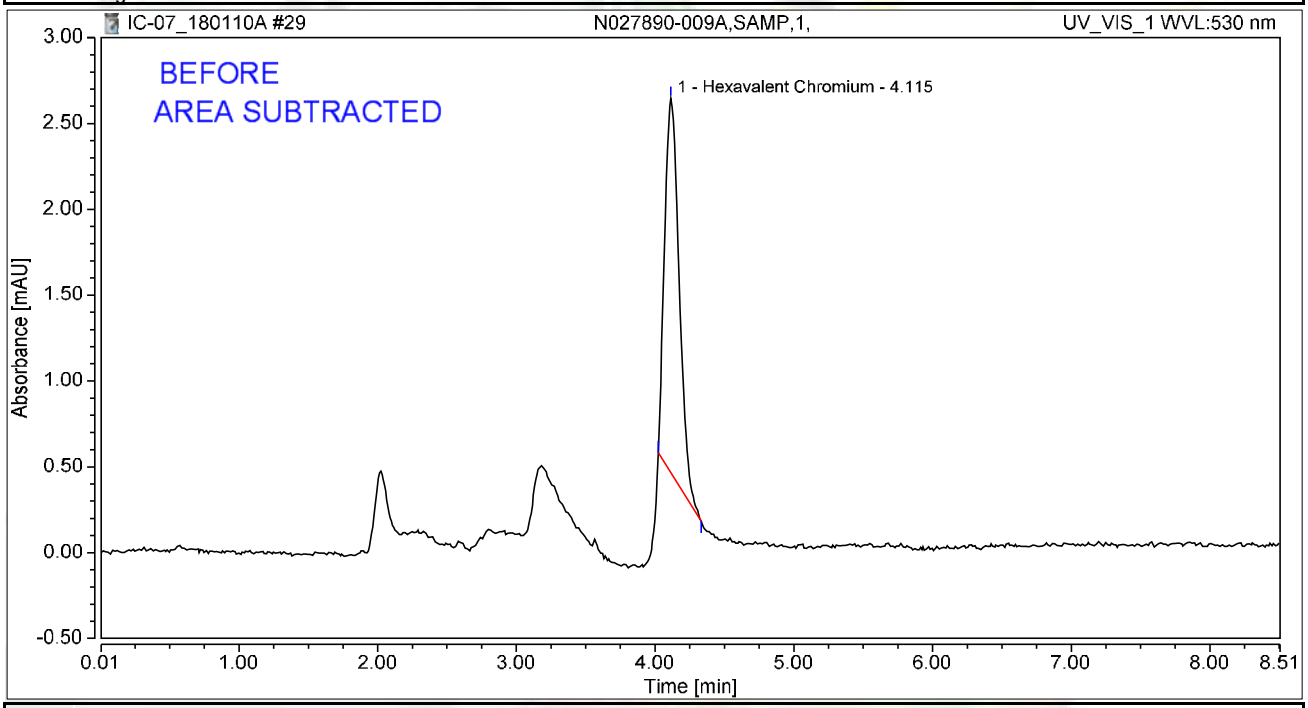
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027890-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.266	2.182	100.00	100.00	1.0135
Total:			**0.266**	**2.182**	**100.00**	**100.00**	

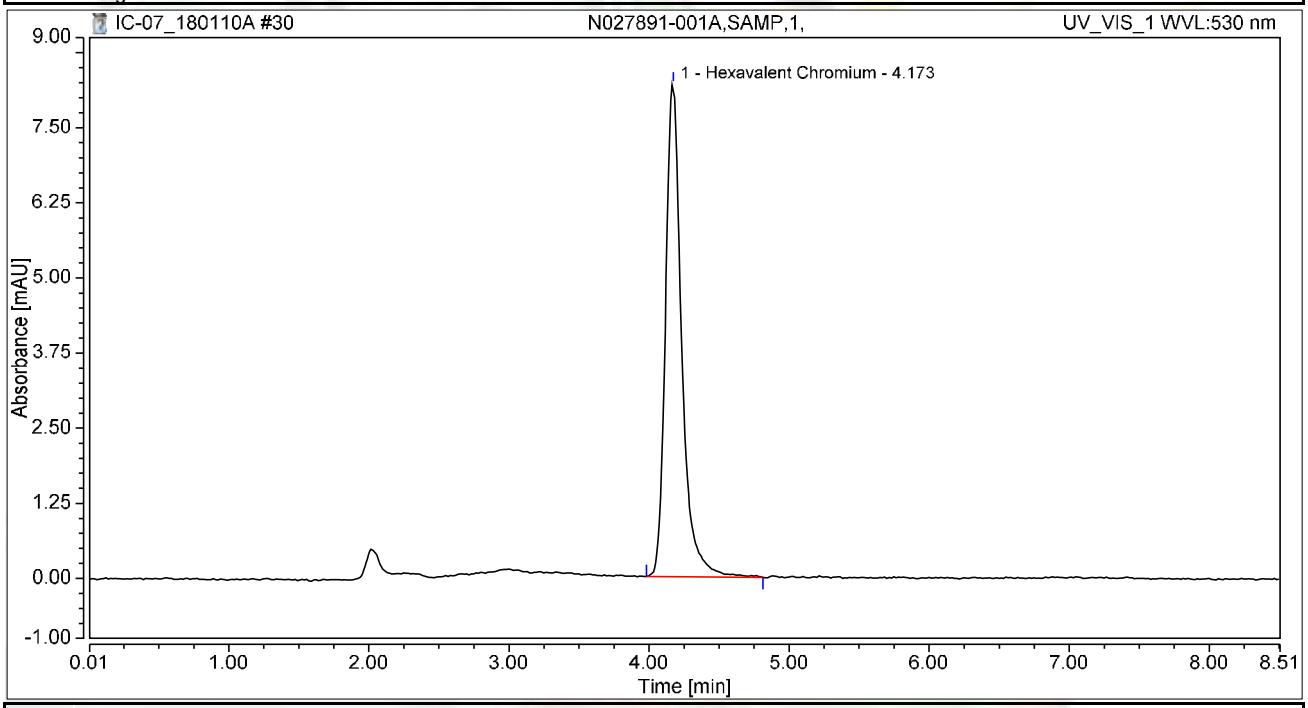
rba 1/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027891-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

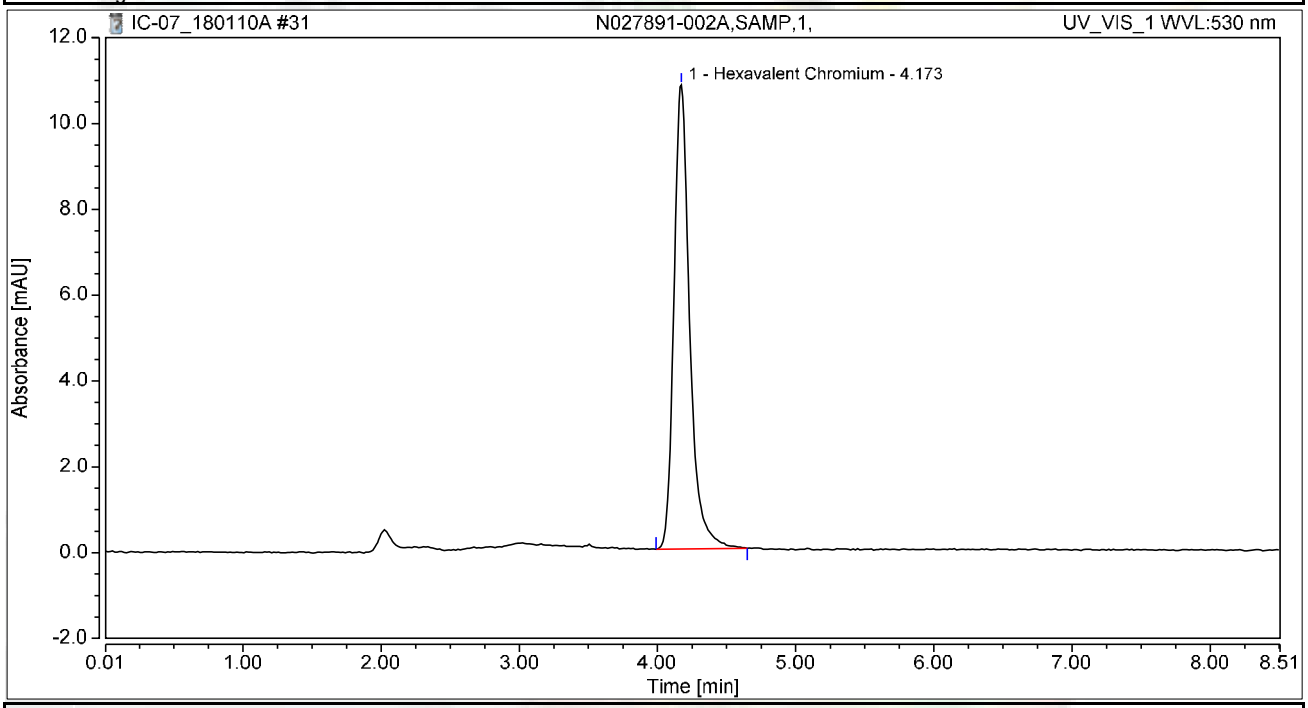
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.098	8.195	100.00	100.00	4.1827
Total:			**1.098**	**8.195**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

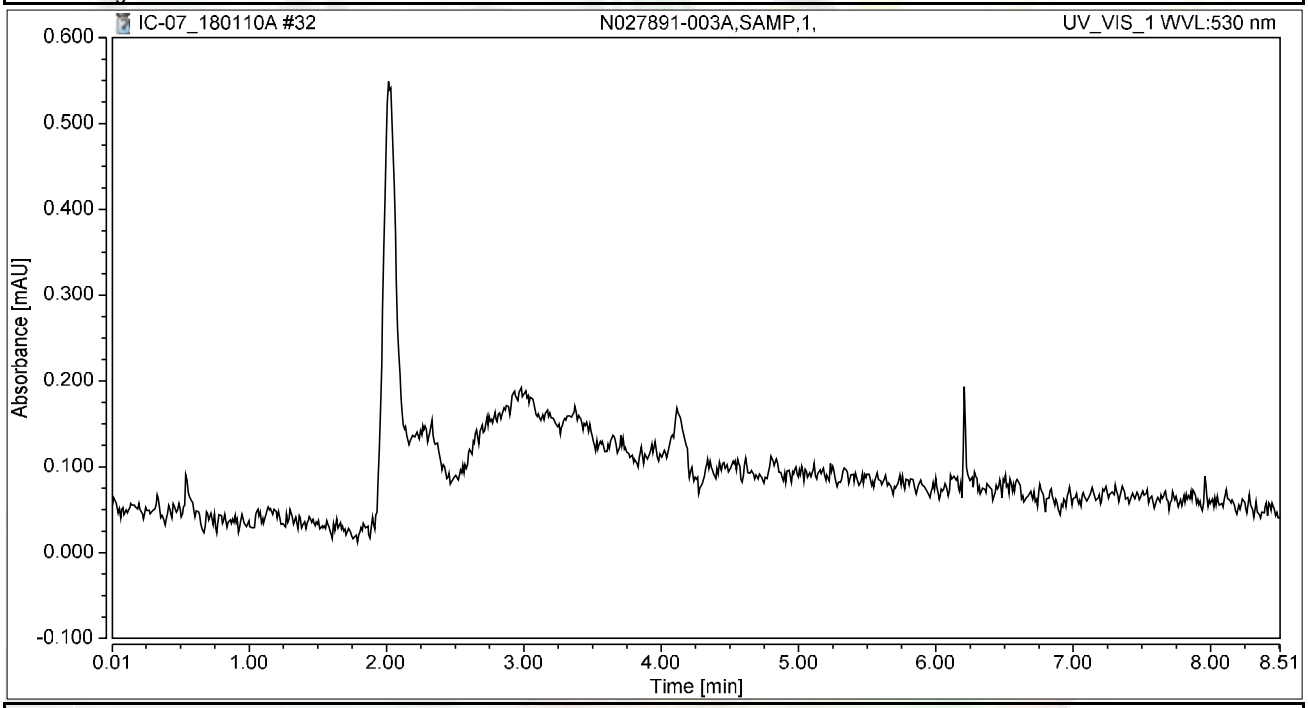
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.432	10.812	100.00	100.00	5.4549
Total:			**1.432**	**10.812**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

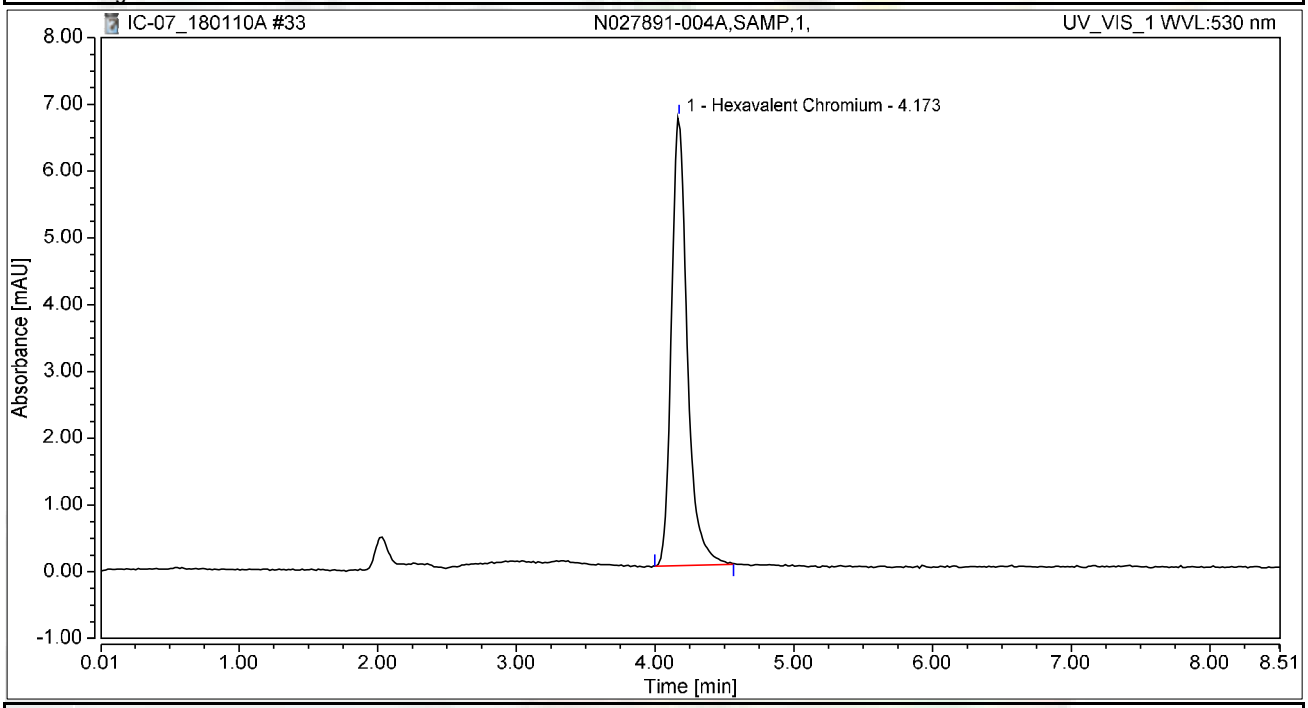
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 11:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

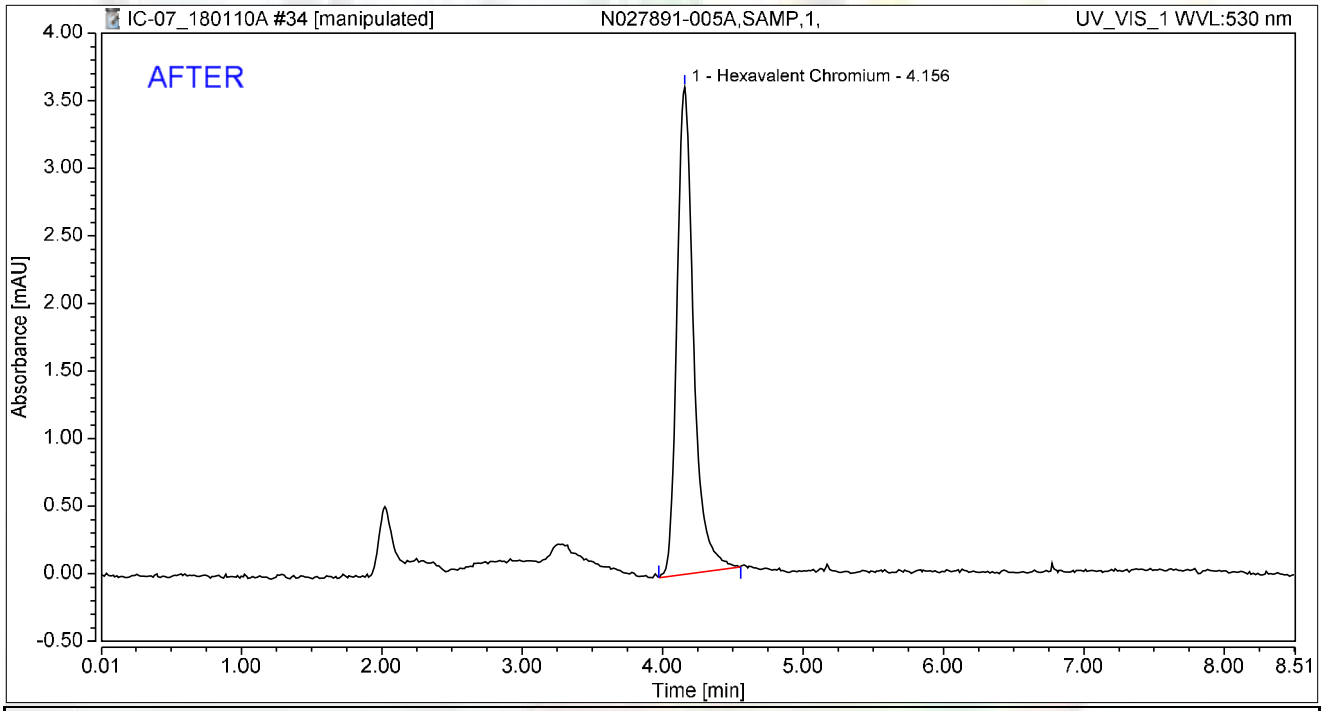
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.890	6.725	100.00	100.00	3.3885
Total:			**0.890**	**6.725**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.495	3.604	100.00	100.00	1.8836
Total:			**0.495**	**3.604**	**100.00**	**100.00**	

rba 1/12/2018

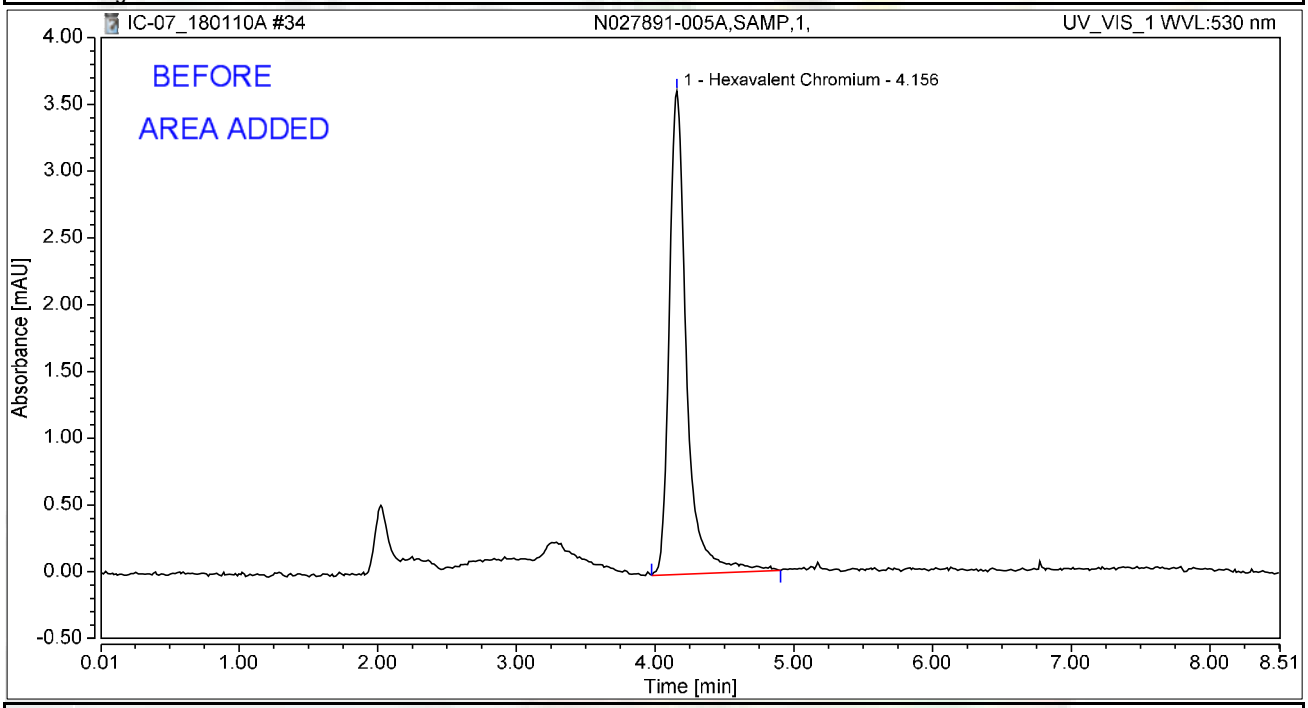
Reviewed by: Nancy 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027891-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.523	3.621	100.00	100.00	1.9918
Total:			**0.523**	**3.621**	**100.00**	**100.00**	

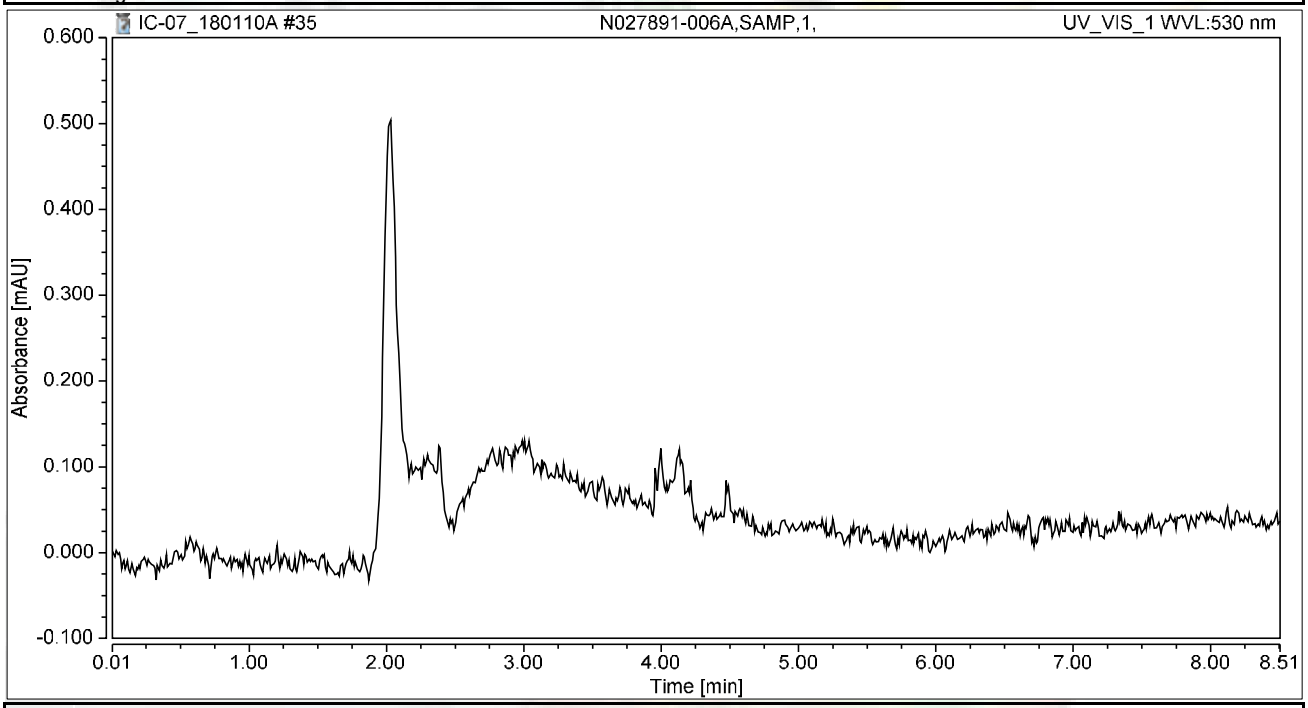
rba 1/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027891-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

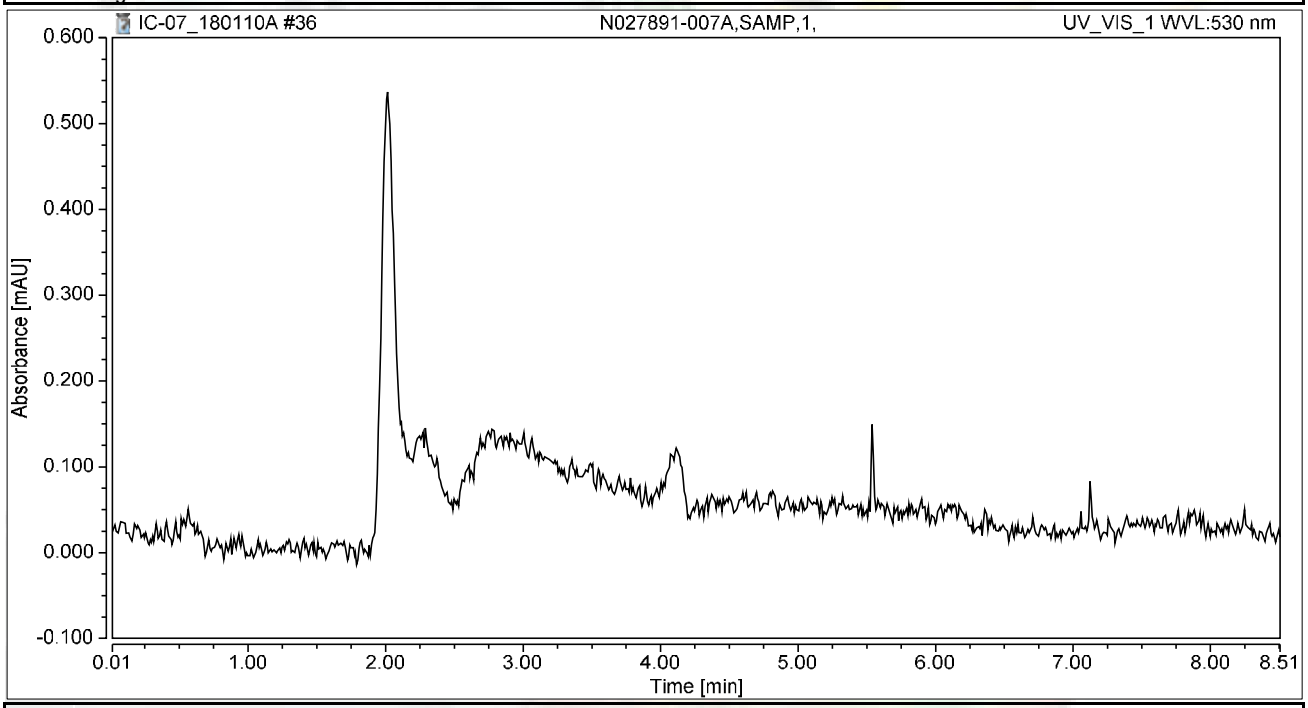
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

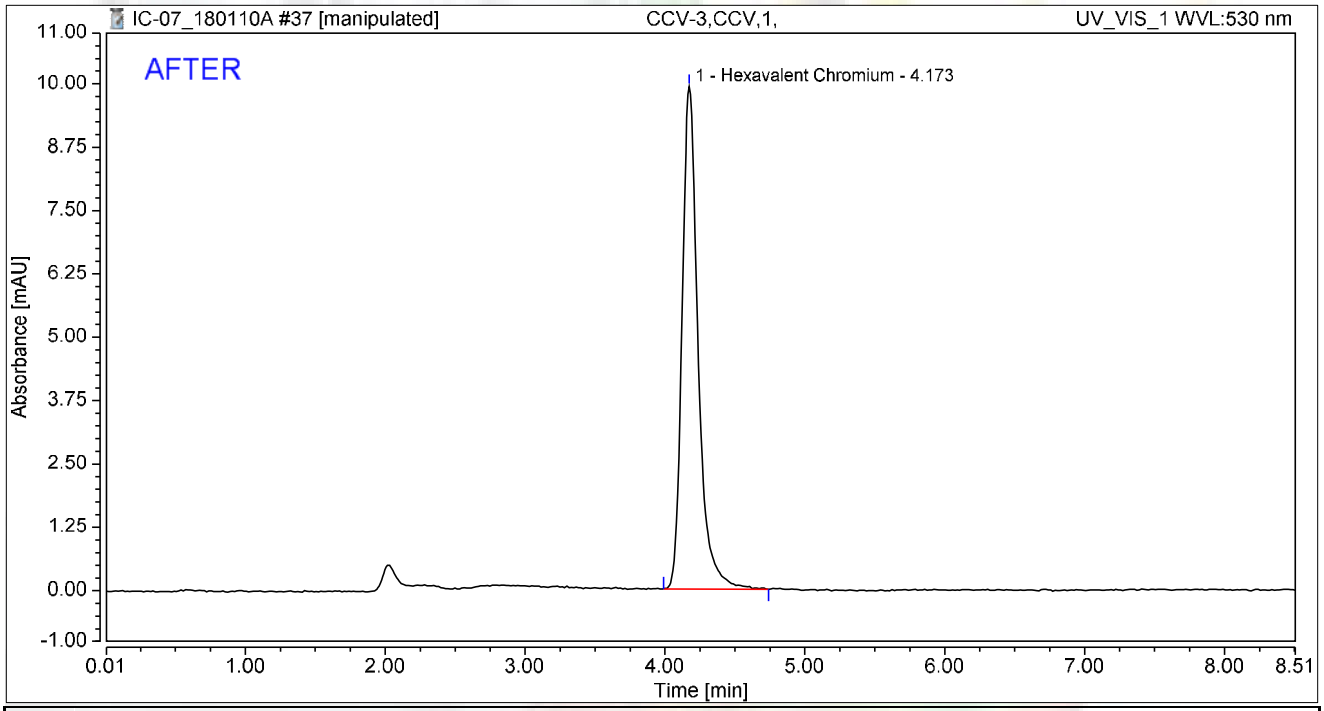
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.315	9.912	100.00	100.00	5.0064
Total:			**1.315**	**9.912**	**100.00**	**100.00**	

rba 1/12/2018

Reviewed by: Nancy 01/12/2018

My first report/Integration

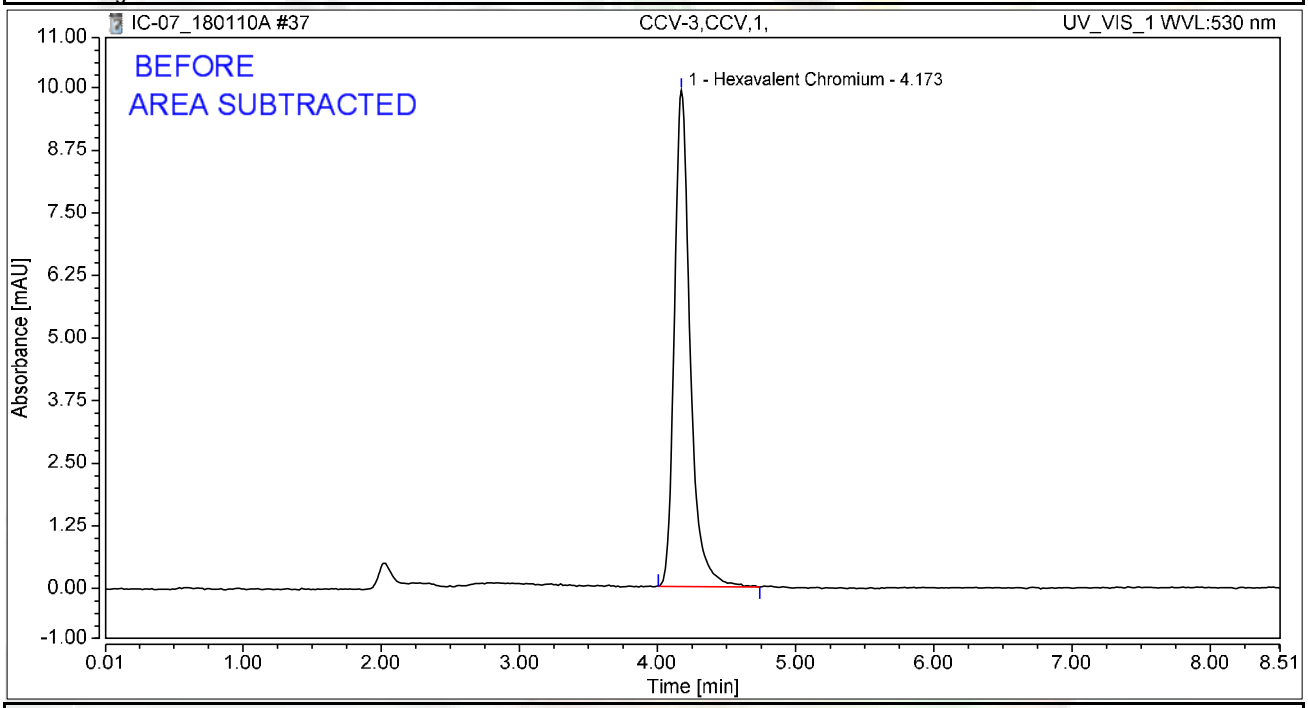
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.311	9.904	100.00	100.00	4.9918
Total:			**1.311**	**9.904**	**100.00**	**100.00**	

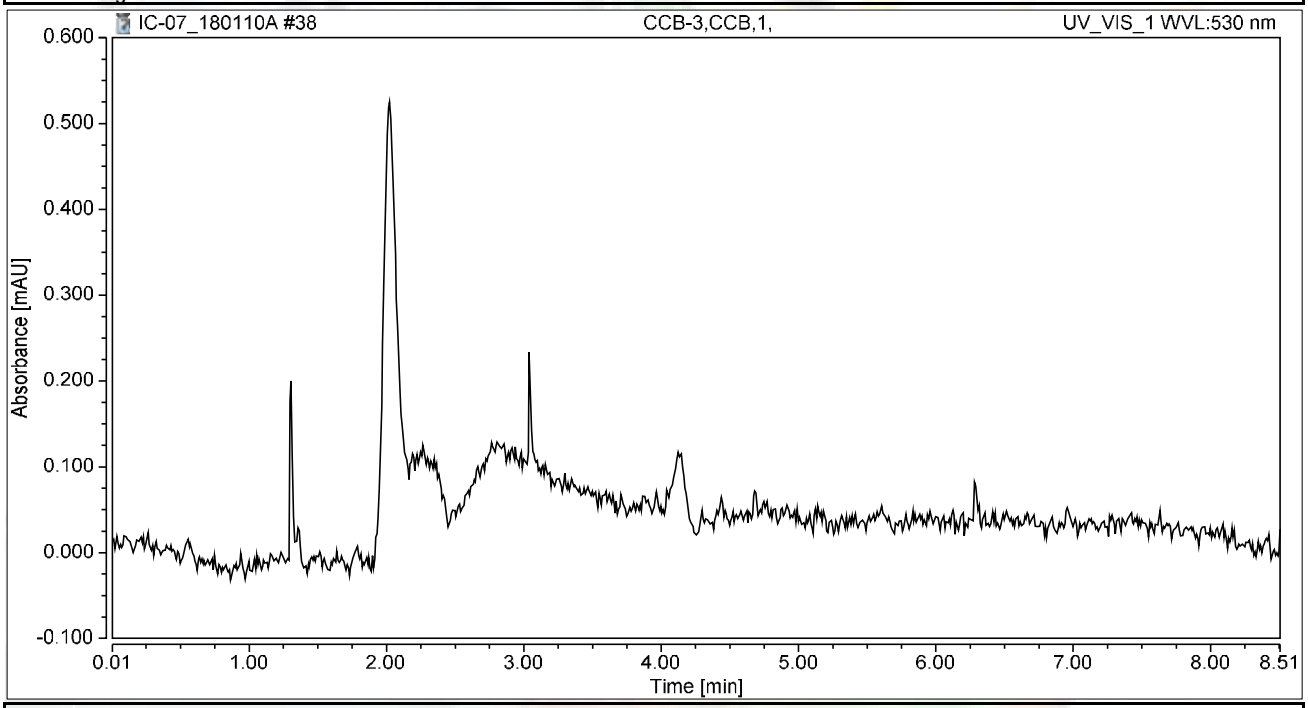
rba 1/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

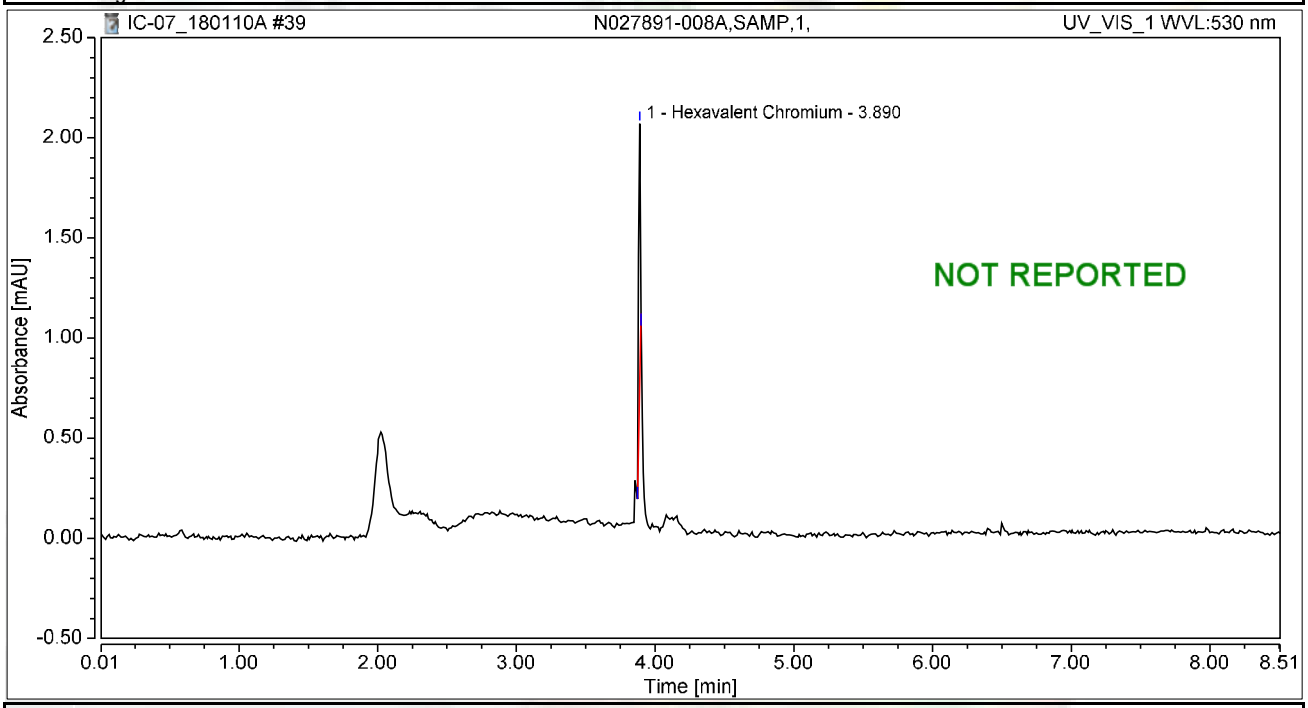
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

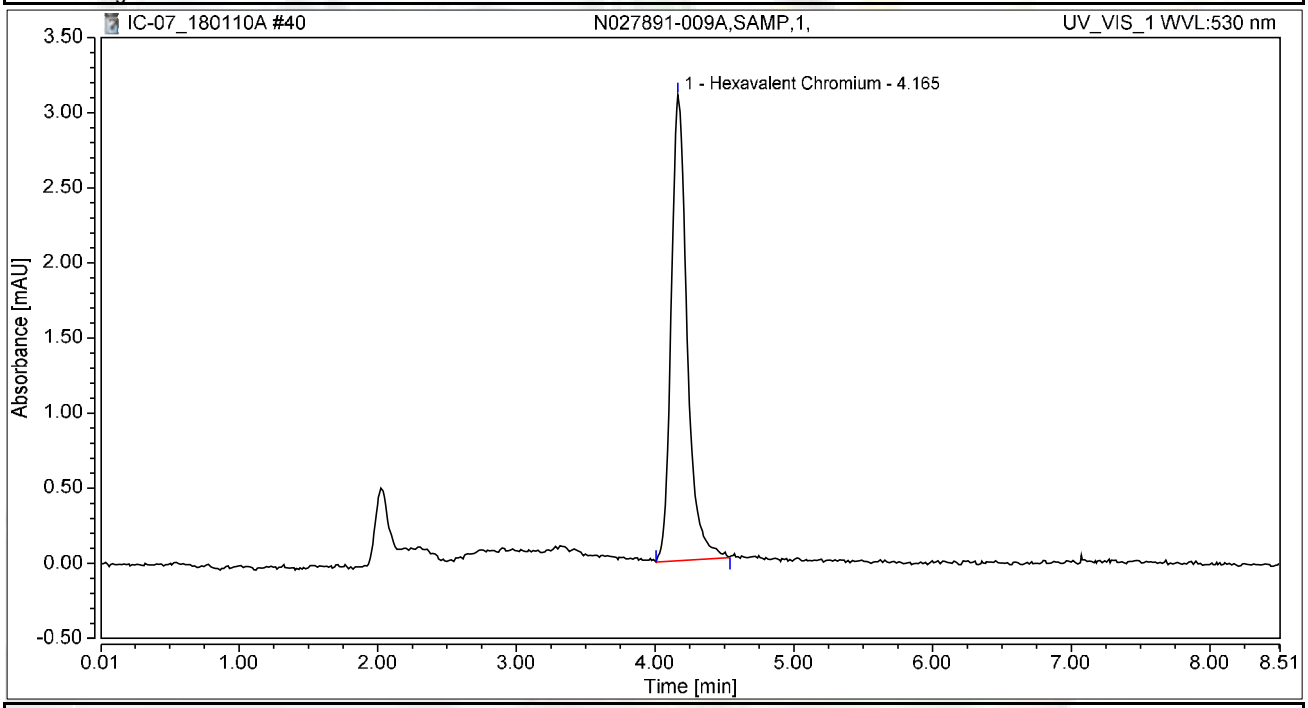
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.890	0.018	1.257	100.00	100.00	0.0687
Total:			**0.018**	**1.257**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

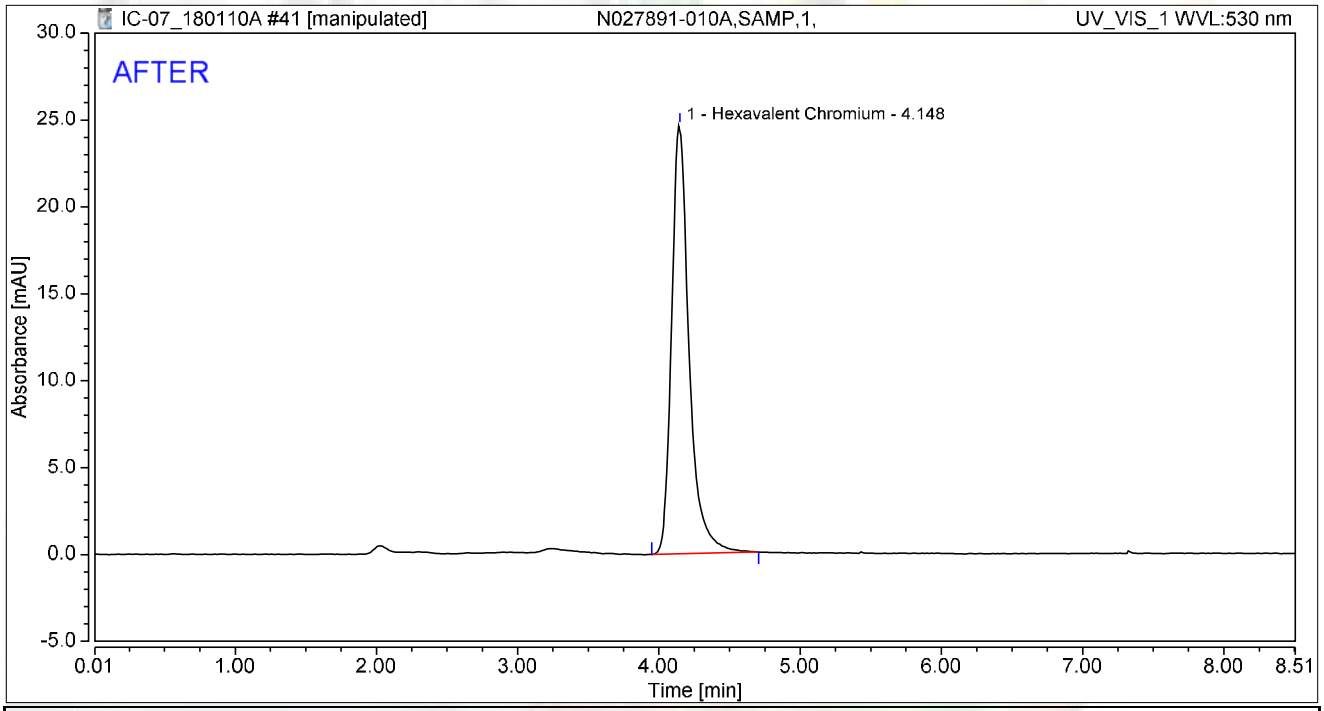
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.414	3.102	100.00	100.00	1.5769
Total:			**0.414**	**3.102**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.545	24.669	100.00	100.00	13.4990
Total:			**3.545**	**24.669**	**100.00**	**100.00**	

rba 1/12/2018

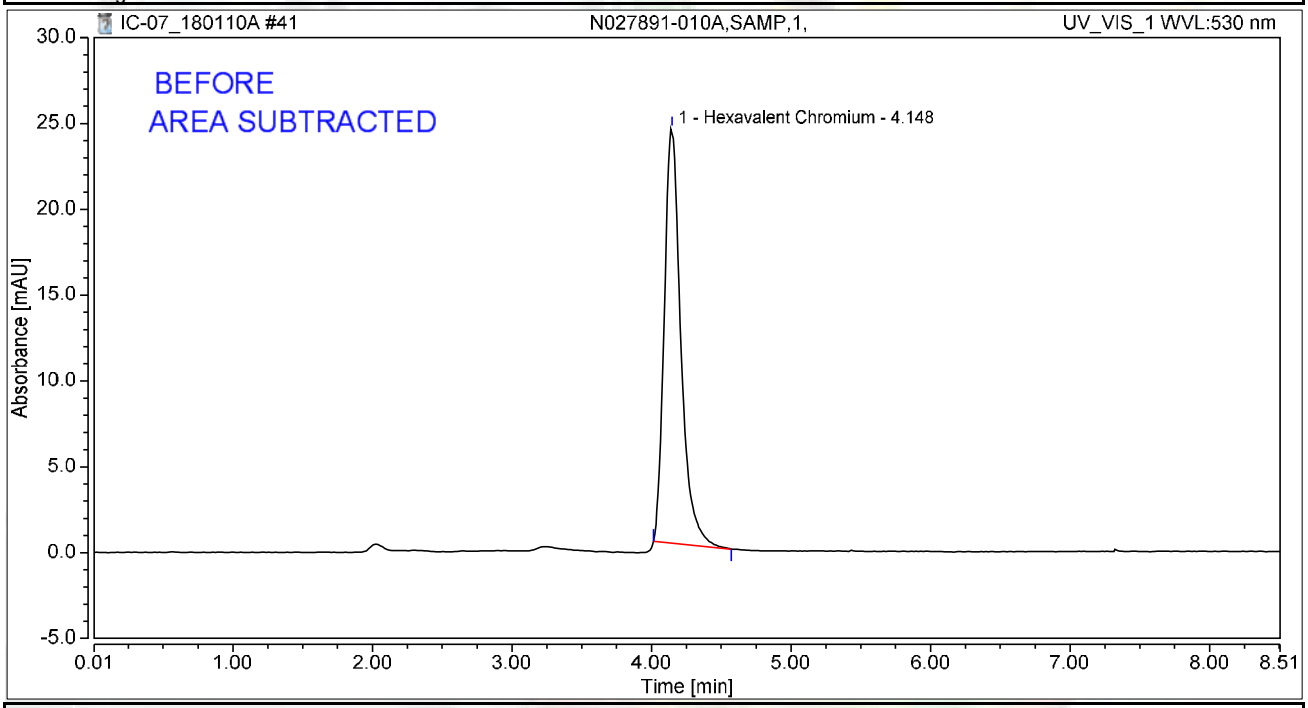
Reviewed by: 01/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027891-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.324	24.151	100.00	100.00	12.6571
Total:			**3.324**	**24.151**	**100.00**	**100.00**	

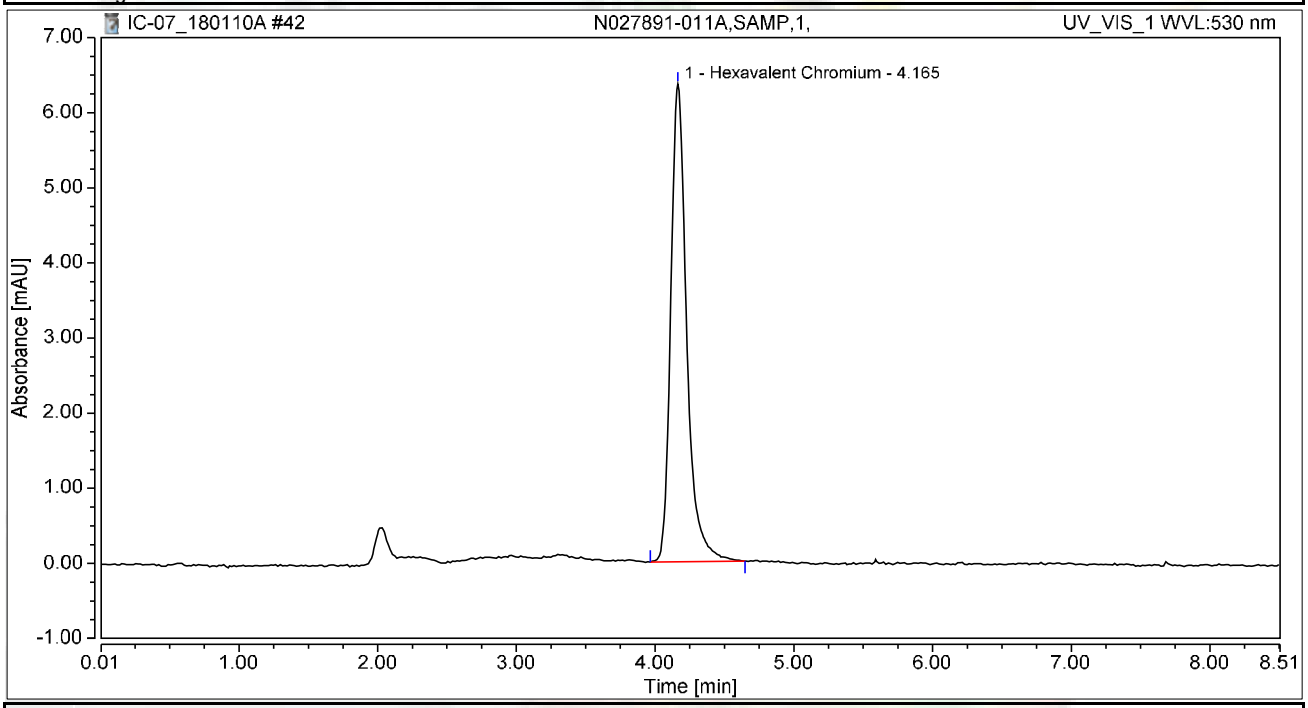
rba 1/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N027891-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

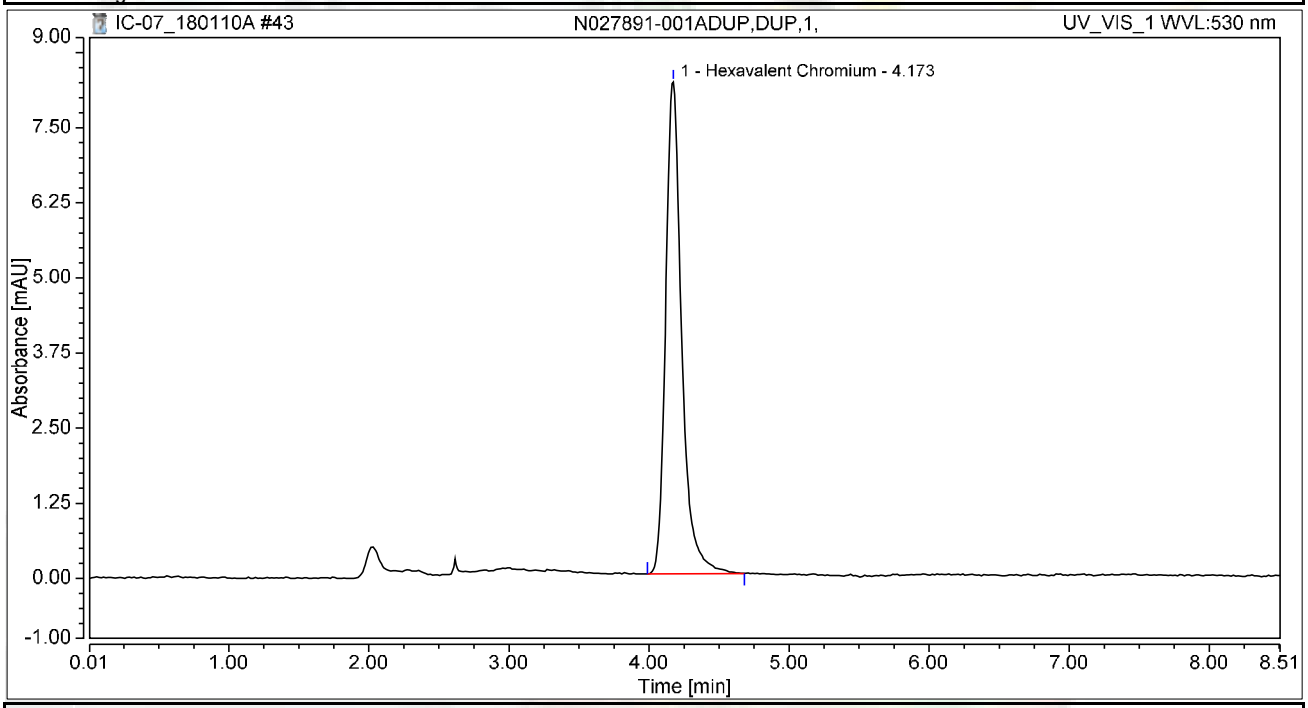
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.847	6.364	100.00	100.00	3.2272
Total:			**0.847**	**6.364**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

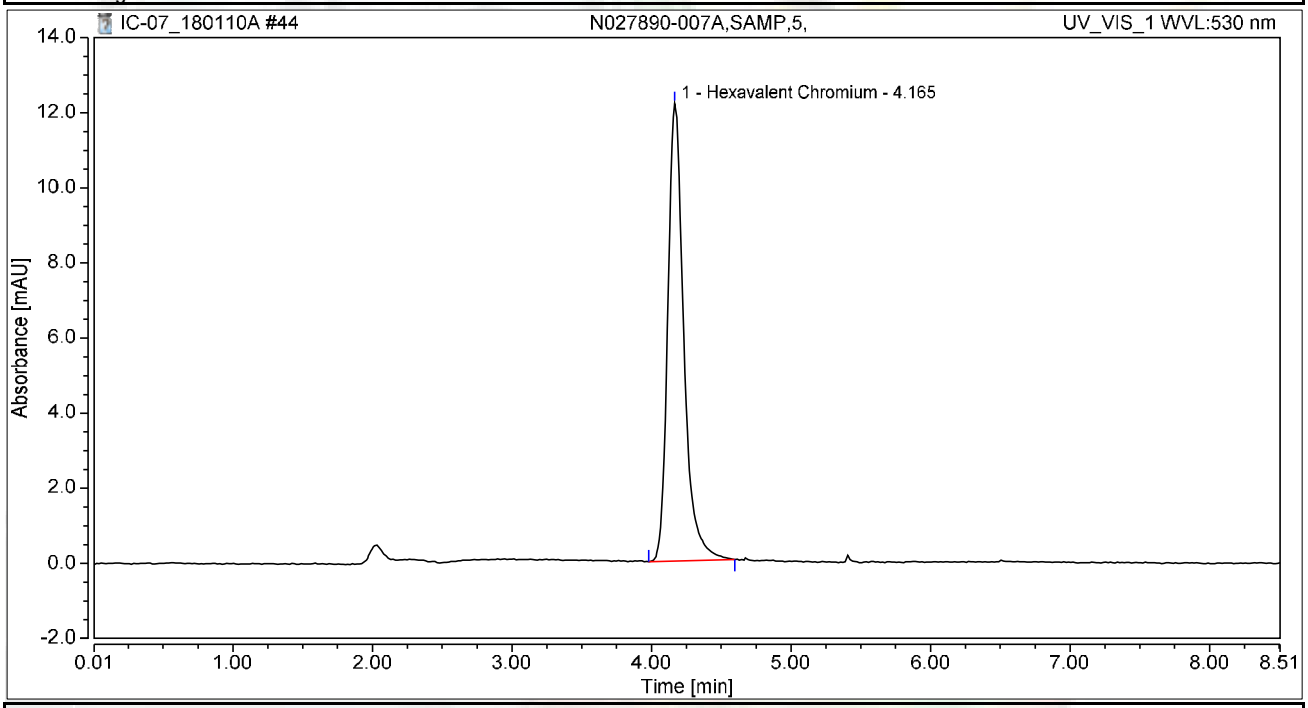
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.088	8.190	100.00	100.00	4.1431
Total:			**1.088**	**8.190**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

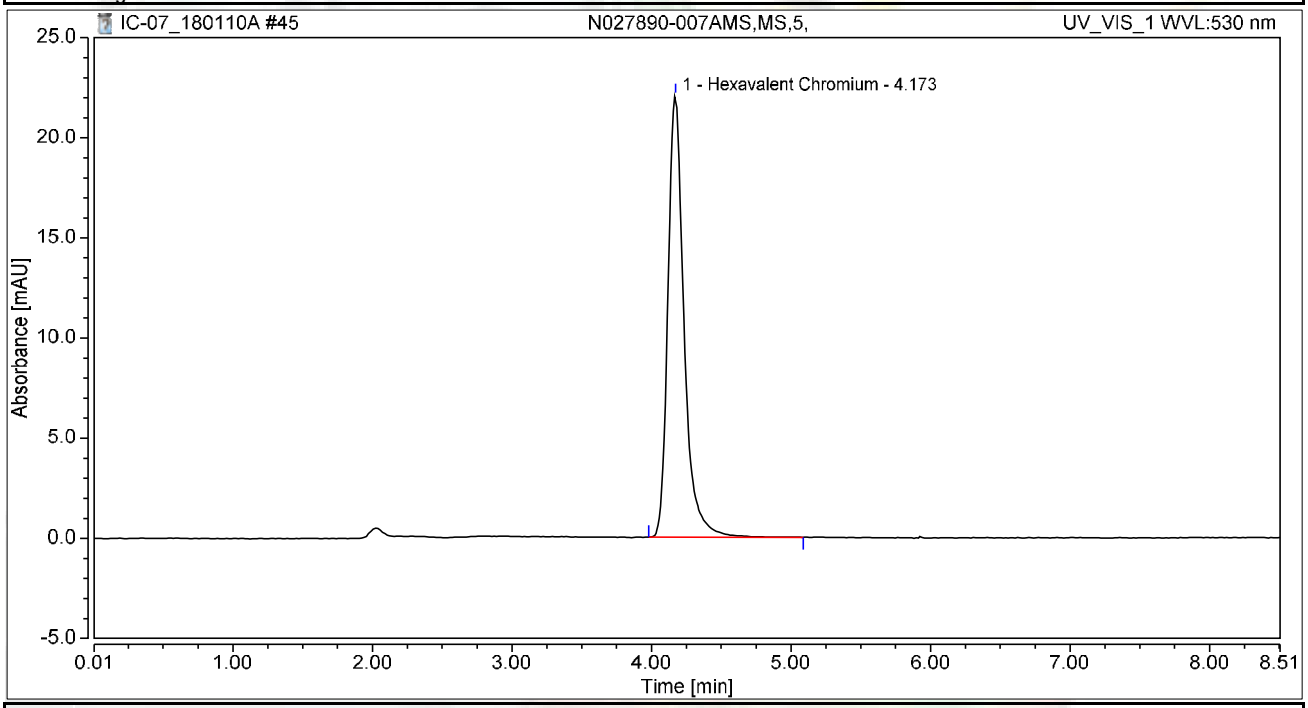
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.619	12.179	100.00	100.00	6.1650
Total:			**1.619**	**12.179**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

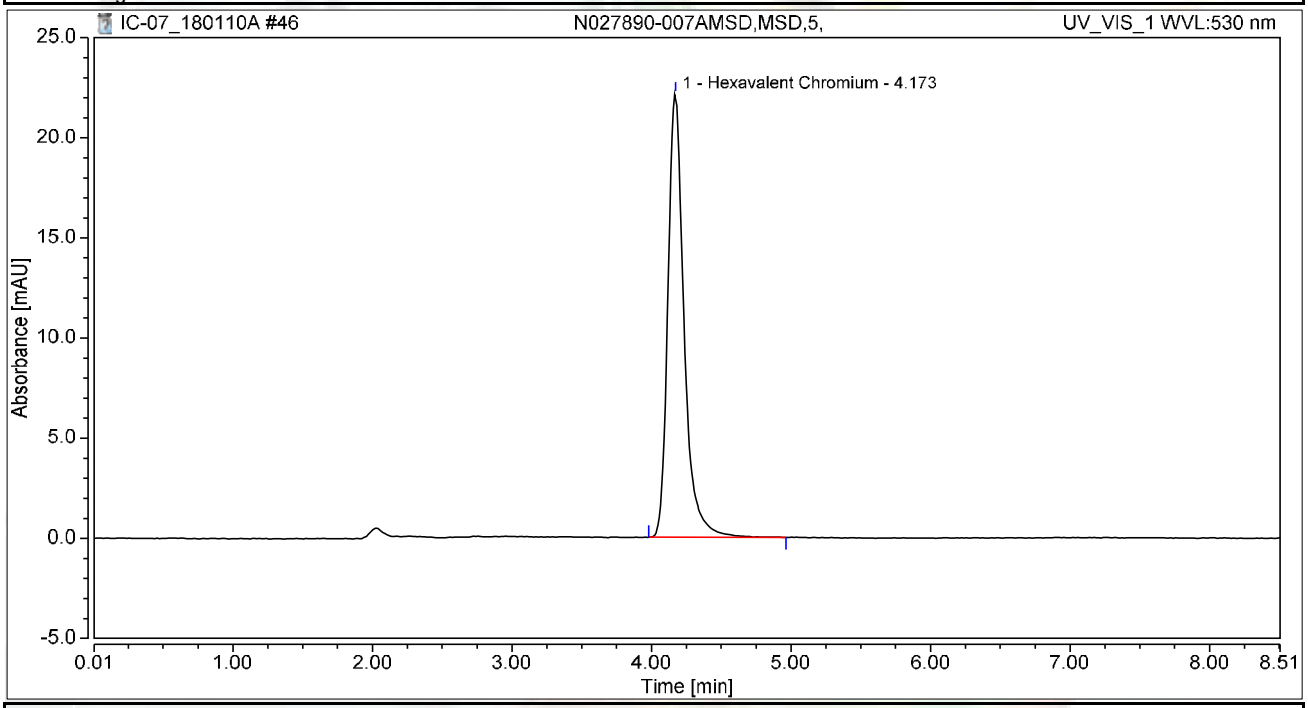
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.962	22.045	100.00	100.00	11.2785
Total:			**2.962**	**22.045**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-007AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

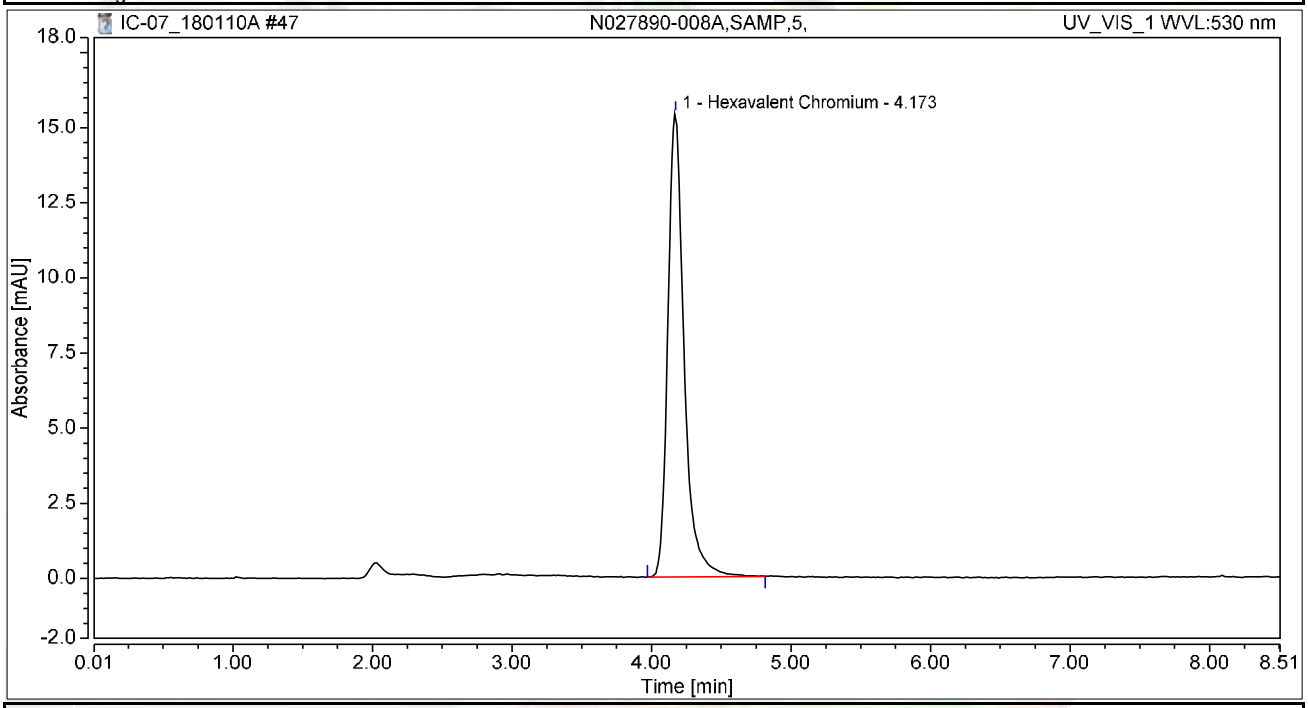
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.978	22.139	100.00	100.00	11.3412
Total:			**2.978**	**22.139**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027890-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

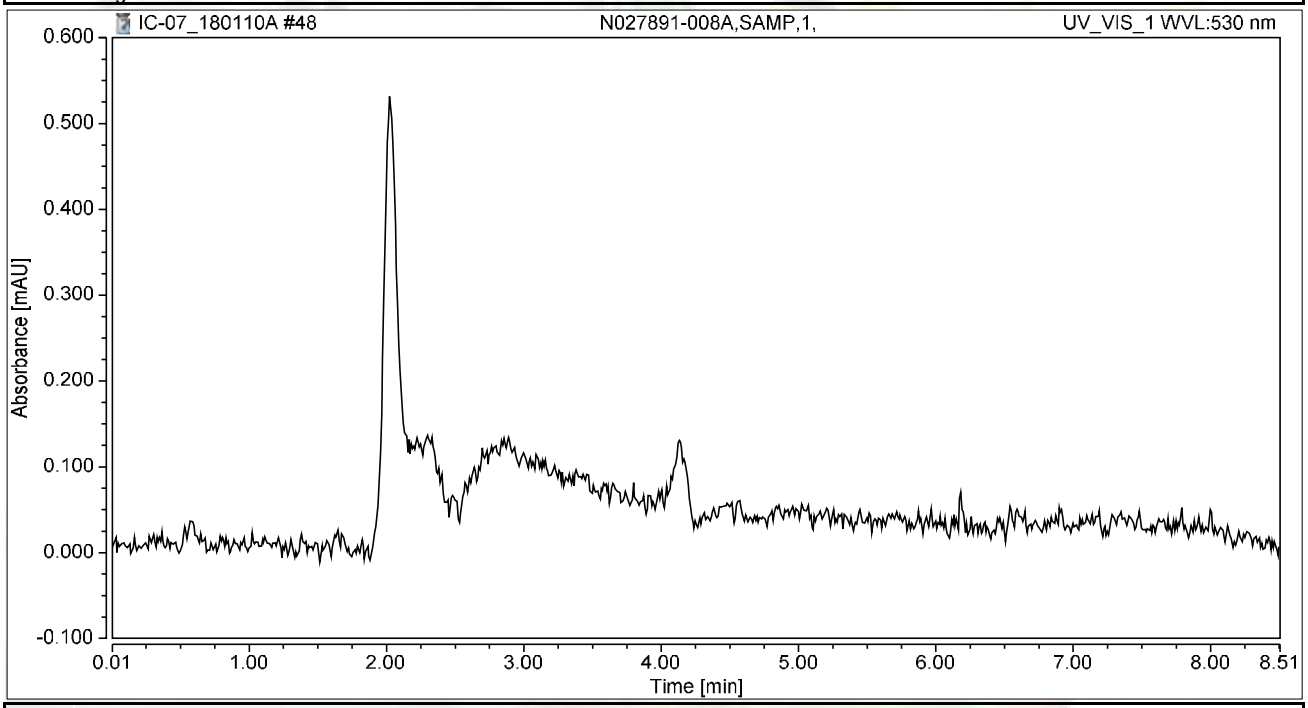
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.081	15.428	100.00	100.00	7.9225
Total:			**2.081**	**15.428**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N027891-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

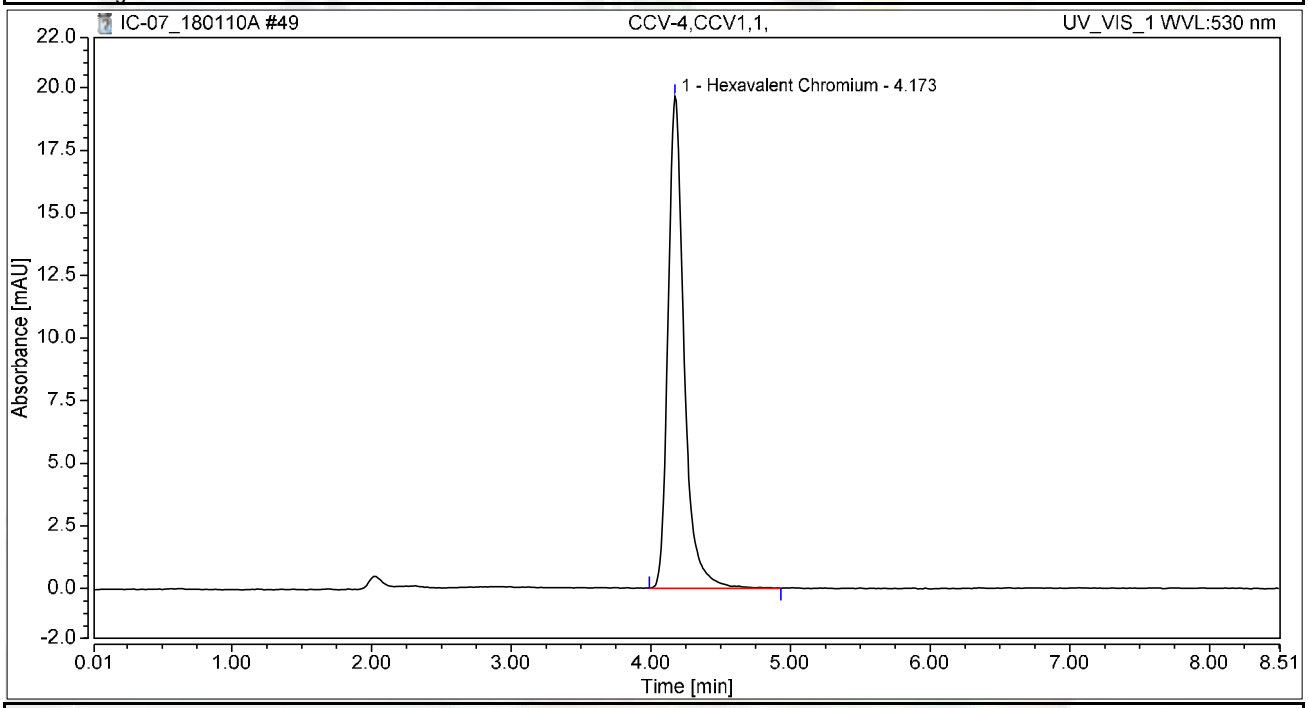
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

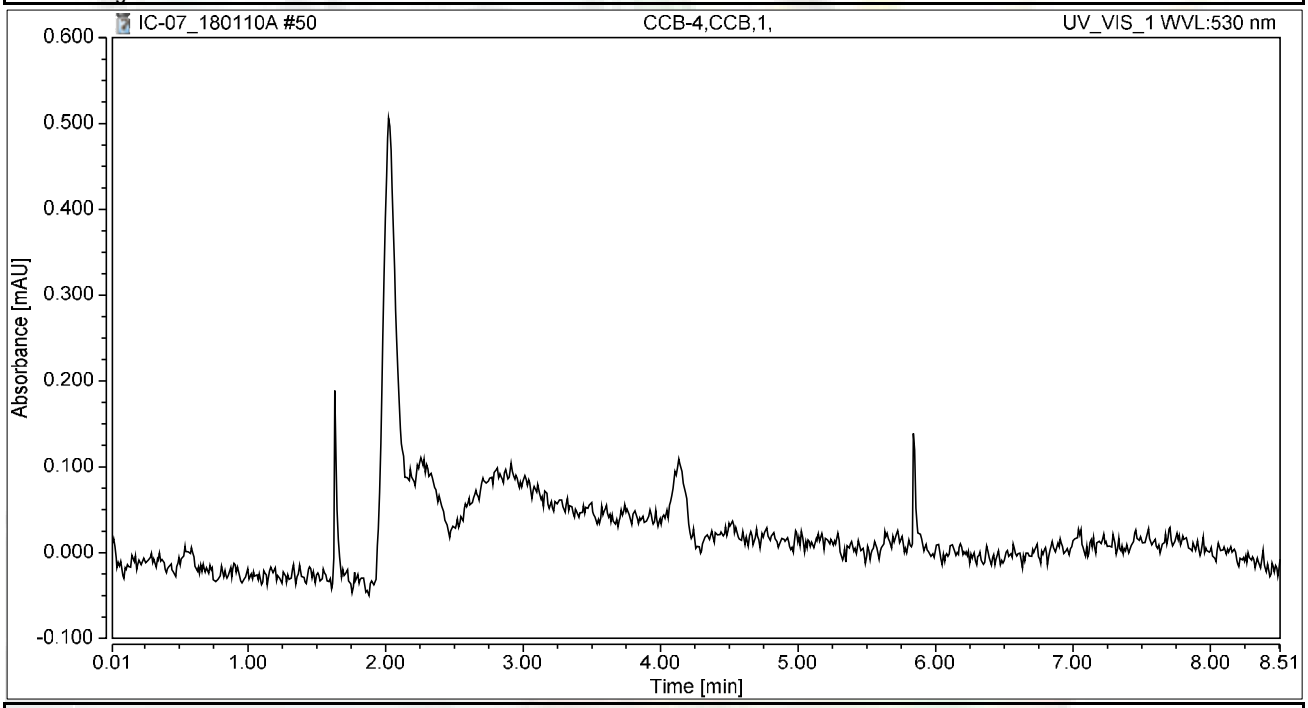
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.624	19.655	100.00	100.00	9.9931
Total:			**2.624**	**19.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180109_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/Jan/18 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121323 **Analyst:** QBM

ASSET #: N027819, N027820 **Date Analyzed:** 1/10/2018

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 1/12/2018

2nd Level Reviewer RLB 01/12/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N027820-001E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4428	*	1
	=	0.4428	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.44 mg/L

RLB 01/12/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

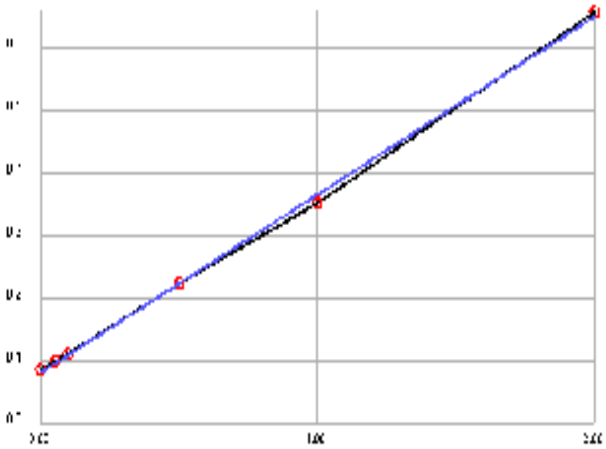
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2839x + 0.0819
Correlation	.999397

Calibrant	Energy	Set	Conc
1	0.0849	0.0000	0.0106
2	0.0994	0.0500	0.0617
3	0.1123	0.1000	0.1071
4	0.2227	0.5000	0.4960
5	0.3511	1.0000	0.9483
6	0.6571	2.0000	2.0262

Notes:

01/12/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **ICV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.490	0.050	0.5000	0	98.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.463	0.050	0.5000	0	92.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCV**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.503	0.050	0.5000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **ICB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **121323**
Client ID: **CCB**	Batch ID: **R121323**	TestNo: **SM4500-NO3**		Analysis Date: **1/10/2018**	SeqNo: **2890464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 01-10-2018 14:33
Time end: 01-10-2018 17:21

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:42:18	0.0170		0.0867
2	<BLANK>	16:43:17	0.0082		0.0842
3	<CAL1>	16:44:12	0.0106	[0]	0.0849
4	<CAL2>	16:45:14	0.0617	[0.05]	0.0994
5	<CAL3>	16:46:09	0.1071	[0.1]	0.1123
6	<CAL4>	16:47:09	0.4960	[0.5]	0.2227
7	<CAL5>	16:48:05	0.9483	[1]	0.3511
8	<CAL6>	16:49:01	2.0262	[2]	0.6571
9	,BLANK,BLANK,1, NOT REPORTED	16:50:01	0.0550		0.0975
10	,ICV,ICV,1,	16:50:56	0.5020		0.2244
11	,ICB,ICB,1,	16:51:52	0.0205		0.0877
12	,MB-H2O,MBLK,1,	16:52:47	0.0099		0.0847
13	,LCS-H2O,LCS,1,	16:53:47	0.4738		0.2164
14	,N027819-001D,SAMP,1,	16:54:43	0.0966		0.1093
15	,N027819-002D,SAMP,5,	16:55:45	0.5675		0.2430
16	,N027819-002DDUP,DUP,5,	16:56:39	0.5947		0.2507
17	,N027819-002DMS,MS,5,	16:57:34	1.1142		0.3982
18	,N027819-002DMSD,MSD,5,	16:58:36	1.1540		0.4095
19	,N027820-001E,SAMP,1,	16:59:32	0.4428		0.2076
20	,N027820-002E,SAMP,1,	17:00:26	0.3833		0.1907
21	,BLANK, NOT REPORTED	17:01:22	0.0289		0.0901
22	,CCV-1,CCV,1,	17:02:23	0.4904		0.2211
23	,CCB-1,CCB,1,	17:03:17	0.0089		0.0844
24	,N027820-003E,SAMP,1,	17:04:19	0.3488		0.1809
25	,N027820-004E,SAMP,1,	17:05:14	0.3481		0.1807
26	,N027820-005E,SAMP,1,	17:06:04	0.3787		0.1894

RLB 01/12/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N027820-006E,SAMP,1,	17:06:46	0.3745		0.1882
28	,N027820-007E,SAMP,1,	17:07:30	0.3601		0.1841
29	,N027820-008E,SAMP,1,	17:08:18	0.3403		0.1785
30	,N027820-009E,SAMP,1,	17:09:01	0.3583		0.1836
31	,N027820-010E,SAMP,1,	17:09:49	0.3833		0.1907
32	,N027820-011E,SAMP,1,	17:10:33	0.4249		0.2025
33	,BLANK, NOT REPORTED	17:11:15	0.0096		0.0846
34	,CCV-2,CCV,1,	17:12:04	0.4626		0.2132
35	,CCB-2,CCB,1,	17:12:47	0.0018		0.0824
36	,N027820-012E,SAMP,1,	17:13:29	0.3523		0.1819
37	,N027820-013E,SAMP,1,	17:14:19	0.3632		0.1850
38	,N027869-001D,SAMP,10,	17:15:01	0.9229		0.3439
39	,N027869-002D,SAMP,5,	17:15:44	0.5337		0.2334
40	,N027869-003D,SAMP,10,	17:16:32	0.4080		0.1977
41	,BLANK, NOT REPORTED	17:17:16	0.0015		0.0823
42	,CCV-3,CCV,1, NOT REPORTED	17:17:59	0.4714		0.2157
43	,CCV-3,CCV,1,	17:18:47	0.5034		0.2248
44	,CCB-3,CCB,1,	17:19:31	-0.0013		0.0815

01/12/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 1/10/2018
Time Analyzed: 2:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R171220B
Color reagent: R171220C
2% Copper Sulfate: R171220A
Ammonium Hydroxide: CINV-171215B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N027819-001D		8.37							
N027819-002D		7.99							
N027820-001E		7.94							
N027820-002E		8.00							
N027820-003E		7.77							
N027820-004E		7.70							
N027820-005E		6.60							
N027820-006E		7.75							
N027820-007E		7.67							
N027820-008E		7.93							
N027820-009E		6.52							
N027820-010E		7.92							
N027820-011E		7.99							
N027820-012E		7.59							
N027820-013E		7.28							
N027869-001D		8.44							
N027869-002D		8.61							
N027869-003D		8.24							

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66278
ASSET #: N027820

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/10/2018

Method:

[X] EPA 6010B / 200.7 DISS
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Fe in N027820-001B PS failed. However LCS passed criteria.

N027820-001B in batch 66278 was only used as reference sample for MS/MSD and PS

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/15/18

2nd Level Reviewer 01/15/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66334
ASSET #: N027820

Instrument ID: ICP-02
Analyst: CEI

Method: DISS
Date Analyzed: 1/11/2018

- [X] EPA 6010B / 200.7
- [ ] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For N027820-001B, 006B, 008B, 009B & 010B run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/15/18

2nd Level Reviewer Nancy 01/15/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027820-003B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.04538 * 1 * (25/25) * 1000

Iron , ug/L = 45.38

Reporting results in two significant figures,

Iron , ug/L = 45

% RSD SUMMARY

RSD SUMMARY: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	14.57	15	PASS
Standard1	ICAL	1	Fe	0.02	6.92	15	PASS
Standard2	ICAL	1	Fe	0.05	0.42	15	PASS
Standard3	ICAL	1	Fe	2	0.2	15	PASS
Standard4	ICAL	1	Fe	5	0.5	15	PASS
Standard5	ICAL	1	Fe	7.5	0.13	15	PASS
Standard6	ICAL	1	Fe	10	0.068	15	PASS
Standard7	ICAL	1	Fe	20	0.2	15	PASS
ICV	ICV	1	Fe	10.18	0.11	15	PASS
ICB	ICB	1	Fe	-0.0014	23.58	15	<PQL
LLICV	CCV1	1	Fe	0.019	2.0016	20	PASS
ICSA1	ICSA	1	Fe	172.29	0.26	15	PASS
ICSAB1	ICSAB	1	Fe	181.51	0.34	15	PASS
CCV1	CCV	1	Fe	9.94	0.11	15	PASS
CCB1	CCB	1	Fe	-0.0022	9.66	15	PASS
MB-66278	MBLK	1	Fe	-0.002	3.084	15	PASS
CCV2	CCV	1	Fe	10.11	0.14	15	PASS
CCB2	CCB	1	Fe	-0.0024	32.8	15	<PQL
LCS-66278	LCS	1	Fe	0.11	0.71	15	PASS
N027820-001B	SAMP	1	Fe	0.028	1.24	15	PASS
N027820-001B	SAMP	5	Fe	0.0037	13.74	15	PASS
N027820-001B-PS	PS	1	Fe	0.22	0.38	15	PASS
N027820-001B-MS	MS	1	Fe	0.14	1.28	15	PASS
N027820-001B-MSD	MSD	1	Fe	0.15	0.41	15	PASS
N027820-002B	SAMP	1	Fe	0.016	3.75	15	PASS
N027820-003B	SAMP	1	Fe	0.045	0.56	15	PASS
N027820-004B	SAMP	1	Fe	0.089	0.68	15	PASS
N027820-005B	SAMP	1	Fe	0.01	3.97	15	PASS
CCV3	CCV	1	Fe	10.021	0.11	15	PASS
CCB3	CCB	1	Fe	-0.0015	27.34	15	<PQL
N027820-006B	SAMP	1	Fe	0.051	1.53	15	PASS
N027820-007B	SAMP	1	Fe	0.02	1.65	15	PASS
N027820-008B	SAMP	1	Fe	0.052	0.54	15	PASS
N027820-009B	SAMP	1	Fe	0.034	1.65	15	PASS
N027820-010B	SAMP	1	Fe	0.034	2.15	15	PASS
N027820-011B	SAMP	1	Fe	0.0078	6.89	15	PASS
N027820-012B	SAMP	1	Fe	0.015	5.59	15	PASS
N027820-013B	SAMP	1	Fe	0.024	1.45	15	PASS
CCV4	CCV	1	Fe	10.054	0.12	15	PASS
CCB4	CCB	1	Fe	-0.0021	7.4	15	PASS
LLCCV1	CCV2	1	Fe	0.019	4.97	20	PASS
ICSA2	ICSA	1	Fe	170.83	0.11	15	PASS

RSD SUMMARY: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB2	ICSAB	1	Fe	181.22	0.13	15	PASS

RSD SUMMARY: 180111E

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	9.39	15	PASS
Standard1	ICAL	1	Fe	0.02	4.54	15	PASS
Standard2	ICAL	1	Fe	0.05	0.4	15	PASS
Standard3	ICAL	1	Fe	2	0.12	15	PASS
Standard4	ICAL	1	Fe	5	0.42	15	PASS
Standard5	ICAL	1	Fe	7.5	0.88	15	PASS
Standard6	ICAL	1	Fe	10	0.094	15	PASS
Standard7	ICAL	1	Fe	20	0.1	15	PASS
ICV	ICV	1	Fe	10.069	0.025	15	PASS
ICB	ICB	1	Fe	-0.00037	73.6	15	<PQL
LLICV	CCV1	1	Fe	0.02	2.74	20	PASS
ICSA1	ICSA	1	Fe	171.69	0.6	15	PASS
ICSAB1	ICSAB	1	Fe	183.96	0.64	15	PASS
MB-66334	MBLK	1	Fe	0.002	77.89	15	<PQL
LCS-66334	LCS	1	Fe	0.1	0.61	15	PASS
N027922-001B	SAMP	1	Fe	0.012	4.53	15	PASS
N027922-001B	SAMP	5	Fe	0.0018	23.48	15	<PQL
N027922-001B-PS	PS	1	Fe	0.12	0.61	15	PASS
N027922-001B-MS	MS	1	Fe	0.12	0.54	15	PASS
N027922-001B-MSD	MSD	1	Fe	0.12	0.35	15	PASS
N027922-002B	SAMP	1	Fe	0.0095	3.34	15	PASS
N027922-004B	SAMP	1	Fe	0.022	2.8	15	PASS
N027922-005B	SAMP	1	Fe	0.016	3.76	15	PASS
CCV1	CCV	1	Fe	10.01	0.078	15	PASS
CCB1	CCB	1	Fe	-0.00085	34.87	15	<PQL
N027922-006B	SAMP	1	Fe	0.03	1.26	15	PASS
N027922-007B	SAMP	1	Fe	0.018	4.93	15	PASS
N027820-001B	SAMP	1	Fe	-0.0004	24.96	15	<PQL
N027820-006B	SAMP	1	Fe	-0.0014	58.48	15	<PQL
N027820-008B	SAMP	1	Fe	-0.00044	81.99	15	<PQL
N027820-009B	SAMP	1	Fe	-0.0015	38.57	15	<PQL
N027820-010B	SAMP	1	Fe	-0.0012	20.88	15	<PQL
CCV2	CCV	1	Fe	10.033	0.12	15	PASS
CCB2	CCB	1	Fe	-0.00096	58.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	3.21	20	PASS
ICSA2	ICSA	1	Fe	171.66	0.15	15	PASS
ICSAB2	ICSAB	1	Fe	184.04	0.62	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180110D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/10/2018	02:55:17 PM
2	Standard1	ICAL	1	01/10/2018	03:00:09 PM
3	Standard2	ICAL	1	01/10/2018	03:04:29 PM
11	Standard3	ICAL	1	01/10/2018	03:09:19 PM
12	Standard4	ICAL	1	01/10/2018	03:14:11 PM
6	Standard5	ICAL	1	01/10/2018	03:19:03 PM
7	Standard6	ICAL	1	01/10/2018	03:23:24 PM
8	Standard7	ICAL	1	01/10/2018	03:27:47 PM
9	ICV	ICV	1	01/10/2018	03:33:13 PM
1	ICB	ICB	1	01/10/2018	03:38:47 PM
2	LLICV	CCV1	1	01/10/2018	03:43:05 PM
4	ICSA1	ICSA	1	01/10/2018	03:47:54 PM
5	ICSAB1	ICSAB	1	01/10/2018	03:54:15 PM
98	MB-66271	MBLK	1	01/10/2018	03:59:48 PM
99	LCS-66271	LCS	1	01/10/2018	04:04:39 PM
100	N027820-001C	SAMP	1	01/10/2018	04:09:31 PM
101	N027820-001C	SAMP	5	01/10/2018	04:14:25 PM
102	N027820-001C-PS	PS	1	01/10/2018	04:19:18 PM
103	N027820-001C-MS	MS	1	01/10/2018	04:24:13 PM
104	N027820-001C-MSD	MSD	1	01/10/2018	04:29:05 PM
105	N027820-002C	SAMP	1	01/10/2018	04:33:58 PM
106	N027820-003C	SAMP	1	01/10/2018	04:38:50 PM
107	N027820-004C	SAMP	1	01/10/2018	04:43:42 PM
7	CCV1	CCV	1	01/10/2018	04:48:35 PM
1	CCB1	CCB	1	01/10/2018	04:53:00 PM
108	N027820-005C	SAMP	1	01/10/2018	04:57:48 PM
109	N027820-006C	SAMP	1	01/10/2018	05:02:41 PM
110	N027820-007C	SAMP	1	01/10/2018	05:07:34 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
111	N027820-008C	SAMP	1	01/10/2018	05:12:26 PM
112	N027820-009C	SAMP	1	01/10/2018	05:17:19 PM
113	N027820-010C	SAMP	1	01/10/2018	05:22:12 PM
114	N027820-011C	SAMP	1	01/10/2018	05:27:04 PM
115	N027820-012C	SAMP	1	01/10/2018	05:31:57 PM
116	N027820-013C	SAMP	1	01/10/2018	05:36:50 PM
117	MB-66278	MBLK	1	01/10/2018	05:41:42 PM
7	CCV2	CCV	1	01/10/2018	05:46:34 PM
1	CCB2	CCB	1	01/10/2018	05:51:58 PM
118	LCS-66278	LCS	1	01/10/2018	05:56:47 PM
119	N027820-001B	SAMP	1	01/10/2018	06:01:40 PM
120	N027820-001B	SAMP	5	01/10/2018	06:06:32 PM
121	N027820-001B-PS	PS	1	01/10/2018	06:11:25 PM
122	N027820-001B-MS	MS	1	01/10/2018	06:16:18 PM
123	N027820-001B-MSD	MSD	1	01/10/2018	06:21:12 PM
124	N027820-002B	SAMP	1	01/10/2018	06:26:05 PM
125	N027820-003B	SAMP	1	01/10/2018	06:30:59 PM
126	N027820-004B	SAMP	1	01/10/2018	06:35:52 PM
127	N027820-005B	SAMP	1	01/10/2018	06:40:46 PM
7	CCV3	CCV	1	01/10/2018	06:45:39 PM
1	CCB3	CCB	1	01/10/2018	06:50:02 PM
128	N027820-006B	SAMP	1	01/10/2018	06:54:21 PM
129	N027820-007B	SAMP	1	01/10/2018	06:59:15 PM
130	N027820-008B	SAMP	1	01/10/2018	07:04:08 PM
131	N027820-009B	SAMP	1	01/10/2018	07:09:02 PM
132	N027820-010B	SAMP	1	01/10/2018	07:14:22 PM
133	N027820-011B	SAMP	1	01/10/2018	07:19:15 PM
134	N027820-012B	SAMP	1	01/10/2018	07:23:38 PM
135	N027820-013B	SAMP	1	01/10/2018	07:28:32 PM
7	CCV4	CCV	1	01/10/2018	07:33:26 PM
1	CCB4	CCB	1	01/10/2018	07:38:50 PM
2	LLCCV1	CCV2	1	01/10/2018	07:43:08 PM
4	ICSA2	ICSA	1	01/10/2018	07:47:57 PM
5	ICSAB2	ICSAB	1	01/10/2018	07:53:58 PM

INJECTION LOG: 180111E

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/11/2018	10:14:22 PM
2	Standard1	ICAL	1	01/11/2018	10:18:42 PM
3	Standard2	ICAL	1	01/11/2018	10:23:31 PM
11	Standard3	ICAL	1	01/11/2018	10:28:20 PM
12	Standard4	ICAL	1	01/11/2018	10:33:10 PM
6	Standard5	ICAL	1	01/11/2018	10:38:02 PM
7	Standard6	ICAL	1	01/11/2018	10:42:52 PM
8	Standard7	ICAL	1	01/11/2018	10:47:14 PM
9	ICV	ICV	1	01/11/2018	10:52:36 PM
1	ICB	ICB	1	01/11/2018	10:58:00 PM
2	LLICV	CCV1	1	01/11/2018	11:02:47 PM
4	ICSA1	ICSA	1	01/11/2018	11:07:36 PM
5	ICSAB1	ICSAB	1	01/11/2018	11:13:36 PM
98	MB-66334	MBLK	1	01/11/2018	11:19:06 PM
99	LCS-66334	LCS	1	01/11/2018	11:23:57 PM
100	N027922-001B	SAMP	1	01/11/2018	11:28:48 PM
101	N027922-001B	SAMP	5	01/11/2018	11:33:40 PM
102	N027922-001B-PS	PS	1	01/11/2018	11:38:30 PM
103	N027922-001B-MS	MS	1	01/11/2018	11:43:21 PM
104	N027922-001B-MSD	MSD	1	01/11/2018	11:48:12 PM
105	N027922-002B	SAMP	1	01/11/2018	11:53:03 PM
106	N027922-004B	SAMP	1	01/11/2018	11:58:06 PM
107	N027922-005B	SAMP	1	01/12/2018	12:02:58 AM
7	CCV1	CCV	1	01/12/2018	12:07:49 AM
1	CCB1	CCB	1	01/12/2018	12:13:12 AM
108	N027922-006B	SAMP	1	01/12/2018	12:18:00 AM
109	N027922-007B	SAMP	1	01/12/2018	12:23:51 AM
110	N027820-001B	SAMP	1	01/12/2018	12:29:03 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
111	N027820-006B	SAMP	1	01/12/2018	12:33:55 AM
112	N027820-008B	SAMP	1	01/12/2018	12:38:48 AM
113	N027820-009B	SAMP	1	01/12/2018	12:43:39 AM
114	N027820-010B	SAMP	1	01/12/2018	12:48:31 AM
7	CCV2	CCV	1	01/12/2018	12:53:23 AM
1	CCB2	CCB	1	01/12/2018	12:58:46 AM
2	LLCCV1	CCV2	1	01/12/2018	01:03:33 AM
4	ICSA2	ICSA	1	01/12/2018	01:08:22 AM
5	ICSAB2	ICSAB	1	01/12/2018	01:14:22 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:10:16 A**
Prep End Date: **1/5/2018 2:00:00 P**
Prep Batch **66278** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/15/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66278	Aqueous		25	☐	0	0	25	1.000		
MB-66278	Aqueous		25	☐	0	0	25	1.000		
N027820-001B	Groundwater		25	☐	0	0	25	1.000		
N027820-001B-MS	Groundwater		25	☐	0	0	25	1.000		
N027820-001B-MS	Groundwater		25	☐	0	0	25	1.000		
N027820-002B	Groundwater		25	☐	0	0	25	1.000		
~~186~~										
N027820-003B	Groundwater		25	☐	0	0	25	1.000		
N027820-004B	Groundwater		25	☐	0	0	25	1.000		
N027820-005B	Groundwater		25	☐	0	0	25	1.000		
N027820-006B	Groundwater		25	☐	0	0	25	1.000		
N027820-007B	Groundwater		25	☐	0	0	25	1.000		
N027820-008B	Groundwater		25	☐	0	0	25	1.000		
N027820-009B	Groundwater		25	☐	0	0	25	1.000		
N027820-010B	Groundwater		25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:10:16 A**
Prep End Date: **1/5/2018 2:00:00 P**

Reviewed/ Date: 01/15/2018
Initials/ Date: for

Prep Batch **66278** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027820-011B	Groundwater		25	☐	0	0	25	1.000		
N027820-012B	Groundwater		25	☐	0	0	25	1.000		
N027820-013B	Groundwater		25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/11/2018 4:00:00 P**
Prep End Date: **1/11/2018 8:00:00 P**

Reviewed/ Date: 01/15/2018

Initials/ Date: for

Prep Batch **66334** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66334	Aqueous		25	☐	0	0	25	1.000		
MB-66334	Aqueous		25	☐	0	0	25	1.000		
N027820-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027922-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/11/2018 4:00:00 P**
Prep End Date: **1/11/2018 8:00:00 P**
Prep Batch **66334** Prep Code: **3010_W_DISS**

Reviewed/ Date: 01/15/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027922-007B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180110D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/10/2018	02:55:17 PM	Fe	273.953	-119	0.00	mg/L	
Standard1	01/10/2018	03:00:09 PM	Fe	273.953	488	0.0200	mg/L	
Standard2	01/10/2018	03:04:29 PM	Fe	273.953	2097	0.050	mg/L	
Standard3	01/10/2018	03:09:19 PM	Fe	273.953	51337	2.000	mg/L	
Standard4	01/10/2018	03:14:11 PM	Fe	273.953	131418	5.000	mg/L	
Standard5	01/10/2018	03:19:03 PM	Fe	273.953	188799	7.500	mg/L	
Standard6	01/10/2018	03:23:24 PM	Fe	273.953	248107	10.000	mg/L	
Standard7	01/10/2018	03:27:47 PM	Fe	273.953	489573	20.000	mg/L	0.9999

INITIAL CALIBRATION SUMMARY: 180111E

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/11/2018	10:14:22 PM	Fe	273.953	-153	0.00	mg/L	
Standard1	01/11/2018	10:18:42 PM	Fe	273.953	496	0.0200	mg/L	
Standard2	01/11/2018	10:23:31 PM	Fe	273.953	2112	0.050	mg/L	
Standard3	01/11/2018	10:28:20 PM	Fe	273.953	50516	2.000	mg/L	
Standard4	01/11/2018	10:33:10 PM	Fe	273.953	126351	5.000	mg/L	
Standard5	01/11/2018	10:38:02 PM	Fe	273.953	188539	7.500	mg/L	
Standard6	01/11/2018	10:42:52 PM	Fe	273.953	243704	10.000	mg/L	
Standard7	01/11/2018	10:47:14 PM	Fe	273.953	480338	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ICV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10176.057	20	10000	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.114	20	20.00	0	95.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9944.480	20	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10106.363	20	10000	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10020.637	20	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10053.884	20	10000	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.540	20	20.00	0	92.7	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **ICV**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/11/2018**	SeqNo: **2892457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10068.718	20	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **ZZZZZZ**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/11/2018**	SeqNo: **2892459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.214	20	20.00	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **CCV**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/12/2018**	SeqNo: **2892471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10009.901	20	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **CCV**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/12/2018**	SeqNo: **2892480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10033.417	20	10000	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **ZZZZZZ**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/12/2018**	SeqNo: **2892482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.951	20	20.00	0	99.8	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ICB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.413994	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.183961	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.429734	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.51639	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.0719	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **ICB**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/11/2018**	SeqNo: **2892458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.369785	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **CCB**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/12/2018**	SeqNo: **2892472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.847839	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **CCB**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/12/2018**	SeqNo: **2892481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.955744	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSA** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510516.682	50	500000	0	102	80	120				
Calcium	497835.625	500	500000	0	99.6	80	120				
Iron	172288.951	20	200000	0	86.1	80	120				
Magnesium	478642.541	100	500000	0	95.7	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSAB** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541436.327	50	500000	0	108	80	120				
Calcium	530420.935	500	500000	0	106	80	120				
Iron	181506.613	20	200000	0	90.8	80	120				
Magnesium	508596.794	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSA** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509210.109	50	500000	0	102	80	120				
Calcium	495325.595	500	500000	0	99.1	80	120				
Iron	170832.665	20	200000	0	85.4	80	120				
Magnesium	470903.563	100	500000	0	94.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSAB** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	543810.781	50	500000	0	109	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ICSAB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	531128.163	500	500000	0	106	80	120				
Iron	181218.628	20	200000	0	90.6	80	120				
Magnesium	504139.575	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121376**
Client ID: **ICSA** Batch ID: **R121376** TestNo: **EPA 6010B** Analysis Date: **1/11/2018** SeqNo: **2892460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510934.344	50	500000	0	102	80	120				
Calcium	497361.915	500	500000	0	99.5	80	120				
Iron	171687.805	20	200000	0	85.8	80	120				
Magnesium	479406.656	100	500000	0	95.9	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121376**
Client ID: **ICSAB** Batch ID: **R121376** TestNo: **EPA 6010B** Analysis Date: **1/11/2018** SeqNo: **2892461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	547887.718	50	500000	0	110	80	120				
Calcium	536021.810	500	500000	0	107	80	120				
Iron	183964.442	20	200000	0	92.0	80	120				
Magnesium	517461.550	100	500000	0	103	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121376**
Client ID: **ICSA** Batch ID: **R121376** TestNo: **EPA 6010B** Analysis Date: **1/12/2018** SeqNo: **2892483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508104.879	50	500000	0	102	80	120				
Calcium	494309.847	500	500000	0	98.9	80	120				
Iron	171656.681	20	200000	0	85.8	80	120				
Magnesium	480143.645	100	500000	0	96.0	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **121376**
Client ID: **ICSAB** Batch ID: **R121376** TestNo: **EPA 6010B** Analysis Date: **1/12/2018** SeqNo: **2892484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	544205.281	50	500000	0	109	80	120				
Calcium	532491.509	500	500000	0	106	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID: **ICSAB**	Batch ID: **R121376**	TestNo: **EPA 6010B**		Analysis Date: **1/12/2018**	SeqNo: **2892484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	184039.193	20	200000	0	92.0	80	120				
Magnesium	520420.890	100	500000	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.099	65-125	PASS
Standard2	ICAL	1	1.039	103.91	65-125	PASS
Standard3	ICAL	1	0.99	99.31	65-125	PASS
Standard4	ICAL	1	1.03	103	65-125	PASS
Standard5	ICAL	1	1.051	105.07	65-125	PASS
Standard6	ICAL	1	0.98	98.22	65-125	PASS
Standard7	ICAL	1	0.98	97.92	65-125	PASS
ICV	ICV	1	0.98	97.77	65-125	PASS
ICB	ICB	1	0.99	98.79	65-125	PASS
LLICV	CCV1	1	0.98	98.42	65-125	PASS
ICSA1	ICSA	1	0.94	94.16	65-125	PASS
ICSAB1	ICSAB	1	0.86	86.39	65-125	PASS
CCV1	CCV	1	0.99	99.48	65-125	PASS
CCB1	CCB	1	1.001	100.1	65-125	PASS
MB-66278	MBLK	1	1.016	101.64	65-125	PASS
CCV2	CCV	1	1	99.51	65-125	PASS
CCB2	CCB	1	1	99.7	65-125	PASS
LCS-66278	LCS	1	0.93	93.29	65-125	PASS
N027820-001B	SAMP	1	0.98	98.044	65-125	PASS
N027820-001B	SAMP	5	1.0022	100.22	65-125	PASS
N027820-001B-PS	PS	1	0.95	95.49	65-125	PASS
N027820-001B-MS	MS	1	0.98	97.55	65-125	PASS
N027820-001B-MSD	MSD	1	0.96	96.17	65-125	PASS
N027820-002B	SAMP	1	0.96	96.085	65-125	PASS
N027820-003B	SAMP	1	0.97	96.87	65-125	PASS
N027820-004B	SAMP	1	0.97	97.056	65-125	PASS
N027820-005B	SAMP	1	0.99	98.53	65-125	PASS
CCV3	CCV	1	1.0012	100.12	65-125	PASS
CCB3	CCB	1	1.012	101.17	65-125	PASS
N027820-006B	SAMP	1	0.98	97.66	65-125	PASS
N027820-007B	SAMP	1	0.97	97.23	65-125	PASS
N027820-008B	SAMP	1	0.99	99.016	65-125	PASS
N027820-009B	SAMP	1	1.01	101.05	65-125	PASS
N027820-010B	SAMP	1	0.99	99.1	65-125	PASS
N027820-011B	SAMP	1	1.0096	100.96	65-125	PASS
N027820-012B	SAMP	1	0.98	98.12	65-125	PASS
N027820-013B	SAMP	1	0.99	99.41	65-125	PASS
CCV4	CCV	1	1.0044	100.44	65-125	PASS
CCB4	CCB	1	1.014	101.39	65-125	PASS
LLCCV1	CCV2	1	1.016	101.6	65-125	PASS

INTERNAL STANDARD: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSA2	ICSA	1	0.96	95.91	65-125	PASS
ICSAB2	ICSAB	1	0.88	87.99	65-125	PASS

INTERNAL STANDARD: 180111E

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.082	65-125	PASS
Standard2	ICAL	1	1.047	104.66	65-125	PASS
Standard3	ICAL	1	1.041	104.13	65-125	PASS
Standard4	ICAL	1	1.035	103.52	65-125	PASS
Standard5	ICAL	1	1.045	104.5	65-125	PASS
Standard6	ICAL	1	0.98	97.87	65-125	PASS
Standard7	ICAL	1	0.97	97.49	65-125	PASS
ICV	ICV	1	0.98	97.94	65-125	PASS
ICB	ICB	1	1.0041	100.41	65-125	PASS
LLICV	CCV1	1	1	99.94	65-125	PASS
ICSA1	ICSA	1	0.95	94.6	65-125	PASS
ICSAB1	ICSAB	1	0.85	84.61	65-125	PASS
MB-66334	MBLK	1	1.0005	100.05	65-125	PASS
LCS-66334	LCS	1	0.93	92.76	65-125	PASS
N027922-001B	SAMP	1	1.014	101.43	65-125	PASS
N027922-001B	SAMP	5	1.014	101.39	65-125	PASS
N027922-001B-PS	PS	1	1.012	101.15	65-125	PASS
N027922-001B-MS	MS	1	1.017	101.74	65-125	PASS
N027922-001B-MSD	MSD	1	1.014	101.44	65-125	PASS
N027922-002B	SAMP	1	1.037	103.68	65-125	PASS
N027922-004B	SAMP	1	1.03	102.95	65-125	PASS
N027922-005B	SAMP	1	0.98	97.8	65-125	PASS
CCV1	CCV	1	0.98	98.37	65-125	PASS
CCB1	CCB	1	1.0026	100.26	65-125	PASS
N027922-006B	SAMP	1	0.96	95.9	65-125	PASS
N027922-007B	SAMP	1	0.99	99.48	65-125	PASS
N027820-001B	SAMP	1	0.97	97	65-125	PASS
N027820-006B	SAMP	1	0.99	98.82	65-125	PASS
N027820-008B	SAMP	1	0.98	98.26	65-125	PASS
N027820-009B	SAMP	1	0.96	95.99	65-125	PASS
N027820-010B	SAMP	1	0.99	99.042	65-125	PASS
CCV2	CCV	1	0.97	97.21	65-125	PASS
CCB2	CCB	1	1	99.75	65-125	PASS
LLCCV1	CCV2	1	0.99	98.78	65-125	PASS
ICSA2	ICSA	1	0.94	93.77	65-125	PASS
ICSAB2	ICSAB	1	0.84	84.13	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027820
Test Method: EPA 6010B
Analysis Date: 1/10/2018

Matrix: Groundwater
Batch No.: 66278

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Iron. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027820-001B DT 5x	Iron	ug/L	18.41402	NA	28.3913	35.14%	10

Note: NA - Not applicable

N027820-001B in batch 66278 was only used as reference sample for MS/MSD and PS.

01/15/2018

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027820
Test Method: EPA 6010B
Analysis Date: 1/11/2018

Matrix: Groundwater
Batch No.: 66334

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027922-001B DT 5X	Iron	ug/L	9.180368	NA	12.12619	24.29%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027820-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID:	**ZZZZZZ**	Batch ID: **66278**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	224.512	20	100.0	28.39	196	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N027922-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **121376**
Client ID:	**ZZZZZZ**	Batch ID: **66334**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/11/2018**	SeqNo: **2892466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.419	20	100.0	12.13	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66271
ASSET #: N027820

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 1/10/2018

Method: TOTAL

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/12/18

2nd Level Reviewer 01/12/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N027820-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02019 * 1 * (25/25) * 1000

Iron , ug/L = 20.19

Reporting results in two significant figures,

Iron , ug/L = 20

% RSD SUMMARY

RSD SUMMARY: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	14.57	15	PASS
Standard1	ICAL	1	Fe	0.02	6.92	15	PASS
Standard2	ICAL	1	Fe	0.05	0.42	15	PASS
Standard3	ICAL	1	Fe	2	0.2	15	PASS
Standard4	ICAL	1	Fe	5	0.5	15	PASS
Standard5	ICAL	1	Fe	7.5	0.13	15	PASS
Standard6	ICAL	1	Fe	10	0.068	15	PASS
Standard7	ICAL	1	Fe	20	0.2	15	PASS
ICV	ICV	1	Fe	10.18	0.11	15	PASS
ICB	ICB	1	Fe	-0.0014	23.58	15	<PQL
LLICV	CCV1	1	Fe	0.019	2.0016	20	PASS
ICSA1	ICSA	1	Fe	172.29	0.26	15	PASS
ICSAB1	ICSAB	1	Fe	181.51	0.34	15	PASS
MB-66271	MBLK	1	Fe	0.0011	78.47	15	<PQL
LCS-66271	LCS	1	Fe	0.11	0.76	15	PASS
N027820-001C	SAMP	1	Fe	0.02	2.27	15	PASS
N027820-001C	SAMP	5	Fe	0.0023	22.26	15	<PQL
N027820-001C-PS	PS	1	Fe	0.12	0.46	15	PASS
N027820-001C-MS	MS	1	Fe	0.12	0.97	15	PASS
N027820-001C-MSD	MSD	1	Fe	0.12	0.61	15	PASS
N027820-002C	SAMP	1	Fe	0.022	0.95	15	PASS
N027820-003C	SAMP	1	Fe	0.55	0.31	15	PASS
N027820-004C	SAMP	1	Fe	0.39	0.26	15	PASS
CCV1	CCV	1	Fe	9.94	0.11	15	PASS
CCB1	CCB	1	Fe	-0.0022	9.66	15	PASS
N027820-005C	SAMP	1	Fe	0.016	2.89	15	PASS
N027820-006C	SAMP	1	Fe	0.017	1.36	15	PASS
N027820-007C	SAMP	1	Fe	0.023	3.79	15	PASS
N027820-008C	SAMP	1	Fe	0.029	0.87	15	PASS
N027820-009C	SAMP	1	Fe	0.016	4.4	15	PASS
N027820-010C	SAMP	1	Fe	0.021	2.33	15	PASS
N027820-011C	SAMP	1	Fe	0.015	7.87	15	PASS
N027820-012C	SAMP	1	Fe	0.022	2.2	15	PASS
N027820-013C	SAMP	1	Fe	0.11	0.53	15	PASS
CCV2	CCV	1	Fe	10.11	0.14	15	PASS
CCB2	CCB	1	Fe	-0.0024	32.8	15	<PQL
CCV3	CCV	1	Fe	10.021	0.11	15	PASS
CCB3	CCB	1	Fe	-0.0015	27.34	15	<PQL
CCV4	CCV	1	Fe	10.054	0.12	15	PASS
CCB4	CCB	1	Fe	-0.0021	7.4	15	PASS
LLCCV1	CCV2	1	Fe	0.019	4.97	20	PASS
ICSA2	ICSA	1	Fe	170.83	0.11	15	PASS

RSD SUMMARY: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB2	ICSAB	1	Fe	181.22	0.13	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180110D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201K/MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201K/-171030G/-171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	01/10/2018	02:55:17 PM
2	Standard1	ICAL	1	01/10/2018	03:00:09 PM
3	Standard2	ICAL	1	01/10/2018	03:04:29 PM
11	Standard3	ICAL	1	01/10/2018	03:09:19 PM
12	Standard4	ICAL	1	01/10/2018	03:14:11 PM
6	Standard5	ICAL	1	01/10/2018	03:19:03 PM
7	Standard6	ICAL	1	01/10/2018	03:23:24 PM
8	Standard7	ICAL	1	01/10/2018	03:27:47 PM
9	ICV	ICV	1	01/10/2018	03:33:13 PM
1	ICB	ICB	1	01/10/2018	03:38:47 PM
2	LLICV	CCV1	1	01/10/2018	03:43:05 PM
4	ICSA1	ICSA	1	01/10/2018	03:47:54 PM
5	ICSAB1	ICSAB	1	01/10/2018	03:54:15 PM
98	MB-66271	MBLK	1	01/10/2018	03:59:48 PM
99	LCS-66271	LCS	1	01/10/2018	04:04:39 PM
100	N027820-001C	SAMP	1	01/10/2018	04:09:31 PM
101	N027820-001C	SAMP	5	01/10/2018	04:14:25 PM
102	N027820-001C-PS	PS	1	01/10/2018	04:19:18 PM
103	N027820-001C-MS	MS	1	01/10/2018	04:24:13 PM
104	N027820-001C-MSD	MSD	1	01/10/2018	04:29:05 PM
105	N027820-002C	SAMP	1	01/10/2018	04:33:58 PM
106	N027820-003C	SAMP	1	01/10/2018	04:38:50 PM
107	N027820-004C	SAMP	1	01/10/2018	04:43:42 PM
7	CCV1	CCV	1	01/10/2018	04:48:35 PM
1	CCB1	CCB	1	01/10/2018	04:53:00 PM
108	N027820-005C	SAMP	1	01/10/2018	04:57:48 PM
109	N027820-006C	SAMP	1	01/10/2018	05:02:41 PM
110	N027820-007C	SAMP	1	01/10/2018	05:07:34 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
111	N027820-008C	SAMP	1	01/10/2018	05:12:26 PM
112	N027820-009C	SAMP	1	01/10/2018	05:17:19 PM
113	N027820-010C	SAMP	1	01/10/2018	05:22:12 PM
114	N027820-011C	SAMP	1	01/10/2018	05:27:04 PM
115	N027820-012C	SAMP	1	01/10/2018	05:31:57 PM
116	N027820-013C	SAMP	1	01/10/2018	05:36:50 PM
117	MB-66278	MBLK	1	01/10/2018	05:41:42 PM
7	CCV2	CCV	1	01/10/2018	05:46:34 PM
1	CCB2	CCB	1	01/10/2018	05:51:58 PM
118	LCS-66278	LCS	1	01/10/2018	05:56:47 PM
119	N027820-001B	SAMP	1	01/10/2018	06:01:40 PM
120	N027820-001B	SAMP	5	01/10/2018	06:06:32 PM
121	N027820-001B-PS	PS	1	01/10/2018	06:11:25 PM
122	N027820-001B-MS	MS	1	01/10/2018	06:16:18 PM
123	N027820-001B-MSD	MSD	1	01/10/2018	06:21:12 PM
124	N027820-002B	SAMP	1	01/10/2018	06:26:05 PM
125	N027820-003B	SAMP	1	01/10/2018	06:30:59 PM
126	N027820-004B	SAMP	1	01/10/2018	06:35:52 PM
127	N027820-005B	SAMP	1	01/10/2018	06:40:46 PM
7	CCV3	CCV	1	01/10/2018	06:45:39 PM
1	CCB3	CCB	1	01/10/2018	06:50:02 PM
128	N027820-006B	SAMP	1	01/10/2018	06:54:21 PM
129	N027820-007B	SAMP	1	01/10/2018	06:59:15 PM
130	N027820-008B	SAMP	1	01/10/2018	07:04:08 PM
131	N027820-009B	SAMP	1	01/10/2018	07:09:02 PM
132	N027820-010B	SAMP	1	01/10/2018	07:14:22 PM
133	N027820-011B	SAMP	1	01/10/2018	07:19:15 PM
134	N027820-012B	SAMP	1	01/10/2018	07:23:38 PM
135	N027820-013B	SAMP	1	01/10/2018	07:28:32 PM
7	CCV4	CCV	1	01/10/2018	07:33:26 PM
1	CCB4	CCB	1	01/10/2018	07:38:50 PM
2	LLCCV1	CCV2	1	01/10/2018	07:43:08 PM
4	ICSA2	ICSA	1	01/10/2018	07:47:57 PM
5	ICSAB2	ICSAB	1	01/10/2018	07:53:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:10:16 A**
Prep End Date: **1/5/2018 2:00:00 P**
Prep Batch **66271** Prep Code: **3010_W**

Reviewed/ Date: 01/12/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-28**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66271	Aqueous		25	☐	0	0	25	1.000		
MB-66271	Aqueous		25	☐	0	0	25	1.000		
N027820-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-002C 186	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-010C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:10:16 A**
Prep End Date: **1/5/2018 2:00:00 P**
Prep Batch **66271** Prep Code: **3010_W**

Reviewed/ Date: 01/12/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-28**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027820-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9602	NITRIC ACID
9612	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180110D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	01/10/2018	02:55:17 PM	Fe	273.953	-119	0.00	mg/L	
Standard1	01/10/2018	03:00:09 PM	Fe	273.953	488	0.0200	mg/L	
Standard2	01/10/2018	03:04:29 PM	Fe	273.953	2097	0.050	mg/L	
Standard3	01/10/2018	03:09:19 PM	Fe	273.953	51337	2.000	mg/L	
Standard4	01/10/2018	03:14:11 PM	Fe	273.953	131418	5.000	mg/L	
Standard5	01/10/2018	03:19:03 PM	Fe	273.953	188799	7.500	mg/L	
Standard6	01/10/2018	03:23:24 PM	Fe	273.953	248107	10.000	mg/L	
Standard7	01/10/2018	03:27:47 PM	Fe	273.953	489573	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ICV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10176.057	20	10000	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.114	20	20.00	0	95.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9944.480	20	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10106.363	20	10000	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10020.637	20	10000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCV**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10053.884	20	10000	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ZZZZZZ**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.540	20	20.00	0	92.7	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ICB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.413994	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.183961	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.429734	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.51639	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **CCB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.0719	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSA** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510516.682	50	500000	0	102	80	120				
Calcium	497835.625	500	500000	0	99.6	80	120				
Iron	172288.951	20	200000	0	86.1	80	120				
Magnesium	478642.541	100	500000	0	95.7	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSAB** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541436.327	50	500000	0	108	80	120				
Calcium	530420.935	500	500000	0	106	80	120				
Iron	181506.613	20	200000	0	90.8	80	120				
Magnesium	508596.794	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSA** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509210.109	50	500000	0	102	80	120				
Calcium	495325.595	500	500000	0	99.1	80	120				
Iron	170832.665	20	200000	0	85.4	80	120				
Magnesium	470903.563	100	500000	0	94.2	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **121326**
Client ID: **ICSAB** Batch ID: **R121326** TestNo: **EPA 6010B** Analysis Date: **1/10/2018** SeqNo: **2890647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	543810.781	50	500000	0	109	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID: **ICSAB**	Batch ID: **R121326**	TestNo: **EPA 6010B**		Analysis Date: **1/10/2018**	SeqNo: **2890647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	531128.163	500	500000	0	106	80	120				
Iron	181218.628	20	200000	0	90.6	80	120				
Magnesium	504139.575	100	500000	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.099	65-125	PASS
Standard2	ICAL	1	1.039	103.91	65-125	PASS
Standard3	ICAL	1	0.99	99.31	65-125	PASS
Standard4	ICAL	1	1.03	103	65-125	PASS
Standard5	ICAL	1	1.051	105.07	65-125	PASS
Standard6	ICAL	1	0.98	98.22	65-125	PASS
Standard7	ICAL	1	0.98	97.92	65-125	PASS
ICV	ICV	1	0.98	97.77	65-125	PASS
ICB	ICB	1	0.99	98.79	65-125	PASS
LLICV	CCV1	1	0.98	98.42	65-125	PASS
ICSA1	ICSA	1	0.94	94.16	65-125	PASS
ICSAB1	ICSAB	1	0.86	86.39	65-125	PASS
MB-66271	MBLK	1	1	99.54	65-125	PASS
LCS-66271	LCS	1	0.92	91.97	65-125	PASS
N027820-001C	SAMP	1	1.0034	100.34	65-125	PASS
N027820-001C	SAMP	5	1.0012	100.12	65-125	PASS
N027820-001C-PS	PS	1	0.95	94.93	65-125	PASS
N027820-001C-MS	MS	1	0.96	95.8	65-125	PASS
N027820-001C-MSD	MSD	1	0.96	95.92	65-125	PASS
N027820-002C	SAMP	1	1	99.65	65-125	PASS
N027820-003C	SAMP	1	0.97	97.39	65-125	PASS
N027820-004C	SAMP	1	0.99	98.53	65-125	PASS
CCV1	CCV	1	0.99	99.48	65-125	PASS
CCB1	CCB	1	1.001	100.1	65-125	PASS
N027820-005C	SAMP	1	0.98	97.84	65-125	PASS
N027820-006C	SAMP	1	0.98	98.23	65-125	PASS
N027820-007C	SAMP	1	0.99	98.87	65-125	PASS
N027820-008C	SAMP	1	0.97	97.26	65-125	PASS
N027820-009C	SAMP	1	0.99	98.81	65-125	PASS
N027820-010C	SAMP	1	1	99.67	65-125	PASS
N027820-011C	SAMP	1	0.97	97.47	65-125	PASS
N027820-012C	SAMP	1	0.97	96.8	65-125	PASS
N027820-013C	SAMP	1	0.97	96.67	65-125	PASS
CCV2	CCV	1	1	99.51	65-125	PASS
CCB2	CCB	1	1	99.7	65-125	PASS
CCV3	CCV	1	1.0012	100.12	65-125	PASS
CCB3	CCB	1	1.012	101.17	65-125	PASS
CCV4	CCV	1	1.0044	100.44	65-125	PASS
CCB4	CCB	1	1.014	101.39	65-125	PASS
LLCCV1	CCV2	1	1.016	101.6	65-125	PASS

INTERNAL STANDARD: 180110D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSA2	ICSA	1	0.96	95.91	65-125	PASS
ICSAB2	ICSAB	1	0.88	87.99	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N027820
Test Method: EPA 6010B
Analysis Date: 1/10/2018

Matrix: Groundwater
Batch No.: 66271

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027820-001C DT 5X	Iron	ug/L	11.59453	NA	20.19157	42.58%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N027820-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **121326**
Client ID:	**ZZZZZZ**	Batch ID: **66271**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **1/10/2018**	SeqNo: **2890603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	122.858	20	100.0	20.19	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66270
ASSET #: N027820

Instrument ID: ICPMS-02
Analyst: CEI

Method:
[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Date Analyzed: ~~1/5/2018~~ 1/6/18

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?		X		X	~~X~~	
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X			X	
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments: bracketed by CCV3 to CCV5

%Rec of Cr IS in CCV2 failed. However samples are closed by ~~ICSAB~~2.
%Rec of IS failed. Se for rerun.
%Rec of Ba in N027820-001B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/10/18

2nd Level Reviewer 01/10/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66270
ASSET #: N027820

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 1/8/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.
%RSD of Se in LLCCV2 failed > 20%. However %Rec of LLCCV2 passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 1/10/18

2nd Level Reviewer 01/10/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N027820-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.33323 * 1 * (25/25)

Arsenic , ug/L = 2.33323

Reporting results in two significant figures,

Arsenic , ug/L = 2.3

% RSD SUMMARY

PERCENT RSD SUMMARY: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.16	12.084	15	PASS	0.11	12.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.57	0.7	15	PASS	0.51	1.068	15	PASS
Std3-5/50 ppb	ICAL	1	5.11	1.54	15	PASS	5.097	0.2	15	PASS
Std4-10/100 ppb	ICAL	1	10.1	0.7	15	PASS	10.29	2.51	15	PASS
Std5-20/200 ppb	ICAL	1	19.78	1.17	15	PASS	20.38	0.43	15	PASS
Std6-40/400 ppb	ICAL	1	39.44	1.12	15	PASS	39.63	0.9	15	PASS
Std7-100/1000 ppb	ICAL	1	98.36	0.29	15	PASS	99.48	1.21	15	PASS
Std8-200/2000 ppb	ICAL	1	200.95	0.94	15	PASS	200.28	0.76	15	PASS
ICV	ICV	1	9.84	0.17	15	PASS	9.97	1.65	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.12	2.86	20	PASS	1.039	4.47	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.089	5.65	15	PASS
ICSAB1	ICSAB	1	19.43	0.68	15	PASS	19.52	1.14	15	PASS
LLICV	CCV1	1	1.12	0.66	20	PASS	1.023	1.36	20	PASS
CCV1	CCV	1	20.83	0.48	15	PASS	20.14	1.56	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.016	101.14	15	<PQL
CCV2	CCV	1	21.023	0.45	15	PASS	19.76	1.49	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.009	21.56	15	<PQL
LLCCV1	CCV2	1	1.13	0.53	20	PASS	1.04	5.79	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.089	9.61	15	PASS
ICSAB2	ICSAB	1	18.36	8.34	15	PASS	20.0066	2.093	15	PASS
CCV3	CCV	1	21.12	0.55	15	PASS	19.54	1.23	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0028	116.99	15	<PQL
MB-66270	MBLK	1	<0.000	N/A	15	<PQL	0.0013	465.68	15	<PQL
LCS-66270	LCS	1	10.11	0.15	15	PASS	9.65	2.27	15	PASS
N027820-001B	SAMP	1	126.068	0.71	15	PASS	0.016	65.097	15	<PQL
N027820-001B	SAMP	5	26.1	0.48	15	PASS	0.0049	245.048	15	<PQL
N027820-001B-PS	PS	1	125.9	0.51	15	PASS	10.54	1.86	15	PASS
N027820-001B-MS	MS	1	127.47	0.7	15	PASS	10.45	1.89	15	PASS
N027820-001B-MSD	MSD	1	127.14	0.94	15	PASS	10.34	2.2	15	PASS
N027820-002B	SAMP	1	123.55	0.25	15	PASS	0.026	43.35	15	<PQL
N027820-003B	SAMP	1	137.73	0.38	15	PASS	0.024	22.036	15	<PQL
CCV4	CCV	1	20.79	0.75	15	PASS	19.59	1.52	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0037	41.5	15	<PQL
N027820-004B	SAMP	1	129.83	1.87	15	PASS	0.06	11.66	15	PASS
N027820-005B	SAMP	1	122.37	0.65	15	PASS	0.019	65.49	15	<PQL
N027820-006B	SAMP	1	123.44	0.47	15	PASS	0.019	92.52	15	<PQL
N027820-007B	SAMP	1	124.11	0.17	15	PASS	<0.000	N/A	15	<PQL
N027820-008B	SAMP	1	129.66	1.29	15	PASS	0.0059	239.32	15	<PQL
N027820-009B	SAMP	1	118.18	0.17	15	PASS	0.0067	24.94	15	<PQL

PERCENT RSD SUMMARY: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027820-010B	SAMP	1	120.44	0.21	15	PASS	0.0083	116.75	15	<PQL
N027820-011B	SAMP	1	122.91	1.65	15	PASS	<0.000	N/A	15	<PQL
N027820-012B	SAMP	1	128.87	0.35	15	PASS	0.016	24.32	15	<PQL
N027820-013B	SAMP	1	128.35	0.65	15	PASS	0.091	3.095	15	PASS
CCV5	CCV	1	20.69	0.89	15	PASS	19.89	0.26	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.15	0.41	20	PASS	1.057	3.9	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.091	10.38	15	PASS
ICSAB3	ICSAB	1	24.031	0.43	15	PASS	19.78	1.94	15	PASS

PERCENT RSD SUMMARY: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	16.48	15	<PQL	0.1	16.28	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.56	2.75	15	PASS	0.51	1.4	15	PASS
Std3-5/50 ppb	ICAL	1	5.36	0.45	15	PASS	5.13	1.58	15	PASS
Std4-10/100 ppb	ICAL	1	10.28	1.52	15	PASS	10.049	0.58	15	PASS
Std5-20/200 ppb	ICAL	1	20.4	0.52	15	PASS	20.32	1.1	15	PASS
Std6-40/400 ppb	ICAL	1	39.61	0.57	15	PASS	39.72	2.41	15	PASS
Std7-100/1000 ppb	ICAL	1	100.031	1.45	15	PASS	99.77	0.94	15	PASS
Std8-200/2000 ppb	ICAL	1	195.25	0.83	15	PASS	200.13	1.37	15	PASS
ICV	ICV	1	98.47	1.12	15	PASS	9.94	0.73	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.56	5.14	20	PASS	0.09	5.18	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	16.98	1.93	15	PASS	20.45	1.26	15	PASS
LLICV	CCV1	1	0.55	1.085	20	PASS	0.086	53.031	20	<PQL
CCV1	CCV	1	20.32	1.46	15	PASS	20.14	1.89	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.14	1.12	15	PASS	20.15	0.46	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.63	4.72	20	PASS	0.084	24.69	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.47	1.54	15	PASS	20.94	1.014	15	PASS
CCV3	CCV	1	20.3	2.41	15	PASS	20.034	2.08	15	PASS
CCB3	CCB	1	0.0048	108.076	15	<PQL	<0.000	N/A	15	<PQL
MB-66270	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66270	LCS	1	98.41	1.87	15	PASS	9.9	1.07	15	PASS
N027820-001B	SAMP	1	0.061	87.33	15	<PQL	2.33	3	15	PASS
N027820-001B	SAMP	5	0.053	100.58	15	<PQL	0.48	15.23	15	NR!
N027820-001B-PS	PS	1	105.91	1.56	15	PASS	13.05	0.73	15	PASS
N027820-001B-MS	MS	1	105.78	1.4	15	PASS	13.078	2.17	15	PASS
N027820-001B-MSD	MSD	1	105.043	2.96	15	PASS	13.062	1.37	15	PASS
N027820-002B	SAMP	1	0.066	138.74	15	<PQL	2.3	2.18	15	PASS
N027820-003B	SAMP	1	24.11	0.43	15	PASS	2.37	1.83	15	PASS
CCV4	CCV	1	19.93	1.52	15	PASS	20.16	0.4	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N027820-004B	SAMP	1	20.042	1.058	15	PASS	2.3	2.62	15	PASS
N027820-005B	SAMP	1	0.19	24.15	15	<PQL	2.24	1.52	15	PASS
N027820-006B	SAMP	1	0.23	10.85	15	PASS	2.3	3.035	15	PASS
N027820-007B	SAMP	1	0.43	9.5	15	PASS	2.32	2.46	15	PASS
N027820-008B	SAMP	1	0.5	11.79	15	PASS	2.48	5.73	15	PASS
N027820-009B	SAMP	1	0.024	240.48	15	<PQL	2.15	2.9	15	PASS

PERCENT RSD SUMMARY: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027820-010B	SAMP	1	0.24	13.17	15	PASS	2.21	5.95	15	PASS
N027820-011B	SAMP	1	0.35	1.15	15	PASS	2.22	1.23	15	PASS
N027820-012B	SAMP	1	1.72	4.47	15	PASS	2.28	0.74	15	PASS
N027820-013B	SAMP	1	23.049	1.7	15	PASS	2.35	3.32	15	PASS
CCV5	CCV	1	20.38	1.25	15	PASS	19.95	1.21	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.58	2.54	20	PASS	0.093	10.7	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.21	1.93	15	PASS	20.99	1.091	15	PASS

PERCENT RSD SUMMARY: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	33.79	15	<PQL	0.096	13.82	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.45	12.17	15	PASS	0.49	2.86	15	PASS
Std3-5/50 ppb	ICAL	1	5.034	6.54	15	PASS	4.93	2.19	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	9.49	15	PASS	9.83	0.91	15	PASS
Std5-20/200 ppb	ICAL	1	19.56	3.75	15	PASS	19.72	1.35	15	PASS
Std6-40/400 ppb	ICAL	1	40.026	2.16	15	PASS	39.78	0.93	15	PASS
Std7-100/1000 ppb	ICAL	1	100.39	1.12	15	PASS	99.27	1.26	15	PASS
Std8-200/2000 ppb	ICAL	1	199.84	1.1	15	PASS	200.45	1.64	15	PASS
ICV	ICV	1	9.73	2.73	15	PASS	10.12	1.51	15	PASS
ICB	ICB	1	0.012	99.49	15	<PQL	0.083	10.66	15	PASS
LLICV	CCV1	1	0.53	21.8	20	NR!	0.57	0.82	20	PASS
ICSA1	ICSA	1	0.023	50.00063	15	<PQL	0.045	28.77	15	<PQL
ICSAB1	ICSAB	1	17.91	2.3	15	PASS	22.16	1.32	15	PASS
LLICV	CCV1	1	0.53	8.25	20	PASS	0.58	1.5	20	PASS
CCV1	CCV	1	18.8	4.35	15	PASS	19.45	1.15	15	PASS
CCB1	CCB	1	0.0036	173.21	15	<PQL	0.054	18.24	15	<PQL
CCV2	CCV	1	19.21	0.74	15	PASS	20.079	0.84	15	PASS
CCB2	CCB	1	0.0074	173.21	15	<PQL	0.042	9.36	15	PASS
LLCCV1	CCV2	1	0.43	26.99	20	<PQL	0.48	2.47	20	PASS
ICSA2	ICSA	1	0.0075	86.65	15	<PQL	0.033	32.49	15	<PQL
ICSAB2	ICSAB	1	18.62	4.45	15	PASS	21.9	0.31	15	PASS
CCV3	CCV	1	18.47	3.35	15	PASS	19.83	0.28	15	PASS
CCB3	CCB	1	0.014	114.35	15	<PQL	0.054	12.92	15	PASS
MB-66270	MBLK	1	0	N/A	15	<PQL	0.0097	65.67	15	<PQL
LCS-66270	LCS	1	9.083	2.099	15	PASS	9.87	1.7	15	PASS
N027820-001B	SAMP	1	1.61	13.39	15	PASS	5.25	2.0064	15	PASS
N027820-001B	SAMP	5	0.37	32.84	15	<PQL	1.049	3.95	15	PASS
N027820-001B-PS	PS	1	11.58	2.24	15	PASS	15.38	2.34	15	PASS
N027820-001B-MS	MS	1	11.55	0.72	15	PASS	15.77	2.19	15	PASS
N027820-001B-MSD	MSD	1	11.76	2.58	15	PASS	15.63	1.65	15	PASS
N027820-002B	SAMP	1	1.56	1.86	15	PASS	5.25	0.95	15	PASS
N027820-003B	SAMP	1	1.47	9.43	15	PASS	5.66	1.82	15	PASS
CCV4	CCV	1	18.86	2.52	15	PASS	19.85	0.63	15	PASS
CCB4	CCB	1	0.012	100.11	15	<PQL	0.039	27.86	15	<PQL
N027820-004B	SAMP	1	1.49	4.53	15	PASS	5.51	0.62	15	PASS
N027820-005B	SAMP	1	1.48	0.44	15	PASS	5	1.28	15	PASS
N027820-006B	SAMP	1	1.63	9.58	15	PASS	5.06	2.87	15	PASS
N027820-007B	SAMP	1	1.62	5.19	15	PASS	5.064	1.35	15	PASS
N027820-008B	SAMP	1	1.52	7.46	15	PASS	5.4	2.24	15	PASS
N027820-009B	SAMP	1	1.58	13.67	15	PASS	4.94	2.039	15	PASS

PERCENT RSD SUMMARY: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N027820-010B	SAMP	1	1.47	13.015	15	PASS	4.92	2.3	15	PASS
N027820-011B	SAMP	1	1.58	7.4	15	PASS	5.024	1.5	15	PASS
N027820-012B	SAMP	1	1.61	3.63	15	PASS	5.16	2.26	15	PASS
N027820-013B	SAMP	1	1.78	9.13	15	PASS	5.17	0.61	15	PASS
CCV5	CCV	1	19.12	2.071	15	PASS	19.83	0.24	15	PASS
CCB5	CCB	1	0.0081	86.6	15	<PQL	0.042	31.44	15	<PQL
LLCCV2	CCV2	1	0.55	26.9	20	NR!	0.52	3.36	20	PASS
ICSA3	ICSA	1	0	N/A	15	<PQL	0.04	11.85	15	PASS
ICSAB3	ICSAB	1	17.89	4.41	15	PASS	21.97	0.63	15	PASS

PERCENT RSD SUMMARY: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	16.66	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	14.035	15	PASS
Std3-5/50 ppb	ICAL	1	5.31	0.83	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	3.25	15	PASS
Std5-20/200 ppb	ICAL	1	21.79	1.76	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	1.49	15	PASS
Std7-100/1000 ppb	ICAL	1	100.64	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	199.36	0.73	15	PASS
ICV	ICV	1	9.91	2.16	15	PASS
ICB	ICB	1	0.028	59.34	15	<PQL
LLICV	CCV1	1	0.63	4.47	20	PASS
ICSA1	ICSA	1	0.041	65.64	15	<PQL
ICSAB1	ICSAB	1	19.5	4.67	15	PASS
LLICV	CCV1	1	0.6	18.91	20	PASS
CCV1	CCV	1	18.97	0.68	15	PASS
CCB1	CCB	1	0.0092	154.42	15	<PQL
MB-66270	MBLK	1	<0.000	N/A	15	<PQL
LCS-66270	LCS	1	9.5	4.52	15	PASS
N027820-001B	SAMP	1	1.61	3.27	15	PASS
N027820-001B	SAMP	5	0.29	19.16	15	<PQL
N027820-001B-PS	PS	1	12.12	2.69	15	PASS
N027820-001B-MS	MS	1	11.92	3.1	15	PASS
CCV2	CCV	1	19.64	3.14	15	PASS
CCB2	CCB	1	0.0072	290.86	15	<PQL
N027820-001B-MSD	MSD	1	11.75	8.15	15	PASS
N027820-002B	SAMP	1	1.7	10.51	15	PASS
N027820-003B	SAMP	1	1.52	18.056	15	NR!
N027820-004B	SAMP	1	1.42	8.3	15	PASS
N027820-005B	SAMP	1	1.6	14.67	15	PASS
N027820-006B	SAMP	1	1.67	6.87	15	PASS
N027820-007B	SAMP	1	1.5	5.36	15	PASS
N027820-008B	SAMP	1	1.63	7.79	15	PASS
N027820-009B	SAMP	1	1.42	6.08	15	PASS
N027820-010B	SAMP	1	1.6	10.86	15	PASS
CCV3	CCV	1	19.63	2.78	15	PASS
CCB3	CCB	1	0.017	45.38	15	<PQL
LCS-66270	LCS	1	9.55	1.53	15	PASS
N027820-011B	SAMP	1	1.56	10.24	15	PASS
N027820-012B	SAMP	1	1.4	17.74	15	NR!
N027820-013B	SAMP	1	1.57	10.091	15	PASS

PERCENT RSD SUMMARY: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
N027820-003B	SAMP	1	1.39	9.32	15	PASS
CCV4	CCV	1	19.036	2.77	15	PASS
CCB4	CCB	1	0.036	19.15	15	<PQL
LLCCV1	CCV2	1	0.4	27.22	20	<PQL
ICSA2	ICSA	1	0.021	107.33	15	<PQL
ICSAB2	ICSAB	1	19.3	2.28	15	PASS
N027820-012B	SAMP	1	1.52	10.044	15	PASS
CCV5	CCV	1	18.97	4.5	15	PASS
CCB5	CCB	1	0.018	158.73	15	<PQL
LLCCV2	CCV2	1	0.51	21.32	20	NR!
ICSA3	ICSA	1	0.0082	159.17	15	<PQL
ICSAB3	ICSAB	1	19.31	3.15	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180106A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0106001.D	RINSE	RINSE	1	01/06/18 10:53 AM
A0106002.D	Cal Blank	IBLK	1	01/06/18 10:59 AM
A0106003.D	Std1-0.1/1 ppb	ICAL	1	01/06/18 11:05 AM
A0106004.D	Std2-0.5/5 ppb	ICAL	1	01/06/18 11:10 AM
A0106005.D	Std3-5/50 ppb	ICAL	1	01/06/18 11:16 AM
A0106006.D	Std4-10/100 ppb	ICAL	1	01/06/18 11:21 AM
A0106007.D	Std5-20/200 ppb	ICAL	1	01/06/18 11:28 AM
A0106008.D	Std6-40/400 ppb	ICAL	1	01/06/18 11:34 AM
A0106009.D	Std7-100/1000 ppb	ICAL	1	01/06/18 11:39 AM
A0106010.D	Std8-200/2000 ppb	ICAL	1	01/06/18 11:45 AM
A0106011.D	ICV	ICV	1	01/06/18 11:51 AM
A0106012.D	ICB	ICB	1	01/06/18 11:57 AM
A0106013.D	LLICV	CCV1	1	01/06/18 12:03 PM
A0106014.D	ICSA1	ICSA	1	01/06/18 12:09 PM
A0106015.D	ICSAB1	ICSAB	1	01/06/18 12:15 PM
A0106016.D	LLICV	CCV1	1	01/06/18 12:20 PM
A0106017.D	MB-66250	MBLK	1	01/06/18 12:25 PM
A0106018.D	LCS-66250	LCS	1	01/06/18 12:31 PM
A0106019.D	N027789-003C	SAMP	5	01/06/18 12:36 PM
A0106020.D	N027789-003C	SAMP	25	01/06/18 12:42 PM
A0106021.D	N027789-003C	SAMP	50	01/06/18 12:47 PM
A0106022.D	N027789-001E	SAMP	1	01/06/18 12:53 PM
A0106023.D	N027789-001E	SAMP	5	01/06/18 12:58 PM
A0106024.D	N027789-001E	SAMP	25	01/06/18 1:04 PM
A0106025.D	N027789-001E	SAMP	125	01/06/18 1:10 PM
A0106026.D	N027789-001E-PS	PS	1	01/06/18 1:15 PM
A0106027.D	CCV1	CCV	1	01/06/18 1:21 PM
A0106028.D	CCB1	CCB	1	01/06/18 1:26 PM
A0106029.D	N027789-001E-PS	PS	5	01/06/18 1:32 PM
A0106030.D	N027789-001E-PS	PS	25	01/06/18 1:37 PM
A0106031.D	N027789-001E-MS	MS	1	01/06/18 1:43 PM
A0106032.D	N027789-001E-MS	MS	5	01/06/18 1:48 PM
A0106033.D	N027789-001E-MS	MS	25	01/06/18 1:54 PM
A0106034.D	N027789-001E-MSD	MSD	1	01/06/18 2:00 PM
A0106035.D	N027789-001E-MSD	MSD	5	01/06/18 2:05 PM
A0106036.D	N027789-001E-MSD	MSD	25	01/06/18 2:11 PM
A0106037.D	N027789-002E	SAMP	1	01/06/18 2:16 PM
A0106038.D	N027789-002E	SAMP	5	01/06/18 2:22 PM
A0106039.D	CCV2	CCV	1	01/06/18 2:27 PM
A0106040.D	CCB2	CCB	1	01/06/18 2:33 PM
A0106041.D	LLCCV1	CCV2	1	01/06/18 2:40 PM
A0106042.D	ICSA2	ICSA	1	01/06/18 2:44 PM

INJECTION LOG: 180106A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0106043.D	ICSAB2	ICSAB	1	01/06/18 2:49 PM
A0106044.D	N027789-002E	SAMP	25	01/06/18 2:55 PM
A0106045.D	N027557-001B	SAMP	1	01/06/18 3:01 PM
A0106046.D	N027557-002B	SAMP	1	01/06/18 3:06 PM
A0106047.D	N027557-003B	SAMP	1	01/06/18 3:12 PM
A0106048.D	N027557-004B	SAMP	1	01/06/18 3:17 PM
A0106049.D	N027557-006B	SAMP	1	01/06/18 3:23 PM
A0106050.D	N027557-010B	SAMP	1	01/06/18 3:28 PM
A0106051.D	N027812-002B	SAMP	1	01/06/18 3:34 PM
A0106052.D	N027812-005B	SAMP	1	01/06/18 3:40 PM
A0106053.D	N027812-007B	SAMP	1	01/06/18 3:45 PM
A0106054.D	CCV3	CCV	1	01/06/18 3:50 PM
A0106055.D	CCB3	CCB	1	01/06/18 3:56 PM
A0106056.D	N027812-008B	SAMP	1	01/06/18 4:02 PM
A0106057.D	MB-66270	MBLK	1	01/06/18 4:07 PM
A0106058.D	LCS-66270	LCS	1	01/06/18 4:13 PM
A0106059.D	N027820-001B	SAMP	1	01/06/18 4:18 PM
A0106060.D	N027820-001B	SAMP	5	01/06/18 4:24 PM
A0106061.D	N027820-001B-PS	PS	1	01/06/18 4:29 PM
A0106062.D	N027820-001B-MS	MS	1	01/06/18 4:35 PM
A0106063.D	N027820-001B-MSD	MSD	1	01/06/18 4:40 PM
A0106064.D	N027820-002B	SAMP	1	01/06/18 4:46 PM
A0106065.D	N027820-003B	SAMP	1	01/06/18 4:51 PM
A0106066.D	CCV4	CCV	1	01/06/18 4:57 PM
A0106067.D	CCB4	CCB	1	01/06/18 5:03 PM
A0106068.D	N027820-004B	SAMP	1	01/06/18 5:08 PM
A0106069.D	N027820-005B	SAMP	1	01/06/18 5:14 PM
A0106070.D	N027820-006B	SAMP	1	01/06/18 5:19 PM
A0106071.D	N027820-007B	SAMP	1	01/06/18 5:25 PM
A0106072.D	N027820-008B	SAMP	1	01/06/18 5:30 PM
A0106073.D	N027820-009B	SAMP	1	01/06/18 5:36 PM
A0106074.D	N027820-010B	SAMP	1	01/06/18 5:41 PM
A0106075.D	N027820-011B	SAMP	1	01/06/18 5:47 PM
A0106076.D	N027820-012B	SAMP	1	01/06/18 5:53 PM
A0106077.D	N027820-013B	SAMP	1	01/06/18 5:58 PM
A0106078.D	CCV5	CCV	1	01/06/18 6:04 PM
A0106079.D	CCB5	CCB	1	01/06/18 6:09 PM
A0106080.D	LLCCV2	CCV2	1	01/06/18 6:15 PM
A0106081.D	ICSA3	ICSA	1	01/06/18 6:20 PM
A0106082.D	ICSAB3	ICSAB	1	01/06/18 6:26 PM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108001.D	RINSE	RINSE	1	01/08/18 9:11 AM
A0108002.D	Cal Blank	IBLK	1	01/08/18 9:16 AM
A0108003.D	Std1-0.1/1 ppb	ICAL	1	01/08/18 9:22 AM
A0108004.D	Std2-0.5/5 ppb	ICAL	1	01/08/18 9:27 AM
A0108005.D	Std3-5/50 ppb	ICAL	1	01/08/18 9:33 AM
A0108006.D	Std4-10/100 ppb	ICAL	1	01/08/18 9:39 AM
A0108007.D	Std5-20/200 ppb	ICAL	1	01/08/18 9:46 AM
A0108008.D	Std6-40/400 ppb	ICAL	1	01/08/18 9:52 AM
A0108009.D	Std7-100/1000 ppb	ICAL	1	01/08/18 9:58 AM
A0108010.D	Std8-200/2000 ppb	ICAL	1	01/08/18 10:04 AM
A0108011.D	ICV	ICV	1	01/08/18 10:09 AM
A0108012.D	ICB	ICB	1	01/08/18 10:15 AM
A0108013.D	LLICV	CCV1	1	01/08/18 10:20 AM
A0108014.D	ICSA1	ICSA	1	01/08/18 10:29 AM
A0108015.D	ICSAB1	ICSAB	1	01/08/18 10:34 AM
A0108016.D	LLICV	CCV1	1	01/08/18 10:40 AM
A0108017.D	N027557-001B	SAMP	1	01/08/18 10:45 AM
A0108018.D	N027557-002B	SAMP	1	01/08/18 10:51 AM
A0108019.D	N027557-003B	SAMP	1	01/08/18 10:56 AM
A0108020.D	N027557-004B	SAMP	1	01/08/18 11:02 AM
A0108021.D	N027557-006B	SAMP	1	01/08/18 11:08 AM
A0108022.D	N027557-010B	SAMP	1	01/08/18 11:15 AM
A0108023.D	N027557-001B	SAMP	1	01/08/18 11:20 AM
A0108024.D	N027557-003B	SAMP	1	01/08/18 11:26 AM
A0108025.D	N027557-004B	SAMP	1	01/08/18 11:31 AM
A0108026.D	N027557-003B	SAMP	1	01/08/18 11:37 AM
A0108027.D	CCV1	CCV	1	01/08/18 11:43 AM
A0108028.D	CCB1	CCB	1	01/08/18 11:48 AM
A0108029.D	N027812-002B	SAMP	1	01/08/18 11:54 AM
A0108030.D	N027812-005B	SAMP	1	01/08/18 11:59 AM
A0108031.D	N027812-007B	SAMP	1	01/08/18 12:05 PM
A0108032.D	N027812-008B	SAMP	1	01/08/18 12:10 PM
A0108033.D	MB-66270	MBLK	1	01/08/18 12:16 PM
A0108034.D	LCS-66270	LCS	1	01/08/18 12:21 PM
A0108035.D	N027820-001B	SAMP	1	01/08/18 12:27 PM
A0108036.D	N027820-001B	SAMP	5	01/08/18 12:32 PM
A0108037.D	N027820-001B-PS	PS	1	01/08/18 12:38 PM
A0108038.D	N027820-001B-MS	MS	1	01/08/18 12:44 PM
A0108039.D	CCV2	CCV	1	01/08/18 12:49 PM
A0108040.D	CCB2	CCB	1	01/08/18 12:55 PM
A0108041.D	N027820-001B-MSD	MSD	1	01/08/18 1:00 PM
A0108042.D	N027820-002B	SAMP	1	01/08/18 1:06 PM

INJECTION LOG: 180108A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0108043.D	N027820-003B	SAMP	1	01/08/18 1:11 PM
A0108044.D	N027820-004B	SAMP	1	01/08/18 1:17 PM
A0108045.D	N027820-005B	SAMP	1	01/08/18 1:22 PM
A0108046.D	N027820-006B	SAMP	1	01/08/18 1:28 PM
A0108047.D	N027820-007B	SAMP	1	01/08/18 1:34 PM
A0108048.D	N027820-008B	SAMP	1	01/08/18 1:40 PM
A0108049.D	N027820-009B	SAMP	1	01/08/18 1:45 PM
A0108050.D	N027820-010B	SAMP	1	01/08/18 1:51 PM
A0108051.D	CCV3	CCV	1	01/08/18 1:56 PM
A0108052.D	CCB3	CCB	1	01/08/18 2:02 PM
A0108053.D	LCS-66270	LCS	1	01/08/18 2:08 PM
A0108054.D	N027820-011B	SAMP	1	01/08/18 2:13 PM
A0108055.D	N027820-012B	SAMP	1	01/08/18 2:19 PM
A0108056.D	N027820-013B	SAMP	1	01/08/18 2:25 PM
A0108057.D	N027820-003B	SAMP	1	01/08/18 2:30 PM
A0108058.D	N027557-002B	SAMP	1	01/08/18 2:38 PM
A0108059.D	N027557-002A	SAMP	1	01/08/18 2:44 PM
A0108060.D	N027557-004B	SAMP	1	01/08/18 2:51 PM
A0108061.D	N027557-004A	SAMP	1	01/08/18 2:56 PM
A0108062.D	N027583-001B	SAMP	1	01/08/18 3:03 PM
A0108063.D	CCV4	CCV	1	01/08/18 3:09 PM
A0108064.D	CCB4	CCB	1	01/08/18 3:15 PM
A0108065.D	LLCCV1	CCV2	1	01/08/18 3:20 PM
A0108066.D	ICSA2	ICSA	1	01/08/18 3:26 PM
A0108067.D	ICSAB2	ICSAB	1	01/08/18 3:31 PM
A0108068.D	N027583-001A	SAMP	1	01/08/18 3:37 PM
A0108069.D	N027583-002B	SAMP	1	01/08/18 3:42 PM
A0108070.D	N027583-002A	SAMP	1	01/08/18 3:48 PM
A0108071.D	N027583-003B	SAMP	1	01/08/18 3:53 PM
A0108072.D	N027583-003A	SAMP	1	01/08/18 3:59 PM
A0108073.D	N027820-012B	SAMP	1	01/08/18 4:05 PM
A0108074.D	CCV5	CCV	1	01/08/18 4:10 PM
A0108075.D	CCB5	CCB	1	01/08/18 4:15 PM
A0108076.D	LLCCV2	CCV2	1	01/08/18 4:21 PM
A0108077.D	ICSA3	ICSA	1	01/08/18 4:28 PM
A0108078.D	ICSAB3	ICSAB	1	01/08/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:09:47 A**
Prep End Date: **1/5/2018 1:00:00 P**
Prep Batch **66270** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 01/10/2018
Initials/ Date: 01/10/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66270	Aqueous		25	☐	0	0	25	1.000		
MB-66270	Aqueous		25	☐	0	0	25	1.000		
N027820-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-002B 186	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **1/5/2018 8:09:47 A**
Prep End Date: **1/5/2018 1:00:00 P**

Reviewed/ Date: 01/10/2018
Initials/ Date: 01/10/2018

Prep Batch **66270** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-31**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N027820-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N027820-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 6 Jan 2018 10:42:46 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	110109.00	0.00	
24 Mg	394171.00	0.00	
25 Mg	52302.90	0.00	
26 Mg	60647.10	0.00	
59 Co	573661.00	0.00	
115 In	1027550.00	0.00	
206 Pb	271258.00	0.00	
207 Pb	239308.00	0.00	
208 Pb	580435.00	0.00	

RSD (%)

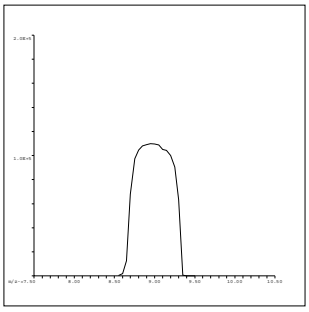
Element	Actual	Required	Flag
9 Be	1.14	5.00	
24 Mg	4.10	5.00	
25 Mg	1.62	5.00	
26 Mg	2.39	5.00	
59 Co	1.02	5.00	
115 In	0.73	5.00	
206 Pb	0.92	5.00	
207 Pb	0.98	5.00	
208 Pb	0.71	5.00	

Ion Ratio

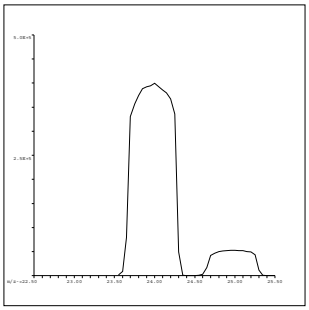
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

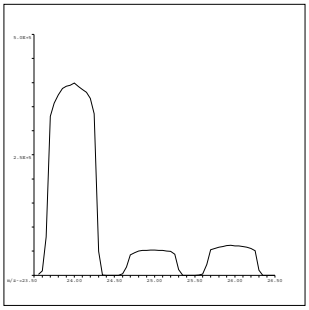
Element	Actual	Required	Flag



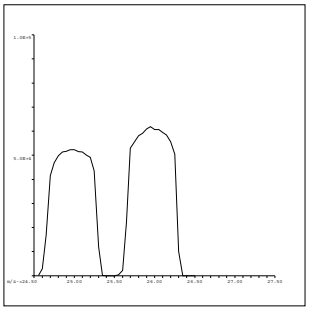
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



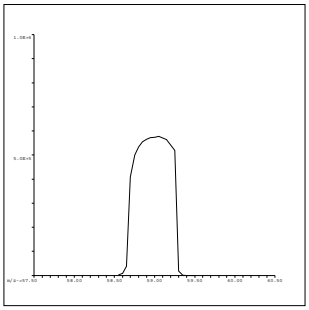
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



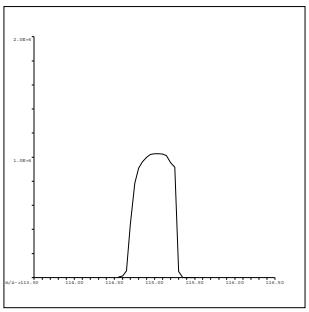
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



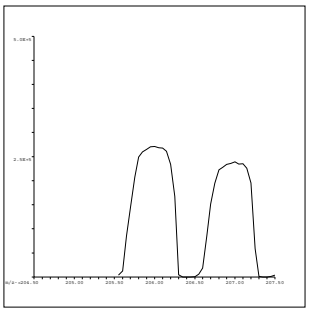
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



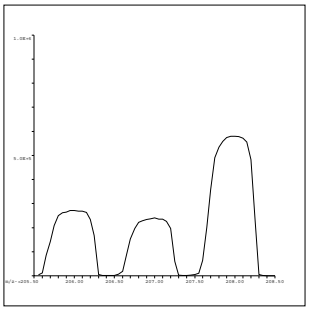
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



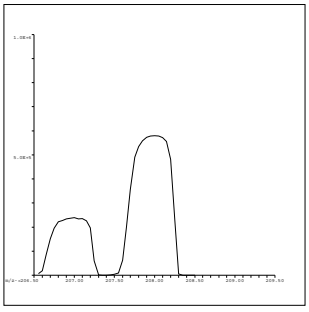
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

C:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Jan 2018 08:55:40 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	96941.10	0.00	
24	Mg	416281.00	0.00	
25	Mg	54933.90	0.00	
26	Mg	64371.70	0.00	
59	Co	524831.00	0.00	
115	In	934224.00	0.00	
206	Pb	243715.00	0.00	
207	Pb	211485.00	0.00	
208	Pb	521909.00	0.00	

RSD (%)

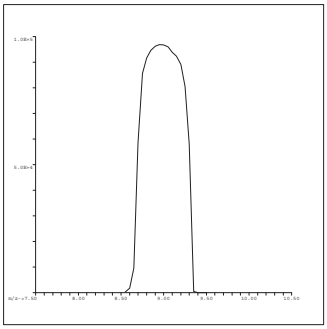
Element		Actual	Required	Flag
9	Be	1.32	5.00	
24	Mg	1.17	5.00	
25	Mg	1.12	5.00	
26	Mg	1.76	5.00	
59	Co	1.33	5.00	
115	In	1.01	5.00	
206	Pb	1.07	5.00	
207	Pb	0.57	5.00	
208	Pb	0.86	5.00	

Ion Ratio

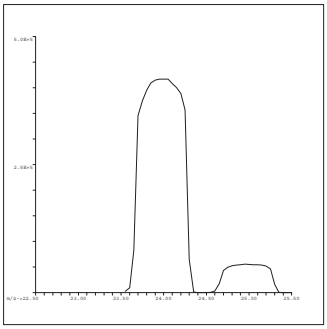
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

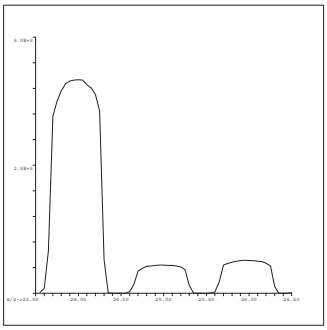
Element	Actual	Required	Flag



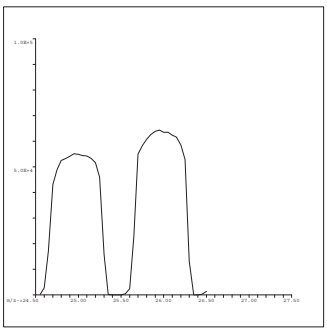
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



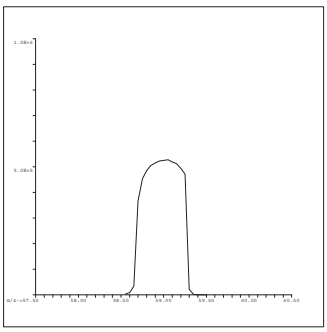
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



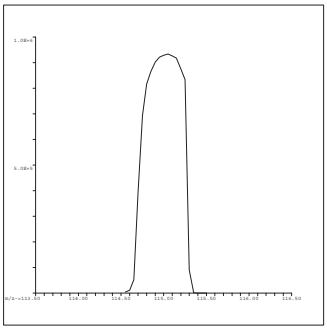
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



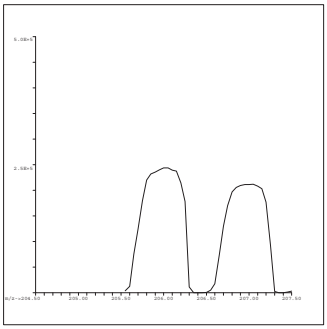
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



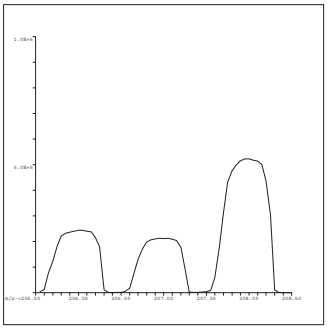
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



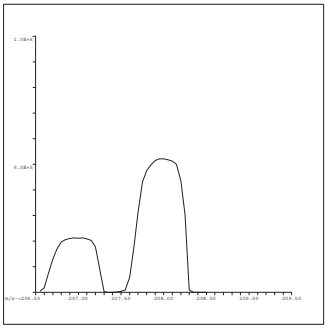
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180106A

Instrument ID: ICPMS-02

Analyte	Data File	A0106002.D	A0106003.D	A0106004.D	A0106005.D	A0106006.D	A0106007.D	A0106008.D	A0106009.D	A0106010.D	
	Acq. Date-Time	01/06/2018 10:59 AM	01/06/2018 11:05 AM	01/06/2018 11:10 AM	01/06/2018 11:16 AM	01/06/2018 11:21 AM	01/06/2018 11:28 AM	01/06/2018 11:34 AM	01/06/2018 11:39 AM	01/06/2018 11:45 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	88622.1		89093.3	89064.6	89922.6	88529.6	94132.9	90054.1	91800.2	
55 Mn [2]	CPS	176.7		2147.6	19110.8	36839.2	71803.7	148047.2	357412	711047.8	1.0000
52 Cr [2]	CPS	341		4225	39242.3	79564.5	154933.1	319955.1	767848.3	1575713.2	1.0000
72 Ge (ISTD) [1]	CPS	73418.8		73788	73232.5	73641.5	72776.9	74635.3	72263.7	72636.4	
78 Se [1]	CPS	0		123.3	1364.6	2753.7	5266.6	11049.7	26831.9	53689.7	1.0000
72 Ge (ISTD) [2]	CPS	67539.9	68330.4	67975.3	68040.1	68254.5	67346.1	70640.2	68208.5	68215.3	
75 As [2]	CPS	38.2	123.1	463.1	4338.4	8489.4	16897.7	34610.9	83880.4	168228.8	1.0000
103 Rh (ISTD) [2]	CPS	2193711.8		2229013.8	2240472	2260109.7	2217372.6	2305177.6	2225893.4	2216306.8	
95 Mo [2]	CPS	108.9		2631.4	25581.1	51318.5	100879.6	211375.5	509150.4	1023592.6	1.0000
159 Tb (ISTD) [3]	CPS	6650373		7017776.1	6991906.1	6969868.6	6947377.9	7134643.9	6949276.5	6989195.8	
137 Ba [3]	CPS	229		6919.9	59727.2	117504.3	229066.8	468888.4	1138585.2	2339246.3	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180108A

Instrument ID: ICPMS-02

Analyte	Data File	A0108002.D	A0108004.D	A0108005.D	A0108006.D	A0108007.D	A0108008.D	A0108009.D	A0108010.D	
	Acq. Date-Time	01/08/2018 09:16 AM	01/08/2018 09:27 AM	01/08/2018 09:33 AM	01/08/2018 09:39 AM	01/08/2018 09:46 AM	01/08/2018 09:52 AM	01/08/2018 09:58 AM	01/08/2018 10:04 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	62619.5	63563.5	63516.6	63395.8	52108.6	63322.2	61513.2	62853.8	
78 Se [1]	CPS	1.1	112.2	1202.3	2324.7	4042.9	9150.7	22034.5	44595.5	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121257**
Client ID: **ICV** Batch ID: **R121257** TestNo: **EPA 6020** Analysis Date: **1/6/2018** SeqNo: **2888037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.943	0.10	10.00	0	99.4	90	110				
Barium	9.840	1.0	10.00	0	98.4	90	110				
Manganese	98.466	0.50	100.0	0	98.5	90	110				
Molybdenum	10.120	0.50	10.00	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121257**
Client ID: **ZZZZZZ** Batch ID: **R121257** TestNo: **EPA 6020** Analysis Date: **1/6/2018** SeqNo: **2888039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.090	0.10	0.1000	0	90.1	80	120				
Barium	1.121	1.0	1.000	0	112	80	120				
Manganese	0.559	0.50	0.5000	0	112	80	120				
Molybdenum	0.567	0.50	0.5000	0	113	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121257**
Client ID: **CCV** Batch ID: **R121257** TestNo: **EPA 6020** Analysis Date: **1/6/2018** SeqNo: **2888053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.144	0.10	20.00	0	101	90	110				
Barium	20.828	1.0	20.00	0	104	90	110				
Manganese	20.322	0.50	20.00	0	102	90	110				
Molybdenum	19.454	0.50	20.00	0	97.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **121257**
Client ID: **CCV** Batch ID: **R121257** TestNo: **EPA 6020** Analysis Date: **1/6/2018** SeqNo: **2888065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.154	0.10	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	21.023	1.0	20.00	0	105	90	110				
Manganese	20.142	0.50	20.00	0	101	90	110				
Molybdenum	20.079	0.50	20.00	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.084	0.10	0.1000	0	83.6	70	130				
Barium	1.131	1.0	1.000	0	113	70	130				
Manganese	0.633	0.50	0.5000	0	127	70	130				
Molybdenum	0.477	0.50	0.5000	0	95.4	70	130				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.034	0.10	20.00	0	100	90	110				
Barium	21.124	1.0	20.00	0	106	90	110				
Manganese	20.295	0.50	20.00	0	101	90	110				
Molybdenum	19.835	0.50	20.00	0	99.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.156	0.10	20.00	0	101	90	110				
Barium	20.793	1.0	20.00	0	104	90	110				
Manganese	19.928	0.50	20.00	0	99.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.853	0.50	20.00	0	99.3	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.953	0.10	20.00	0	99.8	90	110				
Barium	20.686	1.0	20.00	0	103	90	110				
Manganese	20.381	0.50	20.00	0	102	90	110				
Molybdenum	19.826	0.50	20.00	0	99.1	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	93.0	70	130				
Barium	1.152	1.0	1.000	0	115	70	130				
Manganese	0.580	0.50	0.5000	0	116	70	130				
Molybdenum	0.518	0.50	0.5000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.906	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.596	0.50	0.5000	0	119	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.971	0.50	20.00	0	94.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.634	0.50	20.00	0	98.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.036	0.50	20.00	0	95.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.400	0.50	0.5000	0	80.1	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCV**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.968	0.50	20.00	0	94.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ZZZZZZ**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.514	0.50	0.5000	0	103	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.967	1.0	10.00	0	99.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.039	1.0	1.000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.140	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.040	1.0	1.000	0	104	70	130				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.542	1.0	20.00	0	97.7	90	110				

CCV2 was not reported for Cr as Sc on CCV2 is biased high. However, samples N027820 were bracketed between CCV3/CCB3 and CCV5/CCB5.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.594	1.0	20.00	0	98.0	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCV**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.894	1.0	20.00	0	99.5	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ZZZZZZ**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.057	1.0	1.000	0	106	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.083	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.054	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.042	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.054	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.039	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.042	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICB	SampType:	ICB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888685

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888701

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888713

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	CCB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888737

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.036	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **CCB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **CCB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

CCV2/CCB2 was not reported for Cr as Sc on CCV2 is biased high. However, samples N027820 were bracketed between CCV3/CCB3 and CCV5/CCB5.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

01/10/2018

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSA**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.045	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSAB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.451	0.10	20.00	0	102	80	120				
Barium	19.434	1.0	20.00	0	97.2	80	120				
Manganese	16.978	0.50	20.00	0	84.9	80	120				
Molybdenum	22.157	0.50	20.00	0	111	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSA**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSAB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.942	0.10	20.00	0	105	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSAB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	18.359	1.0	20.00	0	91.8	80	120				
Manganese	17.471	0.50	20.00	0	87.4	80	120				
Molybdenum	21.900	0.50	20.00	0	109	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSA**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.040	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSAB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.986	0.10	20.00	0	105	80	120				
Barium	24.031	1.0	20.00	0	120	80	120				S
Manganese	17.213	0.50	20.00	0	86.1	80	120				
Molybdenum	21.968	0.50	20.00	0	110	80	120				

S -Ba is biased high on ICSAB3 however, it still is within 80-120% recovery.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

01/10/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.041	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSAB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888688

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.499	0.50	20.00	0	97.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSAB	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888740

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.304	0.50	20.00	0	96.5	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ICSA	Batch ID:	R121282	TestNo:	EPA 6020			Analysis Date:	1/8/2018	SeqNo:	2888750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **121282**
Client ID: **ICSAB**	Batch ID: **R121282**	TestNo: **EPA 6020**		Analysis Date: **1/8/2018**	SeqNo: **2888751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.315	0.50	20.00	0	96.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ICSA	Batch ID:	R121257	TestNo:	EPA 6020			Analysis Date:	1/6/2018	SeqNo:	2888114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.089	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ICSAB	Batch ID:	R121257	TestNo:	EPA 6020			Analysis Date:	1/6/2018	SeqNo:	2888115

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.519	1.0	20.00	0	97.6	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ICSA	Batch ID:	R121257	TestNo:	EPA 6020			Analysis Date:	1/6/2018	SeqNo:	2888142

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.089	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ICSAB	Batch ID:	R121257	TestNo:	EPA 6020			Analysis Date:	1/6/2018	SeqNo:	2888143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.007	1.0	20.00	0	100	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ICSA	Batch ID:	R121257	TestNo:	EPA 6020			Analysis Date:	1/6/2018	SeqNo:	2888181

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.091	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **121257**
Client ID: **ICSAB**	Batch ID: **R121257**	TestNo: **EPA 6020**		Analysis Date: **1/6/2018**	SeqNo: **2888182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.777	1.0	20.00	0	98.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	6650373	6650373	100	PASS	70-125	88622.1	88622.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	7071651.6	6650373	106.33	PASS	70-125	89810.8	88622.1	101.34	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	7017776.1	6650373	105.52	PASS	70-125	89093.3	88622.1	100.53	PASS	70-125
Std3-5/50 ppb	ICAL	1	6991906.1	6650373	105.14	PASS	70-125	89064.6	88622.1	100.5	PASS	70-125
Std4-10/100 ppb	ICAL	1	6969868.6	6650373	104.8	PASS	70-125	89922.6	88622.1	101.47	PASS	70-125
Std5-20/200 ppb	ICAL	1	6947377.9	6650373	104.47	PASS	70-125	88529.6	88622.1	99.9	PASS	70-125
Std6-40/400 ppb	ICAL	1	7134643.9	6650373	107.28	PASS	70-125	94132.9	88622.1	106.22	PASS	70-125
Std7-100/1000 ppb	ICAL	1	6949276.5	6650373	104.49	PASS	70-125	90054.1	88622.1	101.62	PASS	70-125
Std8-200/2000 ppb	ICAL	1	6989195.8	6650373	105.1	PASS	70-125	91800.2	88622.1	103.59	PASS	70-125
ICV	ICV	1	7422307.5	6650373	111.61	PASS	70-125	94222.1	88622.1	106.32	PASS	70-125
ICB	ICB	1	6633661.5	6650373	99.75	PASS	70-125	87107	88622.1	98.29	PASS	70-125
LLICV	CCV1	1	6604717	6650373	99.31	PASS	70-125	86670	88622.1	97.8	PASS	70-125
ICSA1	ICSA	1	6867435.5	6650373	103.26	PASS	70-125	102043.1	88622.1	115.14	PASS	70-125
ICSAB1	ICSAB	1	6357331	6650373	95.59	PASS	70-125	89638.3	88622.1	101.15	PASS	70-125
LLICV	CCV1	1	6828316.2	6650373	102.68	PASS	70-125	100333.6	88622.1	113.22	PASS	70-125
CCV1	CCV	1	6327720.6	6650373	95.15	PASS	70-125	83131.9	88622.1	93.8	PASS	70-125
CCB1	CCB	1	6782922.4	6650373	101.99	PASS	70-125	103180.3	88622.1	116.43	PASS	70-125
CCV2	CCV	1	7224645.7	6650373	108.64	PASS	70-125	113643	88622.1	128.23	NR!	70-125
CCB2	CCB	1	6785877	6650373	102.04	PASS	70-125	100222.7	88622.1	113.09	PASS	70-125
LLCCV1	CCV2	1	5878246.3	6650373	88.39	PASS	70-125	69803.5	88622.1	78.77	PASS	70-125
ICSA2	ICSA	1	6905516.9	6650373	103.84	PASS	70-125	102610	88622.1	115.78	PASS	70-125
ICSAB2	ICSAB	1	6363342.3	6650373	95.68	PASS	70-125	83543.1	88622.1	94.27	PASS	70-125
CCV3	CCV	1	7172464.5	6650373	107.85	PASS	70-125	107857.6	88622.1	121.71	PASS	70-125
CCB3	CCB	1	6782635.2	6650373	101.99	PASS	70-125	99359.2	88622.1	112.12	PASS	70-125
MB-66270	MBLK	1	6556866.4	6650373	98.59	PASS	70-125	96095.6	88622.1	108.43	PASS	70-125
LCS-66270	LCS	1	7487076.6	6650373	112.58	PASS	70-125	105928.8	88622.1	119.53	PASS	70-125
N027820-001B	SAMP	1	6457575	6650373	97.1	PASS	70-125	89622.6	88622.1	101.13	PASS	70-125
N027820-001B	SAMP	5	6489380.1	6650373	97.58	PASS	70-125	91092.3	88622.1	102.79	PASS	70-125
N027820-001B-PS	PS	1	6542456.2	6650373	98.38	PASS	70-125	87051.8	88622.1	98.23	PASS	70-125
N027820-001B-MS	MS	1	6498190.4	6650373	97.71	PASS	70-125	87692	88622.1	98.95	PASS	70-125
N027820-001B-MSD	MSD	1	6461874.4	6650373	97.17	PASS	70-125	88780.7	88622.1	100.18	PASS	70-125
N027820-002B	SAMP	1	6483021.3	6650373	97.48	PASS	70-125	90926.5	88622.1	102.6	PASS	70-125
N027820-003B	SAMP	1	6425229.3	6650373	96.61	PASS	70-125	90465	88622.1	102.08	PASS	70-125
CCV4	CCV	1	6850929.2	6650373	103.02	PASS	70-125	97978.9	88622.1	110.56	PASS	70-125
CCB4	CCB	1	6514302.5	6650373	97.95	PASS	70-125	88231.2	88622.1	99.56	PASS	70-125
N027820-004B	SAMP	1	6323431.5	6650373	95.084	PASS	70-125	83900.9	88622.1	94.67	PASS	70-125
N027820-005B	SAMP	1	5891278.1	6650373	88.59	PASS	70-125	82444.9	88622.1	93.03	PASS	70-125
N027820-006B	SAMP	1	6376534.6	6650373	95.88	PASS	70-125	85271.3	88622.1	96.22	PASS	70-125
N027820-007B	SAMP	1	6273506.9	6650373	94.33	PASS	70-125	84377.1	88622.1	95.21	PASS	70-125
N027820-008B	SAMP	1	6202239.9	6650373	93.26	PASS	70-125	82957.9	88622.1	93.61	PASS	70-125
N027820-009B	SAMP	1	6125008	6650373	92.1	PASS	70-125	83433.5	88622.1	94.15	PASS	70-125

INTERNAL STANDARD: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027820-010B	SAMP	1	5922805.7	6650373	89.06	PASS	70-125	81618.8	88622.1	92.098	PASS	70-125
N027820-011B	SAMP	1	6289039.8	6650373	94.57	PASS	70-125	84438.3	88622.1	95.28	PASS	70-125
N027820-012B	SAMP	1	6238259.4	6650373	93.8	PASS	70-125	85160.8	88622.1	96.094	PASS	70-125
N027820-013B	SAMP	1	6141011.3	6650373	92.34	PASS	70-125	83289.6	88622.1	93.98	PASS	70-125
CCV5	CCV	1	6770073.4	6650373	101.8	PASS	70-125	92027.5	88622.1	103.84	PASS	70-125
CCB5	CCB	1	6478609.3	6650373	97.42	PASS	70-125	83856.5	88622.1	94.62	PASS	70-125
LLCCV2	CCV2	1	6384049.2	6650373	96	PASS	70-125	81734.1	88622.1	92.23	PASS	70-125
ICSA3	ICSA	1	6744465.6	6650373	101.41	PASS	70-125	94986.5	88622.1	107.18	PASS	70-125
ICSAB3	ICSAB	1	6377720.7	6650373	95.9	PASS	70-125	96515.9	88622.1	108.91	PASS	70-125

INTERNAL STANDARD: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	67539.9	67539.9	100	PASS	70-125	73418.8	73418.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	68330.4	67539.9	101.17	PASS	70-125	74621.8	73418.8	101.64	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	67975.3	67539.9	100.64	PASS	70-125	73788	73418.8	100.5	PASS	70-125
Std3-5/50 ppb	ICAL	1	68040.1	67539.9	100.74	PASS	70-125	73232.5	73418.8	99.75	PASS	70-125
Std4-10/100 ppb	ICAL	1	68254.5	67539.9	101.06	PASS	70-125	73641.5	73418.8	100.3	PASS	70-125
Std5-20/200 ppb	ICAL	1	67346.1	67539.9	99.71	PASS	70-125	72776.9	73418.8	99.13	PASS	70-125
Std6-40/400 ppb	ICAL	1	70640.2	67539.9	104.59	PASS	70-125	74635.3	73418.8	101.66	PASS	70-125
Std7-100/1000 ppb	ICAL	1	68208.5	67539.9	100.99	PASS	70-125	72263.7	73418.8	98.43	PASS	70-125
Std8-200/2000 ppb	ICAL	1	68215.3	67539.9	101	PASS	70-125	72636.4	73418.8	98.93	PASS	70-125
ICV	ICV	1	72599	67539.9	107.49	PASS	70-125	75980.5	73418.8	103.49	PASS	70-125
ICB	ICB	1	67087.2	67539.9	99.33	PASS	70-125	72721.3	73418.8	99.05	PASS	70-125
LLICV	CCV1	1	66586.3	67539.9	98.59	PASS	70-125	70811.8	73418.8	96.45	PASS	70-125
ICSA1	ICSA	1	75130.7	67539.9	111.24	PASS	70-125	77059.1	73418.8	104.96	PASS	70-125
ICSAB1	ICSAB	1	63451.7	67539.9	93.95	PASS	70-125	64200.3	73418.8	87.44	PASS	70-125
LLICV	CCV1	1	76094.3	67539.9	112.67	PASS	70-125	82454.1	73418.8	112.31	PASS	70-125
CCV1	CCV	1	61719.6	67539.9	91.38	PASS	70-125	64976.6	73418.8	88.5	PASS	70-125
CCB1	CCB	1	75579.5	67539.9	111.9	PASS	70-125	82825.3	73418.8	112.81	PASS	70-125
CCV2	CCV	1	83399.6	67539.9	123.48	PASS	70-125	93045.4	73418.8	126.73	NR!	70-125
CCB2	CCB	1	74901	67539.9	110.9	PASS	70-125	82248	73418.8	112.03	PASS	70-125
LLCCV1	CCV2	1	53020.3	67539.9	78.5	PASS	70-125	55972.2	73418.8	76.24	PASS	70-125
ICSA2	ICSA	1	75506.9	67539.9	111.8	PASS	70-125	80656.1	73418.8	109.86	PASS	70-125
ICSAB2	ICSAB	1	60792.8	67539.9	90.01	PASS	70-125	62937.6	73418.8	85.72	PASS	70-125
CCV3	CCV	1	80643.4	67539.9	119.4	PASS	70-125	93814.5	73418.8	127.78	NR!	70-125
CCB3	CCB	1	74572.7	67539.9	110.41	PASS	70-125	87130.3	73418.8	118.68	PASS	70-125
MB-66270	MBLK	1	72138.6	67539.9	106.81	PASS	70-125	82847.6	73418.8	112.84	PASS	70-125
LCS-66270	LCS	1	79340.5	67539.9	117.47	PASS	70-125	89164	73418.8	121.45	PASS	70-125
N027820-001B	SAMP	1	67470.1	67539.9	99.9	PASS	70-125	76163.5	73418.8	103.74	PASS	70-125
N027820-001B	SAMP	5	69085.4	67539.9	102.29	PASS	70-125	77180.2	73418.8	105.12	PASS	70-125
N027820-001B-PS	PS	1	68600.1	67539.9	101.57	PASS	70-125	76813.9	73418.8	104.62	PASS	70-125
N027820-001B-MS	MS	1	68758.5	67539.9	101.8	PASS	70-125	78289.8	73418.8	106.63	PASS	70-125
N027820-001B-MSD	MSD	1	68432.8	67539.9	101.32	PASS	70-125	78400.5	73418.8	106.79	PASS	70-125
N027820-002B	SAMP	1	67920.4	67539.9	100.56	PASS	70-125	78001	73418.8	106.24	PASS	70-125
N027820-003B	SAMP	1	67167.6	67539.9	99.45	PASS	70-125	76796.8	73418.8	104.6	PASS	70-125
CCV4	CCV	1	73072.7	67539.9	108.19	PASS	70-125	82755.1	73418.8	112.72	PASS	70-125
CCB4	CCB	1	66756	67539.9	98.84	PASS	70-125	76255.2	73418.8	103.86	PASS	70-125
N027820-004B	SAMP	1	64085.2	67539.9	94.88	PASS	70-125	71474.7	73418.8	97.35	PASS	70-125
N027820-005B	SAMP	1	59873.8	67539.9	88.65	PASS	70-125	67322.7	73418.8	91.7	PASS	70-125
N027820-006B	SAMP	1	64069.7	67539.9	94.86	PASS	70-125	73433.5	73418.8	100.02	PASS	70-125
N027820-007B	SAMP	1	63718.1	67539.9	94.34	PASS	70-125	71723.6	73418.8	97.69	PASS	70-125
N027820-008B	SAMP	1	63219.5	67539.9	93.6	PASS	70-125	71716.9	73418.8	97.68	PASS	70-125
N027820-009B	SAMP	1	63205.1	67539.9	93.58	PASS	70-125	71510.7	73418.8	97.4	PASS	70-125

INTERNAL STANDARD: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N027820-010B	SAMP	1	59995.2	67539.9	88.83	PASS	70-125	68437.5	73418.8	93.22	PASS	70-125
N027820-011B	SAMP	1	64515	67539.9	95.52	PASS	70-125	72931.1	73418.8	99.34	PASS	70-125
N027820-012B	SAMP	1	64295.7	67539.9	95.2	PASS	70-125	73187.6	73418.8	99.69	PASS	70-125
N027820-013B	SAMP	1	63226.4	67539.9	93.61	PASS	70-125	70807.4	73418.8	96.44	PASS	70-125
CCV5	CCV	1	69274	67539.9	102.57	PASS	70-125	79177.8	73418.8	107.84	PASS	70-125
CCB5	CCB	1	65437.4	67539.9	96.89	PASS	70-125	73663.9	73418.8	100.33	PASS	70-125
LLCCV2	CCV2	1	63369.1	67539.9	93.82	PASS	70-125	72921.9	73418.8	99.32	PASS	70-125
ICSA3	ICSA	1	71059.6	67539.9	105.21	PASS	70-125	77696.9	73418.8	105.83	PASS	70-125
ICSAB3	ICSAB	1	68122.7	67539.9	100.86	PASS	70-125	70752.4	73418.8	96.37	PASS	70-125

INTERNAL STANDARD: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2193711.8	2193711.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2266336.9	2193711.8	103.31	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2229013.8	2193711.8	101.61	PASS	70-125
Std3-5/50 ppb	ICAL	1	2240472	2193711.8	102.13	PASS	70-125
Std4-10/100 ppb	ICAL	1	2260109.7	2193711.8	103.03	PASS	70-125
Std5-20/200 ppb	ICAL	1	2217372.6	2193711.8	101.08	PASS	70-125
Std6-40/400 ppb	ICAL	1	2305177.6	2193711.8	105.08	PASS	70-125
Std7-100/1000 ppb	ICAL	1	2225893.4	2193711.8	101.47	PASS	70-125
Std8-200/2000 ppb	ICAL	1	2216306.8	2193711.8	101.03	PASS	70-125
ICV	ICV	1	2396795	2193711.8	109.26	PASS	70-125
ICB	ICB	1	2198348.5	2193711.8	100.21	PASS	70-125
LLICV	CCV1	1	2178354.2	2193711.8	99.3	PASS	70-125
ICSA1	ICSA	1	2212438.9	2193711.8	100.85	PASS	70-125
ICSAB1	ICSAB	1	1858179.1	2193711.8	84.7	PASS	70-125
LLICV	CCV1	1	2403363.2	2193711.8	109.56	PASS	70-125
CCV1	CCV	1	1995345.1	2193711.8	90.96	PASS	70-125
CCB1	CCB	1	2386796.1	2193711.8	108.8	PASS	70-125
CCV2	CCV	1	2554463.6	2193711.8	116.44	PASS	70-125
CCB2	CCB	1	2372898.4	2193711.8	108.17	PASS	70-125
LLCCV1	CCV2	1	1771074.7	2193711.8	80.73	PASS	70-125
ICSA2	ICSA	1	2224497.4	2193711.8	101.4	PASS	70-125
ICSAB2	ICSAB	1	1843039.2	2193711.8	84.015	PASS	70-125
CCV3	CCV	1	2485726.9	2193711.8	113.31	PASS	70-125
CCB3	CCB	1	2290861.6	2193711.8	104.43	PASS	70-125
MB-66270	MBLK	1	2265751.5	2193711.8	103.28	PASS	70-125
LCS-66270	LCS	1	2500709	2193711.8	113.99	PASS	70-125
N027820-001B	SAMP	1	1973362.2	2193711.8	89.96	PASS	70-125
N027820-001B	SAMP	5	2113376.5	2193711.8	96.34	PASS	70-125
N027820-001B-PS	PS	1	2016594.7	2193711.8	91.93	PASS	70-125
N027820-001B-MS	MS	1	2023966.1	2193711.8	92.26	PASS	70-125
N027820-001B-MSD	MSD	1	2026404.3	2193711.8	92.37	PASS	70-125
N027820-002B	SAMP	1	1991812.6	2193711.8	90.8	PASS	70-125
N027820-003B	SAMP	1	1965170	2193711.8	89.58	PASS	70-125
CCV4	CCV	1	2298083.5	2193711.8	104.76	PASS	70-125
CCB4	CCB	1	2153698.6	2193711.8	98.18	PASS	70-125
N027820-004B	SAMP	1	1895591.2	2193711.8	86.41	PASS	70-125
N027820-005B	SAMP	1	1763219.7	2193711.8	80.38	PASS	70-125
N027820-006B	SAMP	1	1920332.7	2193711.8	87.54	PASS	70-125
N027820-007B	SAMP	1	1875344.8	2193711.8	85.49	PASS	70-125
N027820-008B	SAMP	1	1862054.7	2193711.8	84.88	PASS	70-125
N027820-009B	SAMP	1	1856488.2	2193711.8	84.63	PASS	70-125

INTERNAL STANDARD: 180106A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N027820-010B	SAMP	1	1757856.7	2193711.8	80.13	PASS	70-125
N027820-011B	SAMP	1	1890468.2	2193711.8	86.18	PASS	70-125
N027820-012B	SAMP	1	1903305.8	2193711.8	86.76	PASS	70-125
N027820-013B	SAMP	1	1839104.9	2193711.8	83.84	PASS	70-125
CCV5	CCV	1	2204337	2193711.8	100.48	PASS	70-125
CCB5	CCB	1	2087499.9	2193711.8	95.16	PASS	70-125
LLCCV2	CCV2	1	2064488.4	2193711.8	94.11	PASS	70-125
ICSA3	ICSA	1	2095628.1	2193711.8	95.53	PASS	70-125
ICSAB3	ICSAB	1	1990555.5	2193711.8	90.74	PASS	70-125

INTERNAL STANDARD: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	62619.5	62619.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	65940.2	62619.5	105.3	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	63563.5	62619.5	101.51	PASS	70-125
Std3-5/50 ppb	ICAL	1	63516.6	62619.5	101.43	PASS	70-125
Std4-10/100 ppb	ICAL	1	63395.8	62619.5	101.24	PASS	70-125
Std5-20/200 ppb	ICAL	1	52108.6	62619.5	83.21	PASS	70-125
Std6-40/400 ppb	ICAL	1	63322.2	62619.5	101.12	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61513.2	62619.5	98.23	PASS	70-125
Std8-200/2000 ppb	ICAL	1	62853.8	62619.5	100.37	PASS	70-125
ICV	ICV	1	68295.6	62619.5	109.06	PASS	70-125
ICB	ICB	1	57903.4	62619.5	92.47	PASS	70-125
LLICV	CCV1	1	57110.5	62619.5	91.2	PASS	70-125
ICSA1	ICSA	1	55013.5	62619.5	87.85	PASS	70-125
ICSAB1	ICSAB	1	69228.5	62619.5	110.55	PASS	70-125
LLICV	CCV1	1	69055.2	62619.5	110.28	PASS	70-125
CCV1	CCV	1	61540.9	62619.5	98.28	PASS	70-125
CCB1	CCB	1	66459	62619.5	106.13	PASS	70-125
MB-66270	MBLK	1	77364.5	62619.5	123.55	PASS	70-125
LCS-66270	LCS	1	83977.6	62619.5	134.11	NR!	70-125
N027820-001B	SAMP	1	71184.5	62619.5	113.68	PASS	70-125
N027820-001B	SAMP	5	74190.8	62619.5	118.48	PASS	70-125
N027820-001B-PS	PS	1	74211.1	62619.5	118.51	PASS	70-125
N027820-001B-MS	MS	1	74628.7	62619.5	119.18	PASS	70-125
CCV2	CCV	1	77852.2	62619.5	124.33	PASS	70-125
CCB2	CCB	1	75901	62619.5	121.21	PASS	70-125
N027820-001B-MSD	MSD	1	71482.3	62619.5	114.15	PASS	70-125
N027820-002B	SAMP	1	71586.1	62619.5	114.32	PASS	70-125
N027820-003B	SAMP	1	70846	62619.5	113.14	PASS	70-125
N027820-004B	SAMP	1	71220.1	62619.5	113.73	PASS	70-125
N027820-005B	SAMP	1	69355.1	62619.5	110.76	PASS	70-125
N027820-006B	SAMP	1	70597.2	62619.5	112.74	PASS	70-125
N027820-007B	SAMP	1	69043.2	62619.5	110.26	PASS	70-125
N027820-008B	SAMP	1	68660.3	62619.5	109.65	PASS	70-125
N027820-009B	SAMP	1	66930.1	62619.5	106.88	PASS	70-125
N027820-010B	SAMP	1	69627.8	62619.5	111.19	PASS	70-125
CCV3	CCV	1	74193	62619.5	118.48	PASS	70-125
CCB3	CCB	1	71460	62619.5	114.12	PASS	70-125
LCS-66270	LCS	1	75296	62619.5	120.24	PASS	70-125
N027820-011B	SAMP	1	66830.5	62619.5	106.72	PASS	70-125
N027820-012B	SAMP	1	67651.9	62619.5	108.04	PASS	70-125
N027820-013B	SAMP	1	65615.7	62619.5	104.78	PASS	70-125

INTERNAL STANDARD: 180108A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
N027820-003B	SAMP	1	68402.5	62619.5	109.24	PASS	70-125
CCV4	CCV	1	62815.9	62619.5	100.31	PASS	70-125
CCB4	CCB	1	76461.3	62619.5	122.1	PASS	70-125
LLCCV1	CCV2	1	73233.4	62619.5	116.95	PASS	70-125
ICSA2	ICSA	1	73354.5	62619.5	117.14	PASS	70-125
ICSAB2	ICSAB	1	74704	62619.5	119.3	PASS	70-125
N027820-012B	SAMP	1	72337.5	62619.5	115.52	PASS	70-125
CCV5	CCV	1	61305.7	62619.5	97.9	PASS	70-125
CCB5	CCB	1	68273.1	62619.5	109.03	PASS	70-125
LLCCV2	CCV2	1	67471.9	62619.5	107.75	PASS	70-125
ICSA3	ICSA	1	70782.4	62619.5	113.04	PASS	70-125
ICSAB3	ICSAB	1	67964.9	62619.5	108.54	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N027820
Test Method: EPA 6020
Analysis Date: 1/6/2018 & 1/8/2018

Matrix: Groundwater
Batch No.: 66270

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N027820-001B DT 5X	Arsenic	ug/L	2.390306	NA	2.333232	2.45%	10
N027820-001B DT 5X	Barium	ug/L	130.5158	PASS	126.0677	3.53%	10
N027820-001B DT 5X	Chromium	ug/L	0	NA	0		10
N027820-001B DT 5X	Manganese	ug/L	0	NA	0.061063	100.00%	10
N027820-001B DT 5X	Molybdenum	ug/L	5.243361	NA	5.25268	0.18%	10
N027820-001B DT 5X	Selenium	ug/L	1.425027	NA	1.609105	11.44%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N027820-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888087

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.050	0.10	10.00	2.333	107	80	120				
Barium	125.904	1.0	10.00	126.1	-1.63	80	120				S
Manganese	105.908	0.50	100.0	0.06106	106	80	120				
Molybdenum	15.381	0.50	10.00	5.253	101	80	120				

Sample ID	N027820-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	121282
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/8/2018	SeqNo:	2888710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	12.116	0.50	10.00	1.609	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N027820
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N027820-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	121257
Client ID:	ZZZZZZ	Batch ID:	66270	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	1/6/2018	SeqNo:	2888161

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.543	1.0	10.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

February 21, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028469

RE: PG&E Topock - PMP

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 07, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP
Lab Order: N028469

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028469-001D-MS2 and N028469-001D-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *21-Feb-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP
Lab Order: N028469
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028469-001A	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-001B	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-001C	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-001D	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-002A	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018
N028469-002B	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018
N028469-002C	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018
N028469-002D	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180208B**	QC Batch: **R121948**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	2/8/2018 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180208B**	QC Batch: **R121948**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	2/8/2018 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N028469-001BDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**121948**
Client ID:	**ZZZZZZ**	Batch ID:	**R121948**	TestNo:	**EPA 120.1**			Analysis Date:	**2/8/2018**	SeqNo:	**2925014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	4060.000	0.10						4080	0.491	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180208A**	QC Batch: **R121947**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	2/8/2018 11:30 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/8/2018 11:30 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-002

Client Sample ID: TW-03D-0218
Collection Date: 2/7/2018 8:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180208A**	QC Batch: **R121947**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/8/2018 11:30 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/8/2018 11:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028469-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121947**
Client ID: **ZZZZZZ** Batch ID: **R121947** TestNo: **SM4500-H+B** Analysis Date: **2/8/2018** SeqNo: **2925011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.490	0.10						7.440	0.670	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180208D**	QC Batch: **66738**				PrepDate	**2/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	2/8/2018 01:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180208D**	QC Batch: **66738**				PrepDate	**2/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	2/8/2018 01:39 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	**LCS-66738**	SampType:	**LCS**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**2/8/2018**	RunNo:	**121950**
Client ID:	**LCSW**	Batch ID:	**66738**	TestNo:	**SM2540C**			Analysis Date:	**2/8/2018**	SeqNo:	**2925577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID	**MB-66738**	SampType:	**MBLK**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**2/8/2018**	RunNo:	**121950**
Client ID:	**PBW**	Batch ID:	**66738**	TestNo:	**SM2540C**			Analysis Date:	**2/8/2018**	SeqNo:	**2925578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	**N028455-001ADUP**	SampType:	**DUP**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**2/8/2018**	RunNo:	**121950**
Client ID:	**ZZZZZZ**	Batch ID:	**66738**	TestNo:	**SM2540C**			Analysis Date:	**2/8/2018**	SeqNo:	**2925580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4585.000	50						4420	3.66	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180214I**	QC Batch: **66716**				PrepDate	**2/8/2018**	Analyst: **CEI**
Calcium	140000	85	500		µg/L	1	2/14/2018 09:47 PM
Iron	ND	18	20		µg/L	1	2/14/2018 09:47 PM
Magnesium	35000	48	100		µg/L	1	2/14/2018 09:47 PM
Sodium	710000	660	12000		µg/L	25	2/15/2018 11:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-002

Client Sample ID: TW-03D-0218
Collection Date: 2/7/2018 8:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180214I**	QC Batch: **66716**				PrepDate	**2/8/2018**	Analyst: **CEI**
Calcium	210000	85	500		µg/L	1	2/14/2018 09:53 PM
Iron	ND	18	20		µg/L	1	2/14/2018 09:53 PM
Magnesium	31000	48	100		µg/L	1	2/14/2018 09:53 PM
Sodium	1500000	1300	25000		µg/L	50	2/15/2018 11:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66716** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **PBW** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66716** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **LCSW** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9678.691	500	10000	0	96.8	85	115				
Iron	107.611	20	100.0	0	108	85	115				
Magnesium	9565.647	100	10000	0	95.7	85	115				

Sample ID **N028455-002E-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **ZZZZZZ** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	139913.392	500	10000	129900	100	75	125				
Iron	106.665	20	100.0	0	107	75	125				
Magnesium	37475.885	100	10000	28880	85.9	75	125				

Sample ID **N028455-002E-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **ZZZZZZ** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	138776.280	500	10000	129900	89.0	75	125	139900	0.816	20	
Iron	106.333	20	100.0	0	106	75	125	106.7	0.312	20	
Magnesium	37314.397	100	10000	28880	84.3	75	125	37480	0.432	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-66716	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	PBW	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932140		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		ND	500										

Sample ID	LCS2-66716	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	LCSW	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932141		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		21404.978	500	20000	0	107	85	115					

Sample ID	N028469-001D-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	ZZZZZZ	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932148		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		774532.601	12000	20000	710500	320	75	125				S	

Sample ID	N028469-001D-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	ZZZZZZ	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932149		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		784692.215	12000	20000	710500	371	75	125	774500	1.30	20	S	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180208E** QC Batch: **66723**				PrepDate		**2/8/2018**	Analyst: **CEI**
Manganese	74	0.26	0.50		µg/L	1	2/8/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180208E** QC Batch: **66723** PrepDate **2/8/2018** Analyst: **CEI**							
Manganese	13	0.26	0.50		µg/L	1	2/8/2018 05:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-66723**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **PBW**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-66723**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **LCSW**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	104.435	0.50	100.0	0	104	85	115				

Sample ID **N028469-001D-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	171.023	0.50	100.0	74.42	96.6	75	125				

Sample ID **N028469-001D-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	171.802	0.50	100.0	74.42	97.4	75	125	171.0	0.454	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180208A**	QC Batch: **R121922**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.70	0.033	0.20		µg/L	1	2/8/2018 11:15 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180208E**	QC Batch: **66723**			PrepDate	**2/8/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/8/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-002

Client Sample ID: TW-03D-0218
Collection Date: 2/7/2018 8:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180208A** QC Batch: **R121922**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	2/8/2018 10:46 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180208E** QC Batch: **66723**				PrepDate	**2/8/2018**		Analyst: **CEI**
Chromium	540	0.65	5.0		µg/L	5	2/8/2018 05:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**MB-66723**	SampType:	**MBLK**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**2/8/2018**	RunNo:	**121943**
Client ID:	**PBW**	Batch ID:	**66723**	TestNo:	**EPA 200.8**			Analysis Date:	**2/8/2018**	SeqNo:	**2926133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**LCS-66723**	SampType:	**LCS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**2/8/2018**	RunNo:	**121943**
Client ID:	**LCSW**	Batch ID:	**66723**	TestNo:	**EPA 200.8**			Analysis Date:	**2/8/2018**	SeqNo:	**2926134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.142	1.0	10.00	0	101	85	115				

Sample ID	**N028469-001D-MS**	SampType:	**MS**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**2/8/2018**	RunNo:	**121943**
Client ID:	**ZZZZZZ**	Batch ID:	**66723**	TestNo:	**EPA 200.8**			Analysis Date:	**2/8/2018**	SeqNo:	**2926145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.540	1.0	10.00	0.9570	95.8	75	125				

Sample ID	**N028469-001D-MSD**	SampType:	**MSD**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:	**2/8/2018**	RunNo:	**121943**
Client ID:	**ZZZZZZ**	Batch ID:	**66723**	TestNo:	**EPA 200.8**			Analysis Date:	**2/8/2018**	SeqNo:	**2926147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.597	1.0	10.00	0.9570	96.4	75	125	10.54	0.541	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121922**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **PBW**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121922**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **LCSW**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	90	110				

Sample ID **N028483-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.830	0.20						1.816	0.741	20	

Sample ID **N028469-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1056.800	20	500.0	551.6	101	90	110				

Sample ID **N028469-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1050.150	20	500.0	551.6	99.7	90	110	1057	0.631	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028469-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121922
Client ID:	ZZZZZZ	Batch ID:	R121922	TestNo:	EPA 218.6			Analysis Date:	2/8/2018	SeqNo:	2923636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.712	0.20	1.000	0.6951	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180209A**	QC Batch: **R121960**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	240	1.2	5.0		mg/L	1	2/9/2018 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180209A**	QC Batch: **R121960**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	2/9/2018 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121960**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **LCSW**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.280	5.0	100.0	0	97.3	85	115				

Sample ID **MB-R121960**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **PBW**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028469-001BDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **ZZZZZZ**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	242.678	5.0						240.6	0.866	30	

Sample ID **N028469-002BMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **ZZZZZZ**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	242.678	5.0	100.0	150.6	92.1	75	125				

Sample ID **N028469-002BMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **ZZZZZZ**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	246.862	5.0	100.0	150.6	96.2	75	125	242.7	1.71	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180209A** QC Batch: **R121972**				PrepDate			Analyst: **RAB**
Chloride	1100	1.8	100		mg/L	200	2/9/2018 08:50 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180208A** QC Batch: **R121946**				PrepDate			Analyst: **RAB**
Sulfate	400	1.1	25		mg/L	50	2/8/2018 07:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180209A** QC Batch: **R121972**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	2/9/2018 09:51 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180208A** QC Batch: **R121946**				PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	2/8/2018 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121972_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	PBW	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121972_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	LCSW	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.999	0.50	2.000	0	99.9	90	110				

Sample ID	N028469-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	ZZZZZZ	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1078.220	100						1084	0.498	20	

Sample ID	N028469-001BMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	ZZZZZZ	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1487.780	100	400.0	1084	101	80	120				

Sample ID	N028469-001BMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	ZZZZZZ	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1494.980	100	400.0	1084	103	80	120	1488	0.483	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121946_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	PBW	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121946_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	LCSW	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.633	0.50	4.000	0	90.8	90	110				

Sample ID	N028469-001BMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	ZZZZZZ	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	595.560	25	200.0	398.6	98.5	80	120				

Sample ID	N028469-001BMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	ZZZZZZ	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	595.380	25	200.0	398.6	98.4	80	120	595.6	0.0302	20	

Sample ID	N028469-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	ZZZZZZ	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	388.320	25						398.6	2.62	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180216C**	QC Batch: **R122121**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.25	0.032	0.050		mg/L	1	2/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180216C**	QC Batch: **R122121**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.5	0.16	0.25		mg/L	5	2/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122121	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122121
Client ID:	PBW	Batch ID:	R122121	TestNo:	SM4500-NO3			Analysis Date:	2/16/2018	SeqNo:	2933564

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122121	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122121
Client ID:	LCSW	Batch ID:	R122121	TestNo:	SM4500-NO3			Analysis Date:	2/16/2018	SeqNo:	2933565

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	N028455-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122121
Client ID:	ZZZZZZ	Batch ID:	R122121	TestNo:	SM4500-NO3			Analysis Date:	2/16/2018	SeqNo:	2933571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.603	0.25	2.500	2.834	111	75	125				

Sample ID	N028455-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122121
Client ID:	ZZZZZZ	Batch ID:	R122121	TestNo:	SM4500-NO3			Analysis Date:	2/16/2018	SeqNo:	2933572

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.557	0.25	2.500	2.834	109	75	125	5.602	0.824	20	

Sample ID	N028469-002CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122121
Client ID:	ZZZZZZ	Batch ID:	R122121	TestNo:	SM4500-NO3			Analysis Date:	2/16/2018	SeqNo:	2933577

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.825	0.25						2.503	12.1	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Lisa Kellog	**EDD Requirement**
Address: 1410 Rocky Ridge Dr. #330	**Company:** Arcadis	**Address:** 2999 Oak Road, Suite 300	Excel EDD ☐
Address: Roseville, CA 95661	**Email:** dan.bush@arcadis.com; daniel.moore@critigen.com	Walnut Creek, CA 94597	Geotracker ☐
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr. #330	**Email to:** lisa.kellog@arcadis.com **PO#**	Labspec ☐
Submitted By:	Roseville, CA 95661	**Phone:** 951.677.0577 **Fax:**	Others ☐
Title:	**Phone:** 916.786.3302 **Fax:**		Specify:
Signature: **Date:**	**Sampled By:** Jed DiCamillo		Global ID:
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - PMP	*Signature:* Jed DiCamillo	*Date* 2-7-18	
Project Number:			

QA/QC		Sampe Receipt Condition	Y	N
RTNE	☐			
RWQCB	☐	1. Chilled	☑	☐
CalTrans	☐	2. Headspace	☐	☐
Level III	☐	3. Container Intact	☐	☐
LEVEL IV	☑	4. Seal Present	☐	☐
Regulatory	☐	5. IR number	2	
Specify State:		6. Method of Cooling	Ice	
		Sample Temp:	3-1°C	

Matrix

Ground	☑	Sediment	☐
Potable	☐	Soil	☐
NPDES	☐	Other Solid	☐
Surface	☐		

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr+6 by SM3500	Alkalinity	pH	Chloride	Specific Conductance	Sulfate	TDS	NO2/NO3 by SM 4500	Ca, Fe, Mg, Na by EPA 200.7	Cr, Mn by 200.8	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N028469 - 01	PE-01-0218	2-7-18	0753	X			X	X	X	X	X	X	X	X	X	X	E	4	P	N/S	
2	- 02	TW-03D-0218	2-7-18	805	X			X	X	X	X	X	X	X	X	X	X	E	4	P	N/S	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Courier:

Tracking No.

Relinquished by (Signature and Printed Name): Jed DiCamillo	Date / Time: 2-7-18 1220	Received by (Signature and Printed Name):	Date / Time: 2/7/18 1220
Relinquished by (Signature and Printed Name):	Date / Time: 2/7/18 1433	Received by (Signature and Printed Name):	Date / Time: 2/7/18 1433
Relinquished by (Signature and Printed Name):	Date / Time:	Received by (Signature and Printed Name):	Date / Time:

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☑ E = Routine 5-7 Workdays

TAT Starts at 8 AM the followiing day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

T = Tube	V = VOA	P = Pint
J = Jar	B = Tedlar	G = Glass
M = Metal	P = Plastic	C = Can

White = Laboratory Copy

Yellow = Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/7/2018	Workorder:	N028469
Rep sample Temp (Deg C):	3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH received past holding time.

Checklist Completed B DA 2/8/2018

Reviewed By: 02/20/2018

ASSET Laboratories

WORK ORDER Summary

08-Feb-18

WorkOrder: N028469

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 2/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028469-001A	PE-01-0218	2/7/2018 7:53:00 AM	2/21/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028469-001B			2/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			2/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			2/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			2/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			2/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N028469-001C			2/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028469-001D			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028469-002A	TW-03D-0218	2/7/2018 8:05:00 AM	2/21/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028469-002B			2/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			2/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			2/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			2/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			2/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

08-Feb-18

WorkOrder: N028469

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 2/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028469-002C	TW-03D-0218	2/7/2018 8:05:00 AM	2/21/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028469-002D			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028469-003A	FOLDER	2/21/2018	2/21/2018		EDD	RWQCB	☐	☐	☐	LAB
			2/21/2018		Folder	Folder	☐	☐	☐	LAB
			2/21/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

ASSET Laboratories Work Order:
N028469

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028469

Item	Page
Cover Page	1-5
Analytical Result/QC Summary Reports	6-36
Sample Receiving Items	37-41
List of Analysts	42
Raw Data	
EPA 120.1	43-46
SM 4500-H+B	47-50
SM 2540C	51-60
EPA 200.7_Dissolved	61-103
EPA 200.8_Dissolved	104-147
EPA 218.6	148-244
SM 2320 B	245-254
EPA 300.0	255-285
SM 4500-NO3F	286-301

February 21, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N028469

RE: PG&E Topock - PMP

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 07, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028469-001D-MS2 and N028469-001D-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *21-Feb-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP
Lab Order: N028469
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028469-001A	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-001B	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-001C	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-001D	PE-01-0218	Groundwater	2/7/2018 7:53:00 AM	2/7/2018	2/21/2018
N028469-002A	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018
N028469-002B	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018
N028469-002C	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018
N028469-002D	TW-03D-0218	Groundwater	2/7/2018 8:05:00 AM	2/7/2018	2/21/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180208B**	QC Batch: **R121948**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	2/8/2018 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180208B**	QC Batch: **R121948**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	2/8/2018 11:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N028469-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **121948**
Client ID: **ZZZZZZ** Batch ID: **R121948** TestNo: **EPA 120.1** Analysis Date: **2/8/2018** SeqNo: **2925014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	4060.000	0.10						4080	0.491	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180208A**	QC Batch: **R121947**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	2/8/2018 11:30 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/8/2018 11:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-002

Client Sample ID: TW-03D-0218
Collection Date: 2/7/2018 8:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180208A**	QC Batch: **R121947**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/8/2018 11:30 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/8/2018 11:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028469-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **121947**
Client ID: **ZZZZZZ** Batch ID: **R121947** TestNo: **SM4500-H+B** Analysis Date: **2/8/2018** SeqNo: **2925011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.490	0.10						7.440	0.670	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180208D**	QC Batch: **66738**				PrepDate	**2/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	2/8/2018 01:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180208D**	QC Batch: **66738**				PrepDate	**2/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	2/8/2018 01:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66738**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/8/2018**	RunNo: **121950**
Client ID: **LCSW**	Batch ID: **66738**	TestNo: **SM2540C**		Analysis Date: **2/8/2018**	SeqNo: **2925577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID **MB-66738**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/8/2018**	RunNo: **121950**
Client ID: **PBW**	Batch ID: **66738**	TestNo: **SM2540C**		Analysis Date: **2/8/2018**	SeqNo: **2925578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N028455-001ADUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/8/2018**	RunNo: **121950**
Client ID: **ZZZZZZ**	Batch ID: **66738**	TestNo: **SM2540C**		Analysis Date: **2/8/2018**	SeqNo: **2925580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4585.000	50						4420	3.66	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180214I**	QC Batch: **66716**				PrepDate	**2/8/2018**	Analyst: **CEI**
Calcium	140000	85	500		µg/L	1	2/14/2018 09:47 PM
Iron	ND	18	20		µg/L	1	2/14/2018 09:47 PM
Magnesium	35000	48	100		µg/L	1	2/14/2018 09:47 PM
Sodium	710000	660	12000		µg/L	25	2/15/2018 11:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-002

Client Sample ID: TW-03D-0218
Collection Date: 2/7/2018 8:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180214I**	QC Batch: **66716**				PrepDate	**2/8/2018**	Analyst: **CEI**
Calcium	210000	85	500		µg/L	1	2/14/2018 09:53 PM
Iron	ND	18	20		µg/L	1	2/14/2018 09:53 PM
Magnesium	31000	48	100		µg/L	1	2/14/2018 09:53 PM
Sodium	1500000	1300	25000		µg/L	50	2/15/2018 11:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66716** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **PBW** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66716** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **LCSW** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9678.691	500	10000	0	96.8	85	115				
Iron	107.611	20	100.0	0	108	85	115				
Magnesium	9565.647	100	10000	0	95.7	85	115				

Sample ID **N028455-002E-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **ZZZZZZ** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	139913.392	500	10000	129900	100	75	125				
Iron	106.665	20	100.0	0	107	75	125				
Magnesium	37475.885	100	10000	28880	85.9	75	125				

Sample ID **N028455-002E-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/8/2018** RunNo: **122070**
Client ID: **ZZZZZZ** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	138776.280	500	10000	129900	89.0	75	125	139900	0.816	20	
Iron	106.333	20	100.0	0	106	75	125	106.7	0.312	20	
Magnesium	37314.397	100	10000	28880	84.3	75	125	37480	0.432	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-66716	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	PBW	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932140		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		ND	500										

Sample ID	LCS2-66716	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	LCSW	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932141		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		21404.978	500	20000	0	107	85	115					

Sample ID	N028469-001D-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	ZZZZZZ	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932148		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		774532.601	12000	20000	710500	320	75	125				S	

Sample ID	N028469-001D-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	122085		
Client ID:	ZZZZZZ	Batch ID:	66716	TestNo:	EPA 200.7			Analysis Date:	2/15/2018	SeqNo:	2932149		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		784692.215	12000	20000	710500	371	75	125	774500	1.30	20	S	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180208E**	QC Batch: **66723**				PrepDate	**2/8/2018**	Analyst: **CEI**
Manganese	74	0.26	0.50		µg/L	1	2/8/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180208E**	QC Batch: **66723**			PrepDate	**2/8/2018**		Analyst: **CEI**
Manganese	13	0.26	0.50		µg/L	1	2/8/2018 05:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-66723**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **PBW**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-66723**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **LCSW**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	104.435	0.50	100.0	0	104	85	115				

Sample ID **N028469-001D-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	171.023	0.50	100.0	74.42	96.6	75	125				

Sample ID **N028469-001D-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **2/8/2018**	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **66723**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	171.802	0.50	100.0	74.42	97.4	75	125	171.0	0.454	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180208A**	QC Batch: **R121922**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.70	0.033	0.20		µg/L	1	2/8/2018 11:15 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180208E**	QC Batch: **66723**			PrepDate	**2/8/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/8/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180208A**	QC Batch: **R121922**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	2/8/2018 10:46 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180208E**	QC Batch: **66723**			PrepDate	**2/8/2018**		Analyst: **CEI**
Chromium	540	0.65	5.0		µg/L	5	2/8/2018 05:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-66723	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	121943
Client ID:	PBW	Batch ID:	66723	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66723	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	121943
Client ID:	LCSW	Batch ID:	66723	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926134

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.142	1.0	10.00	0	101	85	115				

Sample ID	N028469-001D-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	121943
Client ID:	ZZZZZZ	Batch ID:	66723	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.540	1.0	10.00	0.9570	95.8	75	125				

Sample ID	N028469-001D-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	2/8/2018	RunNo:	121943
Client ID:	ZZZZZZ	Batch ID:	66723	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.597	1.0	10.00	0.9570	96.4	75	125	10.54	0.541	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R121922**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **PBW**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R121922**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **LCSW**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	90	110				

Sample ID **N028483-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.830	0.20						1.816	0.741	20	

Sample ID **N028469-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1056.800	20	500.0	551.6	101	90	110				

Sample ID **N028469-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1050.150	20	500.0	551.6	99.7	90	110	1057	0.631	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028469-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	121922
Client ID:	ZZZZZZ	Batch ID:	R121922	TestNo:	EPA 218.6			Analysis Date:	2/8/2018	SeqNo:	2923636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.712	0.20	1.000	0.6951	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180209A**	QC Batch: **R121960**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	240	1.2	5.0		mg/L	1	2/9/2018 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180209A**	QC Batch: **R121960**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	2/9/2018 02:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R121960**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **LCSW**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.280	5.0	100.0	0	97.3	85	115				

Sample ID **MB-R121960**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **PBW**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028469-001BDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **ZZZZZZ**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	242.678	5.0						240.6	0.866	30	

Sample ID **N028469-002BMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **ZZZZZZ**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	242.678	5.0	100.0	150.6	92.1	75	125				

Sample ID **N028469-002BMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **121960**
Client ID: **ZZZZZZ**	Batch ID: **R121960**	TestNo: **SM 2320 B**		Analysis Date: **2/9/2018**	SeqNo: **2925727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	246.862	5.0	100.0	150.6	96.2	75	125	242.7	1.71	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028469
Project: PG&E Topock - PMP
Lab ID: N028469-001

Client Sample ID: PE-01-0218
Collection Date: 2/7/2018 7:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180209A**	QC Batch: **R121972**			PrepDate			Analyst: **RAB**
Chloride	1100	1.8	100		mg/L	200	2/9/2018 08:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180208A**	QC Batch: **R121946**			PrepDate			Analyst: **RAB**
Sulfate	400	1.1	25		mg/L	50	2/8/2018 07:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180209A** QC Batch: **R121972**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	2/9/2018 09:51 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180208A** QC Batch: **R121946**				PrepDate			Analyst: **RAB**
Sulfate	520	1.1	25		mg/L	50	2/8/2018 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R121972_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	PBW	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R121972_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	LCSW	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.999	0.50	2.000	0	99.9	90	110				

Sample ID	N028469-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	ZZZZZZ	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926378

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1078.220	100						1084	0.498	20	

Sample ID	N028469-001BMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	ZZZZZZ	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1487.780	100	400.0	1084	101	80	120				

Sample ID	N028469-001BMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	121972
Client ID:	ZZZZZZ	Batch ID:	R121972	TestNo:	EPA 300.0			Analysis Date:	2/9/2018	SeqNo:	2926380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1494.980	100	400.0	1084	103	80	120	1488	0.483	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R121946_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	PBW	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R121946_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	LCSW	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924952

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.633	0.50	4.000	0	90.8	90	110				

Sample ID	N028469-001BMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	ZZZZZZ	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924958

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	595.560	25	200.0	398.6	98.5	80	120				

Sample ID	N028469-001BMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	ZZZZZZ	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	595.380	25	200.0	398.6	98.4	80	120	595.6	0.0302	20	

Sample ID	N028469-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	121946
Client ID:	ZZZZZZ	Batch ID:	R121946	TestNo:	EPA 300.0			Analysis Date:	2/8/2018	SeqNo:	2924962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	388.320	25						398.6	2.62	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 7:53:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180216C**	QC Batch: **R122121**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.25	0.032	0.050		mg/L	1	2/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0218
Lab Order:	N028469	**Collection Date:**	2/7/2018 8:05:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028469-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180216C**	QC Batch: **R122121**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.5	0.16	0.25		mg/L	5	2/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R122121	**MBLK**	**4500N03F_W**	**mg/L**		**122121**
Client ID: **PBW**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R122121	**LCS**	**4500N03F_W**	**mg/L**		**122121**
Client ID: **LCSW**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N028455-002DMS	**MS**	**4500N03F_W**	**mg/L**		**122121**
Client ID: **ZZZZZZ**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.603	0.25	2.500	2.834	111	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N028455-002DMSD	**MSD**	**4500N03F_W**	**mg/L**		**122121**
Client ID: **ZZZZZZ**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.557	0.25	2.500	2.834	109	75	125	5.602	0.824	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N028469-002CDUP	**DUP**	**4500N03F_W**	**mg/L**		**122121**
Client ID: **ZZZZZZ**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.825	0.25						2.503	12.1	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Lisa Kellog	**EDD Requirement**
Address: 1410 Rocky Ridge Dr. #330	**Company:** Arcadis	**Address:** 2999 Oak Road, Suite 300	Excel EDD ☐
Address: Roseville, CA 95661	**Email:** dan.bush@arcadis.com; daniel.moore@critigen.com	Walnut Creek, CA 94597	Geotracker ☐
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr. #330	**Email to:** lisa.kellog@arcadis.com **PO#**	Labspec ☐
Submitted By:	Roseville, CA 95661	**Phone:** 951.677.0577 **Fax:**	Others ☐
Title:	**Phone:** 916.786.3302 **Fax:**		Specify:
Signature: **Date:**	**Sampled By:** Jed DiCamillo		Global ID:

I hereby authorize ASSET Labs to perform the tests indicated below:

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature: Jed DiCamillo *Date* 2-7-18

Project Name: PG&E Topock - PMP

Project Number:

Matrix

Ground	☑	Sediment	☐
Potable	☐	Soil	☐
NPDES	☐	Other Solid	☐
Surface	☐		

QA/QC

RTNE	☐
RWQCB	☐
CalTrans	☐
Level III	☐
LEVEL IV	☑
Regulatory	☐
Specify State:	

Sampe Receipt Condition

	Y	N
1. Chilled	☑	☐
2. Headspace	☐	☐
3. Container Intact	☐	☐
4. Seal Present	☐	☐
5. IR number	2	
6. Method of Cooling	Ice	

Sample Temp: 3-1°C

Courier:

Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr+6 by SM3500	Alkalinity	pH	Chloride	Specific Conductance	Sulfate	TDS	NO2/NO3 by SM 4500	Ca, Fe, Mg, Na by EPA 200.7	Cr, Mn by 200.8	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N028469 - 01	PE-01-0218	2-7-18	0753	X			X	X	X	X	X	X	X	X	X	X	E	4	P	N/S	
2	- 02	TW-03D-0218	2-7-18	805	X			X	X	X	X	X	X	X	X	X	X	E	4	P	N/S	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
Jed DiCamillo	2-7-18 1220		
			2/7/18 1220
Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
	2/7/18 1433		2/7/18 1433
Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☑ E = Routine 5-7 Workdays

TAT Starts at 8 AM the followiing day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

T = Tube	V = VOA	P = Pint
J = Jar	B = Tedlar	G = Glass
M = Metal	P = Plastic	C = Can

White = Laboratory Copy

Yellow = Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/7/2018	Workorder:	N028469
Rep sample Temp (Deg C):	3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH received past holding time.

Checklist Completed B DA 2/8/2018

Reviewed By: 02/20/2018

ASSET Laboratories

WORK ORDER Summary

08-Feb-18

WorkOrder: N028469

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 2/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028469-001A	PE-01-0218	2/7/2018 7:53:00 AM	2/21/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028469-001B			2/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			2/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			2/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			2/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			2/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N028469-001C			2/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028469-001D			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028469-002A	TW-03D-0218	2/7/2018 8:05:00 AM	2/21/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028469-002B			2/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			2/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			2/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			2/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			2/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			2/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

08-Feb-18

WorkOrder: N028469

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 2/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028469-002C	TW-03D-0218	2/7/2018 8:05:00 AM	2/21/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028469-002D			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			2/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			2/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028469-003A	FOLDER	2/21/2018	2/21/2018		EDD	RWQCB	☐	☐	☐	LAB
			2/21/2018		Folder	Folder	☐	☐	☐	LAB
			2/21/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028469

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 200.8_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121948 **Analyst:** LSR

ASSET #: N028469 **Date Analyzed:** 2/8/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/12/2018

2nd Level Reviewer RB 02/21/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/7/18 1100

Analyst: MG

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-171018A	9.53 @ 24.1°C	% Rec: (90-110%)
1412 |	171121A	1415 @ 24.2°C	
9986 |	171018B	9980 @ 23.5°C	
99842 -	171121B	100200 @ 24.1°C	

	Sample ID	Matrix	Reading	Comments
1	N028455-1A	H_2O	6720 @ 23.8°C	
2	| 1A DUP	|	6750 @ 24.6°C	
3	| 2B	|	6570 @ 23.7°C	
4				
5				
6				
7				
8				
9	1413 uS/cm	CINV-171121C	1414 @ 24.1°C	
10	10000 |	170822F	9940 @ 24.2°C	
Dup	99672 |	170831B	99600 @ 24.1°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 2/8/18 1115

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV-171018A	9.67 @ 20.1°C	% Rec: (90-110%)
1412 |	171121A	1446 @ 20.1°C	
9986 |	171018B	10080 @ 20.0°C	
99842 |	171121B	99600 @ 20.0°C	

	Sample ID	Matrix	Reading	Comments
1	N028469-001B	H_2O	4060 @ 20.3°C	
2	| 1B DUP	|	4060 @ 20.1°C	
3	| 2B	|	7270 @ 20.1°C	
4				
5				
6				Julia Ramit 2/12/2018
7				
8	1413 uS/cm	CINV-171121C	1440 @ 20.9°C	RB 02/21/2018
9	10000 |	170822F	9940 @ 20.6°C	
10	99672 |	170831B	99800 @ 20.6°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121947 **Instrument ID:** pH meter

ASSET #: N028469 **Analyst:** LSR

Date Analyzed: 8-Feb

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X			X		
2. Was a closing buffer used at the end of analysis?	X			X		
3. Was the meter checked every 10 samples?			X			X
Sample Information						
4. Are all samples analyzed within hold time.		X			X	
QC Items						
5. Was a duplicate sample analyzed?	X			X		
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			X
7. Runlog complete and included in package.	X			X		
Preliminary Report						
8. Does the raw data match the preliminary report?	X			X		
9. Are analytical results correct?	X			X		
10. Is the QC summary report present and complete?	X			X		

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 2/12/2018

2nd Level Reviewer RLB 02/21/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/7/18 1540
Analyst: MH

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	7.01 @ 25.0°C	Slope: 96.9%
Buffer 4	170615E	4.01 @ 25.0°C	
Buffer 10	170822B	10.01 @ 25.0°C	

	Sample ID	Matrix	pH	Comments
1	N028472-1A	Soil	8.19 @ 25.0°C	
2	1A DUP	"	8.29 @ 25.0°C	
3	N028475-1A	Liquid	5.98 @ 25.0°C	
4				
5				
6				
7				
8				
9				
10				Slope:
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	7.01 @ 25.0°C	Accept: +/-0.1 pH units from expected value

Date: 2/8/18 1130
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CINV-170615F	6.98 @ 25.0°C	SLOPE: 95.0%
Buffer 4	170615E	4.02 @ 25.0°C	
Buffer 10	170828B	10.02 @ 25.0°C	

	Sample ID	Matrix	pH	Comments
1	N028469-001B	H2O	7.44 @ 25.0°C	
2	1B DUP	"	7.49 @ 25.0°C	
3	2B	"	7.30 @ 25.0°C	
4				
5				
6				
7				
8				
9				Julia Ramit 2/12/2018
10				RLB 02/21/2018
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV-171023A	6.99 @ 25.0°C	Accept: +/-0.1 pH units from expected value

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66738 **Analyst:** LSR

ASSET #: N028469 **Date Analyzed:** 2/8/2018

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/13/2018

2nd Level Reviewer: 2/20/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N028469-001B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(46.1253 - 46.0488)*1000000}{30}$$

= 2550 mg/L

Reporting result in two significant figures,

TDS = 2600 mg/L

Divia Ramit 2/13/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/8/2018 1:39:59 P**
Prep End Date: **2/9/2018 11:50:00 A**

Reviewed/ Date: 2/20/2018

Initials/ Date: Lilia Ramit 2/9/2018

Prep Batch **66738** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66738	Water		100	☐	0	0	100	1.000		
MB-66738	Water		100	☐	0	0	100	1.000		
N028455-001A	Water		20	☐	0	0	100	5.000		
N028455-001A-DU	Water		20	☐	0	0	100	5.000		
N028455-002B	Water		20	☐	0	0	100	5.000		
N028469-001B	Groundwater		30	☐	0	0	100	3.333		
N028469-002B	Groundwater		20	☐	0	0	100	5.000		
N028483-003C	Groundwater		100	☐	0	0	100	1.000		
N028483-004C	Groundwater		100	☐	0	0	100	1.000		
N028483-005C	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/8/2018 1:39:59 P**
Prep End Date:

Reviewed/ Date: _____

Initials/ Date: Lilia Ramit 2/9/2018

Prep Batch **66738** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

	Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
CC	LCS-66738	Water	IW31502084	100	☐	0	0	100	1.000		
AA	MB-66738	Water		100	☐	0	0	100	1.000		
V	N028455-001A	Water	6720	100 /20	☐	0	0	100	1.000		
IS	N028455-001A-DU	Water	1	100 /20	☐	0	0	100	1.000		
S	N028455-002B	Water	6510	100 /20	☐	0	0	100	1.000		
T	N028469-001B	Groundwater	4080	100 /30	☐	0	0	100	1.000		
XX	N028469-002B	Groundwater	7270	100 /20	☐	0	0	100	1.000		
GG	N028483-003C	Groundwater	392	100	☐	0	0	100	1.000		
LC	N028483-004C	Groundwater	730	100	☐	0	0	100	1.000		
EE	N028483-005C	Groundwater	73X	100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9099

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/8/18 1339 AP	MB 66738	100	68.3917 68.3913	68.3916 68.3916	
CC	LCS 66738	100	70.1059 70.1056	70.2012 70.2015	
V	NO2845-001A	20	48.8915 48.8914	48.9797 48.9798	
15	1A DUP	20	48.8844 48.8841	48.9760 48.9758	
S	2B	20	45.7307 45.7305	45.8134 45.8137	
T	NO2869-001B	30	46.0484 46.0488	46.1252 46.1253	
XX	2B	20	49.6343 49.6339	49.7232 49.7235	
GG	NO2853-003C	100	67.8183 67.8180	67.8445 67.8449	
LS	4C	100	76.5269 76.5266	76.5739 76.5743	
EE	5C	100	68.2206 68.2204	68.2678 68.2682	

Closing wt : 49.9995 2/9/18 @ 1150 LSN

ASSET Laboratories

Julia Ramit 2/9/2018

Logbook#9

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
2/9/2018									
MB-66738	100	68.3913	68.3916	3	1	3			MBLK
LCS-66738	100	70.1056	70.2015	959	1	959			LCS
N028455-001A	20	48.8914	48.9798	884	5	4420	6720	0.658	SAMP
N028455-001ADUP	20	48.8841	48.9758	917	5	4585	6720	0.682	DUP
N028455-002A	20	45.7305	45.8137	832	5	4160	6510	0.639	SAMP
N028469-001B	30	46.0488	46.1253	765	3.33333333	2550	4080	0.625	SAMP
N028469-002B	20	49.6339	49.7235	896	5	4480	7270	0.616	SAMP
N028483-003C	100	67.818	67.8449	269	1	269	392	0.686	SAMP
N028483-004C	100	76.5266	76.5743	477	1	477	730	0.653	SAMP
N028483-005C	100	68.2204	68.2682	478	1	478	736	0.649	SAMP

Julia Ramit 2/9/2018

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66716
ASSET #: N028469

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/14/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X			X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments: Mg
Dilution test for Ca failed.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 2/21/18
2nd Level Reviewer 2/21/2018 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66716
ASSET #: N028469

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/16/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X			X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

Dilution test failed for Na.
%Rec of Na in N028469-001D PS/MS/MSD failed. However LCS passed criteria.
For Na run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 2/21/18
2nd Level Reviewer 2/21/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028469-001D** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 144.691 * 1 * (25/25) * 1000

Calcium , ug/L = 144691

Reporting results in two significant figures,

Calcium , ug/L = 140000

% RSD SUMMARY

RSD SUMMARY: 180214D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	9.63	15	PASS
Standard1	ICAL	1	Ca	0.2	8.67	15	PASS
Standard2	ICAL	1	Ca	1	3.061	15	PASS
Standard3	ICAL	1	Ca	2	2.023	15	PASS
Standard4	ICAL	1	Ca	5	0.32	15	PASS
Standard5	ICAL	1	Ca	7.5	0.67	15	PASS
Standard6	ICAL	1	Ca	10	0.7	15	PASS
Standard7	ICAL	1	Ca	20	0.29	15	PASS
ICV	ICV	1	Ca	10.058	0.37	15	PASS
ICB	ICB	1	Ca	-0.0002	12109.78	15	<PQL
LLICV1	CCV1	1	Ca	0.21	21.019	20	<PQL
ICB	ICB	1	Ca	0.0092	124.31	15	<PQL
LLICV1	CCV1	1	Ca	0.19	6.52	20	PASS
ICSA1	ICSA	1	Ca	502.56	0.21	15	PASS
ICSAB1	ICSAB	1	Ca	544.85	0.4	15	PASS
MB-66716	MBLK	1	Ca	0.029	33.96	15	<PQL
LCS1-66716	LCS	1	Ca	9.68	0.34	15	PASS
N028455-002E	SAMP	1	Ca	129.88	0.22	15	PASS
N028455-002E	SAMP	5	Ca	28.14	0.79	15	PASS
N028455-002E-PS	PS	1	Ca	145.02	0.25	15	PASS
N028455-002E-MS1	MS	1	Ca	139.91	0.1	15	PASS
N028455-002E-MSD1	MSD	1	Ca	138.78	0.03	15	PASS
N028469-001D	SAMP	1	Ca	144.69	0.17	15	PASS
N028469-002D	SAMP	1	Ca	207.8	0.18	15	PASS
CCV1	CCV	1	Ca	10.36	0.48	15	PASS
CCB1	CCB	1	Ca	0.015	47.0031	15	<PQL
CCV2	CCV	1	Ca	10.17	0.88	15	PASS
CCB2	CCB	1	Ca	-0.0052	418.41	15	<PQL
CCV3	CCV	1	Ca	10.21	0.54	15	PASS
CCB3	CCB	1	Ca	0.035	5.91	15	PASS
LLCCV1	CCV2	1	Ca	0.21	15.82	20	PASS
ICSA2	ICSA	1	Ca	503.37	0.031	15	PASS
ICSAB2	ICSAB	1	Ca	548.92	0.3	15	PASS
CalBlk	IBLK	1	Fe	0	21.44	15	<PQL
Standard1	ICAL	1	Fe	0.02	3.33	15	PASS
Standard2	ICAL	1	Fe	0.05	0.65	15	PASS
Standard3	ICAL	1	Fe	2	0.28	15	PASS
Standard4	ICAL	1	Fe	5	0.094	15	PASS
Standard5	ICAL	1	Fe	7.5	0.0099	15	PASS
Standard6	ICAL	1	Fe	10	0.093	15	PASS
Standard7	ICAL	1	Fe	20	0.092	15	PASS
ICV	ICV	1	Fe	10.02	0.035	15	PASS

RSD SUMMARY: 180214D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICB	ICB	1	Fe	0.00018	176.98	15	<PQL
LLICV1	CCV1	1	Fe	0.02	3.84	20	PASS
ICB	ICB	1	Fe	0.0032	114.0025	15	<PQL
LLICV1	CCV1	1	Fe	0.02	2.81	20	PASS
ICSA1	ICSA	1	Fe	184.22	0.79	15	PASS
ICSAB1	ICSAB	1	Fe	185.82	0.15	15	PASS
MB-66716	MBLK	1	Fe	0.0031	35.95	15	<PQL
LCS1-66716	LCS	1	Fe	0.11	0.94	15	PASS
N028455-002E	SAMP	1	Fe	0.0097	10.18	15	PASS
N028455-002E	SAMP	5	Fe	0.0017	14.13	15	PASS
N028455-002E-PS	PS	1	Fe	0.11	0.6	15	PASS
N028455-002E-MS1	MS	1	Fe	0.11	0.18	15	PASS
N028455-002E-MSD1	MSD	1	Fe	0.11	1.21	15	PASS
N028469-001D	SAMP	1	Fe	0.0073	3.027	15	PASS
N028469-002D	SAMP	1	Fe	-0.0019	10.61	15	PASS
CCV1	CCV	1	Fe	10.033	0.076	15	PASS
CCB1	CCB	1	Fe	-0.00029	112.25	15	<PQL
CCV2	CCV	1	Fe	9.99	0.07	15	PASS
CCB2	CCB	1	Fe	-0.00037	144.32	15	<PQL
CCV3	CCV	1	Fe	9.99	0.038	15	PASS
CCB3	CCB	1	Fe	0.00018	115.88	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	4.92	20	PASS
ICSA2	ICSA	1	Fe	184.41	0.47	15	PASS
ICSAB2	ICSAB	1	Fe	185.6	0.053	15	PASS
CalBlk	IBLK	1	Mg	0	4.42	15	PASS
Standard1	ICAL	1	Mg	0.1	0.61	15	PASS
Standard2	ICAL	1	Mg	1	0.5	15	PASS
Standard3	ICAL	1	Mg	2	0.27	15	PASS
Standard4	ICAL	1	Mg	5	0.21	15	PASS
Standard5	ICAL	1	Mg	7.5	0.2	15	PASS
Standard6	ICAL	1	Mg	10	0.17	15	PASS
Standard7	ICAL	1	Mg	20	0.057	15	PASS
ICV	ICV	1	Mg	9.97	0.078	15	PASS
ICB	ICB	1	Mg	-0.00045	161.38	15	<PQL
LLICV1	CCV1	1	Mg	0.095	1.49	20	PASS
ICB	ICB	1	Mg	0.0075	101.27	15	<PQL
LLICV1	CCV1	1	Mg	0.095	0.9	20	PASS
ICSA1	ICSA	1	Mg	460.2	0.9	15	PASS
ICSAB1	ICSAB	1	Mg	520.16	0.07	15	PASS
MB-66716	MBLK	1	Mg	0.0031	11.045	15	PASS
LCS1-66716	LCS	1	Mg	9.57	0.095	15	PASS
N028455-002E	SAMP	1	Mg	28.88	0.15	15	PASS

RSD SUMMARY: 180214D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N028455-002E	SAMP	5	Mg	6.6	0.51	15	PASS
N028455-002E-PS	PS	1	Mg	38.99	0.11	15	PASS
N028455-002E-MS1	MS	1	Mg	37.48	0.11	15	PASS
N028455-002E-MSD1	MSD	1	Mg	37.31	0.023	15	PASS
N028469-001D	SAMP	1	Mg	34.92	0.16	15	PASS
N028469-002D	SAMP	1	Mg	30.74	0.16	15	PASS
CCV1	CCV	1	Mg	10.086	0.18	15	PASS
CCB1	CCB	1	Mg	0.00056	47.13	15	<PQL
CCV2	CCV	1	Mg	10.043	0.073	15	PASS
CCB2	CCB	1	Mg	0.00071	10.68	15	PASS
CCV3	CCV	1	Mg	10.035	0.13	15	PASS
CCB3	CCB	1	Mg	0.00009	432.63	15	<PQL
LLCCV1	CCV2	1	Mg	0.094	0.8	20	PASS
ICSA2	ICSA	1	Mg	462.31	0.5	15	PASS
ICSAB2	ICSAB	1	Mg	524.11	0.075	15	PASS

RSD SUMMARY: 180215B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	8.94	15	PASS
Standard1	ICAL	1	Na	0.1	2.84	15	PASS
Standard2	ICAL	1	Na	1	2.046	15	PASS
Standard3	ICAL	1	Na	5	0.19	15	PASS
Standard4	ICAL	1	Na	10	0.12	15	PASS
Standard5	ICAL	1	Na	20	0.11	15	PASS
Standard6	ICAL	1	Na	40	0.031	15	PASS
ICV	ICV	1	Na	10.26	0.26	15	PASS
ICB	ICB	1	Na	0.0059	69.66	15	<PQL
ICSA1	ICSA	1	Na	-0.01	42.7	15	<PQL
ICSAB1	ICSAB	1	Na	10.3	0.046	15	PASS
CCV1	CCV	1	Na	10.77	0.62	15	PASS
CCB1	CCB	1	Na	0.0023	443.87	15	<PQL
MB-66716	MBLK	1	Na	0.006	6.44	15	PASS
LCS2-66716	LCS	1	Na	21.41	0.38	15	PASS
N028469-001D	SAMP	25	Na	28.42	0.14	15	PASS
N028469-002D	SAMP	50	Na	29.63	0.16	15	PASS
N028469-001D	SAMP	125	Na	5.019	0.44	15	PASS
CCV2	CCV	1	Na	10.57	0.3	15	PASS
CCB2	CCB	1	Na	0.0035	64.87	15	<PQL
N028469-001D-PS	PS	25	Na	28.62	0.3	15	PASS
N028469-001D-MS2	MS	25	Na	30.98	0.26	15	PASS
N028469-001D-MSD2	MSD	25	Na	31.39	0.17	15	PASS
CCV3	CCV	1	Na	10.64	0.21	15	PASS
CCB3	CCB	1	Na	-0.007	54.54	15	<PQL
ICSA2	ICSA	1	Na	-0.0035	197.043	15	<PQL
ICSAB2	ICSAB	1	Na	10.9	0.29	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180214D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/14/2018	07:17:32 PM
2	Standard1	ICAL	1	02/14/2018	07:22:54 PM
3	Standard2	ICAL	1	02/14/2018	07:28:12 PM
11	Standard3	ICAL	1	02/14/2018	07:33:33 PM
12	Standard4	ICAL	1	02/14/2018	07:38:53 PM
6	Standard5	ICAL	1	02/14/2018	07:45:46 PM
7	Standard6	ICAL	1	02/14/2018	07:52:36 PM
8	Standard7	ICAL	1	02/14/2018	07:59:26 PM
9	ICV	ICV	1	02/14/2018	08:06:20 PM
1	ICB	ICB	1	02/14/2018	08:13:12 PM
2	LLICV1	CCV1	1	02/14/2018	08:18:31 PM
1	ICB	ICB	1	02/14/2018	08:37:30 PM
2	LLICV1	CCV1	1	02/14/2018	08:42:48 PM
4	ICSA1	ICSA	1	02/14/2018	08:48:07 PM
5	ICSAB1	ICSAB	1	02/14/2018	08:54:15 PM
38	MB-66716	MBLK	1	02/14/2018	09:01:43 PM
39	LCS1-66716	LCS	1	02/14/2018	09:07:02 PM
40	N028455-002E	SAMP	1	02/14/2018	09:14:23 PM
41	N028455-002E	SAMP	5	02/14/2018	09:21:15 PM
42	N028455-002E-PS	PS	1	02/14/2018	09:26:34 PM
43	N028455-002E-MS1	MS	1	02/14/2018	09:33:25 PM
44	N028455-002E-MSD1	MSD	1	02/14/2018	09:40:17 PM
45	N028469-001D	SAMP	1	02/14/2018	09:47:07 PM
46	N028469-002D	SAMP	1	02/14/2018	09:53:59 PM
47	MB-66759	MBLK	1	02/14/2018	10:00:51 PM
7	CCV1	CCV	1	02/14/2018	10:06:11 PM
1	CCB1	CCB	1	02/14/2018	10:13:02 PM
48	LCS-66759	LCS	1	02/14/2018	10:18:20 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
49	N028512-001B	SAMP	1	02/14/2018	10:25:42 PM
50	N028512-001B	SAMP	5	02/14/2018	10:30:34 PM
51	N028512-001B-PS	PS	1	02/14/2018	10:35:53 PM
52	N028512-001B-MS	MS	1	02/14/2018	10:42:45 PM
53	N028512-001B-MSD	MSD	1	02/14/2018	10:49:36 PM
54	N028512-002B	SAMP	1	02/14/2018	10:56:28 PM
55	N028512-003B	SAMP	1	02/14/2018	11:01:19 PM
56	N028512-004B	SAMP	1	02/14/2018	11:06:09 PM
57	N028512-005B	SAMP	1	02/14/2018	11:11:01 PM
7	CCV2	CCV	1	02/14/2018	11:15:52 PM
1	CCB2	CCB	1	02/14/2018	11:22:43 PM
58	N028512-006B	SAMP	1	02/14/2018	11:28:29 PM
59	N028512-007B	SAMP	1	02/14/2018	11:35:21 PM
60	N028512-008B	SAMP	1	02/14/2018	11:40:13 PM
61	N028512-009B	SAMP	1	02/14/2018	11:45:05 PM
62	N028512-010B	SAMP	1	02/14/2018	11:49:56 PM
7	CCV3	CCV	1	02/14/2018	11:56:48 PM
1	CCB3	CCB	1	02/15/2018	12:03:38 AM
2	LLCCV1	CCV2	1	02/15/2018	12:08:56 AM
4	ICSA2	ICSA	1	02/15/2018	12:14:14 AM
5	ICSAB2	ICSAB	1	02/15/2018	12:21:47 AM

INJECTION LOG: 180215B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171201R,0.025<50mL
Standard2	MWST-171201R,0.25<50mL
Standard3	MWST-171201R,1.25<50mL
Standard4	MWST-171201R,2.5<50mL
Standard5	MWST-171201R,5<50mL
Standard6	MWST-171201R,10<50mL
ICV	MWST-171030L
CCV	MWST-171201R,2.5<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/15/2018	09:12:13 AM
26	Standard1	ICAL	1	02/15/2018	09:16:01 AM
27	Standard2	ICAL	1	02/15/2018	09:19:48 AM
28	Standard3	ICAL	1	02/15/2018	09:23:36 AM
29	Standard4	ICAL	1	02/15/2018	09:27:23 AM
30	Standard5	ICAL	1	02/15/2018	09:31:10 AM
31	Standard6	ICAL	1	02/15/2018	09:34:58 AM
32	ICV	ICV	1	02/15/2018	09:53:05 AM
1	ICB	ICB	1	02/15/2018	09:56:53 AM
33	ICSA1	ICSA	1	02/15/2018	10:00:40 AM
34	ICSAB1	ICSAB	1	02/15/2018	10:05:46 AM
98	MB-66807	MBLK	1	02/15/2018	10:09:36 AM
120	LCS2-66807	LCS	1	02/15/2018	10:14:26 AM
100	N028613-001A	SAMP	1	02/15/2018	10:18:18 AM
101	N028614-001A	SAMP	1	02/15/2018	10:22:08 AM
102	N028615-001A	SAMP	1	02/15/2018	10:26:58 AM
103	N028616-001A	SAMP	1	02/15/2018	10:30:20 AM
121	N028614-001A	SAMP	5	02/15/2018	10:34:09 AM
122	N028614-001A-PS	PS	1	02/15/2018	10:37:59 AM
123	N028614-001A-MS2	MS	1	02/15/2018	10:42:50 AM
124	N028614-001A-MSD2	MSD	1	02/15/2018	10:47:12 AM
35	CCV1	CCV	1	02/15/2018	10:54:16 AM
1	CCB1	CCB	1	02/15/2018	10:58:06 AM
125	N028614-001A	SAMP	25	02/15/2018	11:01:19 AM
126	N028614-001A-PS	PS	5	02/15/2018	11:05:10 AM
127	N028614-001A-MS2	MS	5	02/15/2018	11:08:30 AM
128	N028614-001A-MSD2	MSD	5	02/15/2018	11:11:50 AM
129	N028615-001A	SAMP	5	02/15/2018	11:15:10 AM
38	MB-66716	MBLK	1	02/15/2018	11:18:31 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
63	LCS2-66716	LCS	1	02/15/2018	11:22:19 AM
64	N028469-001D	SAMP	25	02/15/2018	11:26:09 AM
65	N028469-002D	SAMP	50	02/15/2018	11:29:27 AM
66	N028469-001D	SAMP	125	02/15/2018	11:33:16 AM
35	CCV2	CCV	1	02/15/2018	11:37:05 AM
1	CCB2	CCB	1	02/15/2018	11:40:56 AM
67	N028469-001D-PS	PS	25	02/15/2018	11:44:43 AM
68	N028469-001D-MS2	MS	25	02/15/2018	11:48:02 AM
69	N028469-001D-MSD2	MSD	25	02/15/2018	11:51:21 AM
35	CCV3	CCV	1	02/15/2018	11:54:41 AM
1	CCB3	CCB	1	02/15/2018	11:58:32 AM
33	ICSA2	ICSA	1	02/15/2018	12:02:19 PM
34	ICSAB2	ICSAB	1	02/15/2018	12:06:07 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/8/2018 7:36:09 A**
Prep End Date: **2/8/2018 11:30:00**
Prep Batch **66716** Prep Code: **200.7_PR**

Reviewed/ Date: 2/21/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66716	Aqueous		25	☐	0	0	25	1.000		
LCS2-66716	Aqueous		25	☐	0	0	25	1.000		
MB-66716	Aqueous		25	☐	0	0	25	1.000		
N028455-002E	Water	<2	25	☐	0	0	25	1.000		
N028455-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N028455-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N028469-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N028469-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028469-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028469-002D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9615	HYDROCHLORIC ACID
9652	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180214D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	02/14/2018	07:17:32 PM	Mg	279.079	234	0.00	mg/L	
Standard1	02/14/2018	07:22:54 PM	Mg	279.079	1188	0.1000	mg/L	
Standard2	02/14/2018	07:28:12 PM	Mg	279.079	12352	1.000	mg/L	
Standard3	02/14/2018	07:33:33 PM	Mg	279.079	25226	2.000	mg/L	
Standard4	02/14/2018	07:38:53 PM	Mg	279.079	61556	5.000	mg/L	
Standard5	02/14/2018	07:45:46 PM	Mg	279.079	91915	7.500	mg/L	
Standard6	02/14/2018	07:52:36 PM	Mg	279.079	122934	10.000	mg/L	
Standard7	02/14/2018	07:59:26 PM	Mg	279.079	241817	20.000	mg/L	1.0000
Calcium								
CalBlk	02/14/2018	07:17:32 PM	Ca	227.546	-132	0.00	mg/L	
Standard1	02/14/2018	07:22:54 PM	Ca	227.546	61	0.2000	mg/L	
Standard2	02/14/2018	07:28:12 PM	Ca	227.546	292	1.000	mg/L	
Standard3	02/14/2018	07:33:33 PM	Ca	227.546	610	2.000	mg/L	
Standard4	02/14/2018	07:38:53 PM	Ca	227.546	1500	5.000	mg/L	
Standard5	02/14/2018	07:45:46 PM	Ca	227.546	2233	7.500	mg/L	
Standard6	02/14/2018	07:52:36 PM	Ca	227.546	3034	10.000	mg/L	
Standard7	02/14/2018	07:59:26 PM	Ca	227.546	5854	20.000	mg/L	0.9999
Iron								
CalBlk	02/14/2018	07:17:32 PM	Fe	273.953	-82	0.00	mg/L	
Standard1	02/14/2018	07:22:54 PM	Fe	273.953	421	0.0200	mg/L	
Standard2	02/14/2018	07:28:12 PM	Fe	273.953	1419	0.050	mg/L	
Standard3	02/14/2018	07:33:33 PM	Fe	273.953	43446	2.000	mg/L	
Standard4	02/14/2018	07:38:53 PM	Fe	273.953	105890	5.000	mg/L	
Standard5	02/14/2018	07:45:46 PM	Fe	273.953	158086	7.500	mg/L	
Standard6	02/14/2018	07:52:36 PM	Fe	273.953	209336	10.000	mg/L	
Standard7	02/14/2018	07:59:26 PM	Fe	273.953	414177	20.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 180215B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	02/15/2018	09:12:13 AM	Na	589.594	124	0.00	mg/L	
Standard1	02/15/2018	09:16:01 AM	Na	589.594	108	0.1000	mg/L	
Standard2	02/15/2018	09:19:48 AM	Na	589.594	931	1.000	mg/L	
Standard3	02/15/2018	09:23:36 AM	Na	589.594	5041	5.000	mg/L	
Standard4	02/15/2018	09:27:23 AM	Na	589.594	10775	10.000	mg/L	
Standard5	02/15/2018	09:31:10 AM	Na	589.594	23110	20.000	mg/L	
Standard6	02/15/2018	09:34:58 AM	Na	589.594	50265	40.000	mg/L	0.9989

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122070**
Client ID: **ICV** Batch ID: **R122070** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10058.149	500	10000	0	101	90	110				
Iron	10020.020	20	10000	0	100	90	110				
Magnesium	9965.363	100	10000	0	99.7	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122070**
Client ID: **ZZZZZZ** Batch ID: **R122070** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	186.870	500	200.0	0	93.4	80	120				
Iron	20.295	20	20.00	0	101	80	120				
Magnesium	95.028	100	100.0	0	95.0	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122070**
Client ID: **CCV** Batch ID: **R122070** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10355.188	500	10000	0	104	90	110				
Iron	10032.784	20	10000	0	100	90	110				
Magnesium	10086.244	100	10000	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122070**
Client ID: **CCV** Batch ID: **R122070** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10168.950	500	10000	0	102	90	110				
Iron	9992.352	20	10000	0	99.9	90	110				
Magnesium	10042.998	100	10000	0	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **CCV**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/14/2018**	SeqNo: **2931344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10206.471	500	10000	0	102	90	110				
Iron	9986.791	20	10000	0	99.9	90	110				
Magnesium	10035.354	100	10000	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ZZZZZZ**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2931346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	213.089	500	200.0	0	107	70	130				
Iron	19.270	20	20.00	0	96.4	70	130				
Magnesium	94.458	100	100.0	0	94.5	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **ICV**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10263.269	500	10000	0	103	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **CCV**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10772.196	500	10000	0	108	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **CCV**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10567.508	500	10000	0	106	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **CCV**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10644.645	500	10000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ICB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/14/2018**	SeqNo: **2931311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.173	500									
Iron	3.189	20									
Magnesium	7.457	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **CCB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/14/2018**	SeqNo: **2931326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	15.180	500									
Iron	-0.28512	20									
Magnesium	0.558	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **CCB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/14/2018**	SeqNo: **2931338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-5.175274	500									
Iron	-0.368845	20									
Magnesium	0.707	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **CCB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2931345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	35.046	500									
Iron	0.178	20									
Magnesium	0.092	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **ICB**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5.859	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **CCB**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2.288	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **CCB**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	3.526	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122085**
Client ID: **CCB**	Batch ID: **R122085**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2932151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-6.953437	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ICSA**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/14/2018**	SeqNo: **2931313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508078.144	50	500000	0	102	80	120				
Calcium	502556.244	500	500000	0	101	80	120				
Iron	184224.443	20	200000	0	92.1	80	120				
Magnesium	460196.959	100	500000	0	92.0	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ICSAB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/14/2018**	SeqNo: **2931314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538734.848	50	500000	0	108	80	120				
Calcium	544851.873	500	500000	0	109	80	120				
Iron	185817.591	20	200000	0	92.9	80	120				
Magnesium	520155.537	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ICSA**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2931347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508193.349	50	500000	0	102	80	120				
Calcium	503365.274	500	500000	0	101	80	120				
Iron	184405.210	20	200000	0	92.2	80	120				
Magnesium	462307.208	100	500000	0	92.5	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ICSAB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2931348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	540569.042	50	500000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122070**
Client ID: **ICSAB**	Batch ID: **R122070**	TestNo: **EPA 200.7**		Analysis Date: **2/15/2018**	SeqNo: **2931348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	548920.741	500	500000	0	110	80	120				
Iron	185601.576	20	200000	0	92.8	80	120				
Magnesium	524112.664	100	500000	0	105	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**122085**
Client ID:	**ICSA**	Batch ID:	**R122085**	TestNo:	**EPA 200.7**			Analysis Date:	**2/15/2018**	SeqNo:	**2932121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-10.448393	500									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**122085**
Client ID:	**ICSAB**	Batch ID:	**R122085**	TestNo:	**EPA 200.7**			Analysis Date:	**2/15/2018**	SeqNo:	**2932122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10296.097	500	10000	0	103	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**122085**
Client ID:	**ICSA**	Batch ID:	**R122085**	TestNo:	**EPA 200.7**			Analysis Date:	**2/15/2018**	SeqNo:	**2932152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-3.460715	500									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**122085**
Client ID:	**ICSAB**	Batch ID:	**R122085**	TestNo:	**EPA 200.7**			Analysis Date:	**2/15/2018**	SeqNo:	**2932153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10901.477	500	10000	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180214D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	98.71	65-125	PASS
Standard2	ICAL	1	0.98	97.52	65-125	PASS
Standard3	ICAL	1	1	99.51	65-125	PASS
Standard4	ICAL	1	0.98	98.21	65-125	PASS
Standard5	ICAL	1	0.97	96.84	65-125	PASS
Standard6	ICAL	1	0.97	97.057	65-125	PASS
Standard7	ICAL	1	0.96	95.82	65-125	PASS
ICV	ICV	1	0.97	97.24	65-125	PASS
ICB	ICB	1	0.99	99.44	65-125	PASS
LLICV1	CCV1	1	1	99.5	65-125	PASS
ICB	ICB	1	1	99.95	65-125	PASS
LLICV1	CCV1	1	0.99	99.15	65-125	PASS
ICSA1	ICSA	1	1.18	118.2	65-125	PASS
ICSAB1	ICSAB	1	0.8	80.26	65-125	PASS
MB-66716	MBLK	1	0.99	99.38	65-125	PASS
LCS1-66716	LCS	1	0.89	88.66	65-125	PASS
N028455-002E	SAMP	1	0.87	86.53	65-125	PASS
N028455-002E	SAMP	5	0.91	91.35	65-125	PASS
N028455-002E-PS	PS	1	0.86	86.48	65-125	PASS
N028455-002E-MS1	MS	1	0.88	87.62	65-125	PASS
N028455-002E-MSD1	MSD	1	0.88	88.2	65-125	PASS
N028469-001D	SAMP	1	0.88	88.4	65-125	PASS
N028469-002D	SAMP	1	0.85	85.14	65-125	PASS
CCV1	CCV	1	0.97	96.85	65-125	PASS
CCB1	CCB	1	0.99	99.48	65-125	PASS
CCV2	CCV	1	0.98	97.65	65-125	PASS
CCB2	CCB	1	1	99.76	65-125	PASS
CCV3	CCV	1	0.98	97.7	65-125	PASS
CCB3	CCB	1	1	99.99	65-125	PASS
LLCCV1	CCV2	1	1	99.65	65-125	PASS
ICSA2	ICSA	1	1.19	118.99	65-125	PASS
ICSAB2	ICSAB	1	0.81	81.097	65-125	PASS

INTERNAL STANDARD: 180215B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.58	65-125	PASS
Standard2	ICAL	1	0.99	99.48	65-125	PASS
Standard3	ICAL	1	1.0041	100.41	65-125	PASS
Standard4	ICAL	1	1	99.67	65-125	PASS
Standard5	ICAL	1	0.98	97.56	65-125	PASS
Standard6	ICAL	1	0.96	96.1	65-125	PASS
ICV	ICV	1	0.97	97.39	65-125	PASS
ICB	ICB	1	0.98	98.13	65-125	PASS
ICSA1	ICSA	1	0.98	97.91	65-125	PASS
ICSAB1	ICSAB	1	0.98	97.59	65-125	PASS
CCV1	CCV	1	0.98	97.52	65-125	PASS
CCB1	CCB	1	0.98	97.61	65-125	PASS
MB-66716	MBLK	1	0.99	99.21	65-125	PASS
LCS2-66716	LCS	1	1	99.98	65-125	PASS
N028469-001D	SAMP	25	0.97	97.47	65-125	PASS
N028469-002D	SAMP	50	0.97	97.21	65-125	PASS
N028469-001D	SAMP	125	0.96	96.29	65-125	PASS
CCV2	CCV	1	0.95	95.22	65-125	PASS
CCB2	CCB	1	0.96	96.45	65-125	PASS
N028469-001D-PS	PS	25	0.98	98.072	65-125	PASS
N028469-001D-MS2	MS	25	0.97	97.41	65-125	PASS
N028469-001D-MSD2	MSD	25	0.97	97.26	65-125	PASS
CCV3	CCV	1	0.96	95.95	65-125	PASS
CCB3	CCB	1	0.98	98.053	65-125	PASS
ICSA2	ICSA	1	0.97	97.45	65-125	PASS
ICSAB2	ICSAB	1	0.96	96.33	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028469
Test Method: EPA 200.7
Analysis Date: 2/14/2018

Matrix: Groundwater
Batch No.: 66716

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentrationis <25RL
Dilution test failed for ~~Ca &~~ Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028455-002E DT 5X	Calcium	ug/L	140678 ~~1.40678~~	FAIL	129876.2	~~100.00%~~ 8.3%	10
N028455-002E DT 5X	Iron	ug/L	0	NA	0		10
N028455-002E DT 5X	Magnesium	ug/L	33024.49	FAIL	28884.36	14.33%	10

Note: NA - Not applicable

Mary 2/21/2018

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028469
Test Method: EPA 200.7
Analysis Date: 2/15/2018

Matrix: Groundwater
Batch No.: 66716

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test failed for Na.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028469-001D DT 125X	Sodium	ug/L	627394.5	FAIL	710453	11.69%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N028455-002E-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122070**
Client ID: **ZZZZZZ** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/14/2018** SeqNo: **2931319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	145020.351	500	10000	129900	151	80	120				S
Iron	108.613	20	100.0	0	109	80	120				
Magnesium	38991.611	100	10000	28880	101	80	120				

Sample ID **N028469-001D-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122085**
Client ID: **ZZZZZZ** Batch ID: **66716** TestNo: **EPA 200.7** Analysis Date: **2/15/2018** SeqNo: **2932147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	715391.661	12000	20000	710500	24.7	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66723
ASSET #: N028469

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/8/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.		X		X	~~X~~	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

~~Dilution test failed for Mn. However, PS passed criteria.~~

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 2/21/18

2nd Level Reviewer 2/21/2018 Date: ~

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Manganese concentration, in ug/L , in the original sample as follows:

Manganese , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028469-001D** , the concentration in ug/L is calculated as follows:

Manganese , ug/L = 74.4228 * 1 * (25/25)

Manganese , ug/L = 74.4228

Reporting results in two significant figures,

Manganese , ug/L = 74

% RSD SUMMARY

PERCENT RSD SUMMARY: 180208B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	8.11	15	PASS	0.15	19.37	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	1.33	15	PASS	0.59	12.98	15	PASS
Std3-5/50 ppb	ICAL	1	5.21	1.22	15	PASS	5.33	2.6	15	PASS
Std4-10/100 ppb	ICAL	1	10.31	3.2	15	PASS	10.45	0.28	15	PASS
Std5-20/200 ppb	ICAL	1	20.73	1.21	15	PASS	21.17	2.31	15	PASS
Std6-40/400 ppb	ICAL	1	40.91	1.44	15	PASS	41.39	2.23	15	PASS
Std7-100/1000 ppb	ICAL	1	99.14	0.97	15	PASS	100.9	1.76	15	PASS
Std8-200/2000 ppb	ICAL	1	200.15	2.69	15	PASS	199.13	0.88	15	PASS
ICV	ICV	1	9.95	1.0043	15	PASS	100.7	0.69	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.05	1.31	20	PASS	0.58	4.28	20	PASS
ICSA1	ICSA	1	0.064	8.95	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.65	0.71	15	PASS	19.27	0.15	15	PASS
LLICV	CCV1	1	1.015	5.15	20	PASS	0.56	1.96	20	PASS
CCV1	CCV	1	20.38	1.34	15	PASS	20.94	0.76	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.37	1.013	15	PASS	21.021	2.87	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.077	4.79	20	PASS	0.54	3.12	20	PASS
ICSA2	ICSA	1	0.062	12.65	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.87	0.9	15	PASS	19.45	1.23	15	PASS
CCV3	CCV	1	20.49	1.95	15	PASS	20.89	1.39	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66723	MBLK	1	<0.000	N/A	15	<PQL	0.0012	1327.07	15	<PQL
LCS-66723	LCS	1	10.14	2.024	15	PASS	104.44	0.22	15	PASS
N028483-003B	SAMP	1	0.23	8.8	15	PASS	22.21	0.64	15	PASS
N028483-004B	SAMP	1	3.31	0.55	15	PASS	<0.000	N/A	15	<PQL
N028483-005B	SAMP	1	3.048	1.44	15	PASS	0.11	26.95	15	<PQL
N028469-001D	SAMP	1	0.96	4.5	15	PASS	74.42	2.034	15	PASS
N028469-001D	SAMP	5	0.15	6.27	15	PASS	15.33	1.19	15	PASS
N028469-001D	SAMP	25	0.015	50.53	15	<PQL	3.17	1.9	15	PASS
N028469-001D-PS	PS	1	10.43	0.38	15	PASS	168.11	0.75	15	PASS
CCV4	CCV	1	20.088	0.8	15	PASS	20.31	0.61	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028469-001D-PS	PS	5	2.25	0.92	15	PASS	36.83	1.72	15	PASS
N028469-001D-MS	MS	1	10.54	0.91	15	PASS	171.023	0.62	15	PASS
N028469-001D-MS	MS	5	2.31	0.79	15	PASS	37.34	1.72	15	PASS
N028469-001D-MSD	MSD	1	10.6	1.61	15	PASS	171.8	2.22	15	PASS
N028469-001D-MSD	MSD	5	2.24	5.77	15	PASS	36.71	1.86	15	PASS
N028469-002D	SAMP	1	532.61	0.28	15	PASS	13.48	1.32	15	PASS

PERCENT RSD SUMMARY: 180208B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028469-002D	SAMP	5	108.65	1.26	15	PASS	2.9	3.0017	15	PASS
N028426-001A	SAMP	1	0.89	3.87	15	PASS	0.92	6.1	15	PASS
N028499-001A	SAMP	1	2.52	2.26	15	PASS	5.57	3.04	15	PASS
N028500-001A	SAMP	1	0.37	5.61	15	PASS	6.32	2.84	15	PASS
CCV5	CCV	1	20.28	1.83	15	PASS	20.58	1.91	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028501-001A	SAMP	1	0.87	2.057	15	PASS	0.15	15.67	15	<PQL
CCV6	CCV	1	20.29	2.22	15	PASS	20.79	1.68	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.043	2.49	20	PASS	0.58	8.93	20	PASS
ICSA3	ICSA	1	0.086	36.44	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.8	1.23	15	PASS	19.81	2.58	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180208B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0208001.D	RINSE	RINSE	1	02/08/18 10:32 AM
B0208002.D	Cal Blank	IBLK	1	02/08/18 10:38 AM
B0208003.D	Std1-0.1/1 ppb	ICAL	1	02/08/18 10:44 AM
B0208004.D	Std2-0.5/5 ppb	ICAL	1	02/08/18 10:50 AM
B0208005.D	Std3-5/50 ppb	ICAL	1	02/08/18 10:55 AM
B0208006.D	Std4-10/100 ppb	ICAL	1	02/08/18 11:01 AM
B0208007.D	Std5-20/200 ppb	ICAL	1	02/08/18 11:07 AM
B0208008.D	Std6-40/400 ppb	ICAL	1	02/08/18 11:13 AM
B0208009.D	Std7-100/1000 ppb	ICAL	1	02/08/18 11:18 AM
B0208010.D	Std8-200/2000 ppb	ICAL	1	02/08/18 11:24 AM
B0208011.D	ICV	ICV	1	02/08/18 11:30 AM
B0208012.D	ICB	ICB	1	02/08/18 11:36 AM
B0208013.D	LLICV	CCV1	1	02/08/18 11:41 AM
B0208014.D	ICSA1	ICSA	1	02/08/18 11:47 AM
B0208015.D	ICSAB1	ICSAB	1	02/08/18 11:53 AM
B0208016.D	LLICV	CCV1	1	02/08/18 11:59 AM
B0208017.D	MB-66720	MBLK	1	02/08/18 12:05 PM
B0208018.D	LCS-66720	LCS	1	02/08/18 12:11 PM
B0208019.D	N028471-001B	SAMP	1	02/08/18 12:16 PM
B0208020.D	N028471-001B	SAMP	5	02/08/18 12:22 PM
B0208021.D	N028471-001B	SAMP	25	02/08/18 12:28 PM
B0208022.D	N028471-001B-PS	PS	1	02/08/18 12:33 PM
B0208023.D	N028471-001B-PS	PS	5	02/08/18 12:39 PM
B0208024.D	N028471-001B-MS	MS	1	02/08/18 12:45 PM
B0208025.D	N028471-001B-MS	MS	5	02/08/18 12:51 PM
B0208026.D	N028471-001B-MSD	MSD	1	02/08/18 12:57 PM
B0208027.D	CCV1	CCV	1	02/08/18 1:02 PM
B0208028.D	CCB1	CCB	1	02/08/18 1:08 PM
B0208029.D	N028471-001B-MSD	MSD	5	02/08/18 1:14 PM
B0208030.D	CCV2	CCV	1	02/08/18 1:20 PM
B0208031.D	CCB2	CCB	1	02/08/18 1:26 PM
B0208032.D	LLCCV1	CCV2	1	02/08/18 1:31 PM
B0208033.D	ICSA2	ICSA	1	02/08/18 1:37 PM
B0208034.D	ICSAB2	ICSAB	1	02/08/18 1:43 PM
B0208035.D	MB-66717	MBLK	1	02/08/18 2:54 PM
B0208036.D	LCS-66717	LCS	1	02/08/18 3:00 PM
B0208037.D	N028477-005A	SAMP	1	02/08/18 3:06 PM
B0208038.D	N028477-010A	SAMP	1	02/08/18 3:11 PM
B0208039.D	N028477-015A	SAMP	1	02/08/18 3:16 PM
B0208040.D	N028477-020A	SAMP	1	02/08/18 3:22 PM
B0208041.D	N028480-005A	SAMP	1	02/08/18 3:28 PM
B0208042.D	N028480-005A	SAMP	5	02/08/18 3:34 PM

INJECTION LOG: 180208B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0208043.D	N028480-005A-PS	PS	1	02/08/18 3:42 PM
B0208044.D	N028480-005A-MS	MS	1	02/08/18 3:47 PM
B0208045.D	CCV3	CCV	1	02/08/18 3:53 PM
B0208046.D	CCB3	CCB	1	02/08/18 3:59 PM
B0208047.D	N028480-005A-MSD	MSD	1	02/08/18 4:05 PM
B0208048.D	MB-66723	MBLK	1	02/08/18 4:11 PM
B0208049.D	LCS-66723	LCS	1	02/08/18 4:17 PM
B0208050.D	N028483-003B	SAMP	1	02/08/18 4:24 PM
B0208051.D	N028483-004B	SAMP	1	02/08/18 4:30 PM
B0208052.D	N028483-005B	SAMP	1	02/08/18 4:36 PM
B0208053.D	N028469-001D	SAMP	1	02/08/18 4:42 PM
B0208054.D	N028469-001D	SAMP	5	02/08/18 4:48 PM
B0208055.D	N028469-001D	SAMP	25	02/08/18 4:53 PM
B0208056.D	N028469-001D-PS	PS	1	02/08/18 4:59 PM
B0208057.D	CCV4	CCV	1	02/08/18 5:05 PM
B0208058.D	CCB4	CCB	1	02/08/18 5:11 PM
B0208059.D	N028469-001D-PS	PS	5	02/08/18 5:17 PM
B0208060.D	N028469-001D-MS	MS	1	02/08/18 5:23 PM
B0208061.D	N028469-001D-MS	MS	5	02/08/18 5:31 PM
B0208062.D	N028469-001D-MSD	MSD	1	02/08/18 5:37 PM
B0208063.D	N028469-001D-MSD	MSD	5	02/08/18 5:42 PM
B0208064.D	N028469-002D	SAMP	1	02/08/18 5:48 PM
B0208065.D	N028469-002D	SAMP	5	02/08/18 5:54 PM
B0208066.D	N028426-001A	SAMP	1	02/08/18 6:00 PM
B0208067.D	N028499-001A	SAMP	1	02/08/18 6:06 PM
B0208068.D	N028500-001A	SAMP	1	02/08/18 6:12 PM
B0208069.D	CCV5	CCV	1	02/08/18 6:18 PM
B0208070.D	CCB5	CCB	1	02/08/18 6:24 PM
B0208071.D	N028501-001A	SAMP	1	02/08/18 6:30 PM
B0208072.D	CCV6	CCV	1	02/08/18 6:35 PM
B0208073.D	CCB6	CCB	1	02/08/18 6:41 PM
B0208074.D	LLCCV2	CCV2	1	02/08/18 6:47 PM
B0208075.D	ICSA3	ICSA	1	02/08/18 6:53 PM
B0208076.D	ICSAB3	ICSAB	1	02/08/18 6:59 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/8/2018 11:00:00**
Prep End Date: **2/8/2018 3:00:00 P**

Reviewed/ Date: 2/21/2018
Initials/ Date: 2/21/2018

Prep Batch **66723** Prep Code: **200.8_DISS_P** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-01**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66723	Aqueous		25	☐	0	0	25	1.000		
MB-66723	Aqueous		25	☐	0	0	25	1.000		
N028426-001A	Wastewater	<2	25	☐	0	0	25	1.000		
N028469-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N028469-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028469-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028469-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N028483-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028483-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028483-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028499-001A	Wastewater	<2	25	☐	0	0	25	1.000		
N028500-001A	Wastewater	<2	25	☐	0	0	25	1.000		
N028501-001A	Wastewater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Feb 2018 06:27:39 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	107411.00	0.00	
24	Mg	362455.00	0.00	
25	Mg	48434.00	0.00	
26	Mg	55240.80	0.00	
59	Co	458389.00	0.00	
115	In	728096.00	0.00	
206	Pb	168305.00	0.00	
207	Pb	148125.00	0.00	
208	Pb	362024.00	0.00	

RSD (%)

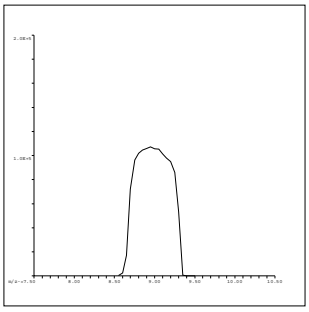
Element		Actual	Required	Flag
9	Be	1.10	5.00	
24	Mg	0.61	5.00	
25	Mg	1.19	5.00	
26	Mg	1.29	5.00	
59	Co	0.53	5.00	
115	In	0.39	5.00	
206	Pb	0.99	5.00	
207	Pb	0.67	5.00	
208	Pb	0.68	5.00	

Ion Ratio

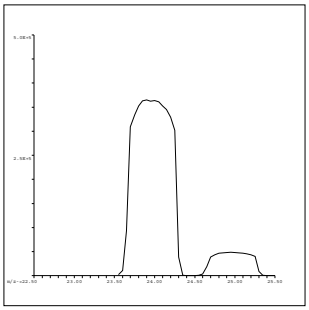
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

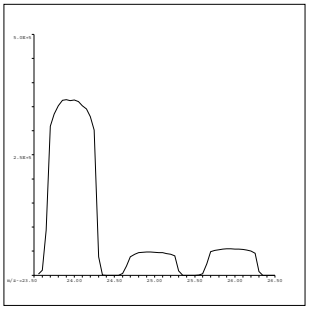
Element	Actual	Required	Flag



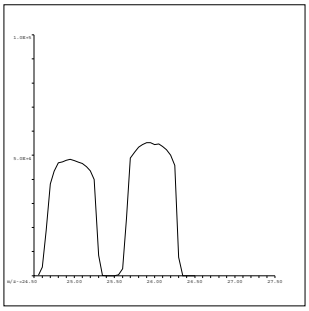
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



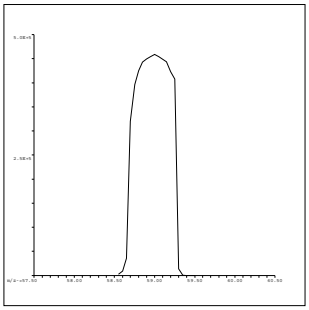
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



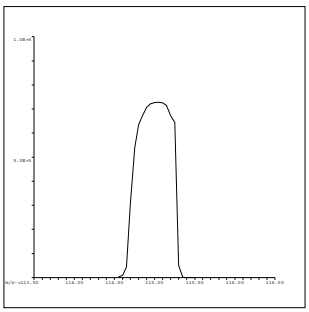
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



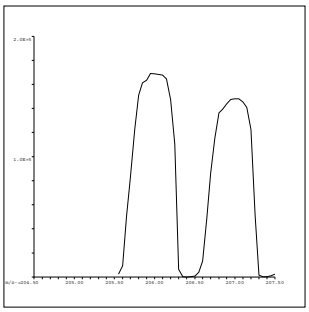
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



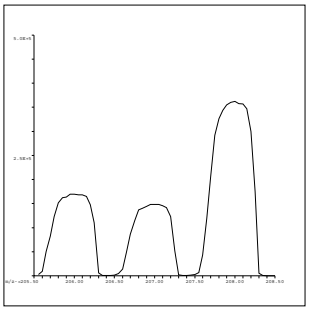
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



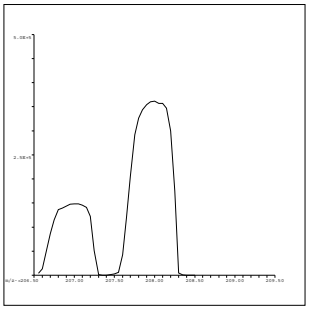
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180208B

Instrument ID: ICPMS-02

Analyte	Data File	B0208002.D	B0208004.D	B0208005.D	B0208006.D	B0208007.D	B0208008.D	B0208009.D	B0208010.D	
	Acq. Date-Time	02/08/2018 10:38 AM	02/08/2018 10:50 AM	02/08/2018 10:55 AM	02/08/2018 11:01 AM	02/08/2018 11:07 AM	02/08/2018 11:13 AM	02/08/2018 11:18 AM	02/08/2018 11:24 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	66667	63870.4	63322.8	63726.7	62485.2	64622.3	64880	63374.1	
55 Mn [2]	CPS	116.8	1513.9	12688.7	24926.4	49378.2	99721.2	243953.5	470223.2	1.0000
52 Cr [2]	CPS	332.2	3078.1	26853.2	53149.4	104514.8	212930.4	517696	1020731.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ICV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	100.700	0.50	100.0	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.558	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.938	0.50	20.00	0	105	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.021	0.50	20.00	0	105	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.540	0.50	0.5000	0	108	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.889	0.50	20.00	0	104	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.308	0.50	20.00	0	102	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924718**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.583	0.50	20.00	0	103	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCV**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.786	0.50	20.00	0	104	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.575	0.50	0.5000	0	115	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICV	SampType:	ICV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.946	1.0	10.00	0	99.5	90	110				

Sample ID	LLICV	SampType:	CCV1	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ZZZZZZ	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926098

not reported

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.050	1.0	1.000	0	105	80	120				

Sample ID	LLICV	SampType:	CCV1	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ZZZZZZ	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.015	1.0	1.000	0	102	80	120				

Sample ID	CCV1	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	CCV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.380	1.0	20.00	0	102	90	110				

Sample ID	CCV2	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	CCV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926115

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.371	1.0	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

2/21/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ZZZZZZ	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.077	1.0	1.000	0	108	70	130				

Sample ID	CCV3	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	CCV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.486	1.0	20.00	0	102	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	CCV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926142

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.088	1.0	20.00	0	100	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	CCV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.285	1.0	20.00	0	101	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	CCV	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.287	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ZZZZZZ**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.043	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ICB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ICB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **CCB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSA	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2924663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSAB	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2924664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.270	0.50	20.00	0	96.4	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSA	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2924682

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSAB	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2924683

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.453	0.50	20.00	0	97.3	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSA	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2924724

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ICSAB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2924725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.808	0.50	20.00	0	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSA	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926099

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSAB	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926100

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.648	1.0	20.00	0	98.2	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSA	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926118

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSAB	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926119

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.874	1.0	20.00	0	99.4	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ICSA	Batch ID:	R121943	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926160

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **121943**
Client ID: **ICSAB**	Batch ID: **R121943**	TestNo: **EPA 200.8**		Analysis Date: **2/8/2018**	SeqNo: **2926161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.801	1.0	20.00	0	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180208B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66667	66667	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	66195.3	66667	99.29	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	63870.4	66667	95.81	PASS	70-125
Std3-5/50 ppb	ICAL	1	63322.8	66667	94.98	PASS	70-125
Std4-10/100 ppb	ICAL	1	63726.7	66667	95.59	PASS	70-125
Std5-20/200 ppb	ICAL	1	62485.2	66667	93.73	PASS	70-125
Std6-40/400 ppb	ICAL	1	64622.3	66667	96.93	PASS	70-125
Std7-100/1000 ppb	ICAL	1	64880	66667	97.32	PASS	70-125
Std8-200/2000 ppb	ICAL	1	63374.1	66667	95.061	PASS	70-125
ICV	ICV	1	63991	66667	95.99	PASS	70-125
ICB	ICB	1	59409.9	66667	89.11	PASS	70-125
LLICV	CCV1	1	57818.4	66667	86.73	PASS	70-125
ICSA1	ICSA	1	66534.4	66667	99.8	PASS	70-125
ICSAB1	ICSAB	1	68240.9	66667	102.36	PASS	70-125
LLICV	CCV1	1	70583	66667	105.87	PASS	70-125
CCV1	CCV	1	64966.7	66667	97.45	PASS	70-125
CCB1	CCB	1	59544.5	66667	89.32	PASS	70-125
CCV2	CCV	1	61695.7	66667	92.54	PASS	70-125
CCB2	CCB	1	57601.2	66667	86.4	PASS	70-125
LLCCV1	CCV2	1	56960.1	66667	85.44	PASS	70-125
ICSA2	ICSA	1	60911.9	66667	91.37	PASS	70-125
ICSAB2	ICSAB	1	64504.2	66667	96.76	PASS	70-125
CCV3	CCV	1	63974.4	66667	95.96	PASS	70-125
CCB3	CCB	1	61182.9	66667	91.77	PASS	70-125
MB-66723	MBLK	1	62012.4	66667	93.018	PASS	70-125
LCS-66723	LCS	1	62212.2	66667	93.32	PASS	70-125
N028483-003B	SAMP	1	64391.5	66667	96.59	PASS	70-125
N028483-004B	SAMP	1	58961.5	66667	88.44	PASS	70-125
N028483-005B	SAMP	1	59352.7	66667	89.029	PASS	70-125
N028469-001D	SAMP	1	57880	66667	86.82	PASS	70-125
N028469-001D	SAMP	5	62730.6	66667	94.095	PASS	70-125
N028469-001D	SAMP	25	62770.9	66667	94.16	PASS	70-125
N028469-001D-PS	PS	1	61768.4	66667	92.65	PASS	70-125
CCV4	CCV	1	68532.4	66667	102.8	PASS	70-125
CCB4	CCB	1	62535.6	66667	93.8	PASS	70-125
N028469-001D-PS	PS	5	56768.5	66667	85.15	PASS	70-125
N028469-001D-MS	MS	1	60396.7	66667	90.59	PASS	70-125
N028469-001D-MS	MS	5	63727.9	66667	95.59	PASS	70-125
N028469-001D-MSD	MSD	1	62992.9	66667	94.49	PASS	70-125
N028469-001D-MSD	MSD	5	64408.1	66667	96.61	PASS	70-125
N028469-002D	SAMP	1	62225.5	66667	93.34	PASS	70-125

INTERNAL STANDARD: 180208B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028469-002D	SAMP	5	63920.9	66667	95.88	PASS	70-125
N028426-001A	SAMP	1	65647.2	66667	98.47	PASS	70-125
N028499-001A	SAMP	1	60463.7	66667	90.7	PASS	70-125
N028500-001A	SAMP	1	65485.7	66667	98.23	PASS	70-125
CCV5	CCV	1	69035.4	66667	103.55	PASS	70-125
CCB5	CCB	1	64968	66667	97.45	PASS	70-125
N028501-001A	SAMP	1	61873.4	66667	92.81	PASS	70-125
CCV6	CCV	1	67738.9	66667	101.61	PASS	70-125
CCB6	CCB	1	63191.4	66667	94.79	PASS	70-125
LLCCV2	CCV2	1	61891.9	66667	92.84	PASS	70-125
ICSA3	ICSA	1	65034	66667	97.55	PASS	70-125
ICSAB3	ICSAB	1	68382.9	66667	102.57	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028469
Test Method: EPA 200.8
Analysis Date: 2/8/2018

Matrix: Groundwater
Batch No.: 66723

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.
~~Dilution test failed for Mn. However, PS passed criteria~~.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028469-001D DT 5X	Chromium	ug/L	0.77 ~~0~~	NA	0.956997	~~100.00%~~ 20%	10
N028469-001D DT 5X	Manganese	ug/L	76.67 ~~0~~	FAIL	74.4228	~~100.00%~~ 3.0%	10

Note: NA - Not applicable

Mary 2/21/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N028469-001D-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **121943**
Client ID: **ZZZZZZ** Batch ID: **66723** TestNo: **EPA 200.8** Analysis Date: **2/8/2018** SeqNo: **2924705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	168.109	0.50	100.0	74.42	93.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N028469-001D-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	121943
Client ID:	ZZZZZZ	Batch ID:	66723	TestNo:	EPA 200.8			Analysis Date:	2/8/2018	SeqNo:	2926141

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.427	1.0	10.00	0.9570	94.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121922
ASSET #: N028469

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/15/2018

2nd Level Reviewer 2/21/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028469-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.6951 * 1$$

$$Cr^{+6}, \mu g/L = 0.6951$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 0.70}$$

rba 2/15/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/08/18 9:20 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/08/18 9:30 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/08/18 9:40 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/08/18 9:49 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/08/18 9:59 AM	Reported
14	MB-R121922	MBLK	1	Hexavalent Chromium	02/08/18 10:08 AM	Reported
15	LCS-R121922	LCS	1	Hexavalent Chromium	02/08/18 10:18 AM	Reported
16	N028483-001A	SAMP	1	Hexavalent Chromium	02/08/18 10:27 AM	Reported
17	N028483-001ADUP	DUP	1	Hexavalent Chromium	02/08/18 10:37 AM	Reported
18	N028469-002A	SAMP	100	Hexavalent Chromium	02/08/18 10:46 AM	Reported
19	N028469-002AMS	MS	100	Hexavalent Chromium	02/08/18 10:56 AM	Reported
20	N028469-002AMSD	MSD	100	Hexavalent Chromium	02/08/18 11:05 AM	Reported
21	N028469-001A	SAMP	1	Hexavalent Chromium	02/08/18 11:15 AM	Reported
22	N028469-001AMS	MS	1	Hexavalent Chromium	02/08/18 11:24 AM	Reported
23	N028483-002A	SAMP	1	Hexavalent Chromium	02/08/18 11:33 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/08/18 11:43 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/08/18 11:52 AM	Reported
26	N028483-003A	SAMP	1	Hexavalent Chromium	02/08/18 12:02 PM	Reported
27	N028483-004A	SAMP	1	Hexavalent Chromium	02/08/18 12:11 PM	Reported
28	N028483-005A	SAMP	1	Hexavalent Chromium	02/08/18 12:21 PM	Reported
29	N028483-006A	SAMP	1	Hexavalent Chromium	02/08/18 12:30 PM	Reported
30	N028482-001A	SAMP	1	Hexavalent Chromium	02/08/18 12:40 PM	Reported
31	N028482-002A	SAMP	1	Hexavalent Chromium	02/08/18 12:49 PM	Reported
32	N028482-003A	SAMP	1	Hexavalent Chromium	02/08/18 12:59 PM	Reported
33	N028482-004A	SAMP	1	Hexavalent Chromium	02/08/18 1:08 PM	Reported
34	N028482-005A	SAMP	1	Hexavalent Chromium	02/08/18 1:17 PM	Reported
35	N028482-006A	SAMP	1	Hexavalent Chromium	02/08/18 1:27 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/08/18 1:36 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/08/18 1:46 PM	Reported
38	N028482-007A	SAMP	1	Hexavalent Chromium	02/08/18 1:55 PM	Reported
39	N028482-008A	SAMP	1	Hexavalent Chromium	02/08/18 2:05 PM	Reported
40	N028482-009A	SAMP	1	Hexavalent Chromium	02/08/18 2:14 PM	Reported
41	N028482-010A	SAMP	1	Hexavalent Chromium	02/08/18 2:24 PM	Not Reported
42	N028482-011A	SAMP	1	Hexavalent Chromium	02/08/18 2:33 PM	Not Reported

INJECTION LOG: 180208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028482-012A	SAMP	20	Hexavalent Chromium	02/08/18 2:43 PM	Reported
44	N028482-010A	SAMP	10	Hexavalent Chromium	02/08/18 2:56 PM	Reported
45	N028482-011A	SAMP	10	Hexavalent Chromium	02/08/18 3:07 PM	Reported
46	LCS-R121979	LCS	1	Hexavalent Chromium	02/08/18 3:17 PM	Reported
47	MB-R121979	MBLK	1	Hexavalent Chromium	02/08/18 3:26 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/08/18 3:35 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/08/18 3:45 PM	Reported
50	N028482-014A	SAMP	5	Hexavalent Chromium	02/08/18 3:54 PM	Reported
51	N028482-013A	SAMP	1	Hexavalent Chromium	02/08/18 4:04 PM	Reported
52	N028482-015A	SAMP	1	Hexavalent Chromium	02/08/18 4:13 PM	Reported
53	N028482-016A	SAMP	1	Hexavalent Chromium	02/08/18 4:23 PM	Reported
54	N028482-017A	SAMP	1	Hexavalent Chromium	02/08/18 4:32 PM	Reported
55	N028482-013ADUP	DUP	1	Hexavalent Chromium	02/08/18 4:42 PM	Reported
56	N028482-014AMS	MS	5	Hexavalent Chromium	02/08/18 4:51 PM	Reported
57	N028482-014AMSD	MSD	5	Hexavalent Chromium	02/08/18 5:01 PM	Reported
58	N028505-007A	SAMP	2000	Hexavalent Chromium	02/08/18 5:10 PM	Reported
59	N028505-007AMS	MS	2000	Hexavalent Chromium	02/08/18 5:20 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/08/18 5:29 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/08/18 5:38 PM	Reported
62	N028505-002A	SAMP	200	Hexavalent Chromium	02/08/18 5:48 PM	Reported
63	N028505-003A	SAMP	200	Hexavalent Chromium	02/08/18 5:57 PM	Reported
64	N028505-004A	SAMP	500	Hexavalent Chromium	02/08/18 6:07 PM	Reported
65	N028505-005A	SAMP	2000	Hexavalent Chromium	02/08/18 6:16 PM	Reported
66	N028505-006A	SAMP	2000	Hexavalent Chromium	02/08/18 6:26 PM	Reported
67	N028421-003A	SAMP	1	Hexavalent Chromium	02/08/18 6:35 PM	Not Reported
68	N028421-003AMS	MS	1	Hexavalent Chromium	02/08/18 6:45 PM	Not Reported
69	N028421-005A	SAMP	1	Hexavalent Chromium	02/08/18 6:54 PM	Not Reported
70	N028421-005AMS	MS	1	Hexavalent Chromium	02/08/18 7:04 PM	Not Reported
71	N028421-008A	SAMP	5	Hexavalent Chromium	02/08/18 7:13 PM	Not Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	02/08/18 7:23 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	02/08/18 7:32 PM	Reported
74	N028421-008AMS	MS	5	Hexavalent Chromium	02/08/18 7:41 PM	Not Reported
75	N028421-009A	SAMP	1	Hexavalent Chromium	02/08/18 7:51 PM	Not Reported
76	N028421-009AMS	MS	1	Hexavalent Chromium	02/08/18 8:00 PM	Not Reported
77	N028453-009A	SAMP	1	Hexavalent Chromium	02/08/18 8:10 PM	Not Reported
78	N028453-009AMS	MS	1	Hexavalent Chromium	02/08/18 8:19 PM	Not Reported
79	N028454-001A	SAMP	1	Hexavalent Chromium	02/08/18 8:29 PM	Not Reported
80	N028454-001AMS	MS	1	Hexavalent Chromium	02/08/18 8:38 PM	Not Reported
81	N028454-003A	SAMP	1	Hexavalent Chromium	02/08/18 8:48 PM	Not Reported
82	N028454-003AMS	MS	1	Hexavalent Chromium	02/08/18 8:57 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	02/08/18 9:07 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	02/08/18 9:16 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180208A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**08/Feb/18 21:46:49**
No. of Injections:	**87**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/08/2018 09:20	Finished	BLANK
10	BLANK	2	1000	Unknown		02/08/2018 09:30	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/08/2018 09:40	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/08/2018 09:49	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/08/2018 09:59	Finished	CCB R180115C
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/08/2018 10:08	Finished	MB R180115C
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/08/2018 10:18	Finished	LCS, IWST-180129B
16	N028483-001A,SAMP	8	1000	Unknown		02/08/2018 10:27	Finished	SAMP,10mL
17	N028483-001ADUP,D	9	1000	Unknown		02/08/2018 10:37	Finished	DUP,10mL
18	N028469-002A,SAMP	10	1000	Unknown		02/08/2018 10:46	Finished	SAMP,0.1>10mL
19	N028469-002AMS,MS	11	1000	Unknown		02/08/2018 10:56	Finished	MS (5ppb), IWST-180129B,0.1
20	N028469-002AMSD,M	12	1000	Unknown		02/08/2018 11:05	Finished	MSD (5ppb), IWST-180129B,0.
21	N028469-001A,SAMP	13	1000	Unknown		02/08/2018 11:15	Finished	SAMP,10mL
22	N028469-001AMS,MS	14	1000	Unknown		02/08/2018 11:24	Finished	MS (1ppb), IWST-180129B,10
23	N028483-002A,SAMP	15	1000	Unknown		02/08/2018 11:33	Finished	SAMP,10mL
24	CCV-2,CCV1,1,	16	1000	Unknown		02/08/2018 11:43	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/08/2018 11:52	Finished	CCB R180115C
26	N028483-003A,SAMP	18	1000	Unknown		02/08/2018 12:02	Finished	SAMP,10mL
27	N028483-004A,SAMP	19	1000	Unknown		02/08/2018 12:11	Finished	SAMP,10mL
28	N028483-005A,SAMP	20	1000	Unknown		02/08/2018 12:21	Finished	SAMP,10mL
29	N028483-006A,SAMP	21	1000	Unknown		02/08/2018 12:30	Finished	SAMP,10mL
30	N028482-001A,SAMP	22	1000	Unknown		02/08/2018 12:40	Finished	SAMP,10mL
31	N028482-002A,SAMP	23	1000	Unknown		02/08/2018 12:49	Finished	SAMP,10mL
32	N028482-003A,SAMP	24	1000	Unknown		02/08/2018 12:59	Finished	SAMP,10mL
33	N028482-004A,SAMP	25	1000	Unknown		02/08/2018 13:08	Finished	SAMP,10mL
34	N028482-005A,SAMP	26	1000	Unknown		02/08/2018 13:17	Finished	SAMP,10mL
35	N028482-006A,SAMP	27	1000	Unknown		02/08/2018 13:27	Finished	SAMP,10mL
36	CCV-3,CCV,1,	28	1000	Unknown		02/08/2018 13:36	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/08/2018 13:46	Finished	CCB R180115C
38	N028482-007A,SAMP	30	1000	Unknown		02/08/2018 13:55	Finished	SAMP,10mL
39	N028482-008A,SAMP	31	1000	Unknown		02/08/2018 14:05	Finished	SAMP,10mL
40	N028482-009A,SAMP	32	1000	Unknown		02/08/2018 14:14	Finished	SAMP,10mL
41	N028482-010A,SAMP	33	1000	Unknown		02/08/2018 14:24	Finished	SAMP,10mL
42	N028482-011A,SAMP	34	1000	Unknown		02/08/2018 14:33	Finished	SAMP,10mL
43	N028482-012A,SAMP	35	1000	Unknown		02/08/2018 14:43	Finished	SAMP,0.5>10mL
44	N028482-010A,SAMP	1	1000	Unknown		02/08/2018 14:56	Finished	SAMP,1>10mL
45	N028482-011A,SAMP	2	1000	Unknown		02/08/2018 15:07	Finished	SAMP,1>10mL
46	LCS-2,LCS,1,	3	1000	Unknown		02/08/2018 15:17	Finished	LCS, IWST-180129B
47	MB-2,MBLK,1,	4	1000	Unknown		02/08/2018 15:26	Finished	MB R180115C
48	CCV-4,CCV1,1,	5	1000	Unknown		02/08/2018 15:35	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	6	1000	Unknown		02/08/2018 15:45	Finished	CCB R180115C
50	N028482-014A,SAMP	7	1000	Unknown		02/08/2018 15:54	Finished	SAMP,2>10mL
51	N028482-013A,SAMP	8	1000	Unknown		02/08/2018 16:04	Finished	SAMP,10mL
52	N028482-015A,SAMP	9	1000	Unknown		02/08/2018 16:13	Finished	SAMP,10mL
53	N028482-016A,SAMP	10	1000	Unknown		02/08/2018 16:23	Finished	SAMP,10mL
54	N028482-017A,SAMP	11	1000	Unknown		02/08/2018 16:32	Finished	SAMP,10mL
55	N028482-013ADUP,D	12	1000	Unknown		02/08/2018 16:42	Finished	DUP,10mL
56	N028482-014AMS,MS	13	1000	Unknown		02/08/2018 16:51	Finished	MS (5ppb), IWST-180129B,2>1
57	N028482-014AMSD,M	14	1000	Unknown		02/08/2018 17:01	Finished	MSD (5ppb), IWST-180129B,2>
58	N028505-007A,SAMP	15	1000	Unknown		02/08/2018 17:10	Finished	SAMP,0.005>10mL
59	N028505-007AMS,MS	16	1000	Unknown		02/08/2018 17:20	Finished	MS (5ppb), IWST-180129B,0.0
60	CCV-5,CCV,1,	17	1000	Unknown		02/08/2018 17:29	Finished	CCV @5ppb, IWST-180129A

61	CCB-5,CCB,1,	18	1000	Unknown		02/08/2018 17:38	Finished	CCB R180115C
62	N028505-002A,SAMF	19	1000	Unknown		02/08/2018 17:48	Finished	SAMP,0.05>10mL
63	N028505-003A,SAMF	20	1000	Unknown		02/08/2018 17:57	Finished	SAMP,0.05>10mL
64	N028505-004A,SAMF	21	1000	Unknown		02/08/2018 18:07	Finished	SAMP,0.02>10mL
65	N028505-005A,SAMF	22	1000	Unknown		02/08/2018 18:16	Finished	SAMP,0.005>10mL
66	N028505-006A,SAMF	23	1000	Unknown		02/08/2018 18:26	Finished	SAMP,0.005>10mL
67	N028421-003A,SAMF	24	1000	Unknown		02/08/2018 18:35	Finished	SAMP,10mL
68	N028421-003AMS,MS	25	1000	Unknown		02/08/2018 18:45	Finished	MS (1ppb), IWST-180129B,10
69	N028421-005A,SAMF	26	1000	Unknown		02/08/2018 18:54	Finished	SAMP,10mL
70	N028421-005AMS,MS	27	1000	Unknown		02/08/2018 19:04	Finished	MS (1ppb), IWST-180129B,10
71	N028421-008A,SAMF	28	1000	Unknown		02/08/2018 19:13	Finished	SAMP,2>10mL
72	CCV-6,CCV1,1,	29	1000	Unknown		02/08/2018 19:23	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	30	1000	Unknown		02/08/2018 19:32	Finished	CCB R180115C
74	N028421-008AMS,MS	31	1000	Unknown		02/08/2018 19:41	Finished	MS (5ppb), IWST-180129B,2>1
75	N028421-009A,SAMF	32	1000	Unknown		02/08/2018 19:51	Finished	SAMP,10mL
76	N028421-009AMS,MS	33	1000	Unknown		02/08/2018 20:00	Finished	MS (1ppb), IWST-180129B,10
77	N028453-009A,SAMF	34	1000	Unknown		02/08/2018 20:10	Finished	SAMP,10mL
78	N028453-009AMS,MS	35	1000	Unknown		02/08/2018 20:19	Finished	MS (1ppb), IWST-180129B,10
79	N028454-001A,SAMF	36	1000	Unknown		02/08/2018 20:29	Finished	SAMP,10mL
80	N028454-001AMS,MS	37	1000	Unknown		02/08/2018 20:38	Finished	MS (1ppb), IWST-180129B,10
81	N028454-003A,SAMF	38	1000	Unknown		02/08/2018 20:48	Finished	SAMP,10mL
82	N028454-003AMS,MS	39	1000	Unknown		02/08/2018 20:57	Finished	MS (1ppb), IWST-180129B,10
83	CCV-7,CCV,1,	40	1000	Unknown		02/08/2018 21:07	Finished	CCV @5ppb, IWST-180129A
84	CCB-7,CCB,1,	41	1000	Unknown		02/08/2018 21:16	Finished	CCB R180115C
85	SHUTDOWN	42	1000	Unknown		02/08/2018 21:25	Finished	
86	Eluent: R180208A	43	1000	Unknown		n.a.	Finished	Eluent
87	PCR: R180208B	44	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/8/18
Time Prepared: 0940H
Prepared By: MSA

slope: 94.8%
pH4: 4.02 @ 25.0°C
7: 7.00 @ 25.0°C
10: 10.04 @ 25.0°C
LCS: 6.98 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CLNU-171116A
NH4OH + NH4SO4 eluent: M802068A
NH4OH + NH4SO4 buffer: M801150

6N NaOH: M711294A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M28482-001A	9.52	-	~250mL	~250mL		
2)	2A	9.54	-				
3)	3A	9.69	-				
4)	4A	9.53	-				
5)	5A	9.41	-				
6)	6A	9.19	9.50			+4 drops 6N NaOH	
7)	7A	9.66	-				
8)	8A	9.68	-				
9)	9A	9.53	-				
10)	10A	9.57	-				
11)	11A	9.50	-				
12)	12A	9.17	9.47			+4 drops 6N NaOH	
13)	13A	9.45	-				
14)	14A	9.35	-				
15)	15A	9.67	-				
	16A	9.64	-				
	17A	9.58	-				

Sample Preparation

Date Prepared: 2/8/18
Time Prepared: 0940H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CLNU-171116A
NH4OH + NH4SO4 eluent: M802068A
NH4OH + NH4SO4 buffer: M801150

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M28483-1A	9.44	-	~250mL	~250mL		
2)	2A	9.65	-				
3)	3A	9.68	-				
4)	4A	9.66	-				
5)	5A	9.63	-				
6)	6A	9.58	-				
7)	M28469-1A	9.54	-				
8)	2A	9.60	-				
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

jba 2/15/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9998

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ICV**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2923622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2923623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **CCV**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.055	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.234	0.20	0.2000	0	117	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.205	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **CCV**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2926888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.992	0.20	5.000	0	99.8	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ZZZZZZ**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2926896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.926	0.20	10.00	0	99.3	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **ICB**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2923624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **CCB**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **CCB**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2923639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **CCB**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2926889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **121922**
Client ID: **CCB**	Batch ID: **R121922**	TestNo: **EPA 218.6**		Analysis Date: **2/8/2018**	SeqNo: **2926897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.165
Actual RT Window	4.085 - 4.245
Applied RT Window	3.965 - 4.365

MB-R121922	N.A.	N.A.
LCS-R121922	4.165	PASS
N028483-001A	4.148	PASS
N028483-001ADUP	4.148	PASS
N028469-002A	4.165	PASS
N028469-002AMS	4.165	PASS
N028469-002AMSD	4.165	PASS
N028469-001A	4.106	PASS
N028469-001AMS	4.106	PASS
N028483-002A	4.156	PASS
N028483-003A	4.140	PASS
N028483-004A	4.156	PASS
N028483-005A	4.156	PASS
N028483-006A	4.140	PASS
N028482-001A	N.A.	N.A.
N028482-002A	N.A.	N.A.
N028482-003A	4.165	PASS
N028482-004A	N.A.	N.A.
N028482-005A	4.156	PASS
N028482-006A	4.148	PASS
N028482-007A	4.156	PASS

rba 2/15/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028482-008A	4.156	PASS
N028482-009A	4.156	PASS
N028482-010A	4.156	PASS
N028482-011A	4.156	PASS
N028482-012A	4.165	PASS
N028482-010A	4.165	PASS
N028482-011A	4.165	PASS
LCS-R121979	4.165	PASS
MB-R121979	N.A.	N.A.
N028482-014A	4.156	PASS
N028482-013A	4.165	PASS
N028482-015A	4.140	PASS
N028482-016A	N.A.	N.A.
N028482-017A	N.A.	N.A.
N028482-013ADUP	4.165	PASS
N028482-014AMS	4.165	PASS
N028482-014AMSD	4.165	PASS
N028505-007A	4.165	PASS
N028505-007AMS	4.165	PASS
N028505-002A	4.165	PASS
N028505-003A	4.165	PASS
N028505-004A	4.165	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028505-005A	4.165	PASS
N028505-006A	4.165	PASS
N028421-003A	N.A.	N.A.
N028421-003AMS	4.156	PASS
N028421-005A	4.131	PASS
N028421-005AMS	4.156	PASS
N028421-008A	4.156	PASS
N028421-008AMS	4.165	PASS
N028421-009A	4.156	PASS
N028421-009AMS	4.156	PASS
N028453-009A	4.156	PASS
N028453-009AMS	4.165	PASS
N028454-001A	4.131	PASS
N028454-001AMS	4.156	PASS
N028454-003A	N.A.	N.A.
N028454-003AMS	4.165	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

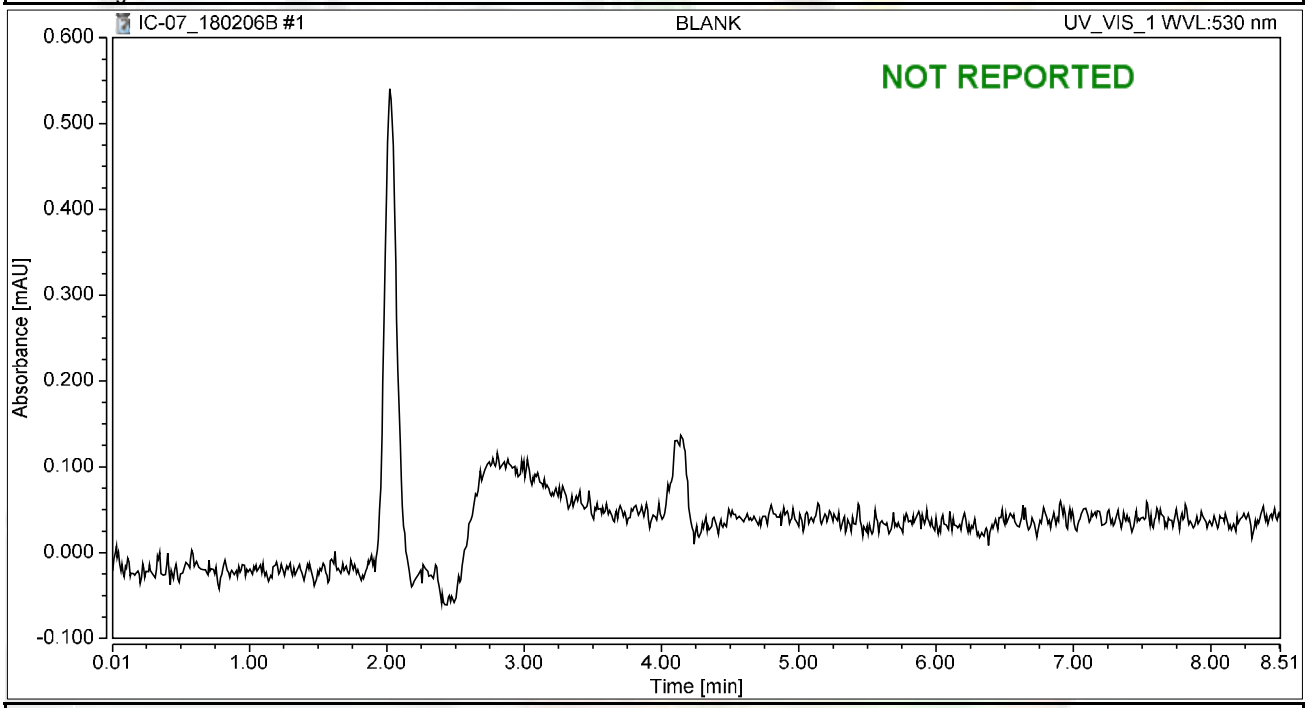
61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

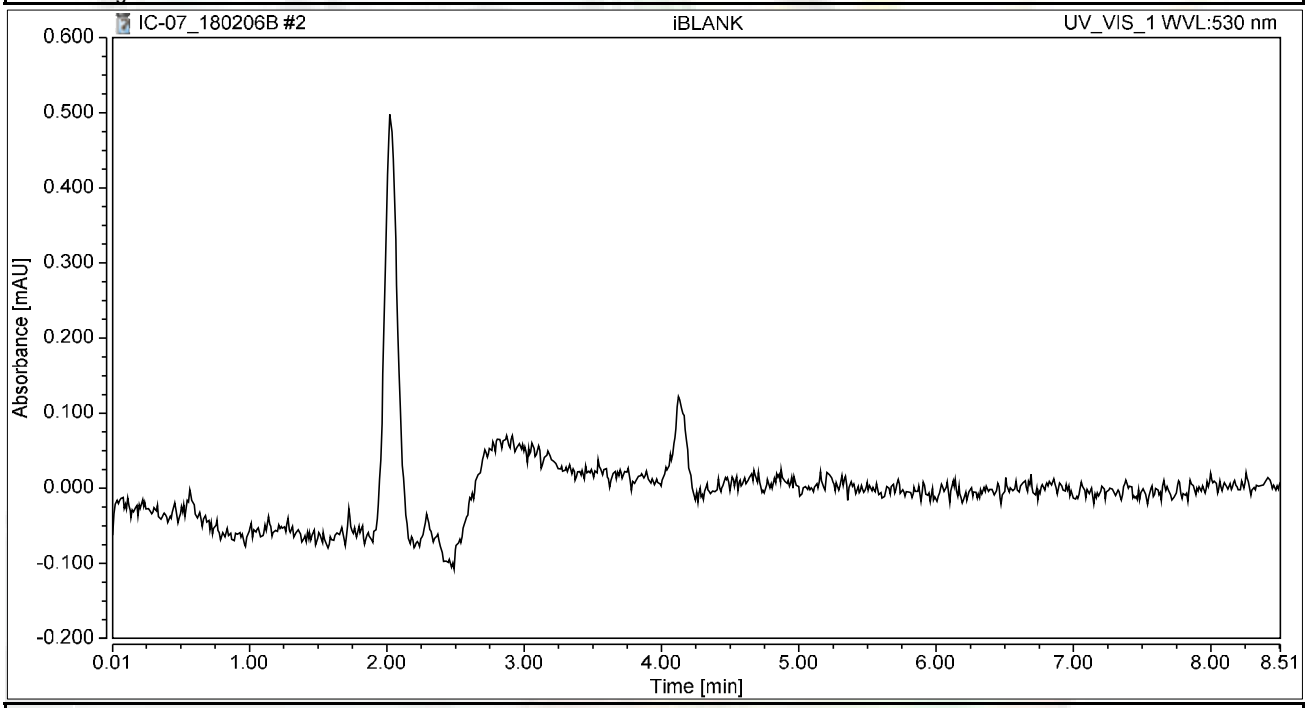
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

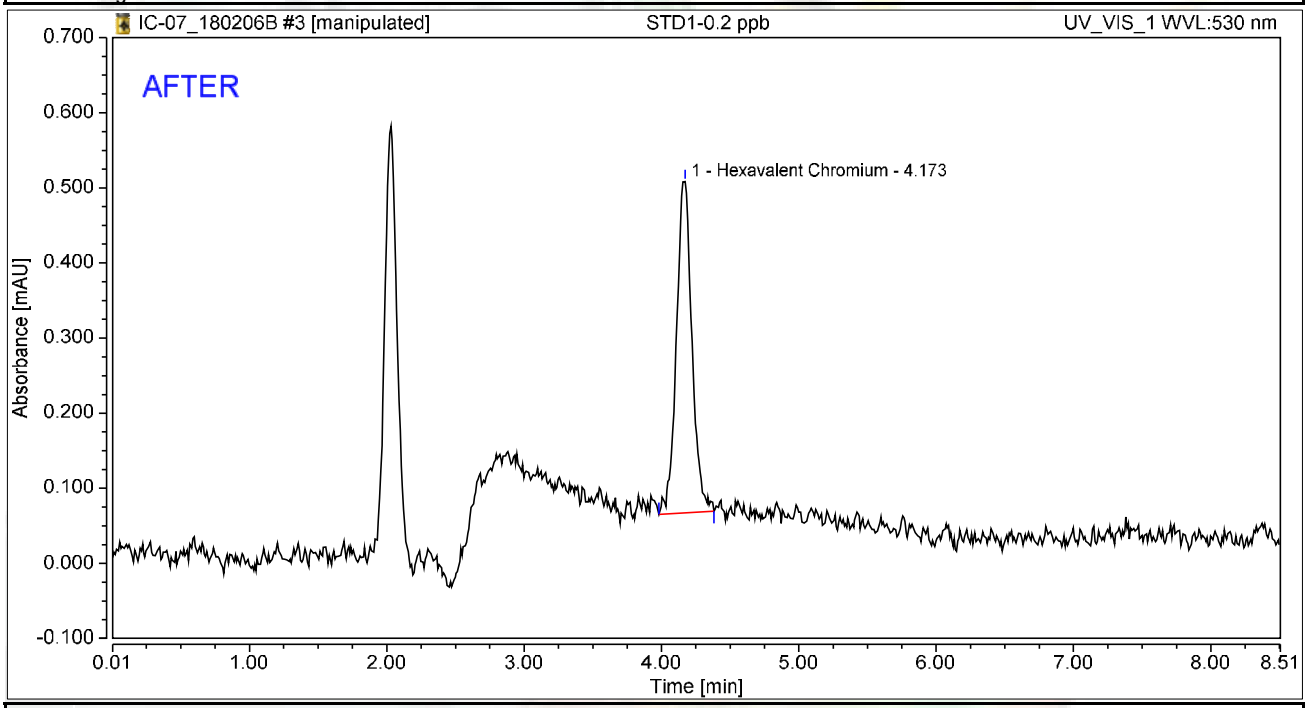
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

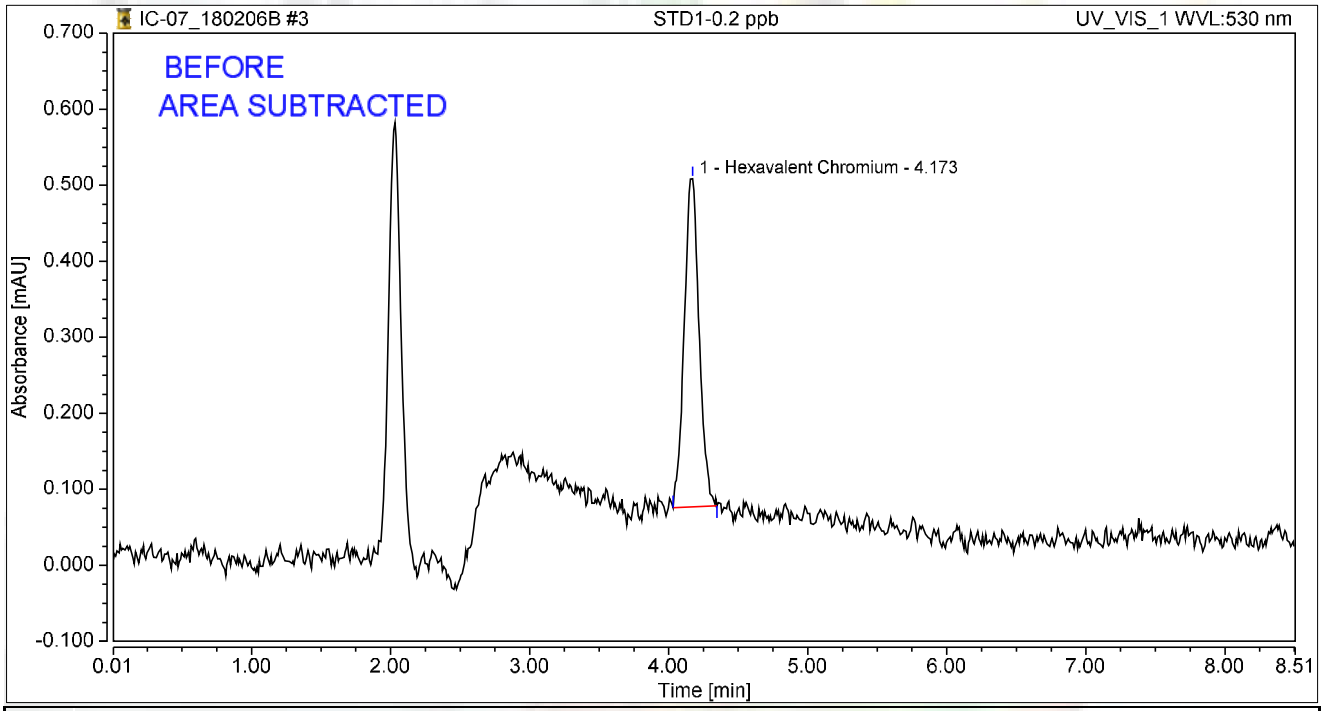
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

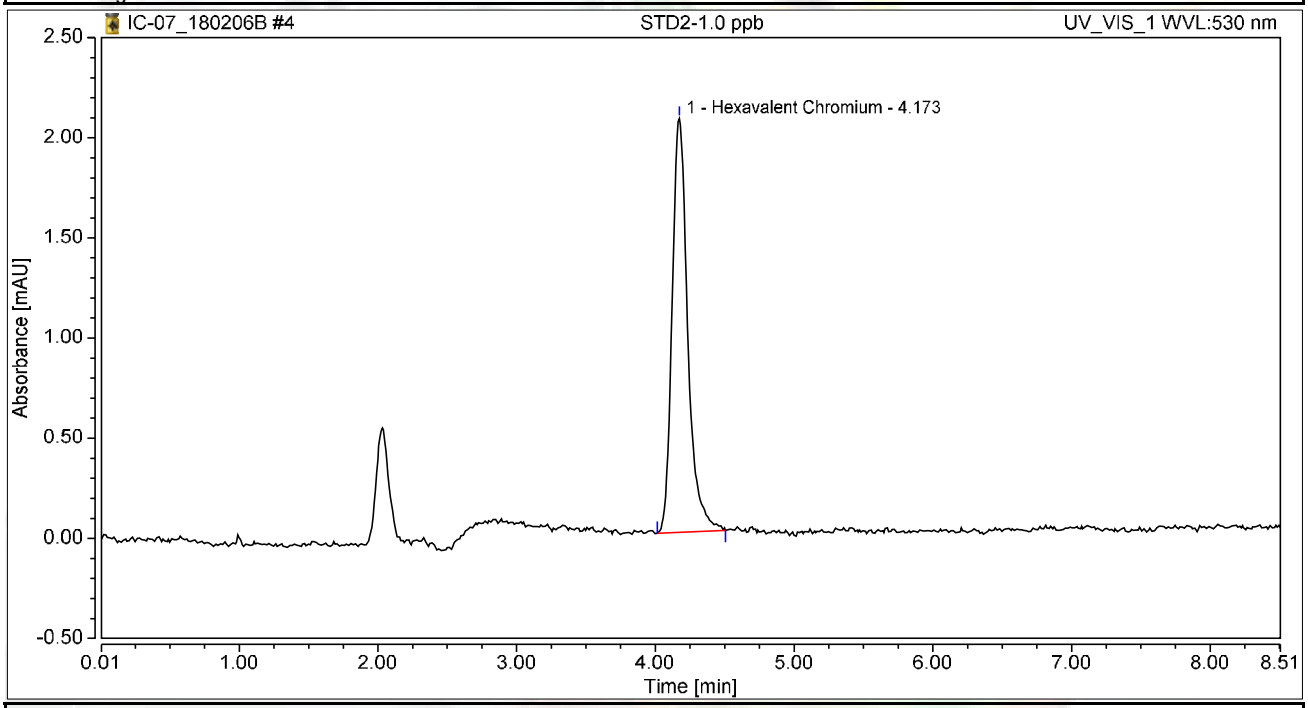
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

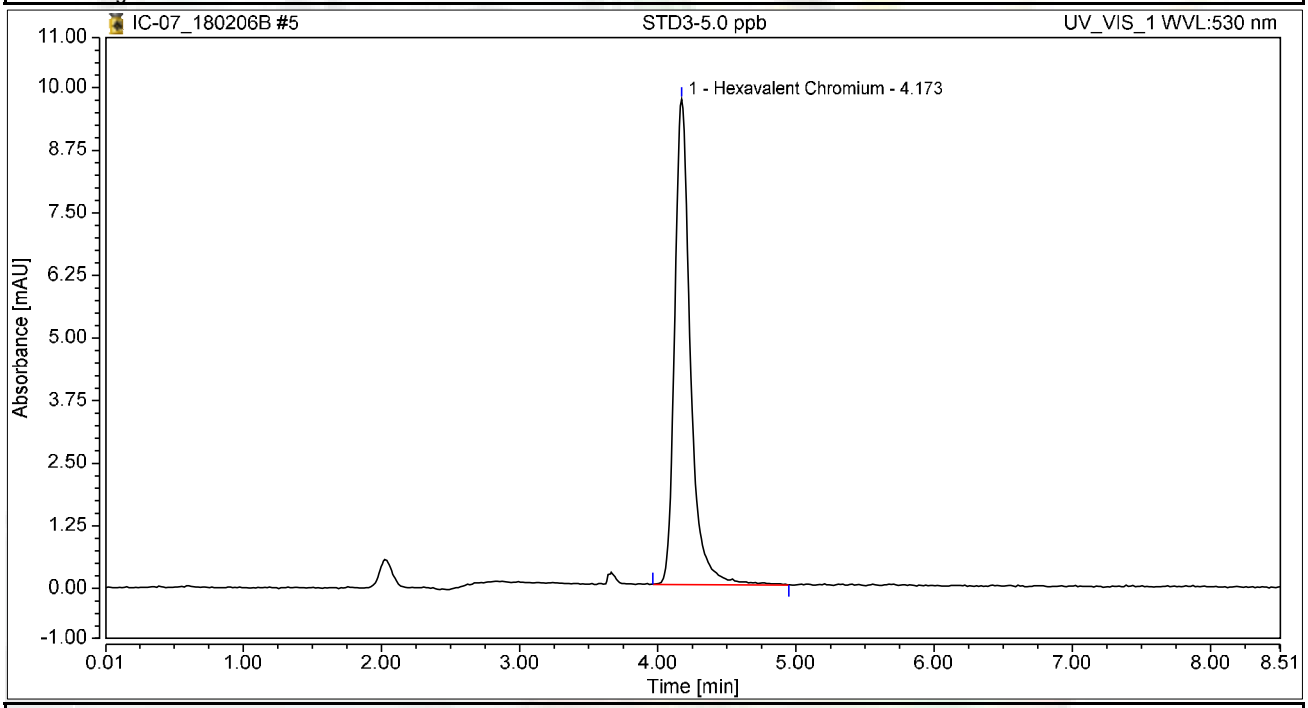
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

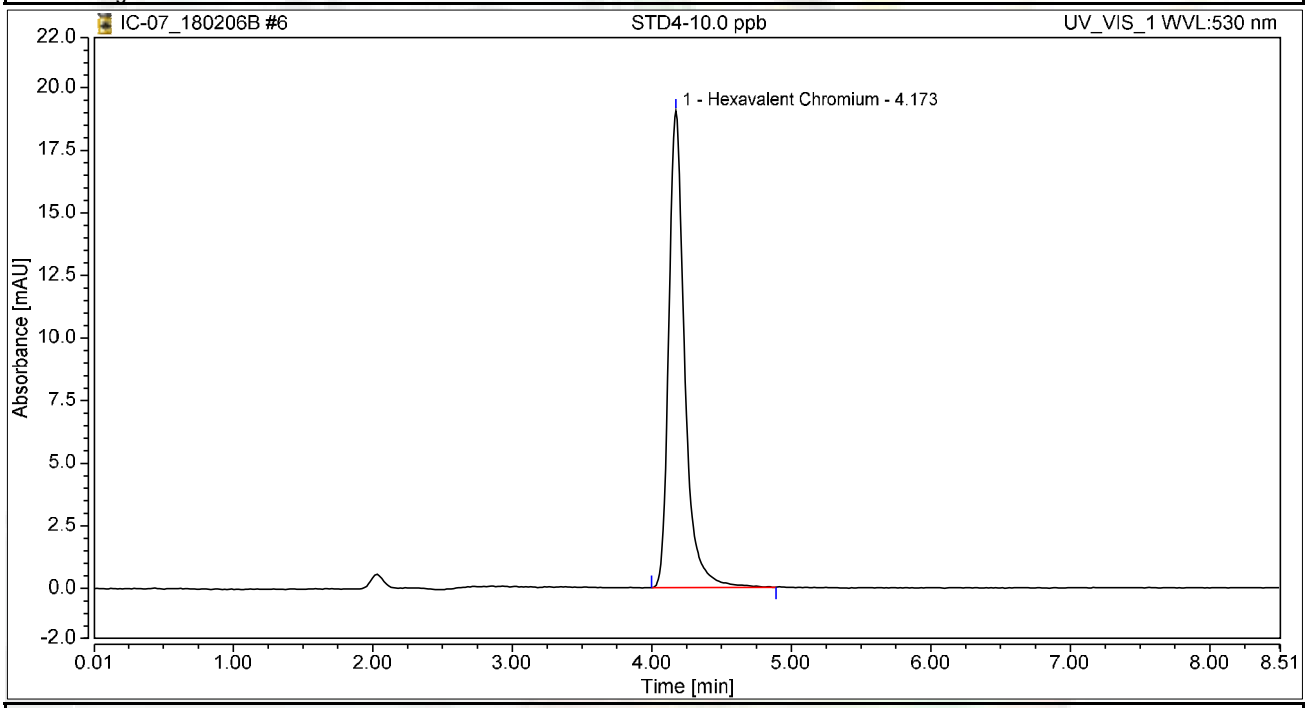
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

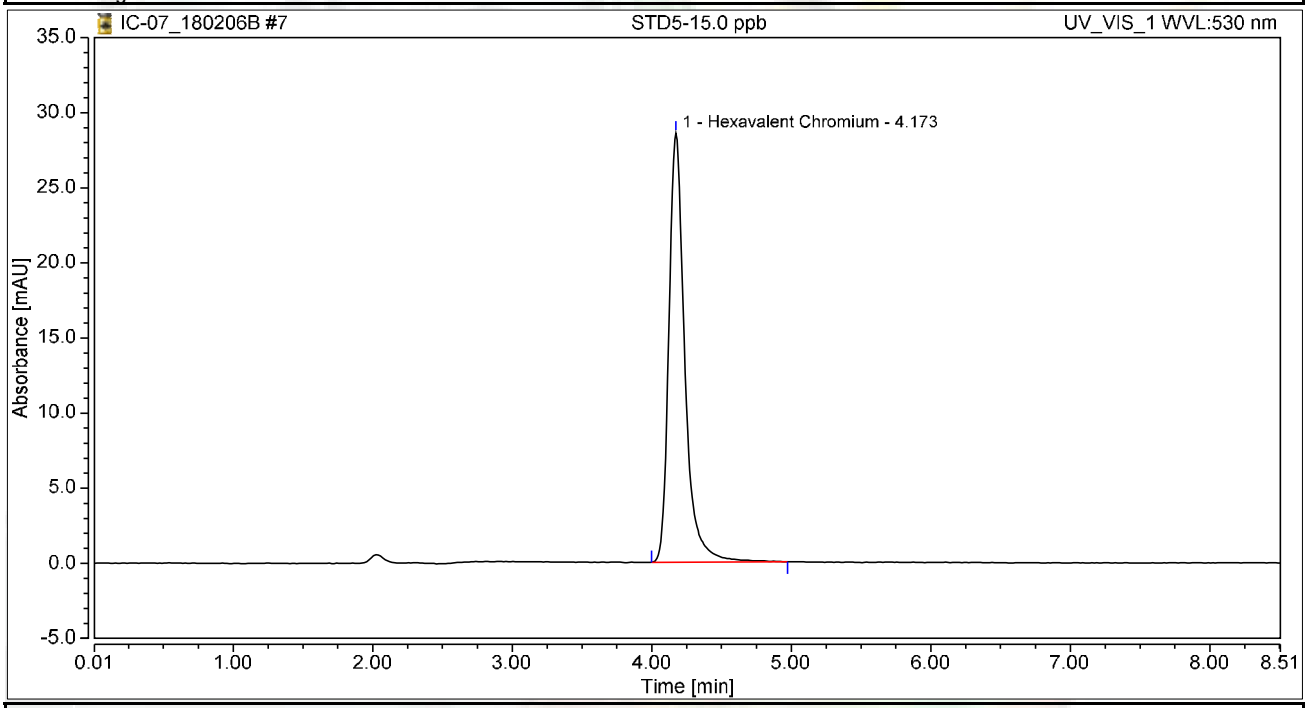
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

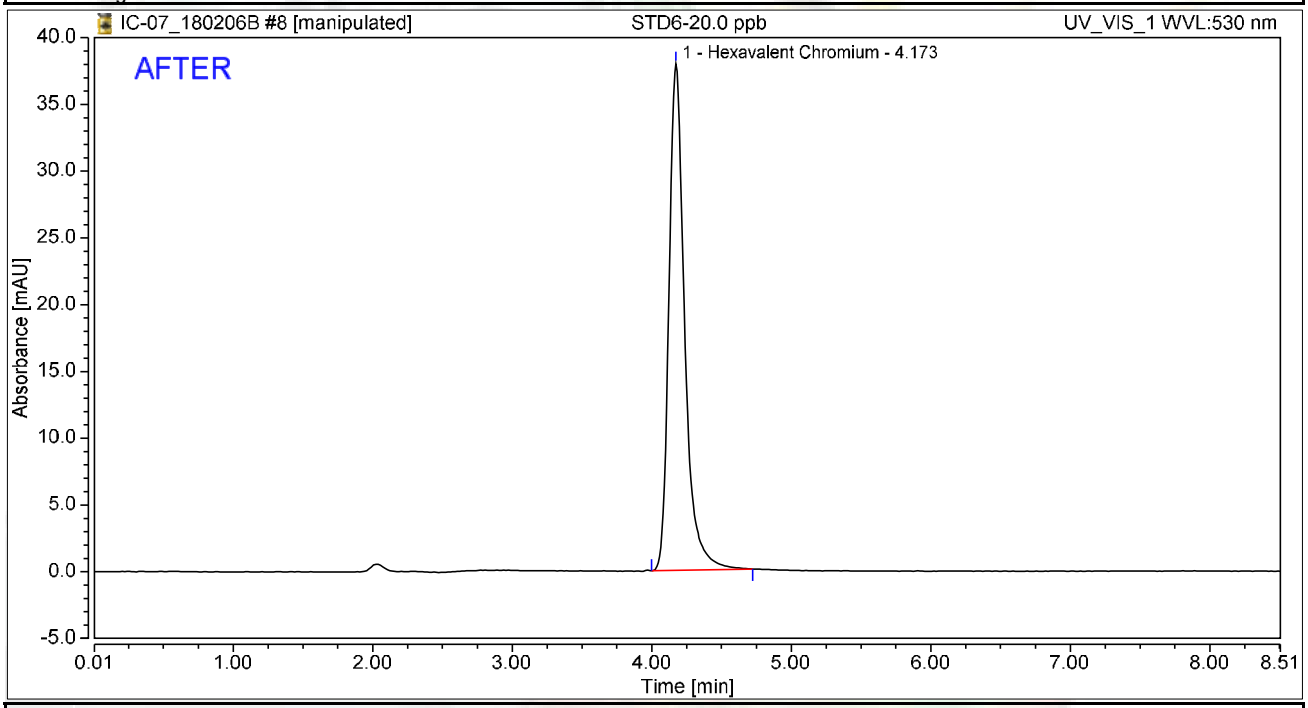
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

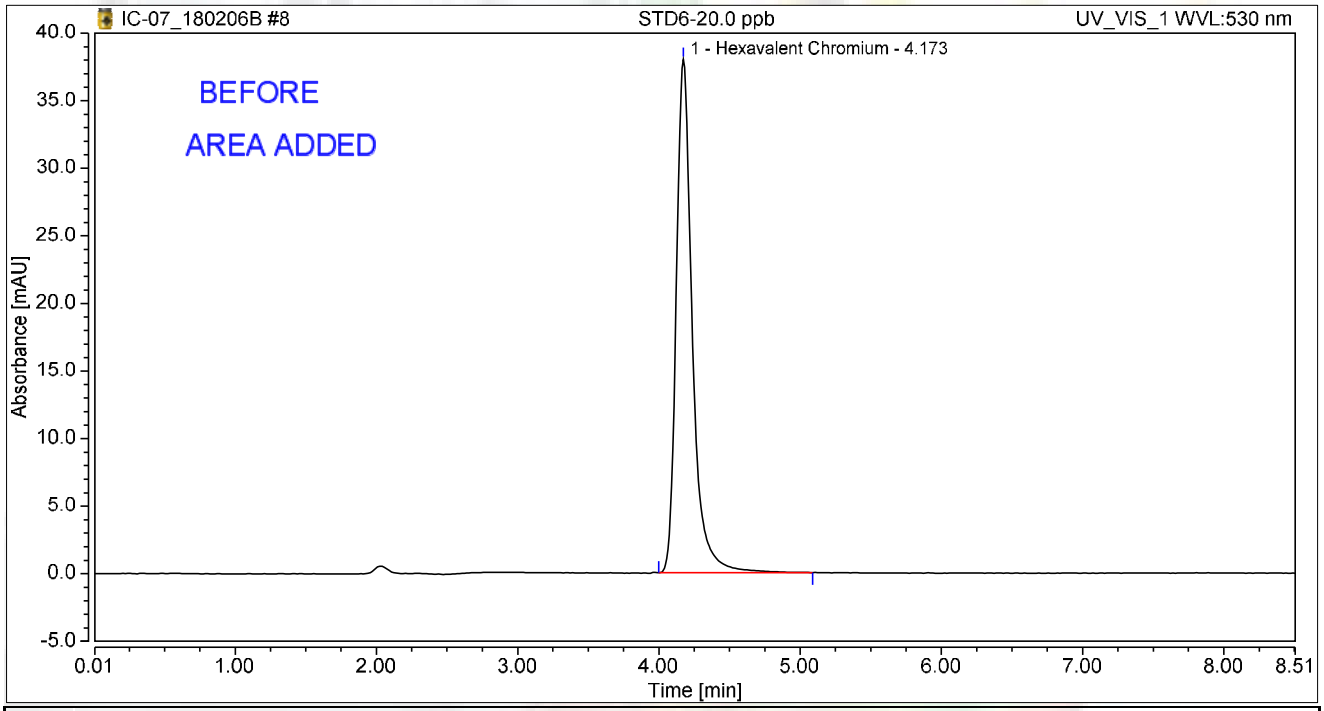
02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

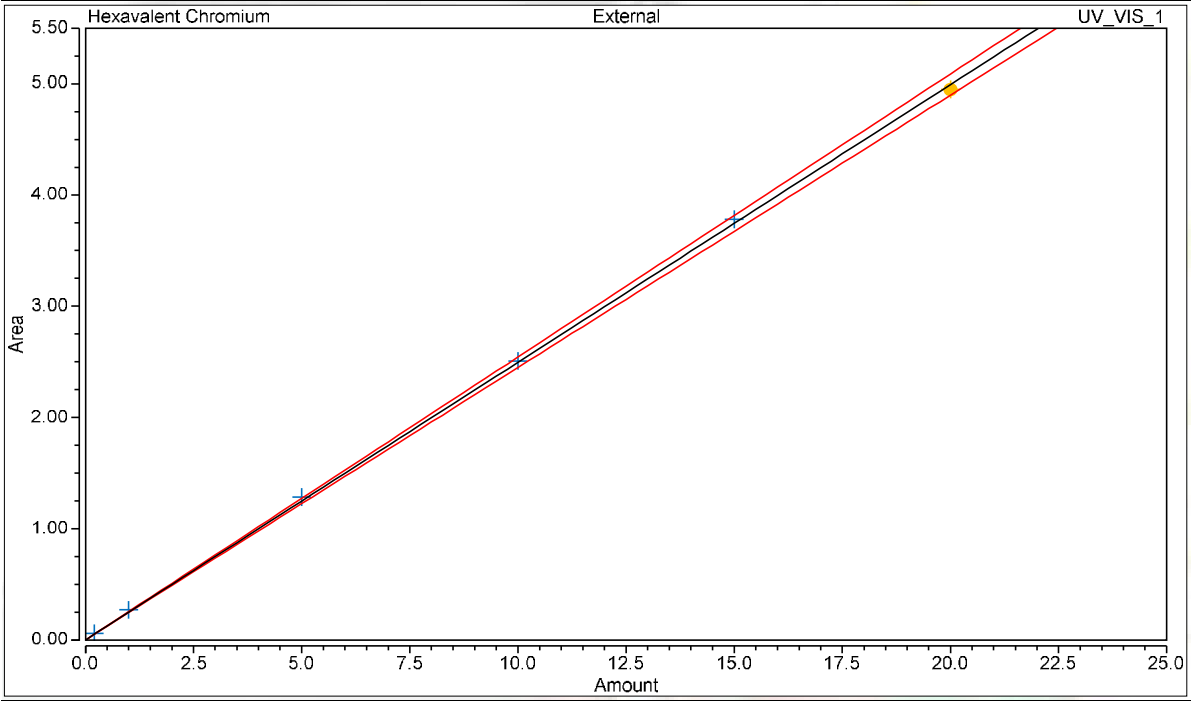
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

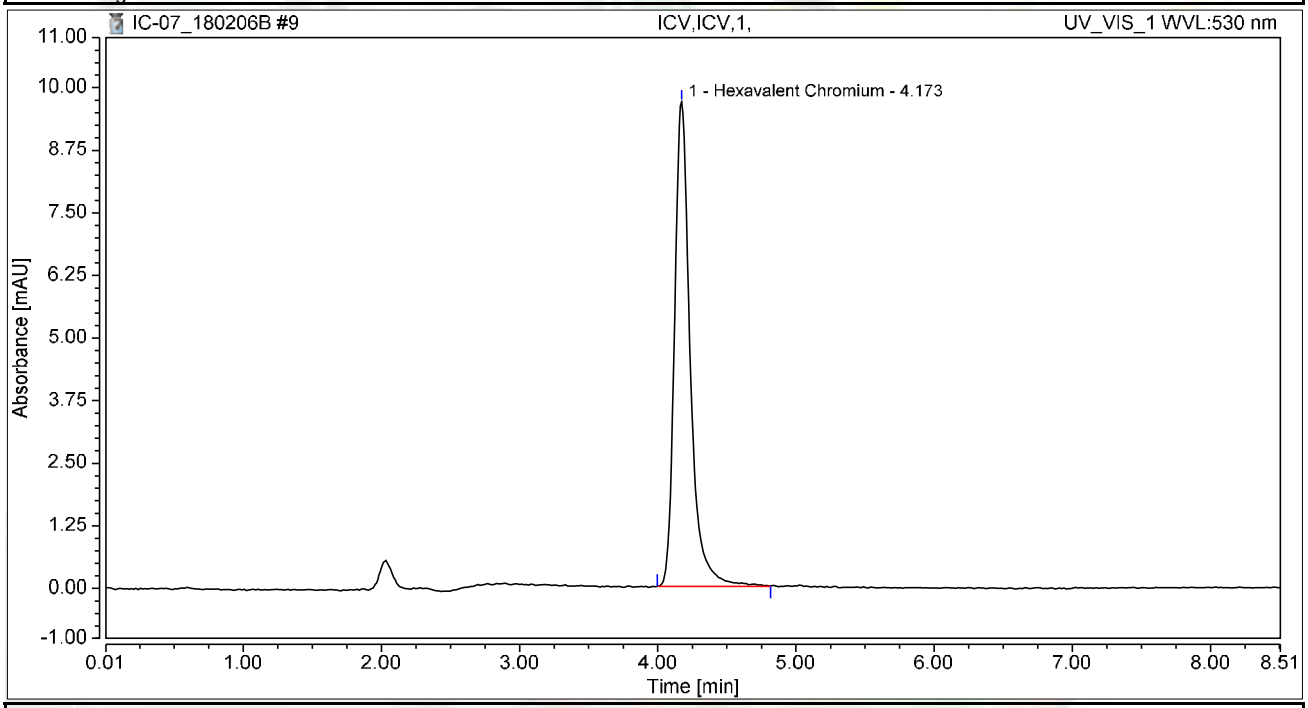
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

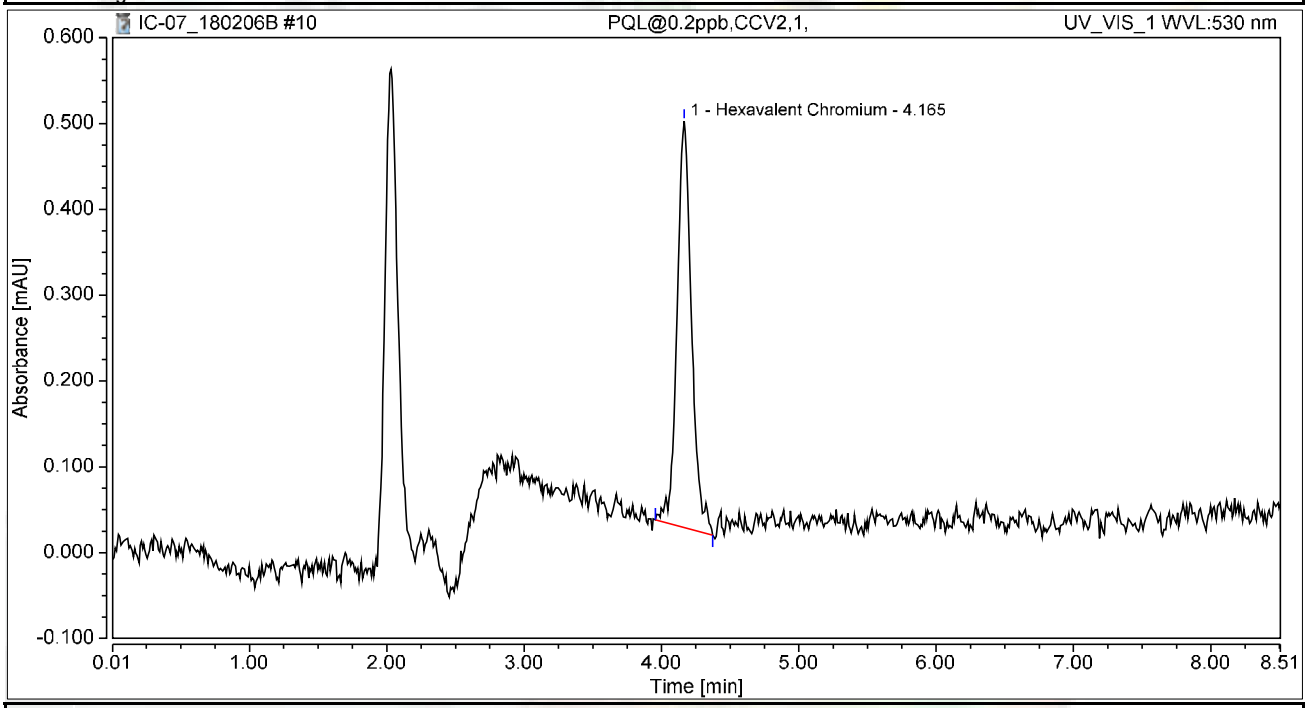
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

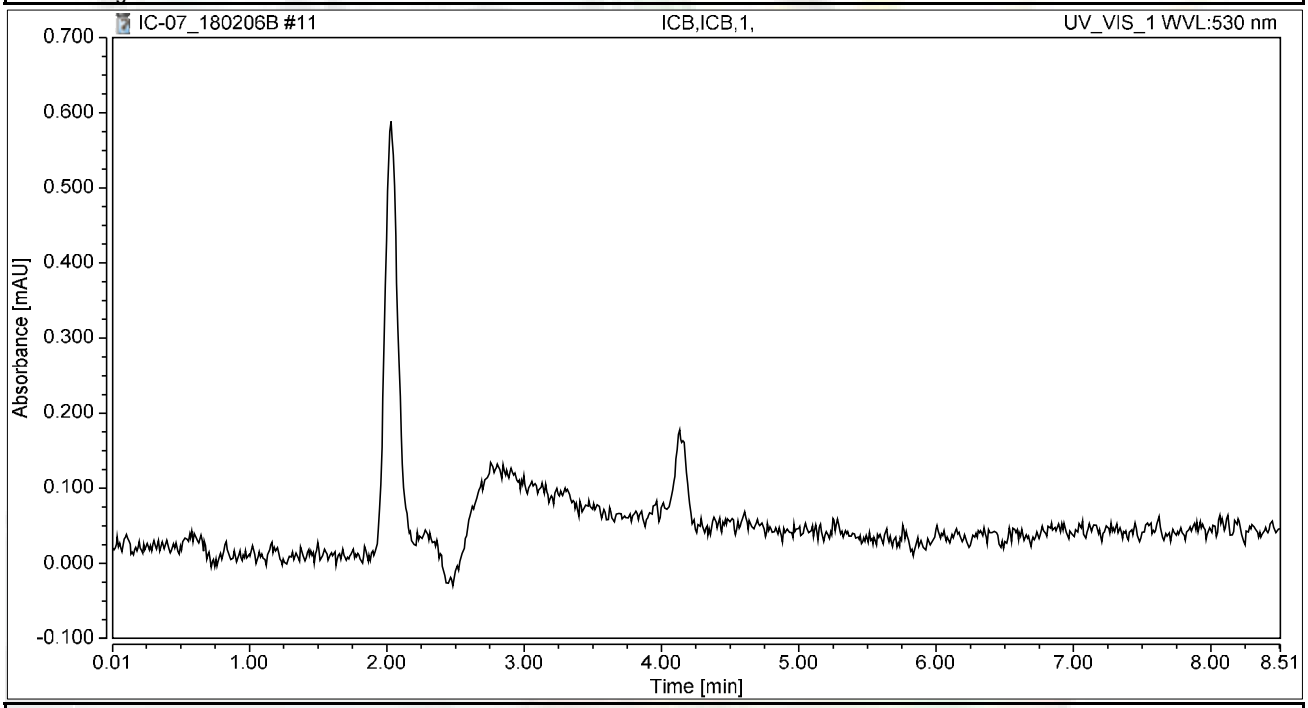
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA



INJECTION LOG: 180208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/08/18 9:20 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/08/18 9:30 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/08/18 9:40 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/08/18 9:49 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/08/18 9:59 AM	Reported
14	MB-R121922	MBLK	1	Hexavalent Chromium	02/08/18 10:08 AM	Reported
15	LCS-R121922	LCS	1	Hexavalent Chromium	02/08/18 10:18 AM	Reported
16	N028483-001A	SAMP	1	Hexavalent Chromium	02/08/18 10:27 AM	Reported
17	N028483-001ADUP	DUP	1	Hexavalent Chromium	02/08/18 10:37 AM	Reported
18	N028469-002A	SAMP	100	Hexavalent Chromium	02/08/18 10:46 AM	Reported
19	N028469-002AMS	MS	100	Hexavalent Chromium	02/08/18 10:56 AM	Reported
20	N028469-002AMSD	MSD	100	Hexavalent Chromium	02/08/18 11:05 AM	Reported
21	N028469-001A	SAMP	1	Hexavalent Chromium	02/08/18 11:15 AM	Reported
22	N028469-001AMS	MS	1	Hexavalent Chromium	02/08/18 11:24 AM	Reported
23	N028483-002A	SAMP	1	Hexavalent Chromium	02/08/18 11:33 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/08/18 11:43 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/08/18 11:52 AM	Reported
26	N028483-003A	SAMP	1	Hexavalent Chromium	02/08/18 12:02 PM	Reported
27	N028483-004A	SAMP	1	Hexavalent Chromium	02/08/18 12:11 PM	Reported
28	N028483-005A	SAMP	1	Hexavalent Chromium	02/08/18 12:21 PM	Reported
29	N028483-006A	SAMP	1	Hexavalent Chromium	02/08/18 12:30 PM	Reported
30	N028482-001A	SAMP	1	Hexavalent Chromium	02/08/18 12:40 PM	Reported
31	N028482-002A	SAMP	1	Hexavalent Chromium	02/08/18 12:49 PM	Reported
32	N028482-003A	SAMP	1	Hexavalent Chromium	02/08/18 12:59 PM	Reported
33	N028482-004A	SAMP	1	Hexavalent Chromium	02/08/18 1:08 PM	Reported
34	N028482-005A	SAMP	1	Hexavalent Chromium	02/08/18 1:17 PM	Reported
35	N028482-006A	SAMP	1	Hexavalent Chromium	02/08/18 1:27 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/08/18 1:36 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/08/18 1:46 PM	Reported
38	N028482-007A	SAMP	1	Hexavalent Chromium	02/08/18 1:55 PM	Reported
39	N028482-008A	SAMP	1	Hexavalent Chromium	02/08/18 2:05 PM	Reported
40	N028482-009A	SAMP	1	Hexavalent Chromium	02/08/18 2:14 PM	Reported
41	N028482-010A	SAMP	1	Hexavalent Chromium	02/08/18 2:24 PM	Not Reported
42	N028482-011A	SAMP	1	Hexavalent Chromium	02/08/18 2:33 PM	Not Reported

rba 2/14/2018

2/16/2018

INJECTION LOG: 180208A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028482-012A	SAMP	20	Hexavalent Chromium	02/08/18 2:43 PM	Reported
44	N028482-010A	SAMP	10	Hexavalent Chromium	02/08/18 2:56 PM	Reported
45	N028482-011A	SAMP	10	Hexavalent Chromium	02/08/18 3:07 PM	Reported
46	LCS-R121979	LCS	1	Hexavalent Chromium	02/08/18 3:17 PM	Reported
47	MB-R121979	MBLK	1	Hexavalent Chromium	02/08/18 3:26 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/08/18 3:35 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/08/18 3:45 PM	Reported
50	N028482-014A	SAMP	5	Hexavalent Chromium	02/08/18 3:54 PM	Reported
51	N028482-013A	SAMP	1	Hexavalent Chromium	02/08/18 4:04 PM	Reported
52	N028482-015A	SAMP	1	Hexavalent Chromium	02/08/18 4:13 PM	Reported
53	N028482-016A	SAMP	1	Hexavalent Chromium	02/08/18 4:23 PM	Reported
54	N028482-017A	SAMP	1	Hexavalent Chromium	02/08/18 4:32 PM	Reported
55	N028482-013ADUP	DUP	1	Hexavalent Chromium	02/08/18 4:42 PM	Reported
56	N028482-014AMS	MS	5	Hexavalent Chromium	02/08/18 4:51 PM	Reported
57	N028482-014AMSD	MSD	5	Hexavalent Chromium	02/08/18 5:01 PM	Reported
58	N028505-007A	SAMP	2000	Hexavalent Chromium	02/08/18 5:10 PM	Reported
59	N028505-007AMS	MS	2000	Hexavalent Chromium	02/08/18 5:20 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/08/18 5:29 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/08/18 5:38 PM	Reported
62	N028505-002A	SAMP	200	Hexavalent Chromium	02/08/18 5:48 PM	Reported
63	N028505-003A	SAMP	200	Hexavalent Chromium	02/08/18 5:57 PM	Reported
64	N028505-004A	SAMP	500	Hexavalent Chromium	02/08/18 6:07 PM	Reported
65	N028505-005A	SAMP	2000	Hexavalent Chromium	02/08/18 6:16 PM	Reported
66	N028505-006A	SAMP	2000	Hexavalent Chromium	02/08/18 6:26 PM	Reported
67	N028421-003A	SAMP	1	Hexavalent Chromium	02/08/18 6:35 PM	Not Reported
68	N028421-003AMS	MS	1	Hexavalent Chromium	02/08/18 6:45 PM	Not Reported
69	N028421-005A	SAMP	1	Hexavalent Chromium	02/08/18 6:54 PM	Not Reported
70	N028421-005AMS	MS	1	Hexavalent Chromium	02/08/18 7:04 PM	Not Reported
71	N028421-008A	SAMP	5	Hexavalent Chromium	02/08/18 7:13 PM	Not Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	02/08/18 7:23 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	02/08/18 7:32 PM	Reported
74	N028421-008AMS	MS	5	Hexavalent Chromium	02/08/18 7:41 PM	Not Reported
75	N028421-009A	SAMP	1	Hexavalent Chromium	02/08/18 7:51 PM	Not Reported
76	N028421-009AMS	MS	1	Hexavalent Chromium	02/08/18 8:00 PM	Not Reported
77	N028453-009A	SAMP	1	Hexavalent Chromium	02/08/18 8:10 PM	Not Reported
78	N028453-009AMS	MS	1	Hexavalent Chromium	02/08/18 8:19 PM	Not Reported
79	N028454-001A	SAMP	1	Hexavalent Chromium	02/08/18 8:29 PM	Not Reported
80	N028454-001AMS	MS	1	Hexavalent Chromium	02/08/18 8:38 PM	Not Reported
81	N028454-003A	SAMP	1	Hexavalent Chromium	02/08/18 8:48 PM	Not Reported
82	N028454-003AMS	MS	1	Hexavalent Chromium	02/08/18 8:57 PM	Not Reported
83	CCV-7	CCV	1	Hexavalent Chromium	02/08/18 9:07 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	02/08/18 9:16 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180208A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**08/Feb/18 21:46:49**
No. of Injections:	**87**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/08/2018 09:20	Finished	BLANK
10	BLANK	2	1000	Unknown		02/08/2018 09:30	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/08/2018 09:40	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/08/2018 09:49	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/08/2018 09:59	Finished	CCB R180115C
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/08/2018 10:08	Finished	MB R180115C
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/08/2018 10:18	Finished	LCS, IWST-180129B
16	N028483-001A,SAMP	8	1000	Unknown		02/08/2018 10:27	Finished	SAMP,10mL
17	N028483-001ADUP,D	9	1000	Unknown		02/08/2018 10:37	Finished	DUP,10mL
18	N028469-002A,SAMP	10	1000	Unknown		02/08/2018 10:46	Finished	SAMP,0.1>10mL
19	N028469-002AMS,MS	11	1000	Unknown		02/08/2018 10:56	Finished	MS (5ppb), IWST-180129B,0.1
20	N028469-002AMSD,M	12	1000	Unknown		02/08/2018 11:05	Finished	MSD (5ppb), IWST-180129B,0.
21	N028469-001A,SAMP	13	1000	Unknown		02/08/2018 11:15	Finished	SAMP,10mL
22	N028469-001AMS,MS	14	1000	Unknown		02/08/2018 11:24	Finished	MS (1ppb), IWST-180129B,10
23	N028483-002A,SAMP	15	1000	Unknown		02/08/2018 11:33	Finished	SAMP,10mL
24	CCV-2,CCV1,1,	16	1000	Unknown		02/08/2018 11:43	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/08/2018 11:52	Finished	CCB R180115C
26	N028483-003A,SAMP	18	1000	Unknown		02/08/2018 12:02	Finished	SAMP,10mL
27	N028483-004A,SAMP	19	1000	Unknown		02/08/2018 12:11	Finished	SAMP,10mL
28	N028483-005A,SAMP	20	1000	Unknown		02/08/2018 12:21	Finished	SAMP,10mL
29	N028483-006A,SAMP	21	1000	Unknown		02/08/2018 12:30	Finished	SAMP,10mL
30	N028482-001A,SAMP	22	1000	Unknown		02/08/2018 12:40	Finished	SAMP,10mL
31	N028482-002A,SAMP	23	1000	Unknown		02/08/2018 12:49	Finished	SAMP,10mL
32	N028482-003A,SAMP	24	1000	Unknown		02/08/2018 12:59	Finished	SAMP,10mL
33	N028482-004A,SAMP	25	1000	Unknown		02/08/2018 13:08	Finished	SAMP,10mL
34	N028482-005A,SAMP	26	1000	Unknown		02/08/2018 13:17	Finished	SAMP,10mL
35	N028482-006A,SAMP	27	1000	Unknown		02/08/2018 13:27	Finished	SAMP,10mL
36	CCV-3,CCV,1,	28	1000	Unknown		02/08/2018 13:36	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/08/2018 13:46	Finished	CCB R180115C
38	N028482-007A,SAMP	30	1000	Unknown		02/08/2018 13:55	Finished	SAMP,10mL
39	N028482-008A,SAMP	31	1000	Unknown		02/08/2018 14:05	Finished	SAMP,10mL
40	N028482-009A,SAMP	32	1000	Unknown		02/08/2018 14:14	Finished	SAMP,10mL
41	N028482-010A,SAMP	33	1000	Unknown		02/08/2018 14:24	Finished	SAMP,10mL
42	N028482-011A,SAMP	34	1000	Unknown		02/08/2018 14:33	Finished	SAMP,10mL
43	N028482-012A,SAMP	35	1000	Unknown		02/08/2018 14:43	Finished	SAMP,0.5>10mL
44	N028482-010A,SAMP	1	1000	Unknown		02/08/2018 14:56	Finished	SAMP,1>10mL
45	N028482-011A,SAMP	2	1000	Unknown		02/08/2018 15:07	Finished	SAMP,1>10mL
46	LCS-2,LCS,1,	3	1000	Unknown		02/08/2018 15:17	Finished	LCS, IWST-180129B
47	MB-2,MBLK,1,	4	1000	Unknown		02/08/2018 15:26	Finished	MB R180115C
48	CCV-4,CCV1,1,	5	1000	Unknown		02/08/2018 15:35	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	6	1000	Unknown		02/08/2018 15:45	Finished	CCB R180115C
50	N028482-014A,SAMP	7	1000	Unknown		02/08/2018 15:54	Finished	SAMP,2>10mL
51	N028482-013A,SAMP	8	1000	Unknown		02/08/2018 16:04	Finished	SAMP,10mL
52	N028482-015A,SAMP	9	1000	Unknown		02/08/2018 16:13	Finished	SAMP,10mL
53	N028482-016A,SAMP	10	1000	Unknown		02/08/2018 16:23	Finished	SAMP,10mL
54	N028482-017A,SAMP	11	1000	Unknown		02/08/2018 16:32	Finished	SAMP,10mL
55	N028482-013ADUP,D	12	1000	Unknown		02/08/2018 16:42	Finished	DUP,10mL
56	N028482-014AMS,MS	13	1000	Unknown		02/08/2018 16:51	Finished	MS (5ppb), IWST-180129B,2>1
57	N028482-014AMSD,M	14	1000	Unknown		02/08/2018 17:01	Finished	MSD (5ppb), IWST-180129B,2>
58	N028505-007A,SAMP	15	1000	Unknown		02/08/2018 17:10	Finished	SAMP,0.005>10mL
59	N028505-007AMS,MS	16	1000	Unknown		02/08/2018 17:20	Finished	MS (5ppb), IWST-180129B,0.0
60	CCV-5,CCV,1,	17	1000	Unknown		02/08/2018 17:29	Finished	CCV @5ppb, IWST-180129A

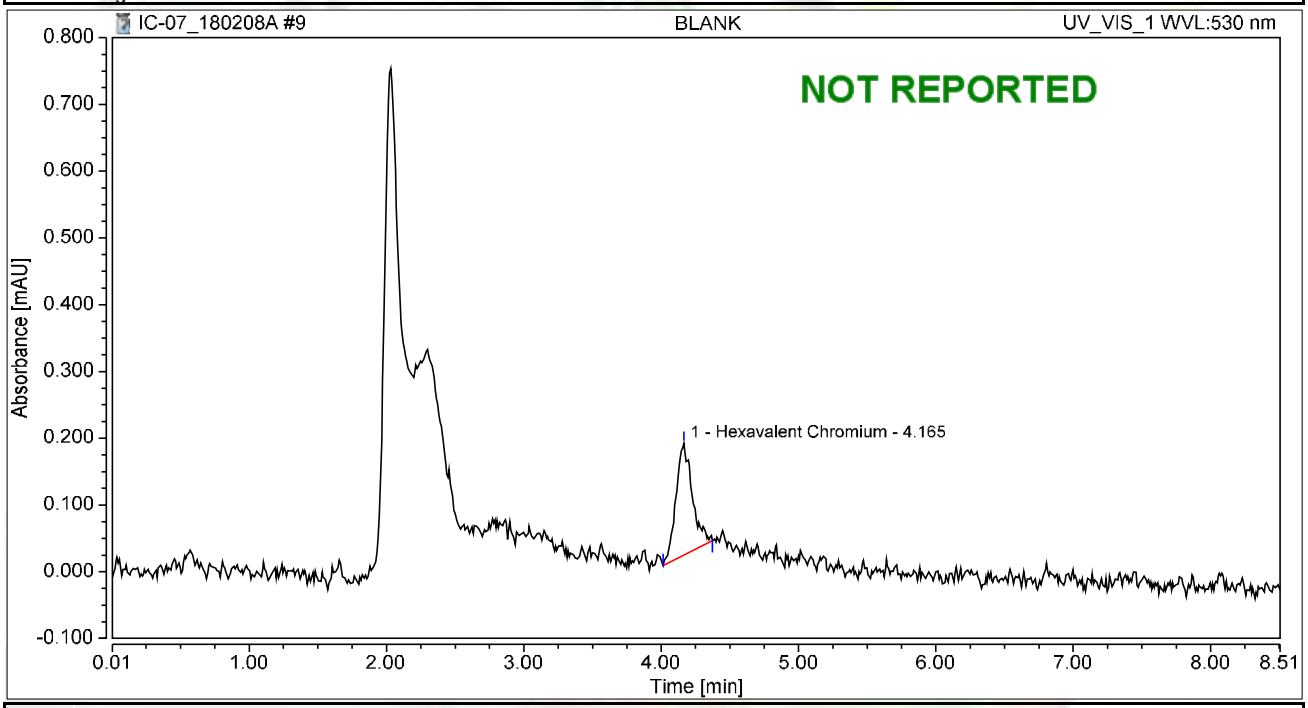
61	CCB-5,CCB,1,	18	1000	Unknown		02/08/2018 17:38	Finished	CCB R180115C
62	N028505-002A,SAMF	19	1000	Unknown		02/08/2018 17:48	Finished	SAMP,0.05>10mL
63	N028505-003A,SAMF	20	1000	Unknown		02/08/2018 17:57	Finished	SAMP,0.05>10mL
64	N028505-004A,SAMF	21	1000	Unknown		02/08/2018 18:07	Finished	SAMP,0.02>10mL
65	N028505-005A,SAMF	22	1000	Unknown		02/08/2018 18:16	Finished	SAMP,0.005>10mL
66	N028505-006A,SAMF	23	1000	Unknown		02/08/2018 18:26	Finished	SAMP,0.005>10mL
67	N028421-003A,SAMF	24	1000	Unknown		02/08/2018 18:35	Finished	SAMP,10mL
68	N028421-003AMS,MS	25	1000	Unknown		02/08/2018 18:45	Finished	MS (1ppb), IWST-180129B,10
69	N028421-005A,SAMF	26	1000	Unknown		02/08/2018 18:54	Finished	SAMP,10mL
70	N028421-005AMS,MS	27	1000	Unknown		02/08/2018 19:04	Finished	MS (1ppb), IWST-180129B,10
71	N028421-008A,SAMF	28	1000	Unknown		02/08/2018 19:13	Finished	SAMP,2>10mL
72	CCV-6,CCV1,1,	29	1000	Unknown		02/08/2018 19:23	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	30	1000	Unknown		02/08/2018 19:32	Finished	CCB R180115C
74	N028421-008AMS,MS	31	1000	Unknown		02/08/2018 19:41	Finished	MS (5ppb), IWST-180129B,2>1
75	N028421-009A,SAMF	32	1000	Unknown		02/08/2018 19:51	Finished	SAMP,10mL
76	N028421-009AMS,MS	33	1000	Unknown		02/08/2018 20:00	Finished	MS (1ppb), IWST-180129B,10
77	N028453-009A,SAMF	34	1000	Unknown		02/08/2018 20:10	Finished	SAMP,10mL
78	N028453-009AMS,MS	35	1000	Unknown		02/08/2018 20:19	Finished	MS (1ppb), IWST-180129B,10
79	N028454-001A,SAMF	36	1000	Unknown		02/08/2018 20:29	Finished	SAMP,10mL
80	N028454-001AMS,MS	37	1000	Unknown		02/08/2018 20:38	Finished	MS (1ppb), IWST-180129B,10
81	N028454-003A,SAMF	38	1000	Unknown		02/08/2018 20:48	Finished	SAMP,10mL
82	N028454-003AMS,MS	39	1000	Unknown		02/08/2018 20:57	Finished	MS (1ppb), IWST-180129B,10
83	CCV-7,CCV,1,	40	1000	Unknown		02/08/2018 21:07	Finished	CCV @5ppb, IWST-180129A
84	CCB-7,CCB,1,	41	1000	Unknown		02/08/2018 21:16	Finished	CCB R180115C
85	SHUTDOWN	42	1000	Unknown		02/08/2018 21:25	Finished	
86	Eluent: R180208A	43	1000	Unknown		n.a.	Finished	Eluent
87	PCR: R180208B	44	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 09:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

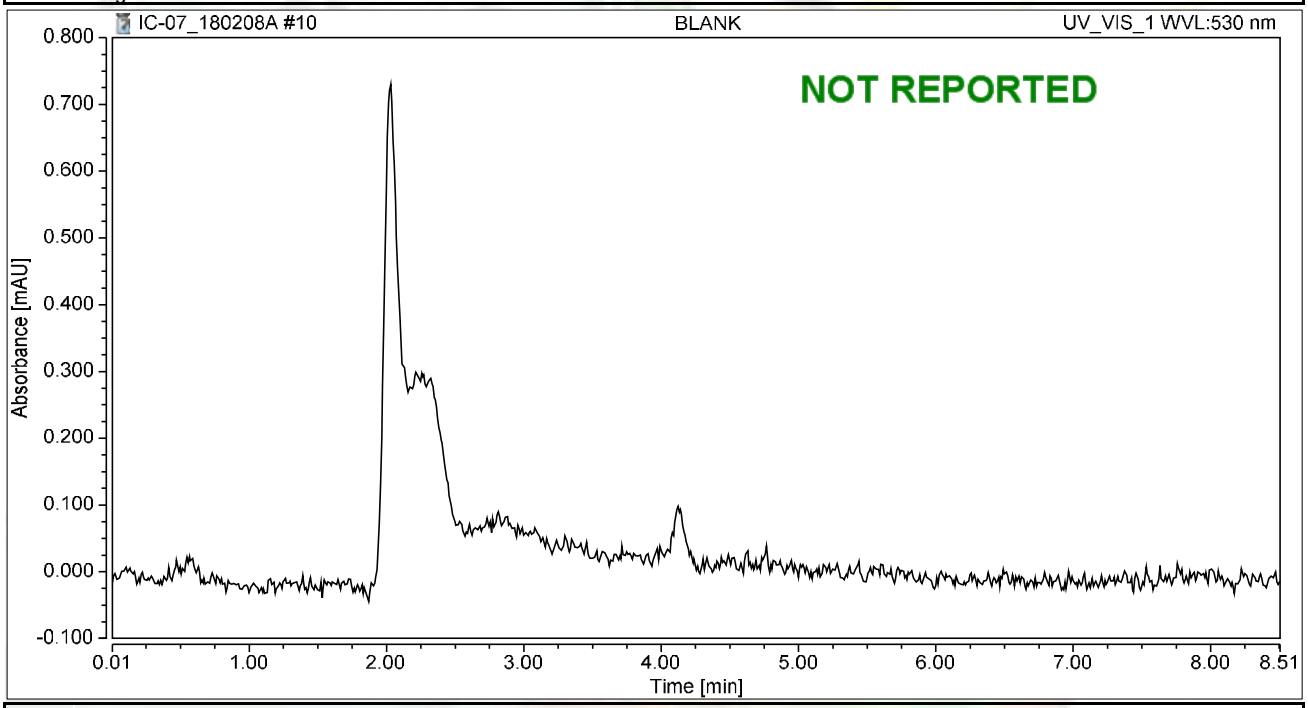
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.023	0.167	100.00	100.00	0.0924
Total:			**0.023**	**0.167**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

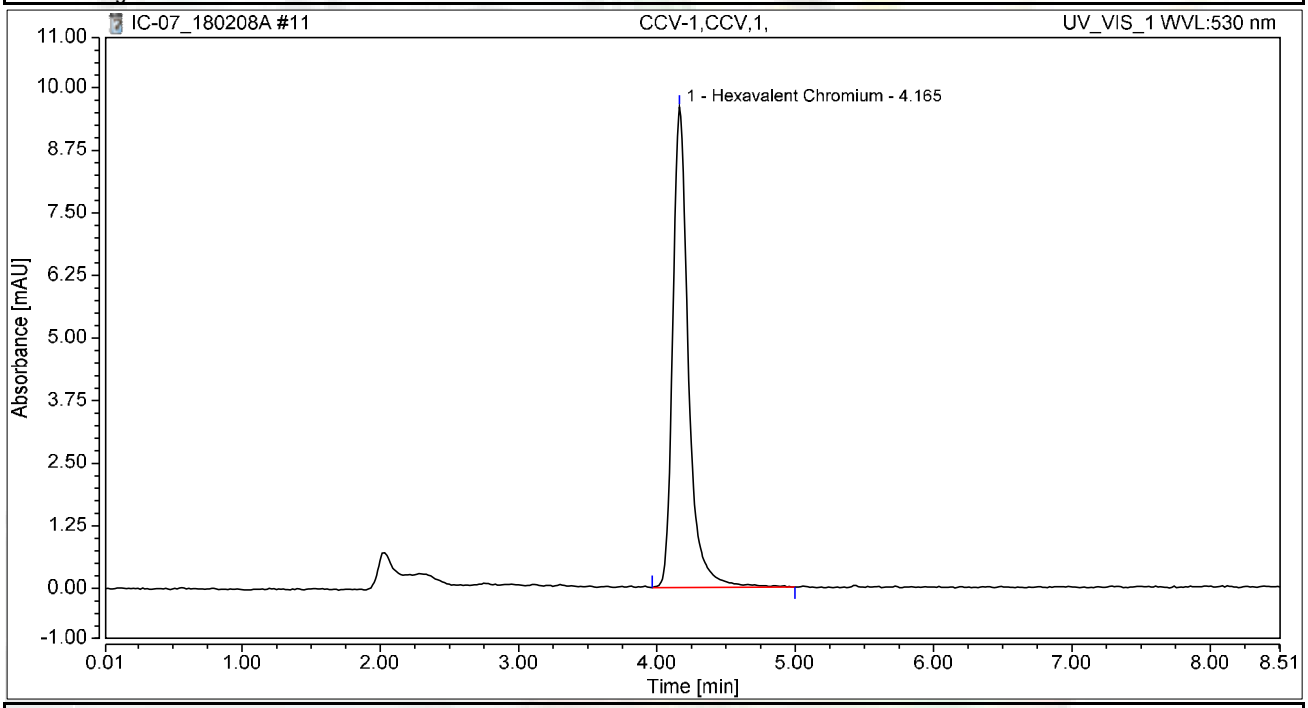
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

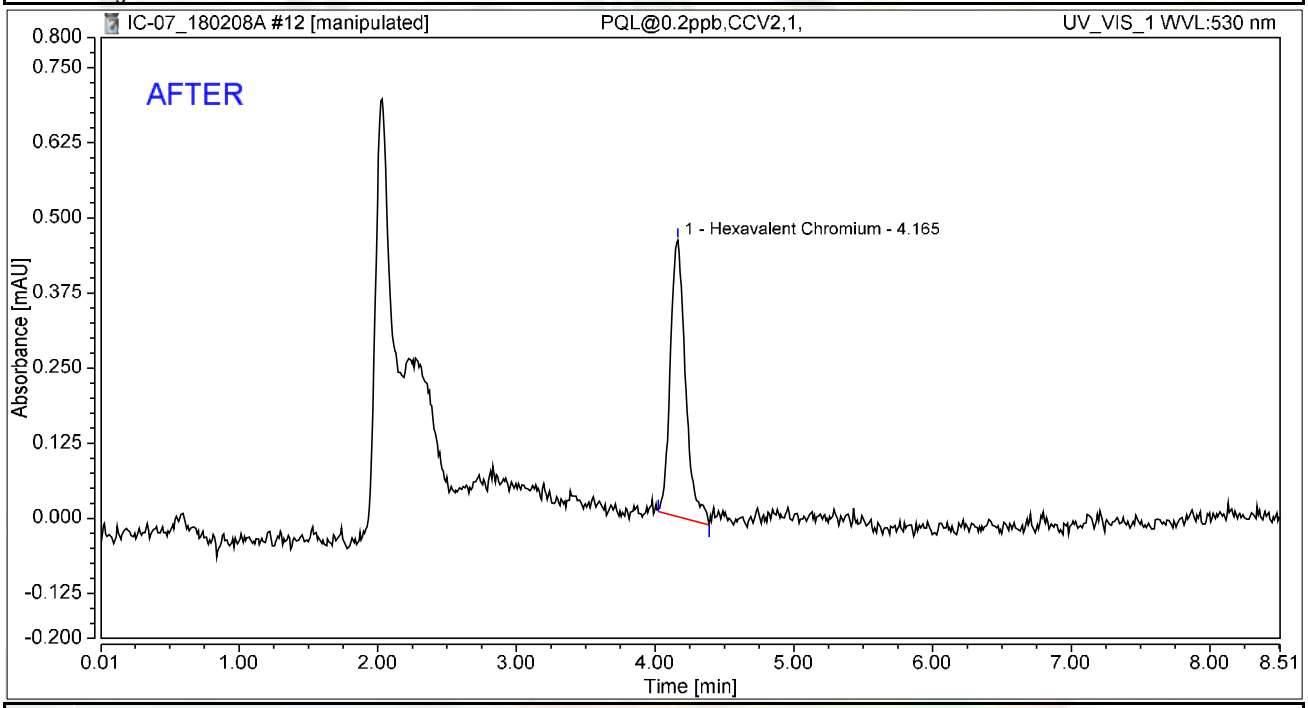
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.262	9.595	100.00	100.00	5.0551
Total:			**1.262**	**9.595**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.460	100.00	100.00	0.2340
Total:			**0.058**	**0.460**	**100.00**	**100.00**	

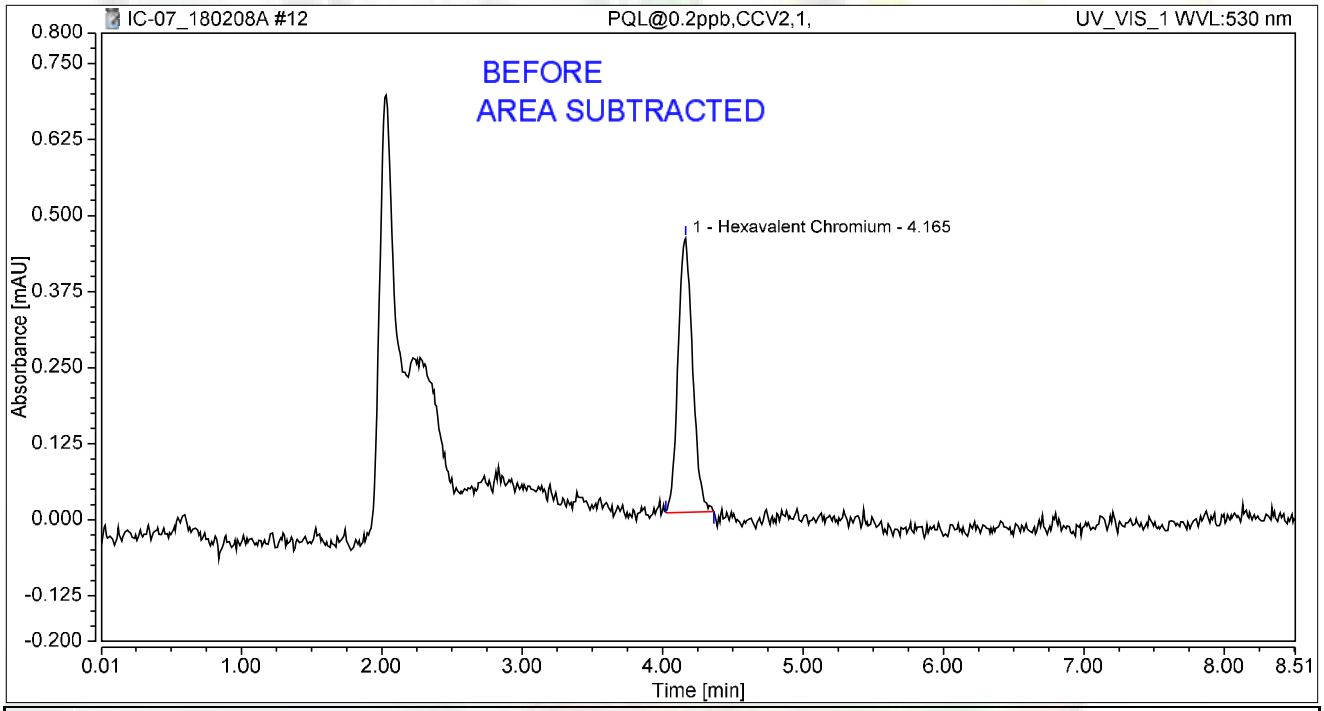
rba 2/14/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.054	0.451	100.00	100.00	0.2168
Total:			**0.054**	**0.451**	**100.00**	**100.00**	

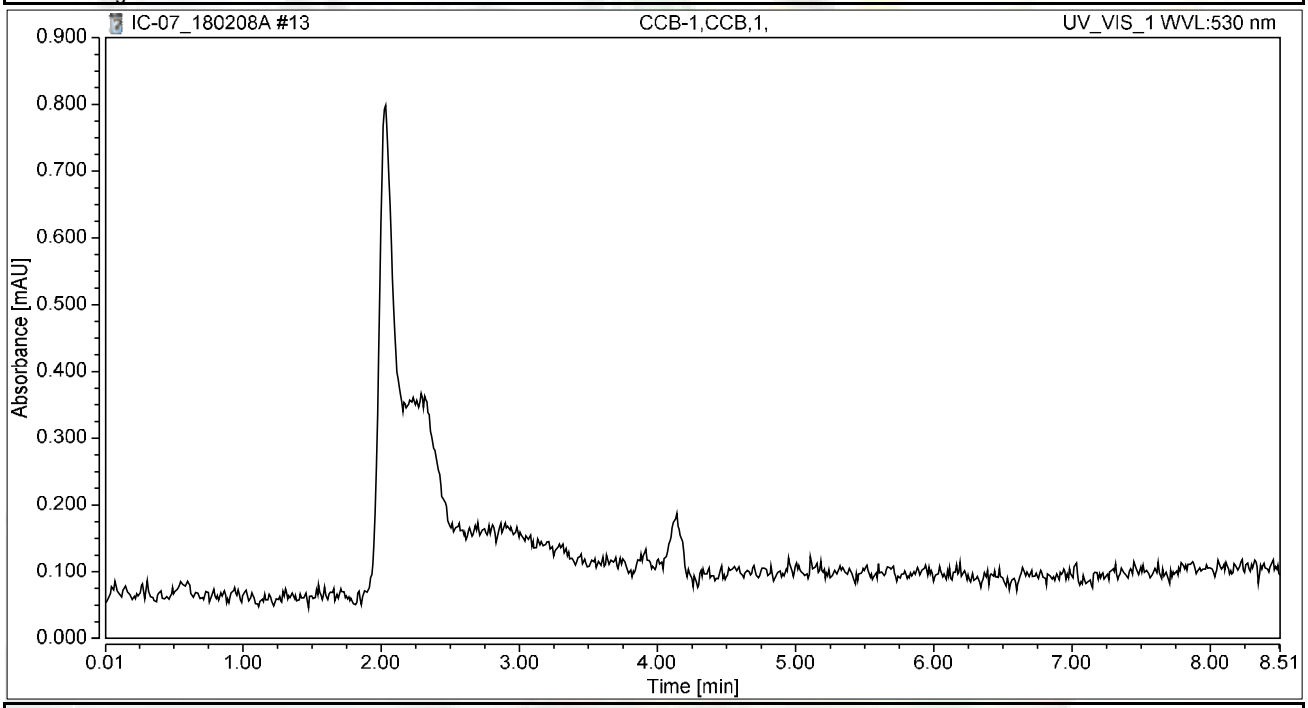
rba 2/14/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

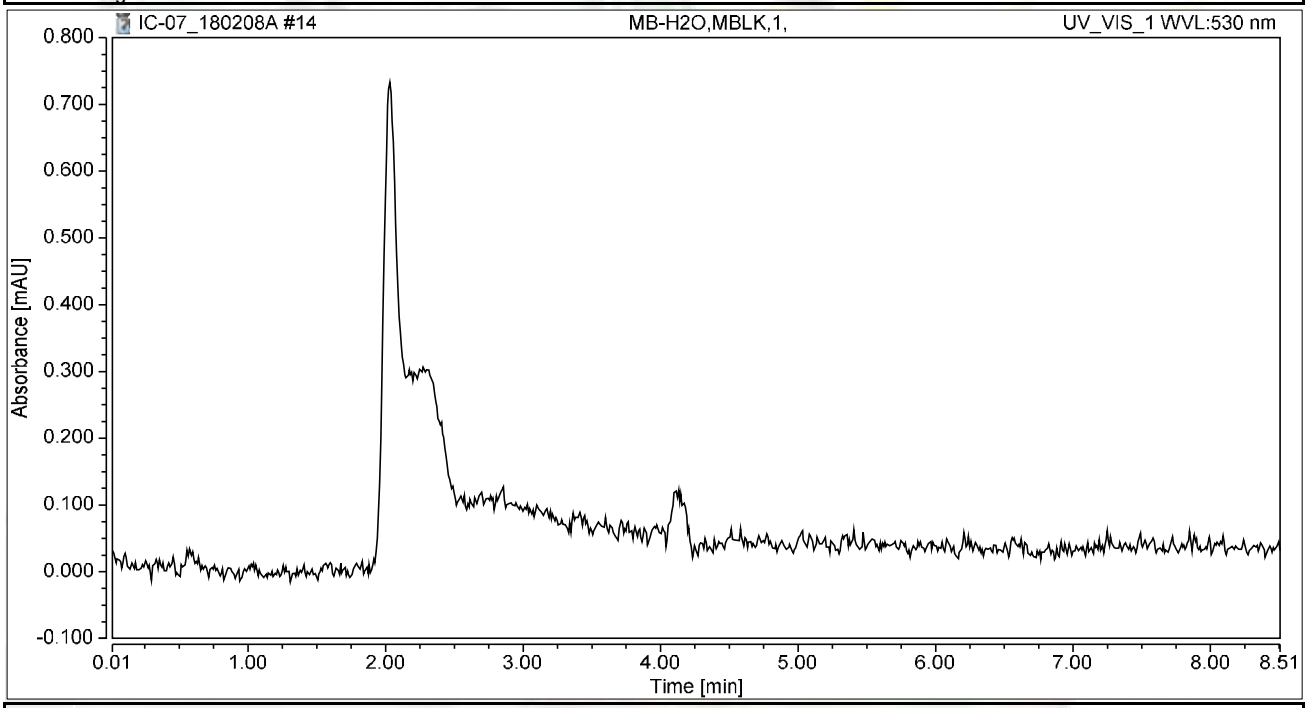
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

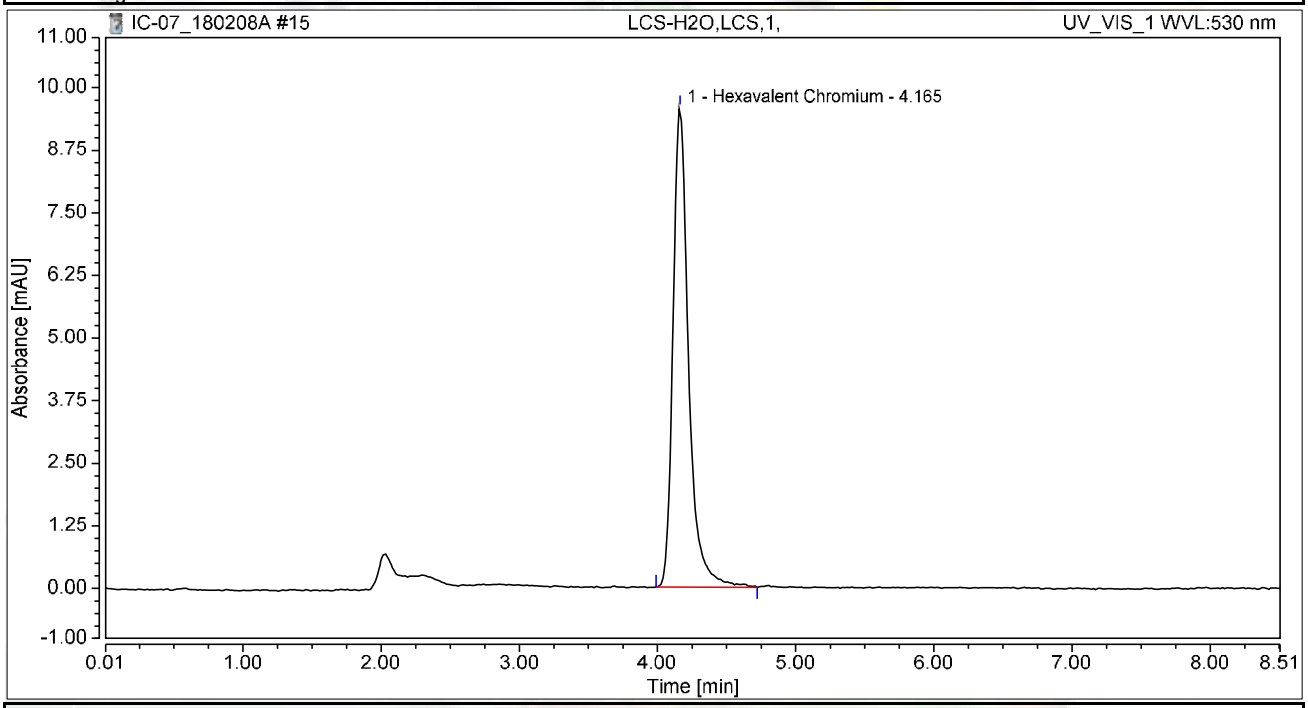
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

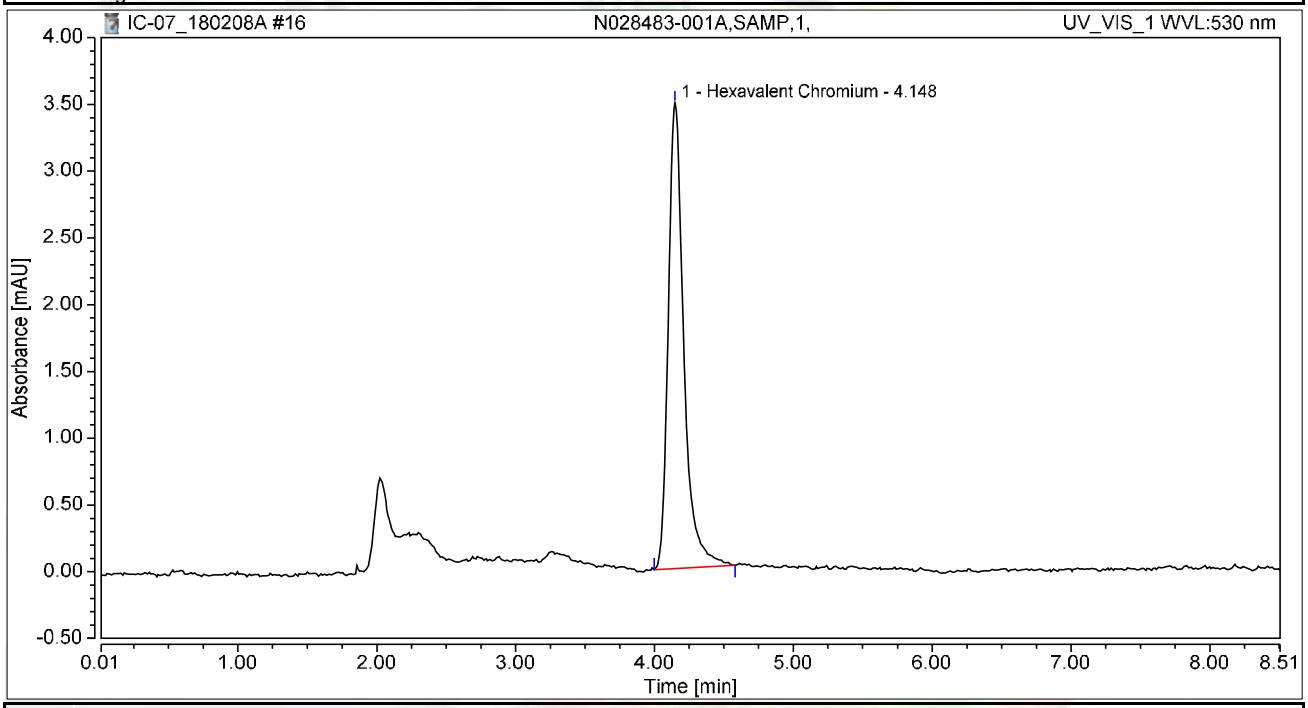
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.249	9.578	100.00	100.00	5.0039
Total:			**1.249**	**9.578**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028483-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 10:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

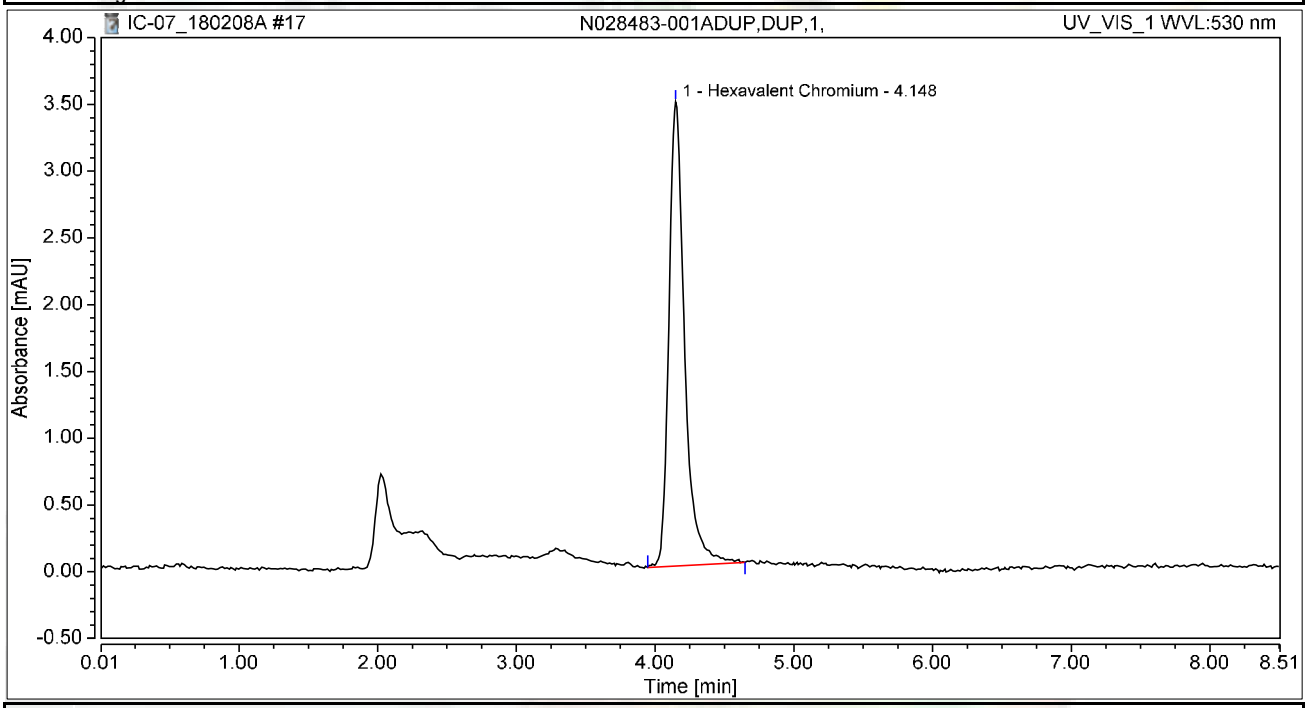
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.453	3.488	100.00	100.00	1.8161
Total:			**0.453**	**3.488**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028483-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 10:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

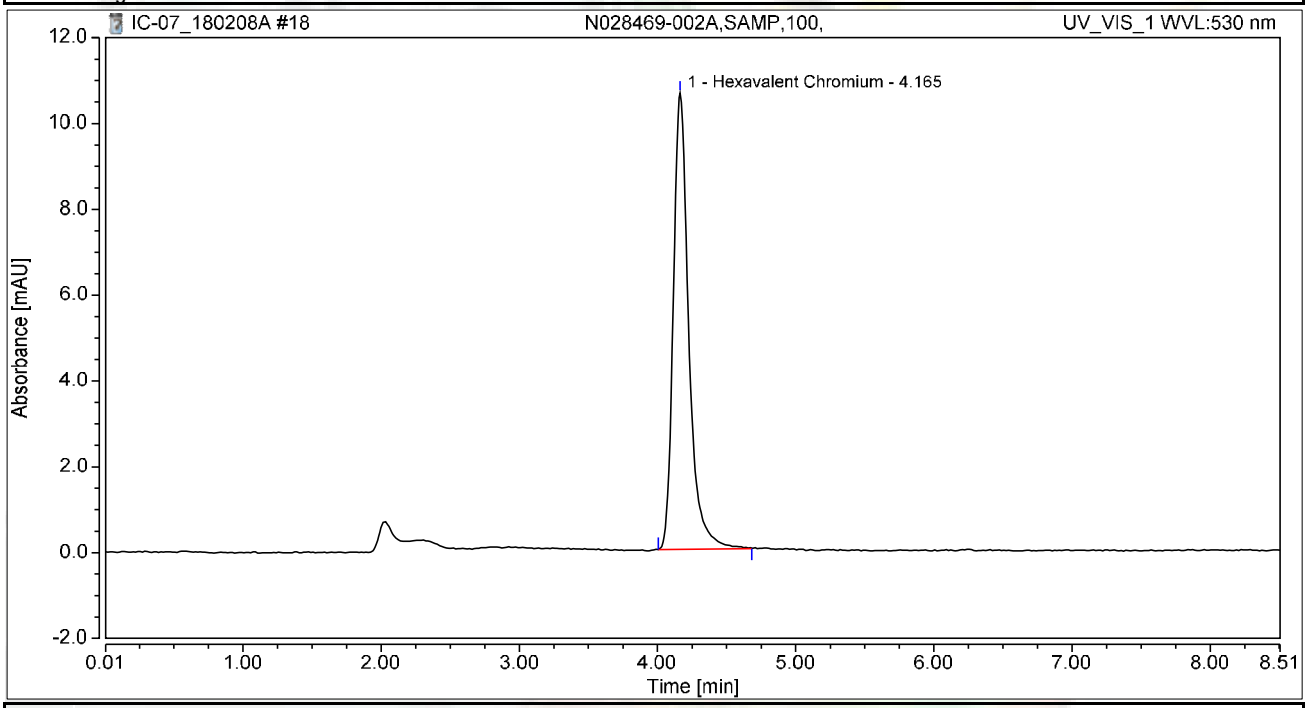
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.457	3.475	100.00	100.00	1.8296
Total:			**0.457**	**3.475**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028469-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

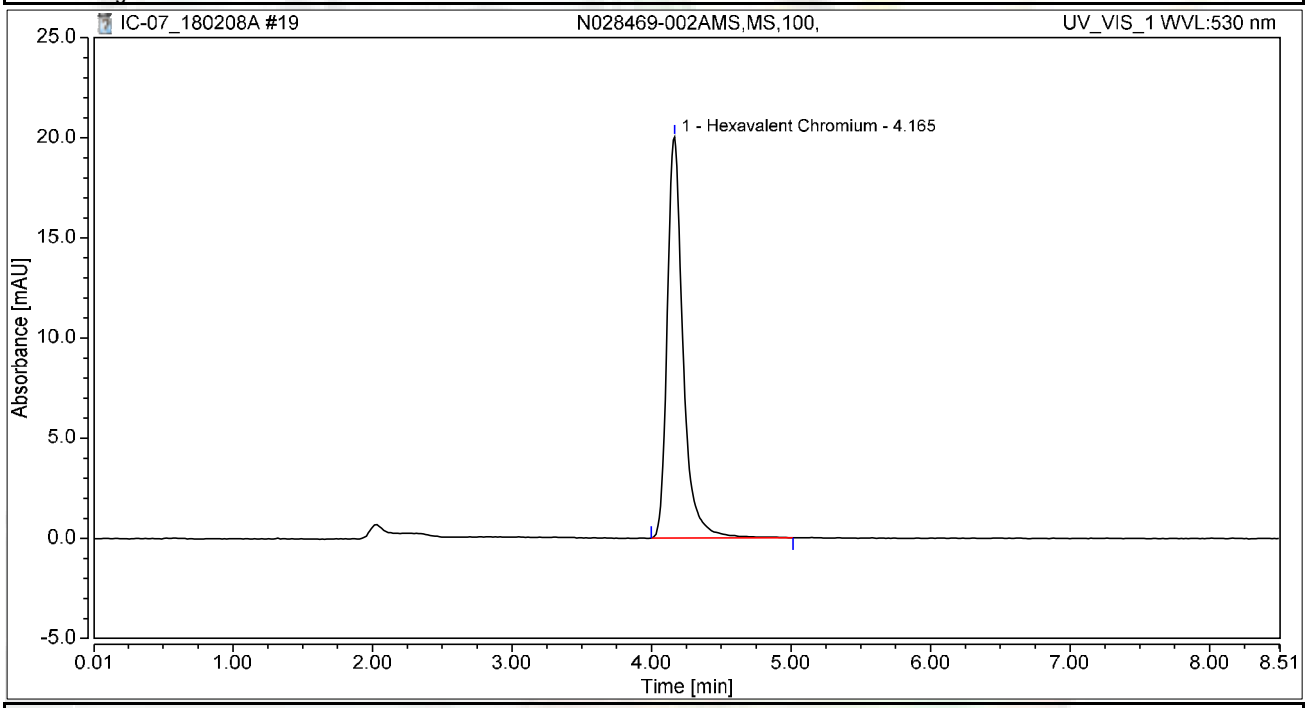
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.377	10.630	100.00	100.00	5.5157
Total:			**1.377**	**10.630**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028469-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

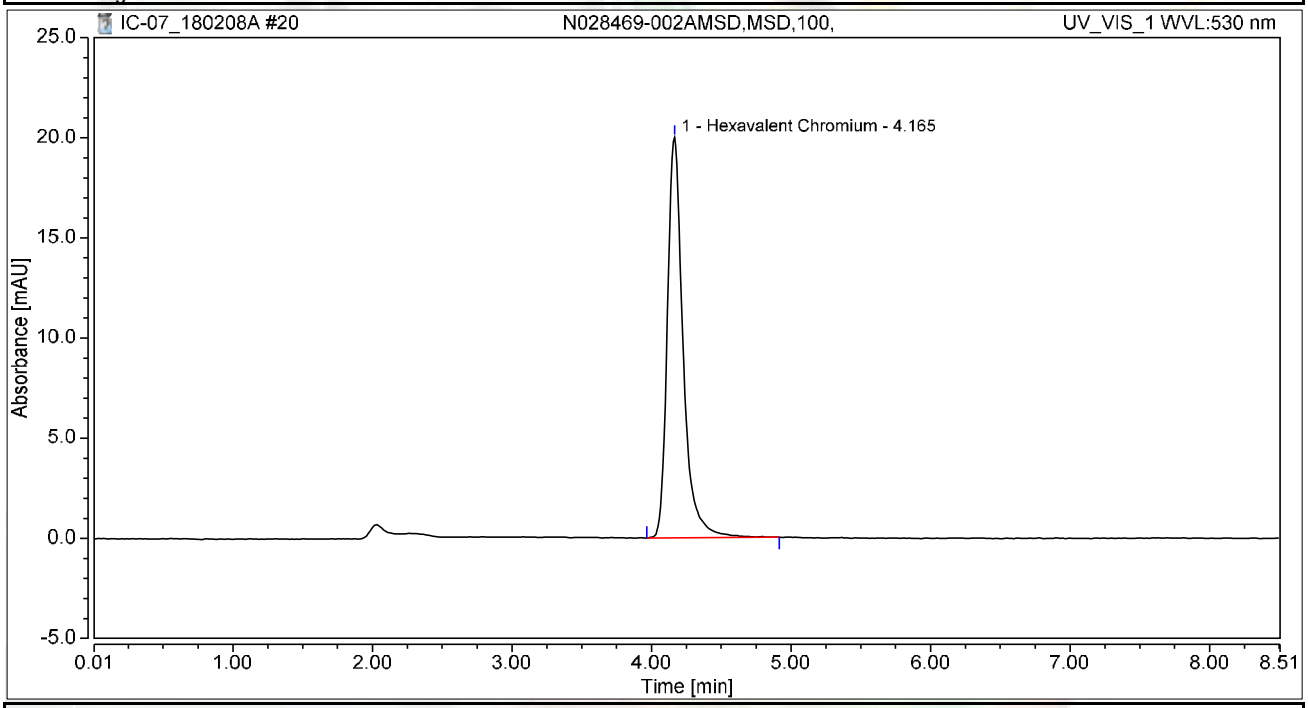
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.638	20.038	100.00	100.00	10.5680
Total:			**2.638**	**20.038**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028469-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

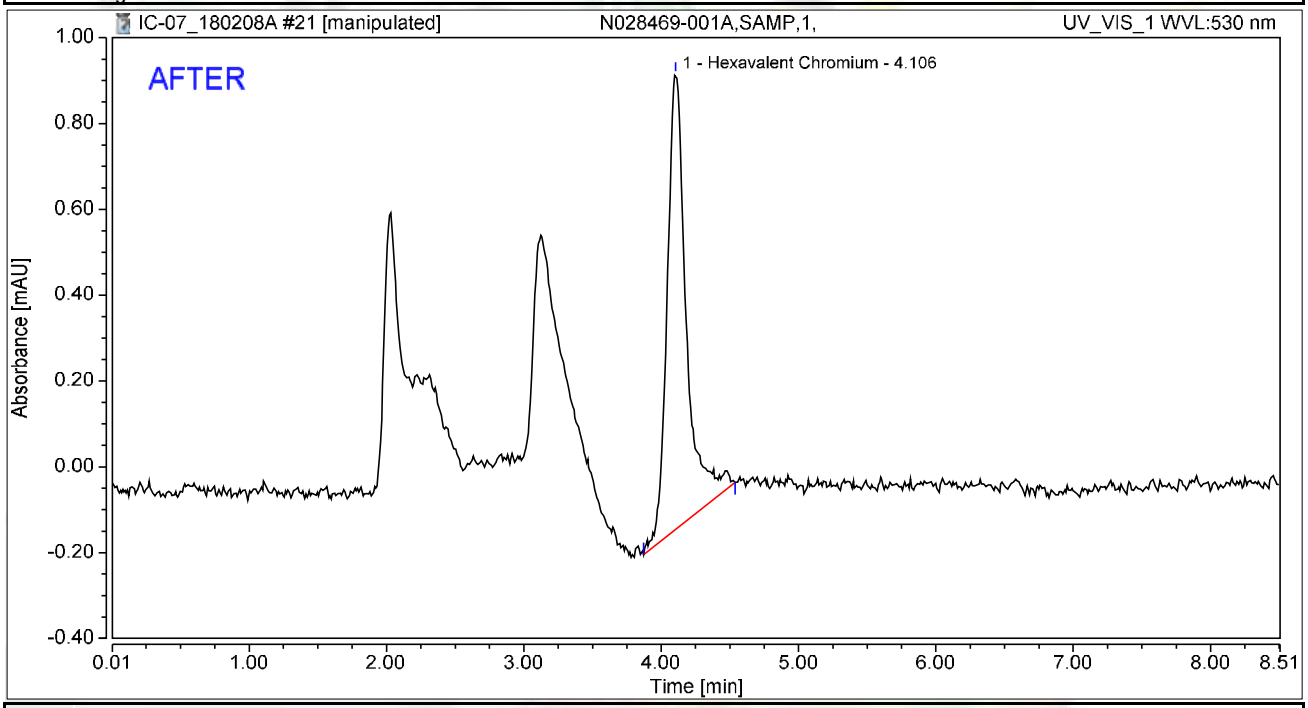
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.622	20.006	100.00	100.00	10.5015
Total:			**2.622**	**20.006**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028469-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.174	1.060	100.00	100.00	0.6951
Total:			**0.174**	**1.060**	**100.00**	**100.00**	

rba 2/14/2018

Reviewed by: Nancy 2/16/2018

My first report/Integration

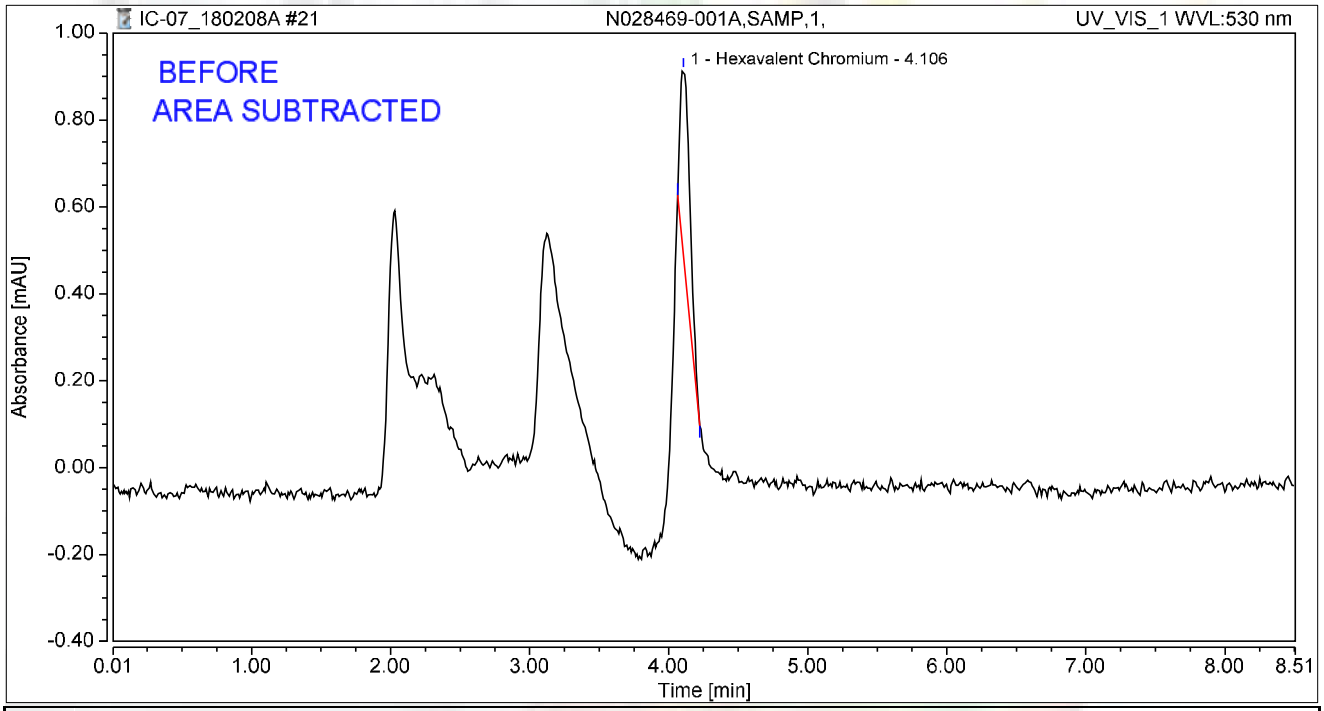
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N028469-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.036	0.428	100.00	100.00	0.1456
Total:			**0.036**	**0.428**	**100.00**	**100.00**	

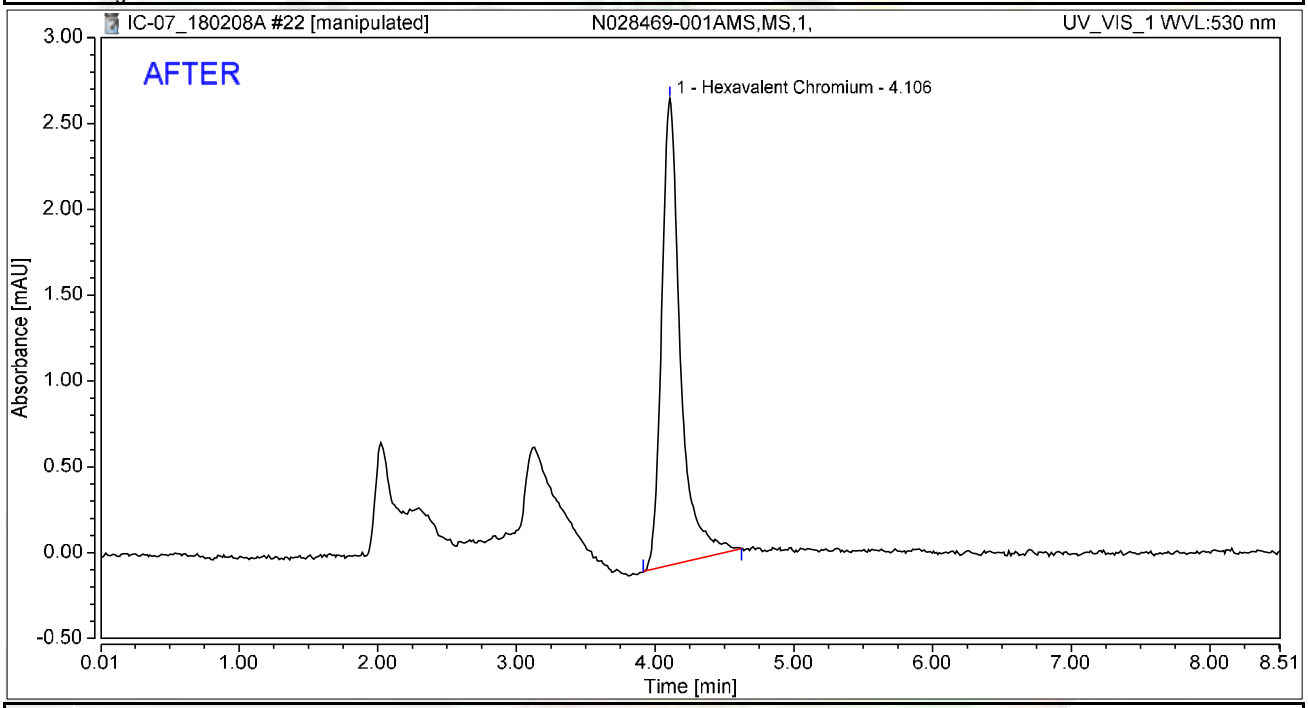
rba 2/14/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028469-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.427	2.719	100.00	100.00	1.7121
Total:			**0.427**	**2.719**	**100.00**	**100.00**	

rba 2/14/2018

Reviewed by: 2/16/2018

My first report/Integration

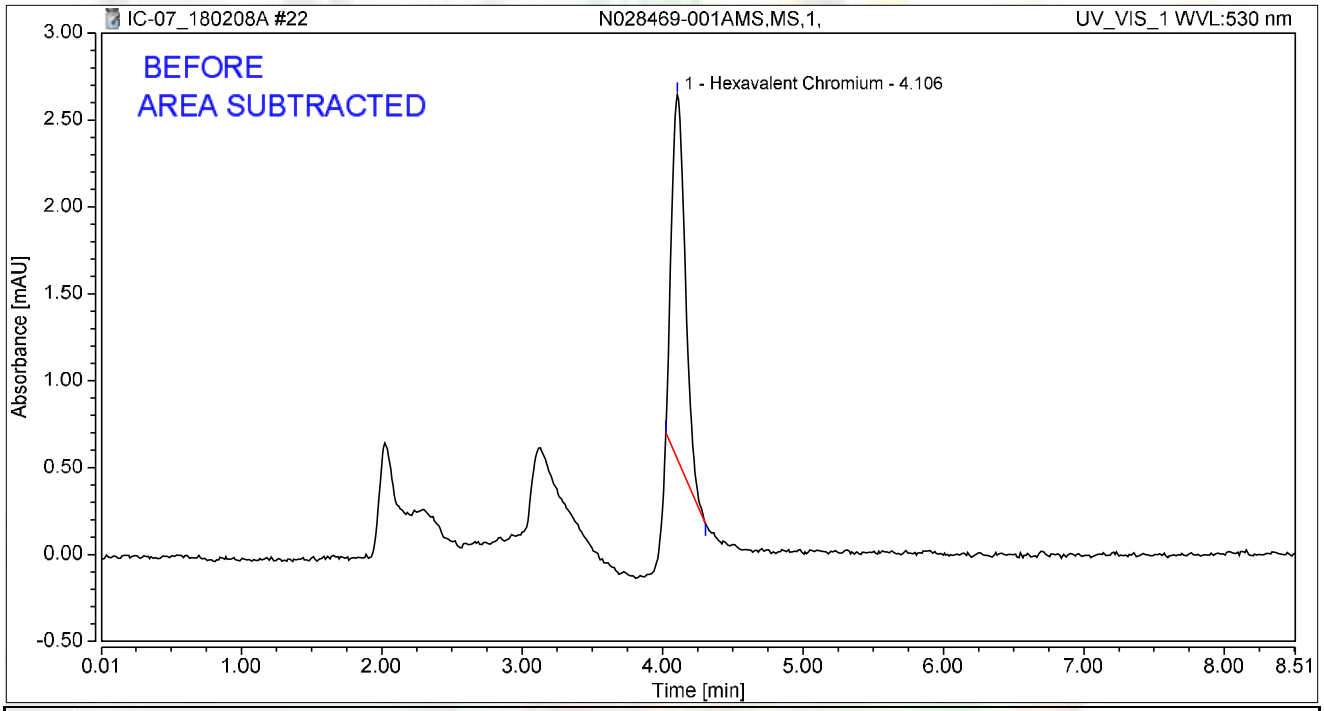
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N028469-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.240	2.098	100.00	100.00	0.9614
Total:			**0.240**	**2.098**	**100.00**	**100.00**	

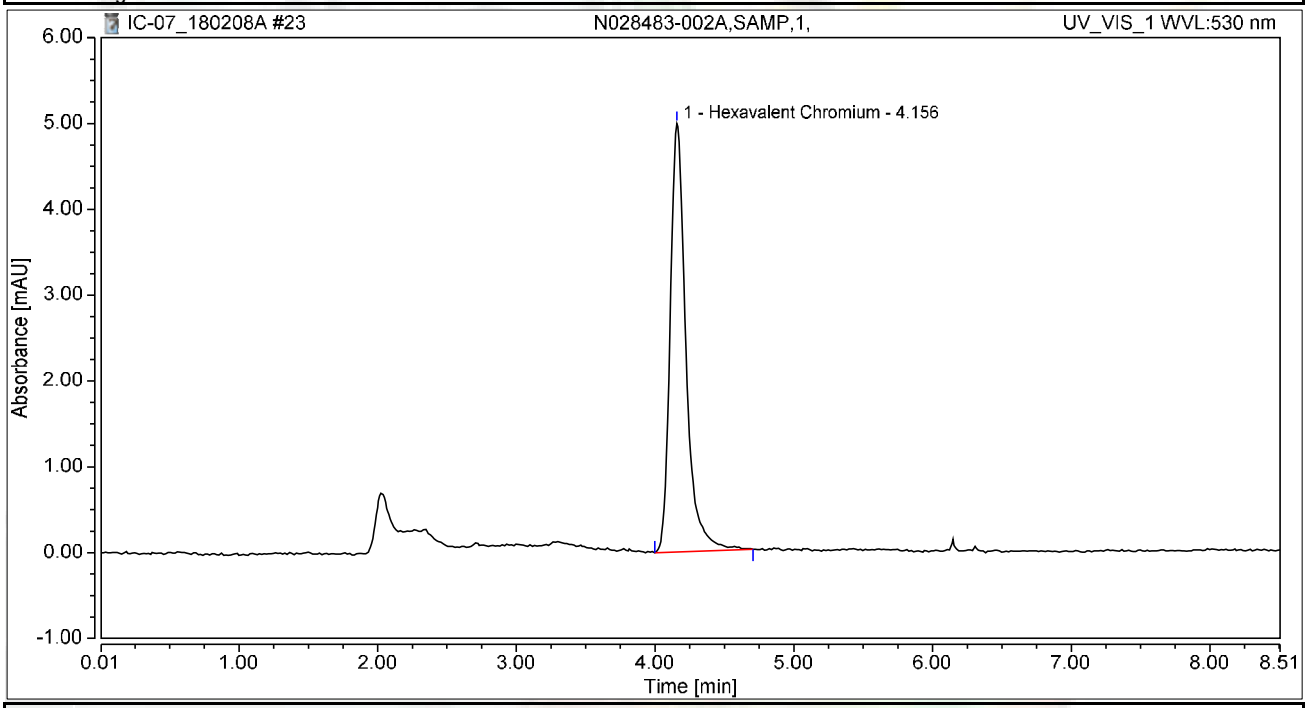
rba 2/14/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028483-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

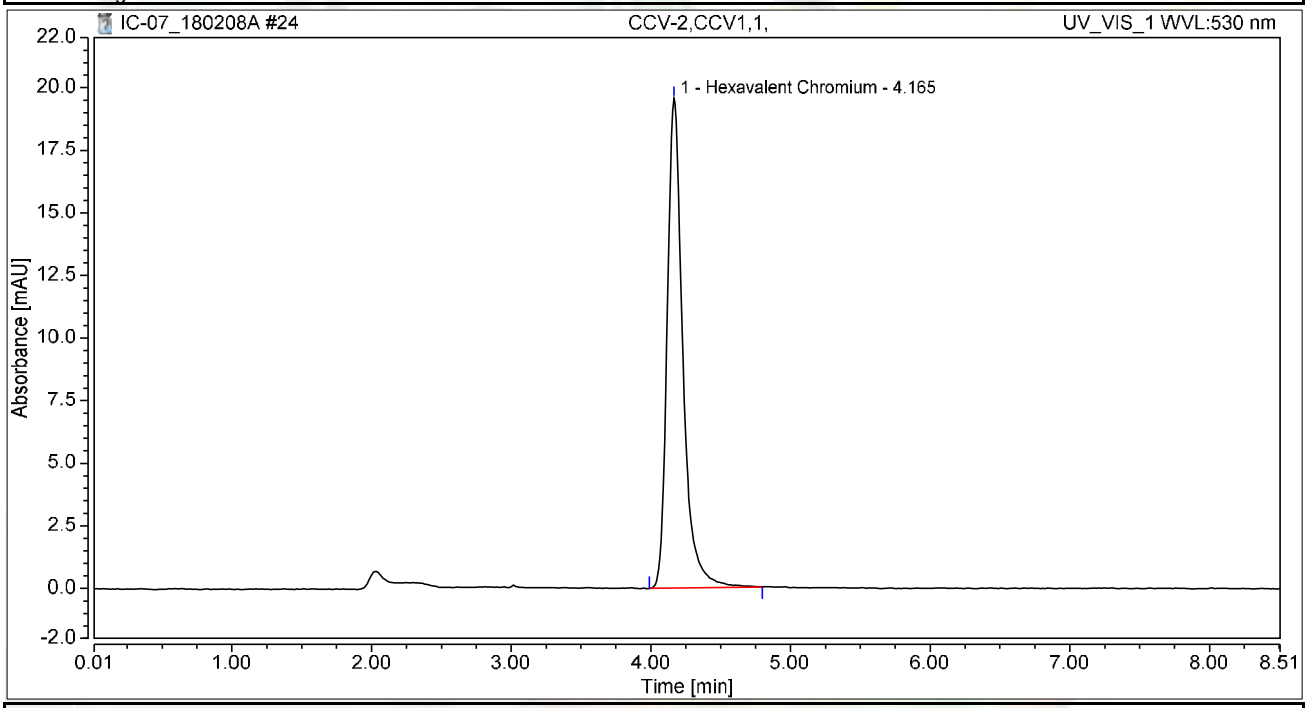
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.658	4.992	100.00	100.00	2.6375
Total:			**0.658**	**4.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

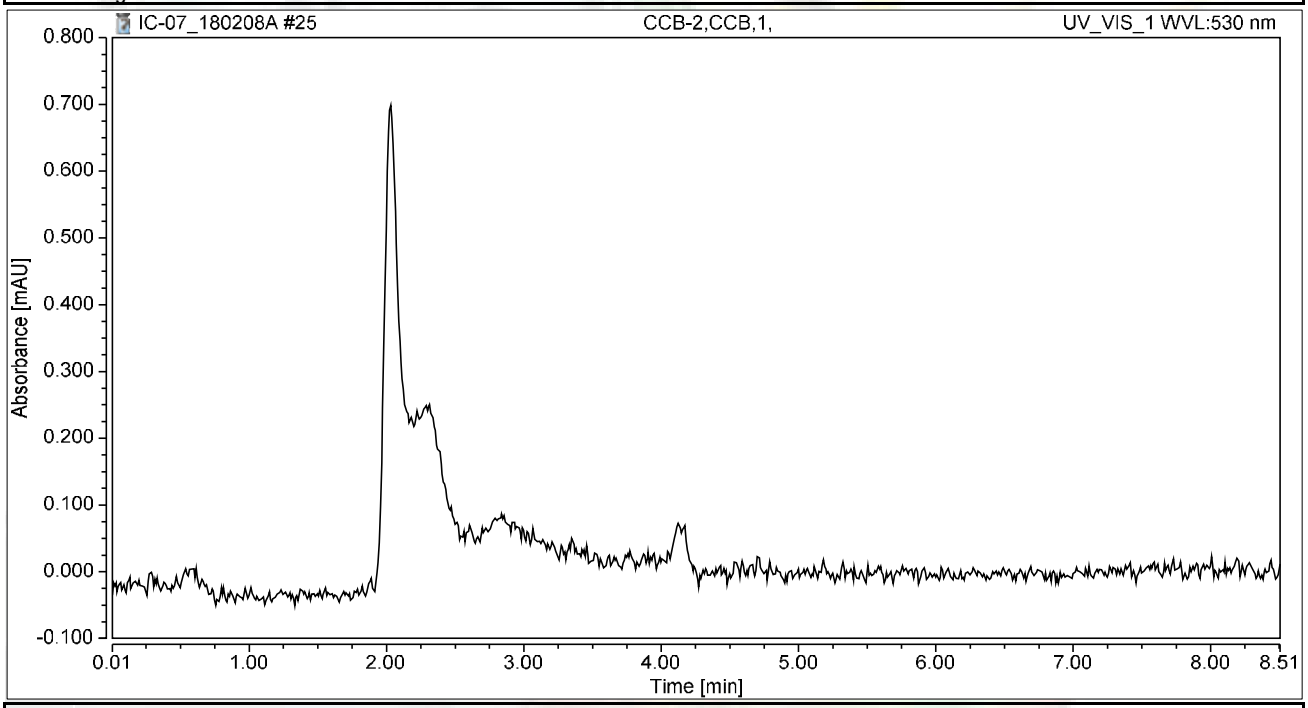
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.548	19.561	100.00	100.00	10.2048
Total:			**2.548**	**19.561**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 11:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

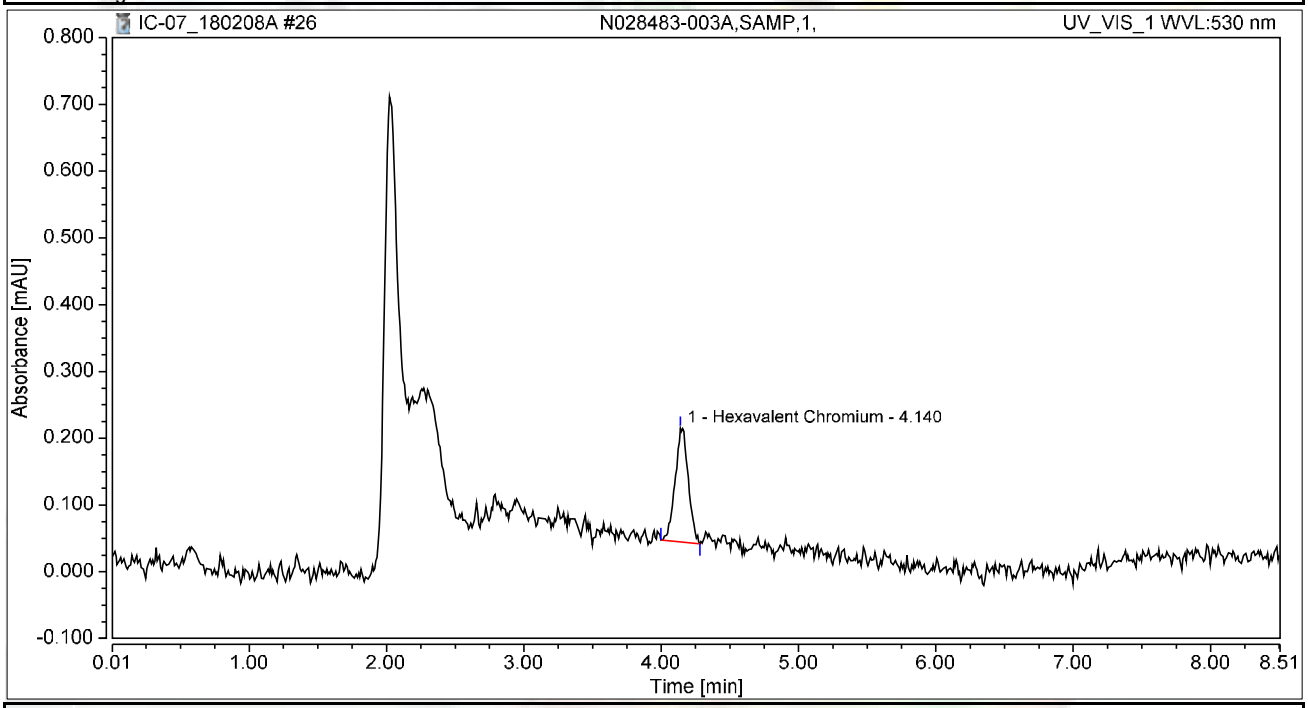
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028483-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

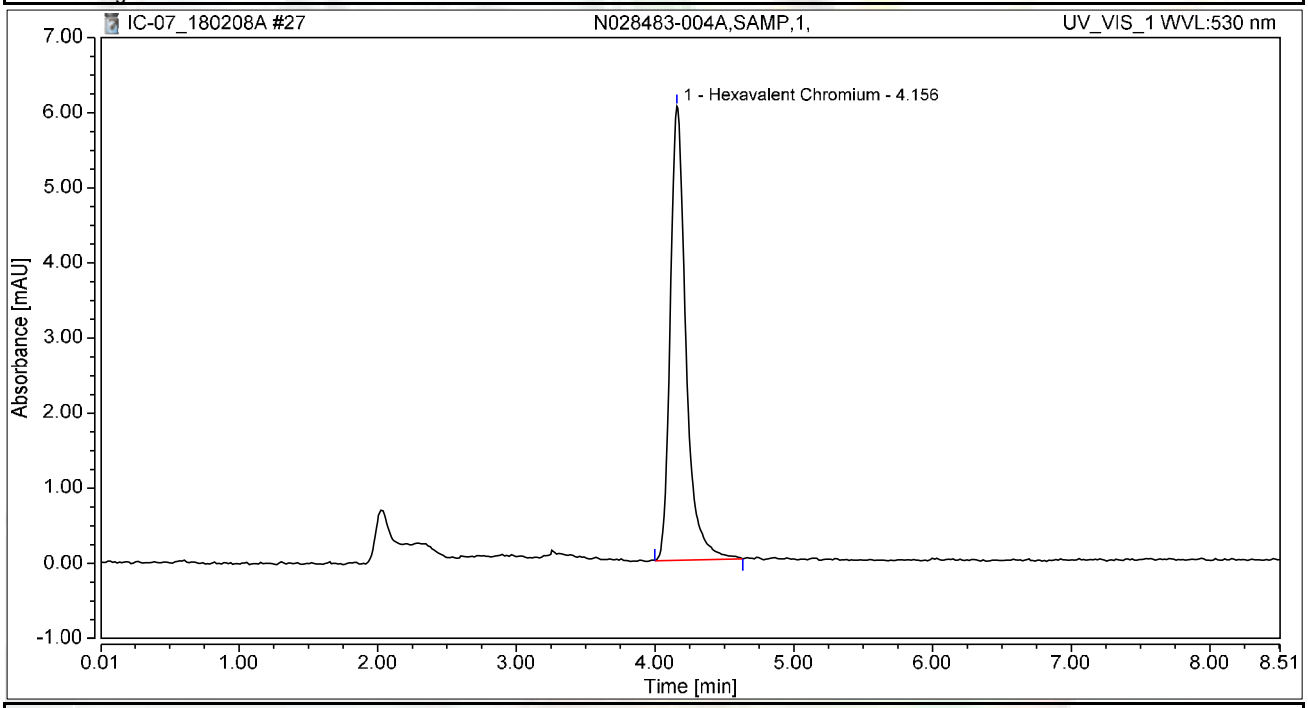
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.019	0.170	100.00	100.00	0.0755
Total:			**0.019**	**0.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028483-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

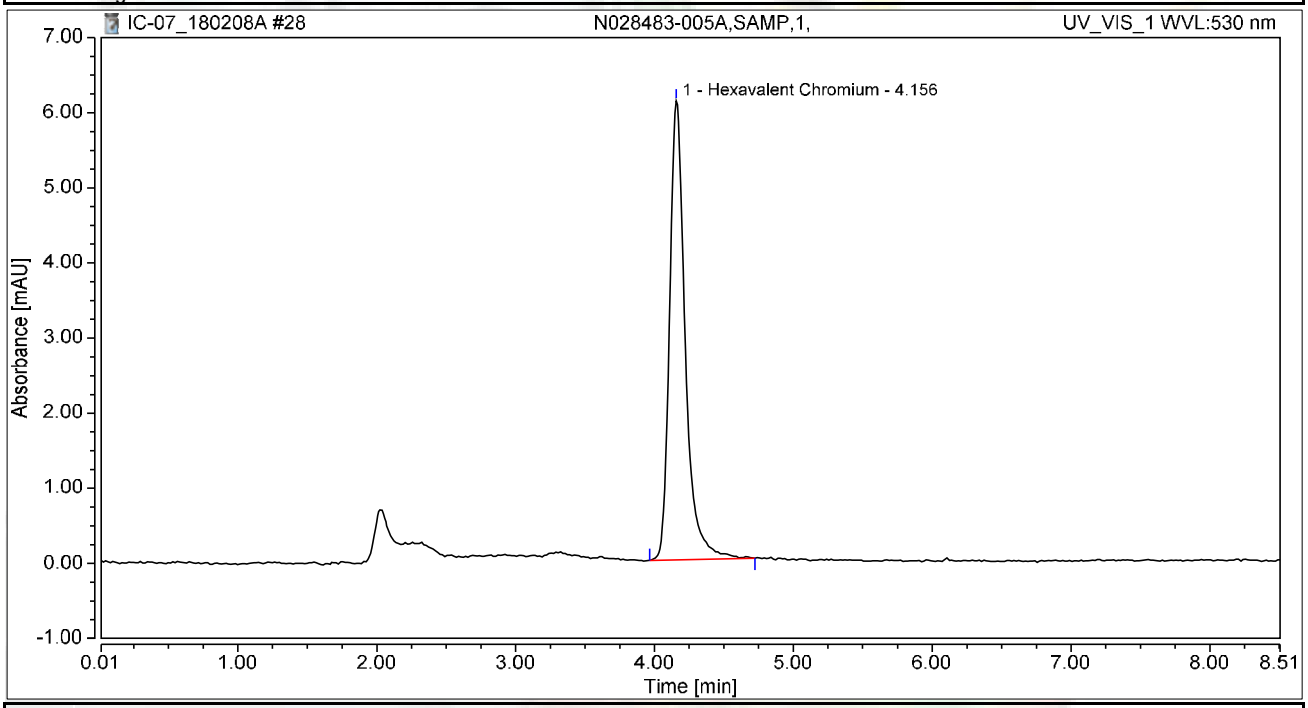
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.793	6.044	100.00	100.00	3.1780
Total:			**0.793**	**6.044**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028483-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

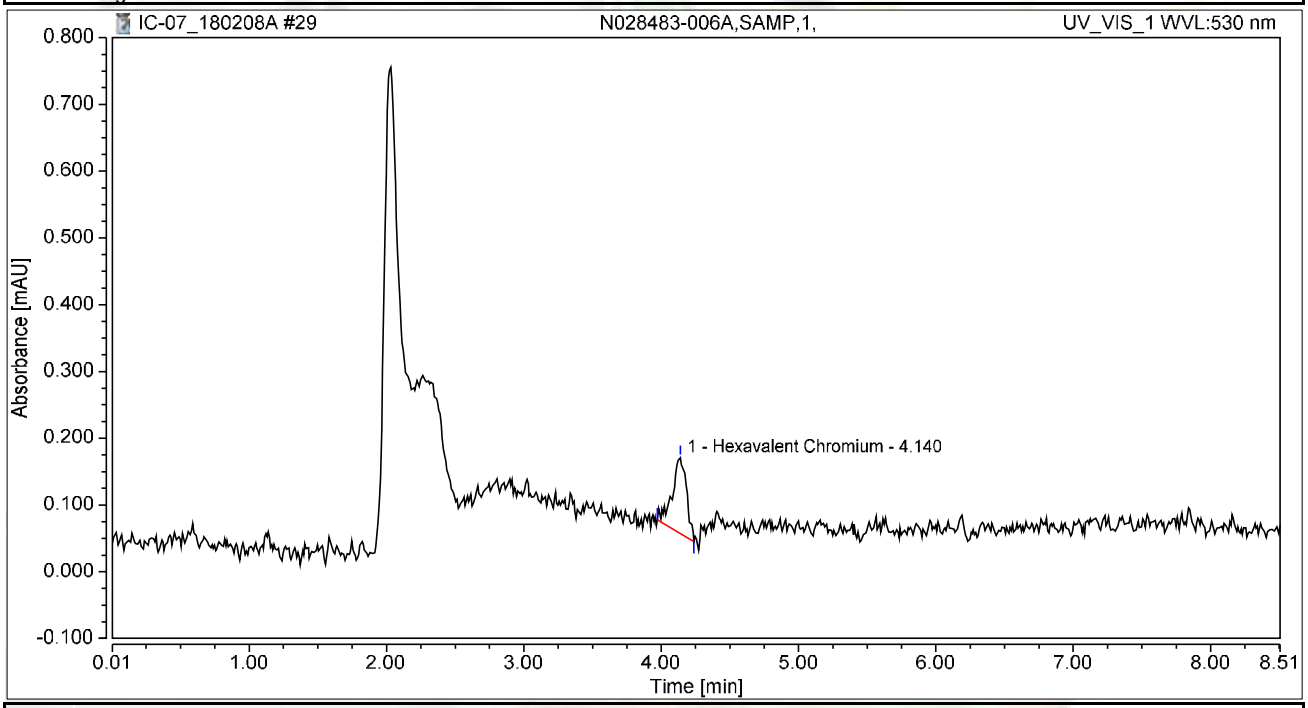
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.804	6.110	100.00	100.00	3.2190
Total:			**0.804**	**6.110**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028483-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

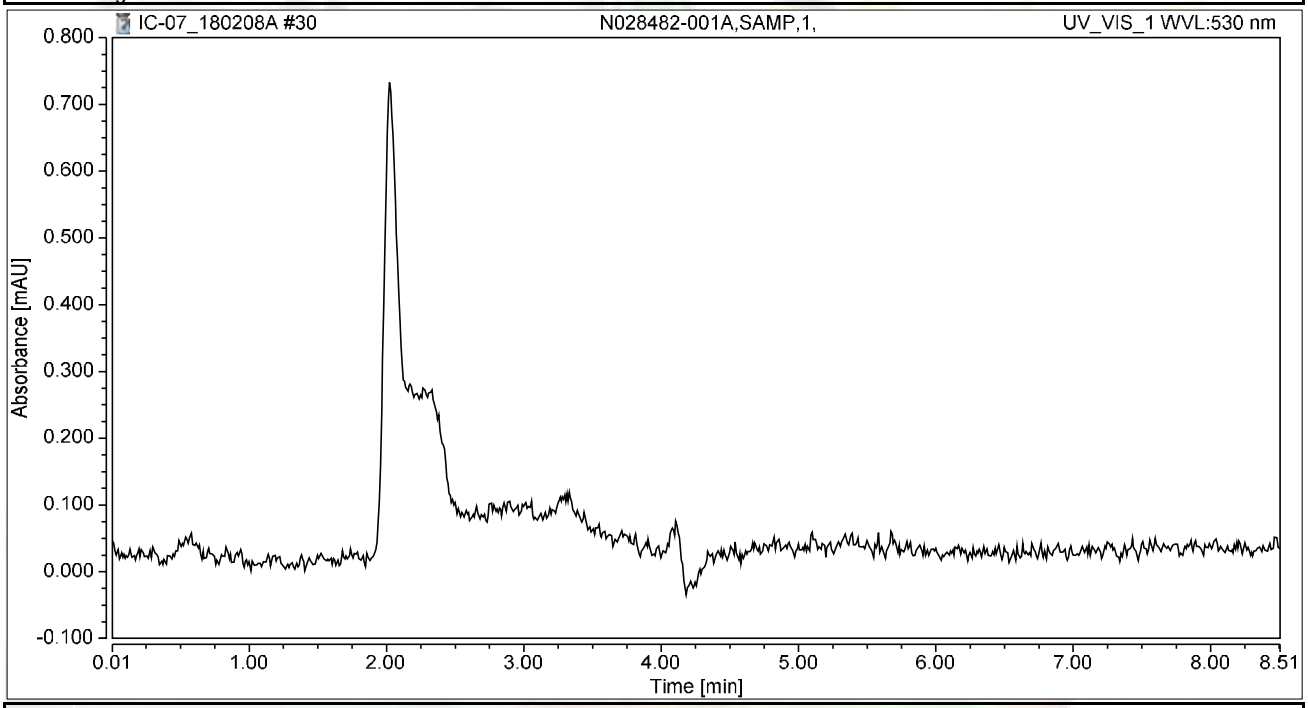
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.013	0.113	100.00	100.00	0.0537
Total:			**0.013**	**0.113**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

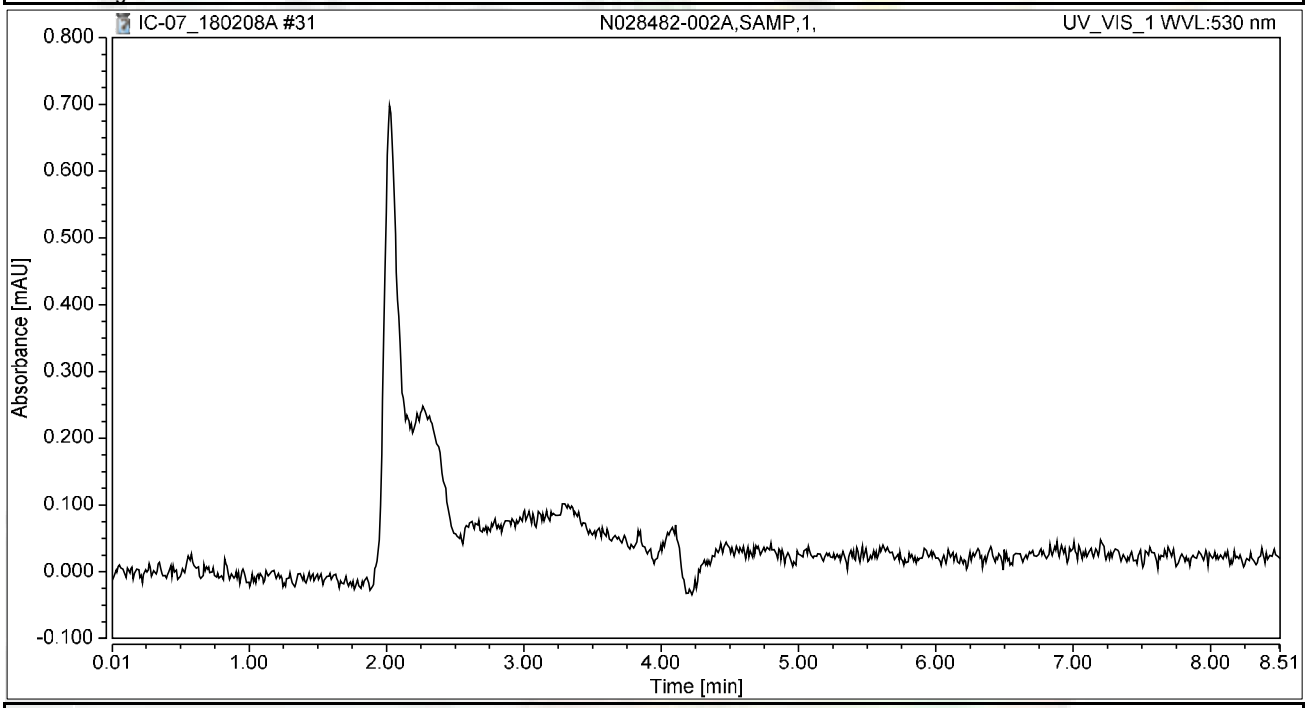
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

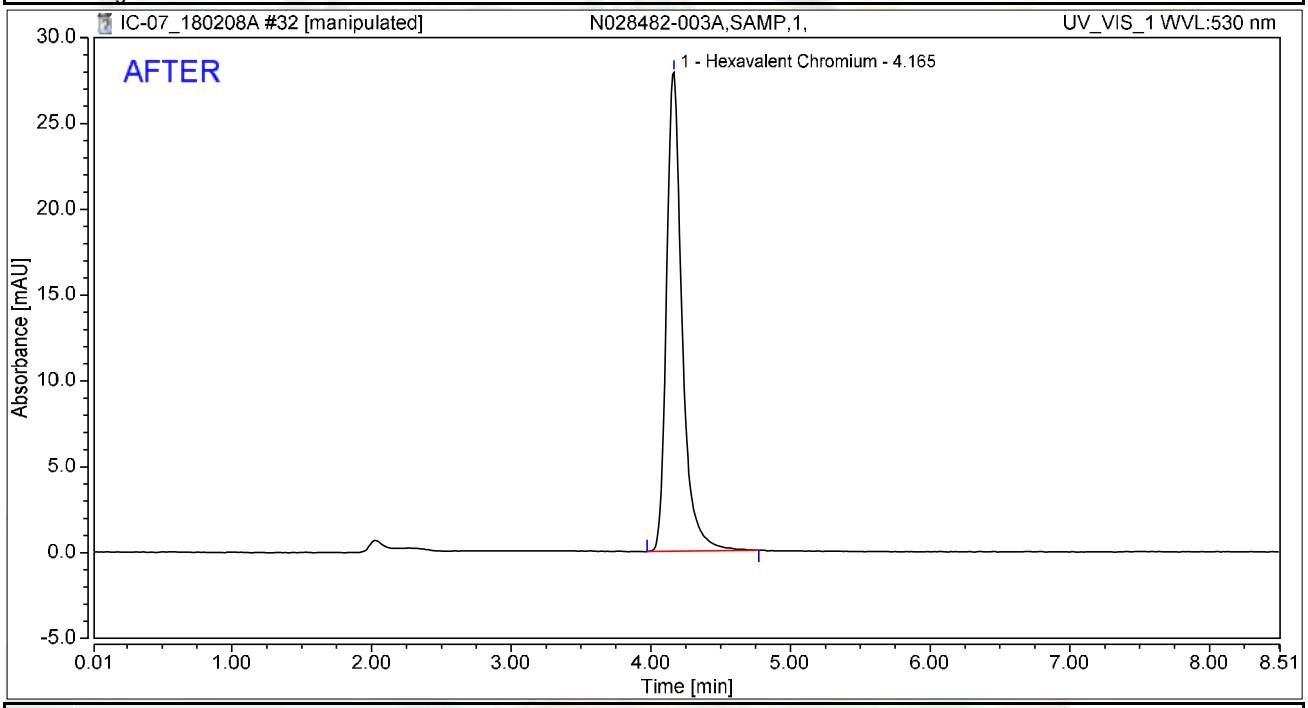
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.614	27.895	100.00	100.00	14.4768
Total:			**3.614**	**27.895**	**100.00**	**100.00**	

rba 2/14/2018

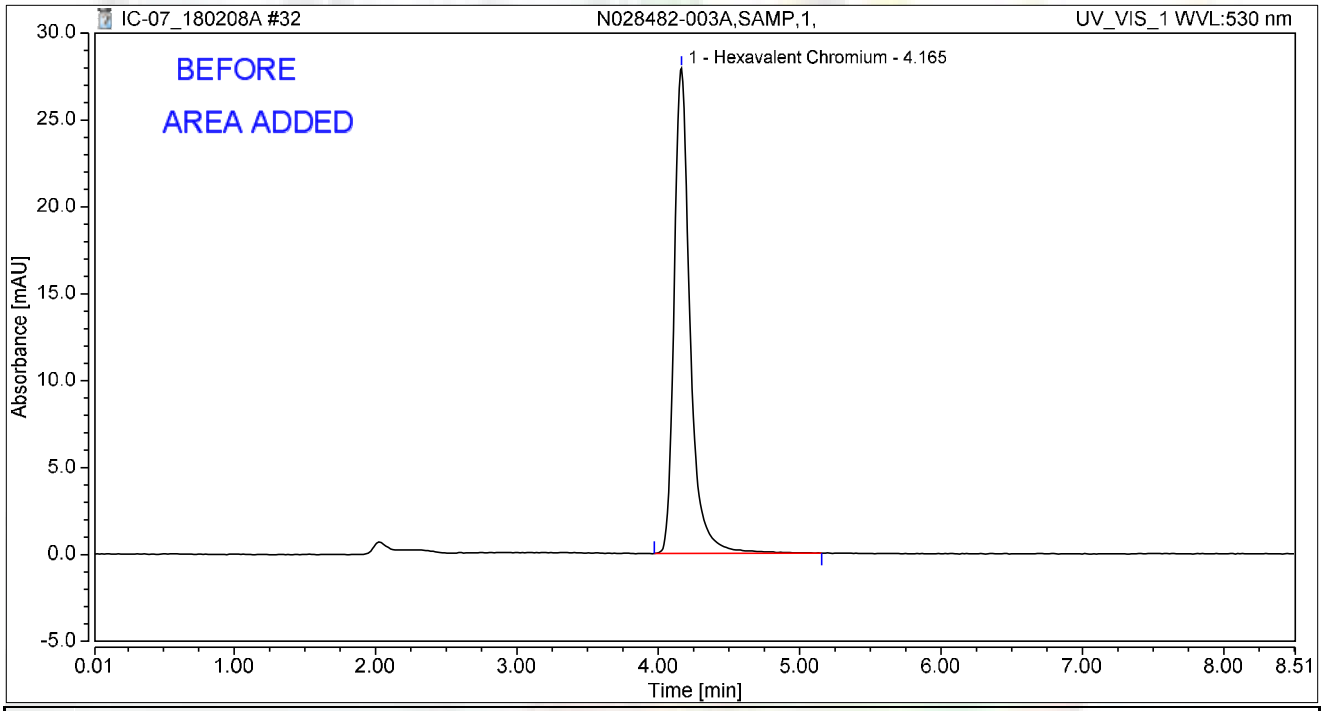
Reviewed by: Nancy 2/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028482-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 12:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.662	27.915	100.00	100.00	14.6699
Total:			**3.662**	**27.915**	**100.00**	**100.00**	

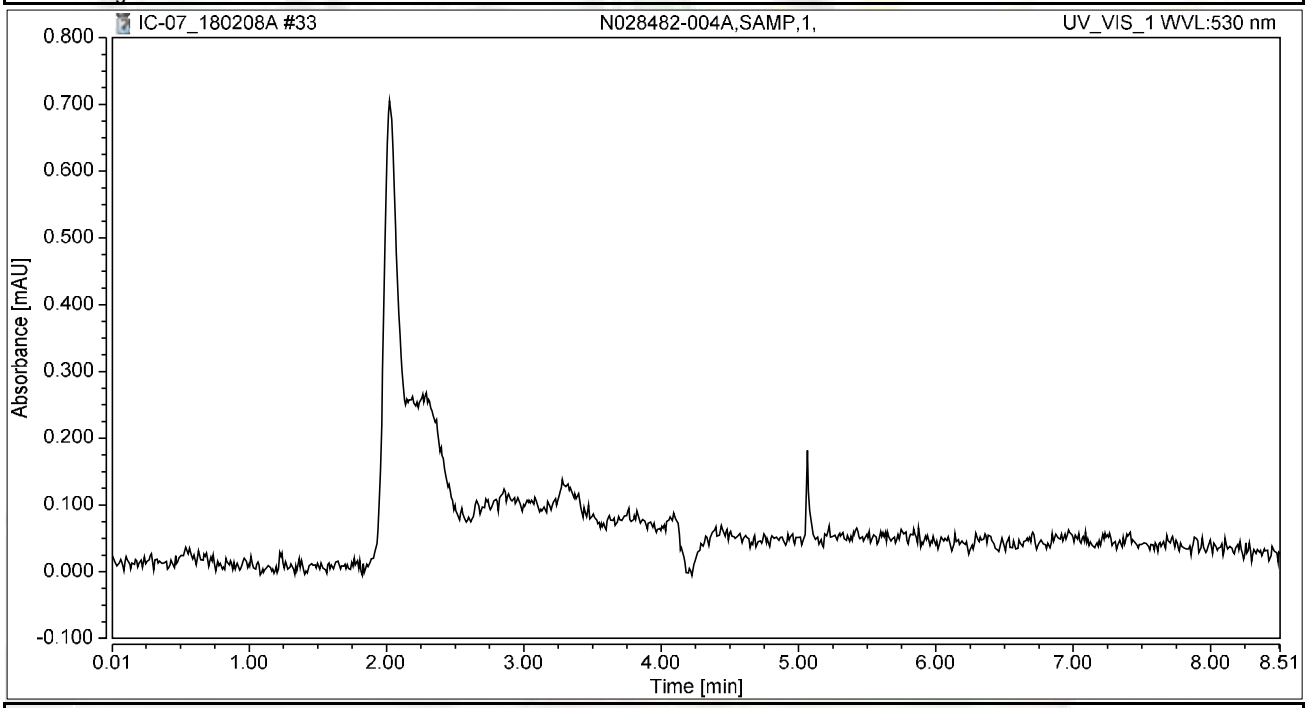
rba 2/14/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028482-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

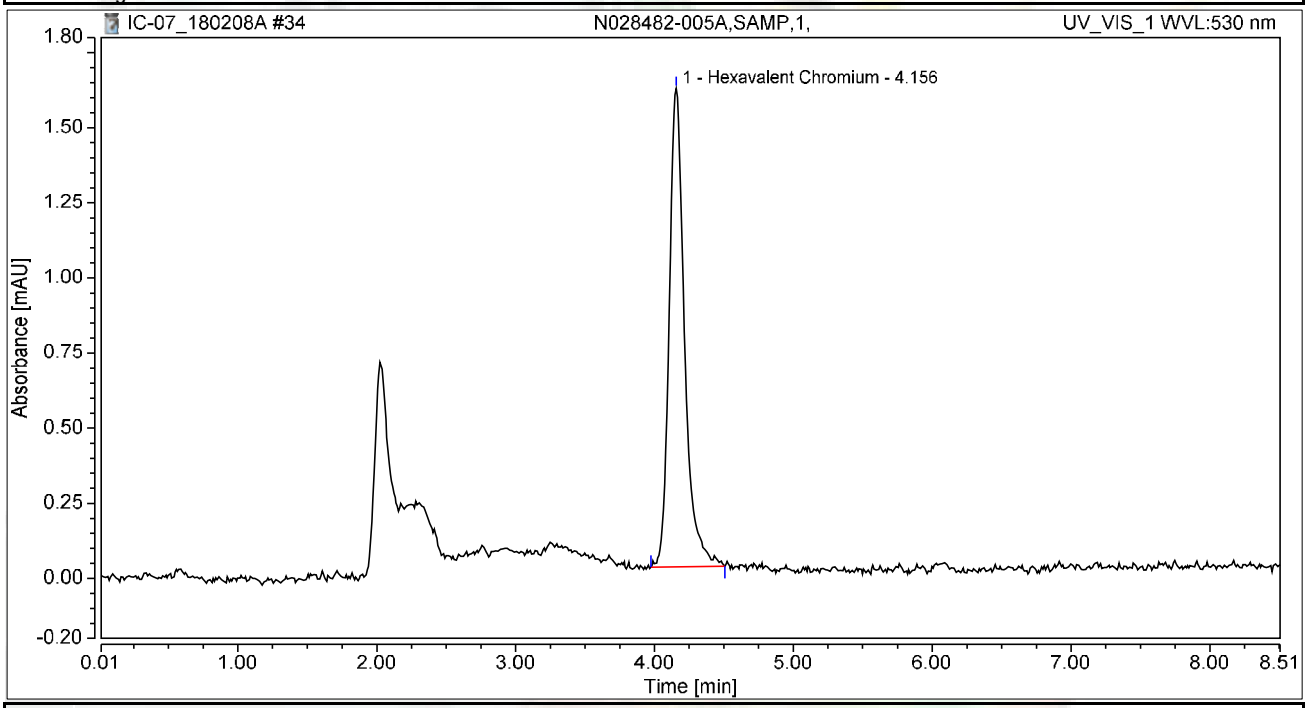
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

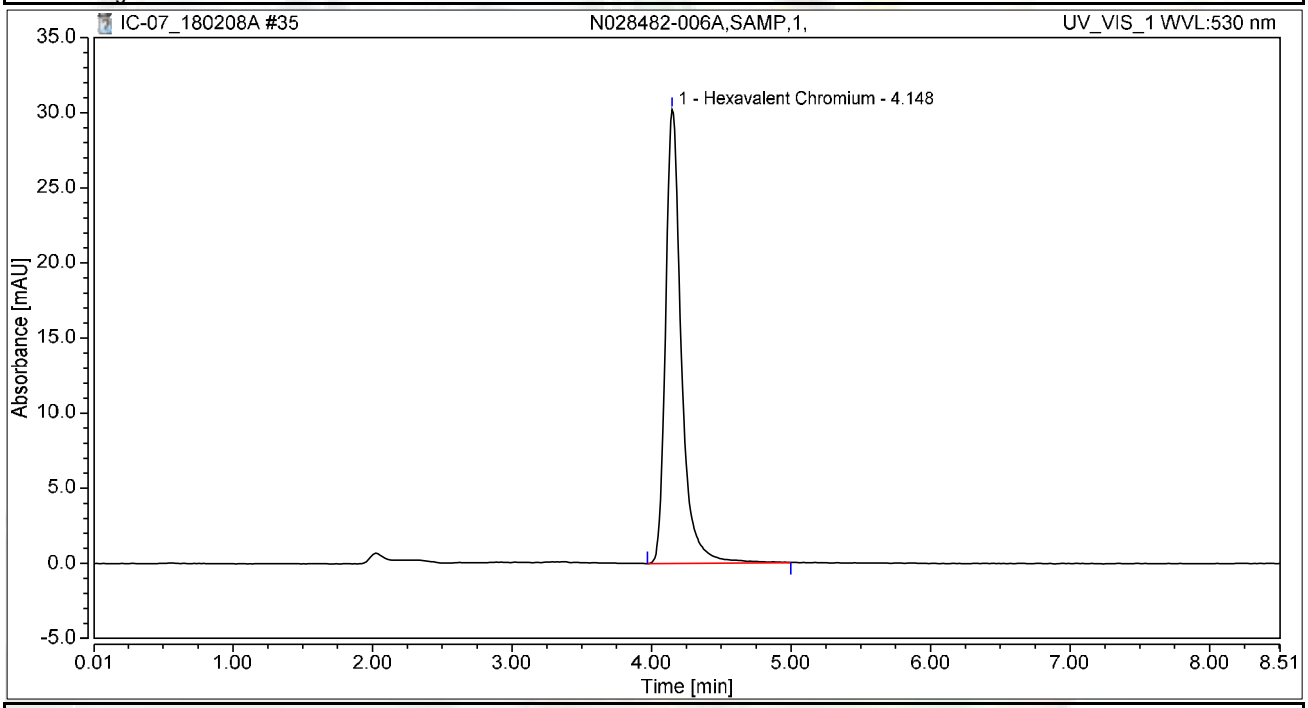
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.204	1.592	100.00	100.00	0.8191
Total:			**0.204**	**1.592**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 13:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

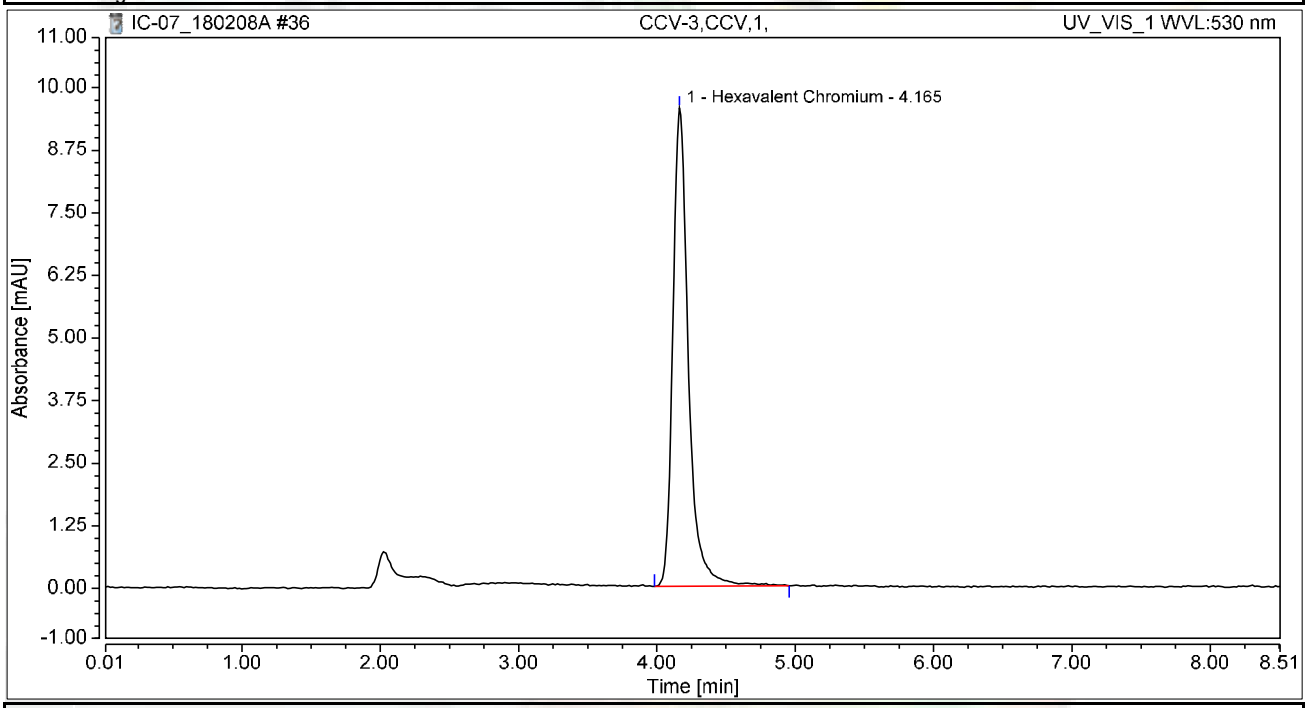
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.951	30.215	100.00	100.00	15.8248
Total:			**3.951**	**30.215**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

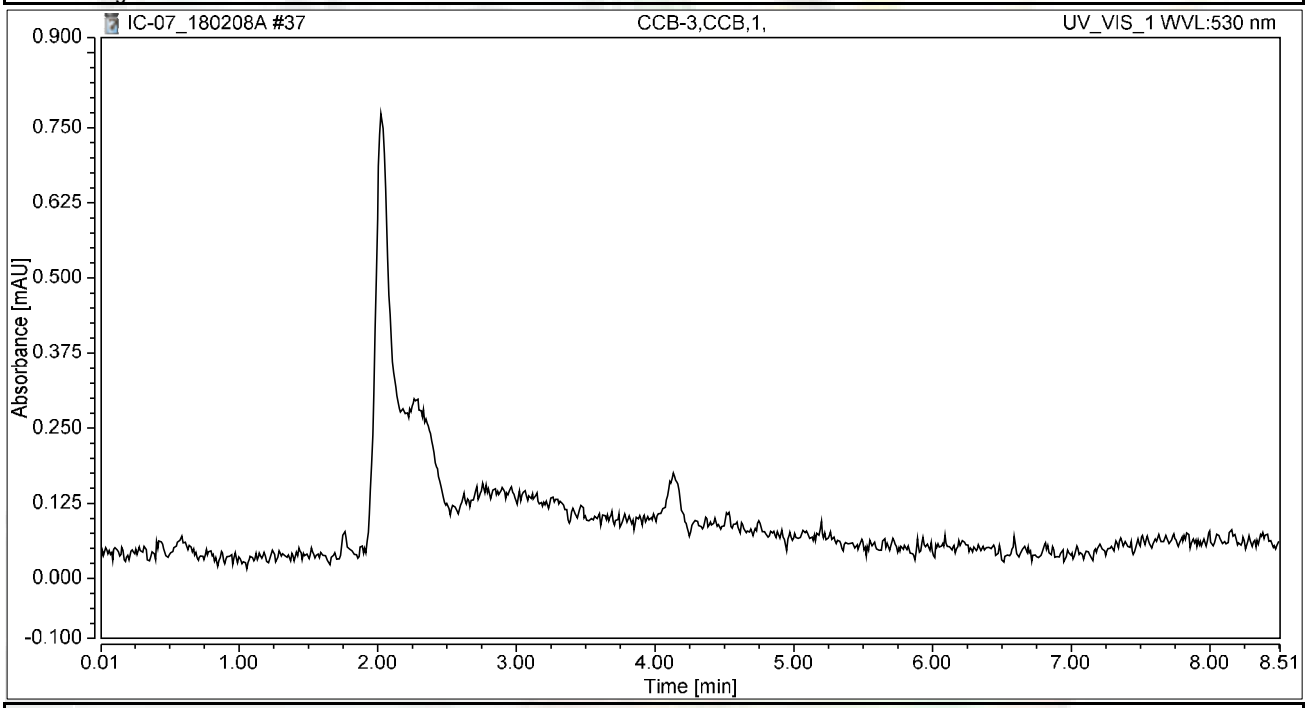
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.246	9.551	100.00	100.00	4.9915
Total:			**1.246**	**9.551**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 13:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

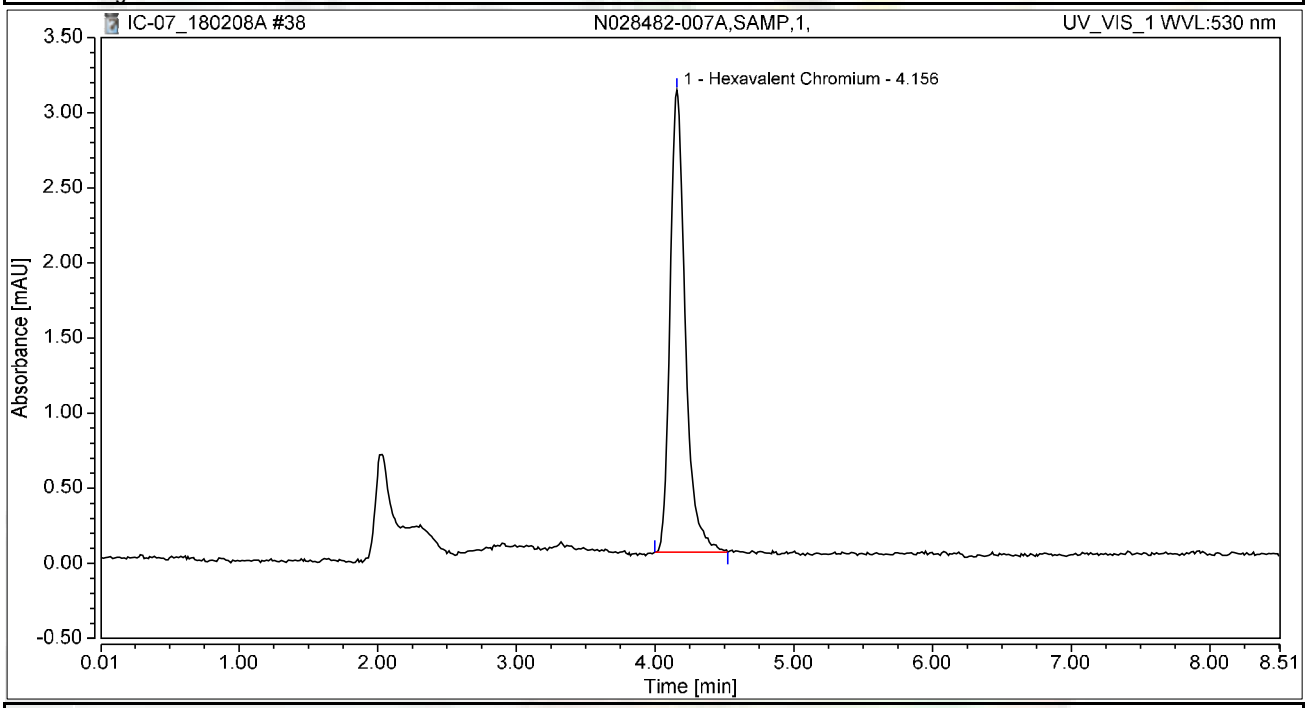
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 13:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

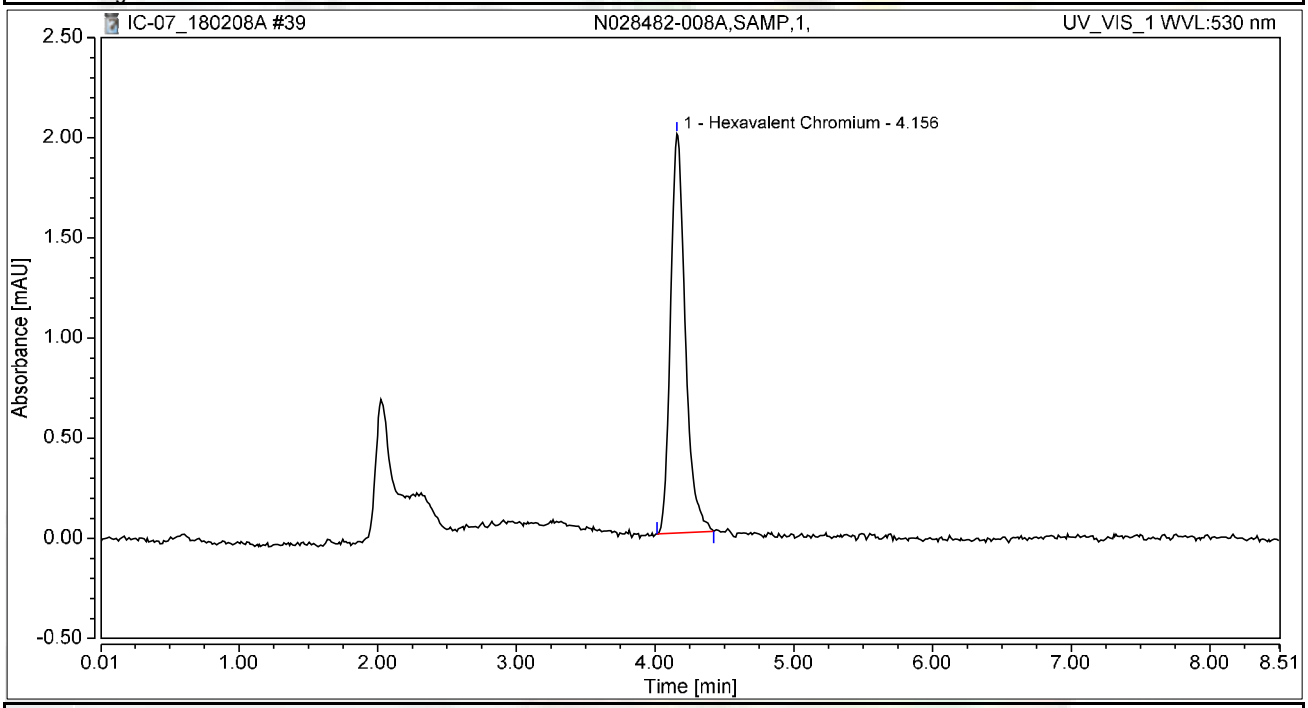
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.391	3.077	100.00	100.00	1.5669
Total:			**0.391**	**3.077**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 14:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

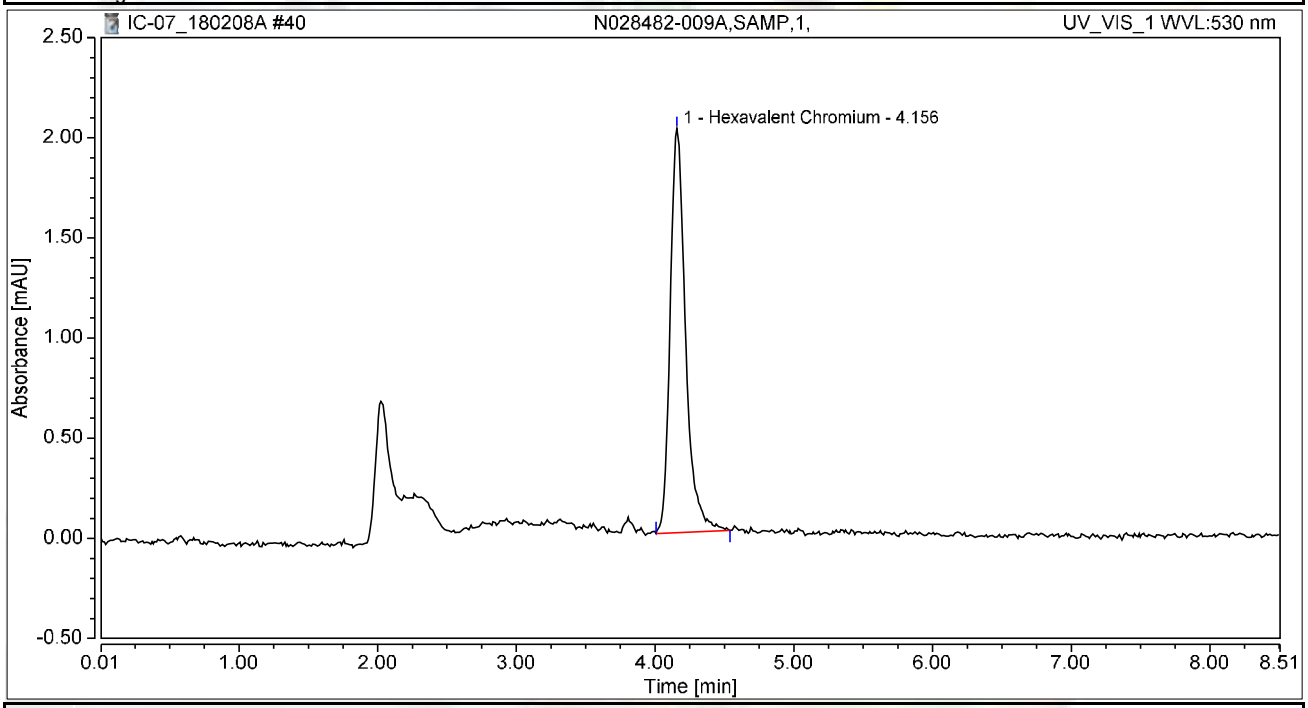
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.246	1.994	100.00	100.00	0.9850
Total:			**0.246**	**1.994**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

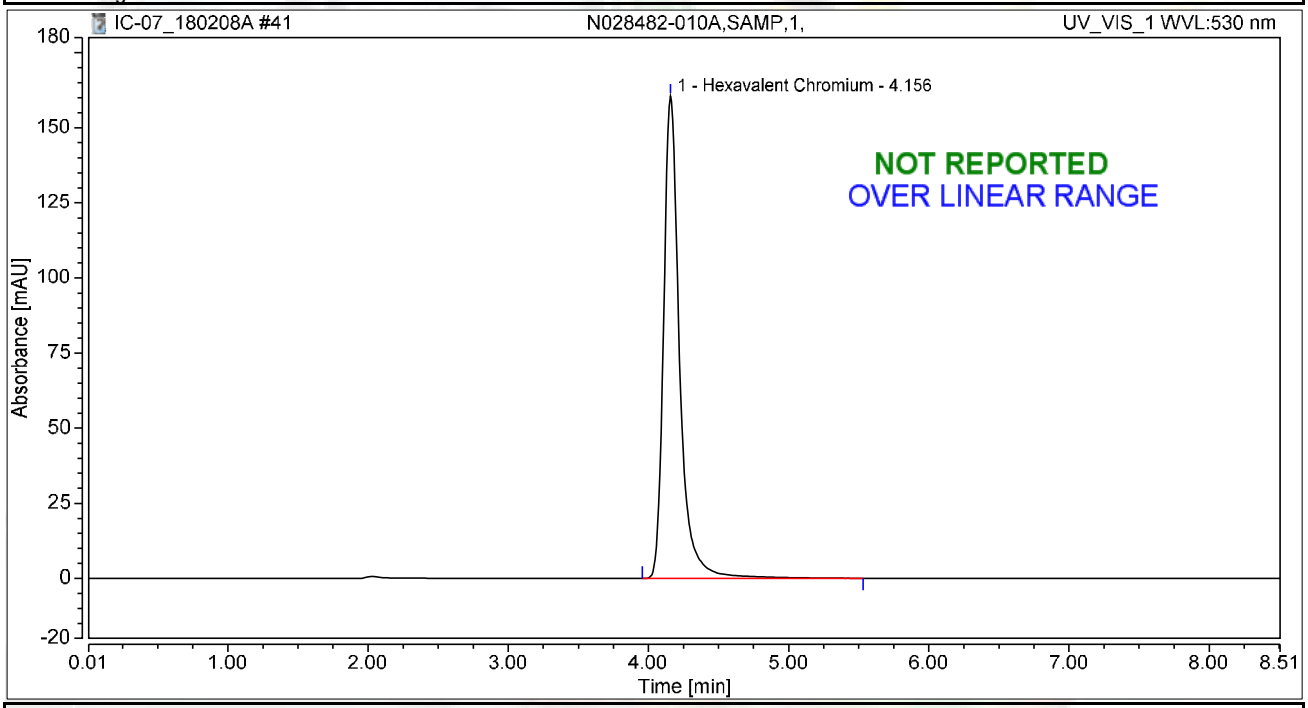
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.260	2.018	100.00	100.00	1.0397
Total:			**0.260**	**2.018**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

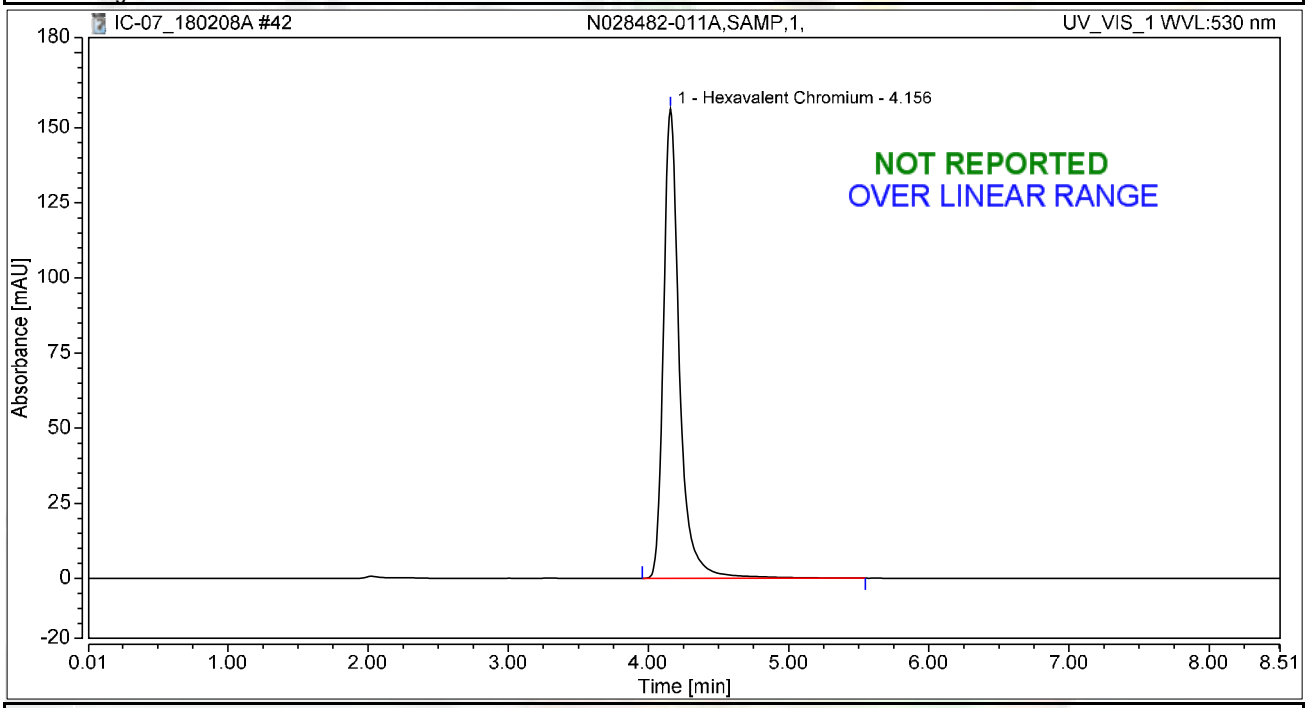
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	21.232	160.523	100.00	100.00	85.0452
Total:			**21.232**	**160.523**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

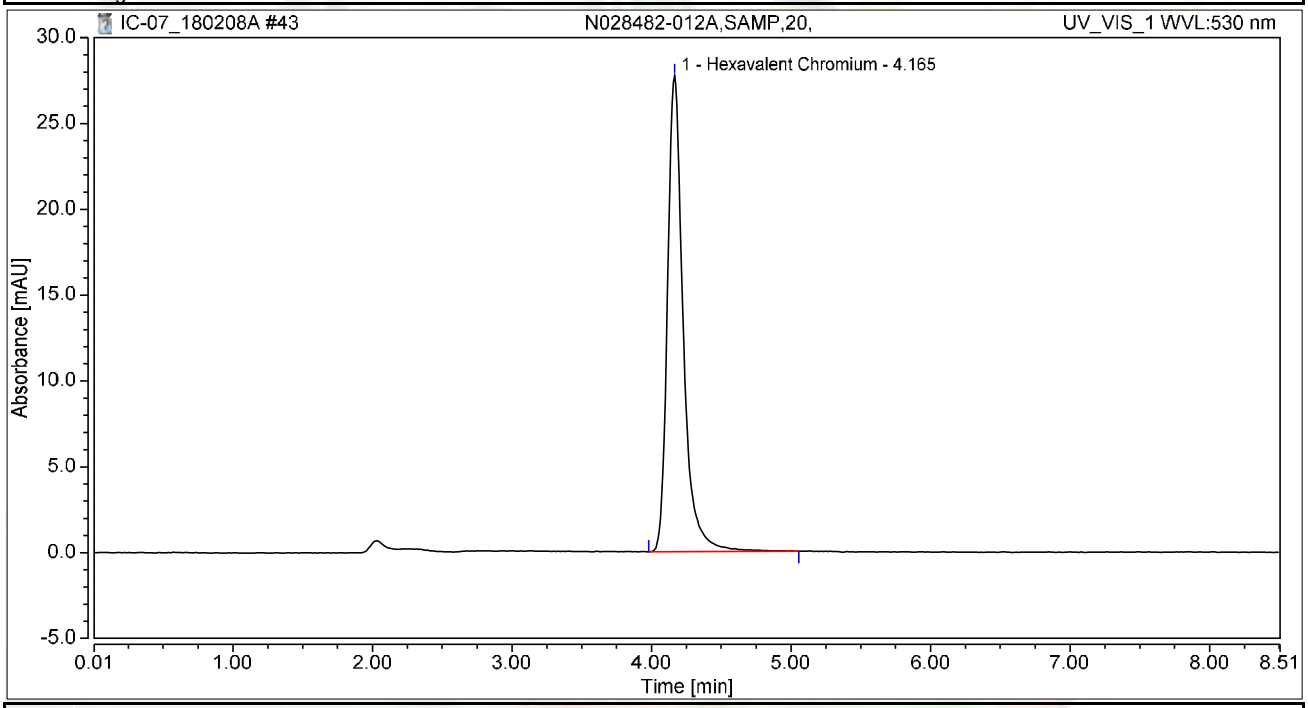
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	20.670	156.285	100.00	100.00	82.7973
Total:			**20.670**	**156.285**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-012A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

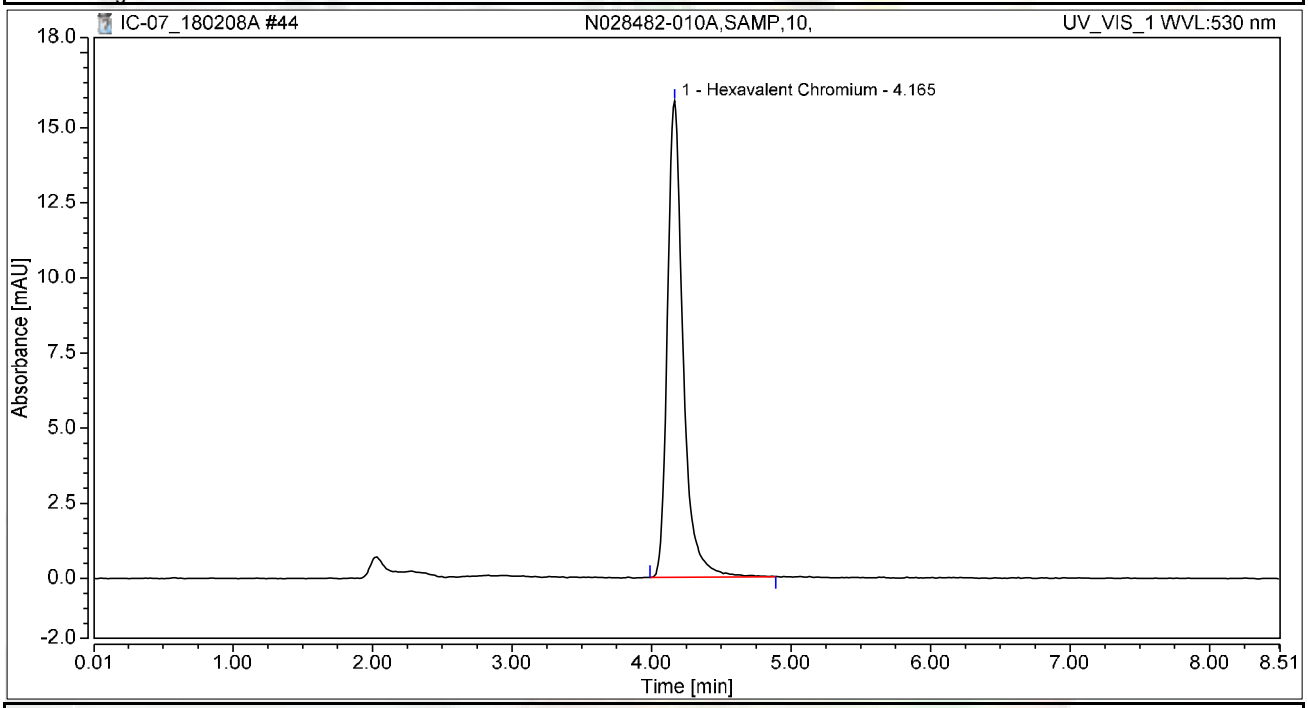
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.632	27.735	100.00	100.00	14.5481
Total:			**3.632**	**27.735**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-010A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

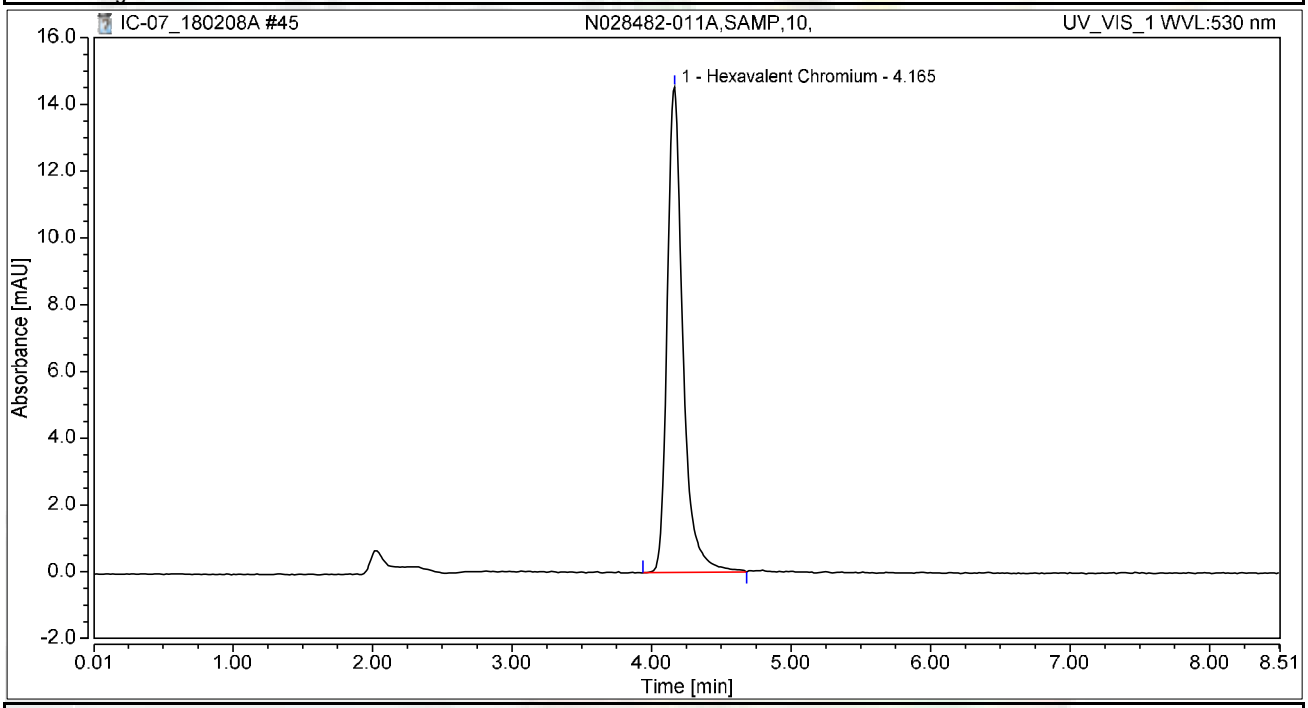
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.065	15.855	100.00	100.00	8.2700
Total:			**2.065**	**15.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028482-011A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 15:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

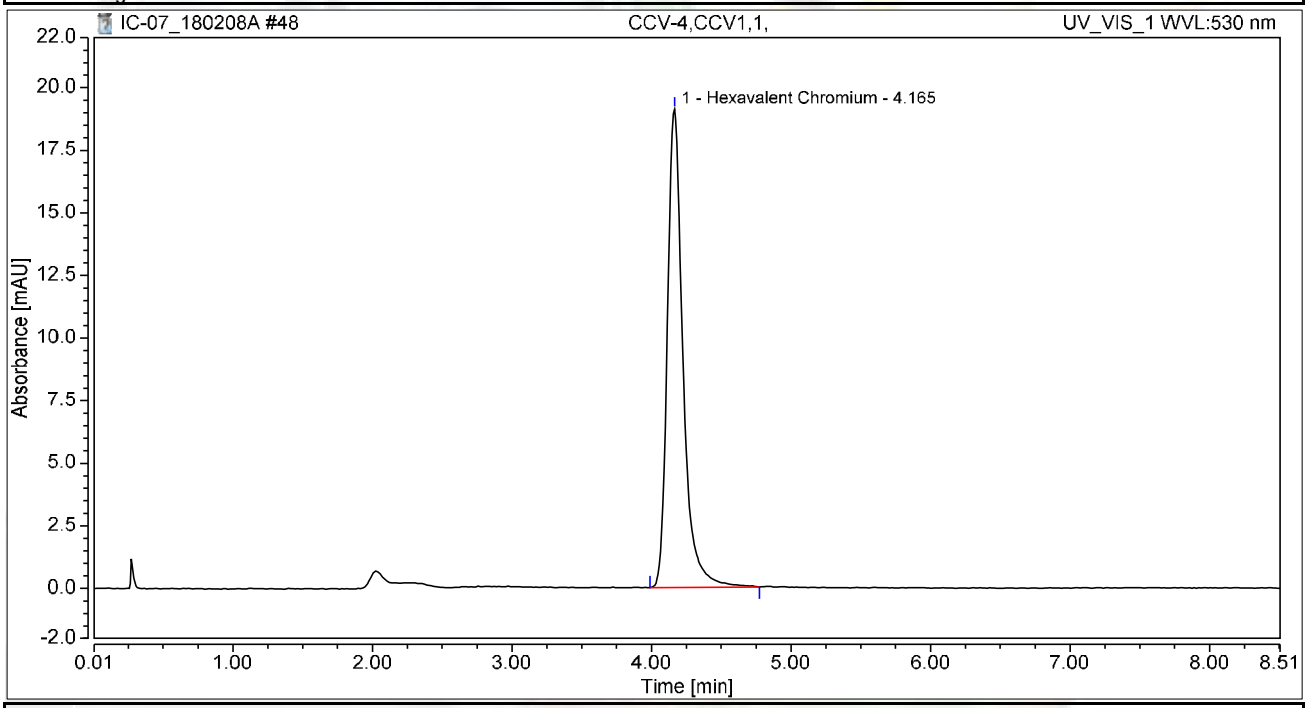
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.889	14.532	100.00	100.00	7.5676
Total:			**1.889**	**14.532**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

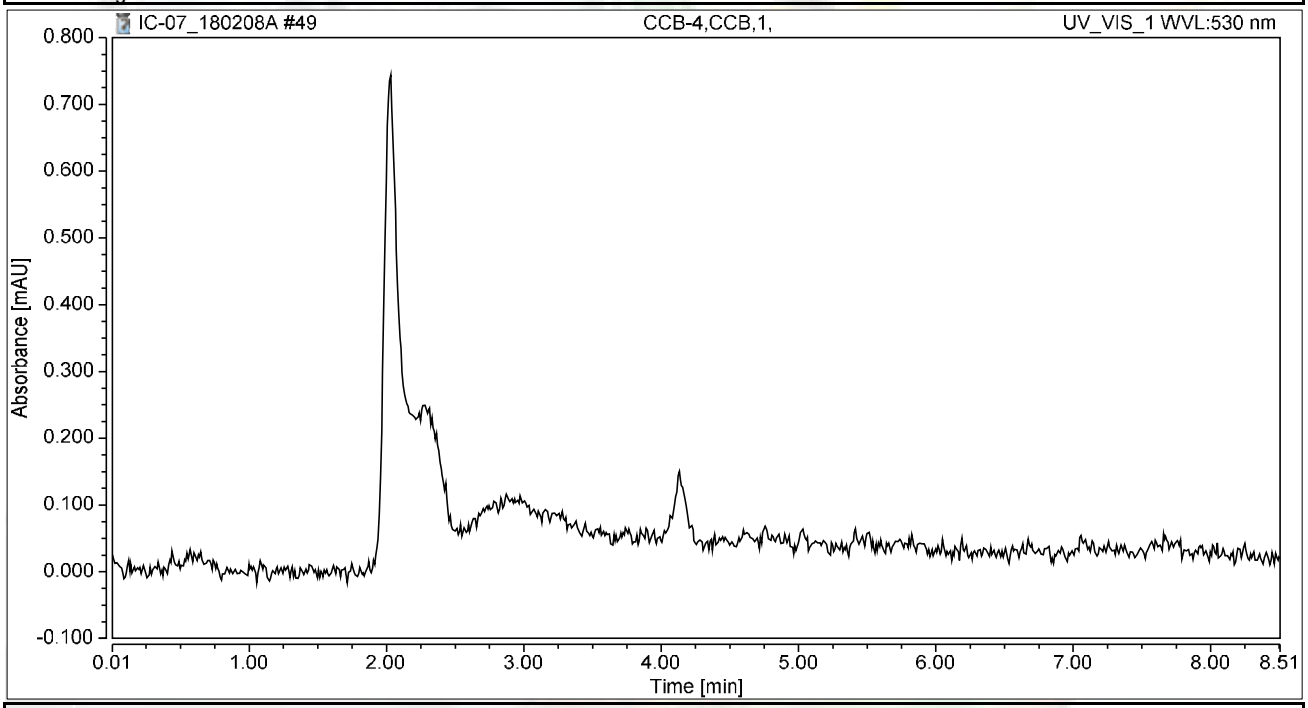
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.478	19.111	100.00	100.00	9.9258
Total:			**2.478**	**19.111**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Feb/18 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R121960 **Analyst:** LSR

ASSET #: N028469 **Date Analyzed:** 2/9/2018

Method: EPA 2320

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/13/2018

2nd Level Reviewer: RLB 02/21/2018 Date:

SAMPLE CALCULATION

Sample ID: **N028469-001B @ pH 7.90**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.95 mL)

= **0.02092 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (11.50) (0.02092 N) (1) * 1000

= 240.5800 mg**/L**

Reporting results in two significant figures,

= **240 mg/L** as CaCO3

Lilia Ramit 2/13/2018
RLB 02/21/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02092 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (11.50 mL) (0.02092) (1) * 1000

= 240.5800 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 240.5800 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **240 mg/L**

Julia Ramit 2/13/2018

RLB 02/21/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.50	50	0.00	0.050	MBLK
LCS-1	8.55	50	0.05	4.65	LCS
N028469-001B	7.90	50	0.00	11.50	SAMP
N028469-002B	7.58	50	0.00	7.20	SAMP
N028469-001BDUP	7.80	50	0.00	11.60	DUP
N028469-002BMS	7.90	50	0.00	11.60	MS
N028469-002BMSD	7.90	50	0.00	11.80	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.950**	ml
N H2SO4	**0.02092**	Normal
Date Analyzed:	**2/9/18**	
Time:	**2:30 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R180108A**	

Julia Ramit 2/13/2018

RB 02/21/2018

Date Analyzed:	2/9/18		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	2:30 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.95	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R180108A							**P > 1/2 T**
									N H2SO4	0.02092	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.5				0.02092	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.55				0.02092	0.05	4.60	4.65	1	1.05	97.28	
N028469-001B	50	7.9				0.02092	0.00	11.50	11.50	1	0.00	240.59	
N028469-002B	50	7.58				0.02092	0.00	7.20	7.20	1	0.00	150.63	
N028469-001BDU	50	7.8				0.02092	0.00	11.60	11.60	1	0.00	242.68	
N028469-002BMS	50	7.9				0.02092	0.00	11.60	11.60	1	0.00	242.68	
N028469-002BMS	50	7.9				0.02092	0.00	11.80	11.80	1	0.00	246.86	

Julia Ramit 2/13/2018

RLB 02/21/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	2/9/18
Time:	2:30 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	2.09	95.19	97.28	97.28		P < 1/2 T
N028469-001B	0.00	0.00	240.59	240.59	240.59		P = 0
N028469-002B	0.00	0.00	150.63	150.63	150.63		P = 0
N028469-001BDUP	0.00	0.00	242.68	242.68	242.68		P = 0
N028469-002BMS	0.00	0.00	242.68	242.68	242.68		P = 0
N028469-002BMSD	0.00	0.00	246.86	246.86	246.86		P = 0

Julia Ramit 2/13/2018

RLB 02/21/2018

Book #5

Matrix: H_2O

pH meter Calibration

SLOPE: 95.1%

Date Extracted: 2/9/18
Time Extracted:
Extracted By: KSR

Date Analyzed: 2/9/18
Time Analyzed: 1430
Analyzed By: KSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV161205A
Hydrochloric Acid: –
Sulfuric Acid: R180108A
Sodium Bicarbonate: CINV150601A

pH 7 - 7.01 - CINV170615F
4 - 4.01 - 170615E
10 - 10.02 - 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARD 12 ATTOUT											
	#1	50 mL	10.91	INST180209A	5 mL	0.05 N	–	–	12.0	50/50	N H_2SO_4 = (2.65 g/L)(5 mL) / (53)(V titrant)	= 0.020833333
	#2	↓	10.93	↓	↓	↓	–	–	11.90	↓		= 0.021008403
1)	MBLK	50 mL	5.50	–	–	–	0.02092	0	0.05	50/50		Ave: 0.020920868
2)	LCS	↓	8.55	INST180209B	1 mL	0.05 N	↓	0.05	4.65	↓		
3)	N028469-1B	↓	7.90	–	–	–	↓	0	11.50	↓		
4)	2B	↓	7.58	–	–	–	↓	0	7.20	↓		
5)	1B DUP	↓	7.80	–	–	–	↓	0	11.60	↓		
6)	2B MS	↓	7.90	INST180209B	1 mL	0.05 N	↓	0	11.60	↓		
7)	2B MSD	↓	7.90	↓	↓	↓	↓	0	11.80	↓		
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)												
17)												
18)												
19)												
20)												
	MS											
	MSD											
	LCS											

$$P = \frac{(V_{pH}\ 8.3)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$$

$$T = \frac{(V_{pH}\ 4.5)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$$

Julia Ramit 2/13/2018

RB 02/21/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121946
ASSET #: N028469 / N028482 / N028483
Method:

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 2/8/2018

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X				
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

failed
~~Phosphate in N028482-001CMSD failed in recovery and RPD criteria. However, LCS passed criteria.~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 2/12/2018

2nd Level Reviewer: 2/21/2018 Date: —

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R121972
ASSET #: N028469 / N028512

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 2/9/2018

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			1		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 2/12/2018

2nd Level Reviewer: 2/21/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N028469-001B** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.9729 * 50

= 398.645

Reporting result in two significant values,

Sulfate, mg/L = 400

rba 2/19/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	ICB,ICB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028482-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028482-002C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028482-010C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028482-011C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028482-014C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028482-001CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028482-001CMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028482-014CDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028482-017C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028482-003C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028482-004C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028482-005C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028482-006C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028482-007C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028482-008C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028482-009C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028482-017CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028482-012C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	N028482-013C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	N028483-003D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	N028483-004D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
39	N028483-005D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
40	N028482-010C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
41	N028482-011C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	ICV,ICV,1	2/8/2018 10:31:41 AM	ICV
10	ICV,ICV,1	2/8/2018 11:00:04 AM	ICV
11	ICB,ICB,1	2/8/2018 11:15:22 AM	ICB
12	MB-H2O,MBLK,1	2/8/2018 11:30:40 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/8/2018 11:45:58 AM	LCS
14	N028482-001C,SAMP,1	2/8/2018 12:01:16 PM	SAMP,10mL
15	N028482-002C,SAMP,1	2/8/2018 12:16:34 PM	SAMP,10mL
16	N028482-010C,SAMP,1	2/8/2018 12:31:51 PM	SAMP,10mL
17	N028482-011C,SAMP,1	2/8/2018 12:47:09 PM	SAMP,10mL
18	N028482-014C,SAMP,1	2/8/2018 1:02:27 PM	SAMP,10mL
19	N028482-001CMS,MS,1	2/8/2018 1:17:45 PM	MS,10mL
20	N028482-001CMSD,MSD,1	2/8/2018 1:33:03 PM	MSD,10mL
21	N028482-014CDUP,DUP,1	2/8/2018 1:48:21 PM	DUP,10mL
22	CCV-1,CCV,1	2/8/2018 2:03:39 PM	CCV
23	CCB-1,CCB,1	2/8/2018 2:18:57 PM	CCB
24	N028482-017C,SAMP,1	2/8/2018 2:36:38 PM	SAMP,10mL
25	N028482-003C,SAMP,1	2/8/2018 2:51:56 PM	SAMP,10mL
26	N028482-004C,SAMP,5	2/8/2018 3:07:14 PM	SAMP,2>10mL
27	N028482-005C,SAMP,10	2/8/2018 3:22:32 PM	SAMP,1>10mL
28	N028482-006C,SAMP,10	2/8/2018 3:37:50 PM	SAMP,1>10mL
29	N028482-007C,SAMP,5	2/8/2018 3:53:08 PM	SAMP,2>10mL
30	N028482-008C,SAMP,5	2/8/2018 4:08:26 PM	SAMP,2>10mL
31	N028482-009C,SAMP,5	2/8/2018 4:23:43 PM	SAMP,2>10mL
32	N028482-017CMS,MS,1	2/8/2018 4:39:01 PM	MS,10mL
33	N028482-012C,SAMP,5	2/8/2018 4:54:19 PM	SAMP,2>10mL
34	CCV-2,CCV,1	2/8/2018 5:09:37 PM	CCV
35	CCB-2,CCB,1	2/8/2018 5:24:55 PM	CCB
36	N028482-013C,SAMP,1	2/8/2018 5:40:13 PM	SAMP,10mL
37	N028483-003D,SAMP,1	2/8/2018 5:55:31 PM	SAMP,10mL
38	N028483-004D,SAMP,1	2/8/2018 6:10:49 PM	SAMP,10mL
39	N028483-005D,SAMP,1	2/8/2018 6:26:08 PM	SAMP,10mL
40	N028482-010C,SAMP,2	2/8/2018 6:41:26 PM	SAMP,5>10mL
41	N028482-011C,SAMP,2	2/8/2018 6:56:44 PM	SAMP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N028482-004C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
43	N028469-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
44	N028469-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
45	N028469-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
46	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
47	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
48	N028469-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
49	N028469-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
50	N028469-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
51	N028482-010C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
52	N028482-011C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
53	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
54	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N028482-004C,SAMP,1	2/8/2018 7:12:02 PM	SAMP,10mL
43	N028469-001B,SAMP,50	2/8/2018 7:27:20 PM	SAMP,0.2>10mL
44	N028469-001BMS,MS,50	2/8/2018 7:42:39 PM	MS,0.2>10mL
45	N028469-001BMSD,MSD,50	2/8/2018 7:57:57 PM	MSD,0.2>10mL
46	CCV-3,CCV,1	2/8/2018 8:13:15 PM	CCV
47	CCB-3,CCB,1	2/8/2018 8:28:32 PM	CCB
48	N028469-001BDUP,DUP,50	2/8/2018 8:43:50 PM	DUP,0.2>10mL
49	N028469-002B,SAMP,500	2/8/2018 8:59:08 PM	SAMP,0.02>10mL
50	N028469-002B,SAMP,50	2/8/2018 9:14:26 PM	SAMP,0.2>10mL
51	N028482-010C,SAMP,10	2/8/2018 9:29:44 PM	SAMP,1>10mL
52	N028482-011C,SAMP,10	2/8/2018 9:45:02 PM	SAMP,1>10mL
53	CCV-4,CCV,1	2/8/2018 10:00:20 PM	CCV
54	CCB-4,CCB,1	2/8/2018 10:15:38 PM	CCB

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Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 56
Created: 2/9/2018 8:28:08 AM by IC-05
Last Update: 2/9/2018 3:50:07 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028512-005C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028512-006C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028512-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028512-003C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028512-002C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028512-004C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028512-007C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028512-008C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028512-009C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028512-010C,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028512-006C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028518-001A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028518-002A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028518-003A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028512-002CDUP,DUP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028512-008CMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028512-008CMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028512-006CMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	N028512-001C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	N028512-003C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	N028518-001A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
39	N028518-002A,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
40	N028518-003A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
41	N028512-003CDUP,DUP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 56
Created: 2/9/2018 8:28:08 AM by IC-05
Last Update: 2/9/2018 3:50:07 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	BLANK,BLANK,1	2/9/2018 8:29:21 AM	BLANK
10	CCV-1,CCV,1	2/9/2018 8:44:39 AM	CCV
11	CCB-1,CCB,1	2/9/2018 8:59:57 AM	CCB
12	MB-H2O,MBLK,1	2/9/2018 9:15:15 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/9/2018 9:30:33 AM	LCS
14	N028512-005C,SAMP,1	2/9/2018 9:57:32 AM	SAMP,10mL
15	N028512-006C,SAMP,10	2/9/2018 10:12:50 AM	SAMP,1>10mL
16	N028512-001C,SAMP,1	2/9/2018 10:28:31 AM	SAMP,10mL
17	N028512-003C,SAMP,2	2/9/2018 11:52:37 AM	SAMP,5>10mL
18	N028512-002C,SAMP,10	2/9/2018 12:37:30 PM	SAMP,1>10mL
19	N028512-004C,SAMP,10	2/9/2018 12:52:49 PM	SAMP,1>10mL
20	N028512-007C,SAMP,1	2/9/2018 1:08:07 PM	SAMP,10mL
21	N028512-008C,SAMP,5	2/9/2018 1:23:24 PM	SAMP,2>10mL
22	CCV-2,CCV,1	2/9/2018 1:38:42 PM	CCV
23	CCB-2,CCB,1	2/9/2018 1:54:00 PM	CCB
24	N028512-009C,SAMP,1	2/9/2018 2:09:18 PM	SAMP,10mL
25	N028512-010C,SAMP,20	2/9/2018 2:24:35 PM	SAMP,0.5>10mL
26	N028512-006C,SAMP,5	2/9/2018 2:43:38 PM	SAMP,2>10mL
27	N028518-001A,SAMP,1	2/9/2018 2:58:56 PM	SAMP,10mL
28	N028518-002A,SAMP,1	2/9/2018 3:14:14 PM	SAMP,10mL
29	N028518-003A,SAMP,1	2/9/2018 3:29:32 PM	SAMP,10mL
30	N028512-002CDUP,DUP,10	2/9/2018 3:44:49 PM	DUP,1>10mL
31	N028512-008CMS,MS,5	2/9/2018 4:00:07 PM	MS,2>10mL
32	N028512-008CMSD,MSD,5	2/9/2018 4:15:25 PM	MSD,2>10mL
33	N028512-006CMS,MS,5	2/9/2018 4:30:43 PM	MS,2>10mL
34	CCV-3,CCV,1	2/9/2018 4:46:00 PM	CCV
35	CCB-3,CCB,1	2/9/2018 5:01:18 PM	CCB
36	N028512-001C,SAMP,5	2/9/2018 5:16:37 PM	SAMP,2>10mL
37	N028512-003C,SAMP,5	2/9/2018 5:31:54 PM	SAMP,2>10mL
38	N028518-001A,SAMP,5	2/9/2018 5:47:12 PM	SAMP,2>10mL
39	N028518-002A,SAMP,10	2/9/2018 6:02:30 PM	SAMP,1>10mL
40	N028518-003A,SAMP,5	2/9/2018 6:17:48 PM	SAMP,2>10mL
41	N028512-003CDUP,DUP,2	2/9/2018 6:33:06 PM	DUP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 56
Created: 2/9/2018 8:28:08 AM by IC-05
Last Update: 2/9/2018 3:50:07 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N028512-003CMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
43	N028512-003CMSD,MSD,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
44	N028512-006C,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
45	N028512-006CDUP,DUP,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
46	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
47	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
48	N028512-006CMS,MS,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
49	N028512-006CMSD,MSD,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
50	N028469-001B,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
51	N028469-001BDUP,DUP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
52	N028469-001BMS,MS,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
53	N028469-001BMSD,MSD,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
54	N028469-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
55	CCV-5,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
56	CCB-5,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 56
Created: 2/9/2018 8:28:08 AM by IC-05
Last Update: 2/9/2018 3:50:07 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N028512-003CMS,MS,2	2/9/2018 6:48:23 PM	MS,5>10mL
43	N028512-003CMSD,MSD,2	2/9/2018 7:03:41 PM	MSD,5>10mL
44	N028512-006C,SAMP,20	2/9/2018 7:18:59 PM	SAMP,0.5>10mL
45	N028512-006CDUP,DUP,20	2/9/2018 7:34:17 PM	DUP,0.5>10mL
46	CCV-4,CCV,1	2/9/2018 7:49:35 PM	CCV
47	CCB-4,CCB,1	2/9/2018 8:04:53 PM	CCB
48	N028512-006CMS,MS,20	2/9/2018 8:20:11 PM	MS,0.5>10mL
49	N028512-006CMSD,MSD,20	2/9/2018 8:35:28 PM	MSD,0.5>10mL
50	N028469-001B,SAMP,200	2/9/2018 8:50:46 PM	SAMP,0.05>10mL
51	N028469-001BDUP,DUP,200	2/9/2018 9:06:04 PM	DUP,0.05>10mL
52	N028469-001BMS,MS,200	2/9/2018 9:21:22 PM	MS,0.05>10mL
53	N028469-001BMSD,MSD,200	2/9/2018 9:36:40 PM	MSD,0.05>10mL
54	N028469-002B,SAMP,500	2/9/2018 9:51:58 PM	SAMP,0.02>10mL
55	CCV-5,CCV,1	2/9/2018 10:07:16 PM	CCV
56	CCB-5,CCB,1	2/9/2018 10:22:33 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0484	0.2152	0.4528	1.1684	2.4370	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0718	0.1461	0.2992	0.7607	1.5900	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **ICV**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2926365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.978	0.50	2.000	0	98.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **CCV**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/9/2018**	SeqNo: **2926367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.950	0.50	2.000	0	97.5	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **CCV**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/9/2018**	SeqNo: **2926371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.960	0.50	2.000	0	98.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **CCV**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/9/2018**	SeqNo: **2926373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.972	0.50	2.000	0	98.6	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **CCV**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/9/2018**	SeqNo: **2926375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.953	0.50	2.000	0	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **CCV**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/9/2018**	SeqNo: **2926382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.959	0.50	2.000	0	98.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **ICV**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.841	0.50	4.000	0	96.0	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCV**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.934	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCV**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.892	0.50	4.000	0	97.3	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCV**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.968	0.50	4.000	0	99.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCV**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.909	0.50	4.000	0	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**121972**
Client ID:	**ICB**	Batch ID:	**R121972**	TestNo:	**EPA 300.0**			Analysis Date:	**2/8/2018**	SeqNo:	**2926366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**121972**
Client ID:	**CCB**	Batch ID:	**R121972**	TestNo:	**EPA 300.0**			Analysis Date:	**2/9/2018**	SeqNo:	**2926368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**121972**
Client ID:	**CCB**	Batch ID:	**R121972**	TestNo:	**EPA 300.0**			Analysis Date:	**2/9/2018**	SeqNo:	**2926372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.122	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**121972**
Client ID:	**CCB**	Batch ID:	**R121972**	TestNo:	**EPA 300.0**			Analysis Date:	**2/9/2018**	SeqNo:	**2926374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-4**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**121972**
Client ID:	**CCB**	Batch ID:	**R121972**	TestNo:	**EPA 300.0**			Analysis Date:	**2/9/2018**	SeqNo:	**2926376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **121972**
Client ID: **CCB**	Batch ID: **R121972**	TestNo: **EPA 300.0**		Analysis Date: **2/9/2018**	SeqNo: **2926383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.123	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **ICB**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCB**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCB**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCB**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **121946**
Client ID: **CCB**	Batch ID: **R121946**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2924967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/8/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	9.754	
CCV-1	Sulfate	9.750	
CCV-2	Sulfate	9.743	
CCV-3	Sulfate	9.727	
CCV-4	Sulfate	9.723	
	Average	9.739	
	Applied RT Window	9.539 - 9.939	
MB-R121946_SO4	Sulfate	N.A.	N.A.
LCS-R121946_SO4	Sulfate	9.744	PASS
N028469-001B	Sulfate	9.730	PASS
N028469-001BMS	Sulfate	9.734	PASS
N028469-001BMSD	Sulfate	9.734	PASS
N028469-001BDUP	Sulfate	9.727	PASS
N028469-002B	Sulfate	9.727	PASS

jrba 2/19/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/9/2018

Sample Name		Retention Time	Evaluation
ICV	Chloride	4.207	
CCV-1	Chloride	4.210	
CCV-2	Chloride	4.203	
CCV-3	Chloride	4.207	
CCV-4	Chloride	4.204	
CCV-~~4~~ 5	Chloride	4.203	
	Average	4.205	
	Applied RT Window	4.005 - 4.405	
MB-R121972_CL	Chloride	N.A.	N.A.
LCS-R121972_CL	Chloride	4.210	PASS
N028469-001B	Chloride	4.203	PASS
N028469-001BDUP	Chloride	4.207	PASS
N028469-001BMS	Chloride	4.203	PASS
N028469-001BMSD	Chloride	4.204	PASS
N028469-002B	Chloride	4.203	PASS

rba 2/19/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122121 **Analyst:** QBM

ASSET #: N028469 **Date Analyzed:** 2/16/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 2/21/2018

2nd Level Reviewer RJB 02/21/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028469-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.246	*	1
	=	0.246	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.25 mg/L

RLB 02/21/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

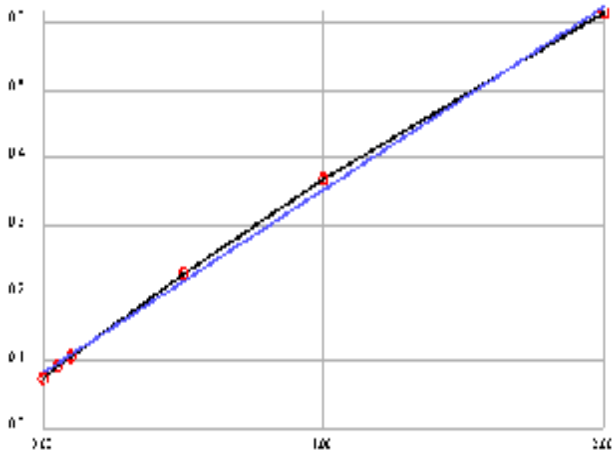
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2702x + 0.0832
Correlation	.998906

Calibrant	Energy	Set	Conc
1	0.0748	0.0000	-0.0312
2	0.0943	0.0500	0.0410
3	0.1060	0.1000	0.0843
4	0.2288	0.5000	0.5388
5	0.3674	1.0000	1.0517
6	0.6143	2.0000	1.9655

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122121**
Client ID: **ICV**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.464	0.050	0.5000	0	92.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122121**
Client ID: **CCV**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122121**
Client ID: **CCV**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.473	0.050	0.5000	0	94.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028469
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122121**
Client ID: **ICB**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122121**
Client ID: **CCB**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122121**
Client ID: **CCB**	Batch ID: **R122121**	TestNo: **SM4500-NO3**		Analysis Date: **2/16/2018**	SeqNo: **2933579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-16-2018 18:40
Time end: 02-16-2018 20:36

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	20:11:22	-0.0101		0.0805
2	<BLANK>	20:12:23	-0.0238		0.0768
3	<CAL1>	20:13:17	-0.0312	[0]	0.0748
4	<CAL2>	20:14:12	0.0410	[0.05]	0.0943
5	<CAL3>	20:15:13	0.0843	[0.1]	0.1060
6	<CAL4>	20:16:09	0.5388	[0.5]	0.2288
7	<CAL5>	20:17:09	1.0517	[1]	0.3674
8	<CAL6>	20:18:04	1.9655	[2]	0.6143
9	,BLANK,BLANK,1, NOT REPORTED	20:19:00	0.0166		0.0877
10	,ICV,ICV,1,	20:20:00	0.4644		0.2087
11	,ICB,ICB,1,	20:20:43	-0.0271		0.0759
12	,MB-H2O,MBLK,1,	20:21:33	-0.0264		0.0761
13	,LCS-H2O,LCS,1,	20:22:15	0.4740		0.2113
14	,N028003-009A,SAMP,10, NOT REPORTED	20:22:58	0.4126		0.1947
15	,N028003-009A,SAMP,5,	20:23:46	0.9836		0.3490
16	,N028093-008A,SAMP,5, NOT REPORTED	20:24:29	1.5077		0.4906
17	,N028093-008A,SAMP,10,	20:25:17	0.7590		0.2883
18	,N028455-002D,SAMP,5,	20:26:01	0.5669		0.2364
19	,N028455-002DMS,MS,5,	20:26:44	1.1205		0.3860
20	,N028455-002DMSD,MSD,5,	20:27:32	1.1113		0.3835
21	,BLANK, NOT REPORTED	20:28:16	0.0014		0.0836
22	,CCV-1,CCV,1,	20:28:58	0.4818		0.2134
23	,CCB-1,CCB,1,	20:29:47	-0.0108		0.0803
24	,N028469-001C,SAMP,1,	20:30:29	0.2460		0.1497
25	,N028469-002C,SAMP,5,	20:31:12	0.5006		0.2185
26	,N028469-002CDUP,DUP,5,	20:32:02	0.5650		0.2359

RJB 02/21/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,BLANK, NOT REPORTED	20:32:44	-0.0282		0.0756
28	,CCV-2,CCV,1,	20:33:27	0.4725		0.2109
29	,CCB-2,CCB,1,	20:34:15	-0.0175		0.0785

02/21/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 2/16/2018
Time Analyzed: 6:37 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028455-002D		6.21							
N028469-001C		8.14							
N028469-002C		7.81							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 02/21/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

March 05, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028679

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 19, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028679

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

ASSET Laboratories

Date: *05-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028679
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028679-001A	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-001B	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-001C	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-001D	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-002A	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-002B	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-002C	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-002D	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-003A	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-003B	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-003C	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-003D	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-004A	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-004B	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-004C	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-004D	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-005A	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-005B	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-005C	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-005D	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-006A	MW-710-Q118	Groundwater	2/19/2018 4:20:00 PM	2/19/2018	3/5/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	6500	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	5100	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	5100	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028679-001DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122203
Client ID:	ZZZZZZ	Batch ID:	R122203	TestNo:	EPA 120.1			Analysis Date:	2/20/2018	SeqNo:	2937506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6540.000	0.10						6520	0.306	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028679
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028679-001

Client Sample ID: MW-58BR-Q118
Collection Date: 2/19/2018 1:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A** QC Batch: **R122166**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/20/2018 10:38 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	11	0.13	1.0		µg/L	1	2/26/2018 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A** QC Batch: **R122166**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/20/2018 10:57 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/26/2018 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028679
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028679-003

Client Sample ID: MW-903-Q118
Collection Date: 2/19/2018 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A** QC Batch: **R122166**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/20/2018 11:16 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/26/2018 08:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A**	QC Batch: **R122166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	560	3.3	20		µg/L	100	2/20/2018 11:35 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66863**			PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	510	0.65	5.0		µg/L	5	2/26/2018 08:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A**	QC Batch: **R122166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	2/20/2018 12:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66863**			PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	530	0.65	5.0		µg/L	5	2/26/2018 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A**	QC Batch: **R122166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/20/2018 12:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122166**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **PBW**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122166**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **LCSW**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.949	0.20	5.000	0	99.0	90	110				

Sample ID **N028679-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.168	1.0	25.00	12.74	97.7	90	110				

Sample ID **N028679-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.682	1.0	5.000	0	93.6	90	110				

Sample ID **N028679-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.715	1.0	5.000	0	94.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028679-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1057.210	20	500.0	556.3	100	90	110				

Sample ID **N028679-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1057.280	20	500.0	554.0	101	90	110				

Sample ID **N028679-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.029	0.20	1.000	0	103	90	110				

Sample ID **N028679-004ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	552.070	20						556.3	0.767	20	

Sample ID **N028679-004AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1055.280	20	500.0	556.3	99.8	90	110	1057	0.183	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66863	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941709

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66863	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.207	1.0	10.00	0	102	85	115				

Sample ID	N028679-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.851	1.0	10.00	11.44	84.1	75	125				

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941718

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.788	1.0	10.00	11.44	83.5	75	125	19.85	0.316	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.0	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.6	0.16	0.25		mg/L	5	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.7	0.16	0.25		mg/L	5	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122323	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	PBW	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941661

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122323	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	LCSW	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	85	115				

Sample ID	N028679-004CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.014	0.25						4.566	9.35	20	

Sample ID	N028679-005CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.441	0.25	2.500	4.710	109	75	125				

Sample ID	N028679-005CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.082	0.25	2.500	4.710	94.9	75	125	7.441	4.94	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.7	0.081	0.10		µg/L	1	2/26/2018 06:46 PM
Manganese	290	1.3	2.5		µg/L	5	2/26/2018 06:51 PM
Molybdenum	24	0.21	0.50		µg/L	1	2/26/2018 06:46 PM
Selenium	2.1	0.36	0.50		µg/L	1	2/26/2018 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	4.3	0.081	0.10		µg/L	1	2/26/2018 07:48 PM
Manganese	1100	2.6	5.0		µg/L	10	2/26/2018 07:59 PM
Molybdenum	67	0.21	0.50		µg/L	1	2/26/2018 07:48 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	4.1	0.081	0.10		µg/L	1	2/26/2018 08:04 PM
Manganese	1100	2.6	5.0		µg/L	10	2/26/2018 08:16 PM
Molybdenum	66	0.21	0.50		µg/L	1	2/26/2018 08:04 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 08:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.6	0.081	0.10		µg/L	1	2/26/2018 08:21 PM
Manganese	1.5	0.26	0.50		µg/L	1	2/26/2018 08:21 PM
Molybdenum	14	0.21	0.50		µg/L	1	2/26/2018 08:21 PM
Selenium	4.0	0.36	0.50		µg/L	1	2/26/2018 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	1.6	0.081	0.10		µg/L	1	2/26/2018 08:32 PM
Manganese	1.8	0.26	0.50		µg/L	1	2/26/2018 08:32 PM
Molybdenum	14	0.21	0.50		µg/L	1	2/26/2018 08:32 PM
Selenium	3.8	0.36	0.50		µg/L	1	2/26/2018 08:32 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66863**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66863**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.287	0.10	10.00	0	103	85	115				
Manganese	104.144	0.50	100.0	0	104	85	115				
Molybdenum	10.217	0.50	10.00	0	102	85	115				
Selenium	10.470	0.50	10.00	0	105	85	115				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.264	0.10	10.00	1.742	105	75	125				
Molybdenum	34.302	0.50	10.00	24.30	100	75	125				
Selenium	11.565	0.50	10.00	2.149	94.2	75	125				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	372.735	2.5	100.0	291.3	81.4	75	125				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.236	0.10	10.00	1.742	105	75	125	12.26	0.225	20	
Molybdenum	34.627	0.50	10.00	24.30	103	75	125	34.30	0.943	20	
Selenium	11.717	0.50	10.00	2.149	95.7	75	125	11.57	1.31	20	

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	374.226	2.5	100.0	291.3	82.9	75	125	372.7	0.399	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

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Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker		RWQCB	✓	1. Chilled /
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec		CalTrans		2. Headspace
Submitted By: Gary Clift	Phone: Fax:	Phone: 949-727-1400, ext 200 Fax:	Others	✓	LEVEL III		3. Container Intact
SR. Technician	916-786-3302		Specify: RWQCB		LEVEL IV		4. Seal Present
Signature: Date: 2/19/18	Sampled By: Gary Clift		Global ID:		Regulatory		5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for				Specify State:		6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 2-19-18						Sample Temp: 2.1°C
Project Number: RC000753.0801							Courier: Tracking No.:

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4. OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4. OH 2x250 mL poly	Metals Dissolved (6020AFF) Manganese; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7); HNO3 500 mL poly	Dissolved Arsenic SW 6020	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028679-01	MW-58BR-Q118	2/19/2018	1350		X		X	X	X		X		X					X	E	4	P	BN	
2	-02	MW-64BR-Q118	2/19/2018	1451		X		X	X	X		X		X					X	E	4	P	BN	
3	-03	MW-903-Q118	2/19/2018	1501		X		X	X	X		X		X					X	E	4	P	BN	
4	-04	MW-62-065-Q118	2/19/2018	1553		X		X	X	X		X		X					X	E	4	P	BN	
5	-05	MW-902-Q118	2/19/2018	1603		X		X	X	X		X		X					X	E	4	P	BN	
6	-06	MW-710-Q118	2/19/2018	1620		X														E	1	P	BN	
7																								
8																								
9																								
10																								

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Gary Clift	2-19-18 1611		2/19/18 1611
	2/19/18 1645		2/19/18 1645

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/19/2018	Workorder:	N028679
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/20/2018

Reviewed By: 02/26/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

20-Feb-18

WorkOrder: N028679

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/19/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028679-001A	MW-58BR-Q118	2/19/2018 1:50:00 PM	3/5/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-001B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-001C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-001D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-002A	MW-64BR-Q118	2/19/2018 2:51:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-002B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-002C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-002D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-003A	MW-903-Q118	2/19/2018 3:01:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-003B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-003C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-003D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-004A	MW-62-065-Q118	2/19/2018 3:53:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-004B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

20-Feb-18

WorkOrder: N028679

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/19/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028679-004B	MW-62-065-Q118	2/19/2018 3:53:00 PM	3/5/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-004C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-004D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-005A	MW-902-Q118	2/19/2018 4:03:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-005B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-005C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-005D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-006A	MW-710-Q118	2/19/2018 4:20:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-007A	FOLDER	3/5/2018	3/5/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/5/2018		Folder	Folder	☐	☐	☐	LAB
			3/5/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028679

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028679

Item	Page
Cover Page	1-5
Analytical Result/QC Summary Reports	6-33
Sample Receiving Items	34-39
List of Analysts	40
Raw Data	
EPA 120.1	41-44
EPA 218.6	45-125
SM 4500-NO3F	126-141
EPA 6020_Dissolved	142-215

March 05, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028679

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 19, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028679

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

ASSET Laboratories

Date: *05-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028679
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028679-001A	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-001B	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-001C	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-001D	MW-58BR-Q118	Groundwater	2/19/2018 1:50:00 PM	2/19/2018	3/5/2018
N028679-002A	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-002B	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-002C	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-002D	MW-64BR-Q118	Groundwater	2/19/2018 2:51:00 PM	2/19/2018	3/5/2018
N028679-003A	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-003B	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-003C	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-003D	MW-903-Q118	Groundwater	2/19/2018 3:01:00 PM	2/19/2018	3/5/2018
N028679-004A	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-004B	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-004C	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-004D	MW-62-065-Q118	Groundwater	2/19/2018 3:53:00 PM	2/19/2018	3/5/2018
N028679-005A	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-005B	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-005C	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-005D	MW-902-Q118	Groundwater	2/19/2018 4:03:00 PM	2/19/2018	3/5/2018
N028679-006A	MW-710-Q118	Groundwater	2/19/2018 4:20:00 PM	2/19/2018	3/5/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	6500	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	5100	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180220D**	QC Batch: **R122203**			PrepDate			Analyst: **LR**
Specific Conductance	5100	0.10	0.10		umhos/cm	1	2/20/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028679-001DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122203
Client ID:	ZZZZZZ	Batch ID:	R122203	TestNo:	EPA 120.1			Analysis Date:	2/20/2018	SeqNo:	2937506

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6540.000	0.10						6520	0.306	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A** QC Batch: **R122166**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/20/2018 10:38 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	11	0.13	1.0		µg/L	1	2/26/2018 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028679
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028679-002

Client Sample ID: MW-64BR-Q118
Collection Date: 2/19/2018 2:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A** QC Batch: **R122166**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/20/2018 10:57 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/26/2018 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180220A**	QC Batch: **R122166**				PrepDate		Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/20/2018 11:16 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/26/2018 08:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A**	QC Batch: **R122166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	560	3.3	20		µg/L	100	2/20/2018 11:35 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66863**			PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	510	0.65	5.0		µg/L	5	2/26/2018 08:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028679
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028679-005

Client Sample ID: MW-902-Q118
Collection Date: 2/19/2018 4:03:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A** QC Batch: **R122166**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	3.3	20		µg/L	100	2/20/2018 12:13 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	530	0.65	5.0		µg/L	5	2/26/2018 08:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180220A**	QC Batch: **R122166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/20/2018 12:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122166**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **PBW**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122166**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **LCSW**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.949	0.20	5.000	0	99.0	90	110				

Sample ID **N028679-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.168	1.0	25.00	12.74	97.7	90	110				

Sample ID **N028679-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.682	1.0	5.000	0	93.6	90	110				

Sample ID **N028679-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.715	1.0	5.000	0	94.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028679-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1057.210	20	500.0	556.3	100	90	110				

Sample ID **N028679-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1057.280	20	500.0	554.0	101	90	110				

Sample ID **N028679-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.029	0.20	1.000	0	103	90	110				

Sample ID **N028679-004ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	552.070	20						556.3	0.767	20	

Sample ID **N028679-004AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1055.280	20	500.0	556.3	99.8	90	110	1057	0.183	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66863	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941709

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66863	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.207	1.0	10.00	0	102	85	115				

Sample ID	N028679-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.851	1.0	10.00	11.44	84.1	75	125				

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941718

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.788	1.0	10.00	11.44	83.5	75	125	19.85	0.316	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.0	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate			Analyst: **QBM**	
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:53:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.6	0.16	0.25		mg/L	5	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028679
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028679-005

Client Sample ID: MW-902-Q118
Collection Date: 2/19/2018 4:03:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.7	0.16	0.25		mg/L	5	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122323**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **122323**		
Client ID: **PBW**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**				SeqNo: **2941661**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122323**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **122323**		
Client ID: **LCSW**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**				SeqNo: **2941662**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	85	115				

Sample ID **N028679-004CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **122323**		
Client ID: **ZZZZZZ**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**				SeqNo: **2941666**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.014	0.25						4.566	9.35	20	

Sample ID **N028679-005CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **122323**		
Client ID: **ZZZZZZ**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**				SeqNo: **2941668**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.441	0.25	2.500	4.710	109	75	125				

Sample ID **N028679-005CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **122323**		
Client ID: **ZZZZZZ**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**				SeqNo: **2941669**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.082	0.25	2.500	4.710	94.9	75	125	7.441	4.94	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	2/26/2018 06:46 PM
Manganese	290	1.3	2.5		µg/L	5	2/26/2018 06:51 PM
Molybdenum	24	0.21	0.50		µg/L	1	2/26/2018 06:46 PM
Selenium	2.1	0.36	0.50		µg/L	1	2/26/2018 06:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 2:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	4.3	0.081	0.10		µg/L	1	2/26/2018 07:48 PM
Manganese	1100	2.6	5.0		µg/L	10	2/26/2018 07:59 PM
Molybdenum	67	0.21	0.50		µg/L	1	2/26/2018 07:48 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 07:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 3:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	4.1	0.081	0.10		µg/L	1	2/26/2018 08:04 PM
Manganese	1100	2.6	5.0		µg/L	10	2/26/2018 08:16 PM
Molybdenum	66	0.21	0.50		µg/L	1	2/26/2018 08:04 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 08:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028679
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028679-004

Client Sample ID: MW-62-065-Q118
Collection Date: 2/19/2018 3:53:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.6	0.081	0.10		µg/L	1	2/26/2018 08:21 PM
Manganese	1.5	0.26	0.50		µg/L	1	2/26/2018 08:21 PM
Molybdenum	14	0.21	0.50		µg/L	1	2/26/2018 08:21 PM
Selenium	4.0	0.36	0.50		µg/L	1	2/26/2018 08:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q118
Lab Order:	N028679	**Collection Date:**	2/19/2018 4:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028679-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.6	0.081	0.10		µg/L	1	2/26/2018 08:32 PM
Manganese	1.8	0.26	0.50		µg/L	1	2/26/2018 08:32 PM
Molybdenum	14	0.21	0.50		µg/L	1	2/26/2018 08:32 PM
Selenium	3.8	0.36	0.50		µg/L	1	2/26/2018 08:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66863**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66863**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.287	0.10	10.00	0	103	85	115				
Manganese	104.144	0.50	100.0	0	104	85	115				
Molybdenum	10.217	0.50	10.00	0	102	85	115				
Selenium	10.470	0.50	10.00	0	105	85	115				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.264	0.10	10.00	1.742	105	75	125				
Molybdenum	34.302	0.50	10.00	24.30	100	75	125				
Selenium	11.565	0.50	10.00	2.149	94.2	75	125				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	372.735	2.5	100.0	291.3	81.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.236	0.10	10.00	1.742	105	75	125	12.26	0.225	20	
Molybdenum	34.627	0.50	10.00	24.30	103	75	125	34.30	0.943	20	
Selenium	11.717	0.50	10.00	2.149	95.7	75	125	11.57	1.31	20	

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	374.226	2.5	100.0	291.3	82.9	75	125	372.7	0.399	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
SR. Technician	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 2/19/18	Sampled By: Gary Clift		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 2-19-18				Sample Temp: 2.1°C
Project Number: RC000753.0801					Courier: Tracking No.:

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4. OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2. SO4, NH4. OH 2x250 mL poly	Metals Dissolved (6020AFF) Manganese; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7); HNO3 500 mL poly	Dissolved Arsenic SW 6020	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028679-01	MW-58BR-Q118	2/19/2018	1350		X		X	X	X		X		X					X	E	4	P	BN	
2	-02	MW-64BR-Q118	2/19/2018	1451		X		X	X	X		X		X					X	E	4	P	BN	
3	-03	MW-903-Q118	2/19/2018	1501		X		X	X	X		X		X					X	E	4	P	BN	
4	-04	MW-62-065-Q118	2/19/2018	1553		X		X	X	X		X		X					X	E	4	P	BN	
5	-05	MW-902-Q118	2/19/2018	1603		X		X	X	X		X		X					X	E	4	P	BN	
6	-06	MW-710-Q118	2/19/2018	1620		X														E	1	P	BN	
7																								
8																								
9																								
10																								

Relinquished by (Signature and Printed Name): Gary Clift 2-19-18 Date/Time: 1611
Relinquished by (Signature and Printed Name): Date/Time: 2/19/18 1611
Relinquished by (Signature and Printed Name): Date/Time: 2/19/18 1645
Relinquished by (Signature and Printed Name): Date/Time: 2/19/18 1645
Relinquished by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/19/2018	Workorder:	N028679
Rep sample Temp (Deg C):	2.1	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 2/20/2018

Reviewed By: 02/26/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

20-Feb-18

WorkOrder: N028679

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/19/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028679-001A	MW-58BR-Q118	2/19/2018 1:50:00 PM	3/5/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-001B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-001C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-001D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-002A	MW-64BR-Q118	2/19/2018 2:51:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-002B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-002C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-002D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-003A	MW-903-Q118	2/19/2018 3:01:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-003B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-003C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-003D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-004A	MW-62-065-Q118	2/19/2018 3:53:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-004B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

20-Feb-18

WorkOrder: N028679

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/19/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028679-004B	MW-62-065-Q118	2/19/2018 3:53:00 PM	3/5/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-004C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-004D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-005A	MW-902-Q118	2/19/2018 4:03:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-005B			3/5/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/5/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028679-005C			3/5/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028679-005D			3/5/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028679-006A	MW-710-Q118	2/19/2018 4:20:00 PM	3/5/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028679-007A	FOLDER	3/5/2018	3/5/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/5/2018		Folder	Folder	☐	☐	☐	LAB
			3/5/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028679

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122203 **Analyst:** LSR

ASSET #: N028679 **Date Analyzed:** 2/20/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/22/2018

2nd Level Reviewer RB 03/01/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/20/18 1400

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV - 171018A	9.55 @ 19.5°C	% Rec: (90-110%)
1412	171121A	1414 @ 19.2°C	
9981	171018B	9720 @ 19.2°C	
99842	171121B	9720 @ 19.3°C	

	Sample ID	Matrix	Reading	Comments
1	NO28679 1D DUP	H2O	6520 @ 19.6°C	NO28679
2	NO28675-1DUP		6540 @ 19.6°C	
3	2D		10,300 @ 19.8°C	LLR 2/21/18
4	3D		10,180 @ 19.6°C	19.6°C
5	4D		5060 @ 19.5°C	
6	5D		5070 @ 19.7°C	19.7°C LLR 2/21/18
7				
8				
9	1413 uS/cm	CINV-171121C	1477 @ 19.1°C	
10	10000	170822F	9277 @ 19.5°C	
Dup	99672	171215A	10000 @ 19.7°C	Accept: 10% water, 20% soil
Std Chk:			19.6	% Rec: (90-110%)

Date: 2/21/18 1750

Analyst: LSR

Julia Ramit 2/22/2018

RLB 03/01/2018

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV - 171018A	9.66 @ 19.8°C	% Rec: (90-110%)
1412	171121A	1434 @ 19.9°C	
9981	171018B	10030 @ 19.9°C	
99842	171121B	100000 @ 19.8°C	

	Sample ID	Matrix	Reading	Comments
1	NO28696-1D DUP	H2O	11,140 @ 19.9°C	
2	2D		10,650 @ 19.7°C	1413 CINV 171121C
3	3D		10,640 @ 19.3°C	=1441 @ 19.5°C
4	4D		17,980 @ 19.7°C	10000 CINV 170822F
5	5D		15,030 @ 20.0°C	=9990 @ 19.7°C
6	6D		14,930 @ 19.8°C	99672 CINV 171215A
7	7D		15,040 @ 20.3°C	=96000 @ 19.7°C
8	8D		14650 @ 19.9°C	
9	9D		10500 @ 19.5°C	
10	4D DUP		18030 @ 19.4°C	
Dup				Accept: 10% water, 20% soil
Std Chk:				% Rec: (90-110%)

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R122166
ASSET #: N028679

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/20/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilutions were necessary in N028679-002A/003A due to matrix interference. MS were not recovered at 1X.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/21/2018

2nd Level Reviewer RLB 03/05/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028679** ~~**N02867**~~**-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.5480 * 5$$

$$Cr^{+6}, \mu g/L = 12.7400$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 13}$$

rba 2/21/2018

RLB 03/05/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/20/18 9:23 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/20/18 9:33 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/20/18 9:43 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/20/18 9:52 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/20/18 10:04 AM	Reported
14	MB-R122166	MBLK	1	Hexavalent Chromium	02/20/18 10:17 AM	Reported
15	LCS-R122166	LCS	1	Hexavalent Chromium	02/20/18 10:29 AM	Reported
16	N028679-001A	SAMP	5	Hexavalent Chromium	02/20/18 10:38 AM	Reported
17	N028679-001AMS	MS	5	Hexavalent Chromium	02/20/18 10:48 AM	Reported
18	N028679-002A	SAMP	5	Hexavalent Chromium	02/20/18 10:57 AM	Reported
19	N028679-002AMS	MS	5	Hexavalent Chromium	02/20/18 11:07 AM	Reported
20	N028679-003A	SAMP	5	Hexavalent Chromium	02/20/18 11:16 AM	Reported
21	N028679-003AMS	MS	5	Hexavalent Chromium	02/20/18 11:25 AM	Reported
22	N028679-004A	SAMP	100	Hexavalent Chromium	02/20/18 11:35 AM	Reported
23	N028679-004AMS	MS	100	Hexavalent Chromium	02/20/18 11:44 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/20/18 11:54 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/20/18 12:03 PM	Reported
26	N028679-005A	SAMP	100	Hexavalent Chromium	02/20/18 12:13 PM	Reported
27	N028679-005AMS	MS	100	Hexavalent Chromium	02/20/18 12:22 PM	Reported
28	N028679-006A	SAMP	1	Hexavalent Chromium	02/20/18 12:32 PM	Reported
29	N028679-006AMS	MS	1	Hexavalent Chromium	02/20/18 12:41 PM	Reported
30	N028679-004ADUP	DUP	100	Hexavalent Chromium	02/20/18 12:56 PM	Reported
31	N028679-004AMSD	MSD	100	Hexavalent Chromium	02/20/18 1:07 PM	Reported
32	N028679-002A	SAMP	1	Hexavalent Chromium	02/20/18 1:17 PM	Not Reported
33	N028679-002AMS	MS	1	Hexavalent Chromium	02/20/18 1:26 PM	Not Reported
34	N028679-003A	SAMP	1	Hexavalent Chromium	02/20/18 1:35 PM	Not Reported
35	N028679-003AMS	MS	1	Hexavalent Chromium	02/20/18 1:45 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/20/18 1:54 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/20/18 2:04 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180220A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**20/Feb/18 14:34:40**
No. of Injections:	**40**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/20/2018 09:23	Finished	BLANK
10	BLANK	2	1000	Unknown		02/20/2018 09:33	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/20/2018 09:43	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/20/2018 09:52	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/20/2018 10:04	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/20/2018 10:17	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/20/2018 10:29	Finished	LCS, IWST-180129B
16	N028679-001A,SAMF	8	1000	Unknown		02/20/2018 10:38	Finished	SAMP,2>10mL
17	N028679-001AMS,MS	9	1000	Unknown		02/20/2018 10:48	Finished	MS (5ppb), IWST-180129B,2>1
18	N028679-002A,SAMF	10	1000	Unknown		02/20/2018 10:57	Finished	SAMP,2>10mL
19	N028679-002AMS,MS	11	1000	Unknown		02/20/2018 11:07	Finished	MS (1ppb), IWST-180129B,2>1
20	N028679-003A,SAMF	12	1000	Unknown		02/20/2018 11:16	Finished	SAMP,2>10mL
21	N028679-003AMS,MS	13	1000	Unknown		02/20/2018 11:25	Finished	MS (1ppb), IWST-180129B,2>1
22	N028679-004A,SAMF	14	1000	Unknown		02/20/2018 11:35	Finished	SAMP,0.1>10mL
23	N028679-004AMS,MS	15	1000	Unknown		02/20/2018 11:44	Finished	MS (5ppb), IWST-180129B,0.1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/20/2018 11:54	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/20/2018 12:03	Finished	CCB R180214B
26	N028679-005A,SAMF	18	1000	Unknown		02/20/2018 12:13	Finished	SAMP,0.1>10mL
27	N028679-005AMS,MS	19	1000	Unknown		02/20/2018 12:22	Finished	MS (5ppb), IWST-180129B,0.1
28	N028679-006A,SAMF	20	1000	Unknown		02/20/2018 12:32	Finished	SAMP,10mL
29	N028679-006AMS,MS	21	1000	Unknown		02/20/2018 12:41	Finished	MS (1ppb), IWST-180129B,10
30	N028679-004ADUP,D	23	1000	Unknown		02/20/2018 12:56	Finished	DUP,0.1>10mL
31	N028679-004AMSD,M	24	1000	Unknown		02/20/2018 13:07	Finished	MSD (5ppb), IWST-180129B,0.
32	N028679-002A,SAMF	25	1000	Unknown		02/20/2018 13:17	Finished	SAMP,10mL
33	N028679-002AMS,MS	26	1000	Unknown		02/20/2018 13:26	Finished	MS (1ppb), IWST-180129B,10
34	N028679-003A,SAMF	27	1000	Unknown		02/20/2018 13:35	Finished	SAMP,10mL
35	N028679-003AMS,MS	28	1000	Unknown		02/20/2018 13:45	Finished	MS (1ppb), IWST-180129B,10
36	CCV-3,CCV,1,	29	1000	Unknown		02/20/2018 13:54	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	30	1000	Unknown		02/20/2018 14:04	Finished	CCB R180214B
38	SHUTDOWN	31	1000	Unknown		02/20/2018 14:13	Finished	
39	Eluent: R180219A	32	1000	Unknown		n.a.	Finished	Eluent
40	PCR: R180219B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/20/18
Time Prepared: 0935H
Prepared By: MSA

Slope: 95.92
pH 4: 3.99 @ 25.0°C
7: 7.01 @ 25.0°C
10: 9.95 @ 25.0°C
LVS: 7.03 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M802219A
NH4OH + NH4SO4 buffer: M802214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028679-001A	9.57	-	~250ml	~250ml		
2)	2A	9.55	-				
3)	3A	9.55	-				
4)	4A	9.48	-				
5)	5A	9.47	-				
6)	6A	9.67	-				
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/21/18
Time Prepared: 0957H
Prepared By: MSA

Slope: 96.02
pH 4: 3.99 @ 25.0°C
7: 7.01 @ 25.0°C
10: 9.98 @ 25.0°C
LVS: 7.02 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M802219A
NH4OH + NH4SO4 buffer: M802214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028696-001A	9.41	-	~250ml	~250ml		
2)	2A	9.54	-				
3)	3A	9.57	-				
4)	4A	9.64	-				
5)	5A	9.67	-				
6)	6A	9.69	-				
7)	7A	9.65	-				
8)	8A	9.63	-				
9)	9A	9.51	-				
10)	10A	9.70	-				
11)	11A	9.69	-				
12)							
13)							
14)							
15)							

Logbook No. 14

jba 2/21/2018
03/05/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.99987

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/05/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ICV**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2935763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2935764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **CCV**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.991	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.200	0.20	0.2000	0	99.8	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ZZZZZZ**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.922	0.20	10.00	0	99.2	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122166**
Client ID: **CCV** Batch ID: **R122166** TestNo: **EPA 218.6** Analysis Date: **2/20/2018** SeqNo: **2935787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.895	0.20	5.000	0	97.9	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **ICB**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2935765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **CCB**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **CCB**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122166**
Client ID: **CCB**	Batch ID: **R122166**	TestNo: **EPA 218.6**		Analysis Date: **2/20/2018**	SeqNo: **2935788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/20/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	

Average	4.165
Actual RT Window	4.085 - 4.245
Applied RT Window	3.965 - 4.365

MB-R122166	N.A.	N.A.
LCS-R122166	4.165	PASS
N028679-001A	4.140	PASS
N028679-001AMS	4.140	PASS
N028679-002A	N.A.	N.A.
N028679-002AMS	4.115	PASS
N028679-003A	N.A.	N.A.
N028679-003AMS	4.123	PASS
N028679-004A	4.165	PASS
N028679-004AMS	4.165	PASS
N028679-005A	4.165	PASS
N028679-005AMS	4.165	PASS
N028679-006A	N.A.	N.A.
N028679-006AMS	4.165	PASS
N028679-004ADUP	4.165	PASS
N028679-004AMSD	4.165	PASS
N028679-002A	N.A.	N.A.
N028679-002AMS	N.A.	N.A.
N028679-003A	N.A.	N.A.
N028679-003AMS	N.A.	N.A.

rba 2/21/2018

RB 03/05/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

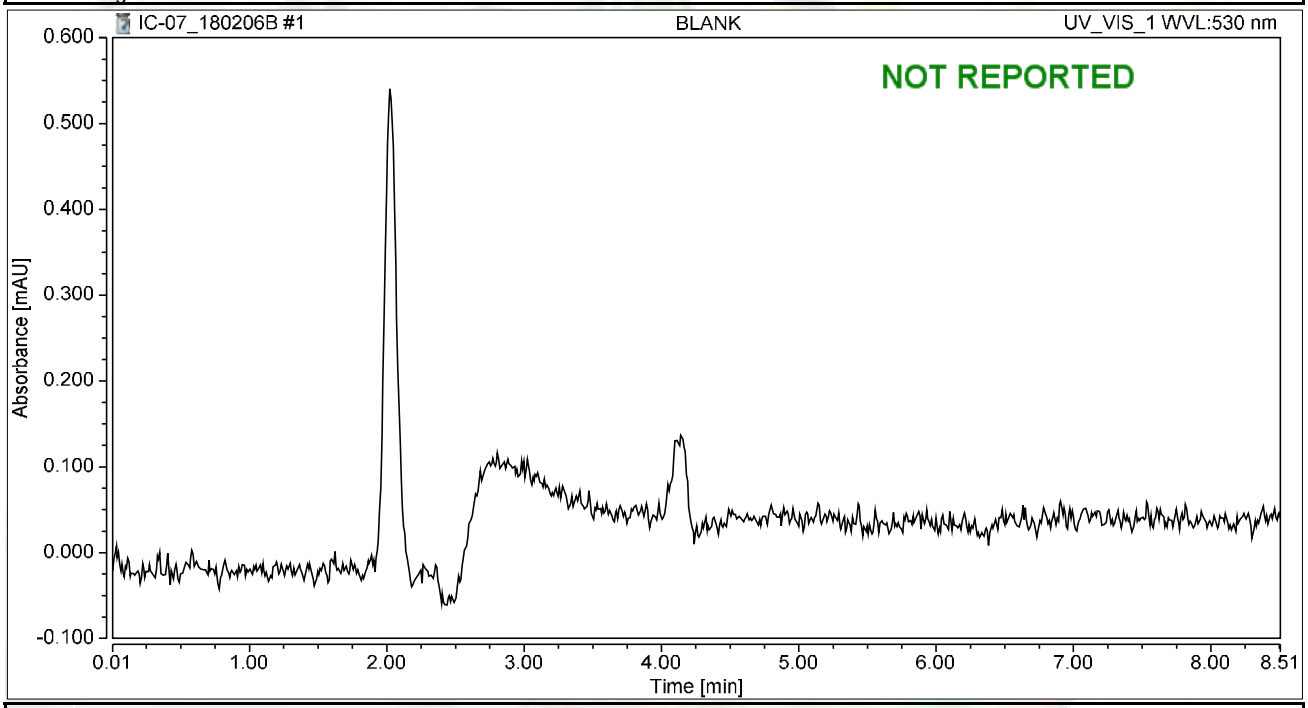
61	N028448-006A,SAMF	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMF	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMF	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMF	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMF	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMF	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMF	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMF	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

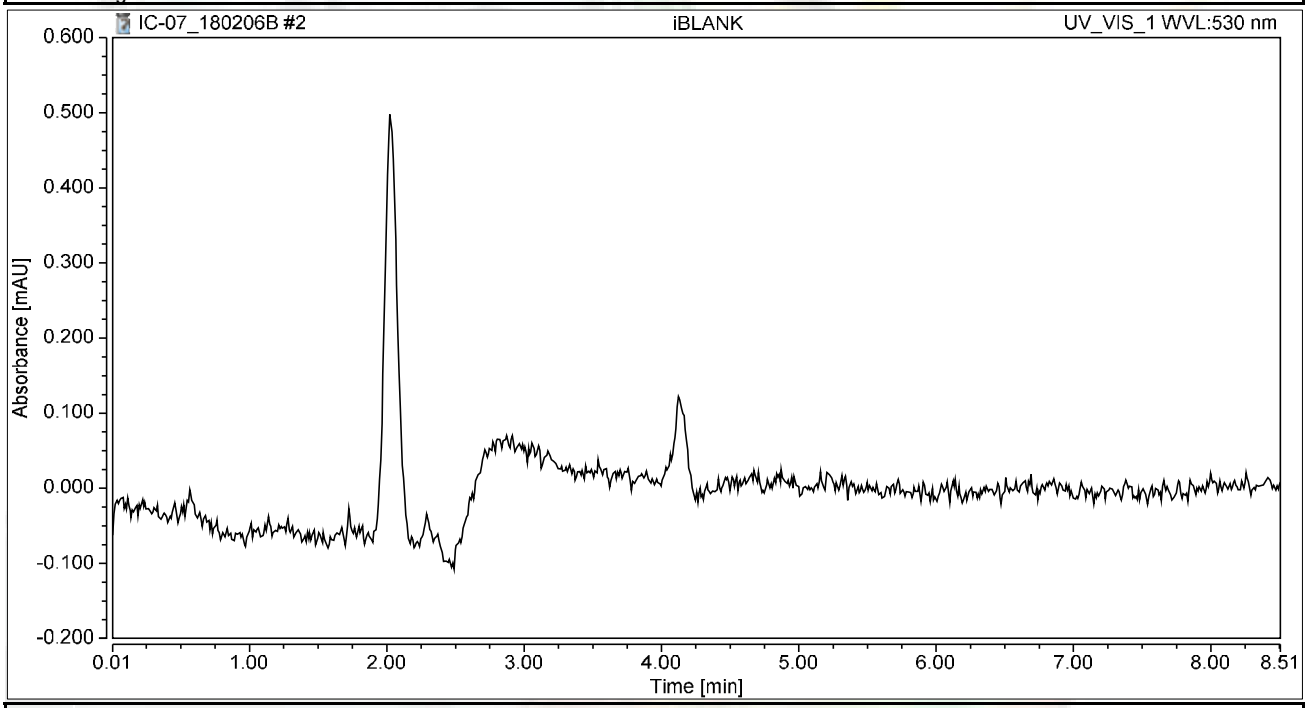
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

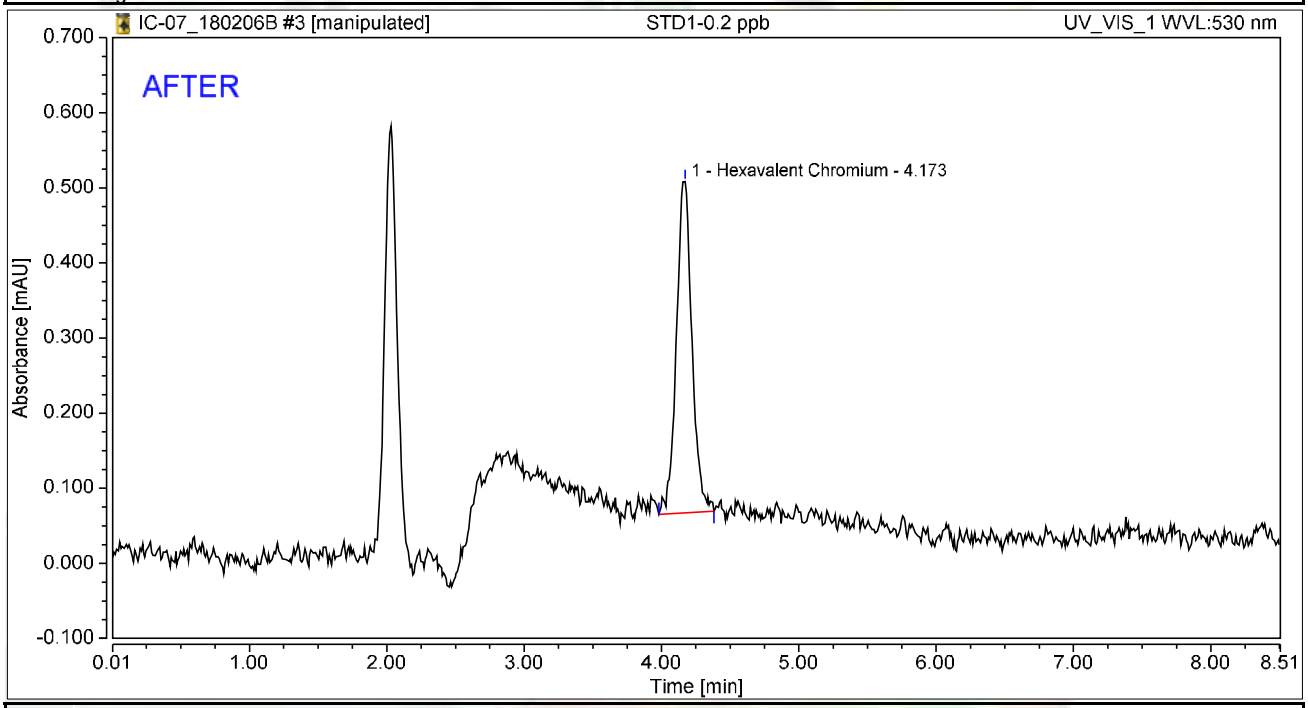
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

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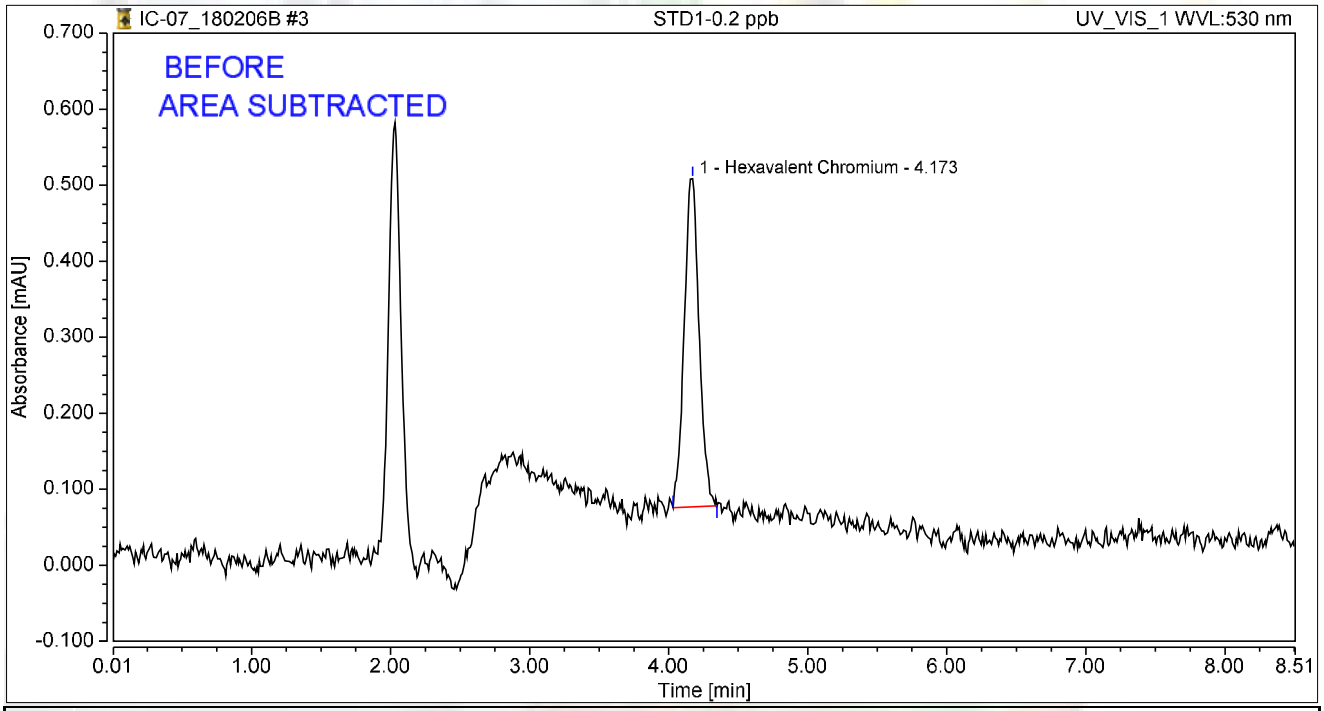
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

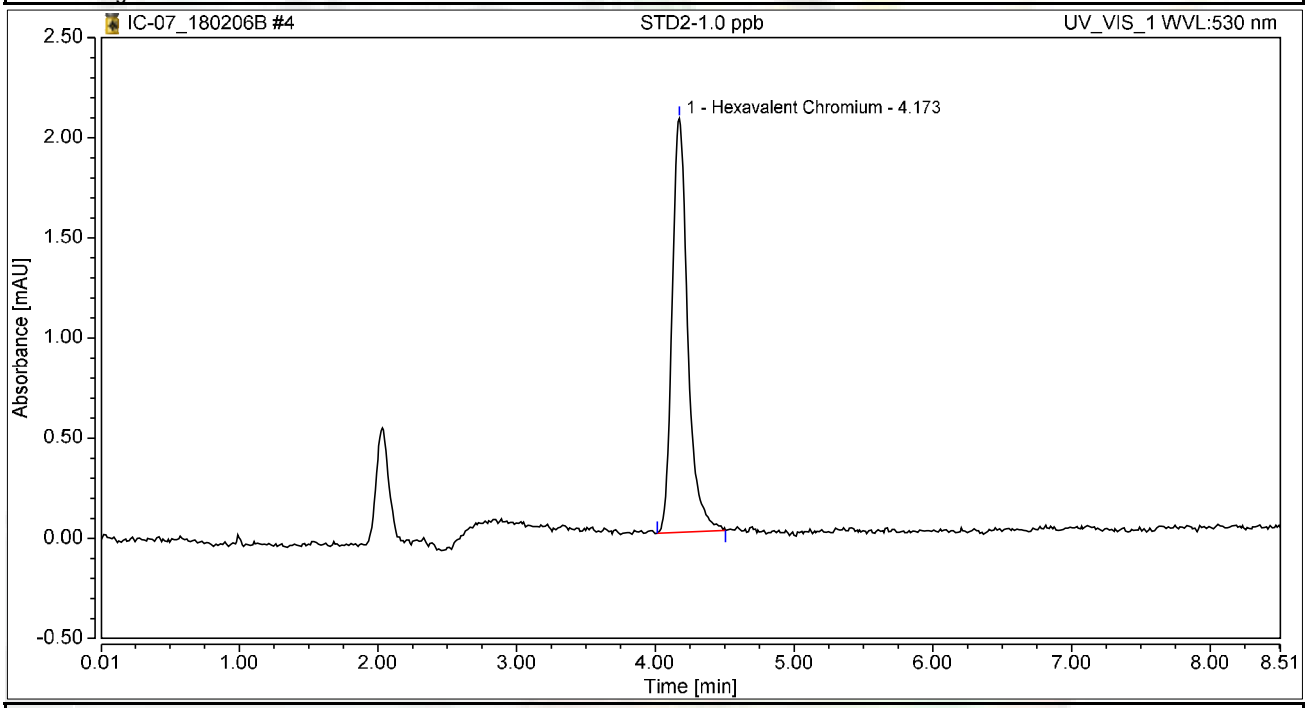
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

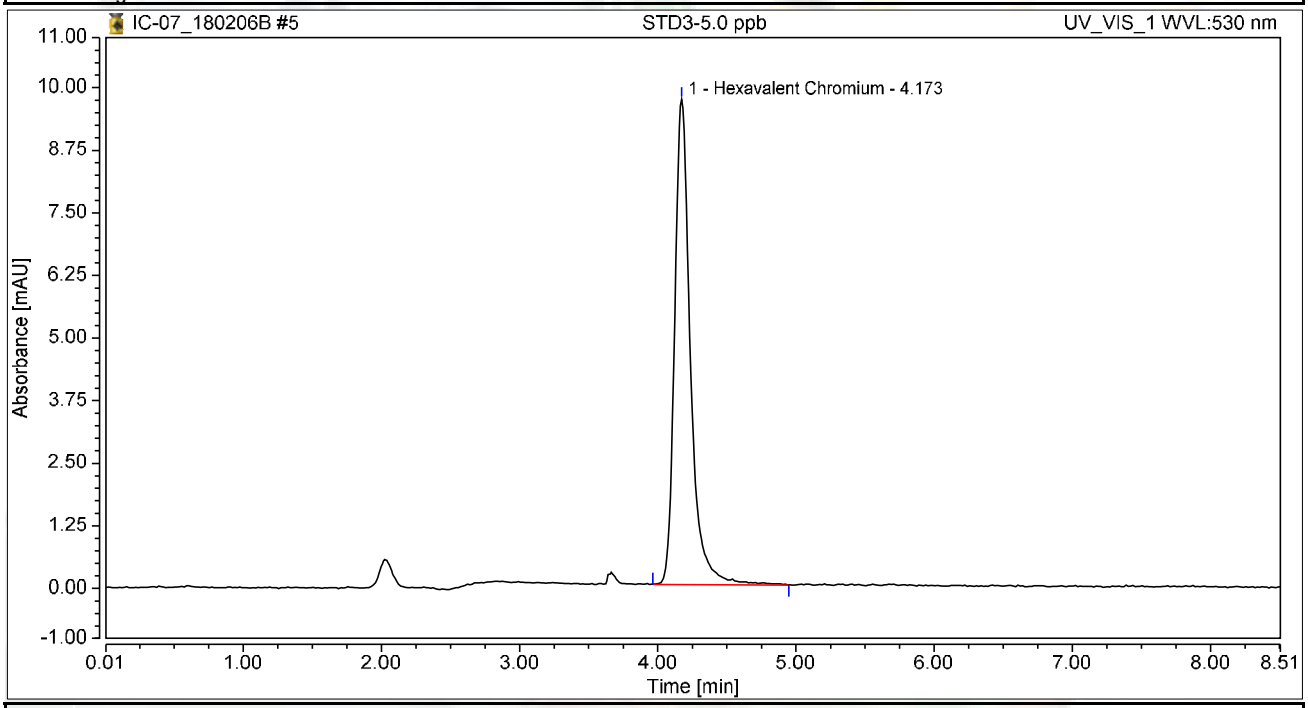
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

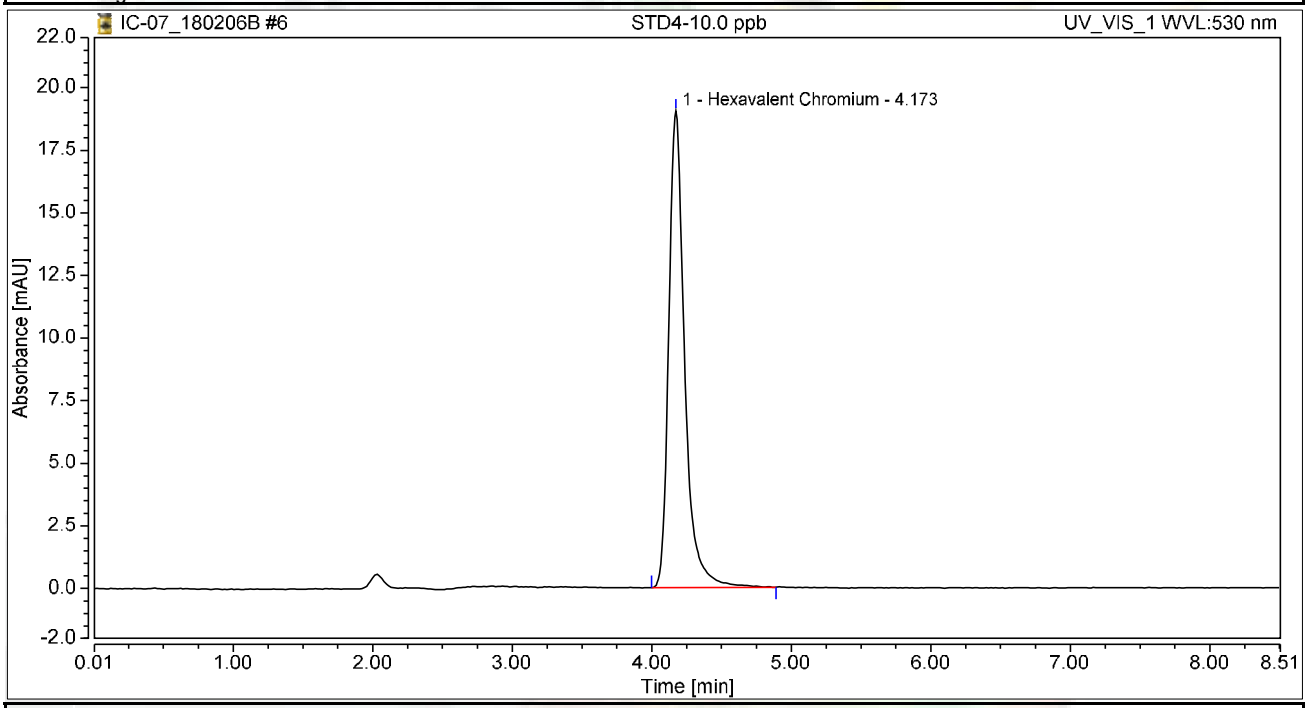
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

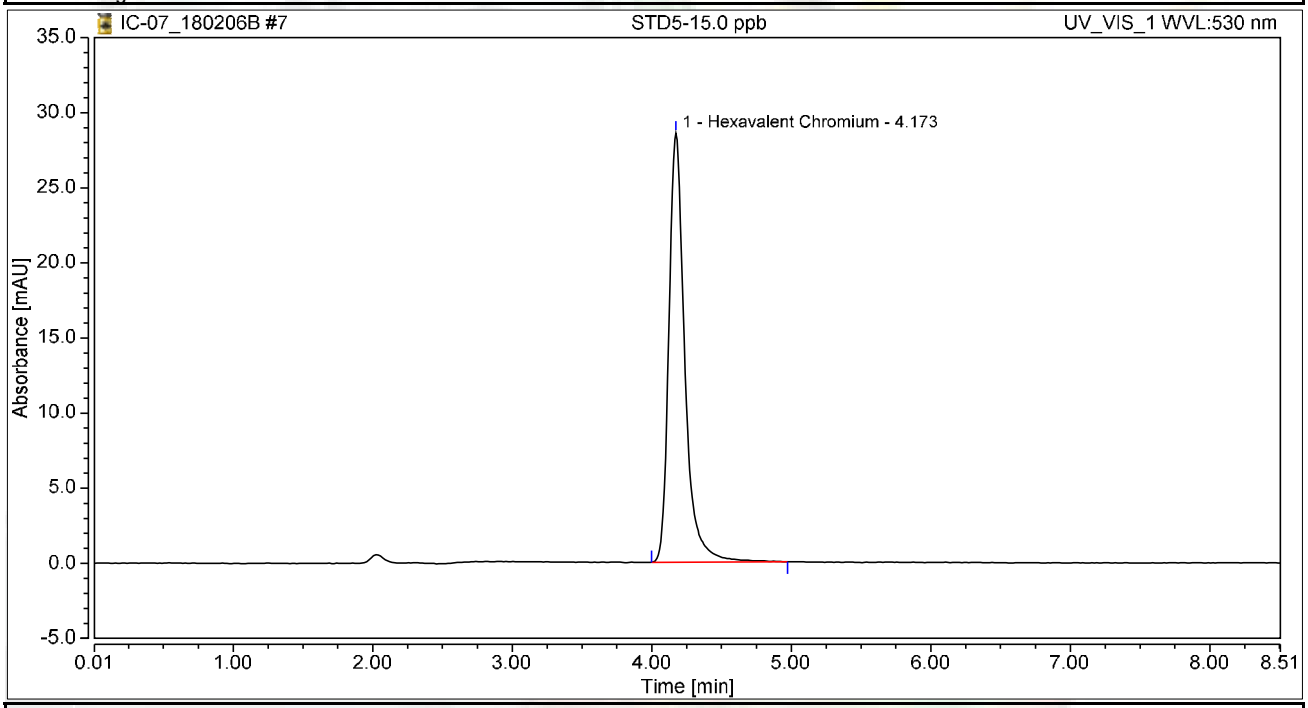
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

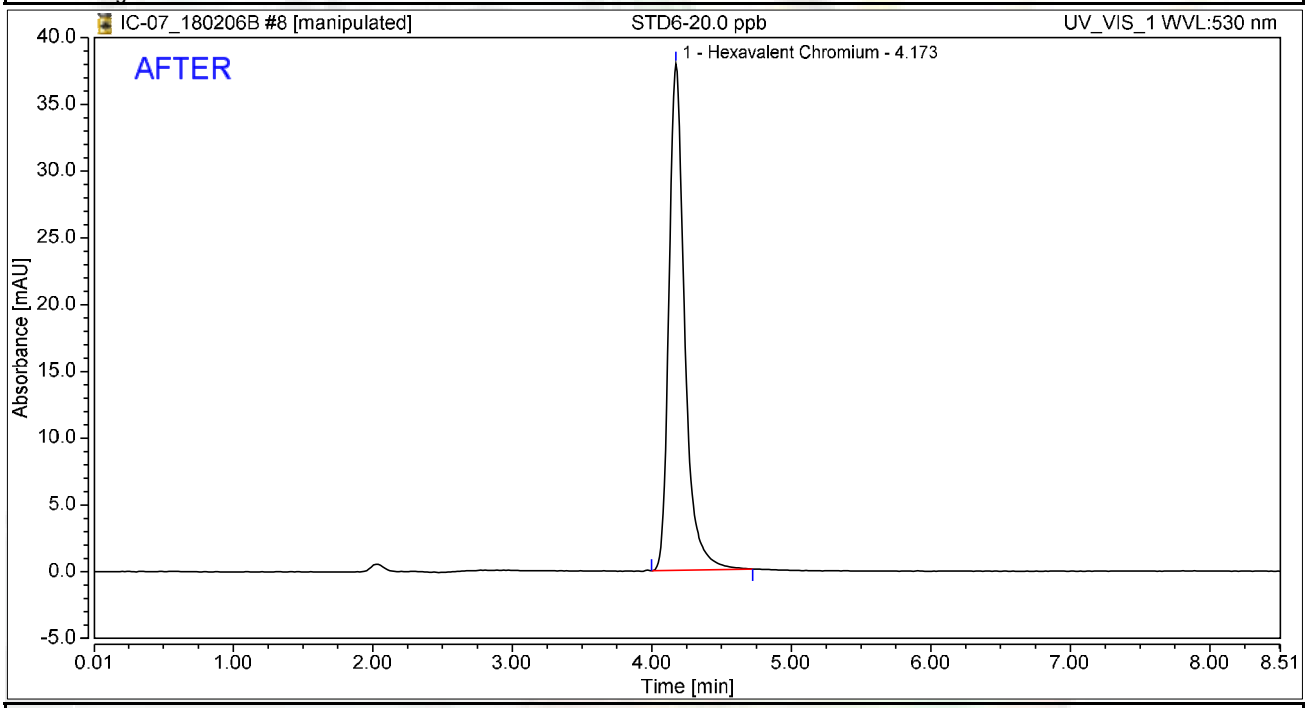
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

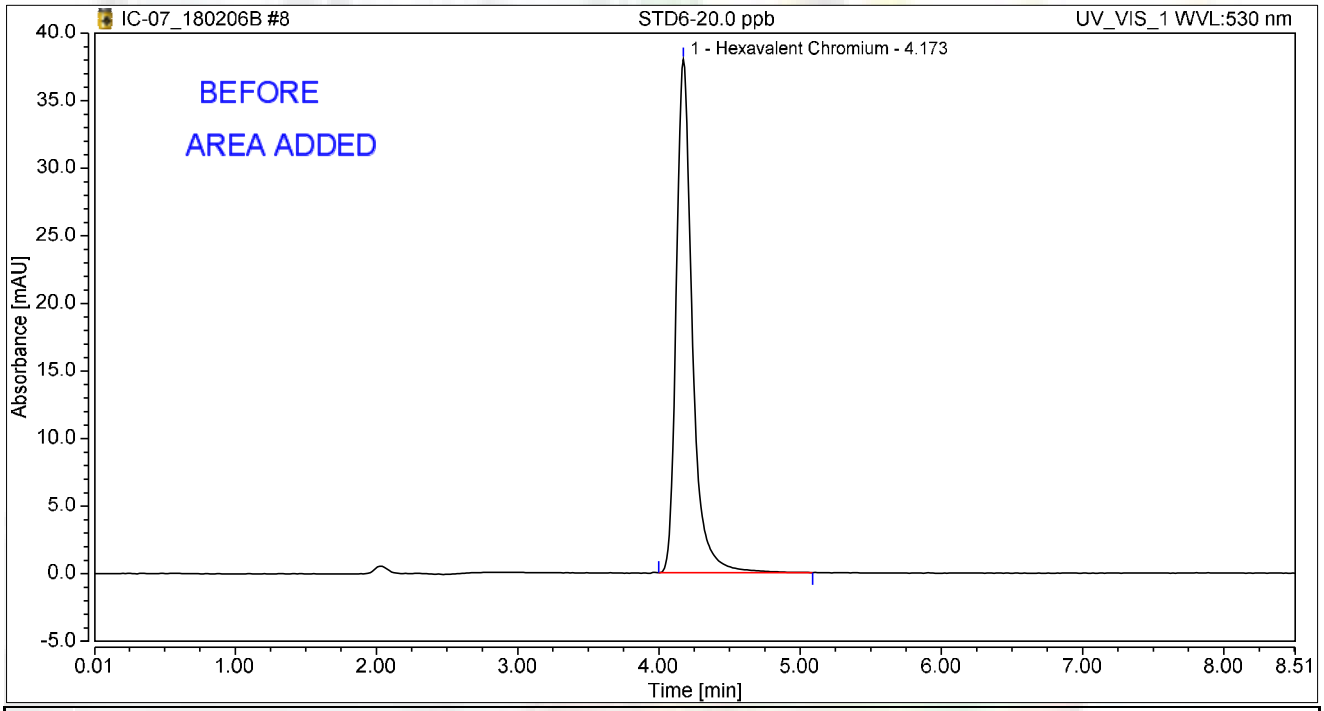
02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

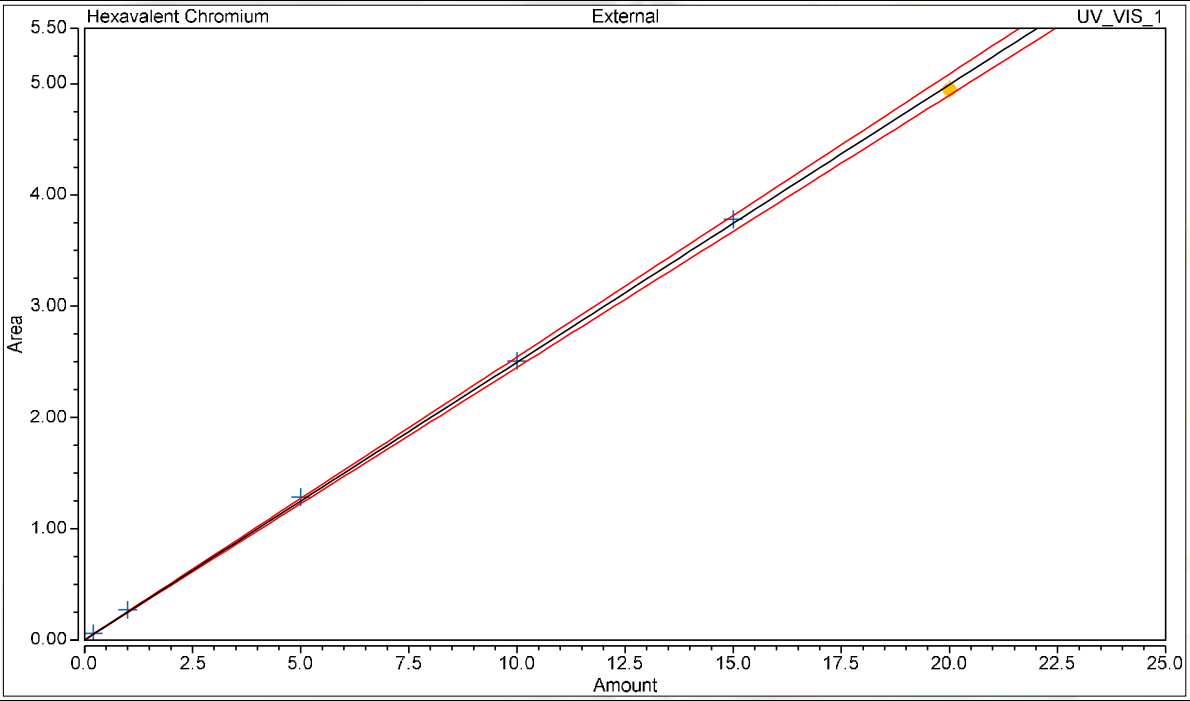
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

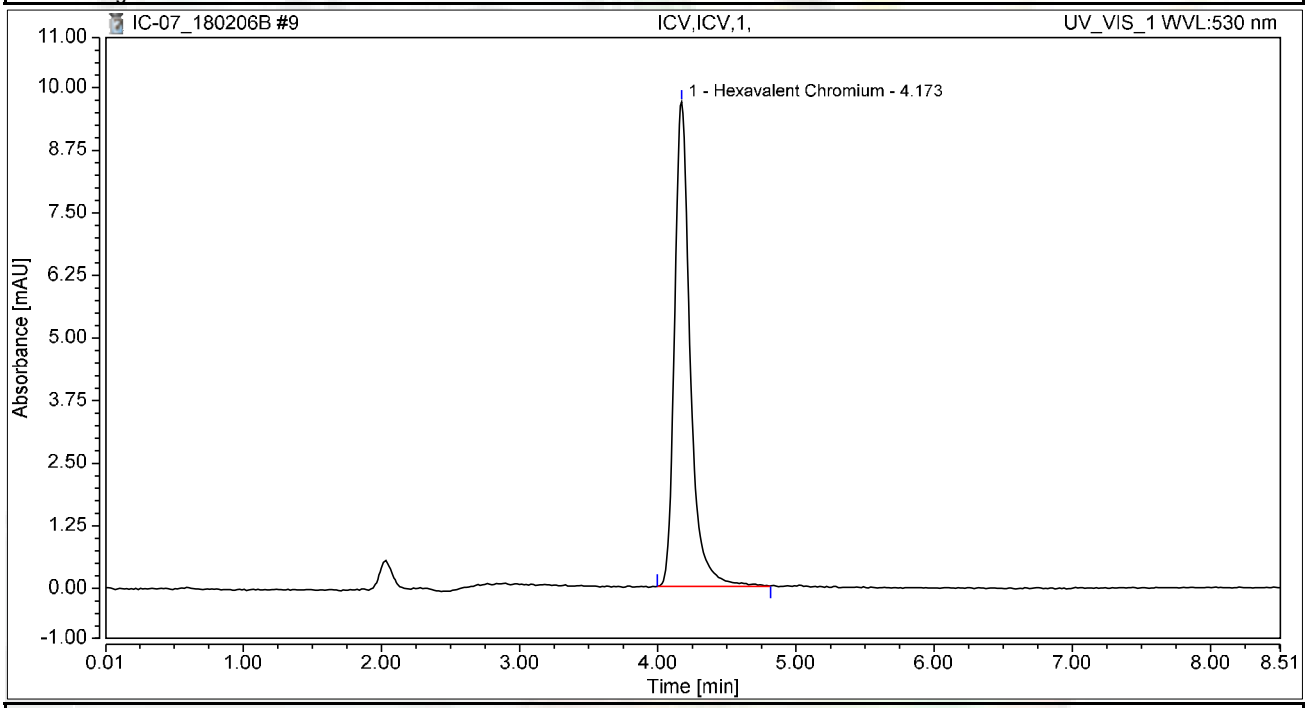
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

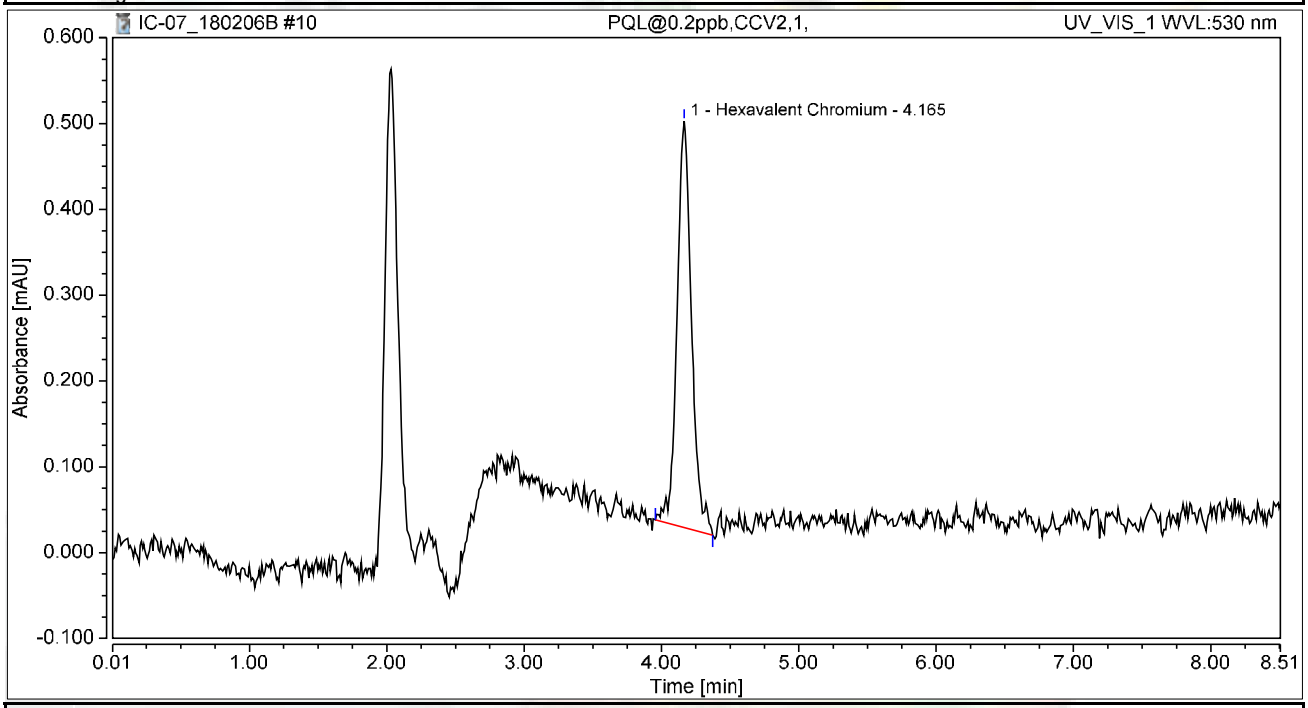
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

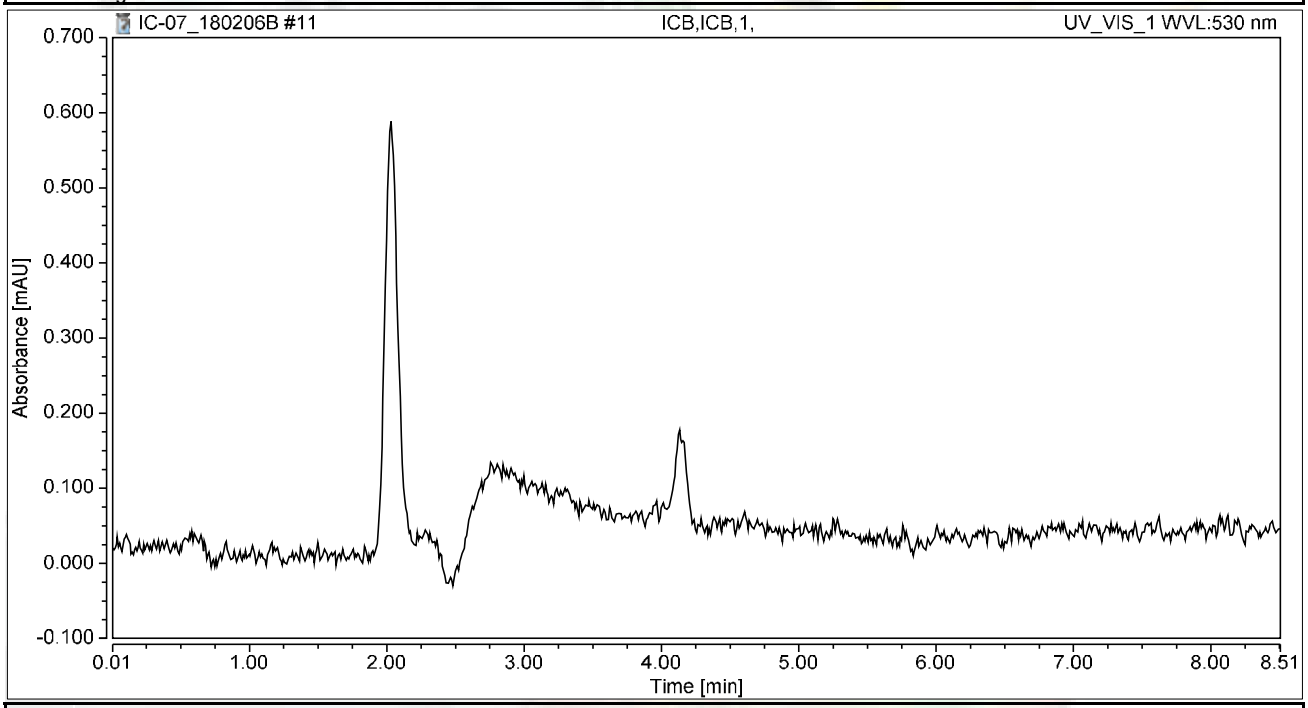
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180220A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/20/18 9:23 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/20/18 9:33 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/20/18 9:43 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/20/18 9:52 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/20/18 10:04 AM	Reported
14	MB-R122166	MBLK	1	Hexavalent Chromium	02/20/18 10:17 AM	Reported
15	LCS-R122166	LCS	1	Hexavalent Chromium	02/20/18 10:29 AM	Reported
16	N028679-001A	SAMP	5	Hexavalent Chromium	02/20/18 10:38 AM	Reported
17	N028679-001AMS	MS	5	Hexavalent Chromium	02/20/18 10:48 AM	Reported
18	N028679-002A	SAMP	5	Hexavalent Chromium	02/20/18 10:57 AM	Reported
19	N028679-002AMS	MS	5	Hexavalent Chromium	02/20/18 11:07 AM	Reported
20	N028679-003A	SAMP	5	Hexavalent Chromium	02/20/18 11:16 AM	Reported
21	N028679-003AMS	MS	5	Hexavalent Chromium	02/20/18 11:25 AM	Reported
22	N028679-004A	SAMP	100	Hexavalent Chromium	02/20/18 11:35 AM	Reported
23	N028679-004AMS	MS	100	Hexavalent Chromium	02/20/18 11:44 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/20/18 11:54 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/20/18 12:03 PM	Reported
26	N028679-005A	SAMP	100	Hexavalent Chromium	02/20/18 12:13 PM	Reported
27	N028679-005AMS	MS	100	Hexavalent Chromium	02/20/18 12:22 PM	Reported
28	N028679-006A	SAMP	1	Hexavalent Chromium	02/20/18 12:32 PM	Reported
29	N028679-006AMS	MS	1	Hexavalent Chromium	02/20/18 12:41 PM	Reported
30	N028679-004ADUP	DUP	100	Hexavalent Chromium	02/20/18 12:56 PM	Reported
31	N028679-004AMSD	MSD	100	Hexavalent Chromium	02/20/18 1:07 PM	Reported
32	N028679-002A	SAMP	1	Hexavalent Chromium	02/20/18 1:17 PM	Not Reported
33	N028679-002AMS	MS	1	Hexavalent Chromium	02/20/18 1:26 PM	Not Reported
34	N028679-003A	SAMP	1	Hexavalent Chromium	02/20/18 1:35 PM	Not Reported
35	N028679-003AMS	MS	1	Hexavalent Chromium	02/20/18 1:45 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/20/18 1:54 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/20/18 2:04 PM	Reported

rba 2/21/2018

IC7 RBA 2/21/2018 1:00 PM

RB 03/01/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180220A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**20/Feb/18 14:34:40**
No. of Injections:	**40**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/20/2018 09:23	Finished	BLANK
10	BLANK	2	1000	Unknown		02/20/2018 09:33	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/20/2018 09:43	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/20/2018 09:52	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/20/2018 10:04	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/20/2018 10:17	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/20/2018 10:29	Finished	LCS, IWST-180129B
16	N028679-001A,SAMF	8	1000	Unknown		02/20/2018 10:38	Finished	SAMP,2>10mL
17	N028679-001AMS,MS	9	1000	Unknown		02/20/2018 10:48	Finished	MS (5ppb), IWST-180129B,2>1
18	N028679-002A,SAMF	10	1000	Unknown		02/20/2018 10:57	Finished	SAMP,2>10mL
19	N028679-002AMS,MS	11	1000	Unknown		02/20/2018 11:07	Finished	MS (1ppb), IWST-180129B,2>1
20	N028679-003A,SAMF	12	1000	Unknown		02/20/2018 11:16	Finished	SAMP,2>10mL
21	N028679-003AMS,MS	13	1000	Unknown		02/20/2018 11:25	Finished	MS (1ppb), IWST-180129B,2>1
22	N028679-004A,SAMF	14	1000	Unknown		02/20/2018 11:35	Finished	SAMP,0.1>10mL
23	N028679-004AMS,MS	15	1000	Unknown		02/20/2018 11:44	Finished	MS (5ppb), IWST-180129B,0.1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/20/2018 11:54	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/20/2018 12:03	Finished	CCB R180214B
26	N028679-005A,SAMF	18	1000	Unknown		02/20/2018 12:13	Finished	SAMP,0.1>10mL
27	N028679-005AMS,MS	19	1000	Unknown		02/20/2018 12:22	Finished	MS (5ppb), IWST-180129B,0.1
28	N028679-006A,SAMF	20	1000	Unknown		02/20/2018 12:32	Finished	SAMP,10mL
29	N028679-006AMS,MS	21	1000	Unknown		02/20/2018 12:41	Finished	MS (1ppb), IWST-180129B,10
30	N028679-004ADUP,D	23	1000	Unknown		02/20/2018 12:56	Finished	DUP,0.1>10mL
31	N028679-004AMSD,M	24	1000	Unknown		02/20/2018 13:07	Finished	MSD (5ppb), IWST-180129B,0.
32	N028679-002A,SAMF	25	1000	Unknown		02/20/2018 13:17	Finished	SAMP,10mL
33	N028679-002AMS,MS	26	1000	Unknown		02/20/2018 13:26	Finished	MS (1ppb), IWST-180129B,10
34	N028679-003A,SAMF	27	1000	Unknown		02/20/2018 13:35	Finished	SAMP,10mL
35	N028679-003AMS,MS	28	1000	Unknown		02/20/2018 13:45	Finished	MS (1ppb), IWST-180129B,10
36	CCV-3,CCV,1,	29	1000	Unknown		02/20/2018 13:54	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	30	1000	Unknown		02/20/2018 14:04	Finished	CCB R180214B
38	SHUTDOWN	31	1000	Unknown		02/20/2018 14:13	Finished	
39	Eluent: R180219A	32	1000	Unknown		n.a.	Finished	Eluent
40	PCR: R180219B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

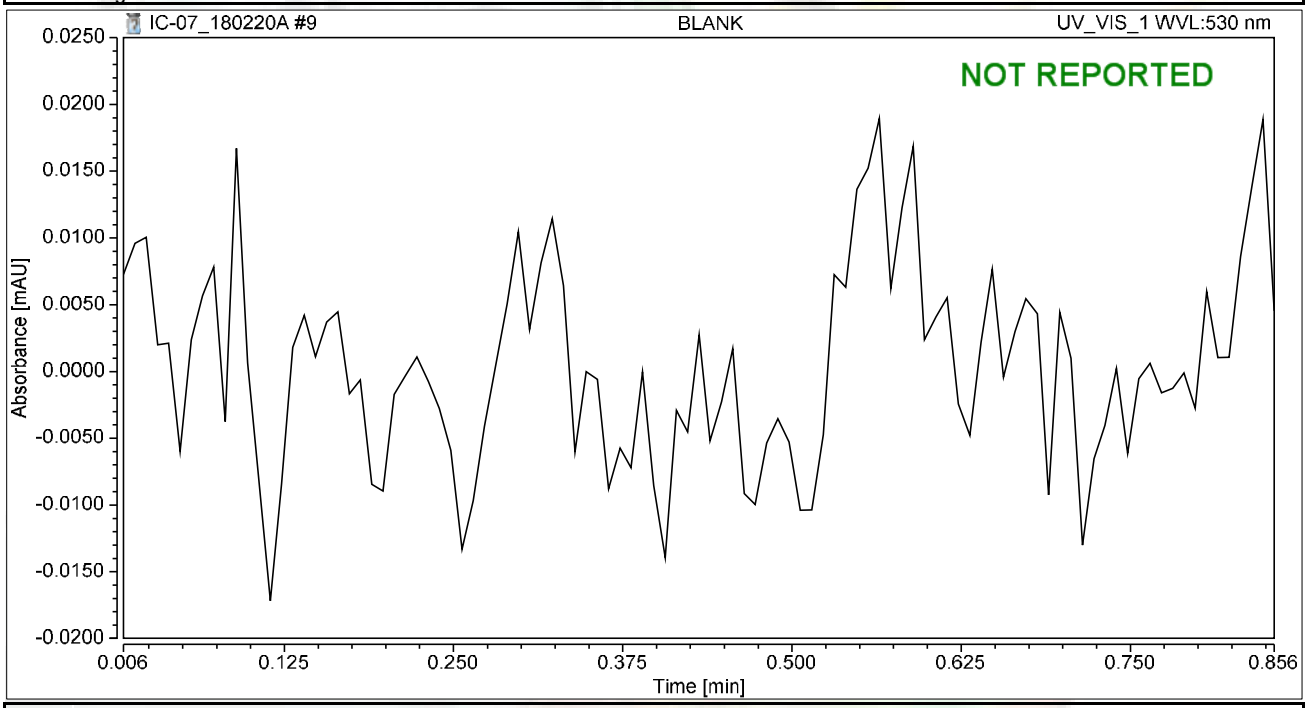
rba 2/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

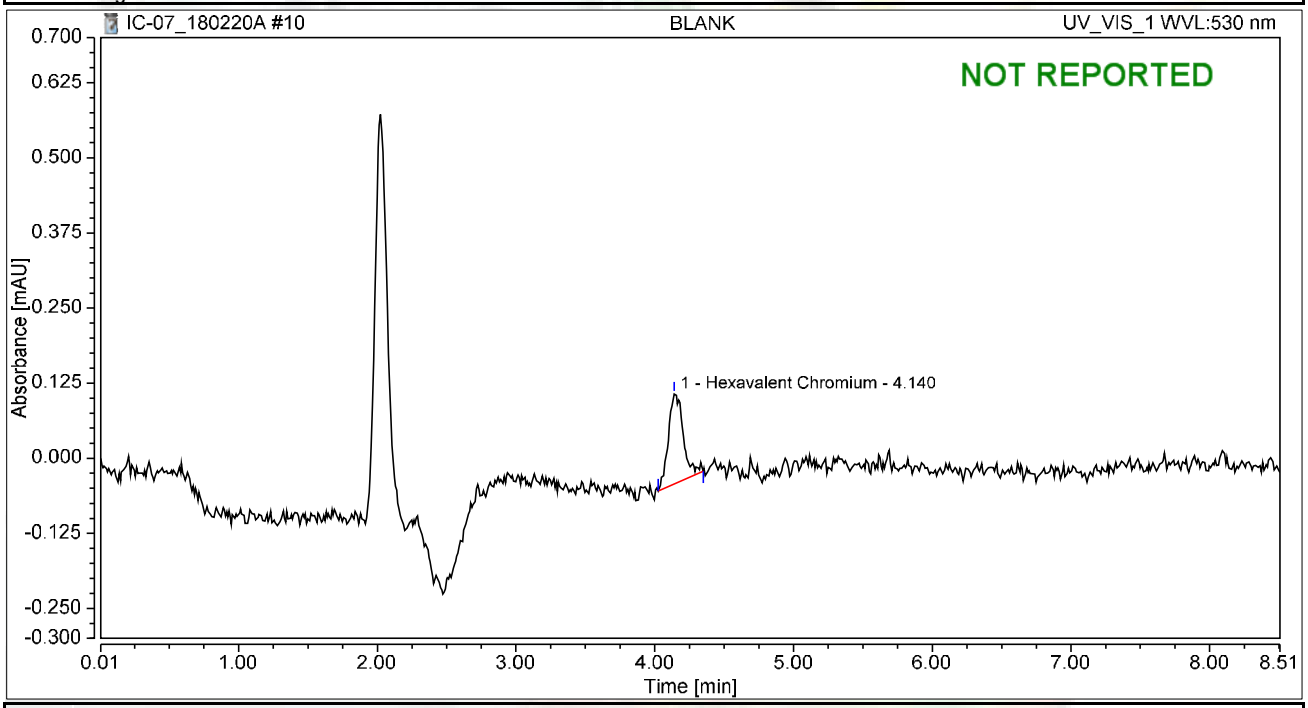
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

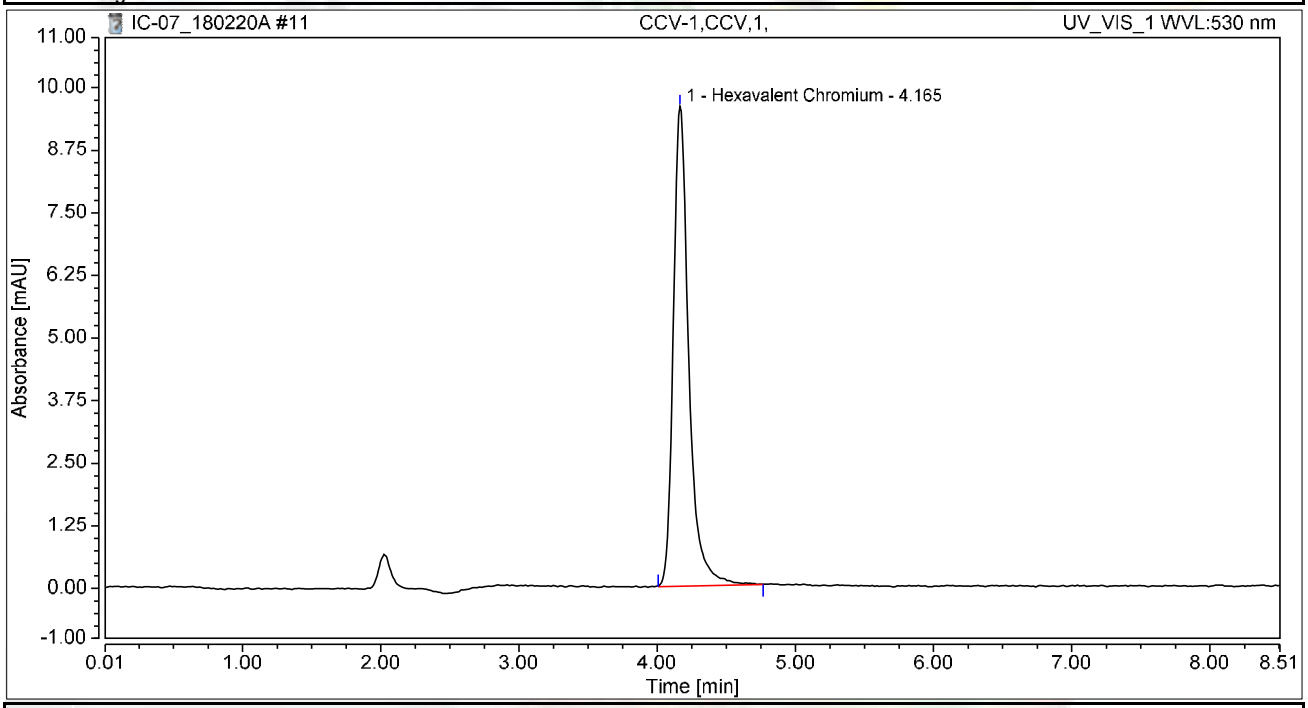
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.018	0.150	100.00	100.00	0.0736
Total:			**0.018**	**0.150**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 09:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

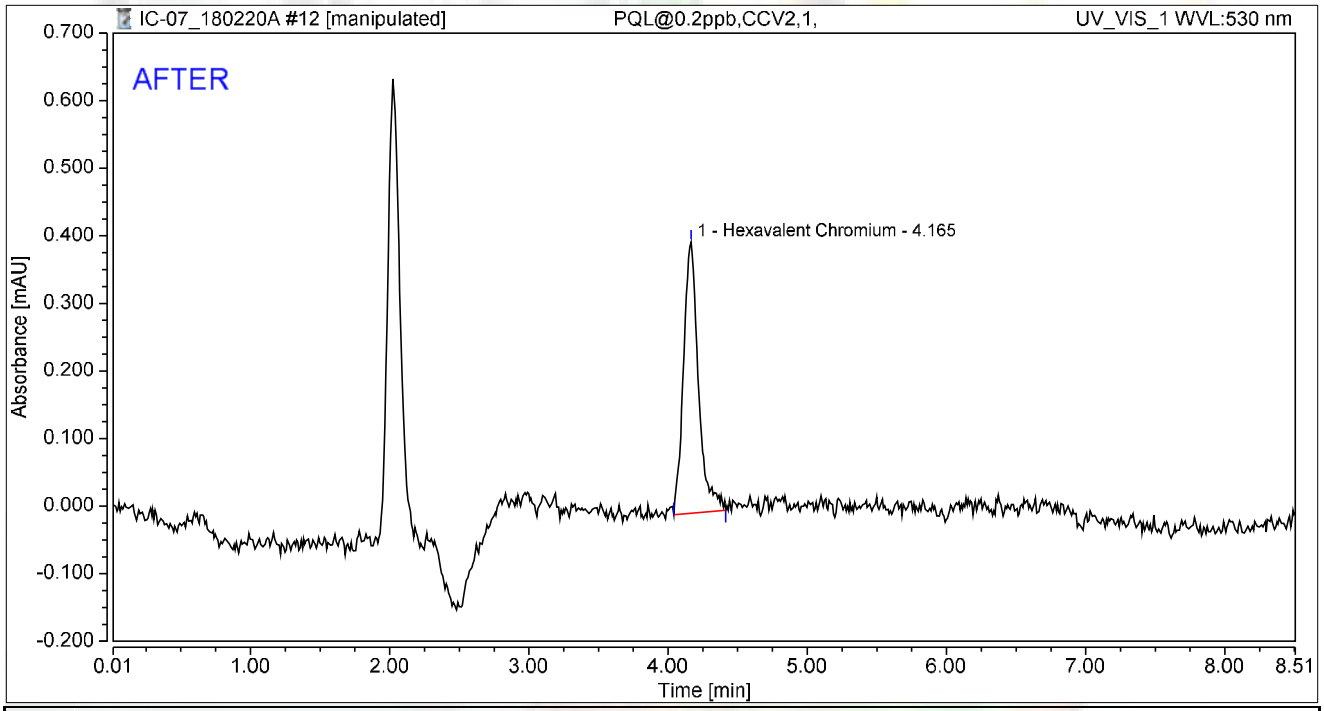
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.246	9.575	100.00	100.00	4.9913
Total:			**1.246**	**9.575**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.050	0.401	100.00	100.00	0.1995
Total:			**0.050**	**0.401**	**100.00**	**100.00**	

rba 2/21/2018

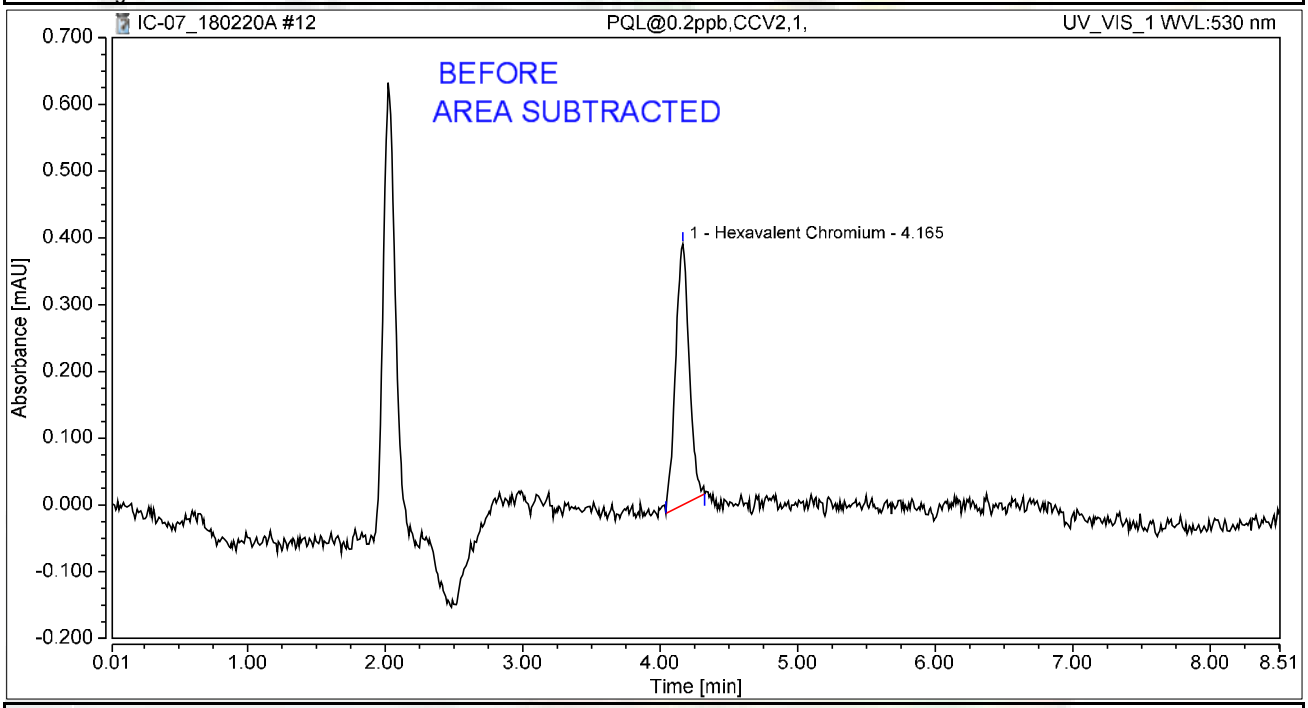
RB 03/01/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.045	0.390	100.00	100.00	0.1787
Total:			**0.045**	**0.390**	**100.00**	**100.00**	

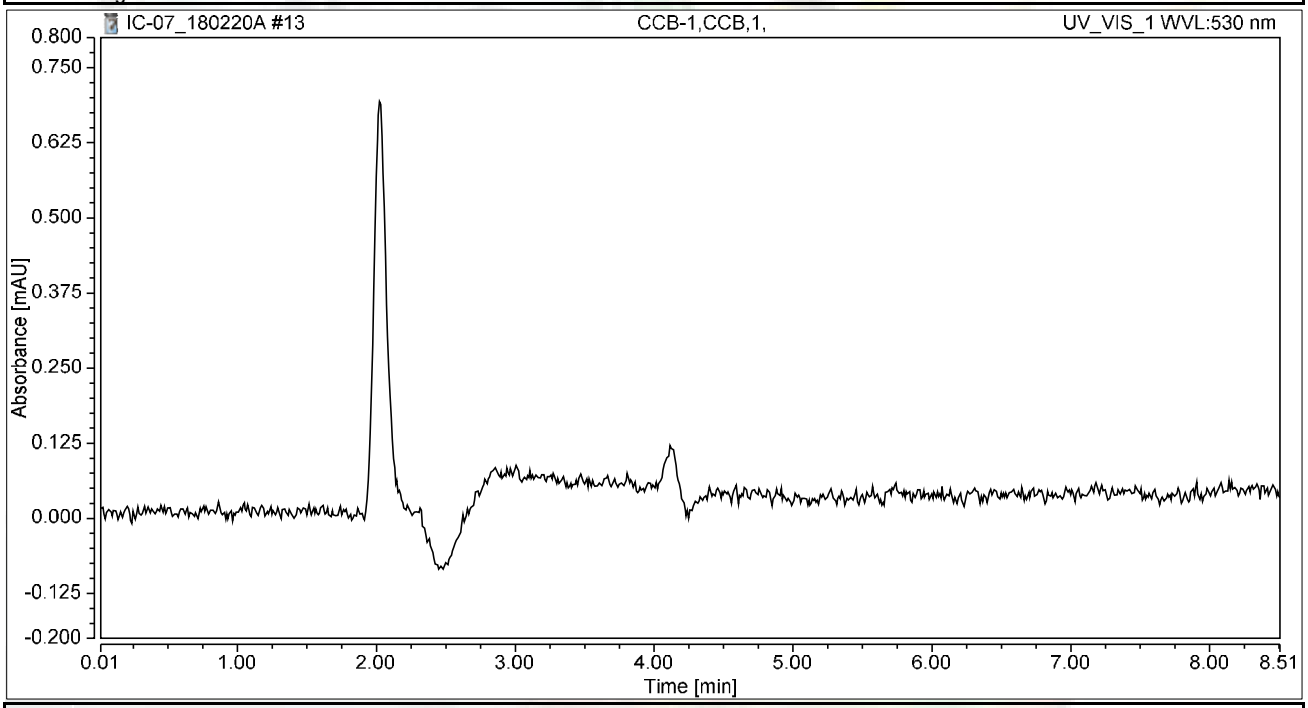
rba 2/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

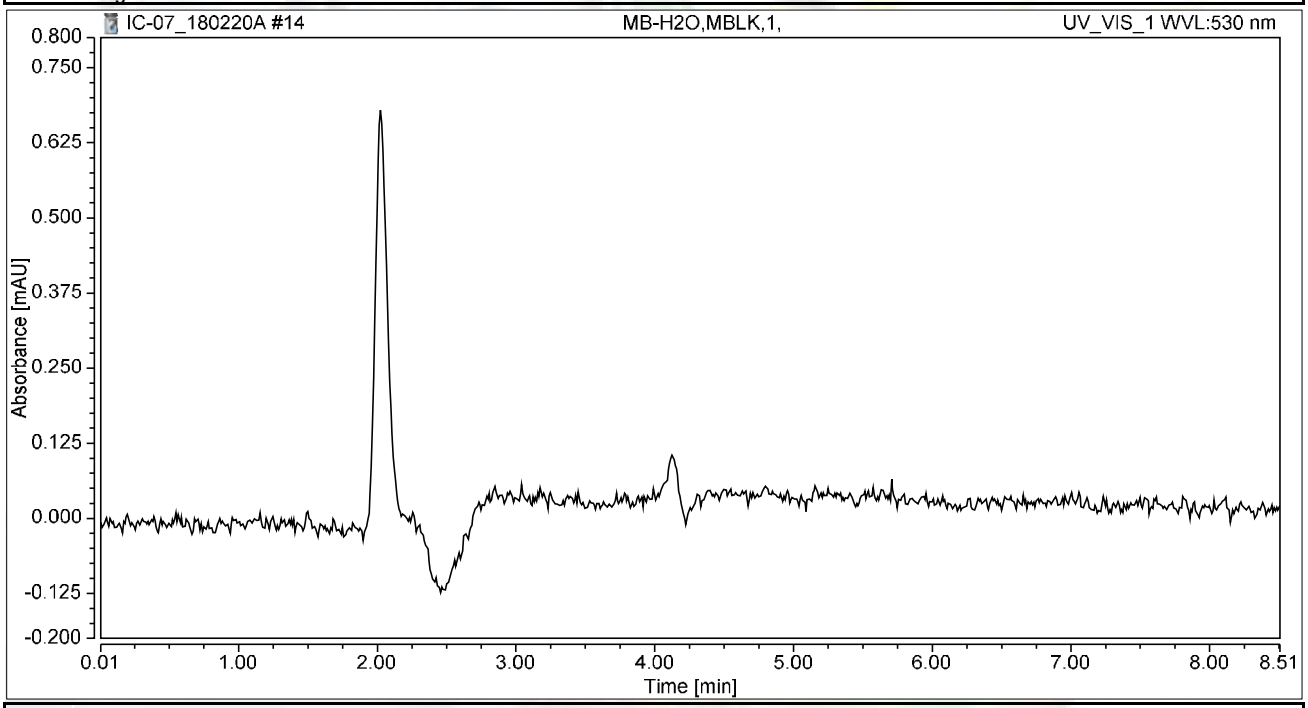
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

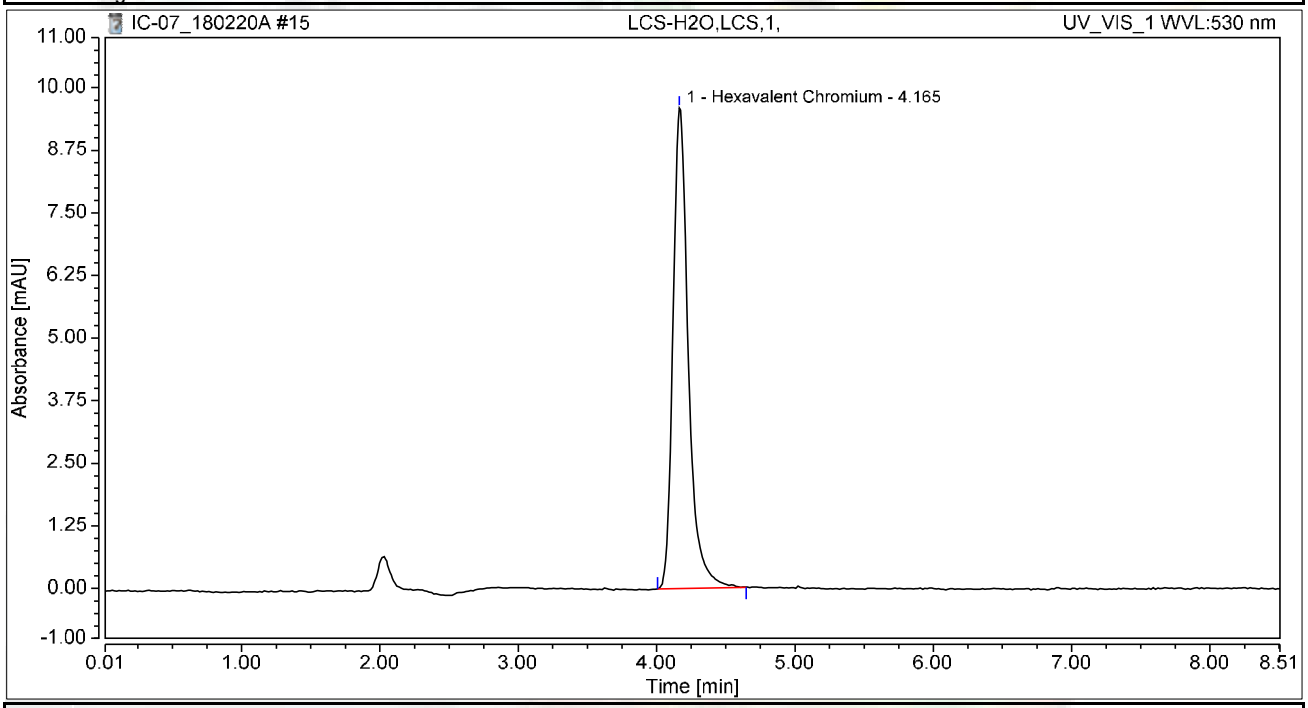
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

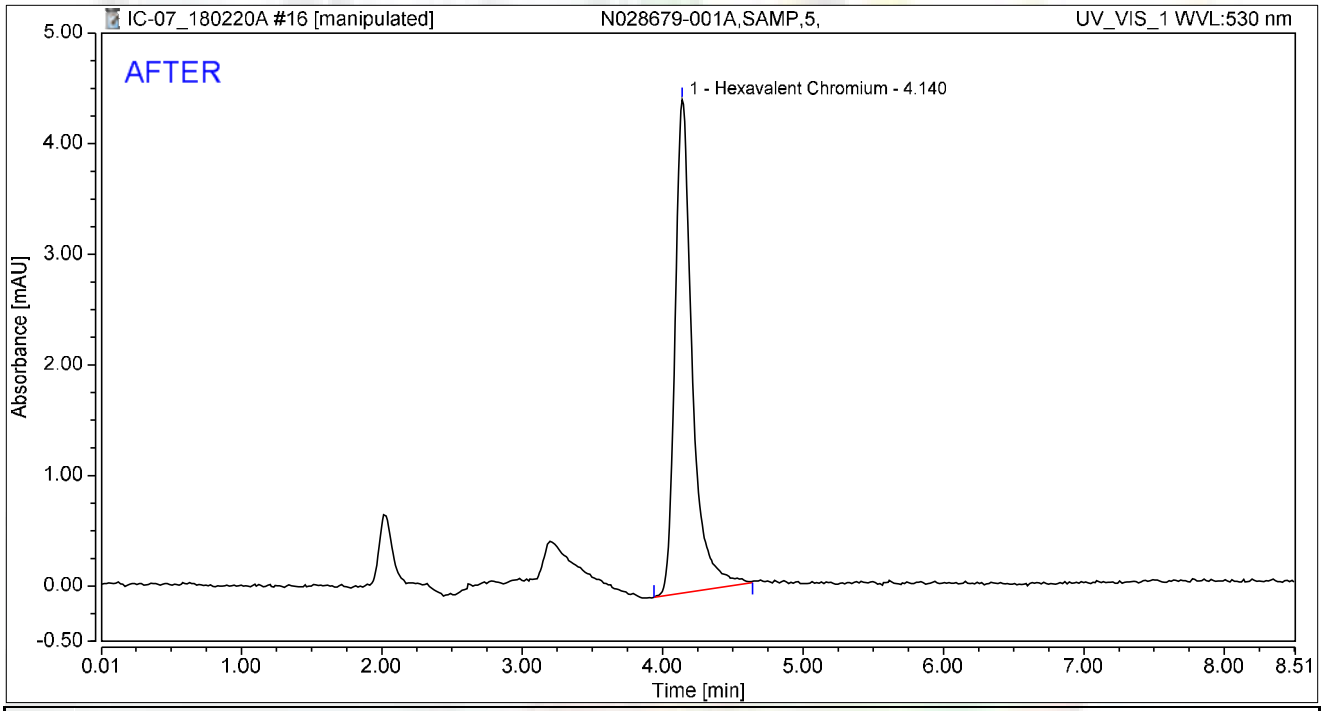
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.235	9.599	100.00	100.00	4.9486
Total:			**1.235**	**9.599**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.636	4.460	100.00	100.00	2.5480
Total:			**0.636**	**4.460**	**100.00**	**100.00**	

rba 2/21/2018

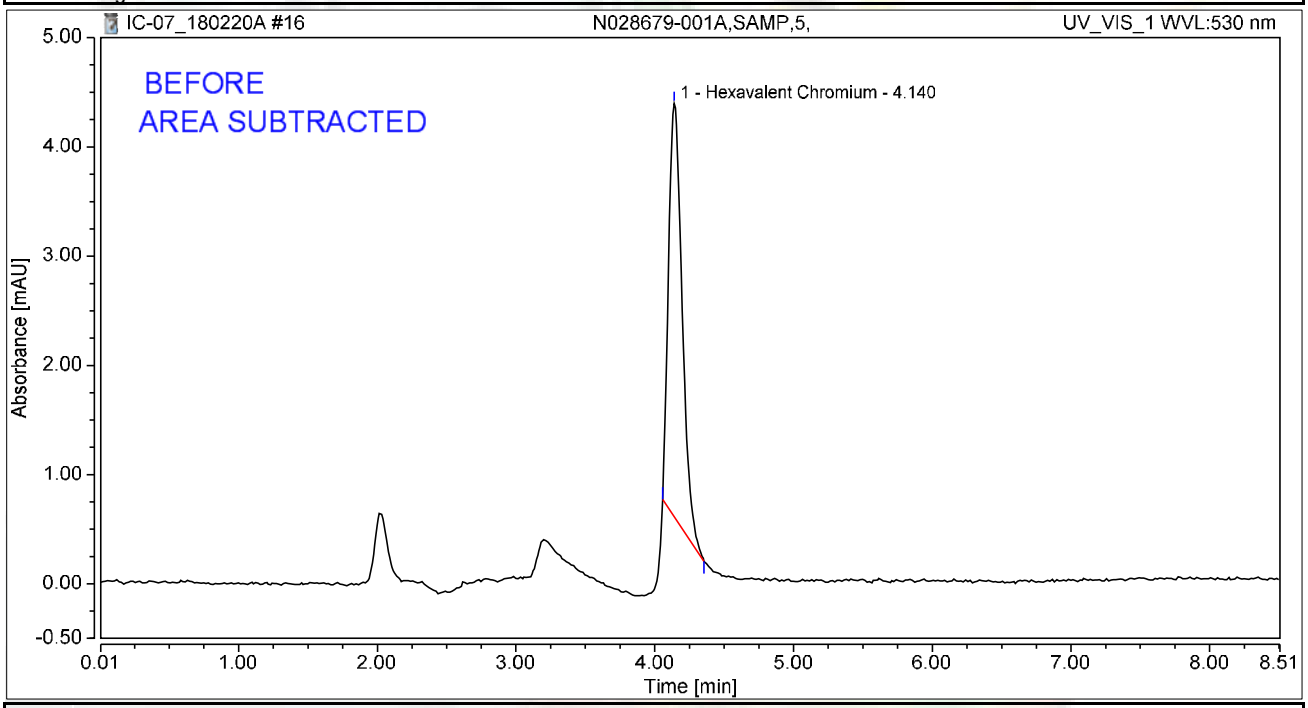
03/01/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028679-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.431	3.781	100.00	100.00	1.7284
Total:			**0.431**	**3.781**	**100.00**	**100.00**	

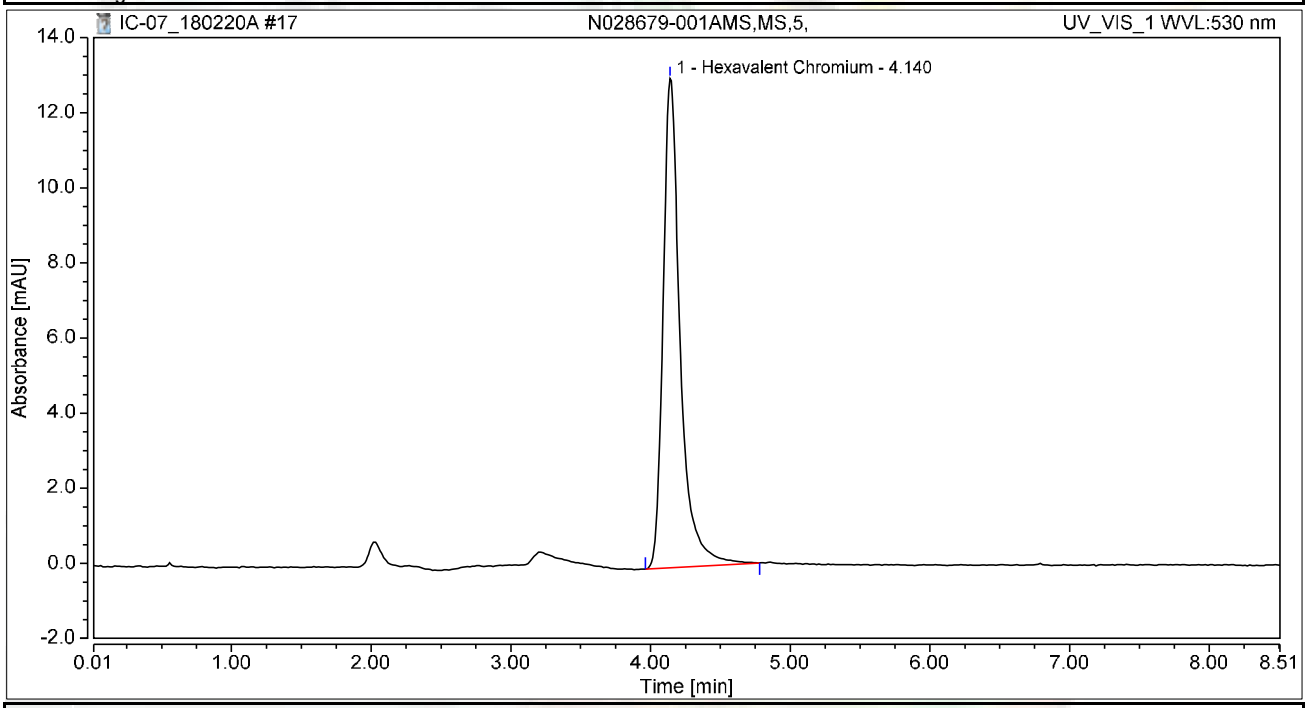
rba 2/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028679-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

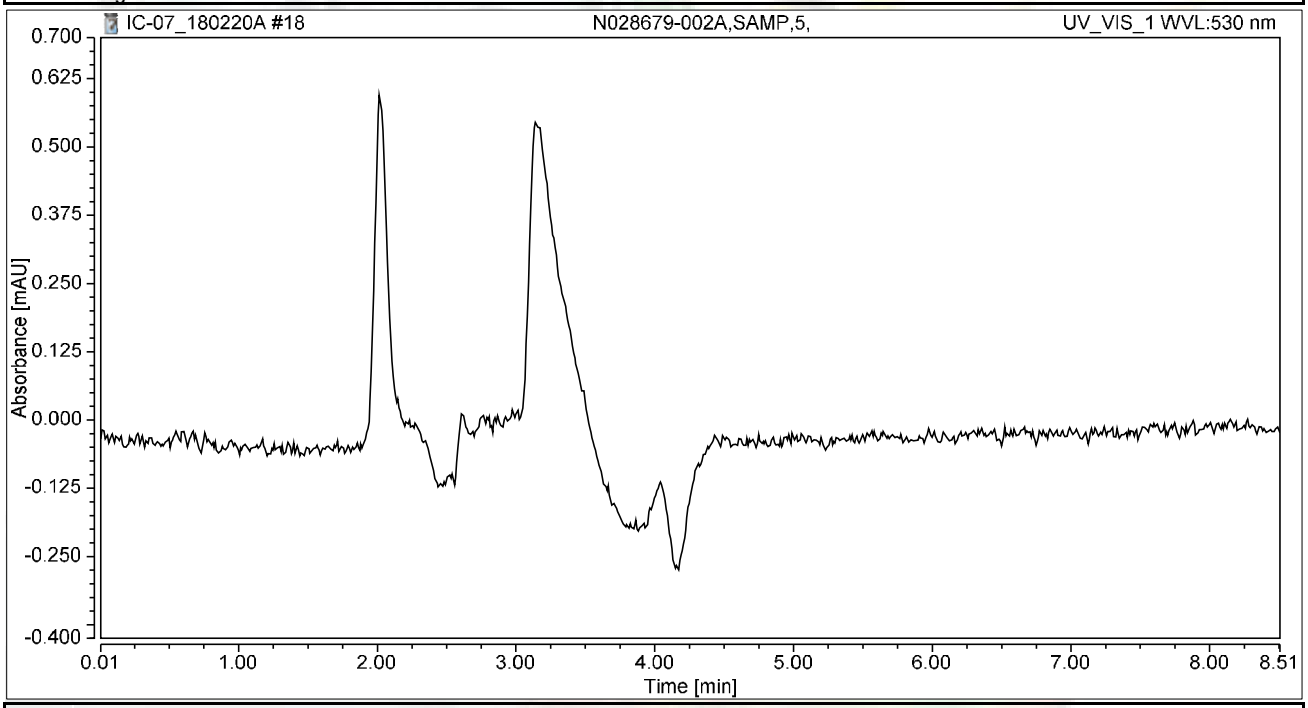
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.856	13.033	100.00	100.00	7.4335
Total:			**1.856**	**13.033**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

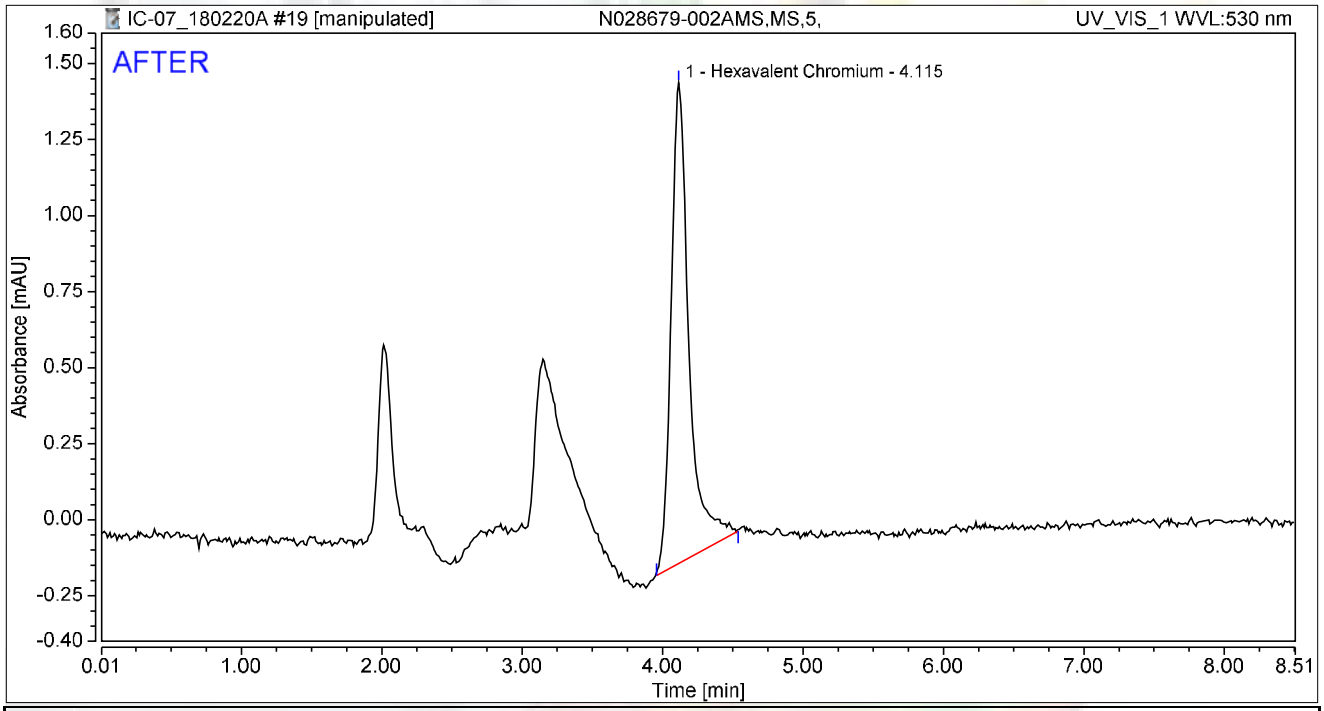
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.234	1.580	100.00	100.00	0.9364
Total:			**0.234**	**1.580**	**100.00**	**100.00**	

rba 2/21/2018

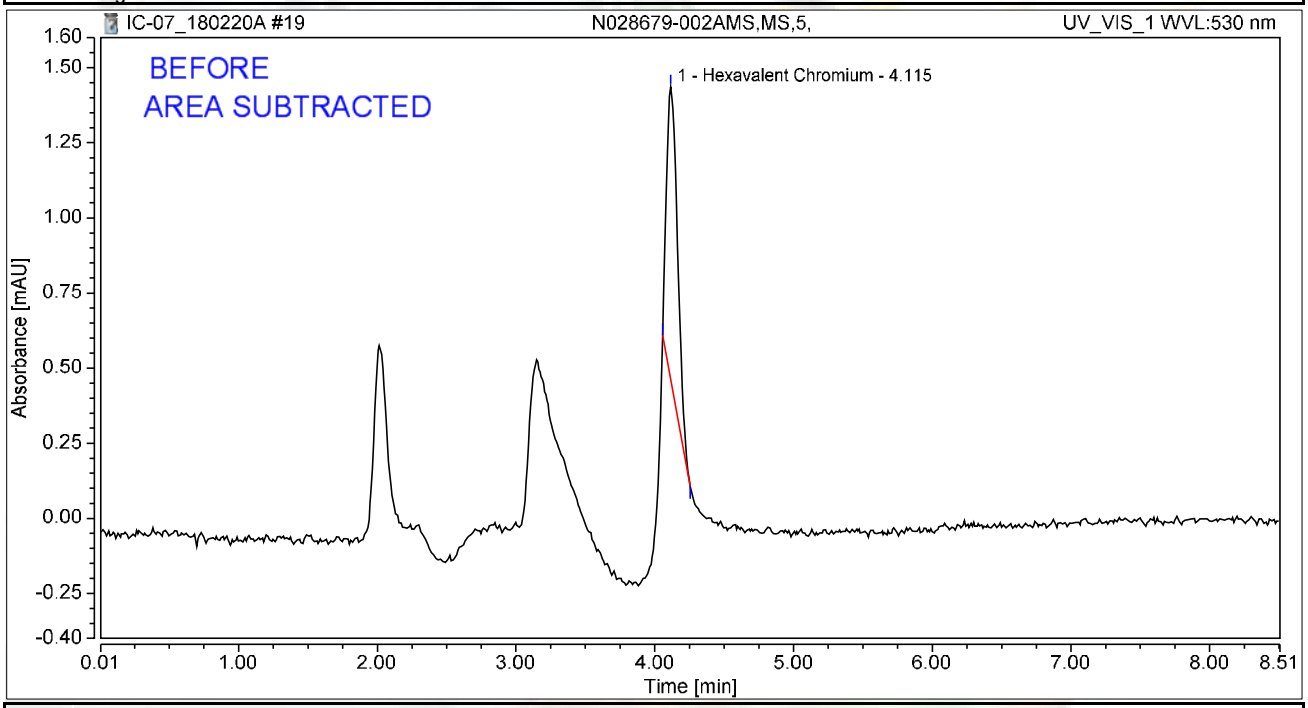
RLB 03/01/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028679-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.091	0.975	100.00	100.00	0.3627
Total:			**0.091**	**0.975**	**100.00**	**100.00**	

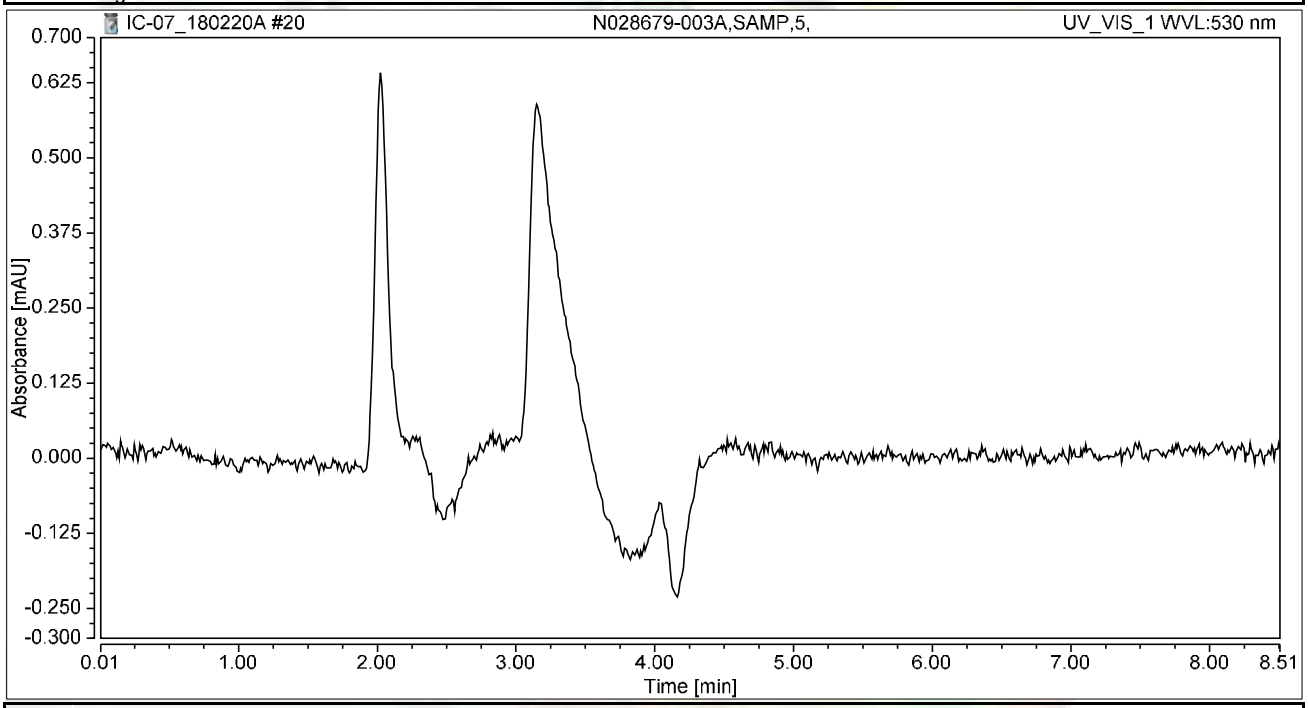
rba 2/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028679-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

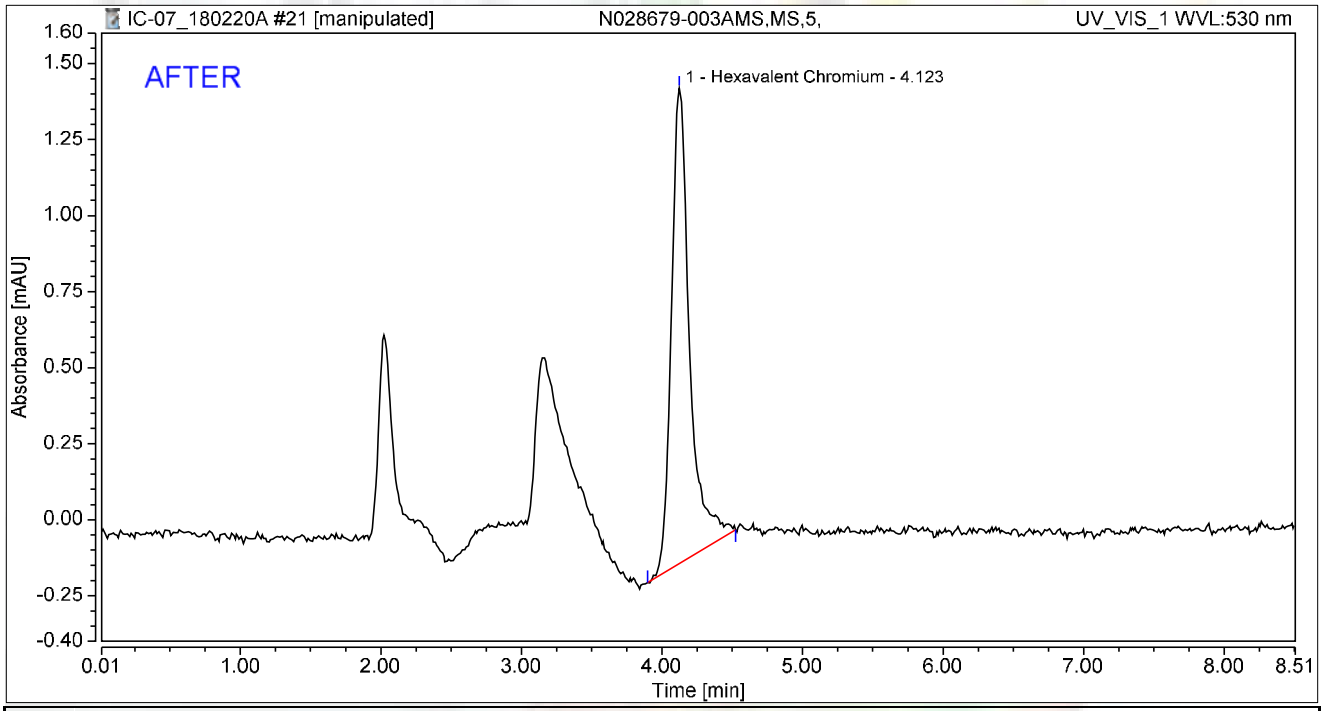
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.235	1.563	100.00	100.00	0.9429
Total:			**0.235**	**1.563**	**100.00**	**100.00**	

rba 2/21/2018

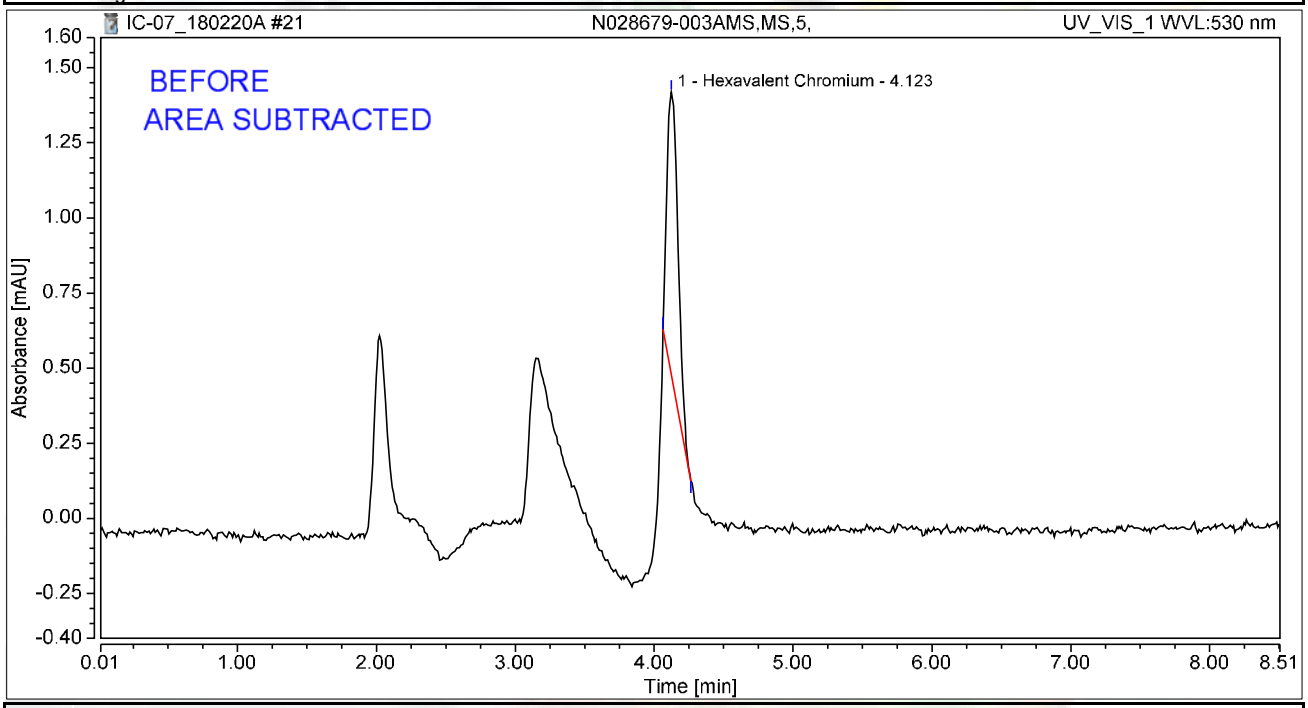
RB 03/01/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028679-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.088	0.936	100.00	100.00	0.3509
Total:			**0.088**	**0.936**	**100.00**	**100.00**	

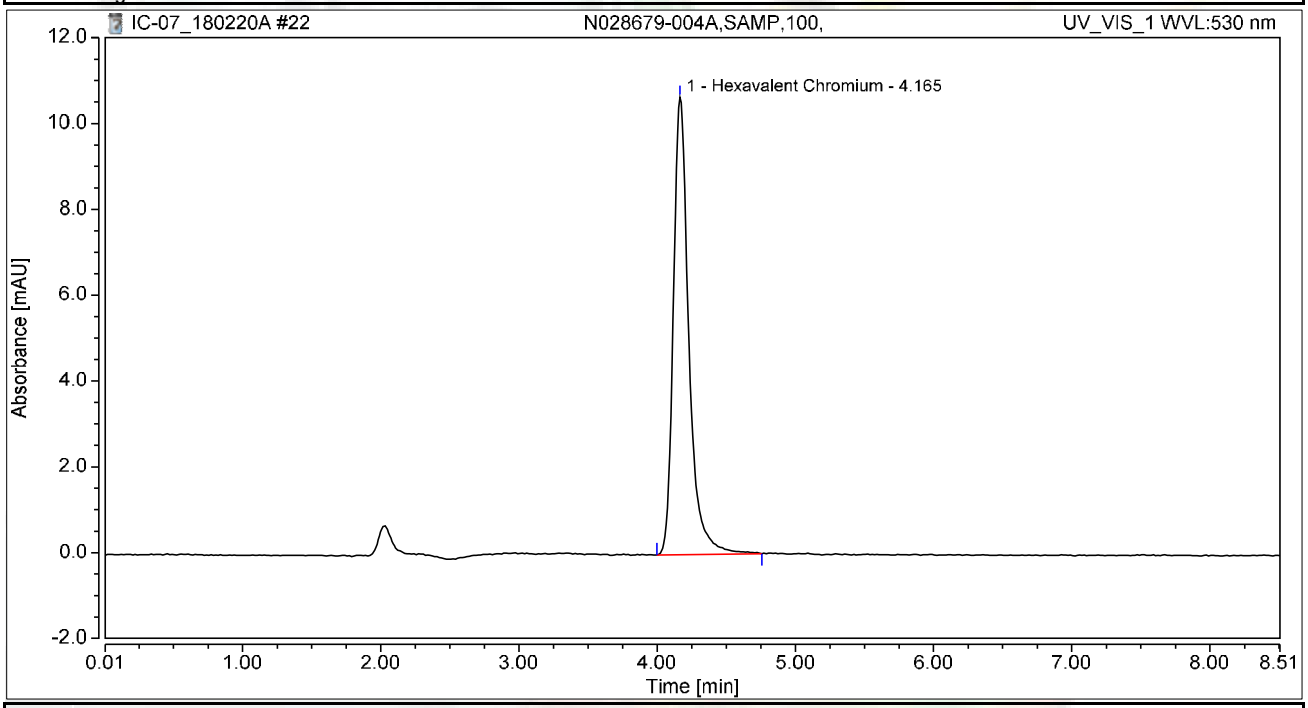
rba 2/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028679-004A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

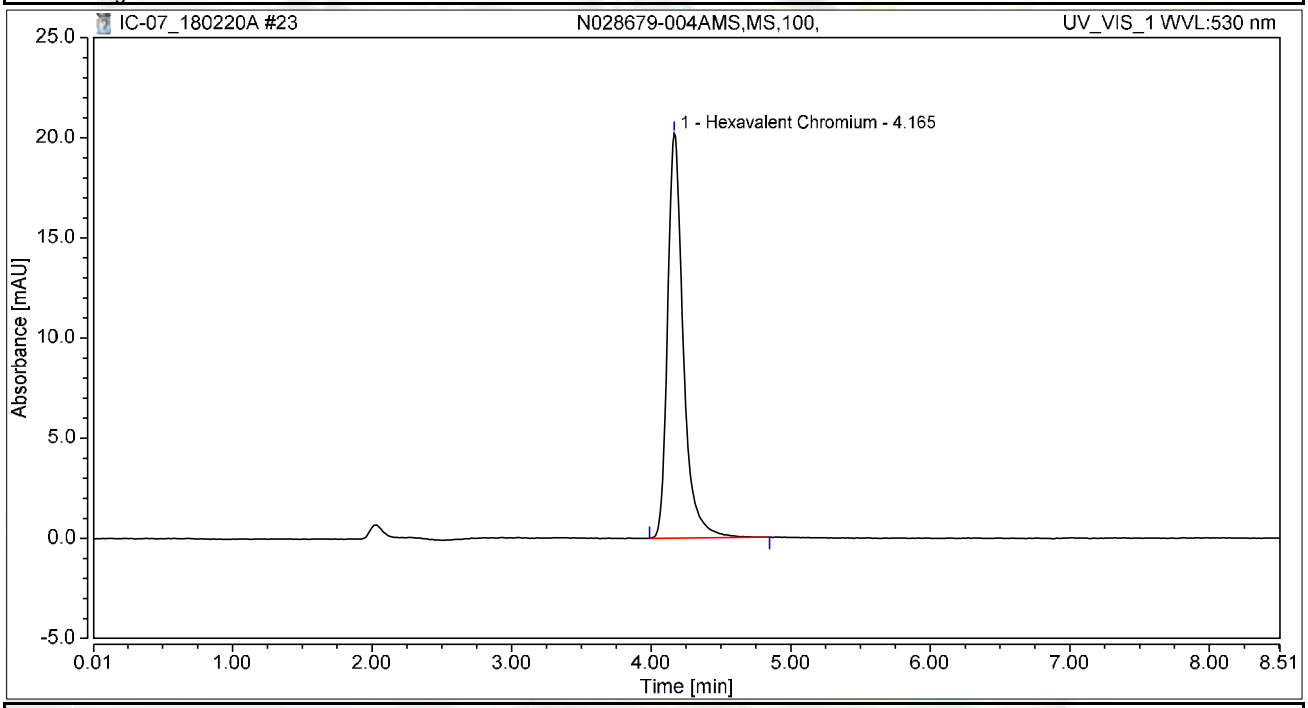
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.389	10.655	100.00	100.00	5.5632
Total:			**1.389**	**10.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-004AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

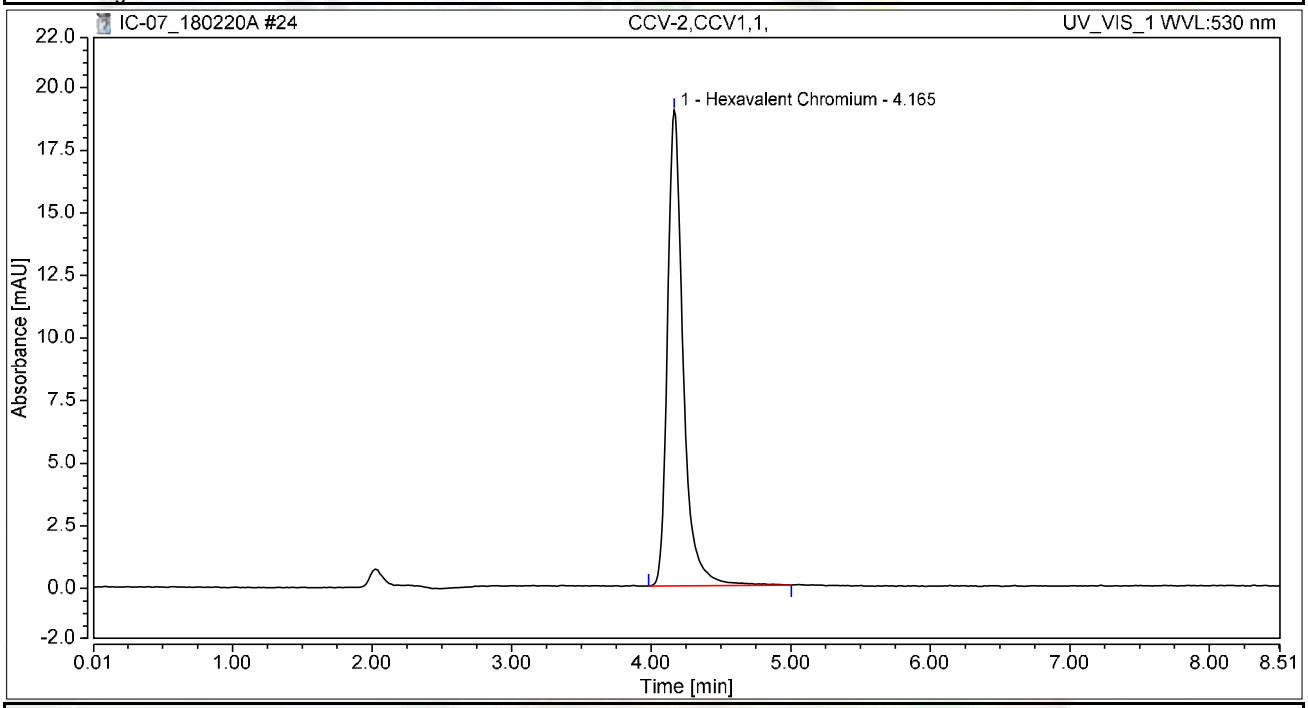
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.639	20.212	100.00	100.00	10.5721
Total:			**2.639**	**20.212**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

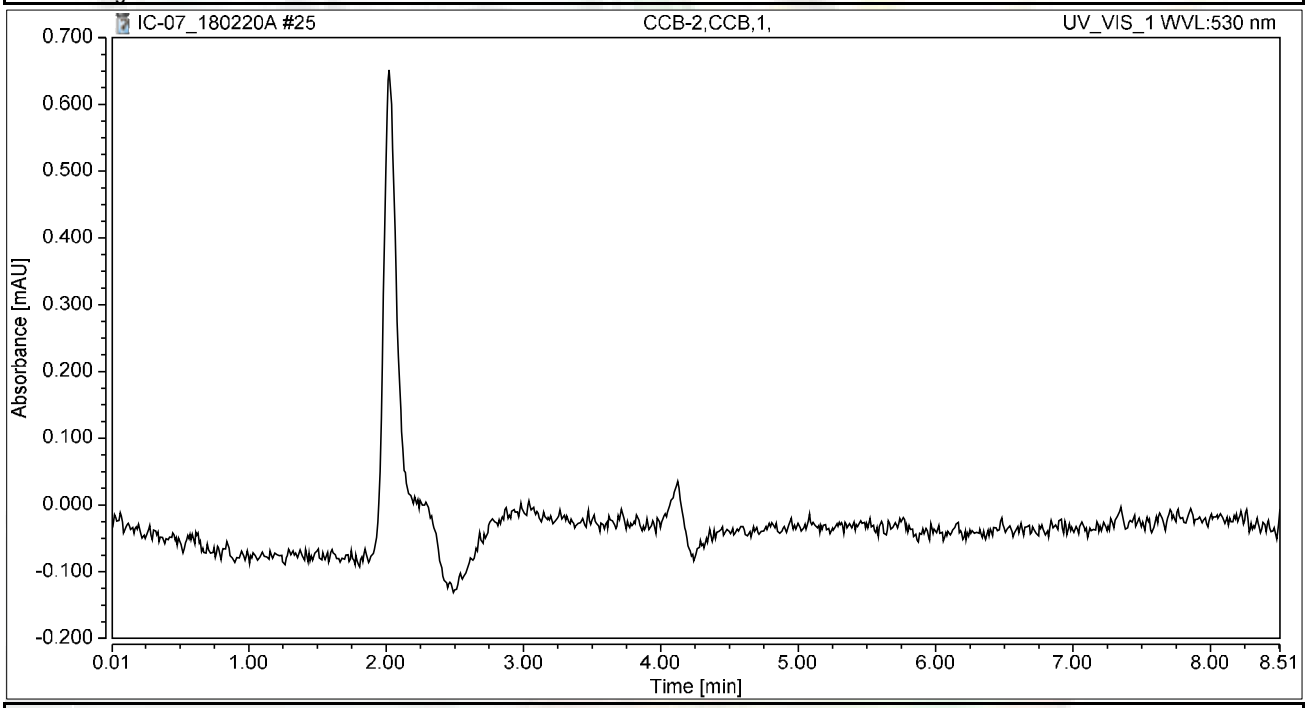
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.477	18.986	100.00	100.00	9.9220
Total:			**2.477**	**18.986**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

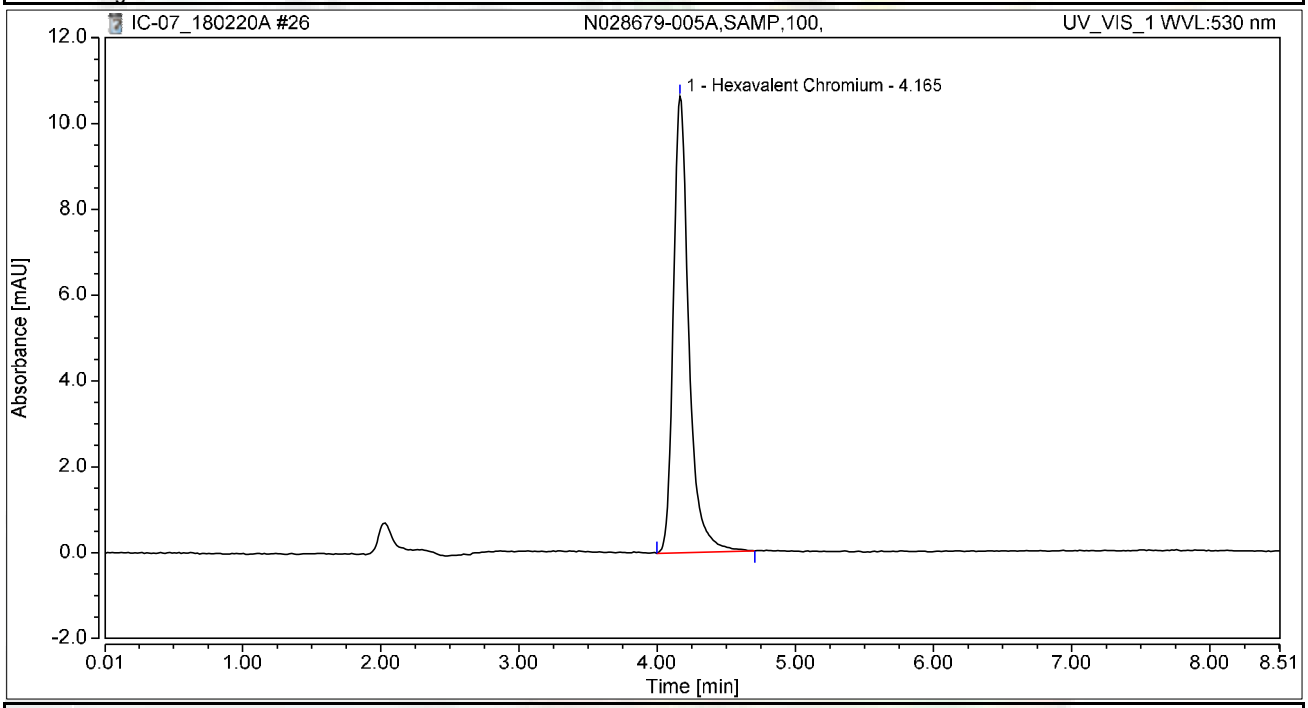
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-005A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

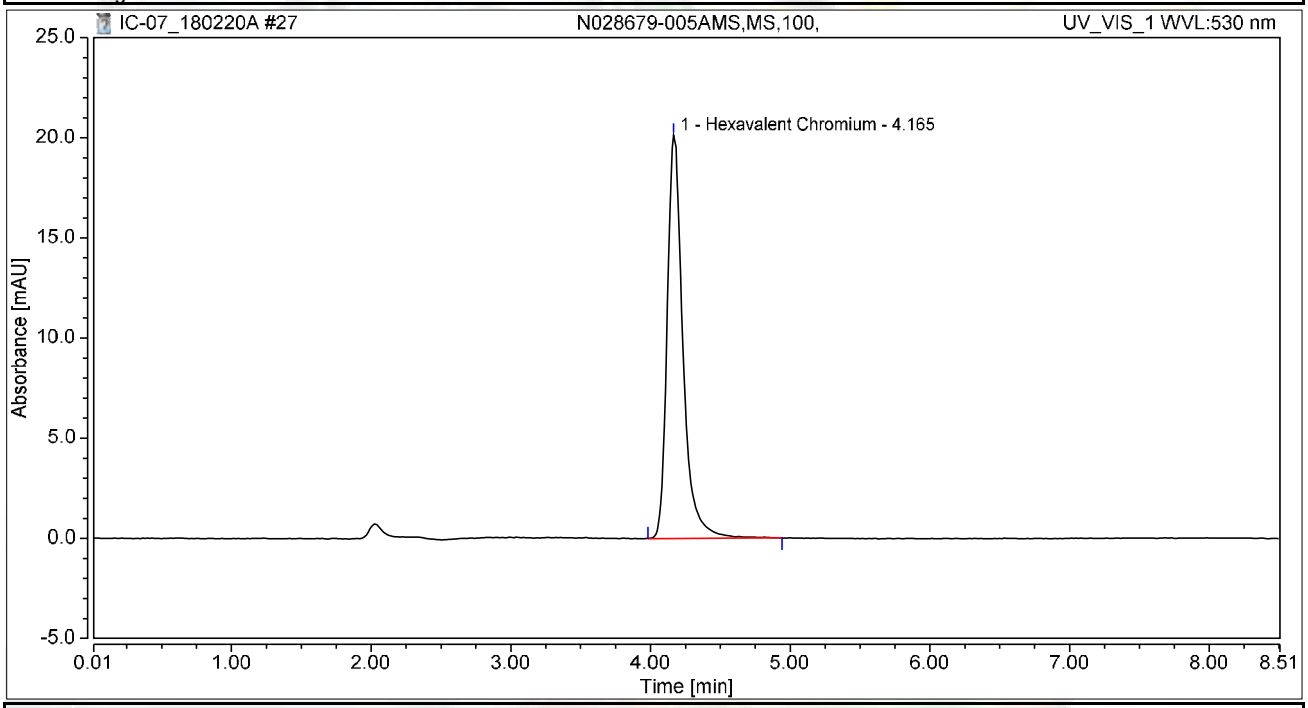
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.383	10.627	100.00	100.00	5.5401
Total:			**1.383**	**10.627**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-005AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

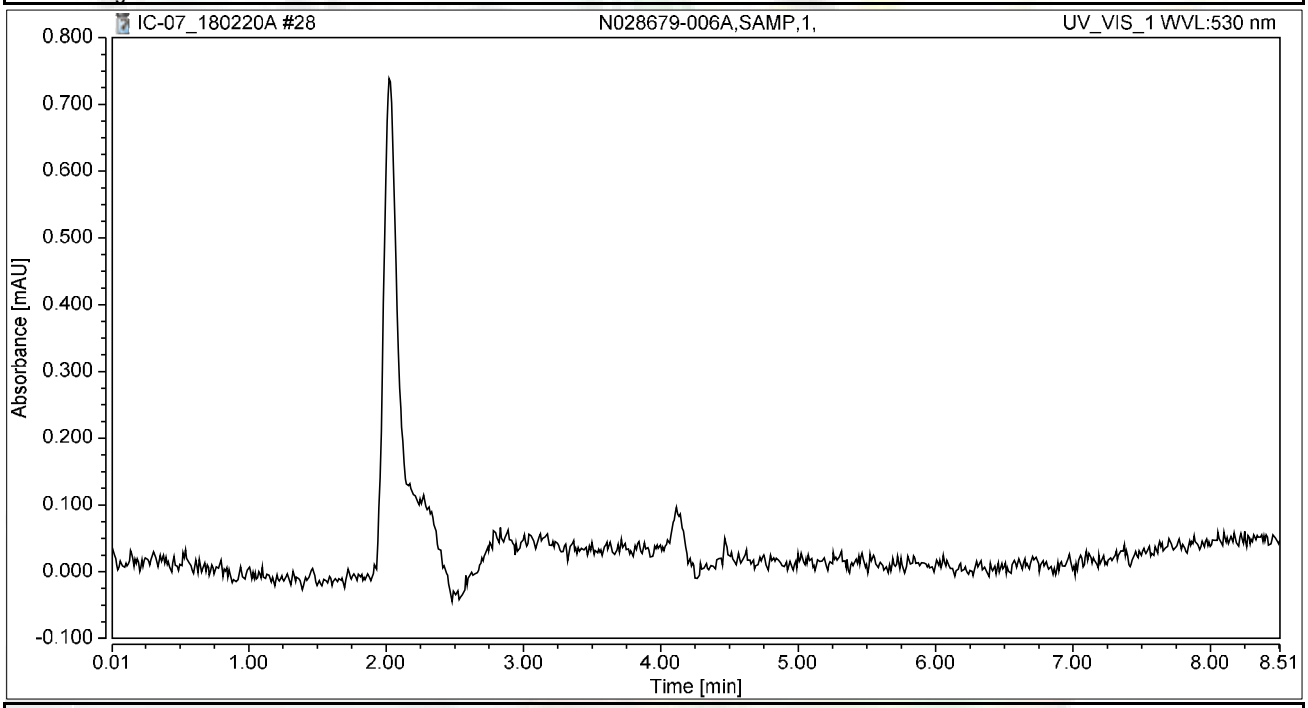
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.640	20.139	100.00	100.00	10.5728
Total:			**2.640**	**20.139**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

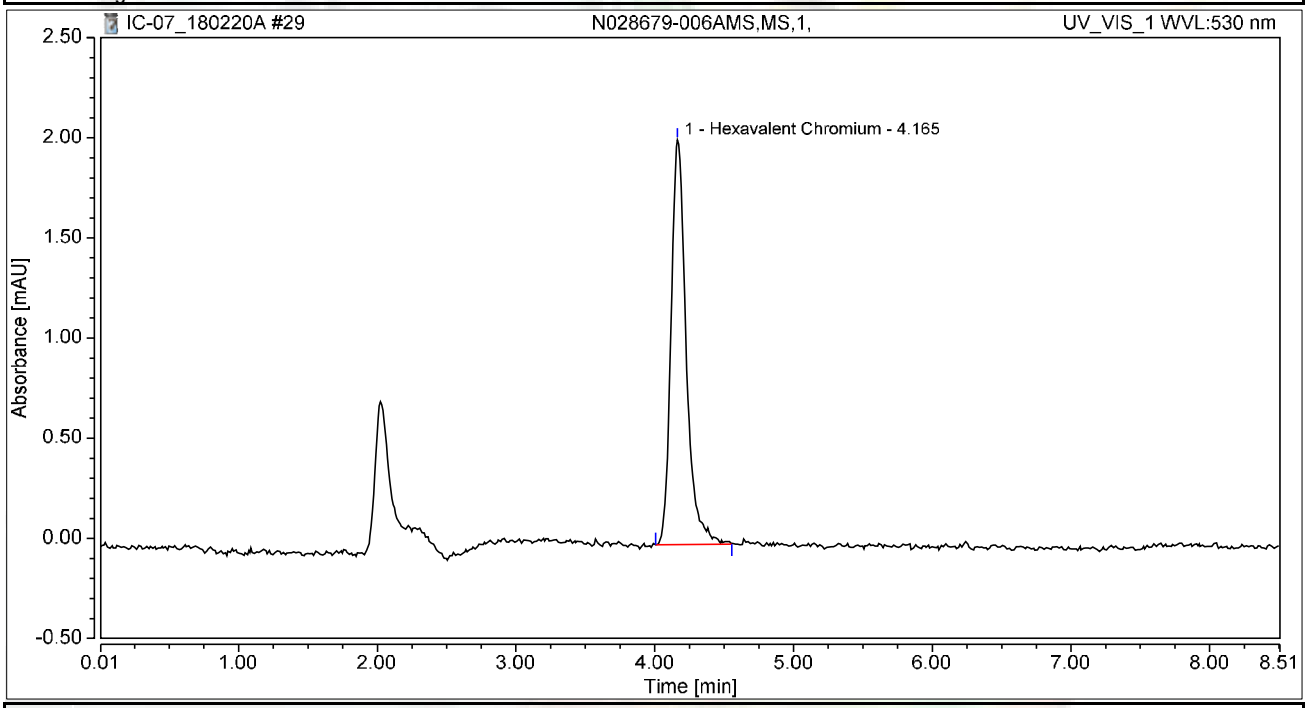
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

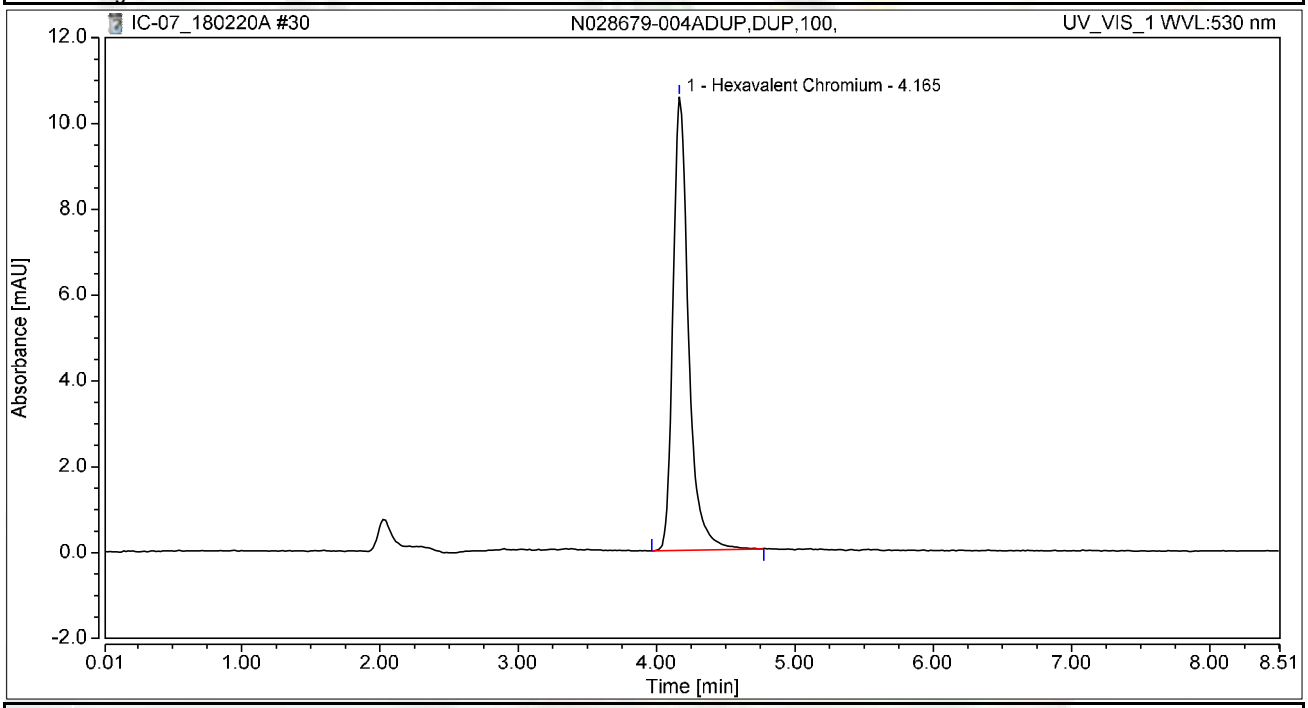
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.257	2.020	100.00	100.00	1.0292
Total:			**0.257**	**2.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-004ADUP,DUP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 12:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

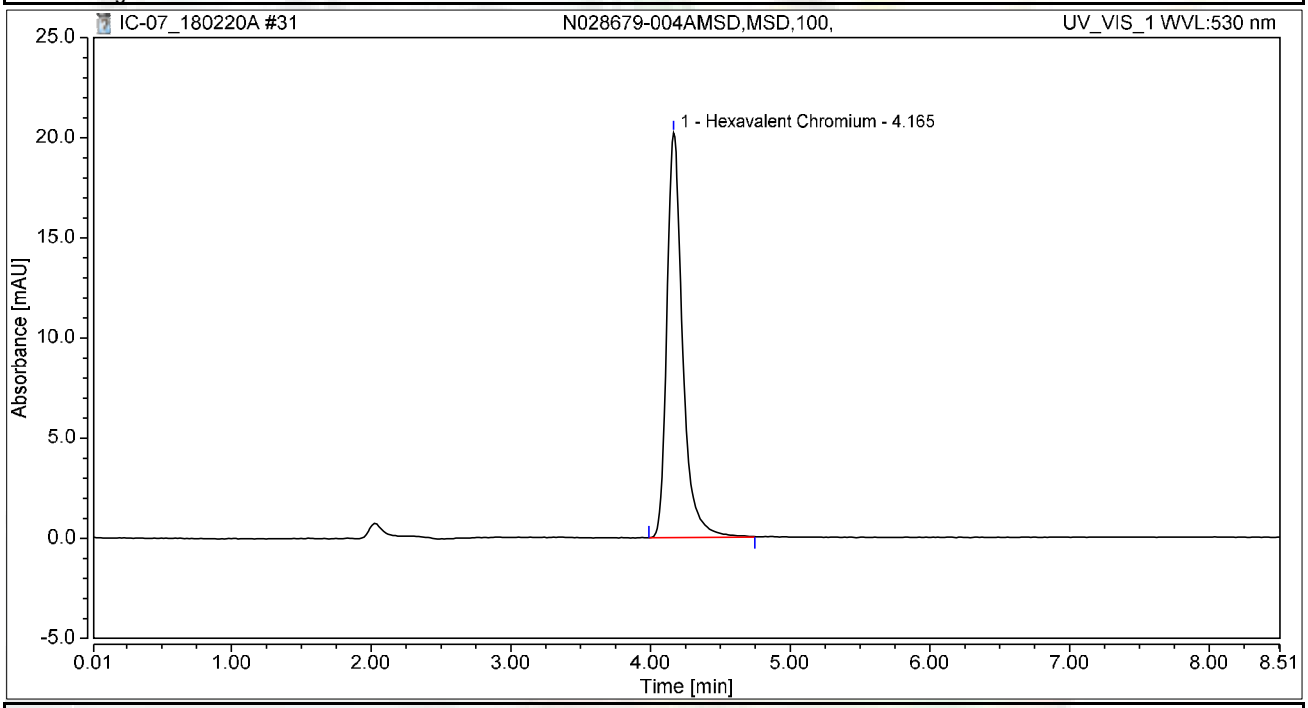
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.378	10.567	100.00	100.00	5.5207
Total:			**1.378**	**10.567**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-004AMSD,MSD,100,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

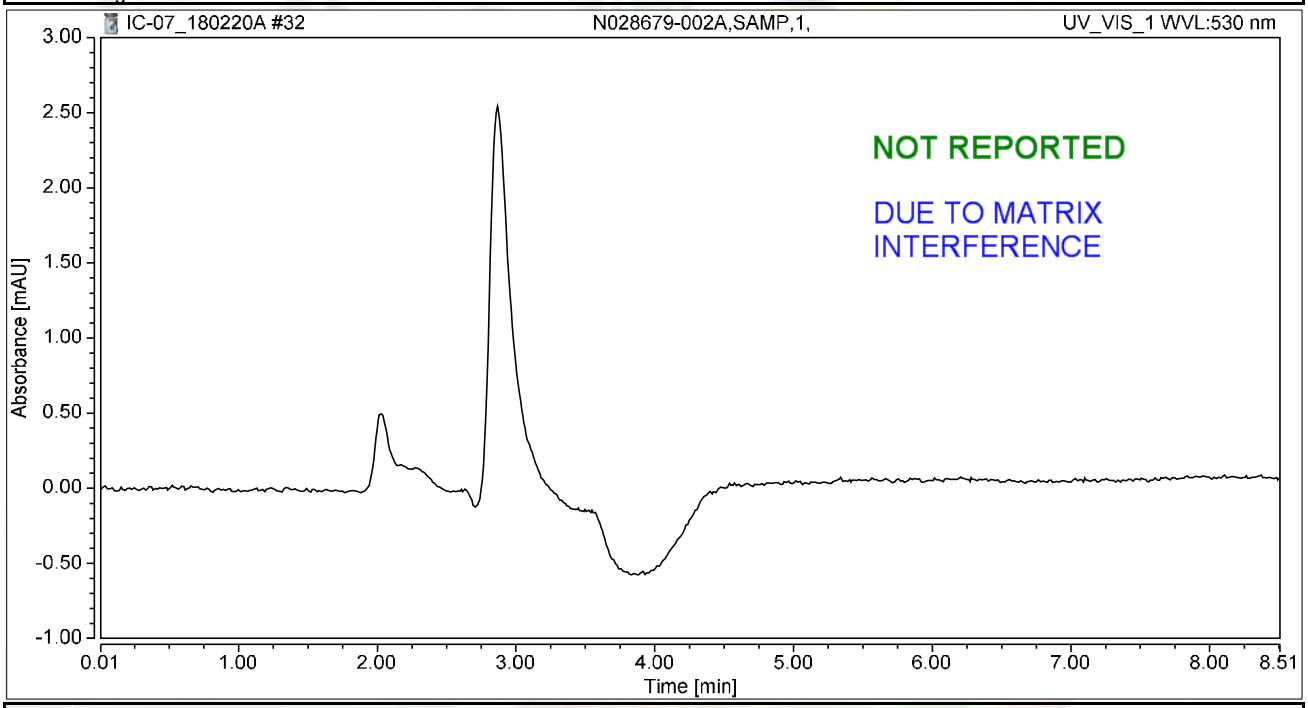
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.635	20.217	100.00	100.00	10.5528
Total:			**2.635**	**20.217**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

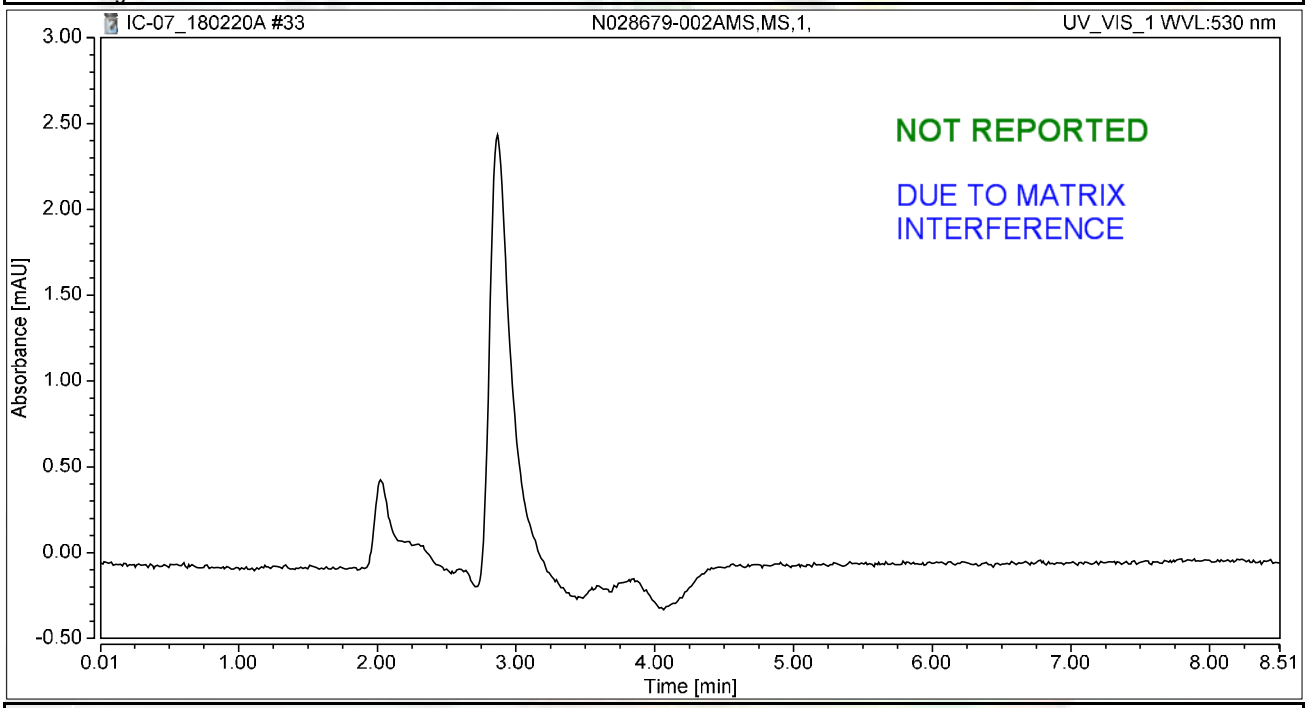
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

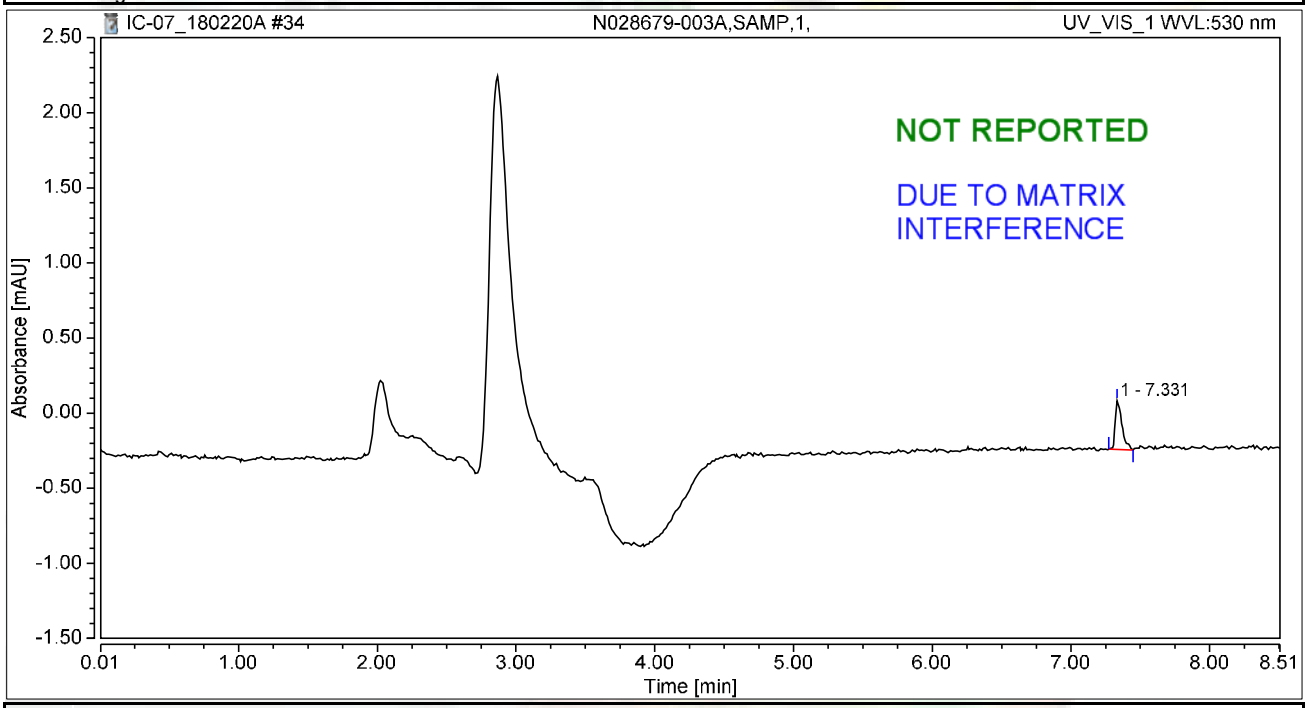
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

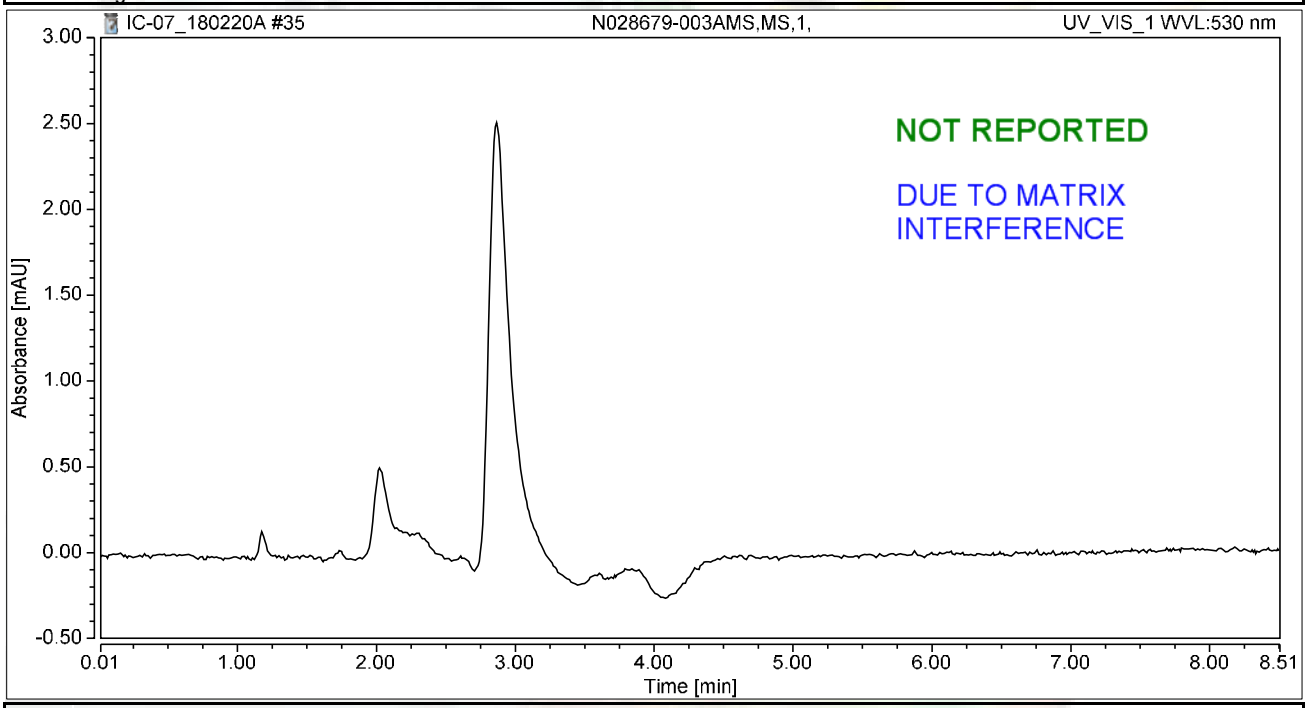
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.331	0.018	0.323	100.00	100.00	n.a.
Total:			**0.018**	**0.323**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028679-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

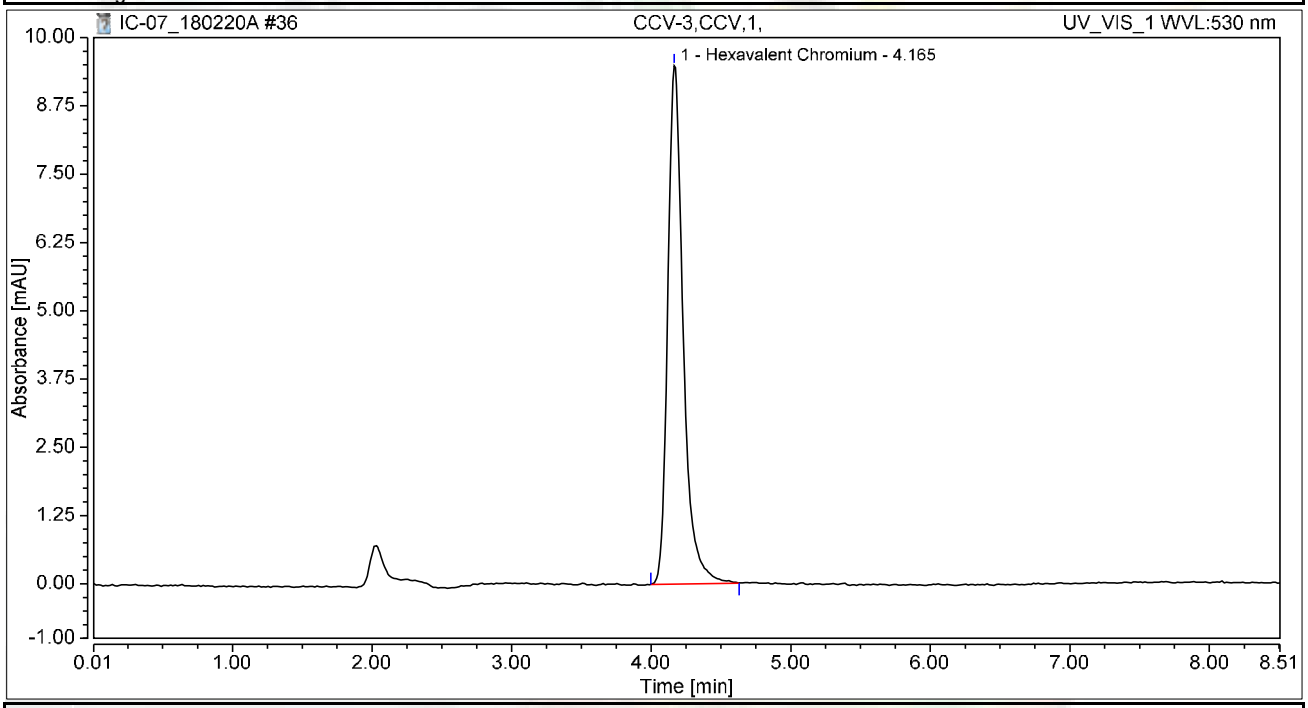
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

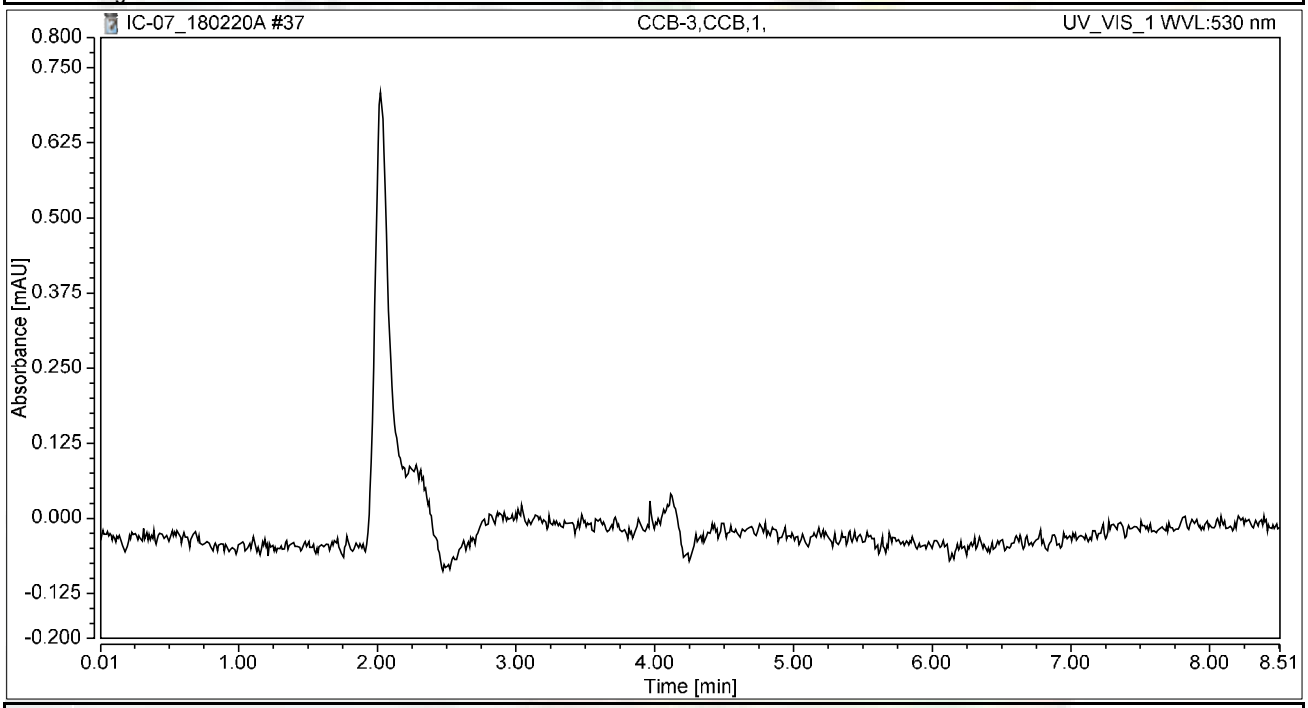
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.222	9.489	100.00	100.00	4.8950
Total:			**1.222**	**9.489**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**20/Feb/18 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122323 **Analyst:** QBM

ASSET #: N028679, 696, 726 **Date Analyzed:** 2/27/2018

Method: 4500_NO3

Initial Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
3. ICV within ± 10% of expected value.		X			X	
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.		X				X
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in ICV failed, high bias. However, LCS is within ICV criteria.

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/5/2018

2nd Level Reviewer RLB 03/05/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028679-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	1.0006	*	1
	=	1.0006	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 1.0 mg/L

RLB 03/05/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

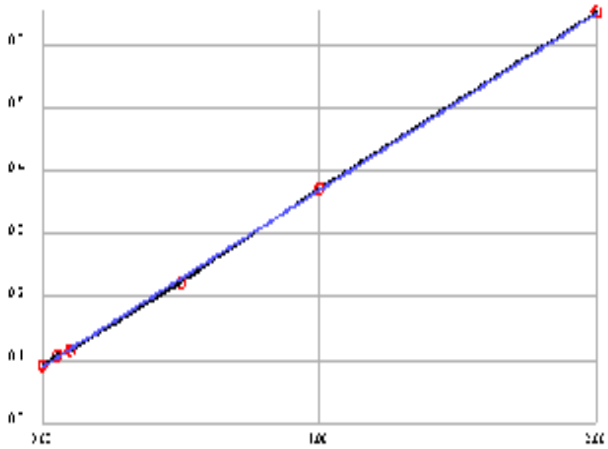
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2802x + 0.0906
Correlation	.999853

Calibrant	Energy	Set	Conc
1	0.0924	0.0000	0.0065
2	0.1094	0.0500	0.0671
3	0.1159	0.1000	0.0903
4	0.2248	0.5000	0.4791
5	0.3717	1.0000	1.0034
6	0.6519	2.0000	2.0036

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **ICV**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.555	0.050	0.5000	0	111	90	110				S

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCV**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.9	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCV**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **ICB**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCB**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCB**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
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www.atl-labs.com

Time start: 02-27-2018 14:06
Time end: 02-27-2018 16:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:18:08	0.0118		0.0939
2	<BLANK>	16:19:07	-0.0053		0.0891
3	<CAL1>	16:20:03	0.0065	[0]	0.0924
4	<CAL2>	16:20:58	0.0671	[0.05]	0.1094
5	<CAL3>	16:22:00	0.0903	[0.1]	0.1159
6	<CAL4>	16:22:54	0.4791	[0.5]	0.2248
7	<CAL5>	16:23:50	1.0034	[1]	0.3717
8	<CAL6>	16:24:45	2.0036	[2]	0.6519
9	,BLANK,BLANK,1,	16:25:45	1.2040		0.4279
10	,ICV,ICV,1,	16:26:41	0.5547		0.2460
11	,ICB,ICB,1,	16:27:42	0.0125		0.0941
12	,MB-H2O,MBLK,1,	16:28:38	-0.0189		0.0853
13	,LCS-H2O,LCS,1,	16:29:32	0.5212		0.2366
14	,N028717-001D,SAMP,5,	16:30:34	0.0493		0.1044
15	,N028679-002C,SAMP,1,	16:31:29	0.0122		0.0940
16	,N028679-004C,SAMP,5,	16:32:23	0.9131		0.3464
17	,N028679-004CDUP,DUP,5,	16:33:25	1.0027		0.3715
18	,N028679-005C,SAMP,5,	16:34:21	0.9420		0.3545
19	,N028679-005CMS,MS,5,	16:35:16	1.4882		0.5075
20	,N028679-005CMSD,MSD,5,	16:36:17	1.4164		0.4874
21	,BLANK,	16:37:12	0.0511		0.1049
22	,CCV-1,CCV,1,	16:38:08	0.4844		0.2263
23	,CCB-1,CCB,1,	16:39:08	0.0186		0.0958
24	,N028679-003C,SAMP,1,	16:40:03	0.0154		0.0949
25	,N028696-001C,SAMP,1,	16:40:59	0.0040		0.0917
26	,N028696-002C,SAMP,1,	16:42:02	0.0839		0.1141

RLB 03/05/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N028696-003C,SAMP,1,	16:42:44	0.0607		0.1076
28	,N028696-005C,SAMP,1, NOT REPORTED	16:43:28	0.0518		0.1051
29	,N028696-006C,SAMP,1, NOT REPORTED	16:44:16	0.0975		0.1179
30	,N028696-007C,SAMP,1, NOT REPORTED	16:44:59	0.1075		0.1207
31	,N028696-004C,SAMP,1,	16:45:47	1.2497		0.4407
32	,N028679-001C,SAMP,1,	16:46:31	1.0006		0.3709
33	,BLANK,	16:47:14	0.0093		0.0932
34	,CCV-2,CCV,1,	16:48:02	0.5258		0.2379
35	,CCB-2,CCB,1,	16:48:45	-0.0317		0.0817
36	,N028726-001C,SAMP,1, NOT REPORTED	16:49:33	-0.0096		0.0879
37	,N028726-004C,SAMP,1,	16:50:17	0.1860		0.1427
38	,N028726-005C,SAMP,1,	16:50:59	0.1871		0.1430
39	,N028726-003C,SAMP,1,	16:51:48	0.1557		0.1342
40	,N028726-002C,SAMP,1,	16:52:32	0.8681		0.3338
41	,N028696-008C,SAMP,1,	16:53:14	0.5833		0.2540
42	,N028696-009C,SAMP,5,	16:53:57	0.6429		0.2707
43	,BLANK,	16:54:45	-0.0182		0.0855
44	,CCV-3,CCV,1,	16:55:28	0.4237		0.2093
45	,CCB-3,CCB,1,	16:56:16	-0.0150		0.0864

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 2/27/2018
Time Analyzed: 2:03 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028679-001C		8.13							
N028679-002C		7.50							
N028679-003C		7.72							
N028679-004C		7.09							
N028679-005C		7.90							
N028696-001C		7.88							
N028696-002C		7.96							
N028696-003C		7.57							
N028696-004C		7.85							
N028696-005C		7.8							
N028696-006C		7.76							
N028696-007C		7.49							
N028696-008C		7.16							
N028696-009C		7.83							
N028717-001D		8.22							
N028726-001C		8.17							
N028726-002C		7.40							
N028726-003C		7.81							
N028726-004C		8.32							
N028726-005C		8.20							

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Book # 1

RLB 03/05/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66863
ASSET #: N028679

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/26/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X	X		X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X	X		X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/5/18

2nd Level Reviewer 3/5/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028679-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 11.4415 * 1 * (25/25)

Chromium , ug/L = 11.4415

Reporting results in two significant figures,

Chromium , ug/L = 11

% RSD SUMMARY

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.17	1.036	15	PASS	0.12	20.13	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.61	1.7	15	PASS	0.51	5.37	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	1.71	15	PASS	4.88	1.7	15	PASS
Std4-10/100 ppb	ICAL	1	10.15	1.18	15	PASS	9.91	1.35	15	PASS
Std5-20/200 ppb	ICAL	1	19.96	0.29	15	PASS	19.89	1.088	15	PASS
Std6-40/400 ppb	ICAL	1	39.69	0.95	15	PASS	39.26	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	97.62	0.54	15	PASS	98.023	0.49	15	PASS
Std8-200/2000 ppb	ICAL	1	201.25	1.4	15	PASS	201.15	0.55	15	PASS
ICV	ICV	1	10.034	0.12	15	PASS	10.064	0.39	15	PASS
ICB	ICB	1	0.0059	64.42	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.078	0.96	20	PASS	1.032	1.0046	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.071	25.026	15	<PQL
ICSAB1	ICSAB	1	16.84	1.16	15	PASS	19.093	0.14	15	PASS
MB-66863	MBLK	1	0.0058	57.019	15	<PQL	0.0025	276.13	15	<PQL
LCS-66863	LCS	1	10.068	0.18	15	PASS	10.21	2.17	15	PASS
N028679-001B	SAMP	1	101.078	0.43	15	PASS	11.44	0.93	15	PASS
N028679-001B	SAMP	5	21.25	1.11	15	PASS	2.49	2.95	15	PASS
N028679-001B	SAMP	25	2.53	2.61	15	PASS	0.53	1.011	15	PASS
N028679-001B-PS	PS	1	107.26	0.29	15	PASS	20.031	1.74	15	PASS
N028679-001B-PS	PS	5	22.29	0.15	15	PASS	4.26	0.42	15	PASS
N028679-001B-MS	MS	1	107.83	0.87	15	PASS	19.85	0.81	15	PASS
N028679-001B-MS	MS	5	22.23	0.9	15	PASS	4.26	1.63	15	PASS
N028679-001B-MSD	MSD	1	108.18	0.34	15	PASS	19.79	0.66	15	PASS
CCV1	CCV	1	21.08	0.32	15	PASS	19.38	0.28	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028679-001B-MSD	MSD	5	22.5	0.48	15	PASS	4.34	0.82	15	PASS
N028679-002B	SAMP	1	152.05	0.13	15	PASS	<0.000	N/A	15	<PQL
N028679-002B	SAMP	5	31.61	0.21	15	PASS	<0.000	N/A	15	<PQL
N028679-002B	SAMP	10	15.6	0.32	15	PASS	<0.000	N/A	15	<PQL
N028679-003B	SAMP	1	149.5	0.067	15	PASS	<0.000	N/A	15	<PQL
N028679-003B	SAMP	5	31.31	0.63	15	PASS	<0.000	N/A	15	<PQL
N028679-003B	SAMP	10	15.81	0.74	15	PASS	<0.000	N/A	15	<PQL
N028679-004B	SAMP	1	34.88	0.48	15	PASS	499.65	0.66	15	PASS
N028679-004B	SAMP	5	7.14	1.21	15	PASS	101.66	0.27	15	PASS
N028679-005B	SAMP	1	34.87	0.34	15	PASS	497.87	0.58	15	PASS
CCV2	CCV	1	21.098	0.63	15	PASS	19.73	0.98	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.018	66.42	15	<PQL
N028679-005B	SAMP	5	7.43	0.42	15	PASS	106.66	0.47	15	PASS
N028696-001B	SAMP	1	16.7	0.71	15	PASS	1.51	2.098	15	PASS
N028696-001B	SAMP	5	3.5	1.19	15	PASS	0.32	2.26	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	17.6	0.32	15	PASS	12.4	1.12	15	PASS
N028696-002B	SAMP	5	3.72	1.88	15	PASS	2.64	0.82	15	PASS
N028696-003B	SAMP	1	17.48	0.57	15	PASS	12.33	0.15	15	PASS
N028696-003B	SAMP	5	3.61	1.43	15	PASS	2.64	1.15	15	PASS
N028696-004B	SAMP	1	29.4	0.35	15	PASS	12.36	0.71	15	PASS
N028696-004B	SAMP	5	6.069	0.87	15	PASS	2.52	1.24	15	PASS
N028696-005B	SAMP	1	45.13	0.26	15	PASS	1.13	4.79	15	PASS
CCV3	CCV	1	21.25	1.23	15	PASS	19.72	0.57	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028696-005B	SAMP	5	9.1	0.85	15	PASS	0.26	6.13	15	PASS
N028696-006B	SAMP	1	41.38	0.56	15	PASS	2.15	2.46	15	PASS
N028696-006B	SAMP	5	8.43	1.79	15	PASS	0.46	3.84	15	PASS
N028696-007B	SAMP	1	33.79	0.46	15	PASS	4.35	1.13	15	PASS
N028696-007B	SAMP	5	7.029	0.89	15	PASS	0.92	1.51	15	PASS
N028696-008B	SAMP	1	61.081	0.52	15	PASS	78.37	0.41	15	PASS
N028696-008B	SAMP	5	12.29	0.85	15	PASS	16.53	1.13	15	PASS
N028696-009B	SAMP	1	151.89	0.1	15	PASS	21.11	0.62	15	PASS
N028696-009B	SAMP	5	31.57	0.6	15	PASS	4.52	2.13	15	PASS
CCV4	CCV	1	21	0.93	15	PASS	20.049	0.82	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.12	3.94	20	PASS	1.03	2.53	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.062	10.9	15	PASS
ICSAB2	ICSAB	1	17.72	0.71	15	PASS	19.2	1.74	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	10.38	1.035	15	PASS	10.33	1.52	15	PASS
N028726-001B	SAMP	1	39.055	0.11	15	PASS	0.68	3.25	15	PASS
N028726-001B	SAMP	5	8.073	1.38	15	PASS	0.13	7.15	15	PASS
N028726-001B	SAMP	25	<0.000	N/A	15	<PQL	0.013	39.31	15	<PQL
N028726-001B-PS	PS	1	47.9	0.27	15	PASS	10.032	0.56	15	PASS
N028726-001B-PS	PS	5	10.22	0.85	15	PASS	2.18	1.29	15	PASS
N028726-001B-MS	MS	1	49.047	0.57	15	PASS	9.9	2.44	15	PASS
N028726-001B-MS	MS	5	10.6	0.88	15	PASS	2.22	1.69	15	PASS
N028726-001B-MSD	MSD	1	48.85	0.23	15	PASS	9.83	1.17	15	PASS
CCV5	CCV	1	20.96	0.12	15	PASS	19.66	1.21	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	10.5	0.68	15	PASS	2.26	4.4	15	PASS
N028726-002B	SAMP	1	30.98	0.71	15	PASS	1.62	2.42	15	PASS
N028726-002B	SAMP	5	6.47	0.83	15	PASS	0.34	2.39	15	PASS
N028726-003B	SAMP	1	39.53	0.48	15	PASS	59.41	0.33	15	PASS
N028726-003B	SAMP	5	8.27	0.33	15	PASS	13.3	1.1	15	PASS
N028726-004B	SAMP	1	43.18	0.59	15	PASS	7.72	0.66	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	9.15	0.87	15	PASS	1.74	1.67	15	PASS
N028726-005B	SAMP	1	42.14	0.67	15	PASS	38.64	1.78	15	PASS
N028726-005B	SAMP	5	8.84	1.24	15	PASS	8.55	0.66	15	PASS
N028727-002B	SAMP	1	114.89	0.34	15	PASS	0.091	5.89	15	PASS
CCV6	CCV	1	20.97	0.91	15	PASS	19.74	0.96	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-002B	SAMP	5	23.63	0.52	15	PASS	0.013	50.24	15	<PQL
N028727-003B	SAMP	1	117.34	0.58	15	PASS	<0.000	N/A	15	<PQL
N028727-003B	SAMP	5	24.3	0.53	15	PASS	<0.000	N/A	15	<PQL
N028727-004B	SAMP	1	118.6	0.41	15	PASS	0.012	96.35	15	<PQL
N028727-004B	SAMP	5	24.81	0.33	15	PASS	<0.000	N/A	15	<PQL
N028727-005B	SAMP	1	116.13	0.48	15	PASS	<0.000	N/A	15	<PQL
N028727-005B	SAMP	5	23.54	0.37	15	PASS	0.00014	5401.72	15	<PQL
N028727-006B	SAMP	1	115.68	0.35	15	PASS	<0.000	N/A	15	<PQL
N028727-006B	SAMP	5	24.016	0.077	15	PASS	<0.000	N/A	15	<PQL
N028727-007B	SAMP	1	114.75	0.79	15	PASS	0.003	81.58	15	<PQL
CCV7	CCV	1	20.92	0.53	15	PASS	19.87	0.87	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	5	23.57	1.69	15	PASS	<0.000	N/A	15	<PQL
N028727-008B	SAMP	1	113.91	0.18	15	PASS	0.0093	160.85	15	<PQL
N028727-008B	SAMP	5	24.19	0.97	15	PASS	<0.000	N/A	15	<PQL
N028727-009B	SAMP	1	115.45	0.55	15	PASS	0.0073	27.26	15	<PQL
N028727-009B	SAMP	5	24.9	0.46	15	PASS	<0.000	N/A	15	<PQL
N028727-010B	SAMP	1	113.14	0.35	15	PASS	<0.000	N/A	15	<PQL
N028727-010B	SAMP	5	23.87	0.64	15	PASS	<0.000	N/A	15	<PQL
N028727-011B	SAMP	1	116.34	0.092	15	PASS	<0.000	N/A	15	<PQL
N028727-011B	SAMP	5	25.19	0.39	15	PASS	<0.000	N/A	15	<PQL
N028727-012B	SAMP	1	118.29	0.4	15	PASS	<0.000	N/A	15	<PQL
CCV8	CCV	1	20.87	0.61	15	PASS	19.75	1.18	15	PASS
CCB8	CCB	1	0.0018	221.42	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	25.042	0.47	15	PASS	<0.000	N/A	15	<PQL
N028727-013B	SAMP	1	115.14	0.58	15	PASS	0.027	32.76	15	<PQL
N028727-013B	SAMP	5	24.21	0.3	15	PASS	<0.000	N/A	15	<PQL
N028727-014C	SAMP	1	92.88	0.42	15	PASS	0.019	2.76	15	PASS
N028727-014C	SAMP	5	19.1	0.88	15	PASS	0.0088	14.77	15	PASS
N028727-015C	SAMP	1	106.65	0.68	15	PASS	0.0023	392.55	15	<PQL
N028727-015C	SAMP	5	22.16	1.058	15	PASS	<0.000	N/A	15	<PQL
CCV9	CCV	1	20.66	0.64	15	PASS	19.63	1.81	15	PASS
CCB9	CCB	1	0.0014	376.28	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.11	2.61	20	PASS	1.032	0.58	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.072	8.52	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	15.42	1.48	15	PASS	19.18	0.54	15	PASS
ICSAB3	ICSAB	1	18.015	0.45	15	PASS	19.87	1.52	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	14.066	15	PASS	0.9	1.28	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	5.81	15	PASS	1.6	26.21	15	<PQL
Std3-5/50 ppb	ICAL	1	5.017	0.68	15	PASS	6.0029	0.55	15	PASS
Std4-10/100 ppb	ICAL	1	10.093	0.49	15	PASS	10.77	0.85	15	PASS
Std5-20/200 ppb	ICAL	1	20.3	0.75	15	PASS	21.15	1.37	15	PASS
Std6-40/400 ppb	ICAL	1	40.46	1.36	15	PASS	41.6	0.62	15	PASS
Std7-100/1000 ppb	ICAL	1	100.83	0.59	15	PASS	101.14	0.58	15	PASS
Std8-200/2000 ppb	ICAL	1	199.46	0.29	15	PASS	198.93	0.88	15	PASS
ICV	ICV	1	104.43	1.42	15	PASS	105.3	1.2	15	PASS
ICB	ICB	1	0.0013	952.1	15	<PQL	0.025	77.3	15	<PQL
LLICV	CCV1	1	0.52	0.57	20	PASS	10.68	0.91	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.54	0.88	15	PASS	19.96	0.37	15	PASS
MB-66863	MBLK	1	<0.000	N/A	15	<PQL	0.03	45.78	15	<PQL
LCS-66863	LCS	1	104.14	1.82	15	PASS	105.23	1.59	15	PASS
N028679-001B	SAMP	1	269.51	0.34	15	PASS	21.92	0.27	15	PASS
N028679-001B	SAMP	5	58.26	1.099	15	PASS	4.49	2.55	15	PASS
N028679-001B	SAMP	25	12.16	1.95	15	PASS	0.93	8.63	15	PASS
N028679-001B-PS	PS	1	363.54	2.11	15	PASS	118.076	1.6	15	PASS
N028679-001B-PS	PS	5	74.37	0.69	15	PASS	25.44	1.095	15	PASS
N028679-001B-MS	MS	1	359.3	0.44	15	PASS	76.62	0.54	15	PASS
N028679-001B-MS	MS	5	74.55	1.94	15	PASS	16.87	1.21	15	PASS
N028679-001B-MSD	MSD	1	352.93	1.038	15	PASS	76.52	0.15	15	PASS
CCV1	CCV	1	19.91	0.33	15	PASS	20.46	0.52	15	PASS
CCB1	CCB	1	0.00095	902.59	15	<PQL	0.025	59.53	15	<PQL
N028679-001B-MSD	MSD	5	74.85	1.047	15	PASS	16.99	1.095	15	PASS
N028679-002B	SAMP	1	1047.14	1.84	15	PASS	544.77	1.65	15	PASS
N028679-002B	SAMP	5	221.54	1.16	15	PASS	118.46	1.11	15	PASS
N028679-002B	SAMP	10	110.61	0.76	15	PASS	60.21	0.47	15	PASS
N028679-003B	SAMP	1	1013.36	1.64	15	PASS	421.63	1.088	15	PASS
N028679-003B	SAMP	5	219.77	0.066	15	PASS	93.52	0.27	15	PASS
N028679-003B	SAMP	10	111.97	0.17	15	PASS	48.55	0.74	15	PASS
N028679-004B	SAMP	1	1.48	2.56	15	PASS	<0.000	N/A	15	<PQL
N028679-004B	SAMP	5	0.34	3.67	15	PASS	0.64	6.26	15	PASS
N028679-005B	SAMP	1	1.81	4.51	15	PASS	0.22	47.77	15	<PQL
CCV2	CCV	1	19.79	1.57	15	PASS	20.43	0.86	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.031	70.092	15	<PQL
N028679-005B	SAMP	5	0.39	1.41	15	PASS	0.35	16.55	15	<PQL
N028696-001B	SAMP	1	120.041	0.48	15	PASS	<0.000	N/A	15	<PQL
N028696-001B	SAMP	5	25.55	1.7	15	PASS	<0.000	N/A	15	<PQL

Fe is not reported

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	5.71	1.27	15	PASS	<0.000	N/A	15	<PQL
N028696-002B	SAMP	5	1.23	1.77	15	PASS	<0.000	N/A	15	<PQL
N028696-003B	SAMP	1	5.99	3.16	15	PASS	<0.000	N/A	15	<PQL
N028696-003B	SAMP	5	1.23	5.32	15	PASS	<0.000	N/A	15	<PQL
N028696-004B	SAMP	1	12.012	0.37	15	PASS	8.98	1.57	15	PASS
N028696-004B	SAMP	5	3.75	1.13	15	PASS	<0.000	N/A	15	<PQL
N028696-005B	SAMP	1	58.72	1	15	PASS	62.7	2.31	15	PASS
CCV3	CCV	1	20.35	0.56	15	PASS	20.78	1.03	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028696-005B	SAMP	5	12.58	0.54	15	PASS	13.68	0.89	15	PASS
N028696-006B	SAMP	1	26.99	0.82	15	PASS	<0.000	N/A	15	<PQL
N028696-006B	SAMP	5	5.85	0.31	15	PASS	<0.000	N/A	15	<PQL
N028696-007B	SAMP	1	12.64	0.88	15	PASS	<0.000	N/A	15	<PQL
N028696-007B	SAMP	5	2.75	2.66	15	PASS	<0.000	N/A	15	<PQL
N028696-008B	SAMP	1	52.64	0.59	15	PASS	<0.000	N/A	15	<PQL
N028696-008B	SAMP	5	11.029	0.97	15	PASS	<0.000	N/A	15	<PQL
N028696-009B	SAMP	1	4.91	1.89	15	PASS	95.66	0.69	15	PASS
N028696-009B	SAMP	5	1.07	8.34	15	PASS	21.56	1.14	15	PASS
CCV4	CCV	1	20.15	0.74	15	PASS	20.98	0.72	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.54	6.93	20	PASS	10.54	0.42	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.58	1.15	15	PASS	20.26	0.76	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	103.83	1.83	15	PASS	104.19	1.19	15	PASS
N028726-001B	SAMP	1	118.79	1.84	15	PASS	<0.000	N/A	15	<PQL
N028726-001B	SAMP	5	24.94	0.37	15	PASS	<0.000	N/A	15	<PQL
N028726-001B	SAMP	25	5.21	2.34	15	PASS	<0.000	N/A	15	<PQL
N028726-001B-PS	PS	1	203.96	0.56	15	PASS	79.92	0.21	15	PASS
N028726-001B-PS	PS	5	45.087	1.16	15	PASS	18.33	0.59	15	PASS
N028726-001B-MS	MS	1	207.55	1.00086	15	PASS	83.68	1.33	15	PASS
N028726-001B-MS	MS	5	46.72	0.39	15	PASS	19.62	1.13	15	PASS
N028726-001B-MSD	MSD	1	205.82	0.36	15	PASS	82.9	0.32	15	PASS
CCV5	CCV	1	20.14	0.32	15	PASS	20.67	1.12	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	46.55	0.82	15	PASS	19.64	1.83	15	PASS
N028726-002B	SAMP	1	34.62	1.19	15	PASS	0.83	14.43	15	PASS
N028726-002B	SAMP	5	7.5	0.82	15	PASS	0.49	11.56	15	PASS
N028726-003B	SAMP	1	10.67	1.77	15	PASS	<0.000	N/A	15	<PQL
N028726-003B	SAMP	5	2.28	1.75	15	PASS	<0.000	N/A	15	<PQL
N028726-004B	SAMP	1	20.9	0.58	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	4.64	0.69	15	PASS	0.52	45.12	15	<PQL
N028726-005B	SAMP	1	21.82	2.047	15	PASS	246.98	1.65	15	PASS
N028726-005B	SAMP	5	4.82	0.8	15	PASS	54.37	0.66	15	PASS
N028727-002B	SAMP	1	<0.000	N/A	15	<PQL	1.44	2.093	15	PASS
CCV6	CCV	1	20.072	1.064	15	PASS	20.71	1.2	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.0059	400.24	15	<PQL
N028727-002B	SAMP	5	<0.000	N/A	15	<PQL	0.33	8.84	15	PASS
N028727-003B	SAMP	1	0.65	4.062	15	PASS	0.89	8.47	15	PASS
N028727-003B	SAMP	5	0.17	13.14	15	PASS	0.96	1.2	15	PASS
N028727-004B	SAMP	1	<0.000	N/A	15	<PQL	3.74	37.16	15	<PQL
N028727-004B	SAMP	5	<0.000	N/A	15	<PQL	0.89	63.56	15	<PQL
N028727-005B	SAMP	1	<0.000	N/A	15	<PQL	1.67	8.55	15	PASS
N028727-005B	SAMP	5	<0.000	N/A	15	<PQL	0.34	5.31	15	PASS
N028727-006B	SAMP	1	<0.000	N/A	15	<PQL	0.62	2.84	15	PASS
N028727-006B	SAMP	5	<0.000	N/A	15	<PQL	0.29	32.6	15	<PQL
N028727-007B	SAMP	1	<0.000	N/A	15	<PQL	7.81	37.6	15	<PQL
CCV7	CCV	1	20.43	0.23	15	PASS	21.12	1.49	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	5	<0.000	N/A	15	<PQL	1.44	11.2	15	PASS
N028727-008B	SAMP	1	<0.000	N/A	15	<PQL	2.42	3.95	15	PASS
N028727-008B	SAMP	5	<0.000	N/A	15	<PQL	0.46	7.12	15	PASS
N028727-009B	SAMP	1	<0.000	N/A	15	<PQL	0.66	26.44	15	<PQL
N028727-009B	SAMP	5	<0.000	N/A	15	<PQL	3.71	2.12	15	PASS
N028727-010B	SAMP	1	<0.000	N/A	15	<PQL	3.53	3.71	15	PASS
N028727-010B	SAMP	5	<0.000	N/A	15	<PQL	0.81	6.23	15	PASS
N028727-011B	SAMP	1	<0.000	N/A	15	<PQL	3.42	0.37	15	PASS
N028727-011B	SAMP	5	<0.000	N/A	15	<PQL	0.51	7.28	15	PASS
N028727-012B	SAMP	1	<0.000	N/A	15	<PQL	3.34	3.69	15	PASS
CCV8	CCV	1	20.37	1.079	15	PASS	20.98	2.26	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	<0.000	N/A	15	<PQL	0.81	1.033	15	PASS
N028727-013B	SAMP	1	0.054	91.58	15	<PQL	15.22	2.92	15	PASS
N028727-013B	SAMP	5	<0.000	N/A	15	<PQL	1.72	0.55	15	PASS
N028727-014C	SAMP	1	17.29	1.95	15	PASS	91.45	1.83	15	PASS
N028727-014C	SAMP	5	3.67	0.93	15	PASS	19.0042	2.37	15	PASS
N028727-015C	SAMP	1	1.93	1.18	15	PASS	10.72	1.34	15	PASS
N028727-015C	SAMP	5	0.4	5.78	15	PASS	2.15	4.19	15	PASS
CCV9	CCV	1	20.43	1.63	15	PASS	20.94	1.57	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.0078	139.94	15	<PQL
LLCCV2	CCV2	1	0.52	10.23	20	PASS	10.55	0.72	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	21.5	0.29	15	PASS	20.45	1.2	15	PASS
ICSAB3	ICSAB	1	21.2	1.92	15	PASS	21.68	0.4	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	19.28	15	NR!	0.13	19.19	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	5.75	15	PASS	0.53	24.52	15	NR!
Std3-5/50 ppb	ICAL	1	5.0073	2.24	15	PASS	4.76	2.15	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	2.61	15	PASS	10.08	5.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.91	1.4	15	PASS	20.046	0.84	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	1.45	15	PASS	39.97	2.13	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	1.75	15	PASS	100.7	0.4	15	PASS
Std8-200/2000 ppb	ICAL	1	199.68	0.6	15	PASS	199.65	2.32	15	PASS
ICV	ICV	1	10.33	1.47	15	PASS	10.034	2.45	15	PASS
ICB	ICB	1	0.0076	46.65	15	<PQL	0.034	88.12	15	<PQL
LLICV	CCV1	1	0.12	12.17	20	PASS	0.55	18.035	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.011	134.88	15	<PQL
ICSAB1	ICSAB	1	20.73	0.88	15	PASS	18.88	4.26	15	PASS
MB-66863	MBLK	1	0.0064	229.043	15	<PQL	0.004	346.87	15	<PQL
LCS-66863	LCS	1	10.29	2.6	15	PASS	10.47	4.33	15	PASS
N028679-001B	SAMP	1	1.74	1.53	15	PASS	2.15	14.38	15	PASS
N028679-001B	SAMP	5	0.35	3.97	15	PASS	0.47	24.085	15	<PQL
N028679-001B	SAMP	25	0.079	6.37	15	PASS	0.093	62.88	15	<PQL
N028679-001B-PS	PS	1	12.087	1.48	15	PASS	10.93	4.41	15	PASS
N028679-001B-PS	PS	5	2.55	6.085	15	PASS	2.54	14.4	15	PASS
N028679-001B-MS	MS	1	12.26	2.45	15	PASS	11.57	0.91	15	PASS
N028679-001B-MS	MS	5	2.54	0.89	15	PASS	2.35	7.66	15	PASS
N028679-001B-MSD	MSD	1	12.24	0.66	15	PASS	11.72	6.59	15	PASS
CCV1	CCV	1	20.12	1.098	15	PASS	19.47	2.11	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0079	150.54	15	<PQL
N028679-001B-MSD	MSD	5	2.57	3.93	15	PASS	2.26	5.54	15	PASS
N028679-002B	SAMP	1	4.25	0.51	15	PASS	0.05	19.066	15	<PQL
N028679-002B	SAMP	5	0.82	5.3	15	PASS	0.0085	147.0063	15	<PQL
N028679-002B	SAMP	10	0.48	4.48	15	PASS	0.00018	4075.71	15	<PQL
N028679-003B	SAMP	1	4.091	3.64	15	PASS	0.08	74.99	15	<PQL
N028679-003B	SAMP	5	0.88	6.66	15	PASS	0.026	75.17	15	<PQL
N028679-003B	SAMP	10	0.38	1.065	15	PASS	0.00015	4840.17	15	<PQL
N028679-004B	SAMP	1	1.62	0.81	15	PASS	4.0041	2.98	15	PASS
N028679-004B	SAMP	5	0.3	1.17	15	PASS	0.87	29.51	15	NR!
N028679-005B	SAMP	1	1.56	2.014	15	PASS	3.82	1.84	15	PASS
CCV2	CCV	1	20.23	1.14	15	PASS	20.27	0.67	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0035	370.87	15	<PQL
N028679-005B	SAMP	5	0.29	17.36	15	NR!	0.93	12.15	15	PASS
N028696-001B	SAMP	1	1.23	2.052	15	PASS	0.032	100.45	15	<PQL
N028696-001B	SAMP	5	0.27	6.45	15	PASS	0.021	102.54	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	5.67	1.071	15	PASS	0.12	51.52	15	<PQL
N028696-002B	SAMP	5	1.13	4.15	15	PASS	0.025	103.7	15	<PQL
N028696-003B	SAMP	1	5.63	0.1	15	PASS	0.13	31.59	15	<PQL
N028696-003B	SAMP	5	1.13	3.16	15	PASS	0.012	114.95	15	<PQL
N028696-004B	SAMP	1	2.26	2.75	15	PASS	0.85	9.12	15	PASS
N028696-004B	SAMP	5	0.43	8.04	15	PASS	0.11	48.42	15	<PQL
N028696-005B	SAMP	1	12.61	1.11	15	PASS	0.2	1.78	15	PASS
CCV3	CCV	1	20.24	0.71	15	PASS	20.27	2.45	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.034	64.69	15	<PQL
N028696-005B	SAMP	5	2.69	0.44	15	PASS	0.046	61.7	15	<PQL
N028696-006B	SAMP	1	14.9	1.24	15	PASS	0.33	14.32	15	PASS
N028696-006B	SAMP	5	2.94	3.012	15	PASS	0.042	18.55	15	<PQL
N028696-007B	SAMP	1	15.21	0.55	15	PASS	0.35	23.23	15	<PQL
N028696-007B	SAMP	5	3.18	3.82	15	PASS	0.057	14.000022	15	PASS
N028696-008B	SAMP	1	10.78	1.048	15	PASS	1.0038	9.17	15	PASS
N028696-008B	SAMP	5	2.18	4.39	15	PASS	0.16	35.11	15	<PQL
N028696-009B	SAMP	1	1.7	7.1	15	PASS	4.2	2.69	15	PASS
N028696-009B	SAMP	5	0.33	7.35	15	PASS	0.73	4.42	15	PASS
CCV4	CCV	1	19.76	0.72	15	PASS	20.84	2.65	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0047	320.52	15	<PQL
LLCCV1	CCV2	1	0.11	5.28	20	PASS	0.54	12.19	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.015	145.12	15	<PQL
ICSAB2	ICSAB	1	20.2	1.41	15	PASS	20.68	2.068	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	0.021	119.32	15	<PQL
LCS-66882	LCS	1	10.27	3.047	15	PASS	11.055	0.77	15	PASS
N028726-001B	SAMP	1	6.74	1.67	15	PASS	0.53	20.92	15	NR!
N028726-001B	SAMP	5	1.43	3.57	15	PASS	0.11	46.54	15	<PQL
N028726-001B	SAMP	25	0.28	8.39	15	PASS	0.0096	141.25	15	<PQL
N028726-001B-PS	PS	1	16.95	1.71	15	PASS	10.87	2.66	15	PASS
N028726-001B-PS	PS	5	3.58	2.36	15	PASS	2.18	12.33	15	PASS
N028726-001B-MS	MS	1	17.084	0.82	15	PASS	10.59	3.015	15	PASS
N028726-001B-MS	MS	5	3.78	3.21	15	PASS	2.35	5.4	15	PASS
N028726-001B-MSD	MSD	1	17.35	1.27	15	PASS	10.67	4.53	15	PASS
CCV5	CCV	1	19.98	0.73	15	PASS	20.98	0.68	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.022	58.54	15	<PQL
N028726-001B-MSD	MSD	5	3.62	2.99	15	PASS	2.3	17.38	15	NR!
N028726-002B	SAMP	1	1.46	4.27	15	PASS	0.69	13.35	15	PASS
N028726-002B	SAMP	5	0.3	9.42	15	PASS	0.17	47.77	15	<PQL
N028726-003B	SAMP	1	7.61	1.83	15	PASS	2.72	11.86	15	PASS
N028726-003B	SAMP	5	1.6	1.8	15	PASS	0.52	30.97	15	NR!
N028726-004B	SAMP	1	3.97	5.67	15	PASS	2.9	13.86	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	0.79	2.68	15	PASS	0.52	10.62	15	PASS
N028726-005B	SAMP	1	4.56	3.086	15	PASS	3.019	8.58	15	PASS
N028726-005B	SAMP	5	0.94	9.42	15	PASS	0.53	10.95	15	PASS
N028727-002B	SAMP	1	2.14	2.019	15	PASS	1.62	1.96	15	PASS
CCV6	CCV	1	19.83	0.7	15	PASS	20.29	2.61	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.023	101.55	15	<PQL
N028727-002B	SAMP	5	0.42	6.65	15	PASS	0.39	13.46	15	PASS
N028727-003B	SAMP	1	2.25	3.86	15	PASS	1.6	9.63	15	PASS
N028727-003B	SAMP	5	0.45	5.54	15	PASS	0.32	18.64	15	<PQL
N028727-004B	SAMP	1	2.27	0.47	15	PASS	1.81	10.67	15	PASS
N028727-004B	SAMP	5	0.46	3.34	15	PASS	0.41	3.94	15	PASS
N028727-005B	SAMP	1	2.22	4.74	15	PASS	1.71	2.96	15	PASS
N028727-005B	SAMP	5	0.43	6.87	15	PASS	0.35	6.32	15	PASS
N028727-006B	SAMP	1	2.17	3.9	15	PASS	1.6	17.8	15	NR!
N028727-006B	SAMP	5	0.43	8.78	15	PASS	0.36	16.36	15	<PQL
N028727-007B	SAMP	1	2.1	5.097	15	PASS	1.47	8.16	15	PASS
CCV7	CCV	1	20.3	0.77	15	PASS	20.5	2.97	15	PASS
CCB7	CCB	1	0.0079	19.42	15	<PQL	0.015	54.22	15	<PQL
N028727-007B	SAMP	5	0.4	2.076	15	PASS	0.32	6.66	15	PASS
N028727-008B	SAMP	1	2.11	4.31	15	PASS	1.65	1.47	15	PASS
N028727-008B	SAMP	5	0.43	6.28	15	PASS	0.28	10.79	15	PASS
N028727-009B	SAMP	1	2.19	6.02	15	PASS	1.66	2.81	15	PASS
N028727-009B	SAMP	5	0.48	8.0061	15	PASS	0.31	37.55	15	<PQL
N028727-010B	SAMP	1	2.16	1.052	15	PASS	1.81	3.97	15	PASS
N028727-010B	SAMP	5	0.44	2.97	15	PASS	0.33	13.57	15	PASS
N028727-011B	SAMP	1	2.21	4.91	15	PASS	1.56	5.79	15	PASS
N028727-011B	SAMP	5	0.46	7.17	15	PASS	0.45	14.37	15	PASS
N028727-012B	SAMP	1	2.2	5.3	15	PASS	1.87	2.18	15	PASS
CCV8	CCV	1	19.95	2.38	15	PASS	20.21	1.32	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.00083	1011.41	15	<PQL
N028727-012B	SAMP	5	0.47	2.93	15	PASS	0.3	32.83	15	<PQL
N028727-013B	SAMP	1	2.21	4.47	15	PASS	1.48	11.69	15	PASS
N028727-013B	SAMP	5	0.41	16.64	15	NR!	0.31	28.011	15	<PQL
N028727-014C	SAMP	1	1.52	3.33	15	PASS	0.96	12.46	15	PASS
N028727-014C	SAMP	5	0.29	4.83	15	PASS	0.2	28.6	15	<PQL
N028727-015C	SAMP	1	1.82	1.58	15	PASS	1.53	5.00092	15	PASS
N028727-015C	SAMP	5	0.36	5.14	15	PASS	0.29	27.76	15	<PQL
CCV9	CCV	1	19.95	0.44	15	PASS	20.29	3.12	15	PASS
CCB9	CCB	1	0.0095	57.5	15	<PQL	0.0012	767	15	<PQL
LLCCV2	CCV2	1	0.11	5.62	20	PASS	0.59	13.24	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.023	40.43	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	20.21	0.89	15	PASS	19.16	3.51	15	PASS
ICSAB3	ICSAB	1	20.085	3.65	15	PASS	18.84	4.12	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.084	16.48	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	1.87	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	1.84	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	0.44	15	PASS
Std5-20/200 ppb	ICAL	1	19.84	1.51	15	PASS
Std6-40/400 ppb	ICAL	1	39.77	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	100.49	1.52	15	PASS
Std8-200/2000 ppb	ICAL	1	199.83	0.91	15	PASS
ICV	ICV	1	10.68	0.4	15	PASS
ICB	ICB	1	0.18	4.16	15	PASS
LLICV	CCV1	1	0.56	2.84	20	PASS
ICSA1	ICSA	1	0.062	14.73	15	PASS
ICSAB1	ICSAB	1	21.76	1.7	15	PASS
MB-66863	MBLK	1	0.051	32.9	15	<PQL
LCS-66863	LCS	1	10.22	0.98	15	PASS
N028679-001B	SAMP	1	24.3	0.56	15	PASS
N028679-001B	SAMP	5	4.75	2.54	15	PASS
N028679-001B	SAMP	25	0.94	1.2	15	PASS
N028679-001B-PS	PS	1	34.68	0.4	15	PASS
N028679-001B-PS	PS	5	6.82	2.42	15	PASS
N028679-001B-MS	MS	1	34.3	0.85	15	PASS
N028679-001B-MS	MS	5	6.74	1.63	15	PASS
N028679-001B-MSD	MSD	1	34.63	2.18	15	PASS
CCV1	CCV	1	20.1	0.73	15	PASS
CCB1	CCB	1	0.069	14.47	15	PASS
N028679-001B-MSD	MSD	5	6.76	3.44	15	PASS
N028679-002B	SAMP	1	66.56	1.33	15	PASS
N028679-002B	SAMP	5	13.13	0.86	15	PASS
N028679-002B	SAMP	10	6.39	1.7	15	PASS
N028679-003B	SAMP	1	65.69	0.94	15	PASS
N028679-003B	SAMP	5	13.021	0.59	15	PASS
N028679-003B	SAMP	10	6.41	0.46	15	PASS
N028679-004B	SAMP	1	13.92	1.024	15	PASS
N028679-004B	SAMP	5	2.77	0.56	15	PASS
N028679-005B	SAMP	1	14.19	2.61	15	PASS
CCV2	CCV	1	20.051	0.66	15	PASS
CCB2	CCB	1	0.054	15.25	15	<PQL
N028679-005B	SAMP	5	2.85	1.91	15	PASS
N028696-001B	SAMP	1	49.27	1.63	15	PASS
N028696-001B	SAMP	5	9.72	2.13	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	84.2	0.88	15	PASS
N028696-002B	SAMP	5	16.62	1.45	15	PASS
N028696-003B	SAMP	1	83.053	1.73	15	PASS
N028696-003B	SAMP	5	16.044	0.81	15	PASS
N028696-004B	SAMP	1	196.038	0.12	15	PASS
N028696-004B	SAMP	5	37.69	0.49	15	PASS
N028696-005B	SAMP	1	77.37	2.64	15	PASS
CCV3	CCV	1	20.11	1.9	15	PASS
CCB3	CCB	1	0.11	17.14	15	<PQL
N028696-005B	SAMP	5	14.84	0.84	15	PASS
N028696-006B	SAMP	1	81.63	1.083	15	PASS
N028696-006B	SAMP	5	15.52	0.8	15	PASS
N028696-007B	SAMP	1	80.031	0.99	15	PASS
N028696-007B	SAMP	5	15.8	0.42	15	PASS
N028696-008B	SAMP	1	76.75	0.89	15	PASS
N028696-008B	SAMP	5	14.4	1.3	15	PASS
N028696-009B	SAMP	1	26.89	0.61	15	PASS
N028696-009B	SAMP	5	5.2	1.21	15	PASS
CCV4	CCV	1	19.76	1.34	15	PASS
CCB4	CCB	1	0.076	15.11	15	<PQL
LLCCV1	CCV2	1	0.52	5.76	20	PASS
ICSA2	ICSA	1	0.04	21.79	15	<PQL
ICSAB2	ICSAB	1	21.93	0.66	15	PASS
MB-66882	MBLK	1	0.054	14.31	15	PASS
LCS-66882	LCS	1	10.046	1.93	15	PASS
N028726-001B	SAMP	1	67.21	0.75	15	PASS
N028726-001B	SAMP	5	13.11	1.67	15	PASS
N028726-001B	SAMP	25	2.64	3.016	15	PASS
N028726-001B-PS	PS	1	75.56	0.86	15	PASS
N028726-001B-PS	PS	5	15.32	0.74	15	PASS
N028726-001B-MS	MS	1	78.32	1.7	15	PASS
N028726-001B-MS	MS	5	16.13	0.45	15	PASS
N028726-001B-MSD	MSD	1	78.79	1.13	15	PASS
CCV5	CCV	1	20.015	0.2	15	PASS
CCB5	CCB	1	0.12	12.7	15	PASS
N028726-001B-MSD	MSD	5	15.94	1.18	15	PASS
N028726-002B	SAMP	1	20.035	1.9	15	PASS
N028726-002B	SAMP	5	3.98	0.9	15	PASS
N028726-003B	SAMP	1	59.2	0.89	15	PASS
N028726-003B	SAMP	5	11.49	0.96	15	PASS
N028726-004B	SAMP	1	59.72	0.36	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	11.64	0.6	15	PASS
N028726-005B	SAMP	1	58.47	0.31	15	PASS
N028726-005B	SAMP	5	11.25	2.2	15	PASS
N028727-002B	SAMP	1	4.84	2.028	15	PASS
CCV6	CCV	1	19.98	0.29	15	PASS
CCB6	CCB	1	0.075	14.32	15	PASS
N028727-002B	SAMP	5	0.99	2.093	15	PASS
N028727-003B	SAMP	1	4.93	1.65	15	PASS
N028727-003B	SAMP	5	0.97	2.86	15	PASS
N028727-004B	SAMP	1	5.017	1.29	15	PASS
N028727-004B	SAMP	5	0.96	2.75	15	PASS
N028727-005B	SAMP	1	4.81	3.53	15	PASS
N028727-005B	SAMP	5	0.95	4.077	15	PASS
N028727-006B	SAMP	1	4.81	1.24	15	PASS
N028727-006B	SAMP	5	0.91	4.92	15	PASS
N028727-007B	SAMP	1	4.75	1.72	15	PASS
CCV7	CCV	1	19.95	0.91	15	PASS
CCB7	CCB	1	0.053	18.047	15	<PQL
N028727-007B	SAMP	5	0.97	3.5	15	PASS
N028727-008B	SAMP	1	4.77	1.26	15	PASS
N028727-008B	SAMP	5	1	2.76	15	PASS
N028727-009B	SAMP	1	4.84	0.8	15	PASS
N028727-009B	SAMP	5	1	2.62	15	PASS
N028727-010B	SAMP	1	4.74	0.65	15	PASS
N028727-010B	SAMP	5	0.95	2.0091	15	PASS
N028727-011B	SAMP	1	4.85	2.52	15	PASS
N028727-011B	SAMP	5	0.98	3.88	15	PASS
N028727-012B	SAMP	1	4.96	1.32	15	PASS
CCV8	CCV	1	19.66	1.0022	15	PASS
CCB8	CCB	1	0.054	8.73	15	PASS
N028727-012B	SAMP	5	0.98	2.17	15	PASS
N028727-013B	SAMP	1	4.95	1.96	15	PASS
N028727-013B	SAMP	5	0.97	3.41	15	PASS
N028727-014C	SAMP	1	5.86	0.59	15	PASS
N028727-014C	SAMP	5	1.13	0.73	15	PASS
N028727-015C	SAMP	1	5.19	1.56	15	PASS
N028727-015C	SAMP	5	1.017	3.98	15	PASS
CCV9	CCV	1	19.58	1.17	15	PASS
CCB9	CCB	1	0.063	15.76	15	<PQL
LLCCV2	CCV2	1	0.5	11.41	20	PASS
ICSA3	ICSA	1	0.019	52.069	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	21.65	1.027	15	PASS
ICSAB3	ICSAB	1	21.33	0.97	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226001.D	RINSE	RINSE	1	02/26/18 5:11 PM
A0226002.D	Cal Blank	IBLK	1	02/26/18 5:16 PM
A0226003.D	Std1-0.1/1 ppb	ICAL	1	02/26/18 5:22 PM
A0226004.D	Std2-0.5/5 ppb	ICAL	1	02/26/18 5:27 PM
A0226005.D	Std3-5/50 ppb	ICAL	1	02/26/18 5:33 PM
A0226006.D	Std4-10/100 ppb	ICAL	1	02/26/18 5:39 PM
A0226007.D	Std5-20/200 ppb	ICAL	1	02/26/18 5:44 PM
A0226008.D	Std6-40/400 ppb	ICAL	1	02/26/18 5:50 PM
A0226009.D	Std7-100/1000 ppb	ICAL	1	02/26/18 5:55 PM
A0226010.D	Std8-200/2000 ppb	ICAL	1	02/26/18 6:01 PM
A0226011.D	ICV	ICV	1	02/26/18 6:07 PM
A0226012.D	ICB	ICB	1	02/26/18 6:12 PM
A0226013.D	LLICV	CCV1	1	02/26/18 6:18 PM
A0226014.D	ICSA1	ICSA	1	02/26/18 6:23 PM
A0226015.D	ICSAB1	ICSAB	1	02/26/18 6:29 PM
A0226016.D	MB-66863	MBLK	1	02/26/18 6:35 PM
A0226017.D	LCS-66863	LCS	1	02/26/18 6:40 PM
A0226018.D	N028679-001B	SAMP	1	02/26/18 6:46 PM
A0226019.D	N028679-001B	SAMP	5	02/26/18 6:51 PM
A0226020.D	N028679-001B	SAMP	25	02/26/18 6:57 PM
A0226021.D	N028679-001B-PS	PS	1	02/26/18 7:03 PM
A0226022.D	N028679-001B-PS	PS	5	02/26/18 7:08 PM
A0226023.D	N028679-001B-MS	MS	1	02/26/18 7:14 PM
A0226024.D	N028679-001B-MS	MS	5	02/26/18 7:20 PM
A0226025.D	N028679-001B-MSD	MSD	1	02/26/18 7:25 PM
A0226026.D	CCV1	CCV	1	02/26/18 7:31 PM
A0226027.D	CCB1	CCB	1	02/26/18 7:36 PM
A0226028.D	N028679-001B-MSD	MSD	5	02/26/18 7:42 PM
A0226029.D	N028679-002B	SAMP	1	02/26/18 7:48 PM
A0226030.D	N028679-002B	SAMP	5	02/26/18 7:53 PM
A0226031.D	N028679-002B	SAMP	10	02/26/18 7:59 PM
A0226032.D	N028679-003B	SAMP	1	02/26/18 8:04 PM
A0226033.D	N028679-003B	SAMP	5	02/26/18 8:10 PM
A0226034.D	N028679-003B	SAMP	10	02/26/18 8:16 PM
A0226035.D	N028679-004B	SAMP	1	02/26/18 8:21 PM
A0226036.D	N028679-004B	SAMP	5	02/26/18 8:27 PM
A0226037.D	N028679-005B	SAMP	1	02/26/18 8:32 PM
A0226038.D	CCV2	CCV	1	02/26/18 8:38 PM
A0226039.D	CCB2	CCB	1	02/26/18 8:44 PM
A0226040.D	N028679-005B	SAMP	5	02/26/18 8:49 PM
A0226041.D	N028696-001B	SAMP	1	02/26/18 8:55 PM
A0226042.D	N028696-001B	SAMP	5	02/26/18 9:00 PM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226043.D	N028696-002B	SAMP	1	02/26/18 9:06 PM
A0226044.D	N028696-002B	SAMP	5	02/26/18 9:12 PM
A0226045.D	N028696-003B	SAMP	1	02/26/18 9:17 PM
A0226046.D	N028696-003B	SAMP	5	02/26/18 9:23 PM
A0226047.D	N028696-004B	SAMP	1	02/26/18 9:29 PM
A0226048.D	N028696-004B	SAMP	5	02/26/18 9:34 PM
A0226049.D	N028696-005B	SAMP	1	02/26/18 9:41 PM
A0226050.D	CCV3	CCV	1	02/26/18 9:47 PM
A0226051.D	CCB3	CCB	1	02/26/18 9:53 PM
A0226052.D	N028696-005B	SAMP	5	02/26/18 9:58 PM
A0226053.D	N028696-006B	SAMP	1	02/26/18 10:04 PM
A0226054.D	N028696-006B	SAMP	5	02/26/18 10:09 PM
A0226055.D	N028696-007B	SAMP	1	02/26/18 10:15 PM
A0226056.D	N028696-007B	SAMP	5	02/26/18 10:21 PM
A0226057.D	N028696-008B	SAMP	1	02/26/18 10:26 PM
A0226058.D	N028696-008B	SAMP	5	02/26/18 10:32 PM
A0226059.D	N028696-009B	SAMP	1	02/26/18 10:38 PM
A0226060.D	N028696-009B	SAMP	5	02/26/18 10:43 PM
A0226061.D	CCV4	CCV	1	02/26/18 10:49 PM
A0226062.D	CCB4	CCB	1	02/26/18 10:54 PM
A0226063.D	LLCCV1	CCV2	1	02/26/18 11:00 PM
A0226064.D	ICSA2	ICSA	1	02/26/18 11:06 PM
A0226065.D	ICSAB2	ICSAB	1	02/26/18 11:11 PM
A0226066.D	MB-66882	MBLK	1	02/26/18 11:17 PM
A0226067.D	LCS-66882	LCS	1	02/26/18 11:22 PM
A0226068.D	N028726-001B	SAMP	1	02/26/18 11:28 PM
A0226069.D	N028726-001B	SAMP	5	02/26/18 11:34 PM
A0226070.D	N028726-001B	SAMP	25	02/26/18 11:39 PM
A0226071.D	N028726-001B-PS	PS	1	02/26/18 11:45 PM
A0226072.D	N028726-001B-PS	PS	5	02/26/18 11:50 PM
A0226073.D	N028726-001B-MS	MS	1	02/26/18 11:56 PM
A0226074.D	N028726-001B-MS	MS	5	02/27/18 12:02 AM
A0226075.D	N028726-001B-MSD	MSD	1	02/27/18 12:07 AM
A0226076.D	CCV5	CCV	1	02/27/18 12:13 AM
A0226077.D	CCB5	CCB	1	02/27/18 12:18 AM
A0226078.D	N028726-001B-MSD	MSD	5	02/27/18 12:24 AM
A0226079.D	N028726-002B	SAMP	1	02/27/18 12:30 AM
A0226080.D	N028726-002B	SAMP	5	02/27/18 12:35 AM
A0226081.D	N028726-003B	SAMP	1	02/27/18 12:41 AM
A0226082.D	N028726-003B	SAMP	5	02/27/18 12:47 AM
A0226083.D	N028726-004B	SAMP	1	02/27/18 12:52 AM
A0226084.D	N028726-004B	SAMP	5	02/27/18 12:58 AM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226085.D	N028726-005B	SAMP	1	02/27/18 1:03 AM
A0226086.D	N028726-005B	SAMP	5	02/27/18 1:09 AM
A0226087.D	N028727-002B	SAMP	1	02/27/18 1:15 AM
A0226088.D	CCV6	CCV	1	02/27/18 1:20 AM
A0226089.D	CCB6	CCB	1	02/27/18 1:26 AM
A0226090.D	N028727-002B	SAMP	5	02/27/18 1:31 AM
A0226091.D	N028727-003B	SAMP	1	02/27/18 1:37 AM
A0226092.D	N028727-003B	SAMP	5	02/27/18 1:43 AM
A0226093.D	N028727-004B	SAMP	1	02/27/18 1:48 AM
A0226094.D	N028727-004B	SAMP	5	02/27/18 1:54 AM
A0226095.D	N028727-005B	SAMP	1	02/27/18 2:00 AM
A0226096.D	N028727-005B	SAMP	5	02/27/18 2:05 AM
A0226097.D	N028727-006B	SAMP	1	02/27/18 2:11 AM
A0226098.D	N028727-006B	SAMP	5	02/27/18 2:16 AM
A0226099.D	N028727-007B	SAMP	1	02/27/18 2:22 AM
A0226100.D	CCV7	CCV	1	02/27/18 2:28 AM
A0226101.D	CCB7	CCB	1	02/27/18 2:33 AM
A0226102.D	N028727-007B	SAMP	5	02/27/18 2:39 AM
A0226103.D	N028727-008B	SAMP	1	02/27/18 2:44 AM
A0226104.D	N028727-008B	SAMP	5	02/27/18 2:50 AM
A0226105.D	N028727-009B	SAMP	1	02/27/18 2:56 AM
A0226106.D	N028727-009B	SAMP	5	02/27/18 3:01 AM
A0226107.D	N028727-010B	SAMP	1	02/27/18 3:07 AM
A0226108.D	N028727-010B	SAMP	5	02/27/18 3:13 AM
A0226109.D	N028727-011B	SAMP	1	02/27/18 3:18 AM
A0226110.D	N028727-011B	SAMP	5	02/27/18 3:24 AM
A0226111.D	N028727-012B	SAMP	1	02/27/18 3:29 AM
A0226112.D	CCV8	CCV	1	02/27/18 3:35 AM
A0226113.D	CCB8	CCB	1	02/27/18 3:41 AM
A0226114.D	N028727-012B	SAMP	5	02/27/18 3:46 AM
A0226115.D	N028727-013B	SAMP	1	02/27/18 3:52 AM
A0226116.D	N028727-013B	SAMP	5	02/27/18 3:58 AM
A0226117.D	N028727-014C	SAMP	1	02/27/18 4:03 AM
A0226118.D	N028727-014C	SAMP	5	02/27/18 4:09 AM
A0226119.D	N028727-015C	SAMP	1	02/27/18 4:14 AM
A0226120.D	N028727-015C	SAMP	5	02/27/18 4:20 AM
A0226121.D	CCV9	CCV	1	02/27/18 4:26 AM
A0226122.D	CCB9	CCB	1	02/27/18 4:31 AM
A0226123.D	LLCCV2	CCV2	1	02/27/18 4:37 AM
A0226124.D	ICSA3	ICSA	1	02/27/18 4:43 AM
A0226125.D	ICSAB3	ICSAB	1	02/27/18 4:48 AM
A0226126.D	ICSAB3	ICSAB	1	02/27/18 4:57 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/21/2018 12:00:00**
Prep End Date: **2/21/2018 4:00:00**
Prep Batch **66863** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 3/5/2018
Initials/ Date: 3/5/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66863	Aqueous		25	☐	0	0	25	1.000		
MB-66863	Aqueous		25	☐	0	0	25	1.000		
N028679-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/21/2018 12:00:00**
Prep End Date: **2/21/2018 4:00:00**
Reviewed/ Date: 3/5/2018
Initials/ Date: 3/5/2018

Prep Batch **66863** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028696-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 26 Feb 2018 02:40:46 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	166688.00	0.00	
24 Mg	675728.00	0.00	
25 Mg	87808.20	0.00	
26 Mg	101444.00	0.00	
59 Co	617412.00	0.00	
115 In	1016020.00	0.00	
206 Pb	323115.00	0.00	
207 Pb	282293.00	0.00	
208 Pb	693360.00	0.00	

RSD (%)

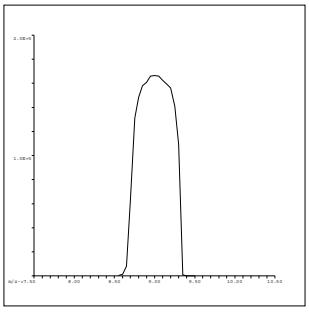
Element	Actual	Required	Flag
9 Be	0.55	5.00	
24 Mg	0.89	5.00	
25 Mg	1.10	5.00	
26 Mg	0.39	5.00	
59 Co	0.82	5.00	
115 In	0.34	5.00	
206 Pb	0.62	5.00	
207 Pb	0.42	5.00	
208 Pb	0.30	5.00	

Ion Ratio

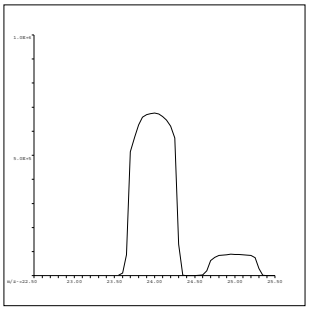
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

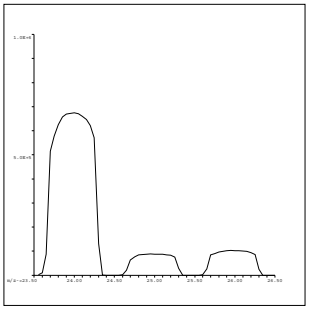
Element	Actual	Required	Flag



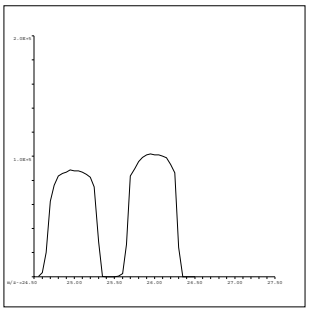
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



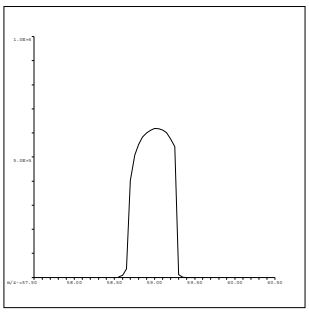
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



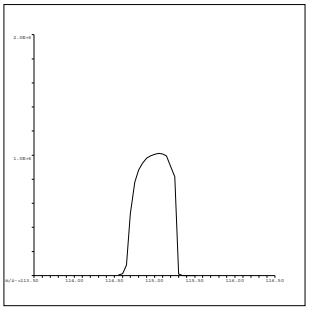
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



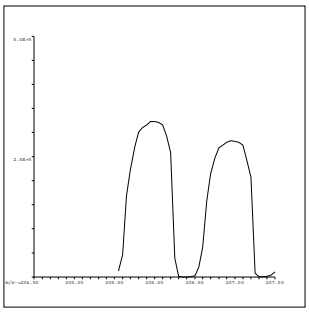
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



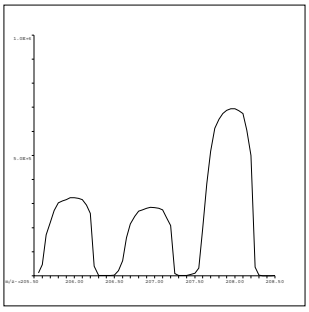
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



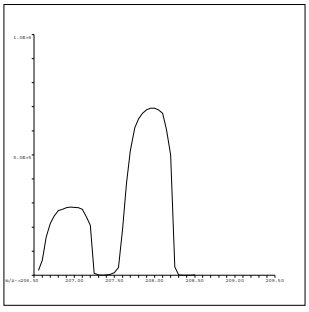
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180226A

Instrument ID: ICPMS-02

Analyte	Data File	A0226002.D	A0226003.D	A0226004.D	A0226005.D	A0226006.D	A0226007.D	A0226008.D	A0226009.D	A0226010.D	
	Acq. Date-Time	02/26/2018 05:16 PM	02/26/2018 05:22 PM	02/26/2018 05:27 PM	02/26/2018 05:33 PM	02/26/2018 05:39 PM	02/26/2018 05:44 PM	02/26/2018 05:50 PM	02/26/2018 05:55 PM	02/26/2018 06:01 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	97491.9		97945.1	97691.6	94822.4	88561.2	91066.6	85636.2	85948.9	
56 Fe [2]	CPS	2632.6		13029	41678.3	70553	127081.6	254683.2	578914.2	1140535	1.0000
55 Mn [2]	CPS	269.9		2378.4	19781.2	38358.4	71806.6	146920.4	343945.9	682609.3	1.0000
52 Cr [2]	CPS	411.9		4521.6	39593	77543.1	145044.6	293996.6	689672.6	1420039.1	0.9999
72 Ge (ISTD) [1]	CPS	78725.2		80838.6	79724.2	77940.1	73997.6	75191.7	70909.3	71589.1	
78 Se [1]	CPS	1.1		151.1	1324.6	2741.4	5176.6	10488.2	24915.4	49860.4	1.0000
72 Ge (ISTD) [2]	CPS	66539.2	68691.3	67509.8	66547.1	65096.8	61880.1	63082.1	59057.1	59377.4	
75 As [2]	CPS	25.8	117.8	430.2	3941.8	7812.1	14504.3	29856.1	69819.3	139372.4	1.0000
103 Rh (ISTD) [2]	CPS	2010768.1		2077477	2060452.4	2039726.9	1928892.8	1979255.7	1857828.9	1871094.3	
95 Mo [2]	CPS	155.6		2488.1	24050.9	47649.2	91115.4	187293.5	443969	889014.6	1.0000
159 Tb (ISTD) [3]	CPS	5729624.3		5937860.3	5973070.7	5993532.6	5784712.1	6047619.1	5817437.6	5855236.7	
137 Ba [3]	CPS	115.8		5844.7	49168.6	96703.5	183434.1	381224.1	901764.1	1870877.4	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

Fe is not reported

3/5/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.329	0.10	10.00	0	103	90	110				
Manganese	104.434	0.50	100.0	0	104	90	110				
Molybdenum	10.677	0.50	10.00	0	107	90	110				
Selenium	10.034	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.116	0.10	0.1000	0	116	80	120				
Manganese	0.524	0.50	0.5000	0	105	80	120				
Molybdenum	0.564	0.50	0.5000	0	113	80	120				
Selenium	0.545	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.116	0.10	20.00	0	101	90	110				
Manganese	19.912	0.50	20.00	0	99.6	90	110				
Molybdenum	20.101	0.50	20.00	0	101	90	110				
Selenium	19.466	0.50	20.00	0	97.3	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.231	0.10	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.795	0.50	20.00	0	99.0	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	20.269	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.239	0.10	20.00	0	101	90	110				
Manganese	20.353	0.50	20.00	0	102	90	110				
Molybdenum	20.110	0.50	20.00	0	101	90	110				
Selenium	20.272	0.50	20.00	0	101	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.758	0.10	20.00	0	98.8	90	110				
Manganese	20.149	0.50	20.00	0	101	90	110				
Molybdenum	19.756	0.50	20.00	0	98.8	90	110				
Selenium	20.839	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Manganese	0.542	0.50	0.5000	0	108	70	130				
Molybdenum	0.523	0.50	0.5000	0	105	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.544	0.50	0.5000	0	109	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Manganese	20.136	0.50	20.00	0	101	90	110				
Molybdenum	20.015	0.50	20.00	0	100	90	110				
Selenium	20.980	0.50	20.00	0	105	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.834	0.10	20.00	0	99.2	90	110				
Manganese	20.072	0.50	20.00	0	100	90	110				
Molybdenum	19.983	0.50	20.00	0	99.9	90	110				
Selenium	20.293	0.50	20.00	0	101	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.305	0.10	20.00	0	102	90	110				
Manganese	20.434	0.50	20.00	0	102	90	110				
Molybdenum	19.950	0.50	20.00	0	99.7	90	110				
Selenium	20.505	0.50	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.952	0.10	20.00	0	99.8	90	110				
Manganese	20.373	0.50	20.00	0	102	90	110				
Molybdenum	19.657	0.50	20.00	0	98.3	90	110				
Selenium	20.206	0.50	20.00	0	101	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.953	0.10	20.00	0	99.8	90	110				
Manganese	20.426	0.50	20.00	0	102	90	110				
Molybdenum	19.576	0.50	20.00	0	97.9	90	110				
Selenium	20.287	0.50	20.00	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.497	0.50	0.5000	0	99.3	70	130				
Selenium	0.585	0.50	0.5000	0	117	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.064	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.377	1.0	20.00	0	96.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.731	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.721	1.0	20.00	0	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.049	1.0	20.00	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.656	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.741	1.0	20.00	0	98.7	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.867	1.0	20.00	0	99.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.755	1.0	20.00	0	98.8	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.627	1.0	20.00	0	98.1	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSA**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.726	0.10	20.00	0	104	80	120				
Manganese	20.545	0.50	20.00	0	103	80	120				
Molybdenum	21.758	0.50	20.00	0	109	80	120				
Selenium	18.881	0.50	20.00	0	94.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSA**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.200	0.10	20.00	0	101	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.579	0.50	20.00	0	103	80	120				
Molybdenum	21.928	0.50	20.00	0	110	80	120				
Selenium	20.681	0.50	20.00	0	103	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSA** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

not reported

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.211	0.10	20.00	0	101	80	120				
Manganese	21.505	0.50	20.00	0	108	80	120				
Molybdenum	21.649	0.50	20.00	0	108	80	120				
Selenium	19.163	0.50	20.00	0	95.8	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.085	0.10	20.00	0	100	80	120				
Manganese	21.203	0.50	20.00	0	106	80	120				
Molybdenum	21.332	0.50	20.00	0	107	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

3/5/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.838	0.50	20.00	0	94.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSA	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941707

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSAB	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941708

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.093	1.0	20.00	0	95.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSA	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSAB	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.196	1.0	20.00	0	96.0	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSA	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2941817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.874	1.0	20.00	0	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5729624.3	5729624.3	100	PASS	70-125	97491.9	97491.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5949790.2	5729624.3	103.84	PASS	70-125	100434.5	97491.9	103.02	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5937860.3	5729624.3	103.63	PASS	70-125	97945.1	97491.9	100.46	PASS	70-125
Std3-5/50 ppb	ICAL	1	5973070.7	5729624.3	104.25	PASS	70-125	97691.6	97491.9	100.2	PASS	70-125
Std4-10/100 ppb	ICAL	1	5993532.6	5729624.3	104.61	PASS	70-125	94822.4	97491.9	97.26	PASS	70-125
Std5-20/200 ppb	ICAL	1	5784712.1	5729624.3	100.96	PASS	70-125	88561.2	97491.9	90.84	PASS	70-125
Std6-40/400 ppb	ICAL	1	6047619.1	5729624.3	105.55	PASS	70-125	91066.6	97491.9	93.41	PASS	70-125
Std7-100/1000 ppb	ICAL	1	5817437.6	5729624.3	101.53	PASS	70-125	85636.2	97491.9	87.84	PASS	70-125
Std8-200/2000 ppb	ICAL	1	5855236.7	5729624.3	102.19	PASS	70-125	85948.9	97491.9	88.16	PASS	70-125
ICV	ICV	1	5444260.4	5729624.3	95.02	PASS	70-125	76934	97491.9	78.91	PASS	70-125
ICB	ICB	1	5497481	5729624.3	95.95	PASS	70-125	78632.4	97491.9	80.66	PASS	70-125
LLICV	CCV1	1	4935809.7	5729624.3	86.15	PASS	70-125	70762.9	97491.9	72.58	PASS	70-125
ICSA1	ICSA	1	4872186.1	5729624.3	85.035	PASS	70-125	80525.3	97491.9	82.6	PASS	70-125
ICSAB1	ICSAB	1	5962027.8	5729624.3	104.06	PASS	70-125	103061.5	97491.9	105.71	PASS	70-125
MB-66863	MBLK	1	5747470.5	5729624.3	100.31	PASS	70-125	91781.9	97491.9	94.14	PASS	70-125
LCS-66863	LCS	1	5536970.7	5729624.3	96.64	PASS	70-125	82735.2	97491.9	84.86	PASS	70-125
N028679-001B	SAMP	1	4592397.8	5729624.3	80.15	PASS	70-125	83205.1	97491.9	85.35	PASS	70-125
N028679-001B	SAMP	5	5190260.9	5729624.3	90.59	PASS	70-125	88980.2	97491.9	91.27	PASS	70-125
N028679-001B	SAMP	25	5477508.7	5729624.3	95.6	PASS	70-125	91523.1	97491.9	93.88	PASS	70-125
N028679-001B-PS	PS	1	4787976.5	5729624.3	83.57	PASS	70-125	91127.5	97491.9	93.47	PASS	70-125
N028679-001B-PS	PS	5	5475821.2	5729624.3	95.57	PASS	70-125	95726.3	97491.9	98.19	PASS	70-125
N028679-001B-MS	MS	1	4860872.9	5729624.3	84.84	PASS	70-125	96210.9	97491.9	98.69	PASS	70-125
N028679-001B-MS	MS	5	5615897	5729624.3	98.015	PASS	70-125	98662	97491.9	101.2	PASS	70-125
N028679-001B-MSD	MSD	1	4844160.8	5729624.3	84.55	PASS	70-125	96689.5	97491.9	99.18	PASS	70-125
CCV1	CCV	1	6128092.4	5729624.3	106.95	PASS	70-125	107973.1	97491.9	110.75	PASS	70-125
CCB1	CCB	1	5859270.4	5729624.3	102.26	PASS	70-125	99382.8	97491.9	101.94	PASS	70-125
N028679-001B-MSD	MSD	5	5380363.3	5729624.3	93.9	PASS	70-125	94336.1	97491.9	96.76	PASS	70-125
N028679-002B	SAMP	1	4213410.9	5729624.3	73.54	PASS	70-125	90584.5	97491.9	92.91	PASS	70-125
N028679-002B	SAMP	5	5544587.4	5729624.3	96.77	PASS	70-125	102491.2	97491.9	105.13	PASS	70-125
N028679-002B	SAMP	10	5989843.6	5729624.3	104.54	PASS	70-125	107596.7	97491.9	110.36	PASS	70-125
N028679-003B	SAMP	1	4286340	5729624.3	74.81	PASS	70-125	94766.4	97491.9	97.2	PASS	70-125
N028679-003B	SAMP	5	5530836.6	5729624.3	96.53	PASS	70-125	102224	97491.9	104.85	PASS	70-125
N028679-003B	SAMP	10	5664617.1	5729624.3	98.87	PASS	70-125	102121.4	97491.9	104.75	PASS	70-125
N028679-004B	SAMP	1	5042700.3	5729624.3	88.011	PASS	70-125	98429.5	97491.9	100.96	PASS	70-125
N028679-004B	SAMP	5	5743795.5	5729624.3	100.25	PASS	70-125	106475.1	97491.9	109.21	PASS	70-125
N028679-005B	SAMP	1	5050456.7	5729624.3	88.15	PASS	70-125	102097.8	97491.9	104.72	PASS	70-125
CCV2	CCV	1	6710152.9	5729624.3	117.11	PASS	70-125	120410.7	97491.9	123.51	PASS	70-125
CCB2	CCB	1	6363665.9	5729624.3	111.07	PASS	70-125	109554.6	97491.9	112.37	PASS	70-125
N028679-005B	SAMP	5	5887522.1	5729624.3	102.76	PASS	70-125	104569.8	97491.9	107.26	PASS	70-125
N028696-001B	SAMP	1	4395561.9	5729624.3	76.72	PASS	70-125	93402	97491.9	95.8	PASS	70-125
N028696-001B	SAMP	5	5537206.9	5729624.3	96.64	PASS	70-125	104002.5	97491.9	106.68	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028696-002B	SAMP	1	4510057.5	5729624.3	78.71	PASS	70-125	99623.1	97491.9	102.19	PASS	70-125
N028696-002B	SAMP	5	5747900.6	5729624.3	100.32	PASS	70-125	104611.1	97491.9	107.3	PASS	70-125
N028696-003B	SAMP	1	4632057.8	5729624.3	80.84	PASS	70-125	100411.4	97491.9	102.99	PASS	70-125
N028696-003B	SAMP	5	5838690.4	5729624.3	101.9	PASS	70-125	106461.7	97491.9	109.2	PASS	70-125
N028696-004B	SAMP	1	3640563.2	5729624.3	63.54	NR!	70-125	85036.1	97491.9	87.22	PASS	70-125
N028696-004B	SAMP	5	5307408.5	5729624.3	92.63	PASS	70-125	96440.1	97491.9	98.92	PASS	70-125
N028696-005B	SAMP	1	4035636.4	5729624.3	70.43	PASS	70-125	90072.8	97491.9	92.39	PASS	70-125
CCV3	CCV	1	6560641.3	5729624.3	114.5	PASS	70-125	112320.7	97491.9	115.21	PASS	70-125
CCB3	CCB	1	5725121.2	5729624.3	99.92	PASS	70-125	96025.7	97491.9	98.5	PASS	70-125
N028696-005B	SAMP	5	5534888.2	5729624.3	96.6	PASS	70-125	95767.4	97491.9	98.23	PASS	70-125
N028696-006B	SAMP	1	3915805.4	5729624.3	68.34	NR!	70-125	87648.7	97491.9	89.9	PASS	70-125
N028696-006B	SAMP	5	5490117.3	5729624.3	95.82	PASS	70-125	97417.9	97491.9	99.92	PASS	70-125
N028696-007B	SAMP	1	4077105.4	5729624.3	71.16	PASS	70-125	92139.6	97491.9	94.51	PASS	70-125
N028696-007B	SAMP	5	5718015.7	5729624.3	99.8	PASS	70-125	103159.7	97491.9	105.81	PASS	70-125
N028696-008B	SAMP	1	4097490	5729624.3	71.51	PASS	70-125	91650.2	97491.9	94.008	PASS	70-125
N028696-008B	SAMP	5	5604745.4	5729624.3	97.82	PASS	70-125	98302.2	97491.9	100.83	PASS	70-125
N028696-009B	SAMP	1	4592865.2	5729624.3	80.16	PASS	70-125	94650.1	97491.9	97.085	PASS	70-125
N028696-009B	SAMP	5	5868413.7	5729624.3	102.42	PASS	70-125	101155.3	97491.9	103.76	PASS	70-125
CCV4	CCV	1	6705398.5	5729624.3	117.03	PASS	70-125	109876.2	97491.9	112.7	PASS	70-125
CCB4	CCB	1	5887453	5729624.3	102.75	PASS	70-125	94427.5	97491.9	96.86	PASS	70-125
LLCCV1	CCV2	1	5737983.5	5729624.3	100.15	PASS	70-125	90255.9	97491.9	92.58	PASS	70-125
ICSA2	ICSA	1	5295032.6	5729624.3	92.42	PASS	70-125	88048.9	97491.9	90.31	PASS	70-125
ICSAB2	ICSAB	1	6508218.2	5729624.3	113.59	PASS	70-125	110466.8	97491.9	113.31	PASS	70-125
MB-66882	MBLK	1	6001938.1	5729624.3	104.75	PASS	70-125	98448.5	97491.9	100.98	PASS	70-125
LCS-66882	LCS	1	6241214.8	5729624.3	108.93	PASS	70-125	95321.8	97491.9	97.77	PASS	70-125
N028726-001B	SAMP	1	4134627.6	5729624.3	72.16	PASS	70-125	78220.3	97491.9	80.23	PASS	70-125
N028726-001B	SAMP	5	5100749.7	5729624.3	89.024	PASS	70-125	87873.9	97491.9	90.13	PASS	70-125
N028726-001B	SAMP	25	5520483.9	5729624.3	96.35	PASS	70-125	91735.9	97491.9	94.096	PASS	70-125
N028726-001B-PS	PS	1	4291868	5729624.3	74.91	PASS	70-125	84189.7	97491.9	86.36	PASS	70-125
N028726-001B-PS	PS	5	5116934.8	5729624.3	89.31	PASS	70-125	91115.1	97491.9	93.46	PASS	70-125
N028726-001B-MS	MS	1	4264718.5	5729624.3	74.43	PASS	70-125	86611.7	97491.9	88.84	PASS	70-125
N028726-001B-MS	MS	5	5266257	5729624.3	91.91	PASS	70-125	90829.2	97491.9	93.17	PASS	70-125
N028726-001B-MSD	MSD	1	4287631.7	5729624.3	74.83	PASS	70-125	88147.9	97491.9	90.42	PASS	70-125
CCV5	CCV	1	6659693	5729624.3	116.23	PASS	70-125	111627.4	97491.9	114.5	PASS	70-125
CCB5	CCB	1	5860670.5	5729624.3	102.29	PASS	70-125	94469	97491.9	96.9	PASS	70-125
N028726-001B-MSD	MSD	5	4870213.2	5729624.3	85.001	PASS	70-125	82691.4	97491.9	84.82	PASS	70-125
N028726-002B	SAMP	1	4644837.1	5729624.3	81.067	PASS	70-125	84436.7	97491.9	86.61	PASS	70-125
N028726-002B	SAMP	5	5308939.5	5729624.3	92.66	PASS	70-125	90747.2	97491.9	93.082	PASS	70-125
N028726-003B	SAMP	1	3461445.6	5729624.3	60.41	NR!	70-125	78086.2	97491.9	80.095	PASS	70-125
N028726-003B	SAMP	5	4896369	5729624.3	85.46	PASS	70-125	86845.9	97491.9	89.08	PASS	70-125
N028726-004B	SAMP	1	3563500.8	5729624.3	62.19	NR!	70-125	78356.4	97491.9	80.37	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-004B	SAMP	5	4968782.4	5729624.3	86.72	PASS	70-125	85699.8	97491.9	87.9	PASS	70-125
N028726-005B	SAMP	1	3487803	5729624.3	60.87	NR!	70-125	74442	97491.9	76.36	PASS	70-125
N028726-005B	SAMP	5	4945116.3	5729624.3	86.31	PASS	70-125	83256.7	97491.9	85.4	PASS	70-125
N028727-002B	SAMP	1	5490620.8	5729624.3	95.83	PASS	70-125	90604.4	97491.9	92.94	PASS	70-125
CCV6	CCV	1	6419302.8	5729624.3	112.04	PASS	70-125	104208	97491.9	106.89	PASS	70-125
CCB6	CCB	1	5685205.8	5729624.3	99.22	PASS	70-125	88402.7	97491.9	90.68	PASS	70-125
N028727-002B	SAMP	5	5348752.9	5729624.3	93.35	PASS	70-125	81951.4	97491.9	84.06	PASS	70-125
N028727-003B	SAMP	1	5333516.3	5729624.3	93.087	PASS	70-125	82292.8	97491.9	84.41	PASS	70-125
N028727-003B	SAMP	5	5344457.3	5729624.3	93.28	PASS	70-125	82509.6	97491.9	84.63	PASS	70-125
N028727-004B	SAMP	1	5391255.4	5729624.3	94.094	PASS	70-125	82936.2	97491.9	85.07	PASS	70-125
N028727-004B	SAMP	5	5268869.4	5729624.3	91.96	PASS	70-125	79856.5	97491.9	81.91	PASS	70-125
N028727-005B	SAMP	1	5262523.7	5729624.3	91.85	PASS	70-125	80298.7	97491.9	82.36	PASS	70-125
N028727-005B	SAMP	5	5252623.5	5729624.3	91.67	PASS	70-125	79619	97491.9	81.67	PASS	70-125
N028727-006B	SAMP	1	5302626.7	5729624.3	92.55	PASS	70-125	80417.8	97491.9	82.49	PASS	70-125
N028727-006B	SAMP	5	5284698.3	5729624.3	92.23	PASS	70-125	79645.5	97491.9	81.69	PASS	70-125
N028727-007B	SAMP	1	5281808.6	5729624.3	92.18	PASS	70-125	79449.4	97491.9	81.49	PASS	70-125
CCV7	CCV	1	6239376.7	5729624.3	108.9	PASS	70-125	95063.1	97491.9	97.51	PASS	70-125
CCB7	CCB	1	5553368.5	5729624.3	96.92	PASS	70-125	82329.9	97491.9	84.45	PASS	70-125
N028727-007B	SAMP	5	5250568	5729624.3	91.64	PASS	70-125	76286.1	97491.9	78.25	PASS	70-125
N028727-008B	SAMP	1	5501214.5	5729624.3	96.014	PASS	70-125	81578.3	97491.9	83.68	PASS	70-125
N028727-008B	SAMP	5	5377218.7	5729624.3	93.85	PASS	70-125	78540.6	97491.9	80.56	PASS	70-125
N028727-009B	SAMP	1	5622614.6	5729624.3	98.13	PASS	70-125	82728.3	97491.9	84.86	PASS	70-125
N028727-009B	SAMP	5	5318241.1	5729624.3	92.82	PASS	70-125	78082.8	97491.9	80.092	PASS	70-125
N028727-010B	SAMP	1	5467283.2	5729624.3	95.42	PASS	70-125	79295.1	97491.9	81.34	PASS	70-125
N028727-010B	SAMP	5	5278731.2	5729624.3	92.13	PASS	70-125	76995.8	97491.9	78.98	PASS	70-125
N028727-011B	SAMP	1	5501131.4	5729624.3	96.012	PASS	70-125	80059.8	97491.9	82.12	PASS	70-125
N028727-011B	SAMP	5	5198401.2	5729624.3	90.73	PASS	70-125	76820.3	97491.9	78.8	PASS	70-125
N028727-012B	SAMP	1	5350804.4	5729624.3	93.39	PASS	70-125	77720	97491.9	79.72	PASS	70-125
CCV8	CCV	1	6119692.3	5729624.3	106.81	PASS	70-125	90708.2	97491.9	93.042	PASS	70-125
CCB8	CCB	1	5403214.8	5729624.3	94.3	PASS	70-125	77030.1	97491.9	79.012	PASS	70-125
N028727-012B	SAMP	5	5216442.1	5729624.3	91.043	PASS	70-125	73495.7	97491.9	75.39	PASS	70-125
N028727-013B	SAMP	1	5246136.1	5729624.3	91.56	PASS	70-125	74036.7	97491.9	75.94	PASS	70-125
N028727-013B	SAMP	5	5158762.7	5729624.3	90.037	PASS	70-125	73750.1	97491.9	75.65	PASS	70-125
N028727-014C	SAMP	1	5115322.3	5729624.3	89.28	PASS	70-125	73097.1	97491.9	74.98	PASS	70-125
N028727-014C	SAMP	5	5058070.4	5729624.3	88.28	PASS	70-125	72005.8	97491.9	73.86	PASS	70-125
N028727-015C	SAMP	1	5127012.9	5729624.3	89.48	PASS	70-125	71828.4	97491.9	73.68	PASS	70-125
N028727-015C	SAMP	5	5109515	5729624.3	89.18	PASS	70-125	72605.2	97491.9	74.47	PASS	70-125
CCV9	CCV	1	5953435.7	5729624.3	103.91	PASS	70-125	85218.4	97491.9	87.41	PASS	70-125
CCB9	CCB	1	5254686.8	5729624.3	91.71	PASS	70-125	72795.9	97491.9	74.67	PASS	70-125
LLCCV2	CCV2	1	5116098.5	5729624.3	89.29	PASS	70-125	71367.5	97491.9	73.2	PASS	70-125
ICSA3	ICSA	1	4878337.2	5729624.3	85.14	PASS	70-125	71649.7	97491.9	73.49	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB3	ICSAB	1	5973149.1	5729624.3	104.25	PASS	70-125	91206.4	97491.9	93.55	PASS	70-125
ICSAB3	ICSAB	1	6446761.5	5729624.3	112.52	PASS	70-125	87311.7	97491.9	89.56	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66539.2	66539.2	100	PASS	70-125	78725.2	78725.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	68691.3	66539.2	103.23	PASS	70-125	81825.8	78725.2	103.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	67509.8	66539.2	101.46	PASS	70-125	80838.6	78725.2	102.68	PASS	70-125
Std3-5/50 ppb	ICAL	1	66547.1	66539.2	100.01	PASS	70-125	79724.2	78725.2	101.27	PASS	70-125
Std4-10/100 ppb	ICAL	1	65096.8	66539.2	97.83	PASS	70-125	77940.1	78725.2	99.003	PASS	70-125
Std5-20/200 ppb	ICAL	1	61880.1	66539.2	93	PASS	70-125	73997.6	78725.2	93.99	PASS	70-125
Std6-40/400 ppb	ICAL	1	63082.1	66539.2	94.8	PASS	70-125	75191.7	78725.2	95.51	PASS	70-125
Std7-100/1000 ppb	ICAL	1	59057.1	66539.2	88.76	PASS	70-125	70909.3	78725.2	90.072	PASS	70-125
Std8-200/2000 ppb	ICAL	1	59377.4	66539.2	89.24	PASS	70-125	71589.1	78725.2	90.94	PASS	70-125
ICV	ICV	1	55525.9	66539.2	83.45	PASS	70-125	65486.3	78725.2	83.18	PASS	70-125
ICB	ICB	1	56003.2	66539.2	84.17	PASS	70-125	66411.9	78725.2	84.36	PASS	70-125
LLICV	CCV1	1	50175.6	66539.2	75.41	PASS	70-125	60924.1	78725.2	77.39	PASS	70-125
ICSA1	ICSA	1	54391	66539.2	81.74	PASS	70-125	63380.1	78725.2	80.51	PASS	70-125
ICSAB1	ICSAB	1	67290.2	66539.2	101.13	PASS	70-125	80235.7	78725.2	101.92	PASS	70-125
MB-66863	MBLK	1	64437.4	66539.2	96.84	PASS	70-125	78888.1	78725.2	100.21	PASS	70-125
LCS-66863	LCS	1	58556.4	66539.2	88.003	PASS	70-125	69600.4	78725.2	88.41	PASS	70-125
N028679-001B	SAMP	1	53134.9	66539.2	79.86	PASS	70-125	60288.5	78725.2	76.58	PASS	70-125
N028679-001B	SAMP	5	59835.7	66539.2	89.93	PASS	70-125	69899.7	78725.2	88.79	PASS	70-125
N028679-001B	SAMP	25	62771.2	66539.2	94.34	PASS	70-125	75712	78725.2	96.17	PASS	70-125
N028679-001B-PS	PS	1	57779.5	66539.2	86.84	PASS	70-125	64728.7	78725.2	82.22	PASS	70-125
N028679-001B-PS	PS	5	63326.5	66539.2	95.17	PASS	70-125	74648.4	78725.2	94.82	PASS	70-125
N028679-001B-MS	MS	1	60164.6	66539.2	90.42	PASS	70-125	67114.8	78725.2	85.25	PASS	70-125
N028679-001B-MS	MS	5	65308.7	66539.2	98.15	PASS	70-125	76788.1	78725.2	97.54	PASS	70-125
N028679-001B-MSD	MSD	1	59641.7	66539.2	89.63	PASS	70-125	64835.7	78725.2	82.36	PASS	70-125
CCV1	CCV	1	72732.2	66539.2	109.31	PASS	70-125	85150.4	78725.2	108.16	PASS	70-125
CCB1	CCB	1	68019.8	66539.2	102.23	PASS	70-125	80183.2	78725.2	101.85	PASS	70-125
N028679-001B-MSD	MSD	5	63496	66539.2	95.43	PASS	70-125	72858.1	78725.2	92.55	PASS	70-125
N028679-002B	SAMP	1	54920.7	66539.2	82.54	PASS	70-125	59241.2	78725.2	75.25	PASS	70-125
N028679-002B	SAMP	5	67324.6	66539.2	101.18	PASS	70-125	75496.5	78725.2	95.9	PASS	70-125
N028679-002B	SAMP	10	68166.7	66539.2	102.45	PASS	70-125	75579.2	78725.2	96.004	PASS	70-125
N028679-003B	SAMP	1	56684.7	66539.2	85.19	PASS	70-125	61021	78725.2	77.51	PASS	70-125
N028679-003B	SAMP	5	67428.5	66539.2	101.34	PASS	70-125	74563.8	78725.2	94.71	PASS	70-125
N028679-003B	SAMP	10	67131.7	66539.2	100.89	PASS	70-125	76715.5	78725.2	97.45	PASS	70-125
N028679-004B	SAMP	1	63154.8	66539.2	94.91	PASS	70-125	69523.7	78725.2	88.31	PASS	70-125
N028679-004B	SAMP	5	71151.6	66539.2	106.93	PASS	70-125	78209.6	78725.2	99.35	PASS	70-125
N028679-005B	SAMP	1	65125.9	66539.2	97.88	PASS	70-125	71976.4	78725.2	91.43	PASS	70-125
CCV2	CCV	1	81919.5	66539.2	123.11	PASS	70-125	91998.2	78725.2	116.86	PASS	70-125
CCB2	CCB	1	75693.1	66539.2	113.76	PASS	70-125	84426.7	78725.2	107.24	PASS	70-125
N028679-005B	SAMP	5	70533.5	66539.2	106	PASS	70-125	77714.8	78725.2	98.72	PASS	70-125
N028696-001B	SAMP	1	58274.5	66539.2	87.58	PASS	70-125	61505.2	78725.2	78.13	PASS	70-125
N028696-001B	SAMP	5	68245	66539.2	102.56	PASS	70-125	75522.2	78725.2	95.93	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028696-002B	SAMP	1	62597.1	66539.2	94.076	PASS	70-125	65733.7	78725.2	83.5	PASS	70-125
N028696-002B	SAMP	5	70157.4	66539.2	105.44	PASS	70-125	77705.8	78725.2	98.71	PASS	70-125
N028696-003B	SAMP	1	63395.6	66539.2	95.28	PASS	70-125	66515.9	78725.2	84.49	PASS	70-125
N028696-003B	SAMP	5	71199.7	66539.2	107	PASS	70-125	77657.9	78725.2	98.64	PASS	70-125
N028696-004B	SAMP	1	52070.4	66539.2	78.26	PASS	70-125	55738.9	78725.2	70.8	PASS	70-125
N028696-004B	SAMP	5	63334.1	66539.2	95.18	PASS	70-125	69250.5	78725.2	87.96	PASS	70-125
N028696-005B	SAMP	1	57250.9	66539.2	86.041	PASS	70-125	57253.1	78725.2	72.73	PASS	70-125
CCV3	CCV	1	77979.2	66539.2	117.19	PASS	70-125	84635.6	78725.2	107.51	PASS	70-125
CCB3	CCB	1	67294.8	66539.2	101.14	PASS	70-125	74778	78725.2	94.99	PASS	70-125
N028696-005B	SAMP	5	64616.1	66539.2	97.11	PASS	70-125	69358.8	78725.2	88.1	PASS	70-125
N028696-006B	SAMP	1	54889.5	66539.2	82.49	PASS	70-125	54507.1	78725.2	69.24	NR!	70-125
N028696-006B	SAMP	5	66868.5	66539.2	100.49	PASS	70-125	69743.7	78725.2	88.59	PASS	70-125
N028696-007B	SAMP	1	57361.3	66539.2	86.21	PASS	70-125	57311.2	78725.2	72.8	PASS	70-125
N028696-007B	SAMP	5	68688.3	66539.2	103.23	PASS	70-125	73492.1	78725.2	93.35	PASS	70-125
N028696-008B	SAMP	1	57099.1	66539.2	85.81	PASS	70-125	57162.9	78725.2	72.61	PASS	70-125
N028696-008B	SAMP	5	67021.1	66539.2	100.72	PASS	70-125	71052.6	78725.2	90.25	PASS	70-125
N028696-009B	SAMP	1	59161	66539.2	88.91	PASS	70-125	60579.5	78725.2	76.95	PASS	70-125
N028696-009B	SAMP	5	69095.3	66539.2	103.84	PASS	70-125	73796.7	78725.2	93.74	PASS	70-125
CCV4	CCV	1	78099	66539.2	117.37	PASS	70-125	84537.2	78725.2	107.38	PASS	70-125
CCB4	CCB	1	67575.7	66539.2	101.56	PASS	70-125	73882.5	78725.2	93.85	PASS	70-125
LLCCV1	CCV2	1	64546.7	66539.2	97.006	PASS	70-125	70334.9	78725.2	89.34	PASS	70-125
ICSA2	ICSA	1	60795.8	66539.2	91.37	PASS	70-125	66152.2	78725.2	84.029	PASS	70-125
ICSAB2	ICSAB	1	75196.2	66539.2	113.01	PASS	70-125	80486.9	78725.2	102.24	PASS	70-125
MB-66882	MBLK	1	69518	66539.2	104.48	PASS	70-125	77464.7	78725.2	98.4	PASS	70-125
LCS-66882	LCS	1	68217.2	66539.2	102.52	PASS	70-125	76239	78725.2	96.84	PASS	70-125
N028726-001B	SAMP	1	51216.5	66539.2	76.97	PASS	70-125	52182.9	78725.2	66.28	NR!	70-125
N028726-001B	SAMP	5	59916	66539.2	90.046	PASS	70-125	63572.8	78725.2	80.75	PASS	70-125
N028726-001B	SAMP	25	64237.8	66539.2	96.54	PASS	70-125	69985.6	78725.2	88.9	PASS	70-125
N028726-001B-PS	PS	1	53997.6	66539.2	81.15	PASS	70-125	54977.6	78725.2	69.83	NR!	70-125
N028726-001B-PS	PS	5	62346.1	66539.2	93.7	PASS	70-125	65132.5	78725.2	82.73	PASS	70-125
N028726-001B-MS	MS	1	56394.6	66539.2	84.75	PASS	70-125	56551.9	78725.2	71.83	PASS	70-125
N028726-001B-MS	MS	5	61847.5	66539.2	92.95	PASS	70-125	66059.5	78725.2	83.91	PASS	70-125
N028726-001B-MSD	MSD	1	55896.3	66539.2	84.005	PASS	70-125	57439.3	78725.2	72.96	PASS	70-125
CCV5	CCV	1	77339.6	66539.2	116.23	PASS	70-125	85523.4	78725.2	108.64	PASS	70-125
CCB5	CCB	1	67228.5	66539.2	101.04	PASS	70-125	74002.2	78725.2	94.001	PASS	70-125
N028726-001B-MSD	MSD	5	57180.6	66539.2	85.94	PASS	70-125	62466.5	78725.2	79.35	PASS	70-125
N028726-002B	SAMP	1	56347.7	66539.2	84.68	PASS	70-125	58178.8	78725.2	73.9	PASS	70-125
N028726-002B	SAMP	5	62786.9	66539.2	94.36	PASS	70-125	68574.1	78725.2	87.11	PASS	70-125
N028726-003B	SAMP	1	49554.8	66539.2	74.47	PASS	70-125	50524.3	78725.2	64.18	NR!	70-125
N028726-003B	SAMP	5	58810.9	66539.2	88.39	PASS	70-125	62463.3	78725.2	79.34	PASS	70-125
N028726-004B	SAMP	1	49144.6	66539.2	73.86	PASS	70-125	49910.4	78725.2	63.4	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-004B	SAMP	5	58475.1	66539.2	87.88	PASS	70-125	62199	78725.2	79.008	PASS	70-125
N028726-005B	SAMP	1	47575.5	66539.2	71.5	PASS	70-125	48555.1	78725.2	61.68	NR!	70-125
N028726-005B	SAMP	5	56755.7	66539.2	85.3	PASS	70-125	59753	78725.2	75.9	PASS	70-125
N028727-002B	SAMP	1	63403.4	66539.2	95.29	PASS	70-125	67861.3	78725.2	86.2	PASS	70-125
CCV6	CCV	1	74045.7	66539.2	111.28	PASS	70-125	81056.2	78725.2	102.96	PASS	70-125
CCB6	CCB	1	63500.7	66539.2	95.43	PASS	70-125	70436.5	78725.2	89.47	PASS	70-125
N028727-002B	SAMP	5	58473	66539.2	87.88	PASS	70-125	64715.3	78725.2	82.2	PASS	70-125
N028727-003B	SAMP	1	59241.4	66539.2	89.032	PASS	70-125	64204.3	78725.2	81.55	PASS	70-125
N028727-003B	SAMP	5	58787.4	66539.2	88.35	PASS	70-125	65947.7	78725.2	83.77	PASS	70-125
N028727-004B	SAMP	1	59038.4	66539.2	88.73	PASS	70-125	65080.3	78725.2	82.67	PASS	70-125
N028727-004B	SAMP	5	58110.8	66539.2	87.33	PASS	70-125	64689.8	78725.2	82.17	PASS	70-125
N028727-005B	SAMP	1	57043.7	66539.2	85.73	PASS	70-125	62260.2	78725.2	79.085	PASS	70-125
N028727-005B	SAMP	5	57668	66539.2	86.67	PASS	70-125	64784.3	78725.2	82.29	PASS	70-125
N028727-006B	SAMP	1	57422.5	66539.2	86.3	PASS	70-125	63198.2	78725.2	80.28	PASS	70-125
N028727-006B	SAMP	5	56970.9	66539.2	85.62	PASS	70-125	65734.8	78725.2	83.5	PASS	70-125
N028727-007B	SAMP	1	57825.1	66539.2	86.9	PASS	70-125	64289.2	78725.2	81.66	PASS	70-125
CCV7	CCV	1	67562.1	66539.2	101.54	PASS	70-125	76973.8	78725.2	97.78	PASS	70-125
CCB7	CCB	1	59354.8	66539.2	89.2	PASS	70-125	67260	78725.2	85.44	PASS	70-125
N028727-007B	SAMP	5	56641.9	66539.2	85.13	PASS	70-125	62977.4	78725.2	80	PASS	70-125
N028727-008B	SAMP	1	59268	66539.2	89.072	PASS	70-125	66566.1	78725.2	84.56	PASS	70-125
N028727-008B	SAMP	5	57564	66539.2	86.51	PASS	70-125	65842.1	78725.2	83.64	PASS	70-125
N028727-009B	SAMP	1	59604.9	66539.2	89.58	PASS	70-125	66254.7	78725.2	84.16	PASS	70-125
N028727-009B	SAMP	5	57126.2	66539.2	85.85	PASS	70-125	65633.3	78725.2	83.37	PASS	70-125
N028727-010B	SAMP	1	57319.9	66539.2	86.14	PASS	70-125	64794.5	78725.2	82.3	PASS	70-125
N028727-010B	SAMP	5	56624.3	66539.2	85.099	PASS	70-125	65111.4	78725.2	82.71	PASS	70-125
N028727-011B	SAMP	1	58332.3	66539.2	87.67	PASS	70-125	65501.6	78725.2	83.2	PASS	70-125
N028727-011B	SAMP	5	55610.8	66539.2	83.58	PASS	70-125	63782.7	78725.2	81.019	PASS	70-125
N028727-012B	SAMP	1	56414.7	66539.2	84.78	PASS	70-125	64100.7	78725.2	81.42	PASS	70-125
CCV8	CCV	1	65314.1	66539.2	98.16	PASS	70-125	75036.6	78725.2	95.31	PASS	70-125
CCB8	CCB	1	57220.8	66539.2	86	PASS	70-125	65504.1	78725.2	83.21	PASS	70-125
N028727-012B	SAMP	5	54331.1	66539.2	81.65	PASS	70-125	62257.9	78725.2	79.083	PASS	70-125
N028727-013B	SAMP	1	52944.1	66539.2	79.57	PASS	70-125	60369.9	78725.2	76.68	PASS	70-125
N028727-013B	SAMP	5	54305.4	66539.2	81.61	PASS	70-125	61666.9	78725.2	78.33	PASS	70-125
N028727-014C	SAMP	1	52751.2	66539.2	79.28	PASS	70-125	59861.3	78725.2	76.038	PASS	70-125
N028727-014C	SAMP	5	53230.6	66539.2	80	PASS	70-125	60155.7	78725.2	76.41	PASS	70-125
N028727-015C	SAMP	1	52176.1	66539.2	78.41	PASS	70-125	59654	78725.2	75.77	PASS	70-125
N028727-015C	SAMP	5	53829.3	66539.2	80.9	PASS	70-125	62055	78725.2	78.82	PASS	70-125
CCV9	CCV	1	61184.9	66539.2	91.95	PASS	70-125	71776.8	78725.2	91.17	PASS	70-125
CCB9	CCB	1	53460.1	66539.2	80.34	PASS	70-125	61974.6	78725.2	78.72	PASS	70-125
LLCCV2	CCV2	1	52703.6	66539.2	79.21	PASS	70-125	60502.6	78725.2	76.85	PASS	70-125
ICSA3	ICSA	1	51542	66539.2	77.46	PASS	70-125	57865.4	78725.2	73.5	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB3	ICSAB	1	64014.6	66539.2	96.21	PASS	70-125	72605.8	78725.2	92.23	PASS	70-125
ICSAB3	ICSAB	1	60678.8	66539.2	91.19	PASS	70-125	63869.6	78725.2	81.13	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2010768.1	2010768.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2095079.1	2010768.1	104.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2077477	2010768.1	103.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	2060452.4	2010768.1	102.47	PASS	70-125
Std4-10/100 ppb	ICAL	1	2039726.9	2010768.1	101.44	PASS	70-125
Std5-20/200 ppb	ICAL	1	1928892.8	2010768.1	95.93	PASS	70-125
Std6-40/400 ppb	ICAL	1	1979255.7	2010768.1	98.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1857828.9	2010768.1	92.39	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1871094.3	2010768.1	93.054	PASS	70-125
ICV	ICV	1	1740741.6	2010768.1	86.57	PASS	70-125
ICB	ICB	1	1776890.2	2010768.1	88.37	PASS	70-125
LLICV	CCV1	1	1605452.4	2010768.1	79.84	PASS	70-125
ICSA1	ICSA	1	1549752.1	2010768.1	77.073	PASS	70-125
ICSAB1	ICSAB	1	1938163.7	2010768.1	96.39	PASS	70-125
MB-66863	MBLK	1	1983930.6	2010768.1	98.67	PASS	70-125
LCS-66863	LCS	1	1826402.3	2010768.1	90.83	PASS	70-125
N028679-001B	SAMP	1	1418184.7	2010768.1	70.53	PASS	70-125
N028679-001B	SAMP	5	1668822.2	2010768.1	82.99	PASS	70-125
N028679-001B	SAMP	25	1818653.1	2010768.1	90.45	PASS	70-125
N028679-001B-PS	PS	1	1525836.4	2010768.1	75.88	PASS	70-125
N028679-001B-PS	PS	5	1773387.8	2010768.1	88.19	PASS	70-125
N028679-001B-MS	MS	1	1616010.1	2010768.1	80.37	PASS	70-125
N028679-001B-MS	MS	5	1823471.3	2010768.1	90.69	PASS	70-125
N028679-001B-MSD	MSD	1	1595331.9	2010768.1	79.34	PASS	70-125
CCV1	CCV	1	2168755	2010768.1	107.86	PASS	70-125
CCB1	CCB	1	2029044.6	2010768.1	100.91	PASS	70-125
N028679-001B-MSD	MSD	5	1755329.1	2010768.1	87.3	PASS	70-125
N028679-002B	SAMP	1	1425056.3	2010768.1	70.87	PASS	70-125
N028679-002B	SAMP	5	1815897.1	2010768.1	90.31	PASS	70-125
N028679-002B	SAMP	10	1957259.7	2010768.1	97.34	PASS	70-125
N028679-003B	SAMP	1	1461508.9	2010768.1	72.68	PASS	70-125
N028679-003B	SAMP	5	1829052.5	2010768.1	90.96	PASS	70-125
N028679-003B	SAMP	10	1885487.2	2010768.1	93.77	PASS	70-125
N028679-004B	SAMP	1	1688221.7	2010768.1	83.96	PASS	70-125
N028679-004B	SAMP	5	1952020.9	2010768.1	97.078	PASS	70-125
N028679-005B	SAMP	1	1701226.5	2010768.1	84.61	PASS	70-125
CCV2	CCV	1	2393210.2	2010768.1	119.02	PASS	70-125
CCB2	CCB	1	2250124.4	2010768.1	111.9	PASS	70-125
N028679-005B	SAMP	5	1935353	2010768.1	96.25	PASS	70-125
N028696-001B	SAMP	1	1471088.7	2010768.1	73.16	PASS	70-125
N028696-001B	SAMP	5	1848277.7	2010768.1	91.92	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028696-002B	SAMP	1	1557649.3	2010768.1	77.47	PASS	70-125
N028696-002B	SAMP	5	1873638	2010768.1	93.18	PASS	70-125
N028696-003B	SAMP	1	1595599	2010768.1	79.35	PASS	70-125
N028696-003B	SAMP	5	1950279.1	2010768.1	96.99	PASS	70-125
N028696-004B	SAMP	1	1258354.8	2010768.1	62.58	NR!	70-125
N028696-004B	SAMP	5	1689693	2010768.1	84.032	PASS	70-125
N028696-005B	SAMP	1	1394259.9	2010768.1	69.34	NR!	70-125
CCV3	CCV	1	2295255.8	2010768.1	114.15	PASS	70-125
CCB3	CCB	1	2003532.9	2010768.1	99.64	PASS	70-125
N028696-005B	SAMP	5	1745928.6	2010768.1	86.83	PASS	70-125
N028696-006B	SAMP	1	1342534.7	2010768.1	66.77	NR!	70-125
N028696-006B	SAMP	5	1799168	2010768.1	89.48	PASS	70-125
N028696-007B	SAMP	1	1425087.2	2010768.1	70.87	PASS	70-125
N028696-007B	SAMP	5	1880154.9	2010768.1	93.5	PASS	70-125
N028696-008B	SAMP	1	1424477.9	2010768.1	70.84	PASS	70-125
N028696-008B	SAMP	5	1828763.1	2010768.1	90.95	PASS	70-125
N028696-009B	SAMP	1	1532685.3	2010768.1	76.22	PASS	70-125
N028696-009B	SAMP	5	1889452.8	2010768.1	93.97	PASS	70-125
CCV4	CCV	1	2320454.1	2010768.1	115.4	PASS	70-125
CCB4	CCB	1	2004189.3	2010768.1	99.67	PASS	70-125
LLCCV1	CCV2	1	1953812	2010768.1	97.17	PASS	70-125
ICSA2	ICSA	1	1707672.8	2010768.1	84.93	PASS	70-125
ICSAB2	ICSAB	1	2092410.1	2010768.1	104.06	PASS	70-125
MB-66882	MBLK	1	2076113	2010768.1	103.25	PASS	70-125
LCS-66882	LCS	1	2086702.8	2010768.1	103.78	PASS	70-125
N028726-001B	SAMP	1	1330086.5	2010768.1	66.15	NR!	70-125
N028726-001B	SAMP	5	1648017.7	2010768.1	81.96	PASS	70-125
N028726-001B	SAMP	25	1825172.8	2010768.1	90.77	PASS	70-125
N028726-001B-PS	PS	1	1400653.6	2010768.1	69.66	NR!	70-125
N028726-001B-PS	PS	5	1707259.8	2010768.1	84.91	PASS	70-125
N028726-001B-MS	MS	1	1429659.6	2010768.1	71.1	PASS	70-125
N028726-001B-MS	MS	5	1699479.6	2010768.1	84.52	PASS	70-125
N028726-001B-MSD	MSD	1	1431244.9	2010768.1	71.18	PASS	70-125
CCV5	CCV	1	2305999.9	2010768.1	114.68	PASS	70-125
CCB5	CCB	1	1998294.8	2010768.1	99.38	PASS	70-125
N028726-001B-MSD	MSD	5	1561012.5	2010768.1	77.63	PASS	70-125
N028726-002B	SAMP	1	1471449.5	2010768.1	73.18	PASS	70-125
N028726-002B	SAMP	5	1722795.2	2010768.1	85.68	PASS	70-125
N028726-003B	SAMP	1	1190218.4	2010768.1	59.19	NR!	70-125
N028726-003B	SAMP	5	1592652.8	2010768.1	79.21	PASS	70-125
N028726-004B	SAMP	1	1188477.1	2010768.1	59.11	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028726-004B	SAMP	5	1591614.5	2010768.1	79.15	PASS	70-125
N028726-005B	SAMP	1	1155126.8	2010768.1	57.45	NR!	70-125
N028726-005B	SAMP	5	1547529.4	2010768.1	76.96	PASS	70-125
N028727-002B	SAMP	1	1739322.7	2010768.1	86.5	PASS	70-125
CCV6	CCV	1	2174228.2	2010768.1	108.13	PASS	70-125
CCB6	CCB	1	1916207.5	2010768.1	95.3	PASS	70-125
N028727-002B	SAMP	5	1722986.2	2010768.1	85.69	PASS	70-125
N028727-003B	SAMP	1	1652928.3	2010768.1	82.2	PASS	70-125
N028727-003B	SAMP	5	1708473.3	2010768.1	84.97	PASS	70-125
N028727-004B	SAMP	1	1655160.3	2010768.1	82.31	PASS	70-125
N028727-004B	SAMP	5	1672703.8	2010768.1	83.19	PASS	70-125
N028727-005B	SAMP	1	1607880.3	2010768.1	79.96	PASS	70-125
N028727-005B	SAMP	5	1663533.4	2010768.1	82.73	PASS	70-125
N028727-006B	SAMP	1	1621225.6	2010768.1	80.63	PASS	70-125
N028727-006B	SAMP	5	1683116.1	2010768.1	83.71	PASS	70-125
N028727-007B	SAMP	1	1605423.2	2010768.1	79.84	PASS	70-125
CCV7	CCV	1	2037877.1	2010768.1	101.35	PASS	70-125
CCB7	CCB	1	1808461.6	2010768.1	89.94	PASS	70-125
N028727-007B	SAMP	5	1629968.8	2010768.1	81.062	PASS	70-125
N028727-008B	SAMP	1	1681174.1	2010768.1	83.61	PASS	70-125
N028727-008B	SAMP	5	1681144.4	2010768.1	83.61	PASS	70-125
N028727-009B	SAMP	1	1677140.7	2010768.1	83.41	PASS	70-125
N028727-009B	SAMP	5	1653064.8	2010768.1	82.21	PASS	70-125
N028727-010B	SAMP	1	1631165.8	2010768.1	81.12	PASS	70-125
N028727-010B	SAMP	5	1638981.2	2010768.1	81.51	PASS	70-125
N028727-011B	SAMP	1	1631839.2	2010768.1	81.16	PASS	70-125
N028727-011B	SAMP	5	1620506.3	2010768.1	80.59	PASS	70-125
N028727-012B	SAMP	1	1574991.3	2010768.1	78.33	PASS	70-125
CCV8	CCV	1	1964871.2	2010768.1	97.72	PASS	70-125
CCB8	CCB	1	1716413.8	2010768.1	85.36	PASS	70-125
N028727-012B	SAMP	5	1578017.7	2010768.1	78.48	PASS	70-125
N028727-013B	SAMP	1	1511555.5	2010768.1	75.17	PASS	70-125
N028727-013B	SAMP	5	1583952.2	2010768.1	78.77	PASS	70-125
N028727-014C	SAMP	1	1505818.4	2010768.1	74.89	PASS	70-125
N028727-014C	SAMP	5	1531041.6	2010768.1	76.14	PASS	70-125
N028727-015C	SAMP	1	1482370.5	2010768.1	73.72	PASS	70-125
N028727-015C	SAMP	5	1559278.5	2010768.1	77.55	PASS	70-125
CCV9	CCV	1	1881325.6	2010768.1	93.56	PASS	70-125
CCB9	CCB	1	1641016.7	2010768.1	81.61	PASS	70-125
LLCCV2	CCV2	1	1600866.2	2010768.1	79.61	PASS	70-125
ICSA3	ICSA	1	1449844.5	2010768.1	72.1	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB3	ICSAB	1	1780996.2	2010768.1	88.57	PASS	70-125
ICSAB3	ICSAB	1	1756751	2010768.1	87.37	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028679
Test Method: EPA 6020
Analysis Date: 2/26/2018

Matrix: Groundwater
Batch No.: 66863

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028679-001B DT 5X	Arsenic	ug/L	1.774336	NA	1.742236	1.84%	10
N028679-001B DT 5X	Chromium	ug/L	12.47202	NA	11.44148	9.01%	10
N028679-001B DT 25X	Manganese	ug/L	303.9595	PASS	291.3219	4.34%	10
N028679-001B DT 5X	Molybdenum	ug/L	23.76055	PASS	24.29756	2.21%	10
N028679-001B DT 5X	Selenium	ug/L	2.36312	NA	2.1495	9.94%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028679-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.087	0.10	10.00	1.742	103	80	120				
Molybdenum	34.681	0.50	10.00	24.30	104	80	120				
Selenium	10.933	0.50	10.00	2.149	87.8	80	120				

Sample ID	N028679-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	371.841	2.5	100.0	291.3	80.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028679
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028679-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941714

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.031	1.0	10.00	11.44	85.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 05, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028696

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 20, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburcano for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-001 (MW-34-100-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-005 (MW-72BR-200-LF_S-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N028696-001, -005, -006 and -007 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N028696-004, -005 and -006 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-001 (MW-34-100-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.6 and 0.28 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-005 (MW-72BR-200-LF_S-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.4 and 1.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028696
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028696-001A	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-001B	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-001C	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-001D	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-002A	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-002B	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-002C	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-002D	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-003A	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-003B	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-003C	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-003D	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-004A	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-004B	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-004C	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-004D	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-005A	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-005B	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-005C	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-005D	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-006A	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-006B	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-006C	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-006D	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-007A	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-007B	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-007C	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-007D	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-008A	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028696
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028696-008B	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018
N028696-008C	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018
N028696-008D	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018
N028696-009A	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-009B	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-009C	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-009D	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-010A	MW-711-Q118	Groundwater	2/20/2018 4:00:00 PM	2/20/2018	3/5/2018
N028696-011A	MW-712-Q118	Groundwater	2/20/2018 4:05:00 PM	2/20/2018	3/5/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 3:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N028696-004DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **122198**
Client ID: **ZZZZZZ** Batch ID: **R122198** TestNo: **EPA 120.1** Analysis Date: **2/21/2018** SeqNo: **2937425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	18030.000	0.10						17980	0.278	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/21/2018 11:02 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	1.5	0.13	1.0		µg/L	1	2/26/2018 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/21/2018 10:24 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	12	0.13	1.0		µg/L	1	2/26/2018 09:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/21/2018 10:43 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	12	0.13	1.0		µg/L	1	2/26/2018 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/21/2018 11:21 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	12	0.13	1.0		µg/L	1	2/26/2018 09:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/21/2018 11:59 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	1.1	0.13	1.0		µg/L	1	2/26/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.6	0.17	1.0		µg/L	5	2/21/2018 12:18 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	2.1	0.13	1.0		µg/L	1	2/26/2018 10:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 3:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.5	0.17	1.0		µg/L	5	2/21/2018 12:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	4.4	0.13	1.0		µg/L	1	2/26/2018 10:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	90	0.66	4.0		µg/L	20	2/21/2018 12:56 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	78	0.13	1.0		µg/L	1	2/26/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	22	0.17	1.0		µg/L	5	2/21/2018 01:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	21	0.13	1.0		µg/L	1	2/26/2018 10:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-711-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A**	QC Batch: **R122215**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/21/2018 01:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-712-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A**	QC Batch: **R122215**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/21/2018 02:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122215**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **PBW**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122215**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **LCSW**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.017	0.20	5.000	0	100	90	110				

Sample ID **N028696-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.435	1.0	5.000	13.36	102	90	110				

Sample ID **N028696-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.164	1.0	5.000	13.35	96.3	90	110				

Sample ID **N028696-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.766	1.0	5.000	0	95.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028696-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938186

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.617	1.0	5.000	12.60	100	90	110				

Sample ID	N028696-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938190

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.586	1.0	5.000	0.4525	103	90	110				

Sample ID	N028696-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.855	1.0	5.000	1.612	105	90	110				

Sample ID	N028696-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938194

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.460	1.0	5.000	4.506	99.1	90	110				

Sample ID	N028696-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	189.346	4.0	100.0	89.79	99.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028696-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938198

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.736	1.0						22.02	1.32	20	

Sample ID	N028696-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938202

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID	N028696-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0.05040	98.9	90	110				

Sample ID	N028696-008AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	190.178	4.0	100.0	89.79	100	90	110	189.3	0.438	20	

Sample ID	N028696-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122215
Client ID:	ZZZZZZ	Batch ID:	R122215	TestNo:	EPA 218.6			Analysis Date:	2/21/2018	SeqNo:	2938206

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.215	1.0	25.00	22.02	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66863	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941709

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66863	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.207	1.0	10.00	0	102	85	115				

Sample ID	N028679-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.851	1.0	10.00	11.44	84.1	75	125				

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941718

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.788	1.0	10.00	11.44	83.5	75	125	19.85	0.316	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.084	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.061	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.2	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.093	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 3:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.11	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.63	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.4	0.16	0.25		mg/L	5	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122323	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	PBW	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941661

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122323	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	LCSW	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	85	115				

Sample ID	N028679-004CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.014	0.25						4.566	9.35	20	

Sample ID	N028679-005CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.441	0.25	2.500	4.710	109	75	125				

Sample ID	N028679-005CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.082	0.25	2.500	4.710	94.9	75	125	7.441	4.94	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122365	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	PBW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122365	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	LCSW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.490	0.050	0.5000	0	98.1	85	115				

Sample ID	N028726-002CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.918	0.050						0.8686	5.52	20	

Sample ID	N028696-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.290	0.25	2.500	3.444	114	75	125				

Sample ID	N028696-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.910	0.25	2.500	3.444	98.7	75	125	6.290	6.22	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.2	0.081	0.10		µg/L	1	2/26/2018 08:55 PM
Manganese	120	0.26	0.50		µg/L	1	2/26/2018 08:55 PM
Molybdenum	49	0.21	0.50		µg/L	1	2/26/2018 08:55 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	5.7	0.081	0.10		µg/L	1	2/26/2018 09:06 PM
Manganese	5.7	0.26	0.50		µg/L	1	2/26/2018 09:06 PM
Molybdenum	84	0.21	0.50		µg/L	1	2/26/2018 09:06 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 09:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	5.6	0.081	0.10		µg/L	1	2/26/2018 09:17 PM
Manganese	6.0	0.26	0.50		µg/L	1	2/26/2018 09:17 PM
Molybdenum	83	0.21	0.50		µg/L	1	2/26/2018 09:17 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Molybdenum	190	1.1	2.5		µg/L	5	2/26/2018 09:34 PM
Selenium	0.85	0.36	0.50		µg/L	1	2/26/2018 09:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	13	0.081	0.10		µg/L	1	2/26/2018 09:41 PM
Manganese	59	0.26	0.50		µg/L	1	2/26/2018 09:41 PM
Molybdenum	74	1.1	2.5		µg/L	5	2/26/2018 09:58 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	15	0.081	0.10		µg/L	1	2/26/2018 10:04 PM
Manganese	27	0.26	0.50		µg/L	1	2/26/2018 10:04 PM
Molybdenum	78	1.1	2.5		µg/L	5	2/26/2018 10:09 PM
Selenium	ND	1.8	2.5		µg/L	5	2/26/2018 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-007

Client Sample ID: MW-72BR-200-3V-Q118
Collection Date: 2/20/2018 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	15	0.081	0.10		µg/L	1	2/26/2018 10:15 PM
Manganese	13	0.26	0.50		µg/L	1	2/26/2018 10:15 PM
Molybdenum	80	0.21	0.50		µg/L	1	2/26/2018 10:15 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 10:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-008

Client Sample ID: MW-72-080-Q118
Collection Date: 2/20/2018 1:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	11	0.081	0.10		µg/L	1	2/26/2018 10:26 PM
Manganese	53	0.26	0.50		µg/L	1	2/26/2018 10:26 PM
Molybdenum	77	0.21	0.50		µg/L	1	2/26/2018 10:26 PM
Selenium	1.0	0.36	0.50		µg/L	1	2/26/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	2/26/2018 10:38 PM
Manganese	4.9	0.26	0.50		µg/L	1	2/26/2018 10:38 PM
Molybdenum	27	0.21	0.50		µg/L	1	2/26/2018 10:38 PM
Selenium	4.2	0.36	0.50		µg/L	1	2/26/2018 10:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66863**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66863**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.287	0.10	10.00	0	103	85	115				
Manganese	104.144	0.50	100.0	0	104	85	115				
Molybdenum	10.217	0.50	10.00	0	102	85	115				
Selenium	10.470	0.50	10.00	0	105	85	115				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.264	0.10	10.00	1.742	105	75	125				
Molybdenum	34.302	0.50	10.00	24.30	100	75	125				
Selenium	11.565	0.50	10.00	2.149	94.2	75	125				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	372.735	2.5	100.0	291.3	81.4	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.236	0.10	10.00	1.742	105	75	125	12.26	0.225	20	
Molybdenum	34.627	0.50	10.00	24.30	103	75	125	34.30	0.943	20	
Selenium	11.717	0.50	10.00	2.149	95.7	75	125	11.57	1.31	20	

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	374.226	2.5	100.0	291.3	82.9	75	125	372.7	0.399	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:
SR. Technician	Phone: 916-786-3302 Fax:	

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	
Sample Temp:	2.6°C / 3.2°C	

Signature: Date: 2-20-18
I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Gary Clift
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 2-20-18

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Courier:
Tracking No.:

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Metals Dissolved (6020AFF) Manganese; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Cr; HNO3 (500 mL poly)	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	pH (SM4500-HB) (1 liter poly)	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 (500 mL poly)	Dissolved Arsenic SW 6020 (500 ml poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028696-01	MW-34-100-Q118	2/20/2018	1254		X		X	X	X		X		X					X	E	4	P	BN	
2	-02	MW-44-115-Q118	2/20/2018	1344		X		X	X	X		X		X					X	E	4	P	BN	
3	-03	MW-901-Q118	2/20/2018	1354		X		X	X	X		X		X					X	E	4	P	BN	
4	-04	MW-46-175-Q118	2/20/2018	1444		X		X	X	X		X		X					X	E	4	P	BN	
5	-05	MW-72BR-200-LF S-Q118	2/20/2018	1051		X		X	X	X		X		X					X	E	4	P	BN	
6	-06	MW-72BR-200-LF D-Q118	2/20/2018	1123		X		X	X	X		X		X					X	E	4	P	BN	
7	-07	MW-72BR-200-3V-Q118	2/20/2018	1511		X		X	X	X		X		X					X	E	4	P	BN	
8	-08	MW-72-080-Q118	2/20/2018	1351		X		X	X	X		X		X					X	E	4	P	BN	
9	-09	MW-73-080-Q118	2/20/2018	1443		X		X	X	X		X		X					X	E	4	P	BN	
10	-10	MW-711-Q118	2/20/2018	1600		X														E	1	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
GARY CLIFT	2-20-18 1630		2/20/18 1630
	2/20/18 1654		2/20/18 1654

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes		EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:		Excel EDD		RTNE		1. Chilled	✓	
				Geotracker		RWQCB	✓	2. Headspace		
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:		Labspec		CalTrans		3. Container Intact		
				Others	✓	LEVEL III		4. Seal Present		
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Specify: RWQCB		LEVEL IV		5. IR number	2	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200	Fax:	Global ID:		Regulatory		6. Method of Cooling:		
SR. Technician	Phone: 916-786-3302 Fax:					Specify State:			ice	
Signature: Date: 2-20-18	Sampled By: Gary Clift							Sample Temp: 2.6°C / 3.2°C		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - GMP — Signature: — Date: 2-20-18

Project Number: RC000753.0801

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Manganese; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028696-11 .	MW-712-Q118	2/20/2018	1605		X														E	1	P	BN	
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Courier:

Tracking No.:

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
GARY CLIFT	2-20-18 1630		2/20/18 1630
	2/20/18 1856		2/20/18 1856

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
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9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/20/2018	Workorder:	N028696
Rep sample Temp (Deg C):	2.6/3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See Correspondence.

Checklist Completed By: YR 2/21/2018

Reviewed By: 02/23/2018

Subject: RE: PG&E Topock - GMP, RC000753.801 (Asset Labs No. N028696)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/21/2018 12:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>

Yes, no space is correct. Underscore only.

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Wednesday, February 21, 2018 2:13 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Subject: Re: PG&E Topock - GMP, RC000753.801 (Asset Labs No. N028696)

Noted Laura,

So the IDs are:

- Sample 5: MW-72BR-200-LF_S-Q118

- Sample 6: MW-72BR-200-LF_D-Q118

Sorry, for some reason I left space before S and D.

Thanks,

On 2/21/2018 11:53 AM, Madsen, Laura wrote:

> Hi,
> Below is the correct ID. Sorry it was incorrect on the COC.
>
> Sample 5: MW-72BR-200-LF_ S-Q118
>
> - Sample 6: MW-72BR-200-LF_ D-Q118
>
> Thanks,
> Laura
> -----Original Message-----
> From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
> Sent: Wednesday, February 21, 2018 2:03 PM
> To: Madsen, Laura <Laura.Madsen@arcadis.com>
> Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; 'Andreafe. Gallardo'
> <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo'
> <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com;
> maryann.balilu@assetlaboratoriesph.com
> Subject: PG&E Topock - GMP, RC000753.801 (Asset Labs No. N028696)
>
> Hello Laura,
>
> Please kindly confirm which are the correct IDs for samples 5 and 6 on the attached
> COC:
>
> - Sample 5: MW-72BR-200-LF S-Q118 or MW-72BR-200-LF_ S-Q118
>
> - Sample 6: MW-72BR-200-LF D-Q118 or MW-72BR-200-LF_ D-Q118
>
> Thanks,
>
> --
> Yoandra Rodriguez
> Sample Control Officer
> Asset Laboratories
>
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--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET LV Sample Control

From: Madsen, Laura <Laura.Madsen@arcadis.com>
Sent: Friday, February 23, 2018 8:46 AM
To: ASSET LV Sample Control; Dan Moore; 'Marlon B. Cartin'; Yoandra Rodriguez
Cc: Tina Rice; Kalib Sumter; jmahn@blainetech.com; Bush, Dan; Madsen, Laura
Subject: RE: N028726; N028727 COC and Work Order Summary for Samples Received 2/21/2018

Hi Yoandra,
I was mistaken, SDG N028726 has no errors.

It was SDG N028696 that needs the correction

- Sample #4 (MW-46-175-Q118) – Remove dissolved As and dissolved Manganese. COC was marked incorrectly

Thanks,
Laura

From: Madsen, Laura
Sent: Friday, February 23, 2018 10:14 AM
To: ASSET LV Sample Control <samplecontrol.lv@assetlaboratories.com>; Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>; Yoandra Rodriguez <yoandra@assetlaboratories.com>
Cc: Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; jmahn@blainetech.com; Clift, Gary <Gary.Clift@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Subject: RE: N028726; N028727 COC and Work Order Summary for Samples Received 2/21/2018

Hi Yoandra,
Can you make the following changes to the SDGs?

SDG N028726

- Sample #4 – Remove dissolved As and dissolved Manganese. COC was marked incorrectly

SDG N028727

- Sample #14 and #15 – The COC should have been checked for dissolved Cr, please add.

Thanks,
Laura

From: ASSET LV Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Thursday, February 22, 2018 4:19 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>
Cc: Madsen, Laura <Laura.Madsen@arcadis.com>; Sean.Maurel@arcadis.com; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Vadpey, Nick <Nicholas.Vadpey@arcadis.com>; Harmon, Alison <Ali.Harmon@arcadis.com>; Serna, Erica <Erica.Serna@arcadis.com>; jmahn@blainetech.com; Bloes, Marty <mbloes@pivox.com>
Subject: N028726; N028727 COC and Work Order Summary for Samples Received 2/21/2018

Hi Dan Bush:

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

21-Feb-18

WorkOrder: N028696

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801 **QC Level:** Level IV **Date Received:** 2/20/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028696-001A	MW-34-100-Q118	2/20/2018 12:54:00 PM	3/6/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-001B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-001C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-001D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-002A	MW-44-115-Q118	2/20/2018 1:44:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-002B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-002C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-002D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-003A	MW-901-Q118	2/20/2018 1:54:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-003B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-003C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-003D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-004A	MW-46-175-Q118	2/20/2018 2:44:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-004B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

21-Feb-18

WorkOrder: N028696

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801 **QC Level:** Level IV **Date Received:** 2/20/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028696-004B	MW-46-175-Q118	2/20/2018 2:44:00 PM	3/6/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-004C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-004D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-005A	MW-72BR-200-LF_S-Q118	2/20/2018 10:51:00 AM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-005B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-005C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-005D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-006A	MW-72BR-200-LF_D-Q118	2/20/2018 11:23:00 AM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-006B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-006C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-006D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-007A	MW-72BR-200-3V-Q118	2/20/2018 3:11:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-007B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-007C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-007D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

21-Feb-18

WorkOrder: N028696

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801 **QC Level:** Level IV **Date Received:** 2/20/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028696-008A	MW-72-080-Q118	2/20/2018 1:51:00 PM	3/6/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-008B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-008C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-008D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-009A	MW-73-080-Q118	2/20/2018 2:43:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-009B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-009C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-009D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-010A	MW-711-Q118	2/20/2018 4:00:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-011A	MW-712-Q118	2/20/2018 4:05:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-012A	FOLDER	3/6/2018	3/6/2018		Folder	Folder	☐	☐	☐	LAB
			3/6/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028696

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028696

Item	Page
Cover Page	1-7
Analytical Result/QC Summary Reports	8-54
Sample Receiving Items	55-65
List of Analysts	66
Raw Data	
EPA 120.1	67-70
EPA 218.6	71-197
SM 4500-NO3F	198-220
EPA 6020_Dissolved	221-294

March 05, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028696

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 20, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-001 (MW-34-100-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-005 (MW-72BR-200-LF_S-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N028696-001, -005, -006 and -007 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N028696-004, -005 and -006 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-001 (MW-34-100-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.6 and 0.28 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N028696-005 (MW-72BR-200-LF_S-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.4 and 1.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *05-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028696
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028696-001A	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-001B	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-001C	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-001D	MW-34-100-Q118	Groundwater	2/20/2018 12:54:00 PM	2/20/2018	3/5/2018
N028696-002A	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-002B	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-002C	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-002D	MW-44-115-Q118	Groundwater	2/20/2018 1:44:00 PM	2/20/2018	3/5/2018
N028696-003A	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-003B	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-003C	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-003D	MW-901-Q118	Groundwater	2/20/2018 1:54:00 PM	2/20/2018	3/5/2018
N028696-004A	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-004B	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-004C	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-004D	MW-46-175-Q118	Groundwater	2/20/2018 2:44:00 PM	2/20/2018	3/5/2018
N028696-005A	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-005B	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-005C	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-005D	MW-72BR-200-LF_S-Q118	Groundwater	2/20/2018 10:51:00 AM	2/20/2018	3/5/2018
N028696-006A	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-006B	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-006C	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-006D	MW-72BR-200-LF_D-Q118	Groundwater	2/20/2018 11:23:00 AM	2/20/2018	3/5/2018
N028696-007A	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-007B	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-007C	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-007D	MW-72BR-200-3V-Q118	Groundwater	2/20/2018 3:11:00 PM	2/20/2018	3/5/2018
N028696-008A	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028696
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028696-008B	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018
N028696-008C	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018
N028696-008D	MW-72-080-Q118	Groundwater	2/20/2018 1:51:00 PM	2/20/2018	3/5/2018
N028696-009A	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-009B	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-009C	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-009D	MW-73-080-Q118	Groundwater	2/20/2018 2:43:00 PM	2/20/2018	3/5/2018
N028696-010A	MW-711-Q118	Groundwater	2/20/2018 4:00:00 PM	2/20/2018	3/5/2018
N028696-011A	MW-712-Q118	Groundwater	2/20/2018 4:05:00 PM	2/20/2018	3/5/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 3:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180221B**	QC Batch: **R122198**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	2/21/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028696-004DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122198
Client ID:	ZZZZZZ	Batch ID:	R122198	TestNo:	EPA 120.1			Analysis Date:	2/21/2018	SeqNo:	2937425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	18030.000	0.10						17980	0.278	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/21/2018 11:02 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	1.5	0.13	1.0		µg/L	1	2/26/2018 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/21/2018 10:24 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	12	0.13	1.0		µg/L	1	2/26/2018 09:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/21/2018 10:43 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	12	0.13	1.0		µg/L	1	2/26/2018 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	2/21/2018 11:21 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	12	0.13	1.0		µg/L	1	2/26/2018 09:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/21/2018 11:59 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	1.1	0.13	1.0		µg/L	1	2/26/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-006

Client Sample ID: MW-72BR-200-LF_D-Q118
Collection Date: 2/20/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.6	0.17	1.0		µg/L	5	2/21/2018 12:18 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate **2/21/2018**			Analyst: **CEI**
Chromium	2.1	0.13	1.0		µg/L	1	2/26/2018 10:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-007

Client Sample ID: MW-72BR-200-3V-Q118
Collection Date: 2/20/2018 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.5	0.17	1.0		µg/L	5	2/21/2018 12:37 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	4.4	0.13	1.0		µg/L	1	2/26/2018 10:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	90	0.66	4.0		µg/L	20	2/21/2018 12:56 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	78	0.13	1.0		µg/L	1	2/26/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A** QC Batch: **R122215**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	22	0.17	1.0		µg/L	5	2/21/2018 01:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66863**				PrepDate	**2/21/2018**		Analyst: **CEI**
Chromium	21	0.13	1.0		µg/L	1	2/26/2018 10:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-711-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A**	QC Batch: **R122215**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/21/2018 01:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-712-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180221A**	QC Batch: **R122215**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/21/2018 02:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122215**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **PBW**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122215**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **LCSW**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.017	0.20	5.000	0	100	90	110				

Sample ID **N028696-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.435	1.0	5.000	13.36	102	90	110				

Sample ID **N028696-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.164	1.0	5.000	13.35	96.3	90	110				

Sample ID **N028696-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.766	1.0	5.000	0	95.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028696-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.617	1.0	5.000	12.60	100	90	110				

Sample ID **N028696-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.586	1.0	5.000	0.4525	103	90	110				

Sample ID **N028696-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.855	1.0	5.000	1.612	105	90	110				

Sample ID **N028696-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.460	1.0	5.000	4.506	99.1	90	110				

Sample ID **N028696-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	189.346	4.0	100.0	89.79	99.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028696-009ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122215**
Client ID: **ZZZZZZ** Batch ID: **R122215** TestNo: **EPA 218.6** Analysis Date: **2/21/2018** SeqNo: **2938198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.736	1.0						22.02	1.32	20	

Sample ID **N028696-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122215**
Client ID: **ZZZZZZ** Batch ID: **R122215** TestNo: **EPA 218.6** Analysis Date: **2/21/2018** SeqNo: **2938202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N028696-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122215**
Client ID: **ZZZZZZ** Batch ID: **R122215** TestNo: **EPA 218.6** Analysis Date: **2/21/2018** SeqNo: **2938204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0.05040	98.9	90	110				

Sample ID **N028696-008AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122215**
Client ID: **ZZZZZZ** Batch ID: **R122215** TestNo: **EPA 218.6** Analysis Date: **2/21/2018** SeqNo: **2938205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	190.178	4.0	100.0	89.79	100	90	110	189.3	0.438	20	

Sample ID **N028696-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122215**
Client ID: **ZZZZZZ** Batch ID: **R122215** TestNo: **EPA 218.6** Analysis Date: **2/21/2018** SeqNo: **2938206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.215	1.0	25.00	22.02	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66863	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941709

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66863	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941710

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.207	1.0	10.00	0	102	85	115				

Sample ID	N028679-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.851	1.0	10.00	11.44	84.1	75	125				

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941718

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.788	1.0	10.00	11.44	83.5	75	125	19.85	0.316	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.084	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.061	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180227E**	QC Batch: **R122323**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.2	0.032	0.050		mg/L	1	2/27/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-005

Client Sample ID: MW-72BR-200-LF_S-Q118
Collection Date: 2/20/2018 10:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.093	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 3:11:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.11	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.63	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:43:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.4	0.16	0.25		mg/L	5	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122323	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	PBW	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941661

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122323	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	LCSW	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	85	115				

Sample ID	N028679-004CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941666

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.014	0.25						4.566	9.35	20	

Sample ID	N028679-005CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941668

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.441	0.25	2.500	4.710	109	75	125				

Sample ID	N028679-005CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122323
Client ID:	ZZZZZZ	Batch ID:	R122323	TestNo:	SM4500-NO3			Analysis Date:	2/27/2018	SeqNo:	2941669

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.082	0.25	2.500	4.710	94.9	75	125	7.441	4.94	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122365	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	PBW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122365	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	LCSW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.490	0.050	0.5000	0	98.1	85	115				

Sample ID	N028726-002CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.918	0.050						0.8686	5.52	20	

Sample ID	N028696-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.290	0.25	2.500	3.444	114	75	125				

Sample ID	N028696-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.910	0.25	2.500	3.444	98.7	75	125	6.290	6.22	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-001

Client Sample ID: MW-34-100-Q118
Collection Date: 2/20/2018 12:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.2	0.081	0.10		µg/L	1	2/26/2018 08:55 PM
Manganese	120	0.26	0.50		µg/L	1	2/26/2018 08:55 PM
Molybdenum	49	0.21	0.50		µg/L	1	2/26/2018 08:55 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 08:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 1:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	5.7	0.081	0.10		µg/L	1	2/26/2018 09:06 PM
Manganese	5.7	0.26	0.50		µg/L	1	2/26/2018 09:06 PM
Molybdenum	84	0.21	0.50		µg/L	1	2/26/2018 09:06 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 09:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-003

Client Sample ID: MW-901-Q118
Collection Date: 2/20/2018 1:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	5.6	0.081	0.10		µg/L	1	2/26/2018 09:17 PM
Manganese	6.0	0.26	0.50		µg/L	1	2/26/2018 09:17 PM
Molybdenum	83	0.21	0.50		µg/L	1	2/26/2018 09:17 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 09:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Molybdenum	190	1.1	2.5		µg/L	5	2/26/2018 09:34 PM
Selenium	0.85	0.36	0.50		µg/L	1	2/26/2018 09:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 10:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	13	0.081	0.10		µg/L	1	2/26/2018 09:41 PM
Manganese	59	0.26	0.50		µg/L	1	2/26/2018 09:41 PM
Molybdenum	74	1.1	2.5		µg/L	5	2/26/2018 09:58 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 09:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q118
Lab Order:	N028696	**Collection Date:**	2/20/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028696-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**				PrepDate	**2/21/2018**	Analyst: **CEI**
Arsenic	15	0.081	0.10		µg/L	1	2/26/2018 10:04 PM
Manganese	27	0.26	0.50		µg/L	1	2/26/2018 10:04 PM
Molybdenum	78	1.1	2.5		µg/L	5	2/26/2018 10:09 PM
Selenium	ND	1.8	2.5		µg/L	5	2/26/2018 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-007

Client Sample ID: MW-72BR-200-3V-Q118
Collection Date: 2/20/2018 3:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	15	0.081	0.10		µg/L	1	2/26/2018 10:15 PM
Manganese	13	0.26	0.50		µg/L	1	2/26/2018 10:15 PM
Molybdenum	80	0.21	0.50		µg/L	1	2/26/2018 10:15 PM
Selenium	ND	0.36	0.50		µg/L	1	2/26/2018 10:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-008

Client Sample ID: MW-72-080-Q118
Collection Date: 2/20/2018 1:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	11	0.081	0.10		µg/L	1	2/26/2018 10:26 PM
Manganese	53	0.26	0.50		µg/L	1	2/26/2018 10:26 PM
Molybdenum	77	0.21	0.50		µg/L	1	2/26/2018 10:26 PM
Selenium	1.0	0.36	0.50		µg/L	1	2/26/2018 10:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028696
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028696-009

Client Sample ID: MW-73-080-Q118
Collection Date: 2/20/2018 2:43:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66863**			PrepDate	**2/21/2018**	Analyst: **CEI**	
Arsenic	1.7	0.081	0.10		µg/L	1	2/26/2018 10:38 PM
Manganese	4.9	0.26	0.50		µg/L	1	2/26/2018 10:38 PM
Molybdenum	27	0.21	0.50		µg/L	1	2/26/2018 10:38 PM
Selenium	4.2	0.36	0.50		µg/L	1	2/26/2018 10:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66863**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66863**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.287	0.10	10.00	0	103	85	115				
Manganese	104.144	0.50	100.0	0	104	85	115				
Molybdenum	10.217	0.50	10.00	0	102	85	115				
Selenium	10.470	0.50	10.00	0	105	85	115				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.264	0.10	10.00	1.742	105	75	125				
Molybdenum	34.302	0.50	10.00	24.30	100	75	125				
Selenium	11.565	0.50	10.00	2.149	94.2	75	125				

Sample ID **N028679-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/21/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66863**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	372.735	2.5	100.0	291.3	81.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.236	0.10	10.00	1.742	105	75	125	12.26	0.225	20	
Molybdenum	34.627	0.50	10.00	24.30	103	75	125	34.30	0.943	20	
Selenium	11.717	0.50	10.00	2.149	95.7	75	125	11.57	1.31	20	

Sample ID	N028679-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/21/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	374.226	2.5	100.0	291.3	82.9	75	125	372.7	0.399	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:
SR. Technician	Phone: 916-786-3302 Fax:	

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled		
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number	2	
Global ID:		Regulatory		6. Method of Cooling: Ice		
		Specify State:		Sample Temp: 2.6°C / 3.2°C		

Signature: Date: 2-20-18
I hereby authorize ASSET Labs to perform the tests indicated below.

Sampled By: Gary Clift
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 2-20-18

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Manganese; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028696-01	MW-34-100-Q118	2/20/2018	1254		X		X	X	X		X		X					X	E	4	P	BN	
2	-02	MW-44-115-Q118	2/20/2018	1344		X		X	X	X		X		X					X	E	4	P	BN	
3	-03	MW-901-Q118	2/20/2018	1354		X		X	X	X		X		X					X	E	4	P	BN	
4	-04	MW-46-175-Q118	2/20/2018	1444		X		X	X	X		X		X					X	E	4	P	BN	
5	-05	MW-72BR-200-LF S-Q118	2/20/2018	1051		X		X	X	X		X		X					X	E	4	P	BN	
6	-06	MW-72BR-200-LF D-Q118	2/20/2018	1123		X		X	X	X		X		X					X	E	4	P	BN	
7	-07	MW-72BR-200-3V-Q118	2/20/2018	1511		X		X	X	X		X		X					X	E	4	P	BN	
8	-08	MW-72-080-Q118	2/20/2018	1351		X		X	X	X		X		X					X	E	4	P	BN	
9	-09	MW-73-080-Q118	2/20/2018	1443		X		X	X	X		X		X					X	E	4	P	BN	
10	-10	MW-711-Q118	2/20/2018	1600		X														E	1	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time:	Received by (Signature and Printed Name)	Date/Time:
GARY CLIFT	2-20-18 1630		2/20/18 1630
	2/20/18 1854		2/20/18 1854

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
SR. Technician	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 2-20-18	Sampled By: Gary Clift		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*			Specify State:	6. Method of Cooling: ice
Project Name: PG&E Topock - GMP	Signature: Date: 2-20-18	Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface			Sample Temp: 2.6C / 3.2C
Project Number: RC000753.0801					Courier: Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Metals Dissolved (6020AFF) Manganese; HNO3 (500 mL poly)	Metals Dissolved (6020AFF) Cr; HNO3 (500 mL poly)	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 (500 mL poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	pH (SM4500-HB) (1 liter poly)	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 (500 mL poly)	Dissolved Arsenic SW 6020 (500 ml poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028696-11 .	MW-712-Q118	2/20/2018	1605		X														E	1	P	BN	
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
GARY CLIFT	2-20-18 1630		
	2/20/18 1856		2/20/18 1856

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/20/2018	Workorder:	N028696
Rep sample Temp (Deg C):	2.6/3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See Correspondence.

Checklist Completed By: YR 2/21/2018

Reviewed By: 02/23/2018

Subject: RE: PG&E Topock - GMP, RC000753.801 (Asset Labs No. N028696)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/21/2018 12:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>

Yes, no space is correct. Underscore only.

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Wednesday, February 21, 2018 2:13 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Subject: Re: PG&E Topock - GMP, RC000753.801 (Asset Labs No. N028696)

Noted Laura,

So the IDs are:

- Sample 5: MW-72BR-200-LF_S-Q118

- Sample 6: MW-72BR-200-LF_D-Q118

Sorry, for some reason I left space before S and D.

Thanks,

On 2/21/2018 11:53 AM, Madsen, Laura wrote:

> Hi,
> Below is the correct ID. Sorry it was incorrect on the COC.
>
> Sample 5: MW-72BR-200-LF_ S-Q118
>
> - Sample 6: MW-72BR-200-LF_ D-Q118
>
> Thanks,
> Laura
> -----Original Message-----
> From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
> Sent: Wednesday, February 21, 2018 2:03 PM
> To: Madsen, Laura <Laura.Madsen@arcadis.com>
> Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
> Subject: PG&E Topock - GMP, RC000753.801 (Asset Labs No. N028696)
>
> Hello Laura,
>
> Please kindly confirm which are the correct IDs for samples 5 and 6 on the attached COC:
>
> - Sample 5: MW-72BR-200-LF S-Q118 or MW-72BR-200-LF_ S-Q118
>
> - Sample 6: MW-72BR-200-LF D-Q118 or MW-72BR-200-LF_ D-Q118
>
> Thanks,
>
> --
> Yoandra Rodriguez
> Sample Control Officer
> Asset Laboratories
>
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--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET LV Sample Control

From: Madsen, Laura <Laura.Madsen@arcadis.com>
Sent: Friday, February 23, 2018 8:46 AM
To: ASSET LV Sample Control; Dan Moore; 'Marlon B. Cartin'; Yoandra Rodriguez
Cc: Tina Rice; Kalib Sumter; jmahn@blainetech.com; Bush, Dan; Madsen, Laura
Subject: RE: N028726; N028727 COC and Work Order Summary for Samples Received 2/21/2018

Hi Yoandra,
I was mistaken, SDG N028726 has no errors.

It was SDG N028696 that needs the correction

- Sample #4 (MW-46-175-Q118) – Remove dissolved As and dissolved Manganese. COC was marked incorrectly

Thanks,
Laura

From: Madsen, Laura
Sent: Friday, February 23, 2018 10:14 AM
To: ASSET LV Sample Control <samplecontrol.lv@assetlaboratories.com>; Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>; Yoandra Rodriguez <yoandra@assetlaboratories.com>
Cc: Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; jmahn@blainetech.com; Clift, Gary <Gary.Clift@arcadis.com>; Madsen, Laura <Laura.Madsen@arcadis.com>
Subject: RE: N028726; N028727 COC and Work Order Summary for Samples Received 2/21/2018

Hi Yoandra,
Can you make the following changes to the SDGs?

SDG N028726

- Sample #4 – Remove dissolved As and dissolved Manganese. COC was marked incorrectly

SDG N028727

- Sample #14 and #15 – The COC should have been checked for dissolved Cr, please add.

Thanks,
Laura

From: ASSET LV Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Thursday, February 22, 2018 4:19 PM
To: Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>
Cc: Madsen, Laura <Laura.Madsen@arcadis.com>; Sean.Maurel@arcadis.com; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Vadpey, Nick <Nicholas.Vadpey@arcadis.com>; Harmon, Alison <Ali.Harmon@arcadis.com>; Serna, Erica <Erica.Serna@arcadis.com>; jmahn@blainetech.com; Bloes, Marty <mbloes@pivox.com>
Subject: N028726; N028727 COC and Work Order Summary for Samples Received 2/21/2018

Hi Dan Bush:

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

21-Feb-18

WorkOrder: N028696

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801 **QC Level:** Level IV **Date Received:** 2/20/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028696-001A	MW-34-100-Q118	2/20/2018 12:54:00 PM	3/6/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-001B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-001C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-001D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-002A	MW-44-115-Q118	2/20/2018 1:44:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-002B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-002C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-002D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-003A	MW-901-Q118	2/20/2018 1:54:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-003B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-003C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-003D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-004A	MW-46-175-Q118	2/20/2018 2:44:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-004B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

21-Feb-18

WorkOrder: N028696

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801 **QC Level:** Level IV **Date Received:** 2/20/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028696-004B	MW-46-175-Q118	2/20/2018 2:44:00 PM	3/6/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-004C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-004D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-005A	MW-72BR-200-LF_S-Q118	2/20/2018 10:51:00 AM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-005B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-005C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-005D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-006A	MW-72BR-200-LF_D-Q118	2/20/2018 11:23:00 AM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-006B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-006C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-006D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-007A	MW-72BR-200-3V-Q118	2/20/2018 3:11:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-007B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-007C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-007D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

21-Feb-18

WorkOrder: N028696

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801 **QC Level:** Level IV **Date Received:** 2/20/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028696-008A	MW-72-080-Q118	2/20/2018 1:51:00 PM	3/6/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-008B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-008C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-008D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-009A	MW-73-080-Q118	2/20/2018 2:43:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-009B			3/6/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/6/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028696-009C			3/6/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028696-009D			3/6/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N028696-010A	MW-711-Q118	2/20/2018 4:00:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-011A	MW-712-Q118	2/20/2018 4:05:00 PM	3/6/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028696-012A	FOLDER	3/6/2018	3/6/2018		Folder	Folder	☐	☐	☐	LAB
			3/6/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028696

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122198 **Analyst:** LSR

ASSET #: N028696 **Date Analyzed:** 2/21/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/22/2018

2nd Level Reviewer: RB 03/05/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/20/18 1400

Analyst: LSR

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV - 171018A	9.55 @ 19.5°C	% Rec: (90-110%)
1412	171121A	1414 @ 19.2°C	
9981	171018B	9720 @ 19.2°C	
99842	171121B	9720 @ 19.3°C	

	Sample ID	Matrix	Reading	Comments
1	NO28679 1D DUP	H2O	6520 @ 19.6°C	NO28679
2	NO28675-1DUP		6540 @ 19.6°C	
3	2D		10,300 @ 19.8°C	LLR 2/21/18
4	3D		10,180 @ 19.6°C	19.6°C
5	4D		5060 @ 19.5°C	
6	5D		5070 @ 19.7°C	19.7°C LLR 2/21/18
7				
8				
9	1413 µS/cm	CINV-171121C	1477 @ 19.1°C	
10	10000	170822F	9277 @ 19.5°C	
Dup	99672	171215A	10000 @ 19.7°C	Accept: 10% water, 20% soil
Std Chk:			19.6	% Rec: (90-110%)

Date: 2/21/18 1750

Analyst: LSR

Julia Ramit 2/22/2018

RB 03/05/2018

Standard	Std ID	Reading	Comments
9.43 uS/cm	CINV - 171018A	9.66 @ 19.8°C	% Rec: (90-110%)
1412	171121A	1434 @ 19.9°C	
9981	171018B	10030 @ 19.9°C	
99842	171121B	100000 @ 19.8°C	

	Sample ID	Matrix	Reading	Comments
1	NO28696-1D1D	H2O	11,140 @ 19.9°C	
2	2D		10,650 @ 19.7°C	1413 CINV 171121C
3	3D		10,640 @ 19.3°C	=1441 @ 19.5°C
4	4D		17,980 @ 19.7°C	10000 CINV 170822F
5	5D		15,030 @ 20.0°C	=9990 @ 19.7°C
6	6D		14,930 @ 19.8°C	99672 CINV 171215A
7	7D		15,040 @ 20.3°C	=96000 @ 19.7°C
8	8D		14650 @ 19.9°C	
9	9D		10500 @ 19.5°C	
10	4DDUP		18030 @ 19.4°C	
Dup				Accept: 10% water, 20% soil
Std Chk:				% Rec: (90-110%)

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R122215
ASSET #: N028696

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/21/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X					
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

N028696-001A = <1.0 ug/L ; N028696-001B (6020) = 1.5 ug/L **N028696-005A = 0.45 ug/L ; N028696-005B (6020) = 1.3 ug/L**
MS protocol performed. Recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 2/25/2018

2nd Level Reviewer RB 03/05/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028696-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.6714 * 5$$

$$Cr^{+6}, \mu g/L = 13.3570$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 13}$$

rba 2/25/2018

03/05/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/21/18 8:55 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/21/18 9:06 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/21/18 9:15 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/21/18 9:39 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/21/18 9:54 AM	Reported
14	MB-R122215	MBLK	1	Hexavalent Chromium	02/21/18 10:06 AM	Reported
15	LCS-R122215	LCS	1	Hexavalent Chromium	02/21/18 10:15 AM	Reported
16	N028696-002A	SAMP	5	Hexavalent Chromium	02/21/18 10:24 AM	Reported
17	N028696-002AMS	MS	5	Hexavalent Chromium	02/21/18 10:34 AM	Reported
18	N028696-003A	SAMP	5	Hexavalent Chromium	02/21/18 10:43 AM	Reported
19	N028696-003AMS	MS	5	Hexavalent Chromium	02/21/18 10:53 AM	Reported
20	N028696-001A	SAMP	5	Hexavalent Chromium	02/21/18 11:02 AM	Reported
21	N028696-001AMS	MS	5	Hexavalent Chromium	02/21/18 11:12 AM	Reported
22	N028696-004A	SAMP	5	Hexavalent Chromium	02/21/18 11:21 AM	Reported
23	N028696-004AMS	MS	5	Hexavalent Chromium	02/21/18 11:31 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/21/18 11:40 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/21/18 11:50 AM	Reported
26	N028696-005A	SAMP	5	Hexavalent Chromium	02/21/18 11:59 AM	Reported
27	N028696-005AMS	MS	5	Hexavalent Chromium	02/21/18 12:09 PM	Reported
28	N028696-006A	SAMP	5	Hexavalent Chromium	02/21/18 12:18 PM	Reported
29	N028696-006AMS	MS	5	Hexavalent Chromium	02/21/18 12:27 PM	Reported
30	N028696-007A	SAMP	5	Hexavalent Chromium	02/21/18 12:37 PM	Reported
31	N028696-007AMS	MS	5	Hexavalent Chromium	02/21/18 12:46 PM	Reported
32	N028696-008A	SAMP	20	Hexavalent Chromium	02/21/18 12:56 PM	Reported
33	N028696-008AMS	MS	20	Hexavalent Chromium	02/21/18 1:06 PM	Reported
34	N028696-009A	SAMP	5	Hexavalent Chromium	02/21/18 1:15 PM	Reported
35	N028696-009ADUP	DUP	5	Hexavalent Chromium	02/21/18 1:24 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/21/18 1:34 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/21/18 1:43 PM	Reported
38	N028696-010A	SAMP	1	Hexavalent Chromium	02/21/18 1:53 PM	Reported
39	N028696-010AMS	MS	1	Hexavalent Chromium	02/21/18 2:02 PM	Reported
40	N028696-011A	SAMP	1	Hexavalent Chromium	02/21/18 2:12 PM	Reported
41	N028696-011AMS	MS	1	Hexavalent Chromium	02/21/18 2:21 PM	Reported
42	N028696-008AMSD	MSD	20	Hexavalent Chromium	02/21/18 2:30 PM	Reported

INJECTION LOG: 180221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028696-009AMS	MS	5	Hexavalent Chromium	02/21/18 2:40 PM	Reported
44	N028696-001A	SAMP	1	Hexavalent Chromium	02/21/18 2:49 PM	Not Reported
45	N028696-001AMS	MS	1	Hexavalent Chromium	02/21/18 2:59 PM	Not Reported
46	N028696-005A	SAMP	1	Hexavalent Chromium	02/21/18 3:08 PM	Not Reported
47	N028696-005AMS	MS	1	Hexavalent Chromium	02/21/18 3:18 PM	Not Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/21/18 3:27 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/21/18 3:37 PM	Reported
50	N028696-006A	SAMP	1	Hexavalent Chromium	02/21/18 3:46 PM	Not Reported
51	N028696-006AMS	MS	1	Hexavalent Chromium	02/21/18 3:56 PM	Not Reported
52	N028696-007A	SAMP	1	Hexavalent Chromium	02/21/18 4:05 PM	Not Reported
53	N028696-007AMS	MS	1	Hexavalent Chromium	02/21/18 4:15 PM	Not Reported
54	CCV-5	CCV	1	Hexavalent Chromium	02/21/18 4:24 PM	Reported
55	CCB-5	CCB	1	Hexavalent Chromium	02/21/18 4:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180221A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/Feb/18 17:04:18**
No. of Injections:	**58**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/21/2018 08:55	Finished	BLANK
10	BLANK	2	1000	Unknown		02/21/2018 09:06	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/21/2018 09:15	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/21/2018 09:39	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/21/2018 09:54	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/21/2018 10:06	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/21/2018 10:15	Finished	LCS, IWST-180129B
16	N028696-002A,SAMF	8	1000	Unknown		02/21/2018 10:24	Finished	SAMP,2>10mL
17	N028696-002AMS,MS	9	1000	Unknown		02/21/2018 10:34	Finished	MS (1ppb), IWST-180129B,2>1
18	N028696-003A,SAMF	10	1000	Unknown		02/21/2018 10:43	Finished	SAMP,2>10mL
19	N028696-003AMS,MS	11	1000	Unknown		02/21/2018 10:53	Finished	MS (1ppb), IWST-180129B,2>1
20	N028696-001A,SAMF	12	1000	Unknown		02/21/2018 11:02	Finished	SAMP,2>10mL
21	N028696-001AMS,MS	13	1000	Unknown		02/21/2018 11:12	Finished	MS (1ppb), IWST-180129B,2>1
22	N028696-004A,SAMF	14	1000	Unknown		02/21/2018 11:21	Finished	SAMP,2>10mL
23	N028696-004AMS,MS	15	1000	Unknown		02/21/2018 11:31	Finished	MS (1ppb), IWST-180129B,2>1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/21/2018 11:40	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/21/2018 11:50	Finished	CCB R180214B
26	N028696-005A,SAMF	18	1000	Unknown		02/21/2018 11:59	Finished	SAMP,2>10mL
27	N028696-005AMS,MS	19	1000	Unknown		02/21/2018 12:09	Finished	MS (1ppb), IWST-180129B,2>1
28	N028696-006A,SAMF	20	1000	Unknown		02/21/2018 12:18	Finished	SAMP,2>10mL
29	N028696-006AMS,MS	21	1000	Unknown		02/21/2018 12:27	Finished	MS (1ppb), IWST-180129B,2>1
30	N028696-007A,SAMF	22	1000	Unknown		02/21/2018 12:37	Finished	SAMP,2>10mL
31	N028696-007AMS,MS	23	1000	Unknown		02/21/2018 12:46	Finished	MS (1ppb), IWST-180129B,2>1
32	N028696-008A,SAMF	24	1000	Unknown		02/21/2018 12:56	Finished	SAMP,0.5>10mL
33	N028696-008AMS,MS	25	1000	Unknown		02/21/2018 13:06	Finished	MS (5ppb), IWST-180129B,0.5
34	N028696-009A,SAMF	26	1000	Unknown		02/21/2018 13:15	Finished	SAMP,2>10mL
35	N028696-009ADUP,D	27	1000	Unknown		02/21/2018 13:24	Finished	DUP,2>10mL
36	CCV-3,CCV,1,	28	1000	Unknown		02/21/2018 13:34	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/21/2018 13:43	Finished	CCB R180214B
38	N028696-010A,SAMF	30	1000	Unknown		02/21/2018 13:53	Finished	SAMP,10mL
39	N028696-010AMS,MS	31	1000	Unknown		02/21/2018 14:02	Finished	MS (1ppb), IWST-180129B,10
40	N028696-011A,SAMF	32	1000	Unknown		02/21/2018 14:12	Finished	SAMP,10mL
41	N028696-011AMS,MS	33	1000	Unknown		02/21/2018 14:21	Finished	MS (1ppb), IWST-180129B,10
42	N028696-008AMSD,M	34	1000	Unknown		02/21/2018 14:30	Finished	MSD (5ppb), IWST-180129B,2>
43	N028696-009AMS,MS	35	1000	Unknown		02/21/2018 14:40	Finished	MS (5ppb), IWST-180129B,2>1
44	N028696-001A,SAMF	36	1000	Unknown		02/21/2018 14:49	Finished	SAMP,10mL
45	N028696-001AMS,MS	37	1000	Unknown		02/21/2018 14:59	Finished	MS (1ppb), IWST-180129B,10
46	N028696-005A,SAMF	38	1000	Unknown		02/21/2018 15:08	Finished	SAMP,10mL
47	N028696-005AMS,MS	39	1000	Unknown		02/21/2018 15:18	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	40	1000	Unknown		02/21/2018 15:27	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	41	1000	Unknown		02/21/2018 15:37	Finished	CCB R180214B
50	N028696-006A,SAMF	42	1000	Unknown		02/21/2018 15:46	Finished	SAMP,10mL
51	N028696-006AMS,MS	43	1000	Unknown		02/21/2018 15:56	Finished	MS (1ppb), IWST-180129B,10
52	N028696-007A,SAMF	44	1000	Unknown		02/21/2018 16:05	Finished	SAMP,10mL
53	N028696-007AMS,MS	45	1000	Unknown		02/21/2018 16:15	Finished	MS (1ppb), IWST-180129B,10
54	CCV-5,CCV,1,	46	1000	Unknown		02/21/2018 16:24	Finished	CCV @5ppb, IWST-180129A
55	CCB-5,CCB,1,	47	1000	Unknown		02/21/2018 16:33	Finished	CCB R180214B
56	SHUTDOWN	48	1000	Unknown		02/21/2018 16:43	Finished	
57	Eluent: R180219A	49	1000	Unknown		n.a.	Finished	Eluent
58	PCR: R180219B	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 2/20/18
Time Prepared: 0935H
Prepared By: MSA

Slope: 95.92
PH4: 3.99 @25.0°C
7: 7.01 @25.0°C
10: 9.95 @25.0°C
LVS: 7.03 @25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CLNV-171116A
NH4OH + NH4SO4 eluent: M802219A
NH4OH + NH4SO4 buffer: M802214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028679-001A	9.57	-	~250ml	~250ml		
2)	2A	9.55	-				
3)	3A	9.55	-				
4)	4A	9.48	-				
5)	5A	9.47	-				
6)	6A	9.67	-				
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/21/18
Time Prepared: 0957H
Prepared By: MSA

Slope: 96.02
PH4: 3.99 @25.0°C
7: 7.01 @25.0°C
10: 9.98 @25.0°C
LVS: 7.02 @25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CLNV-171116A
NH4OH + NH4SO4 eluent: M802219A
NH4OH + NH4SO4 buffer: M802214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028696-001A	9.41	-	~250ml	~250ml		
2)	2A	9.54	-				
3)	3A	9.57	-				
4)	4A	9.64	-				
5)	5A	9.67	-				
6)	6A	9.69	-				
7)	7A	9.65	-				
8)	8A	9.63	-				
9)	9A	9.51	-				
10)	10A	9.70	-				
11)	11A	9.69	-				
12)							
13)							
14)							
15)							

Logbook No. 14

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9998 7

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/05/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ICV**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2938171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2938172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCV**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.929	0.20	5.000	0	98.6	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.7	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.992	0.20	10.00	0	99.9	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCV**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.907	0.20	5.000	0	98.1	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ZZZZZZ**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.913	0.20	10.00	0	99.1	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCV**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.984	0.20	5.000	0	99.7	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **ICB**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2938173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCB**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCB**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938188**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCB**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122215**
Client ID: **CCB**	Batch ID: **R122215**	TestNo: **EPA 218.6**		Analysis Date: **2/21/2018**	SeqNo: **2938208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122215**
Client ID: **CCB** Batch ID: **R122215** TestNo: **EPA 218.6** Analysis Date: **2/21/2018** SeqNo: **2938210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/21/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	

Average	4.165
Actual RT Window	4.085 - 4.245
Applied RT Window	3.965 - 4.365

MB-R122215	N.A.	N.A.
LCS-R122215	4.173	PASS
N028696-002A	4.131	PASS
N028696-002AMS	4.140	PASS
N028696-003A	4.140	PASS
N028696-003AMS	4.131	PASS
N028696-001A	N.A.	N.A.
N028696-001AMS	4.131	PASS
N028696-004A	4.106	PASS
N028696-004AMS	4.106	PASS
N028696-005A	4.115	PASS
N028696-005AMS	4.115	PASS
N028696-006A	4.106	PASS
N028696-006AMS	4.115	PASS
N028696-007A	4.115	PASS
N028696-007AMS	4.115	PASS
N028696-008A	4.156	PASS
N028696-008AMS	4.156	PASS
N028696-009A	4.131	PASS
N028696-009ADUP	4.131	PASS
N028696-010A	N.A.	N.A.
N028696-010AMS	4.165	PASS
N028696-011A	4.123	PASS



03/05/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/21/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028696-011AMS	4.165	PASS
N028696-008AMSD	4.156	PASS
N028696-009AMS	4.131	PASS
N028696-001A	N.A.	N.A.
N028696-001AMS	3.948	FAIL
N028696-005A	N.A.	N.A.
N028696-005AMS	N.A.	N.A.
N028696-006A	3.690	FAIL
N028696-006AMS	3.756	FAIL
N028696-007A	3.748	FAIL
N028696-007AMS	3.723	FAIL



03/05/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

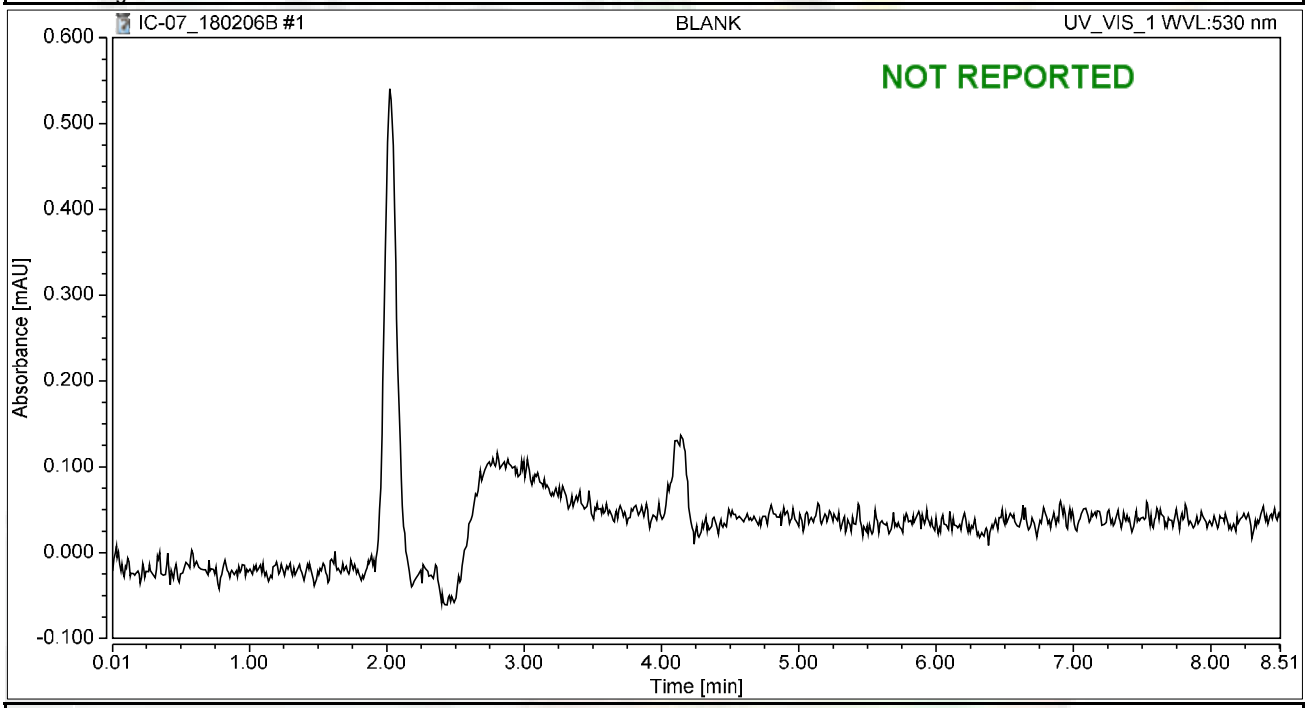
61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

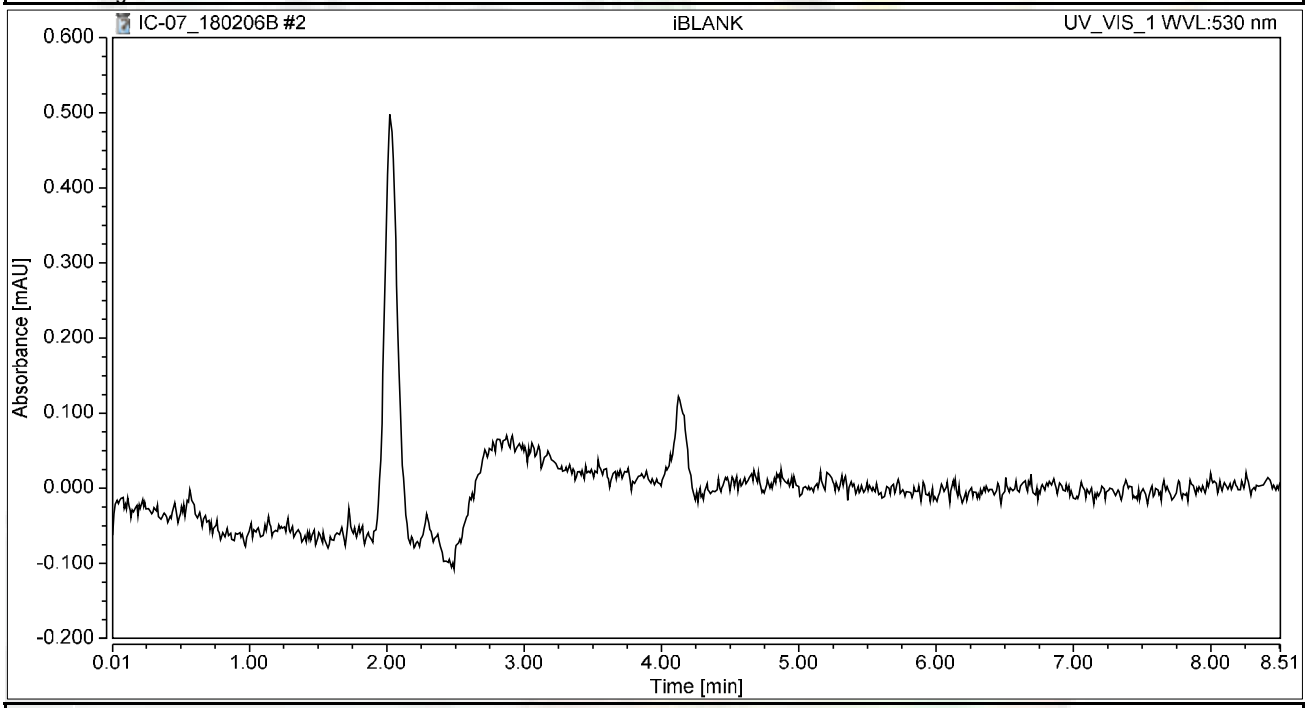
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

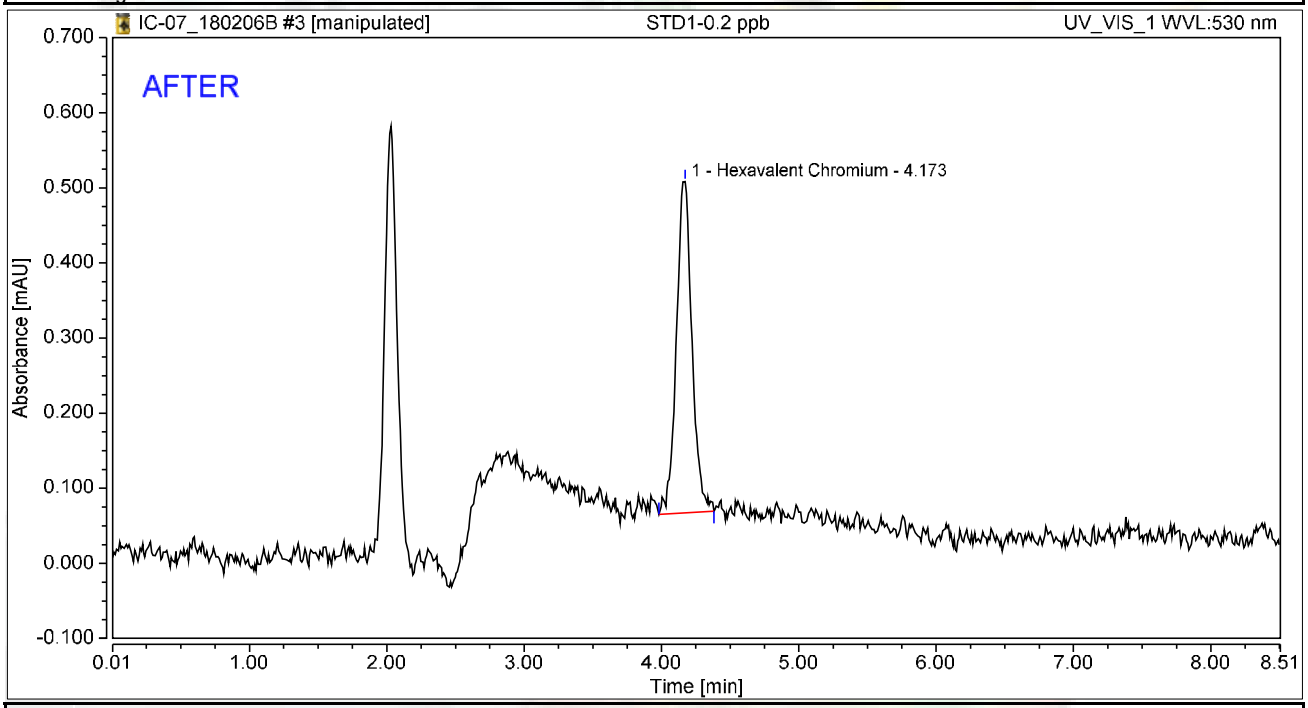
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

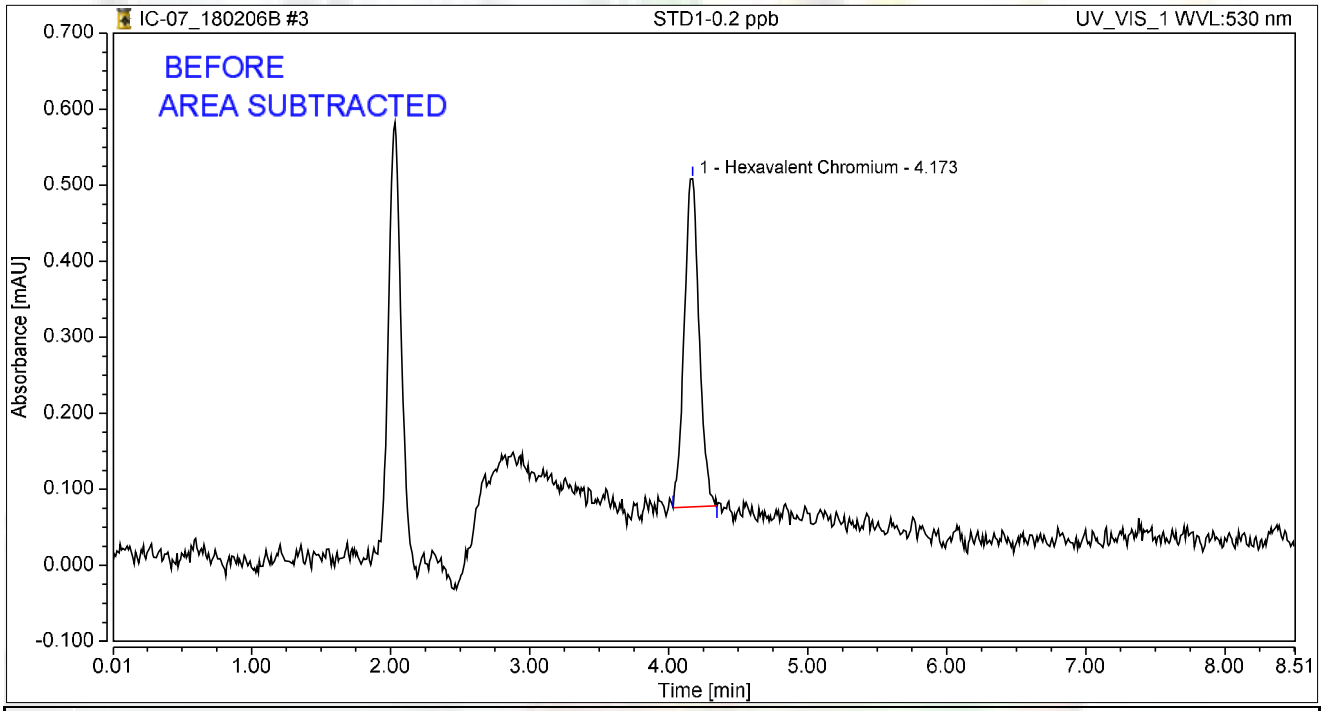
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

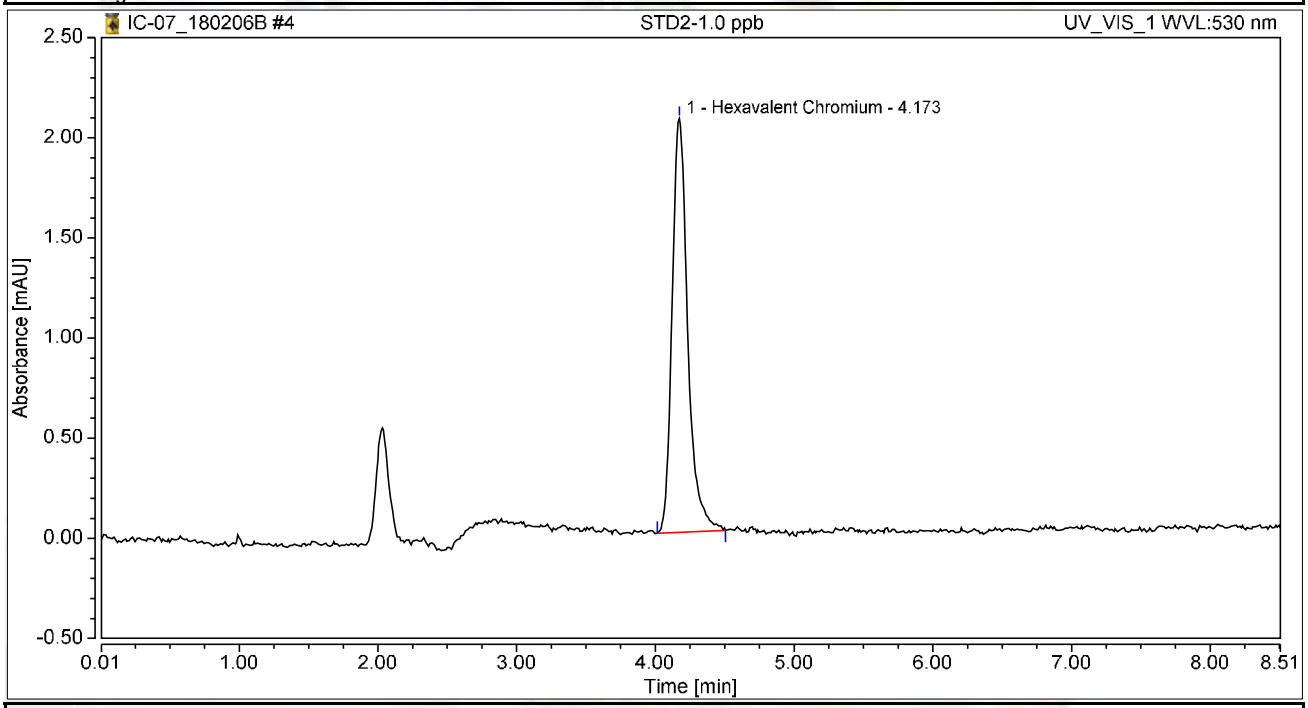
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

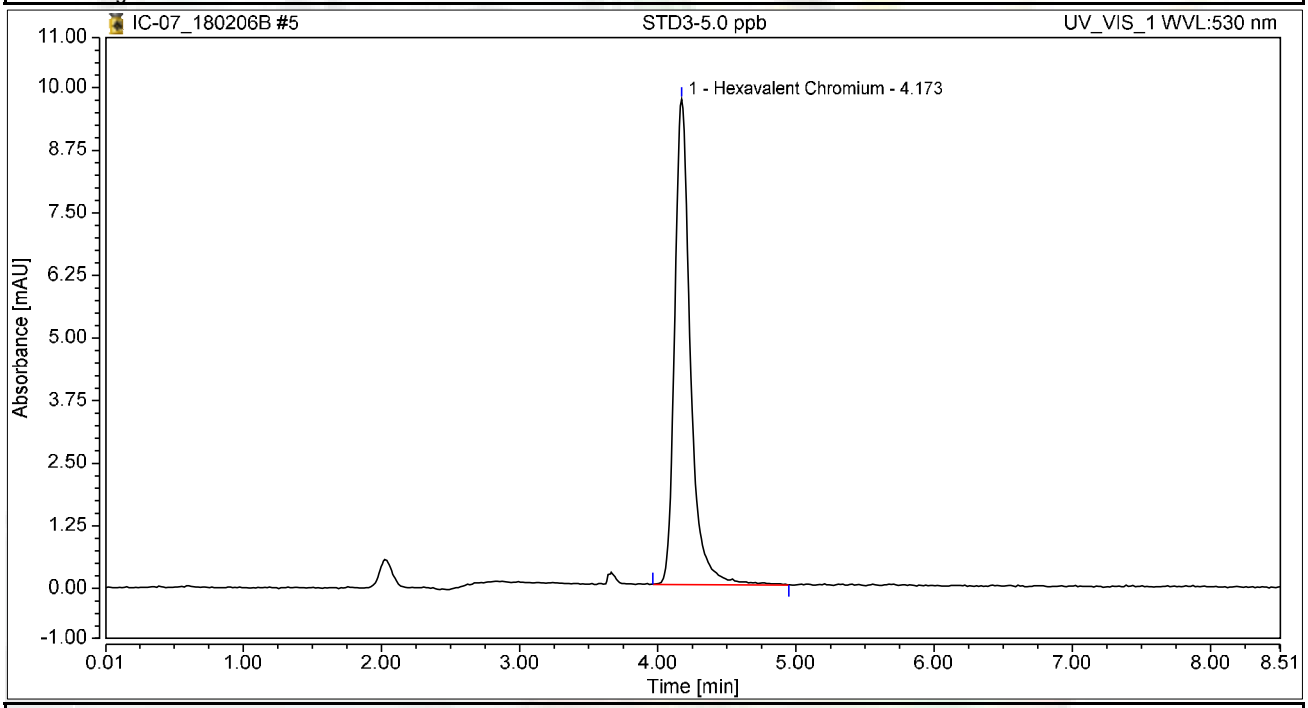
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

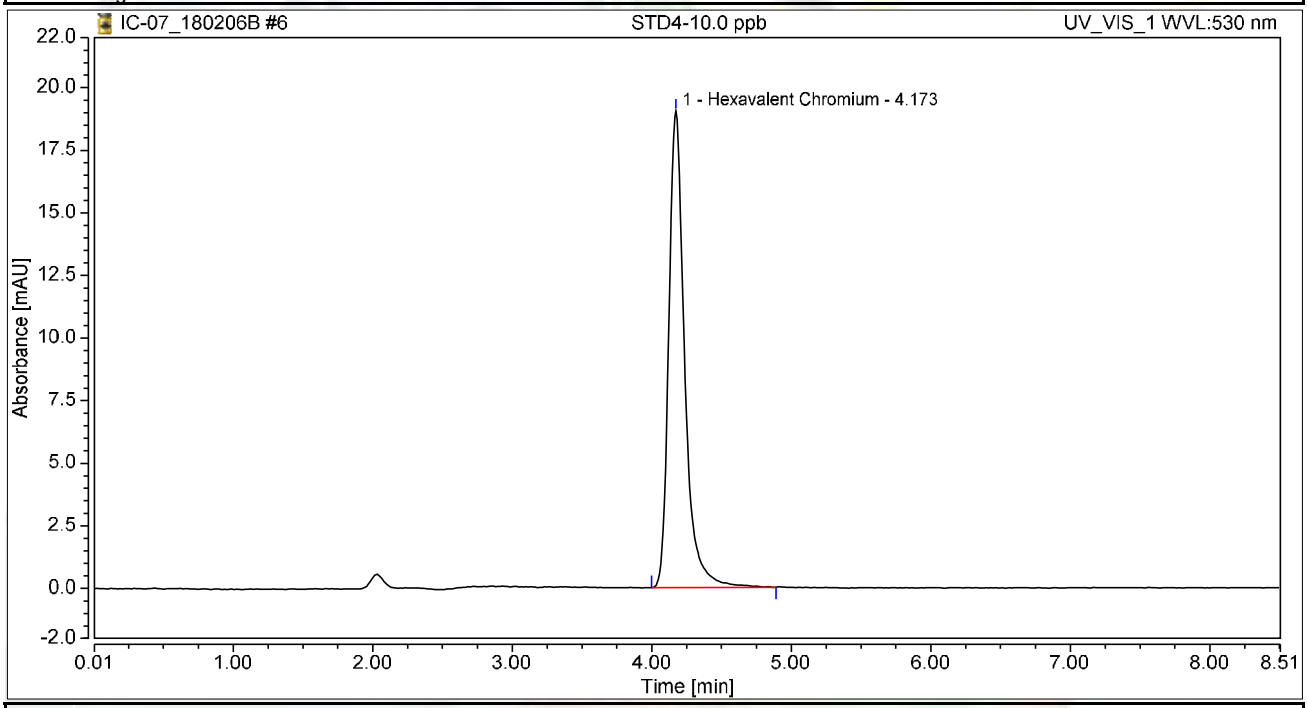
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

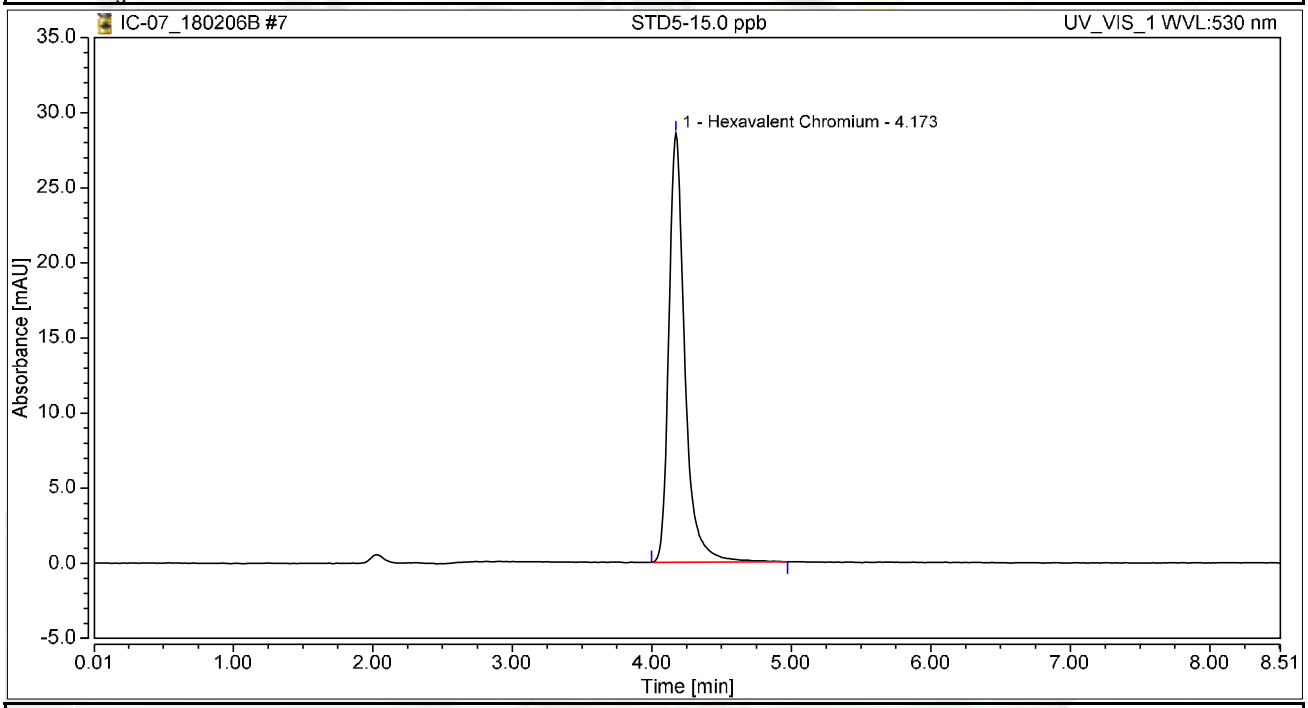
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

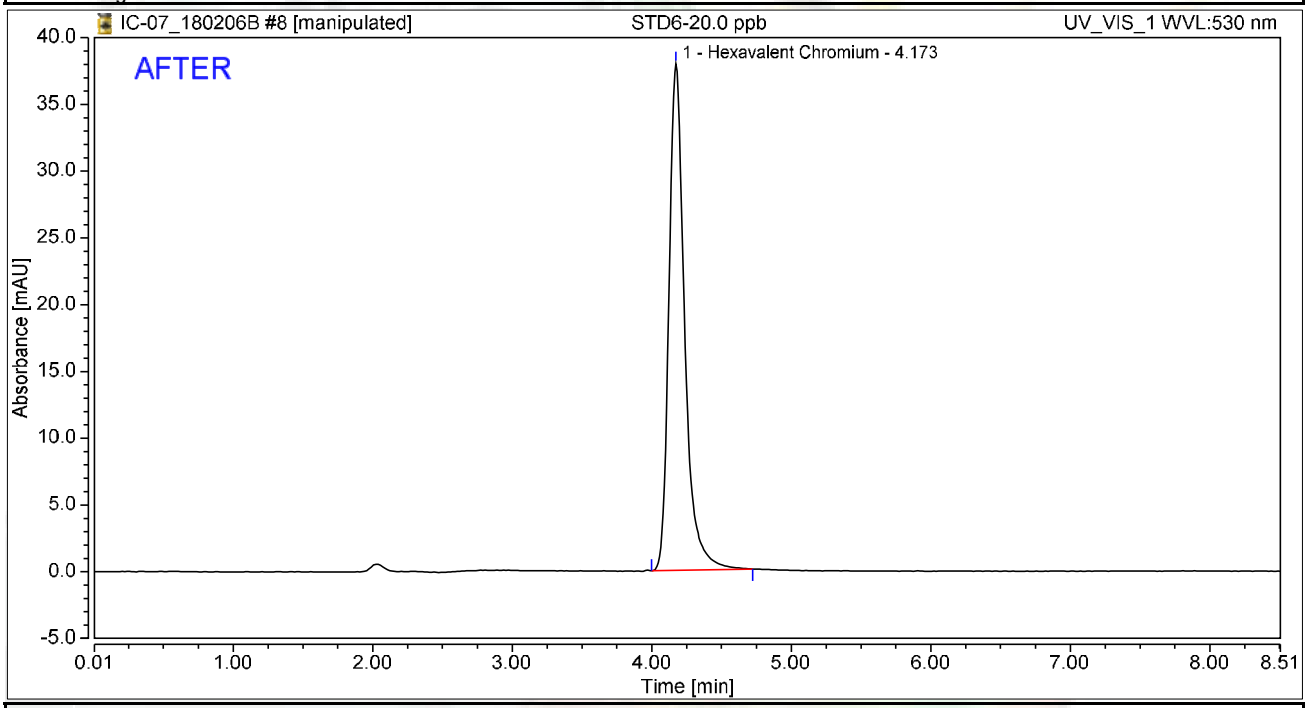
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

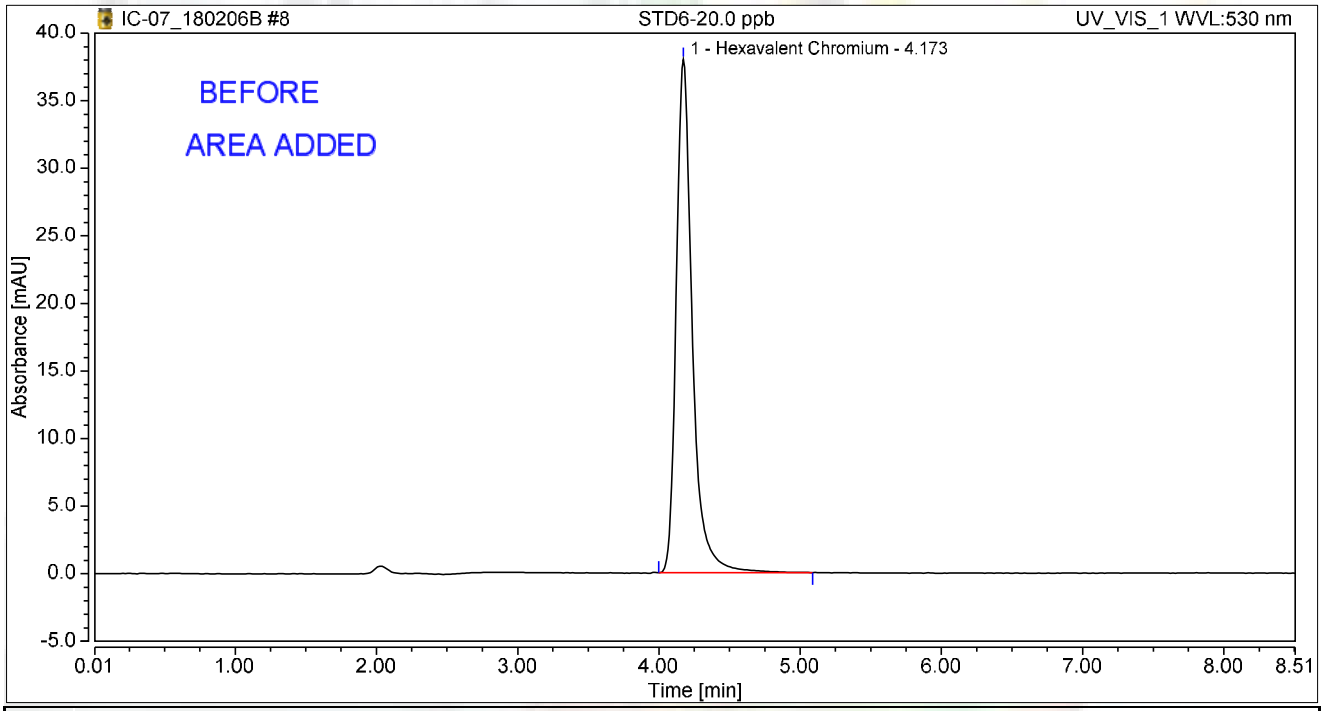
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

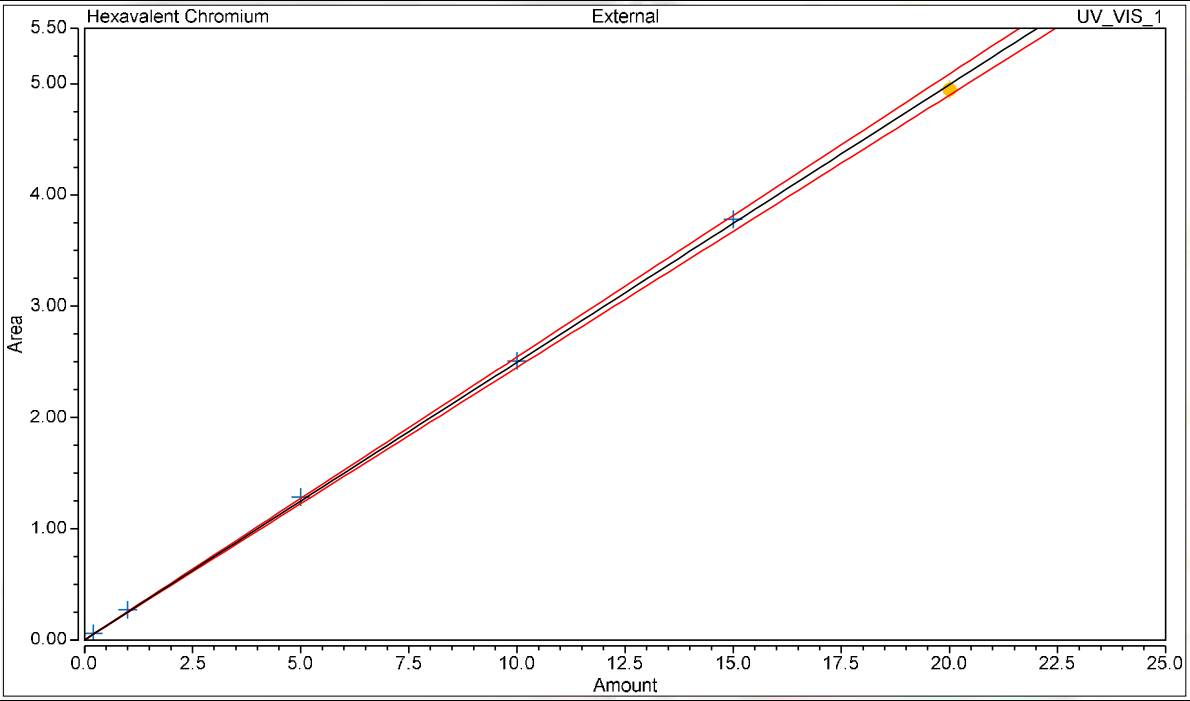
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

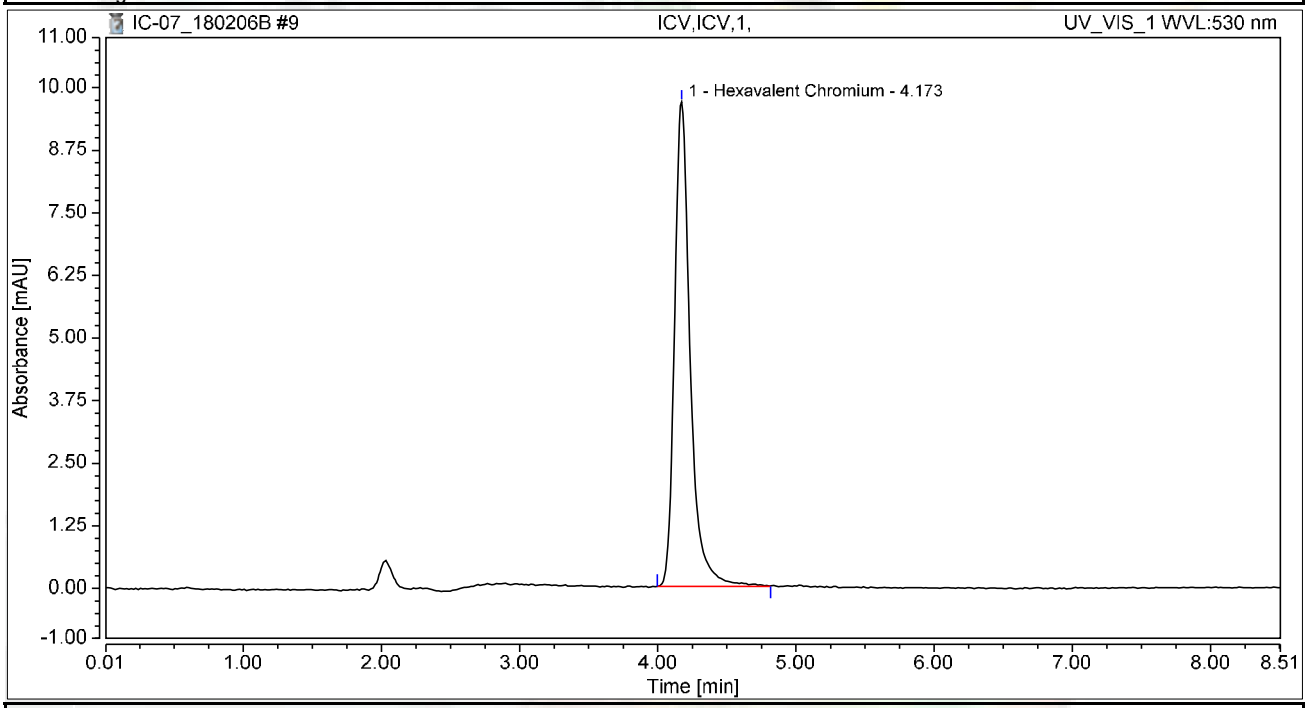
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

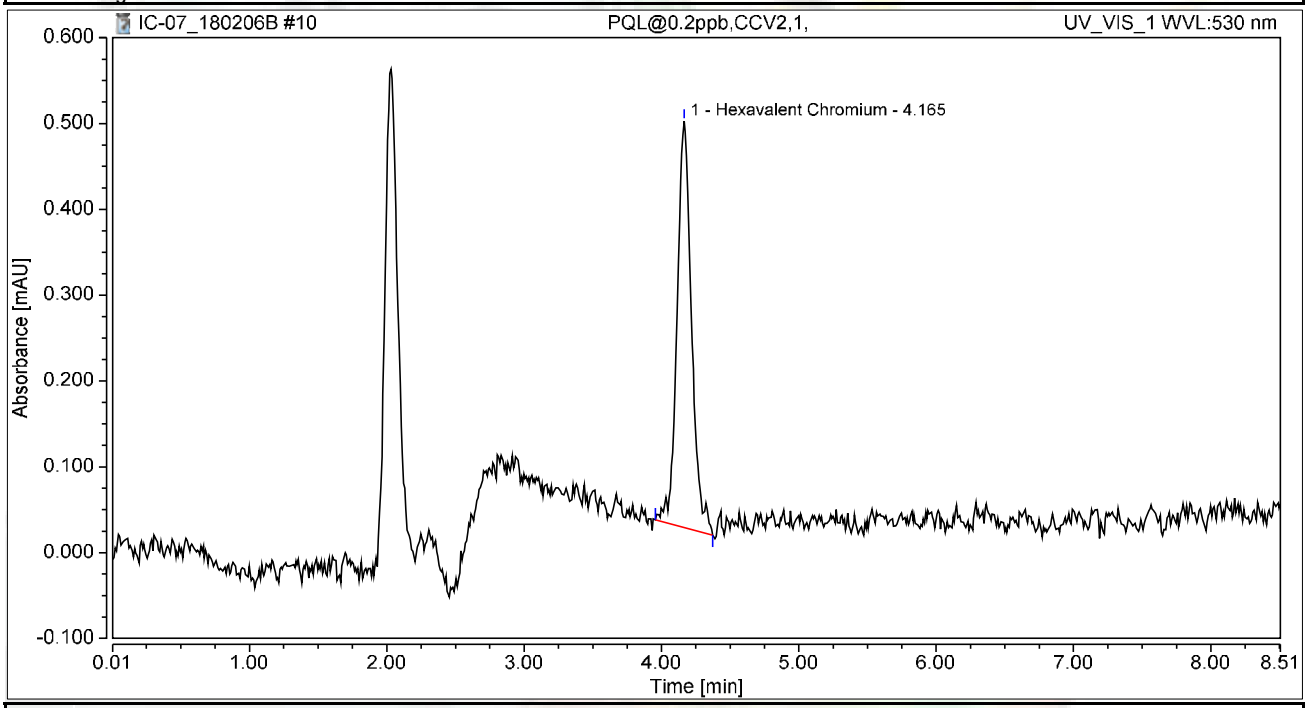
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

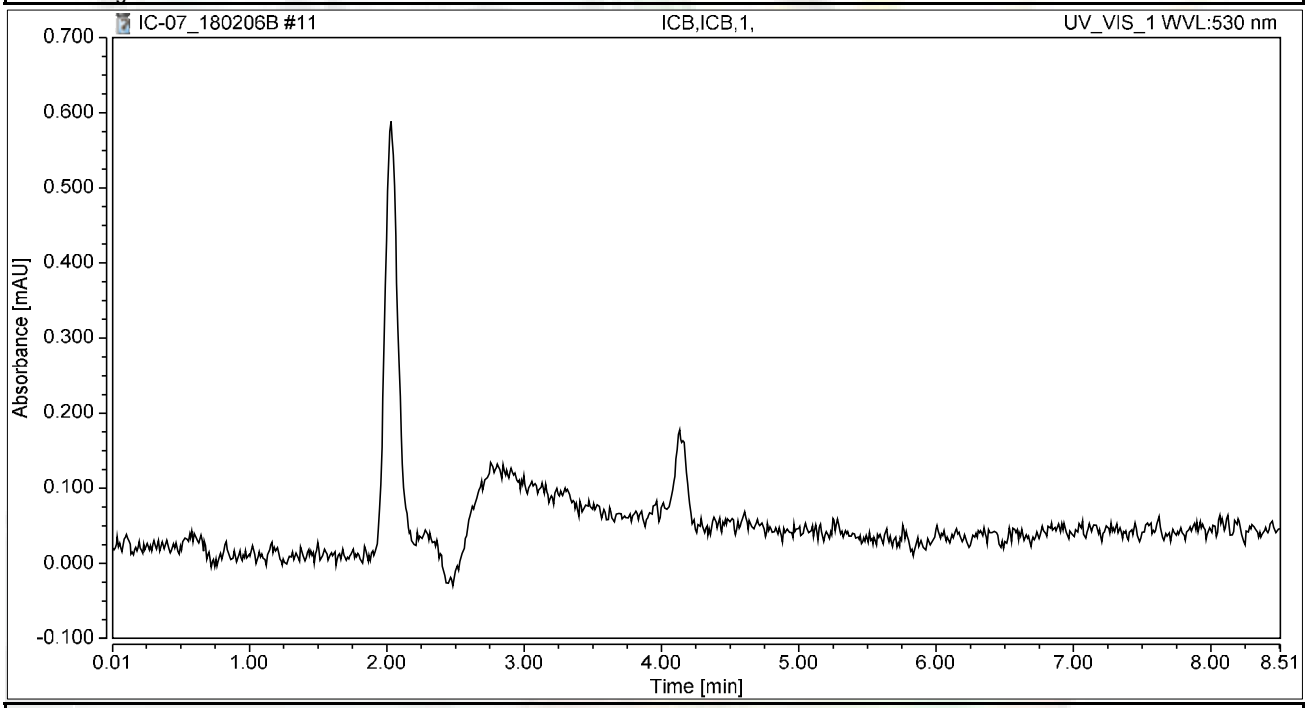
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/21/18 8:55 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/21/18 9:06 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/21/18 9:15 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/21/18 9:39 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/21/18 9:54 AM	Reported
14	MB-R122215	MBLK	1	Hexavalent Chromium	02/21/18 10:06 AM	Reported
15	LCS-R122215	LCS	1	Hexavalent Chromium	02/21/18 10:15 AM	Reported
16	N028696-002A	SAMP	5	Hexavalent Chromium	02/21/18 10:24 AM	Reported
17	N028696-002AMS	MS	5	Hexavalent Chromium	02/21/18 10:34 AM	Reported
18	N028696-003A	SAMP	5	Hexavalent Chromium	02/21/18 10:43 AM	Reported
19	N028696-003AMS	MS	5	Hexavalent Chromium	02/21/18 10:53 AM	Reported
20	N028696-001A	SAMP	5	Hexavalent Chromium	02/21/18 11:02 AM	Reported
21	N028696-001AMS	MS	5	Hexavalent Chromium	02/21/18 11:12 AM	Reported
22	N028696-004A	SAMP	5	Hexavalent Chromium	02/21/18 11:21 AM	Reported
23	N028696-004AMS	MS	5	Hexavalent Chromium	02/21/18 11:31 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/21/18 11:40 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/21/18 11:50 AM	Reported
26	N028696-005A	SAMP	5	Hexavalent Chromium	02/21/18 11:59 AM	Reported
27	N028696-005AMS	MS	5	Hexavalent Chromium	02/21/18 12:09 PM	Reported
28	N028696-006A	SAMP	5	Hexavalent Chromium	02/21/18 12:18 PM	Reported
29	N028696-006AMS	MS	5	Hexavalent Chromium	02/21/18 12:27 PM	Reported
30	N028696-007A	SAMP	5	Hexavalent Chromium	02/21/18 12:37 PM	Reported
31	N028696-007AMS	MS	5	Hexavalent Chromium	02/21/18 12:46 PM	Reported
32	N028696-008A	SAMP	20	Hexavalent Chromium	02/21/18 12:56 PM	Reported
33	N028696-008AMS	MS	20	Hexavalent Chromium	02/21/18 1:06 PM	Reported
34	N028696-009A	SAMP	5	Hexavalent Chromium	02/21/18 1:15 PM	Reported
35	N028696-009ADUP	DUP	5	Hexavalent Chromium	02/21/18 1:24 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/21/18 1:34 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/21/18 1:43 PM	Reported
38	N028696-010A	SAMP	1	Hexavalent Chromium	02/21/18 1:53 PM	Reported
39	N028696-010AMS	MS	1	Hexavalent Chromium	02/21/18 2:02 PM	Reported
40	N028696-011A	SAMP	1	Hexavalent Chromium	02/21/18 2:12 PM	Reported
41	N028696-011AMS	MS	1	Hexavalent Chromium	02/21/18 2:21 PM	Reported
42	N028696-008AMSD	MSD	20	Hexavalent Chromium	02/21/18 2:30 PM	Reported

INJECTION LOG: 180221A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028696-009AMS	MS	5	Hexavalent Chromium	02/21/18 2:40 PM	Reported
44	N028696-001A	SAMP	1	Hexavalent Chromium	02/21/18 2:49 PM	Not Reported
45	N028696-001AMS	MS	1	Hexavalent Chromium	02/21/18 2:59 PM	Not Reported
46	N028696-005A	SAMP	1	Hexavalent Chromium	02/21/18 3:08 PM	Not Reported
47	N028696-005AMS	MS	1	Hexavalent Chromium	02/21/18 3:18 PM	Not Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/21/18 3:27 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/21/18 3:37 PM	Reported
50	N028696-006A	SAMP	1	Hexavalent Chromium	02/21/18 3:46 PM	Not Reported
51	N028696-006AMS	MS	1	Hexavalent Chromium	02/21/18 3:56 PM	Not Reported
52	N028696-007A	SAMP	1	Hexavalent Chromium	02/21/18 4:05 PM	Not Reported
53	N028696-007AMS	MS	1	Hexavalent Chromium	02/21/18 4:15 PM	Not Reported
54	CCV-5	CCV	1	Hexavalent Chromium	02/21/18 4:24 PM	Reported
55	CCB-5	CCB	1	Hexavalent Chromium	02/21/18 4:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180221A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/Feb/18 17:04:18**
No. of Injections:	**58**	*Updated By:*	**ics 5000**

Injection Details

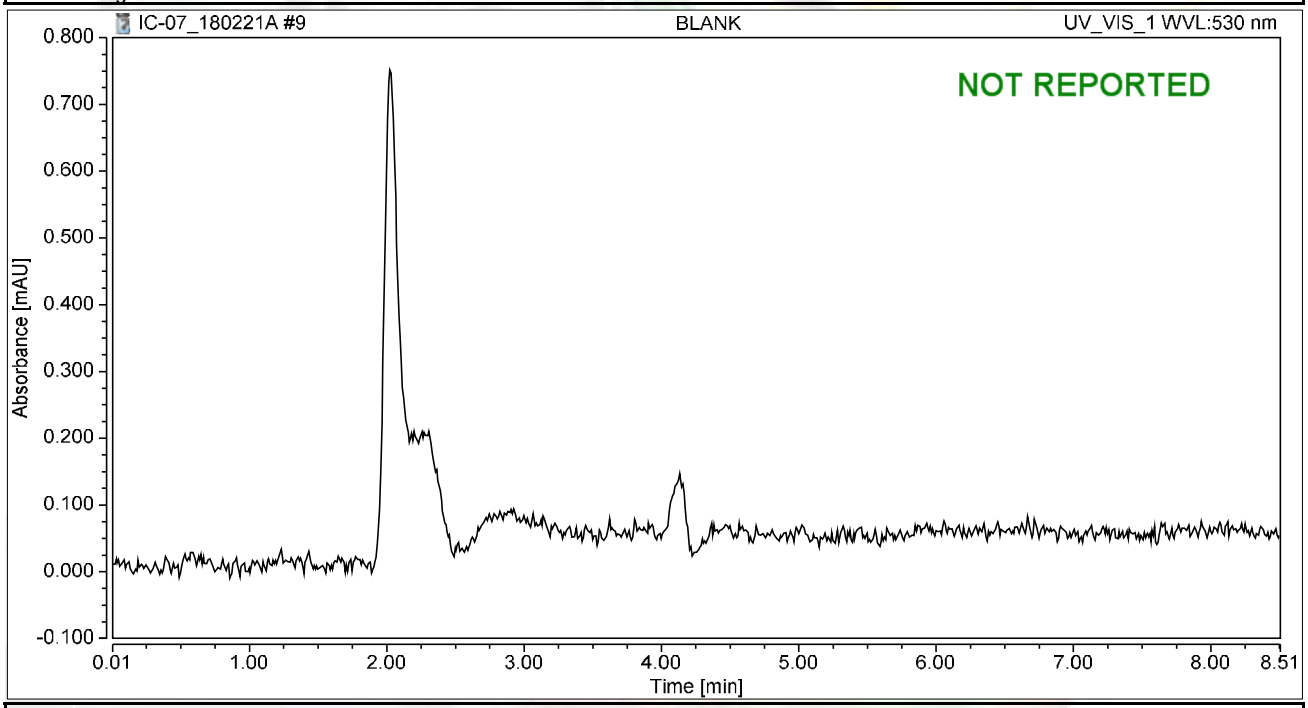
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/21/2018 08:55	Finished	BLANK
10	BLANK	2	1000	Unknown		02/21/2018 09:06	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/21/2018 09:15	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/21/2018 09:39	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/21/2018 09:54	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/21/2018 10:06	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/21/2018 10:15	Finished	LCS, IWST-180129B
16	N028696-002A,SAMF	8	1000	Unknown		02/21/2018 10:24	Finished	SAMP,2>10mL
17	N028696-002AMS,MS	9	1000	Unknown		02/21/2018 10:34	Finished	MS (1ppb), IWST-180129B,2>1
18	N028696-003A,SAMF	10	1000	Unknown		02/21/2018 10:43	Finished	SAMP,2>10mL
19	N028696-003AMS,MS	11	1000	Unknown		02/21/2018 10:53	Finished	MS (1ppb), IWST-180129B,2>1
20	N028696-001A,SAMF	12	1000	Unknown		02/21/2018 11:02	Finished	SAMP,2>10mL
21	N028696-001AMS,MS	13	1000	Unknown		02/21/2018 11:12	Finished	MS (1ppb), IWST-180129B,2>1
22	N028696-004A,SAMF	14	1000	Unknown		02/21/2018 11:21	Finished	SAMP,2>10mL
23	N028696-004AMS,MS	15	1000	Unknown		02/21/2018 11:31	Finished	MS (1ppb), IWST-180129B,2>1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/21/2018 11:40	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/21/2018 11:50	Finished	CCB R180214B
26	N028696-005A,SAMF	18	1000	Unknown		02/21/2018 11:59	Finished	SAMP,2>10mL
27	N028696-005AMS,MS	19	1000	Unknown		02/21/2018 12:09	Finished	MS (1ppb), IWST-180129B,2>1
28	N028696-006A,SAMF	20	1000	Unknown		02/21/2018 12:18	Finished	SAMP,2>10mL
29	N028696-006AMS,MS	21	1000	Unknown		02/21/2018 12:27	Finished	MS (1ppb), IWST-180129B,2>1
30	N028696-007A,SAMF	22	1000	Unknown		02/21/2018 12:37	Finished	SAMP,2>10mL
31	N028696-007AMS,MS	23	1000	Unknown		02/21/2018 12:46	Finished	MS (1ppb), IWST-180129B,2>1
32	N028696-008A,SAMF	24	1000	Unknown		02/21/2018 12:56	Finished	SAMP,0.5>10mL
33	N028696-008AMS,MS	25	1000	Unknown		02/21/2018 13:06	Finished	MS (5ppb), IWST-180129B,0.5
34	N028696-009A,SAMF	26	1000	Unknown		02/21/2018 13:15	Finished	SAMP,2>10mL
35	N028696-009ADUP,D	27	1000	Unknown		02/21/2018 13:24	Finished	DUP,2>10mL
36	CCV-3,CCV,1,	28	1000	Unknown		02/21/2018 13:34	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/21/2018 13:43	Finished	CCB R180214B
38	N028696-010A,SAMF	30	1000	Unknown		02/21/2018 13:53	Finished	SAMP,10mL
39	N028696-010AMS,MS	31	1000	Unknown		02/21/2018 14:02	Finished	MS (1ppb), IWST-180129B,10
40	N028696-011A,SAMF	32	1000	Unknown		02/21/2018 14:12	Finished	SAMP,10mL
41	N028696-011AMS,MS	33	1000	Unknown		02/21/2018 14:21	Finished	MS (1ppb), IWST-180129B,10
42	N028696-008AMSD,M	34	1000	Unknown		02/21/2018 14:30	Finished	MSD (5ppb), IWST-180129B,2>
43	N028696-009AMS,MS	35	1000	Unknown		02/21/2018 14:40	Finished	MS (5ppb), IWST-180129B,2>1
44	N028696-001A,SAMF	36	1000	Unknown		02/21/2018 14:49	Finished	SAMP,10mL
45	N028696-001AMS,MS	37	1000	Unknown		02/21/2018 14:59	Finished	MS (1ppb), IWST-180129B,10
46	N028696-005A,SAMF	38	1000	Unknown		02/21/2018 15:08	Finished	SAMP,10mL
47	N028696-005AMS,MS	39	1000	Unknown		02/21/2018 15:18	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	40	1000	Unknown		02/21/2018 15:27	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	41	1000	Unknown		02/21/2018 15:37	Finished	CCB R180214B
50	N028696-006A,SAMF	42	1000	Unknown		02/21/2018 15:46	Finished	SAMP,10mL
51	N028696-006AMS,MS	43	1000	Unknown		02/21/2018 15:56	Finished	MS (1ppb), IWST-180129B,10
52	N028696-007A,SAMF	44	1000	Unknown		02/21/2018 16:05	Finished	SAMP,10mL
53	N028696-007AMS,MS	45	1000	Unknown		02/21/2018 16:15	Finished	MS (1ppb), IWST-180129B,10
54	CCV-5,CCV,1,	46	1000	Unknown		02/21/2018 16:24	Finished	CCV @5ppb, IWST-180129A
55	CCB-5,CCB,1,	47	1000	Unknown		02/21/2018 16:33	Finished	CCB R180214B
56	SHUTDOWN	48	1000	Unknown		02/21/2018 16:43	Finished	
57	Eluent: R180219A	49	1000	Unknown		n.a.	Finished	Eluent
58	PCR: R180219B	50	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 08:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

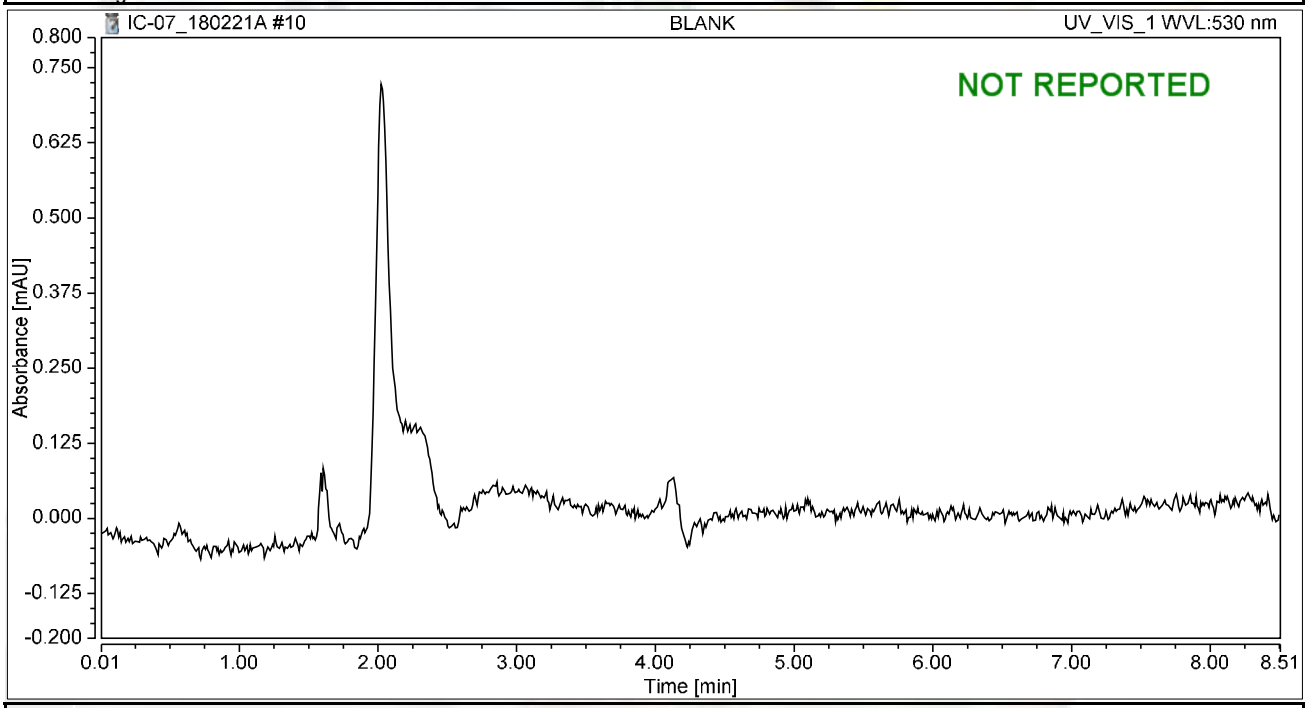
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

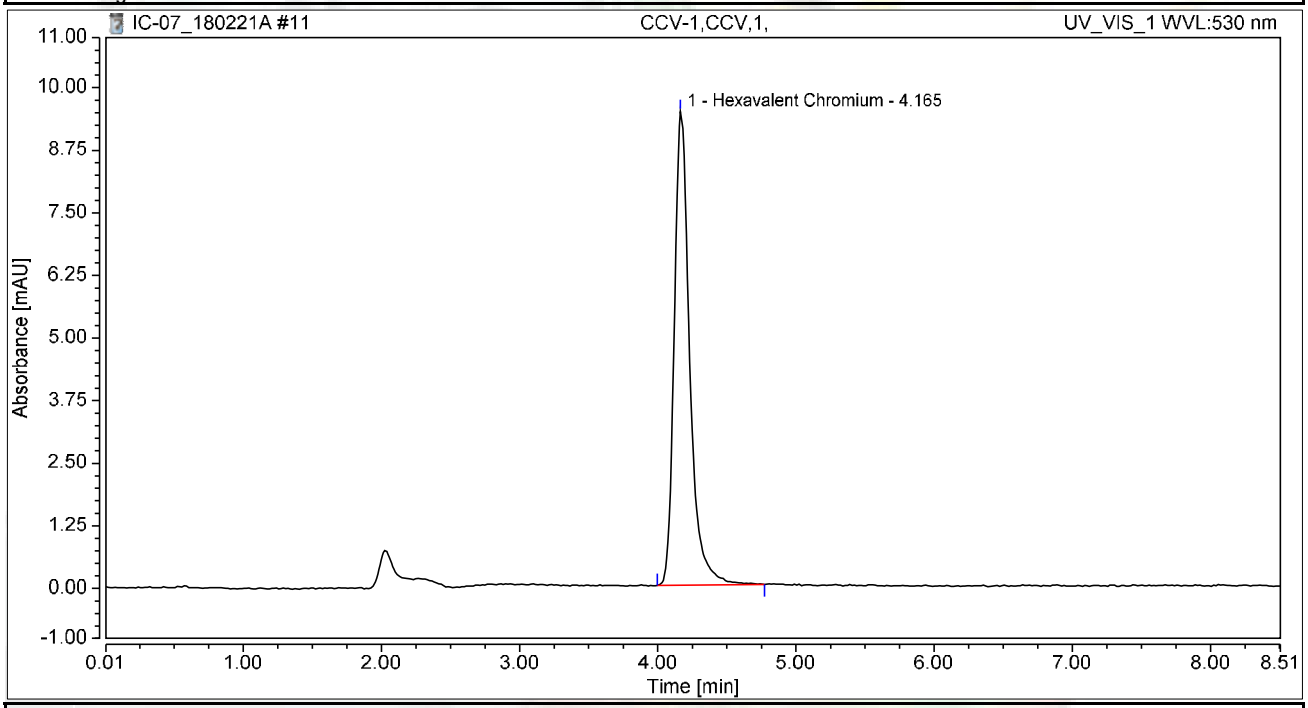
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 09:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

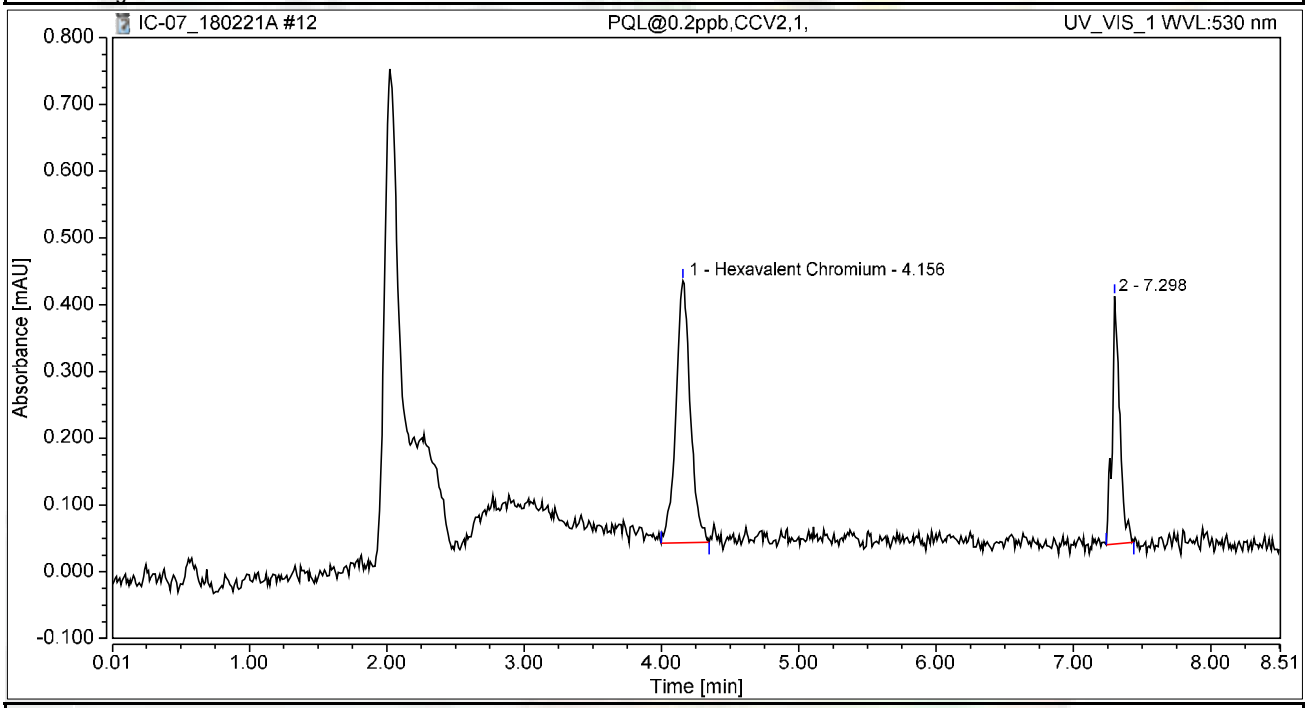
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.230	9.461	100.00	100.00	4.9287
Total:			**1.230**	**9.461**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

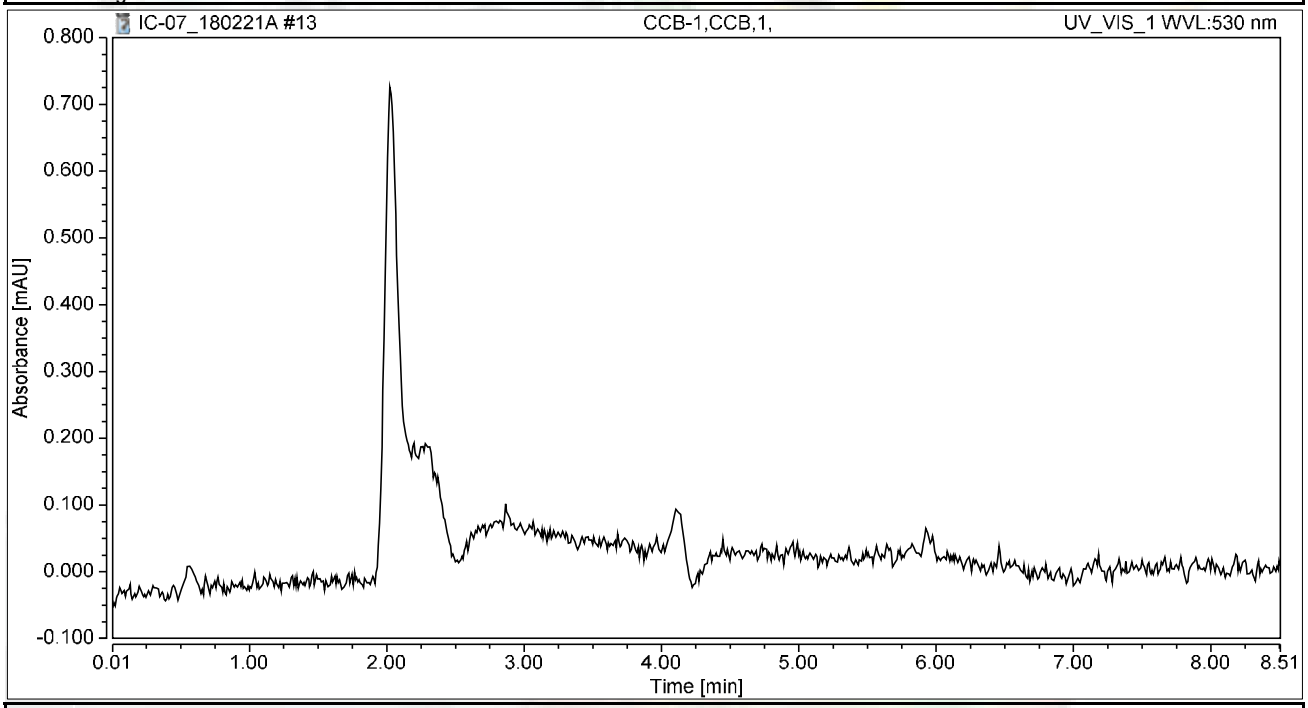
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.048	0.393	66.43	51.40	0.1913
2		7.298	0.024	0.371	33.57	48.60	n.a.
Total:			**0.072**	**0.764**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

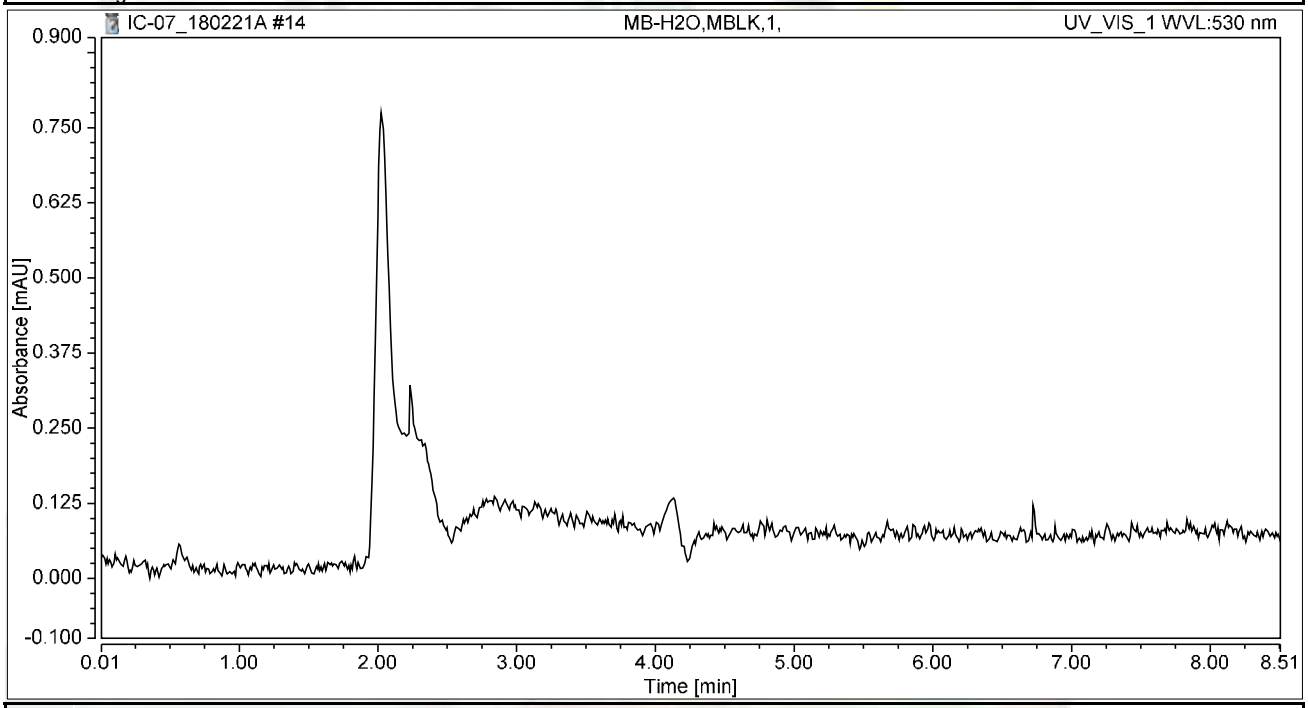
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

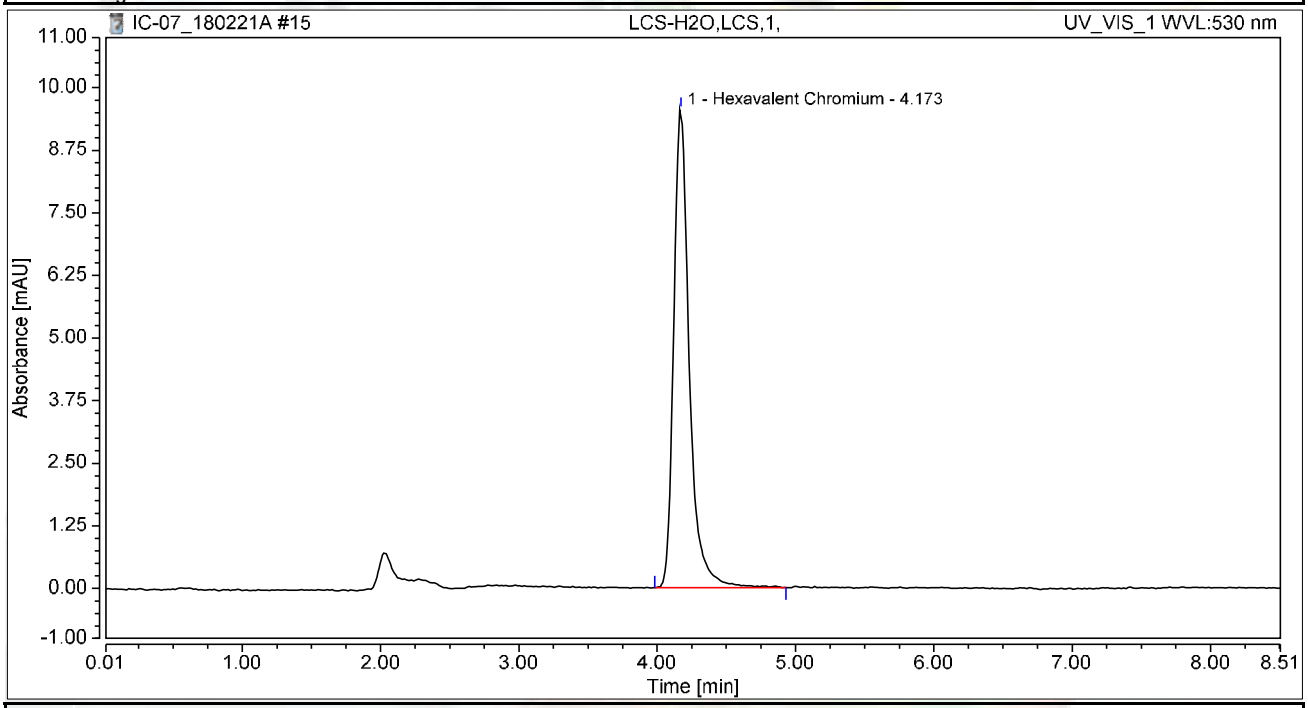
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

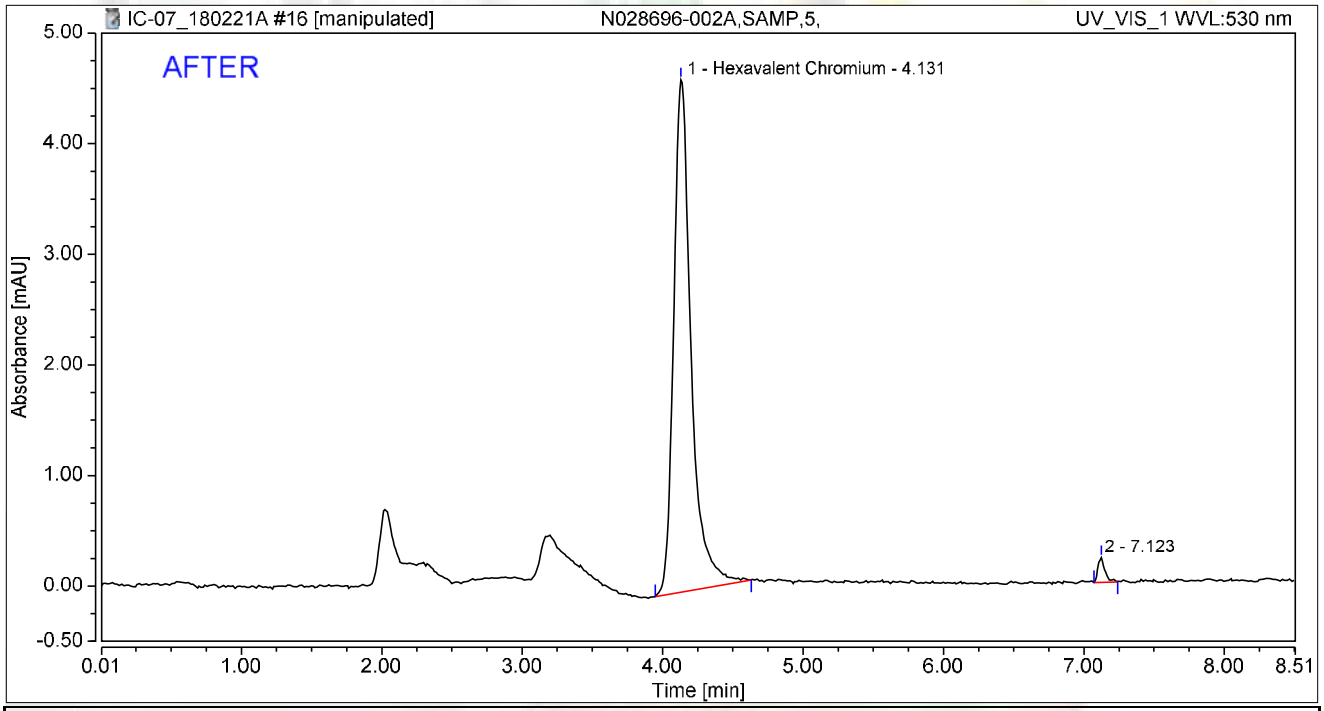
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.253	9.551	100.00	100.00	5.0170
Total:			**1.253**	**9.551**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.667	4.634	98.10	95.40	2.6714
2		7.123	0.013	0.224	1.90	4.60	n.a.
Total:			**0.680**	**4.858**	**100.00**	**100.00**	

rba 2/25/2018

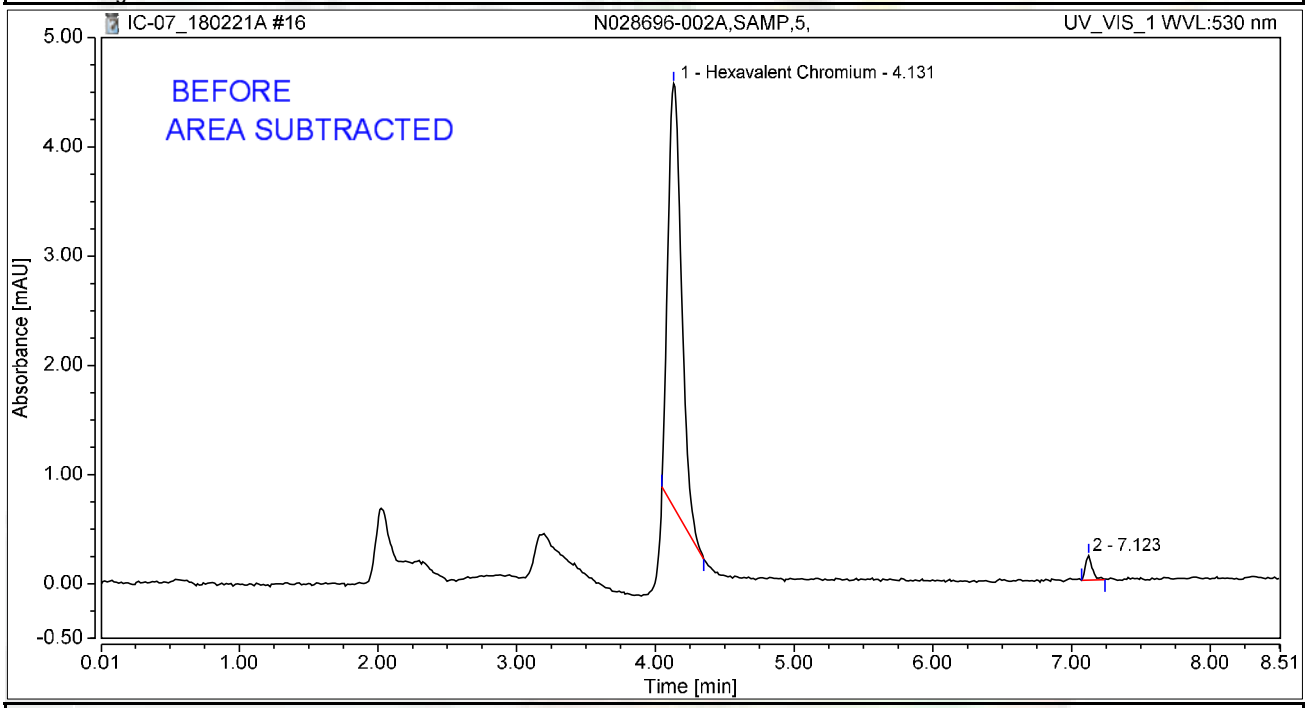
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.444	3.873	97.16	94.54	1.7767
2		7.123	0.013	0.224	2.84	5.46	n.a.
Total:			**0.457**	**4.097**	**100.00**	**100.00**	

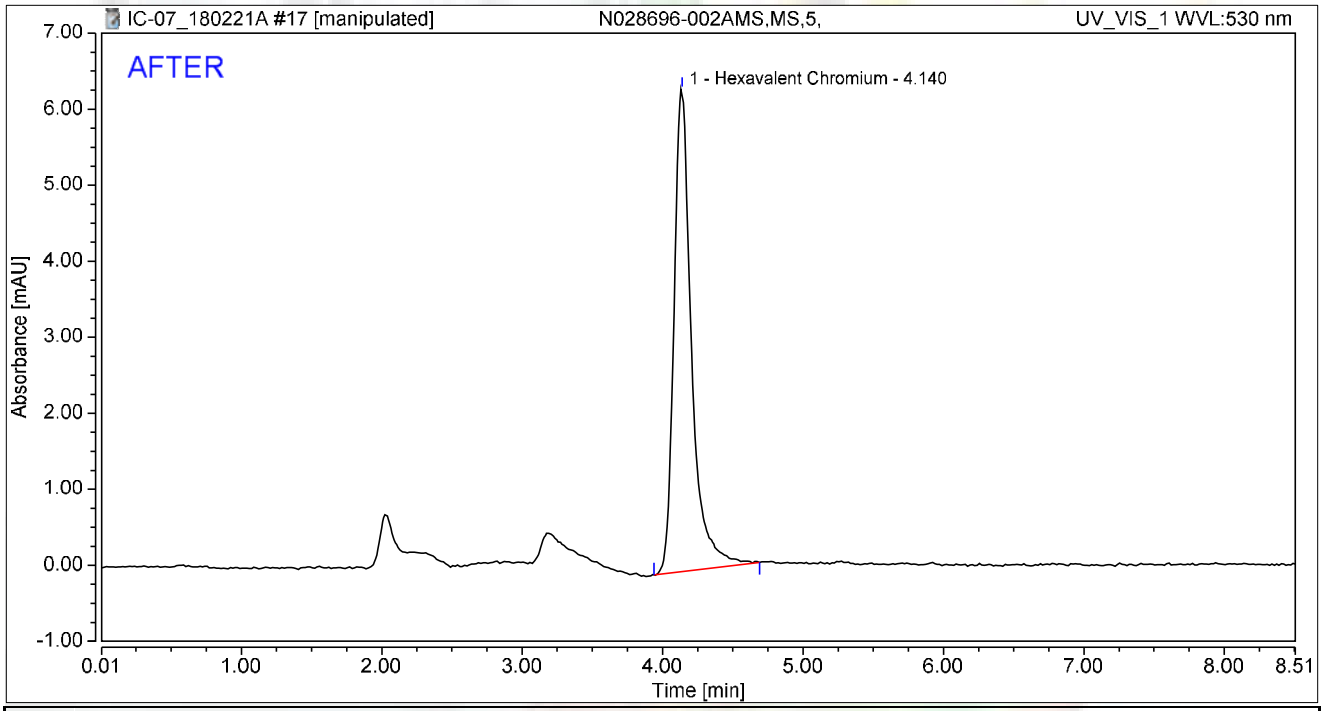
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.920	6.340	100.00	100.00	3.6869
Total:			**0.920**	**6.340**	**100.00**	**100.00**	

rba 2/25/2018

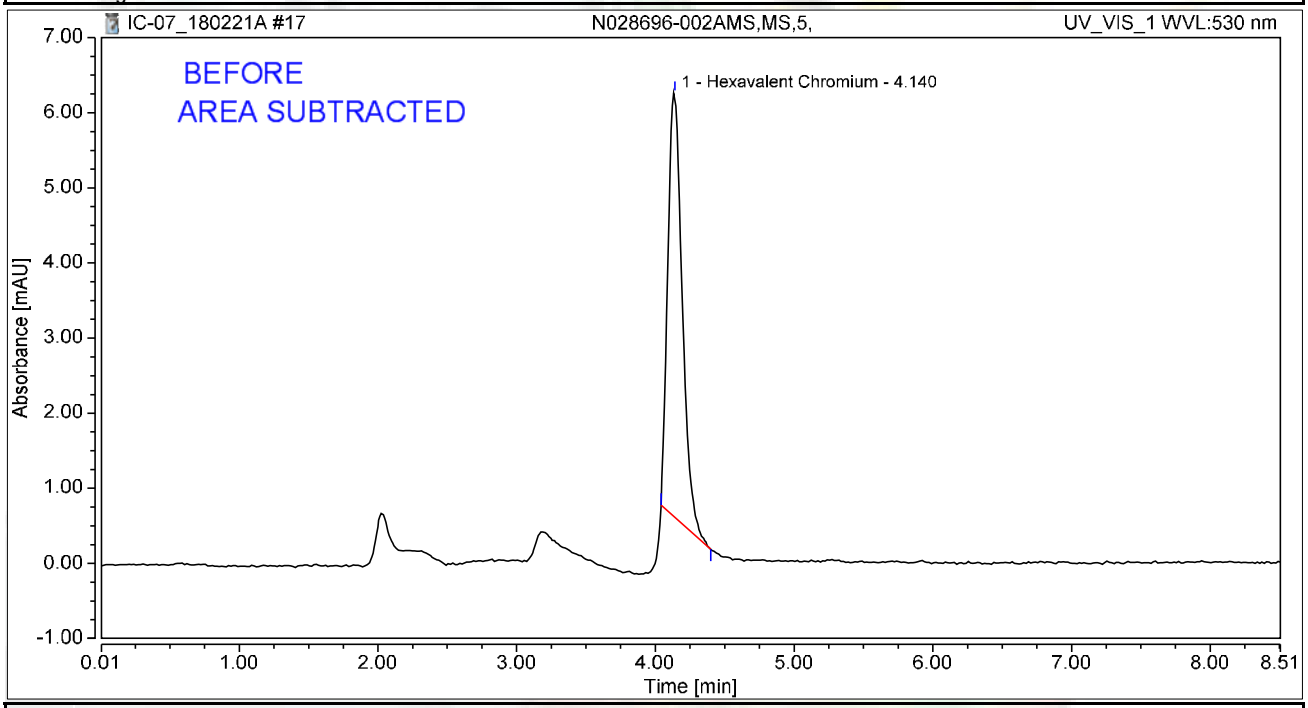
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.685	5.648	100.00	100.00	2.7445
Total:			**0.685**	**5.648**	**100.00**	**100.00**	

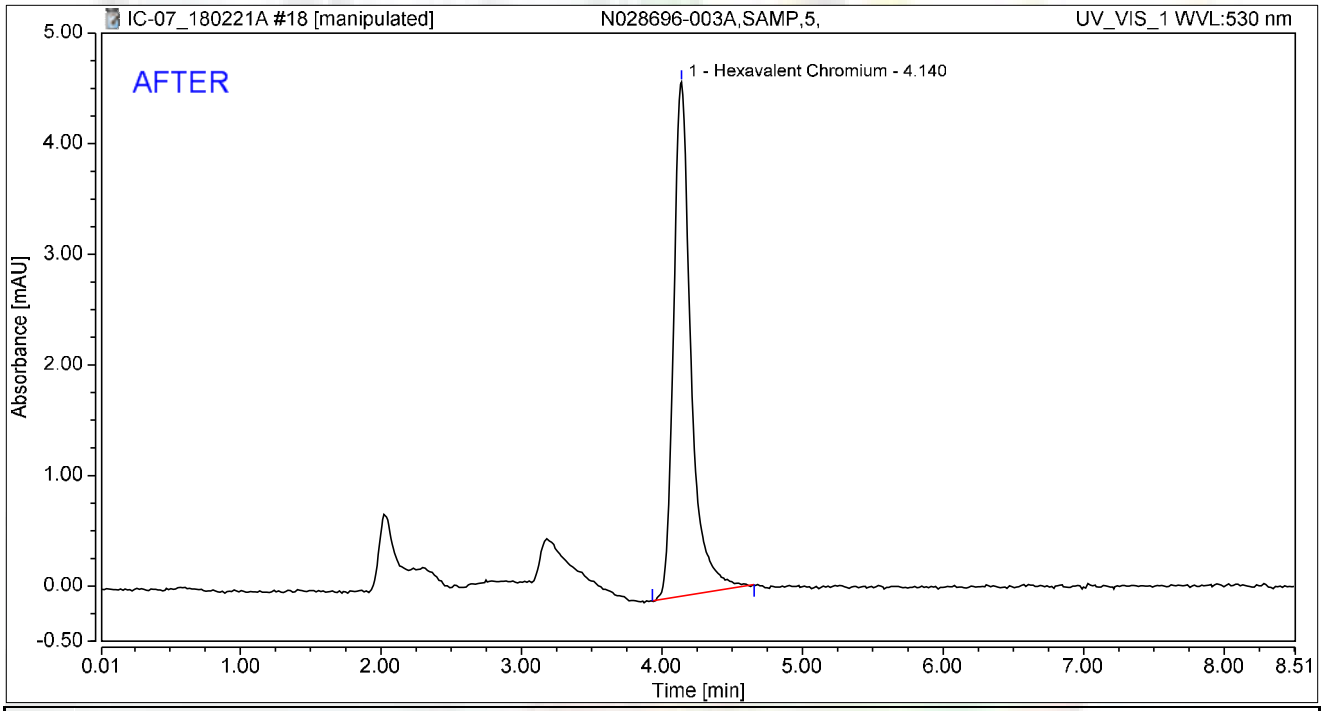
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.666	4.648	100.00	100.00	2.6696
Total:			**0.666**	**4.648**	**100.00**	**100.00**	

rba 2/25/2018

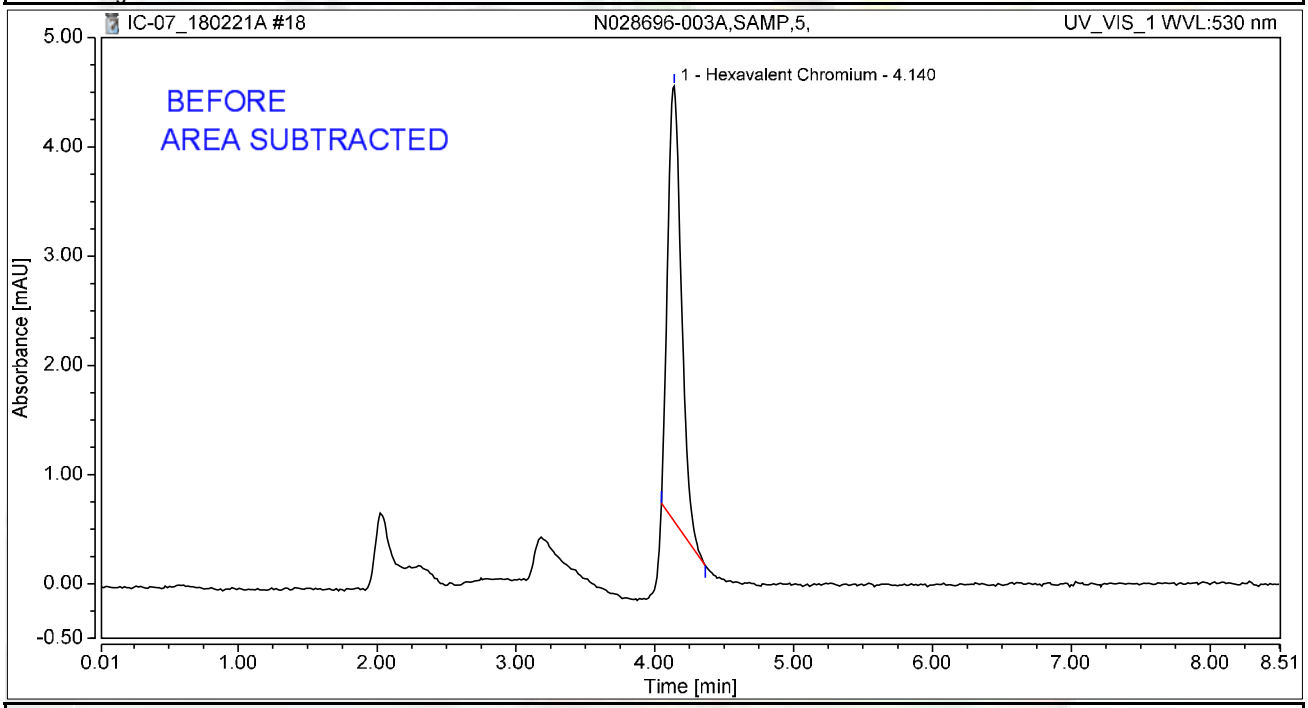
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.461	3.983	100.00	100.00	1.8462
Total:			**0.461**	**3.983**	**100.00**	**100.00**	

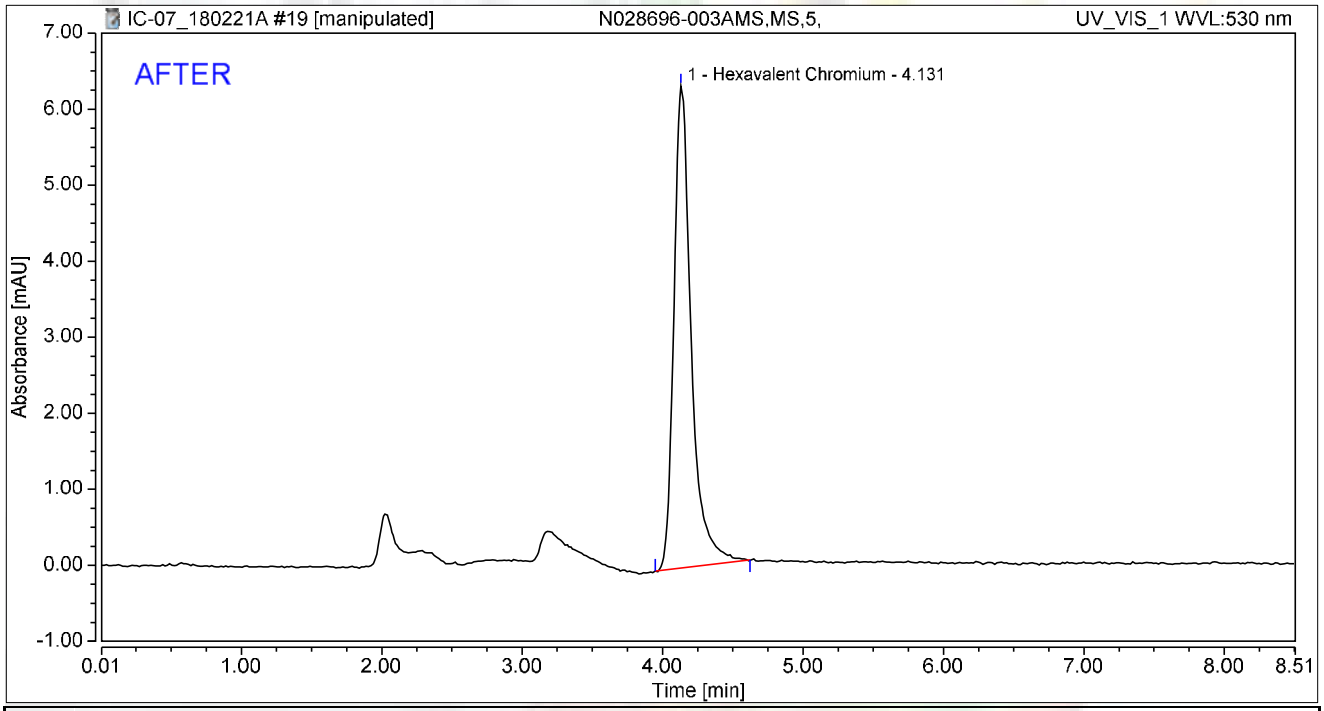
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.907	6.340	100.00	100.00	3.6328
Total:			**0.907**	**6.340**	**100.00**	**100.00**	

rba 2/25/2018

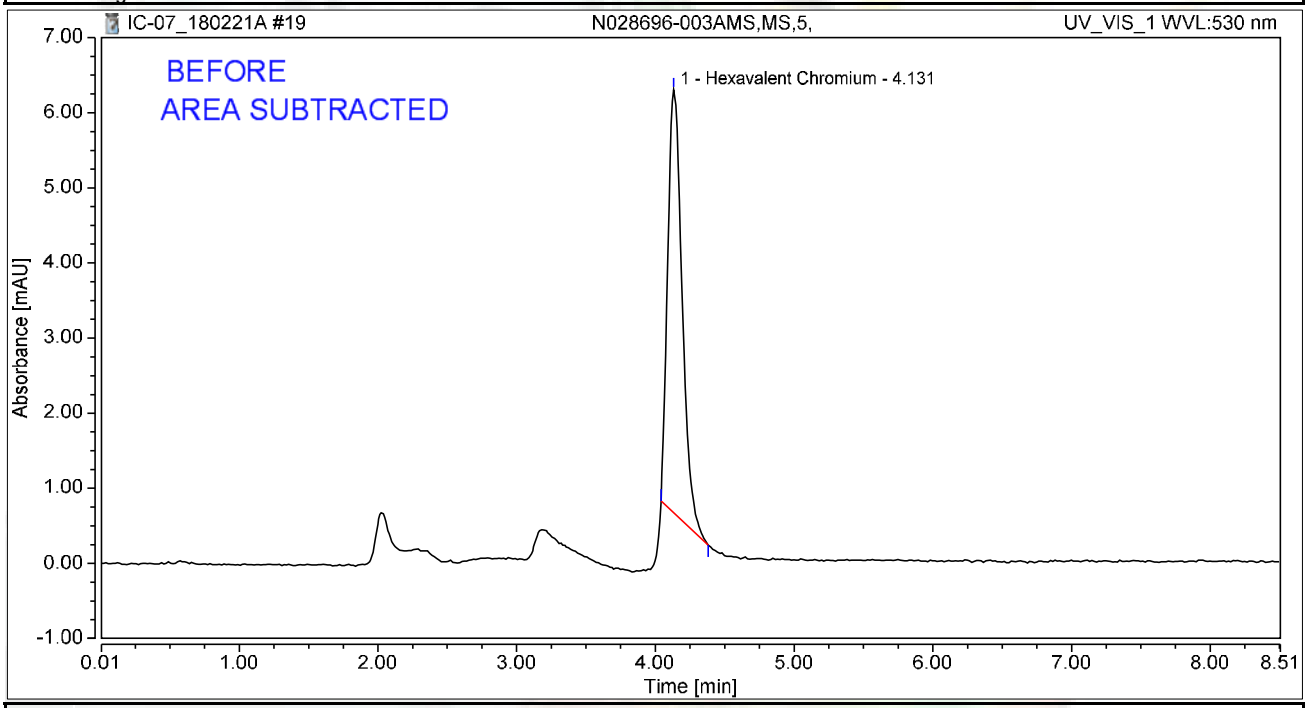
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 10:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.682	5.634	100.00	100.00	2.7312
Total:			**0.682**	**5.634**	**100.00**	**100.00**	

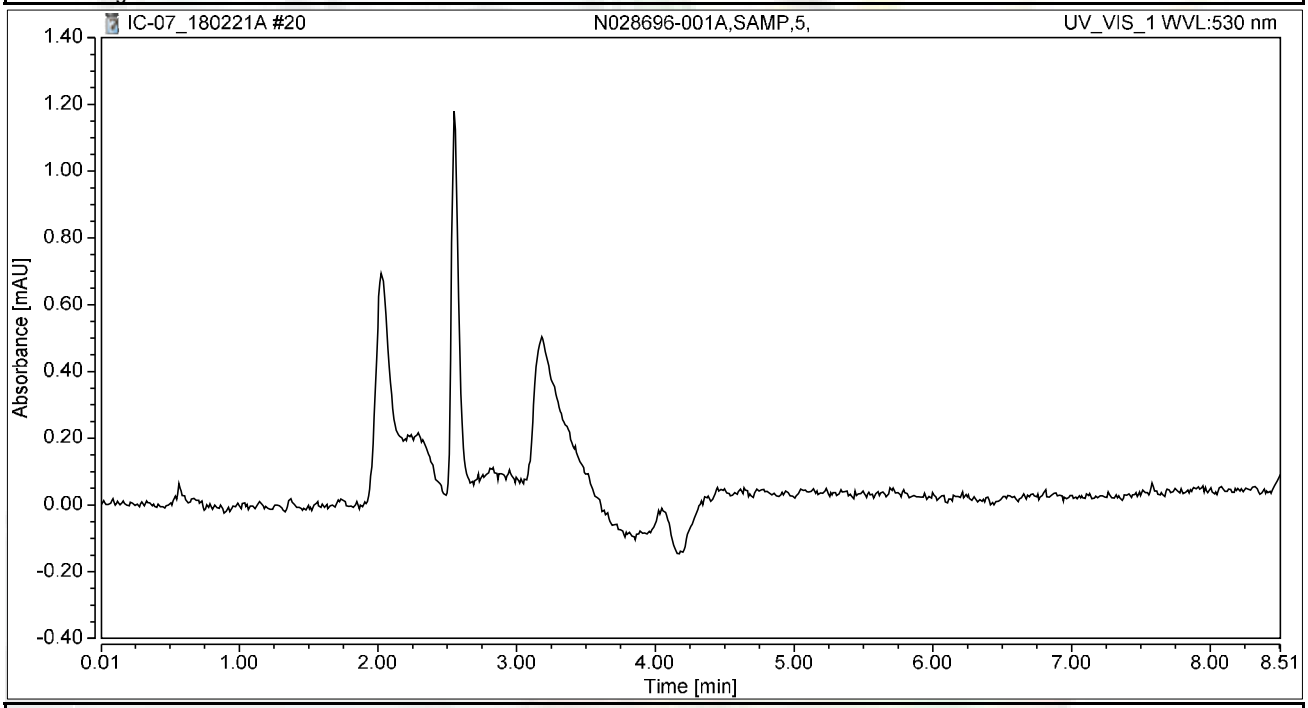
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

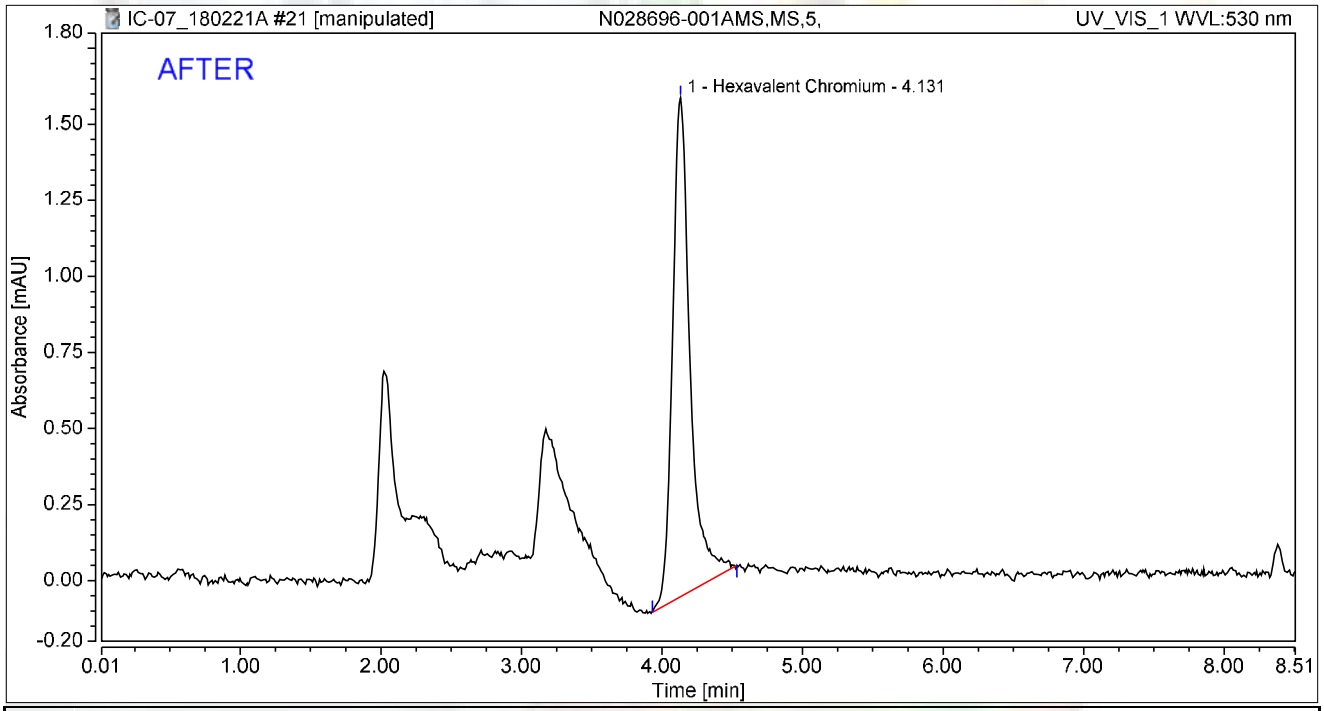
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.238	1.641	100.00	100.00	0.9531
Total:			**0.238**	**1.641**	**100.00**	**100.00**	

rba 2/25/2018

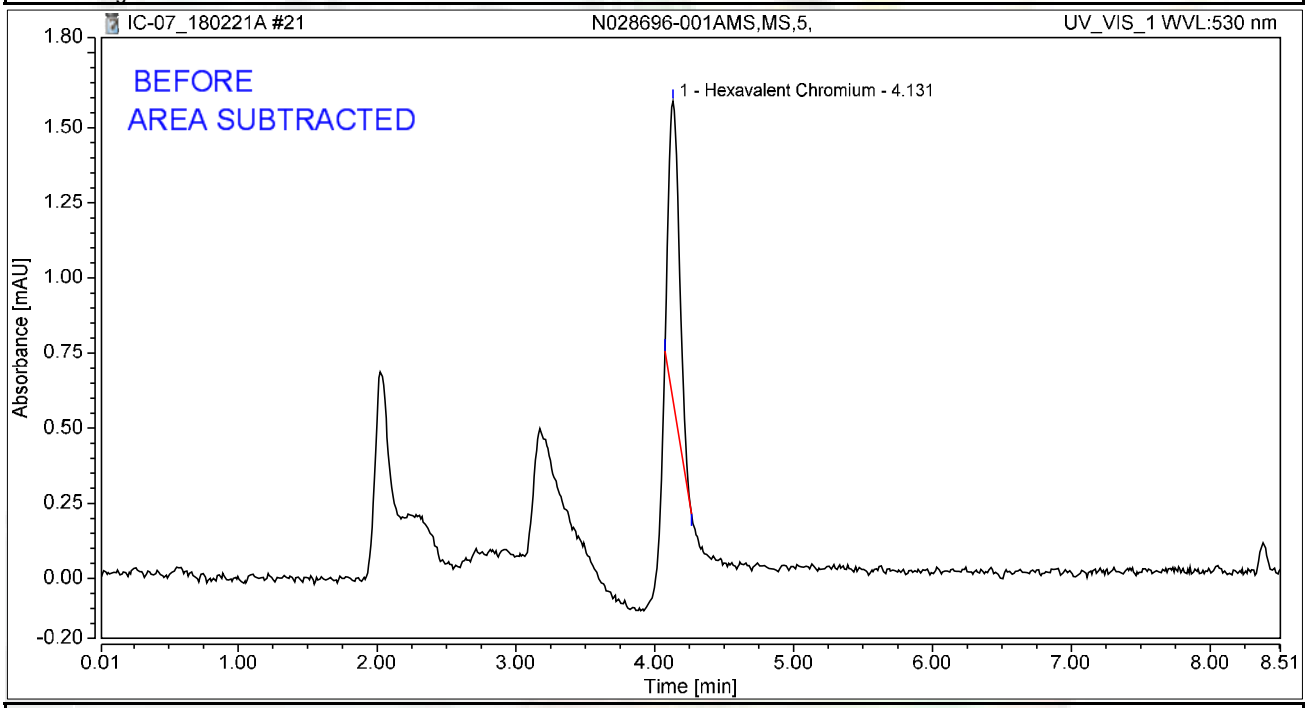
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.091	0.996	100.00	100.00	0.3659
Total:			**0.091**	**0.996**	**100.00**	**100.00**	

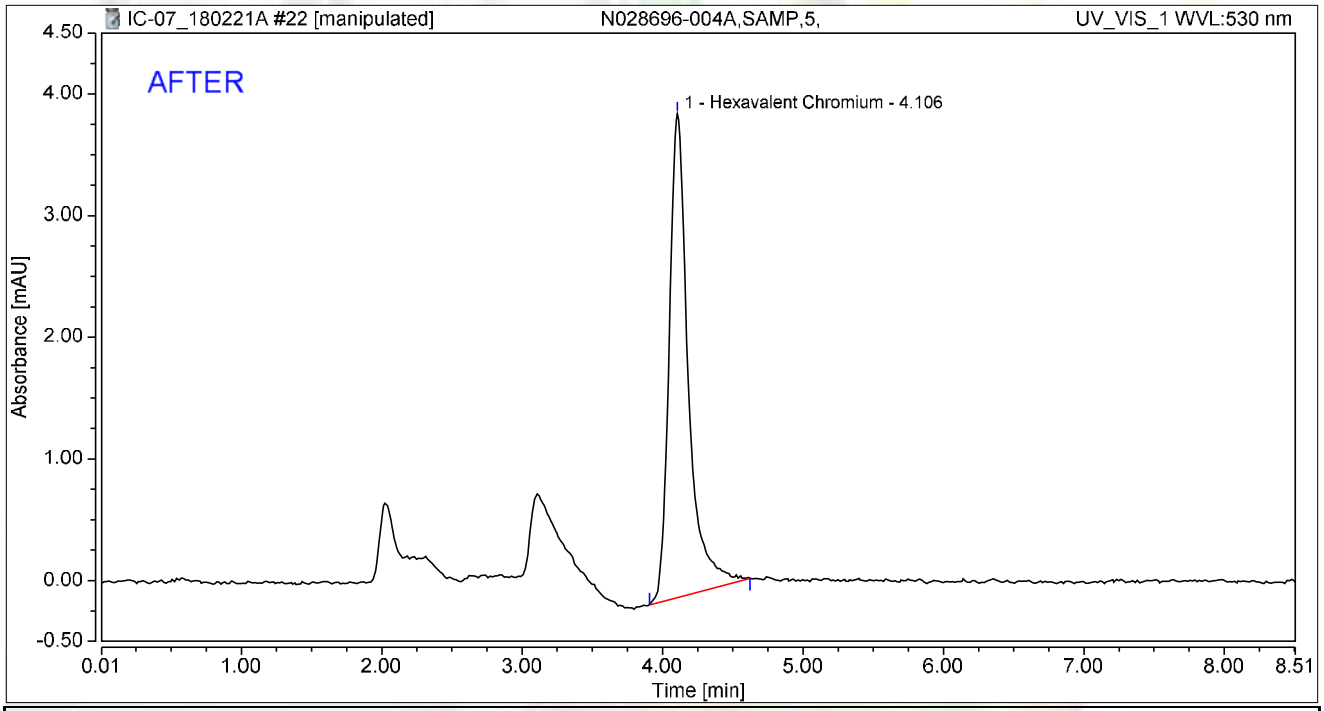
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.629	3.976	100.00	100.00	2.5203
Total:			**0.629**	**3.976**	**100.00**	**100.00**	

rba 2/25/2018

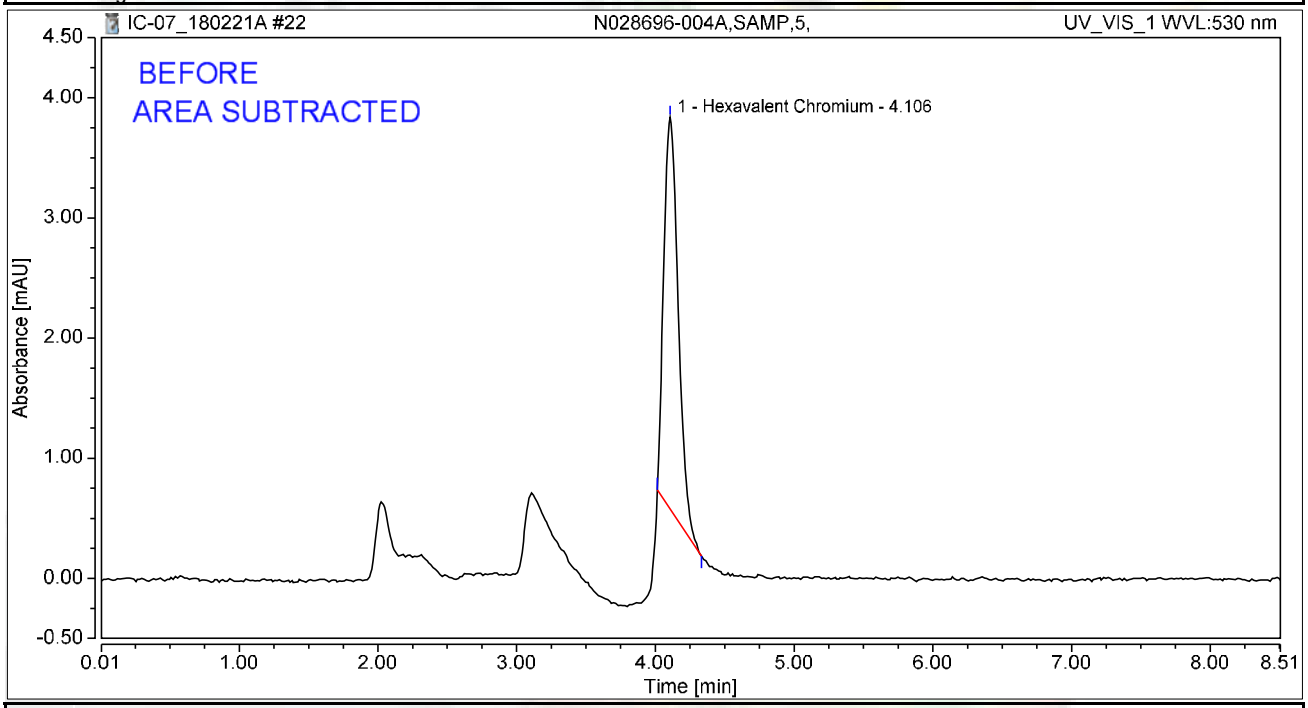
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.395	3.258	100.00	100.00	1.5838
Total:			**0.395**	**3.258**	**100.00**	**100.00**	

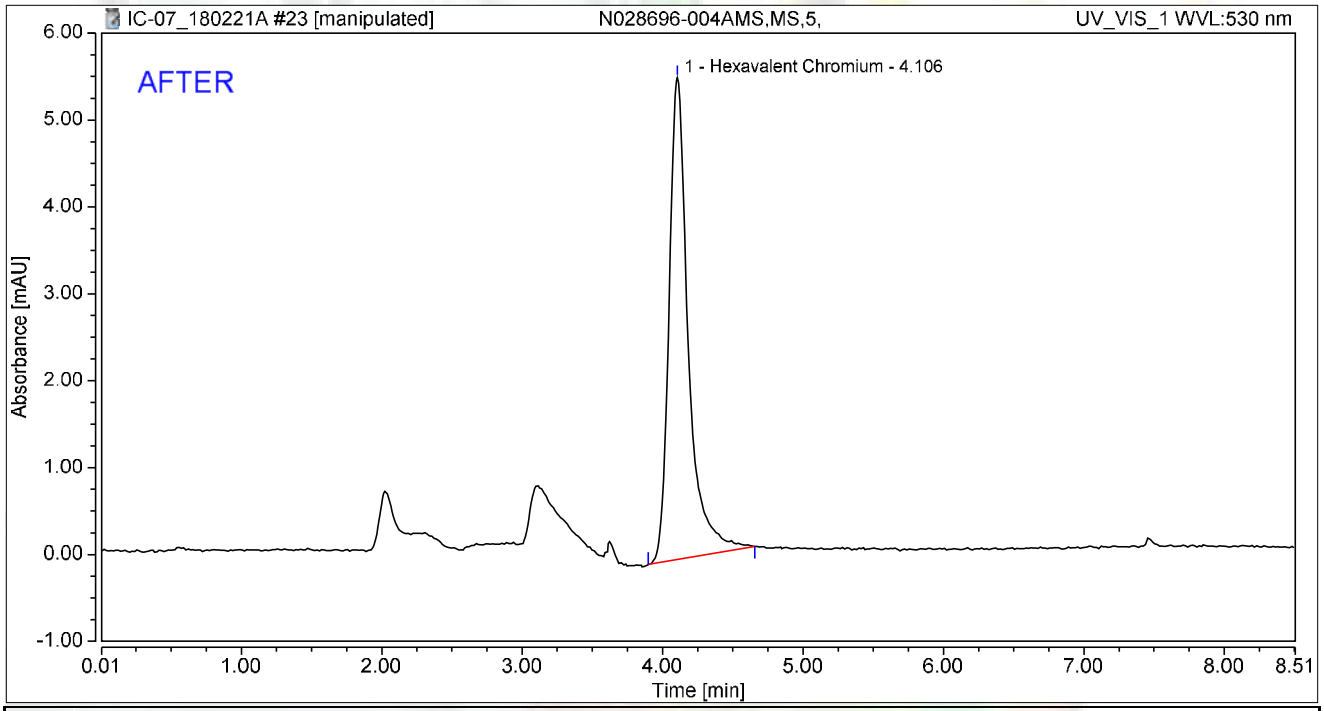
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.880	5.544	100.00	100.00	3.5233
Total:			**0.880**	**5.544**	**100.00**	**100.00**	

rba 2/25/2018

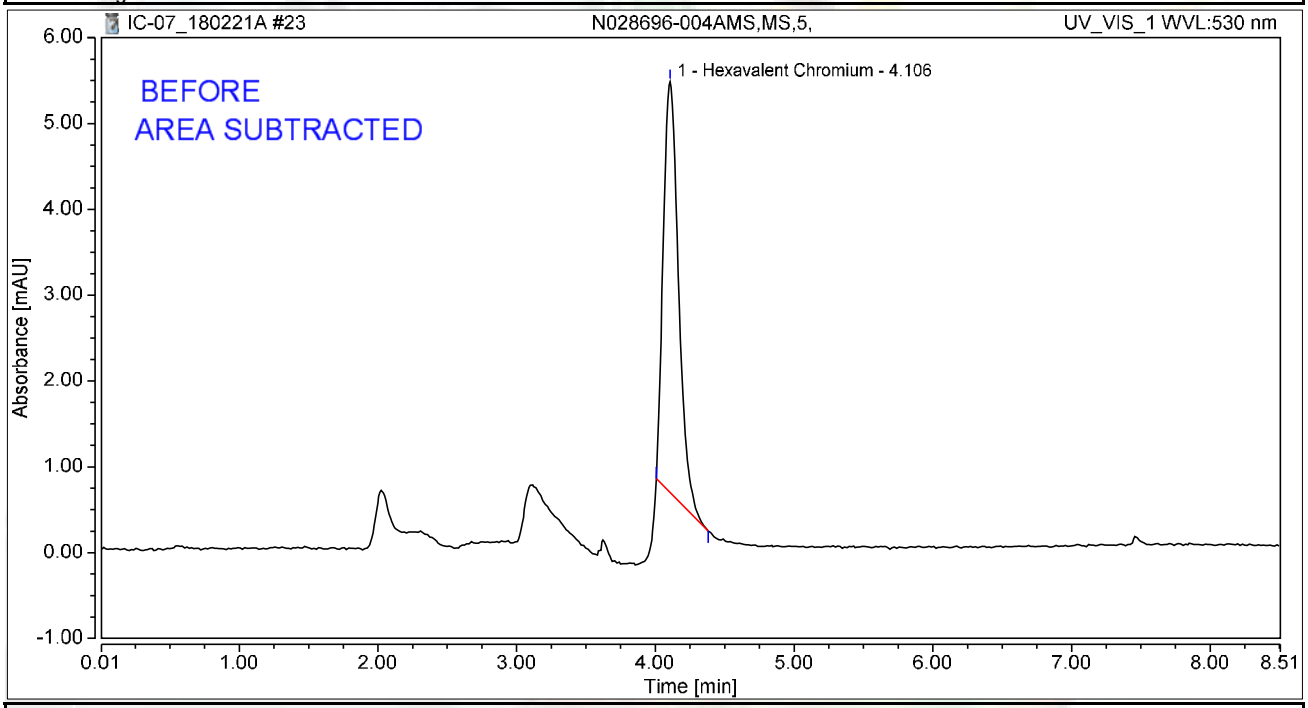
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.612	4.787	100.00	100.00	2.4527
Total:			**0.612**	**4.787**	**100.00**	**100.00**	

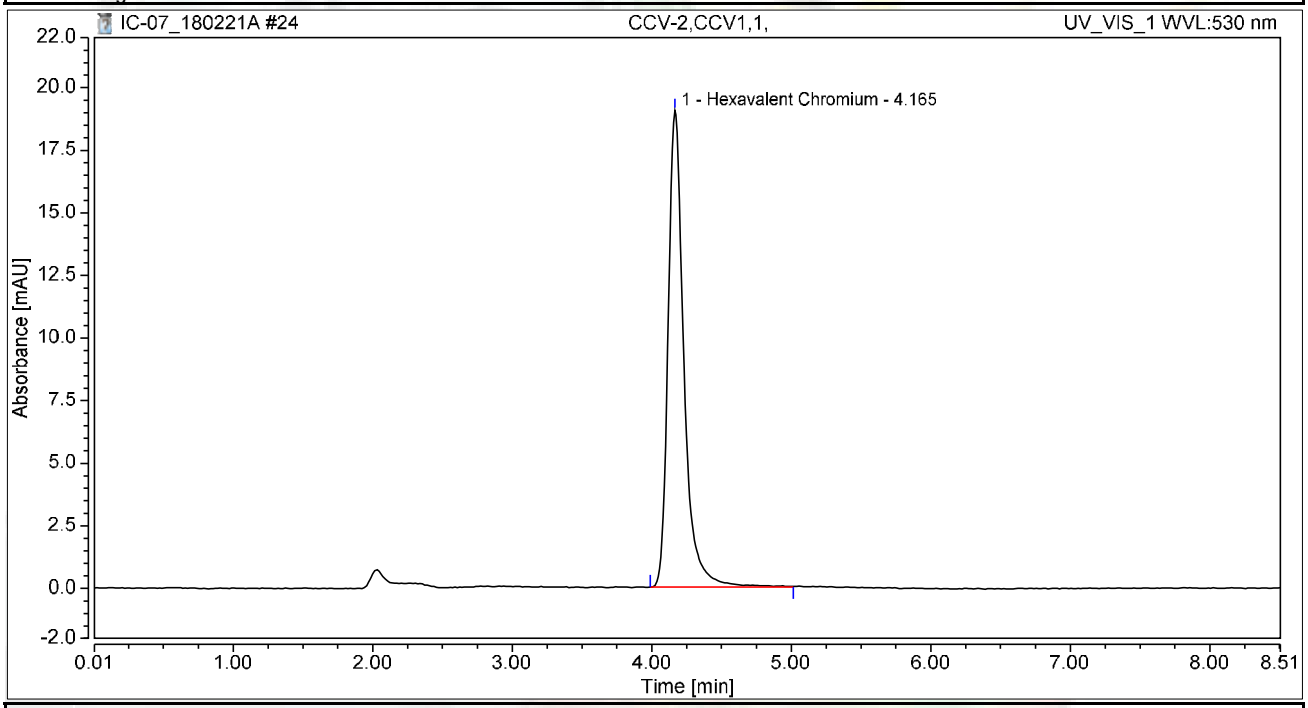
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

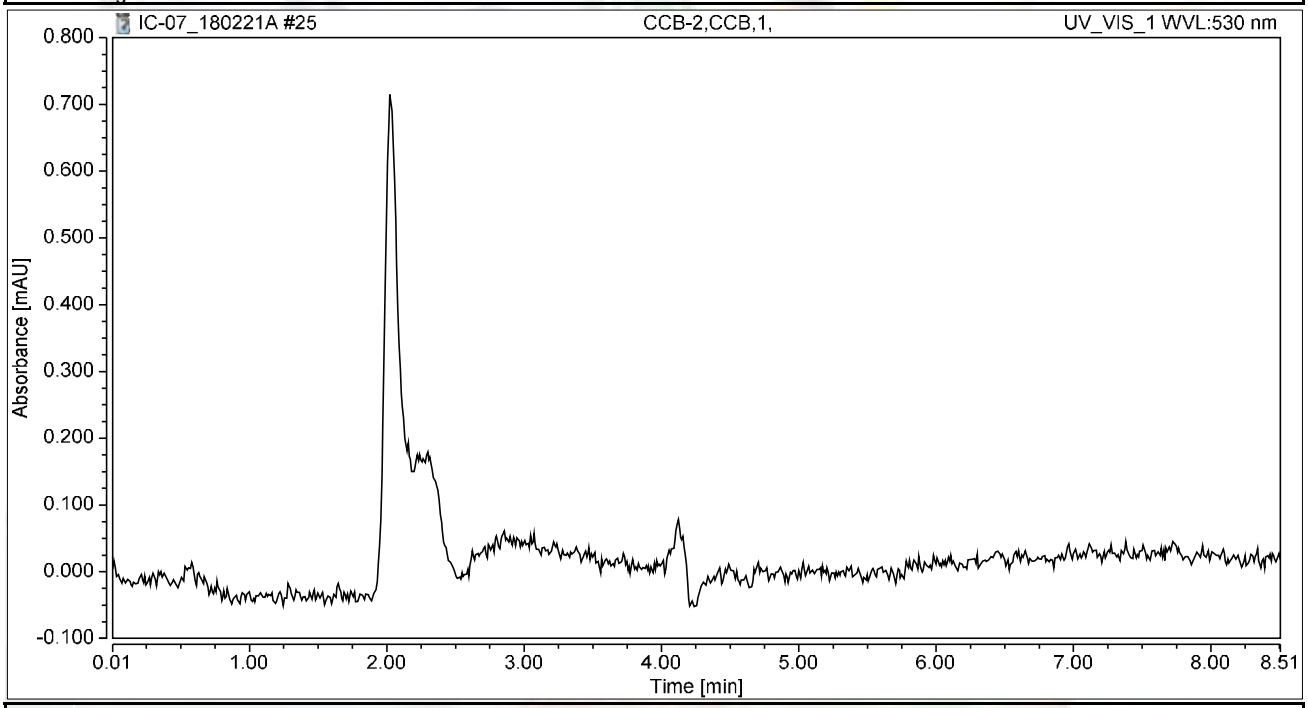
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.494	19.023	100.00	100.00	9.9919
Total:			**2.494**	**19.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

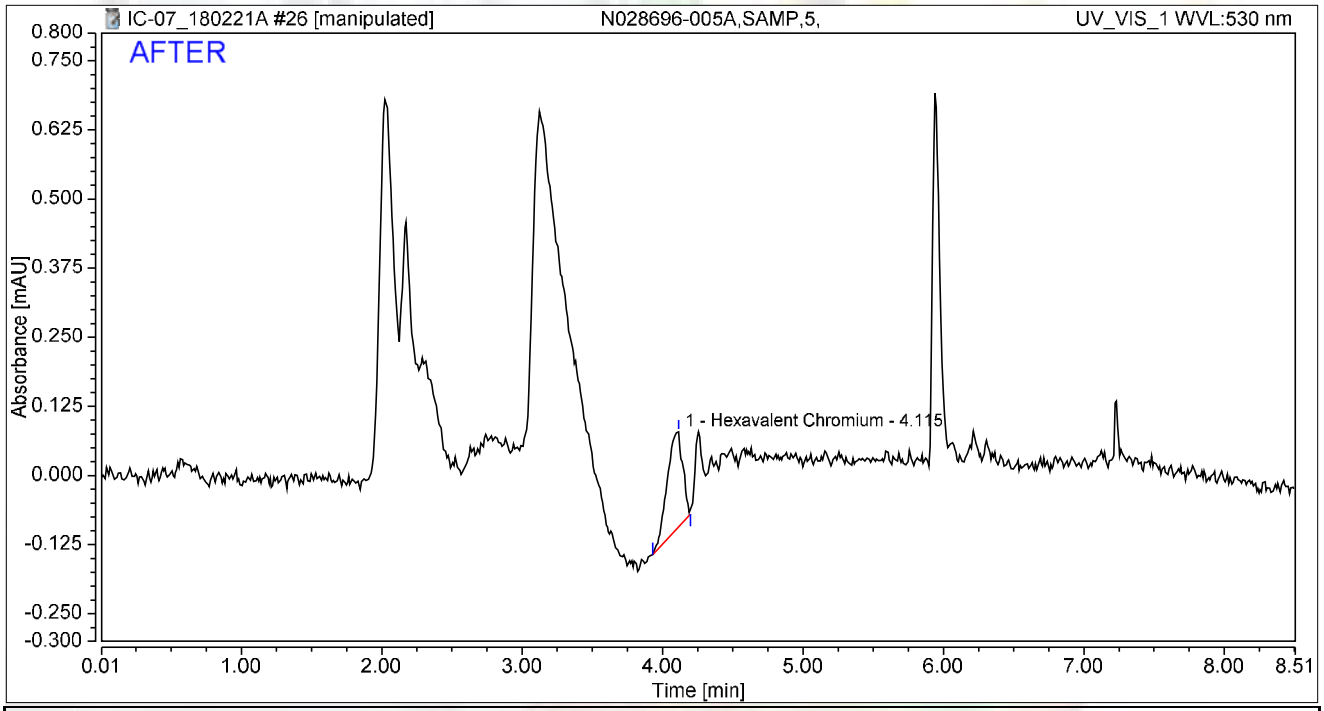
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.023	0.171	100.00	100.00	0.0905
Total:			**0.023**	**0.171**	**100.00**	**100.00**	

rba 2/25/2018

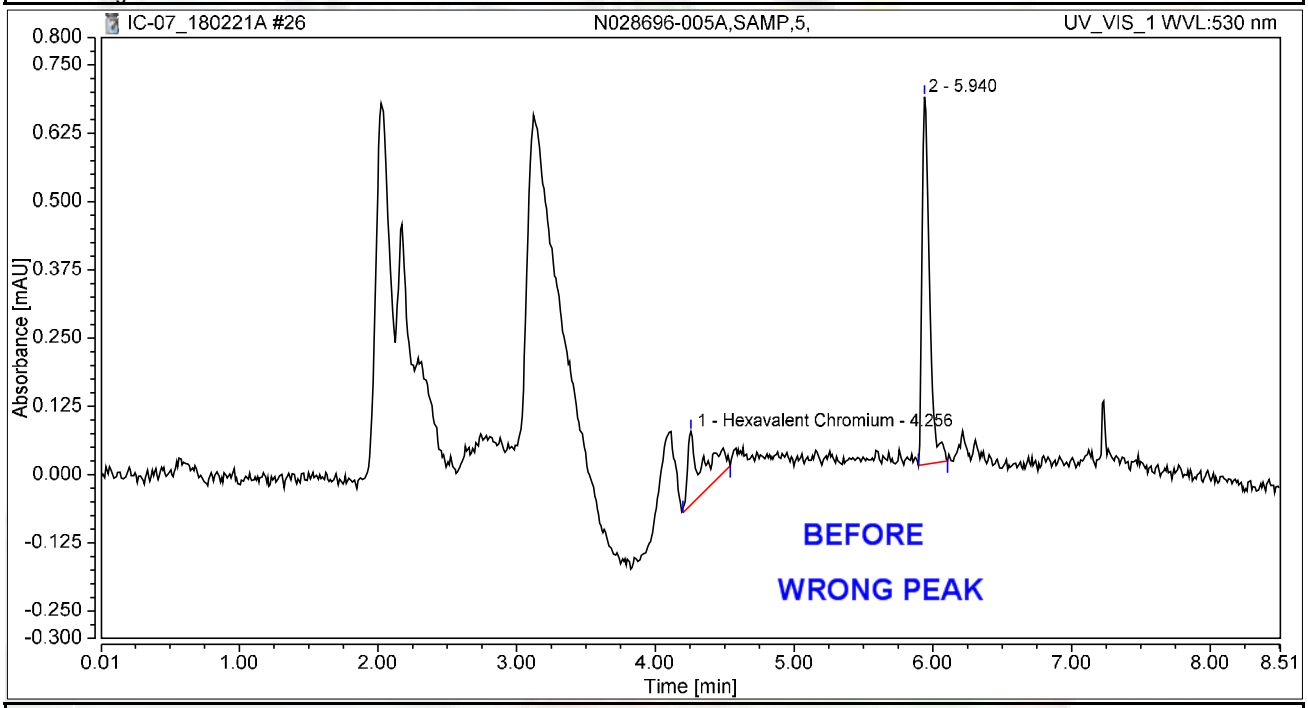
RLB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.018	0.134	29.39	16.58	0.0702
2		5.940	0.042	0.673	70.61	83.42	n.a.
Total:			**0.060**	**0.806**	**100.00**	**100.00**	

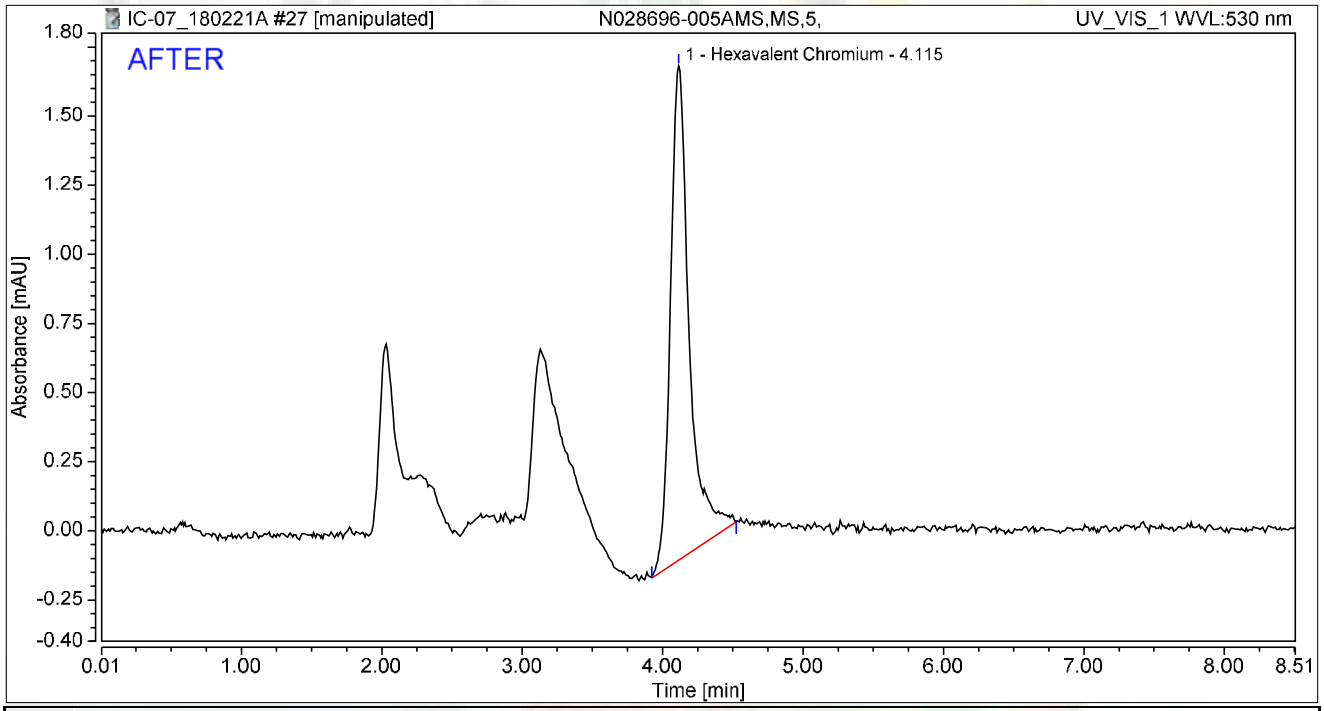
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.279	1.787	100.00	100.00	1.1171
Total:			**0.279**	**1.787**	**100.00**	**100.00**	

rba 2/25/2018

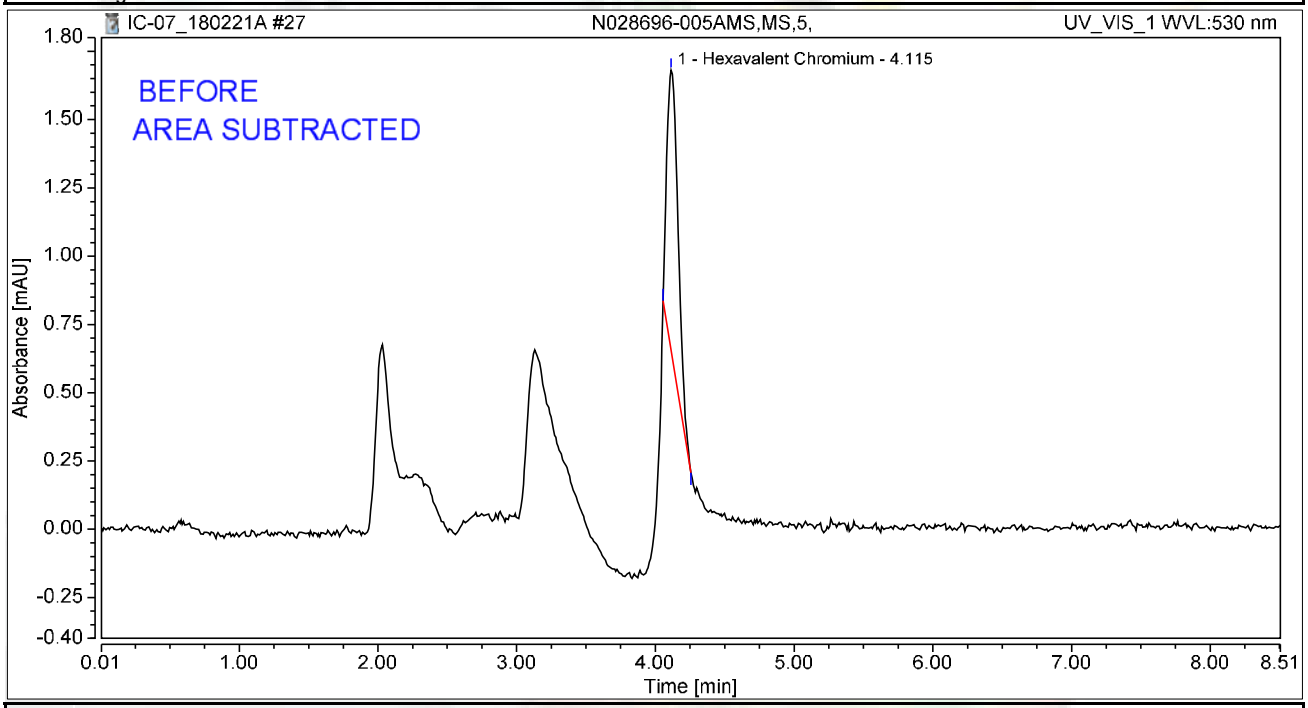
RLB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.097	1.027	100.00	100.00	0.3885
Total:			**0.097**	**1.027**	**100.00**	**100.00**	

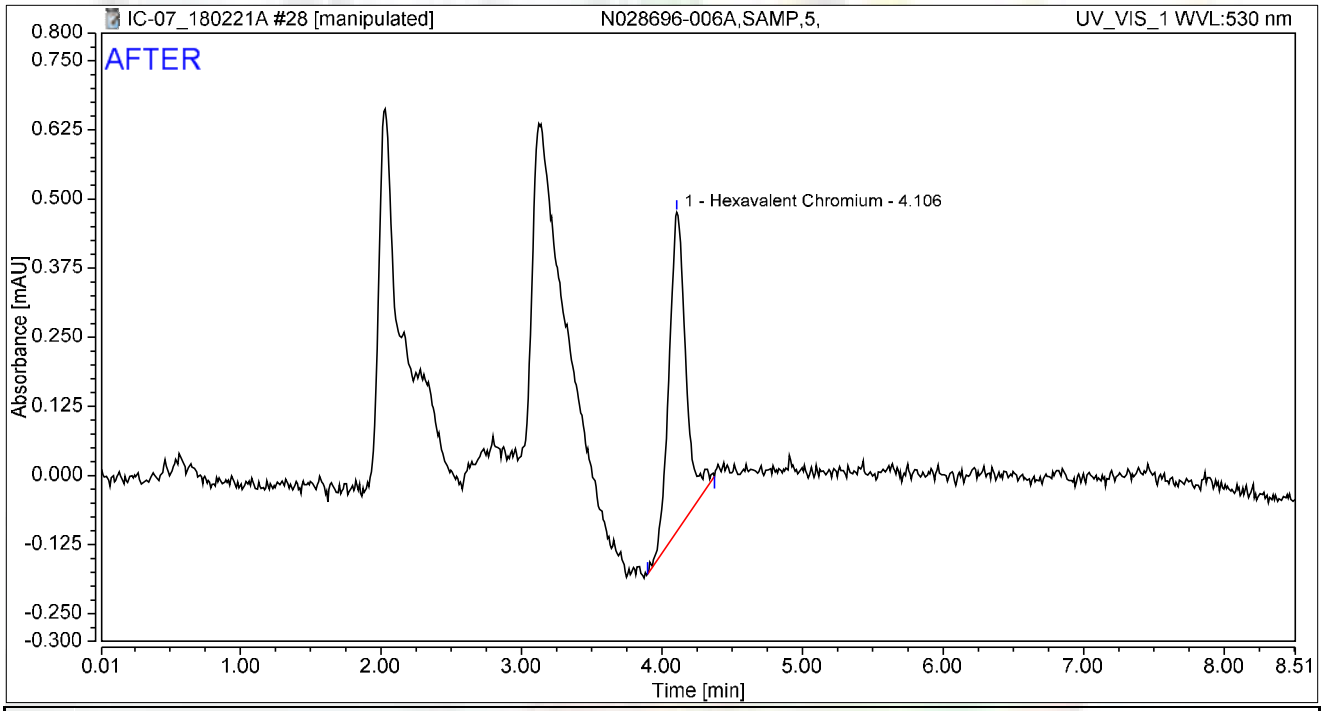
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.080	0.577	100.00	100.00	0.3224
Total:			**0.080**	**0.577**	**100.00**	**100.00**	

rba 2/25/2018

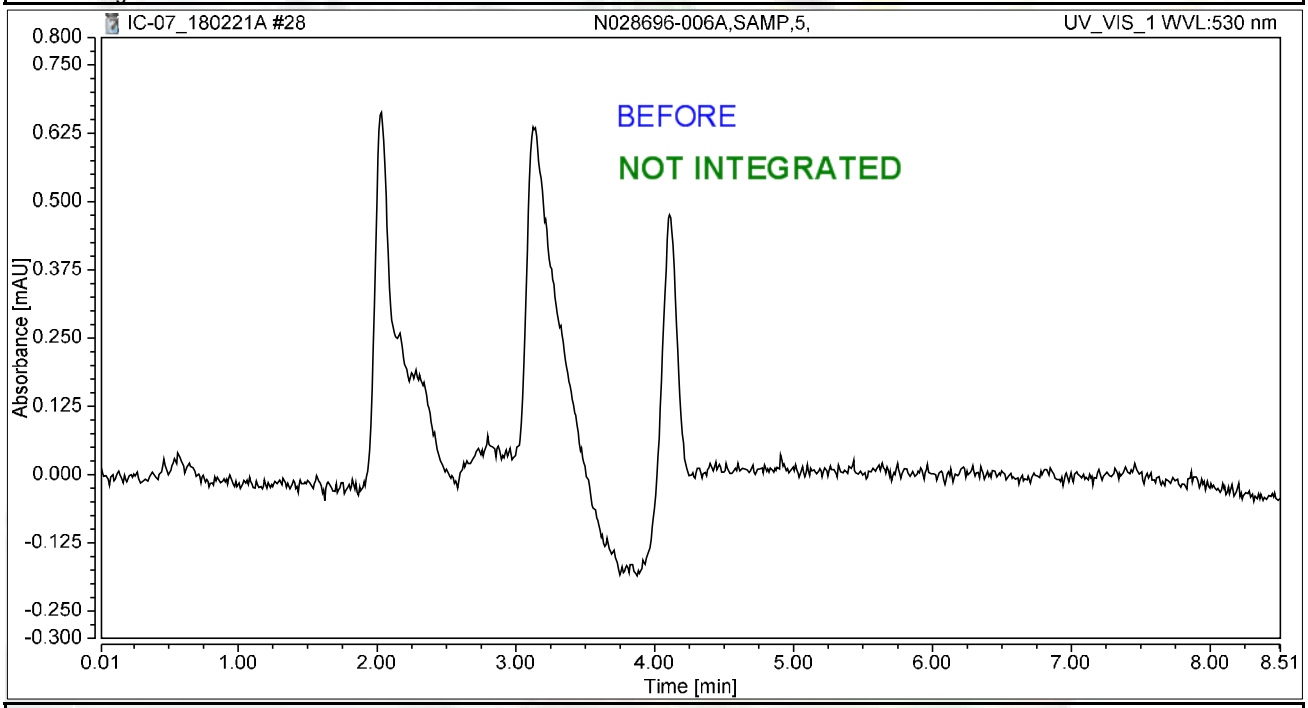
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

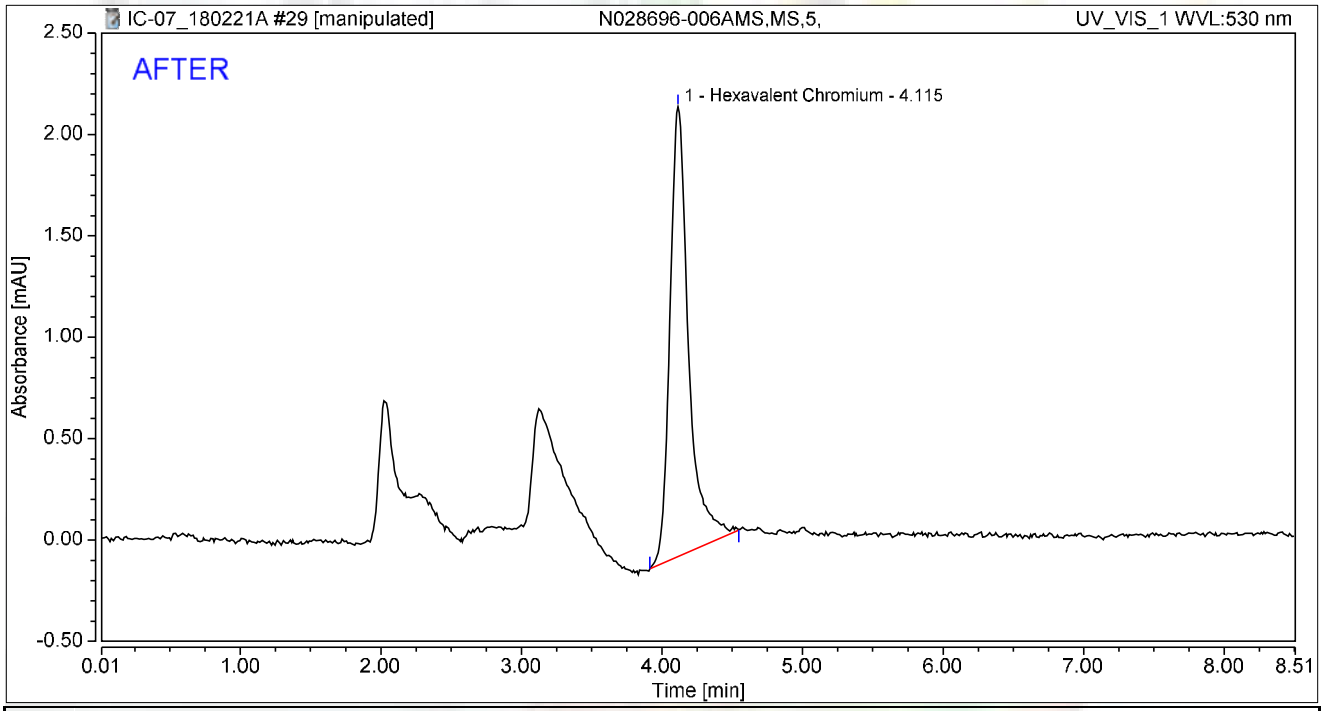
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.342	2.219	100.00	100.00	1.3710
Total:			**0.342**	**2.219**	**100.00**	**100.00**	

rba 2/25/2018

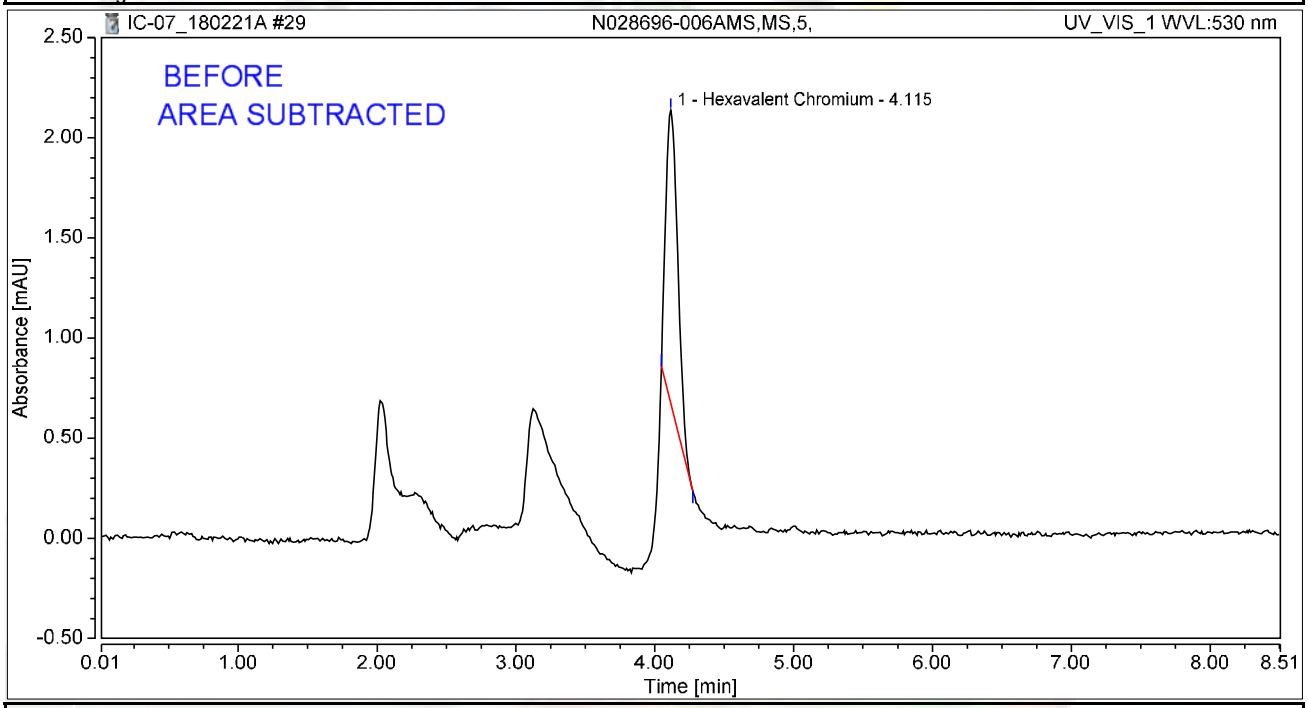
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.148	1.462	100.00	100.00	0.5942
Total:			**0.148**	**1.462**	**100.00**	**100.00**	

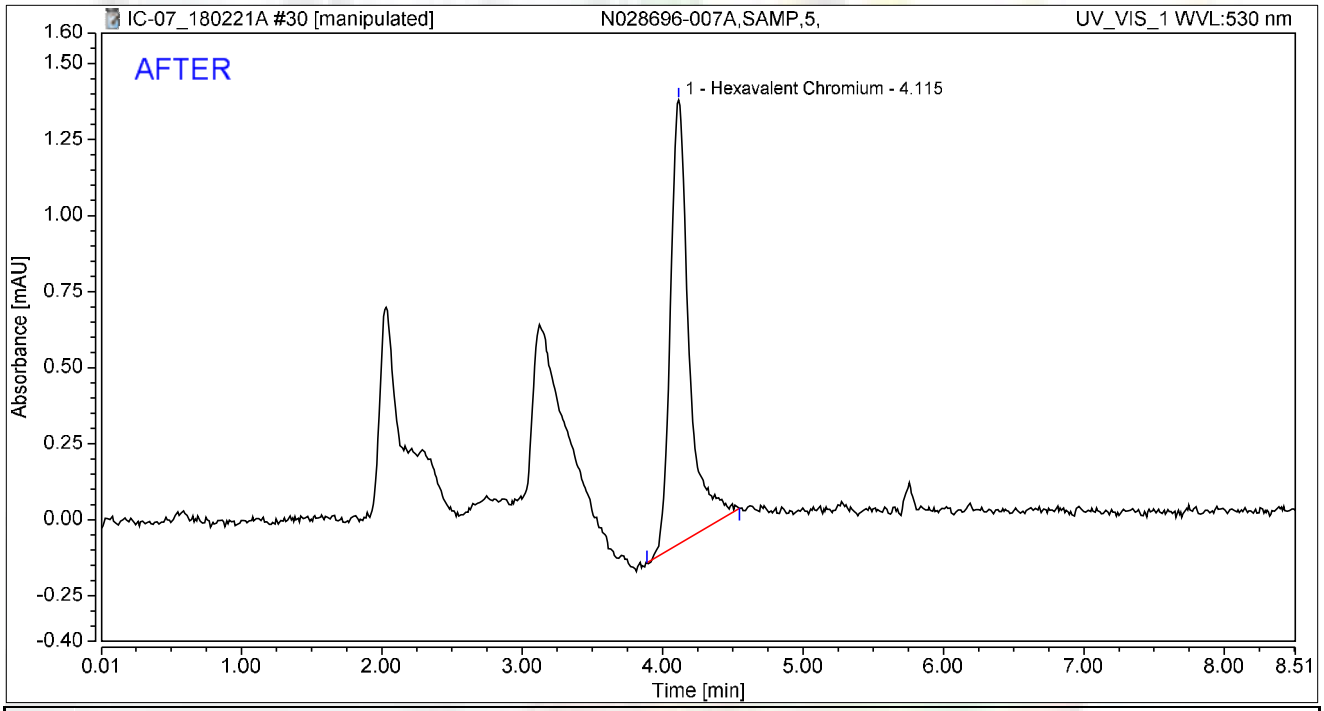
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.225	1.460	100.00	100.00	0.9013
Total:			**0.225**	**1.460**	**100.00**	**100.00**	

rba 2/25/2018

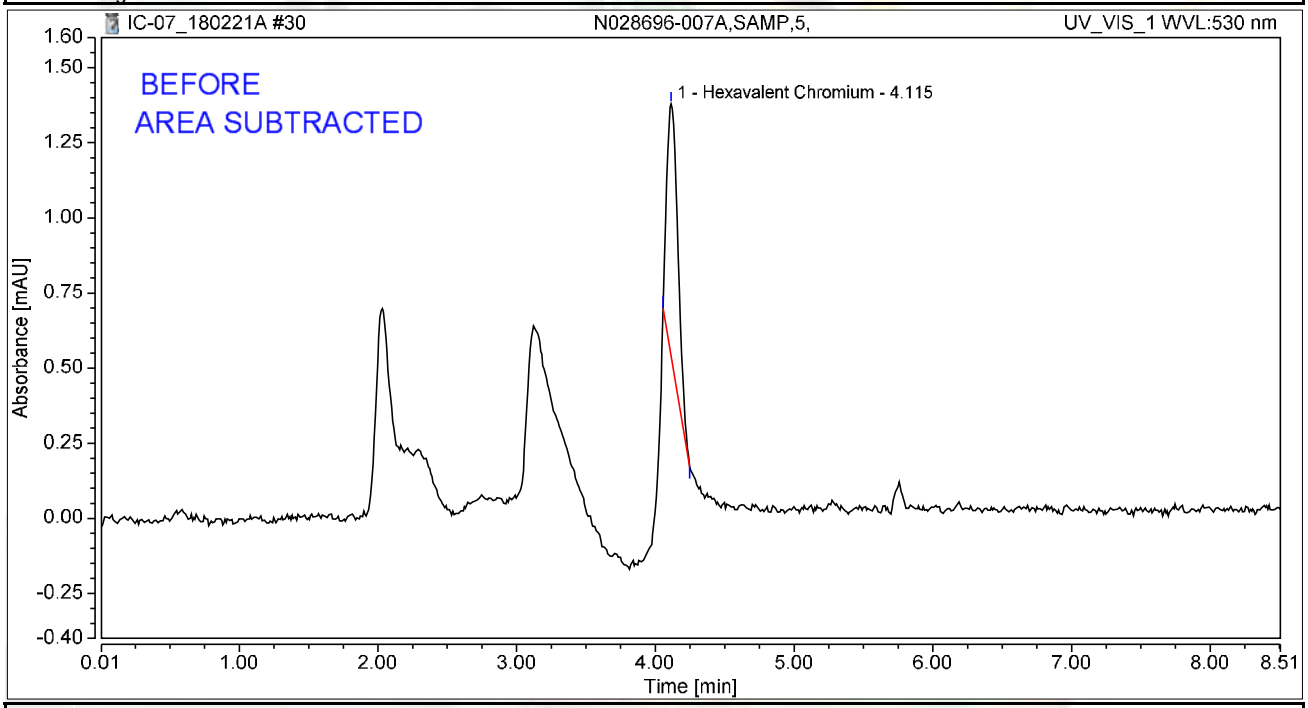
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.078	0.841	100.00	100.00	0.3137
Total:			**0.078**	**0.841**	**100.00**	**100.00**	

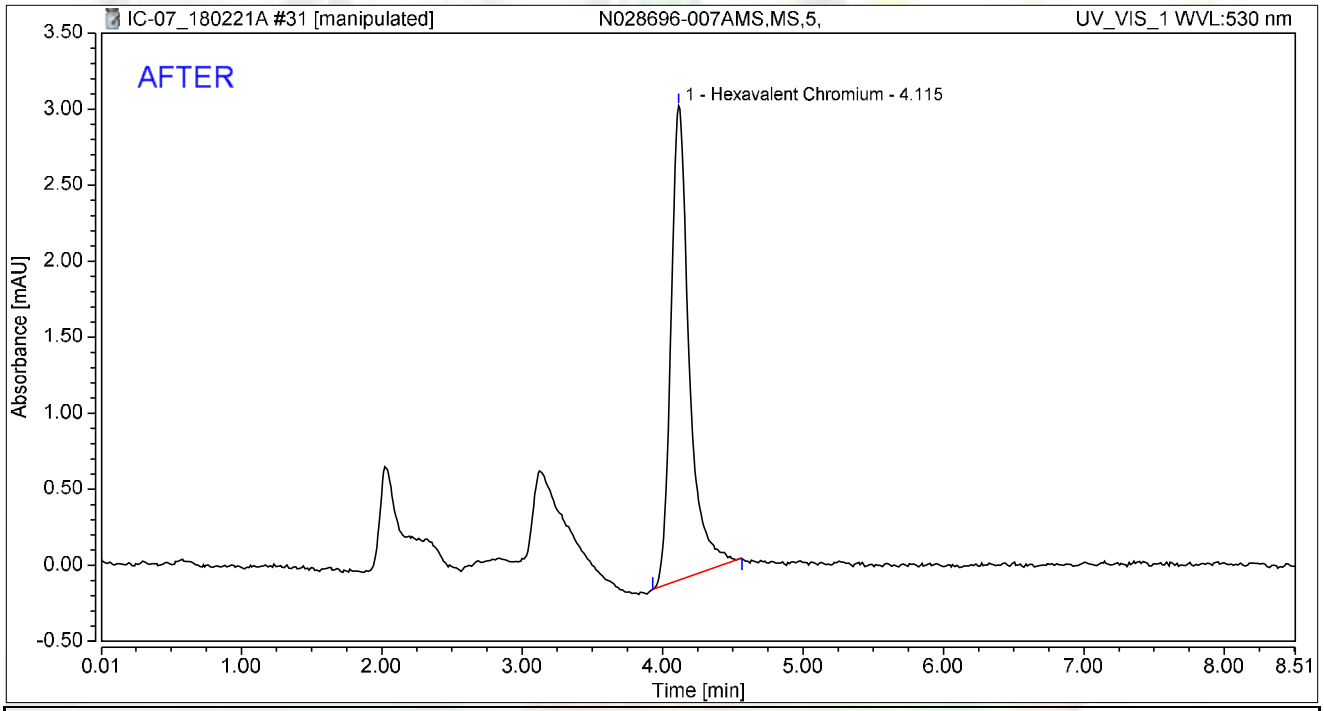
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.472	3.119	100.00	100.00	1.8920
Total:			**0.472**	**3.119**	**100.00**	**100.00**	

rba 2/25/2018

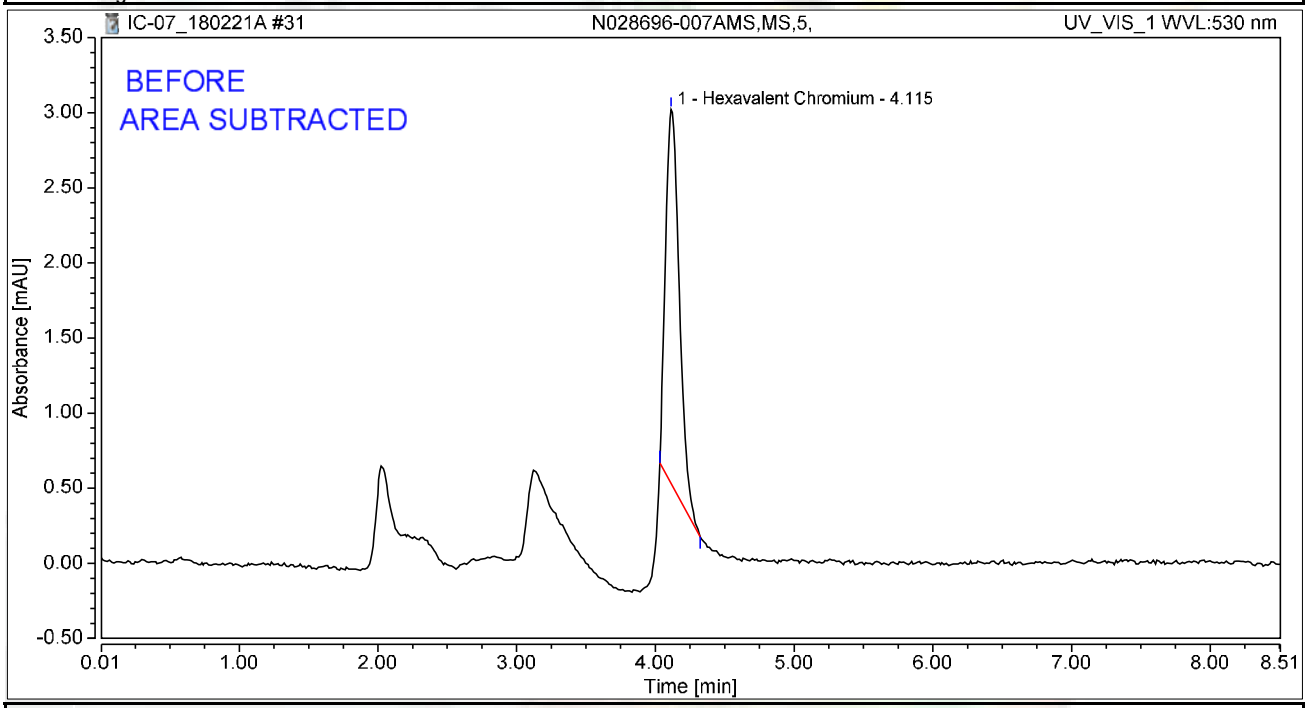
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.289	2.493	100.00	100.00	1.1577
Total:			**0.289**	**2.493**	**100.00**	**100.00**	

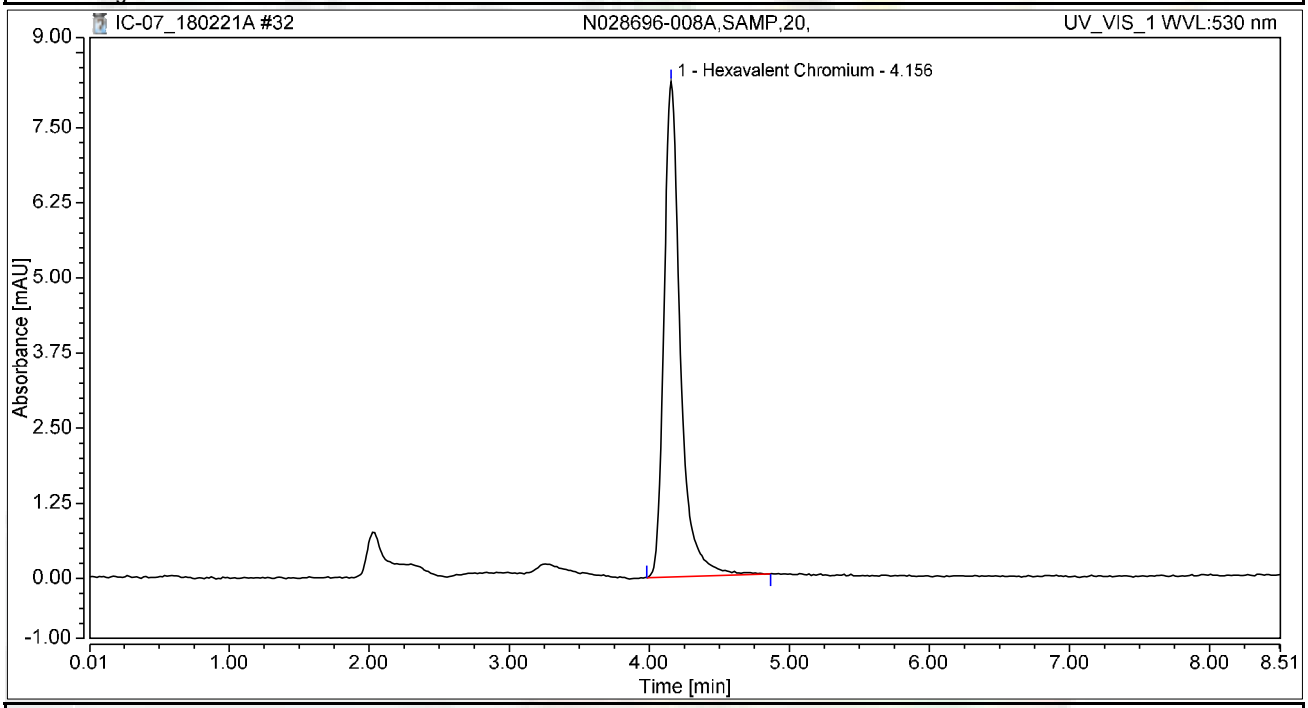
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-008A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 12:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

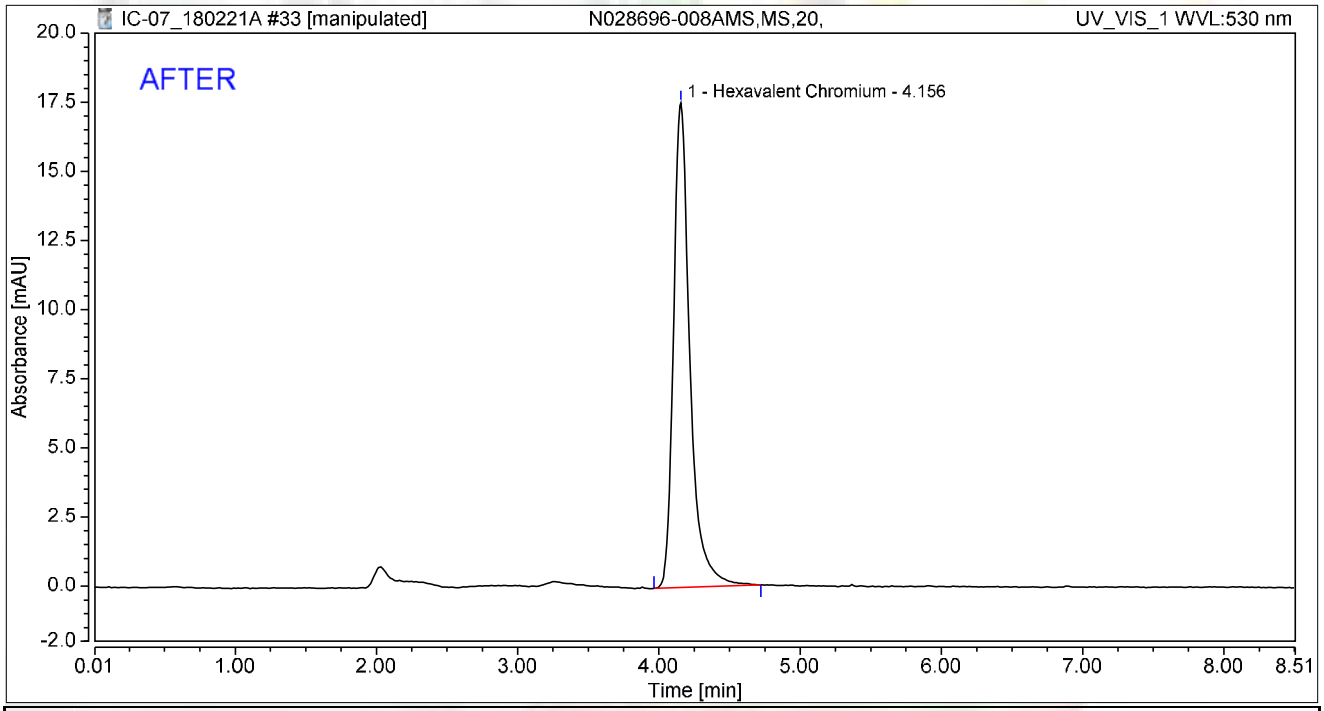
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.121	8.245	100.00	100.00	4.4895
Total:			**1.121**	**8.245**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-008AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.364	17.532	100.00	100.00	9.4673
Total:			**2.364**	**17.532**	**100.00**	**100.00**	

rba 2/25/2018

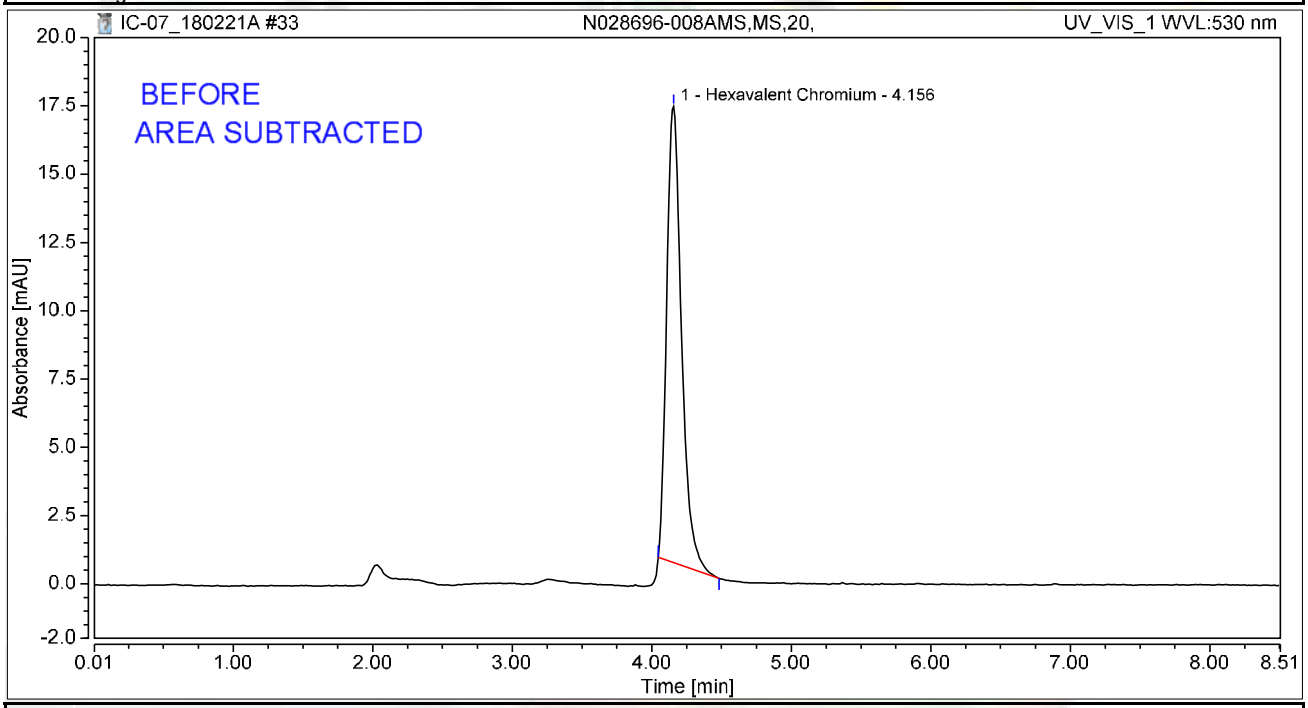
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-008AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.058	16.704	100.00	100.00	8.2443
Total:			**2.058**	**16.704**	**100.00**	**100.00**	

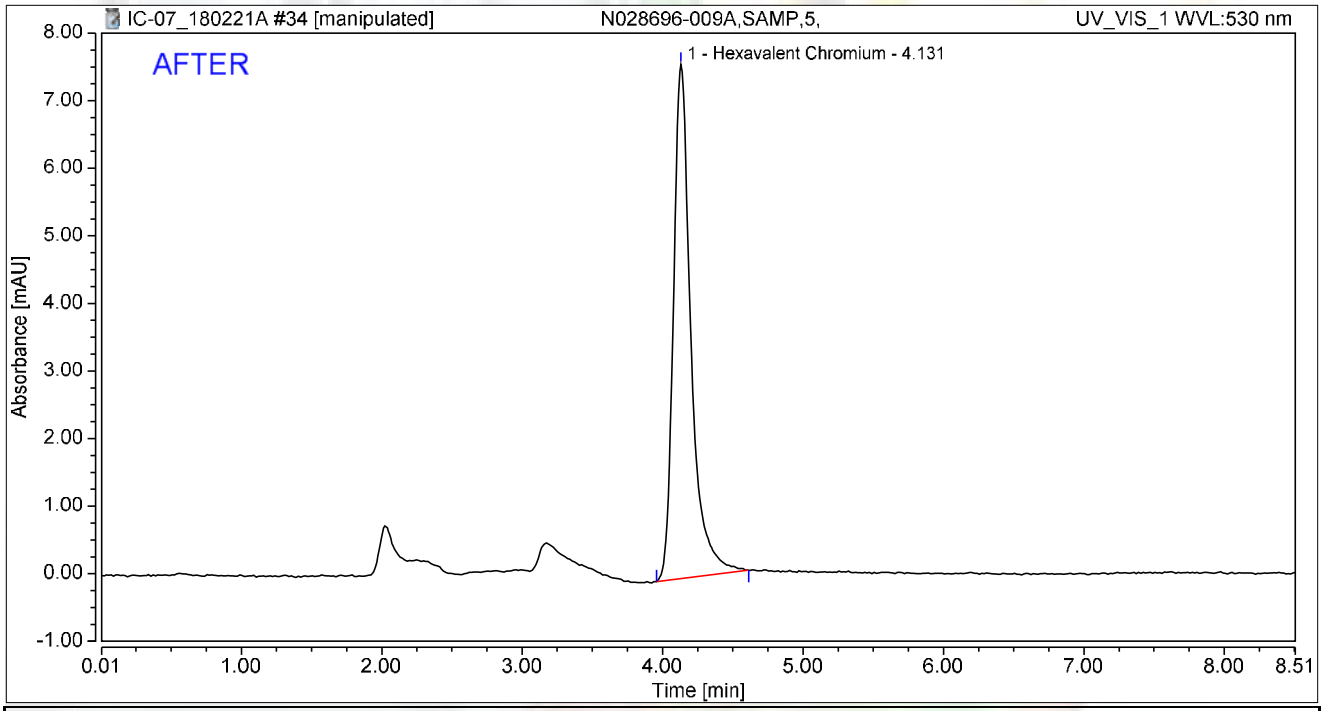
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.100	7.610	100.00	100.00	4.4048
Total:			**1.100**	**7.610**	**100.00**	**100.00**	

rba 2/25/2018

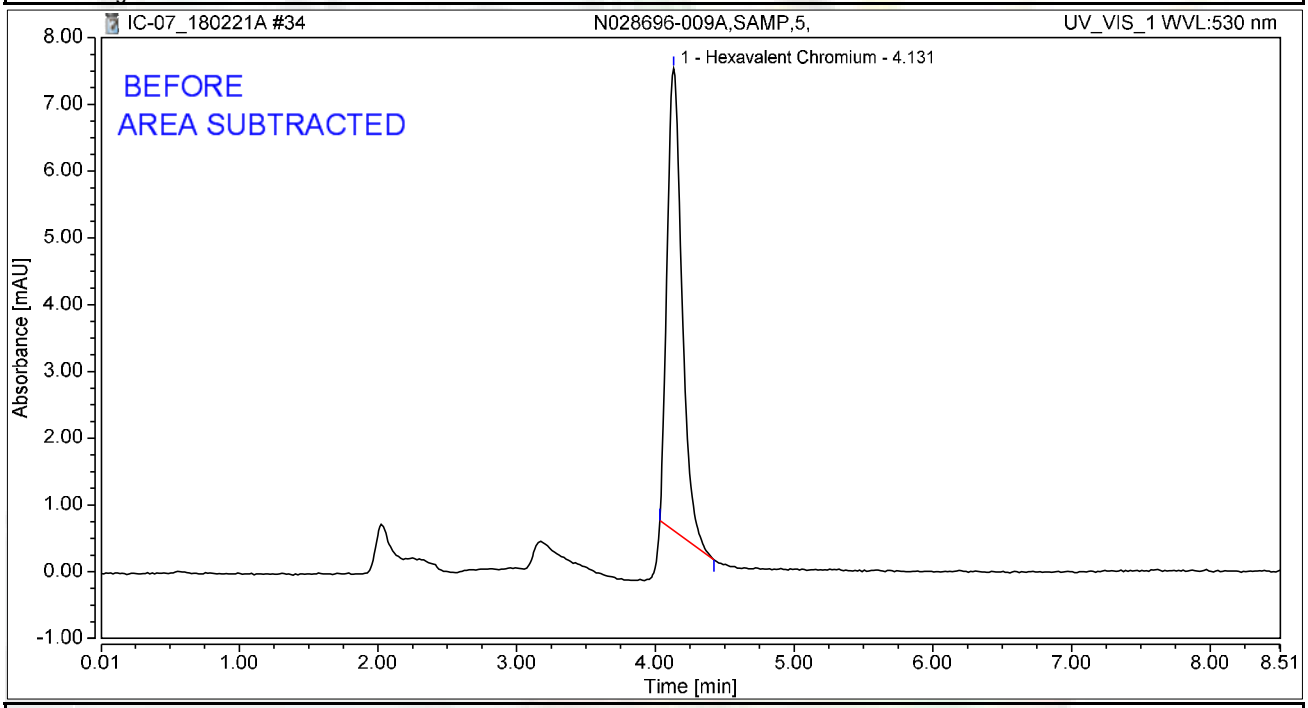
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.865	6.919	100.00	100.00	3.4654
Total:			**0.865**	**6.919**	**100.00**	**100.00**	

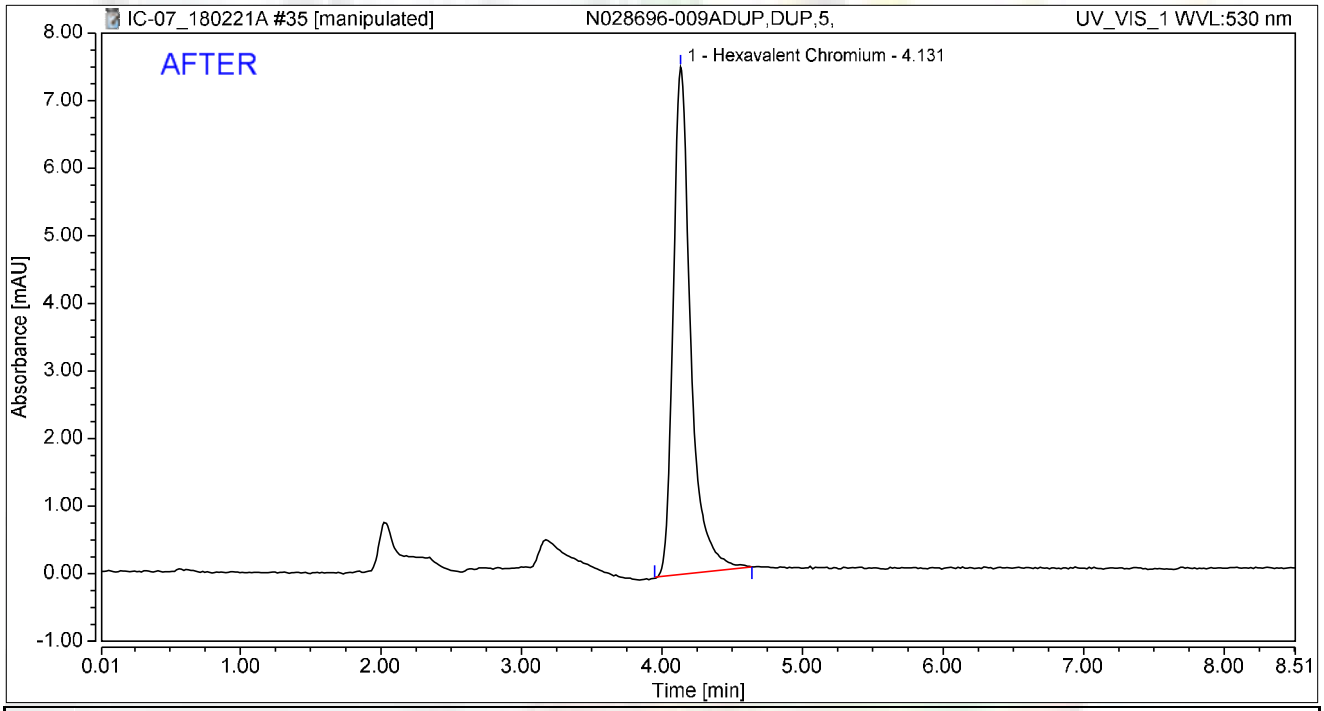
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-009ADUP,DUP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.085	7.509	100.00	100.00	4.3471
Total:			**1.085**	**7.509**	**100.00**	**100.00**	

rba 2/25/2018

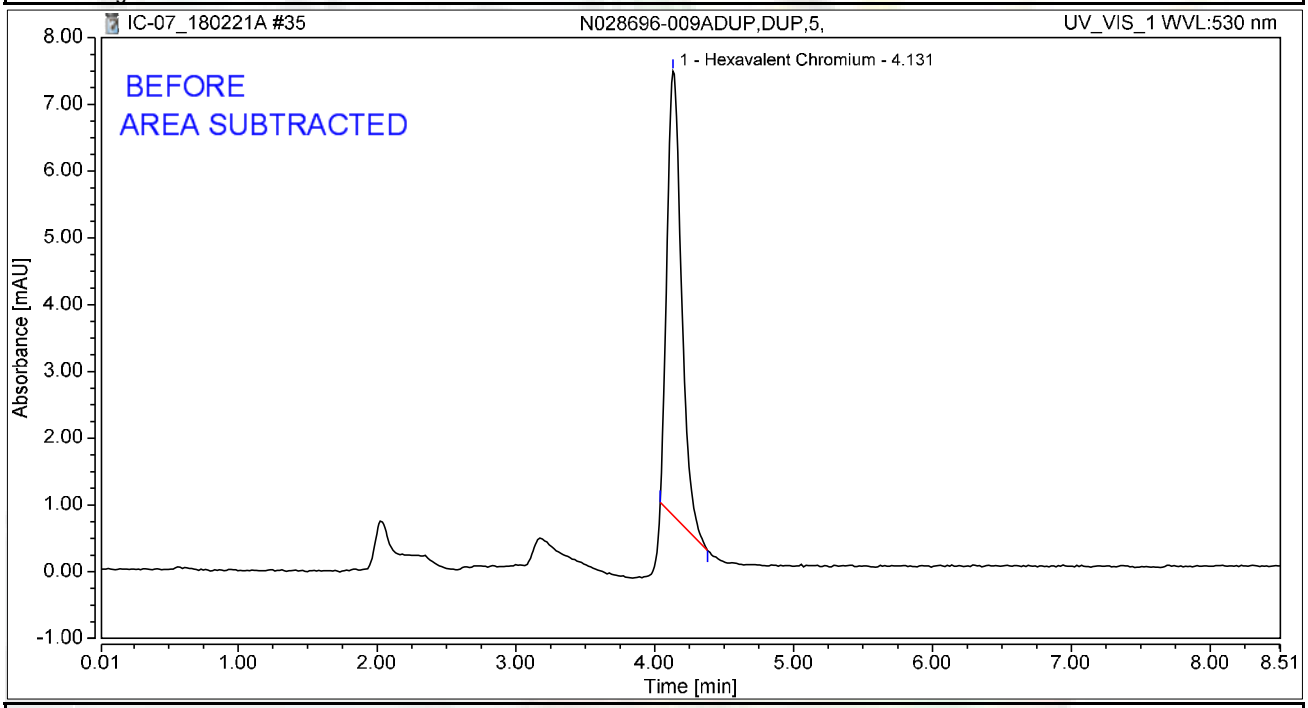
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-009ADUP,DUP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.809	6.651	100.00	100.00	3.2424
Total:			**0.809**	**6.651**	**100.00**	**100.00**	

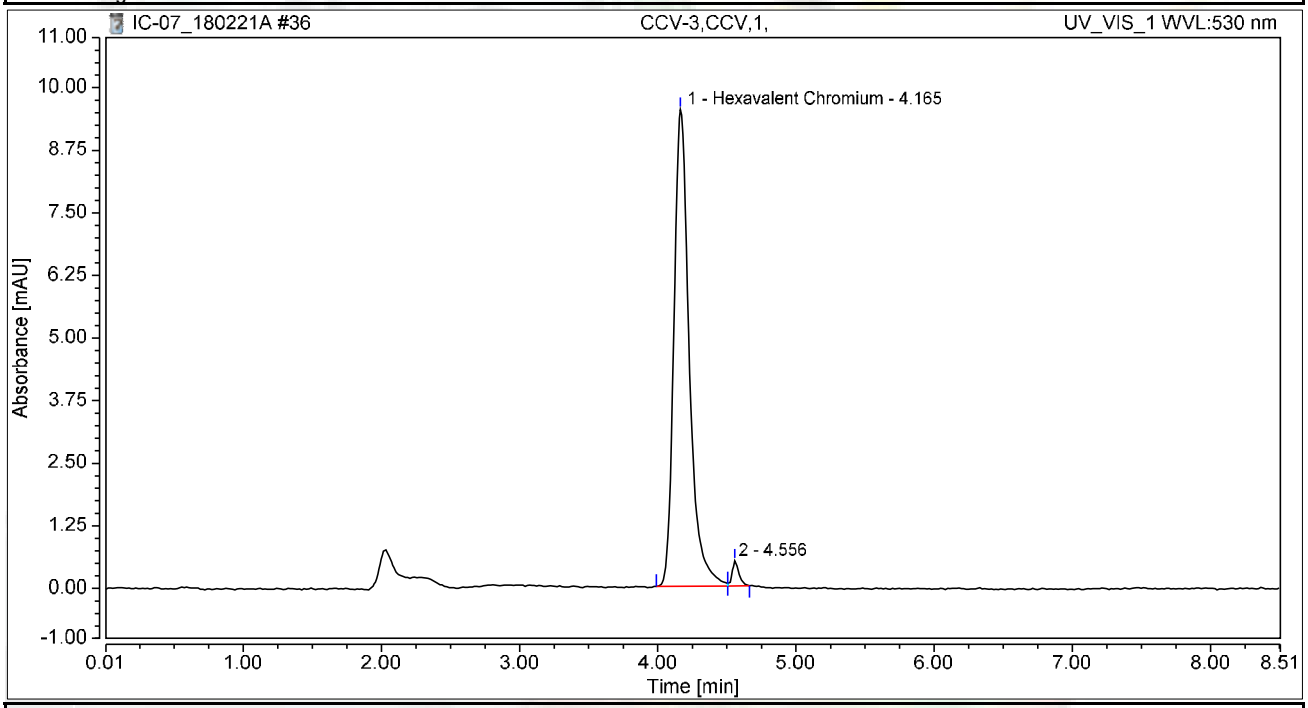
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

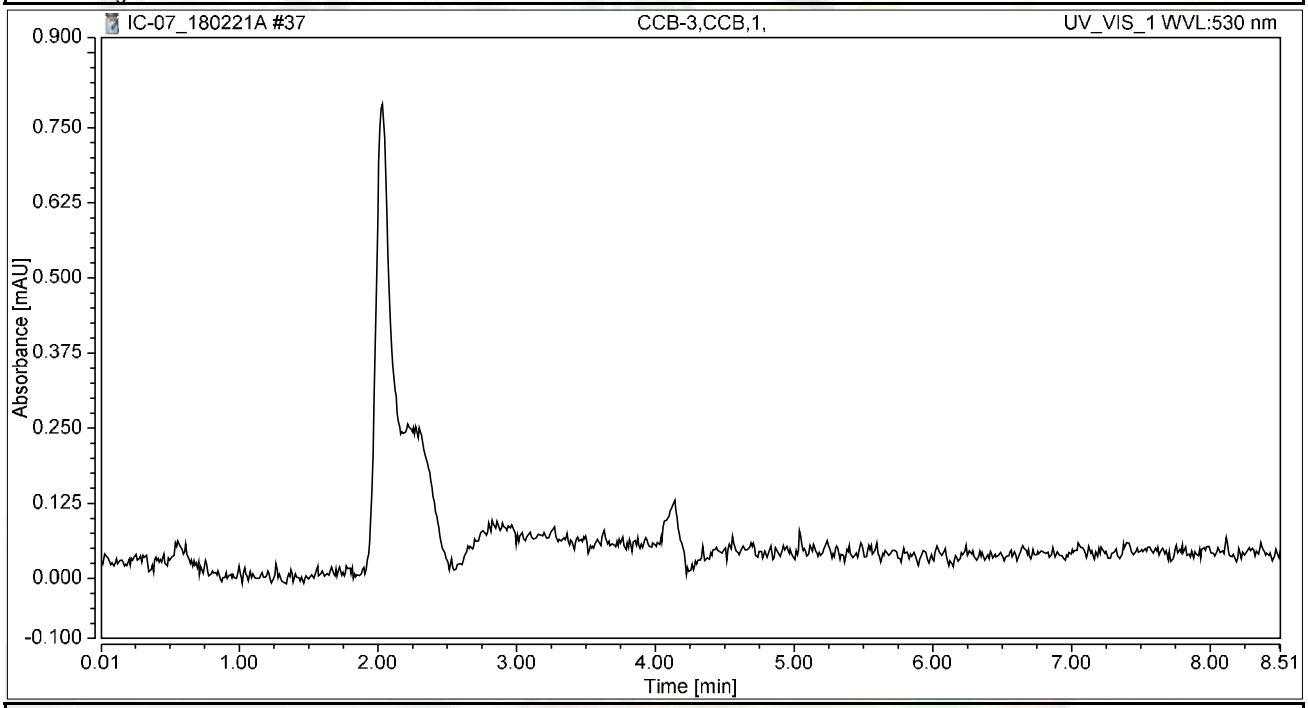
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.225	9.524	97.72	95.03	4.9065
2		4.556	0.029	0.498	2.28	4.97	n.a.
Total:			**1.254**	**10.021**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

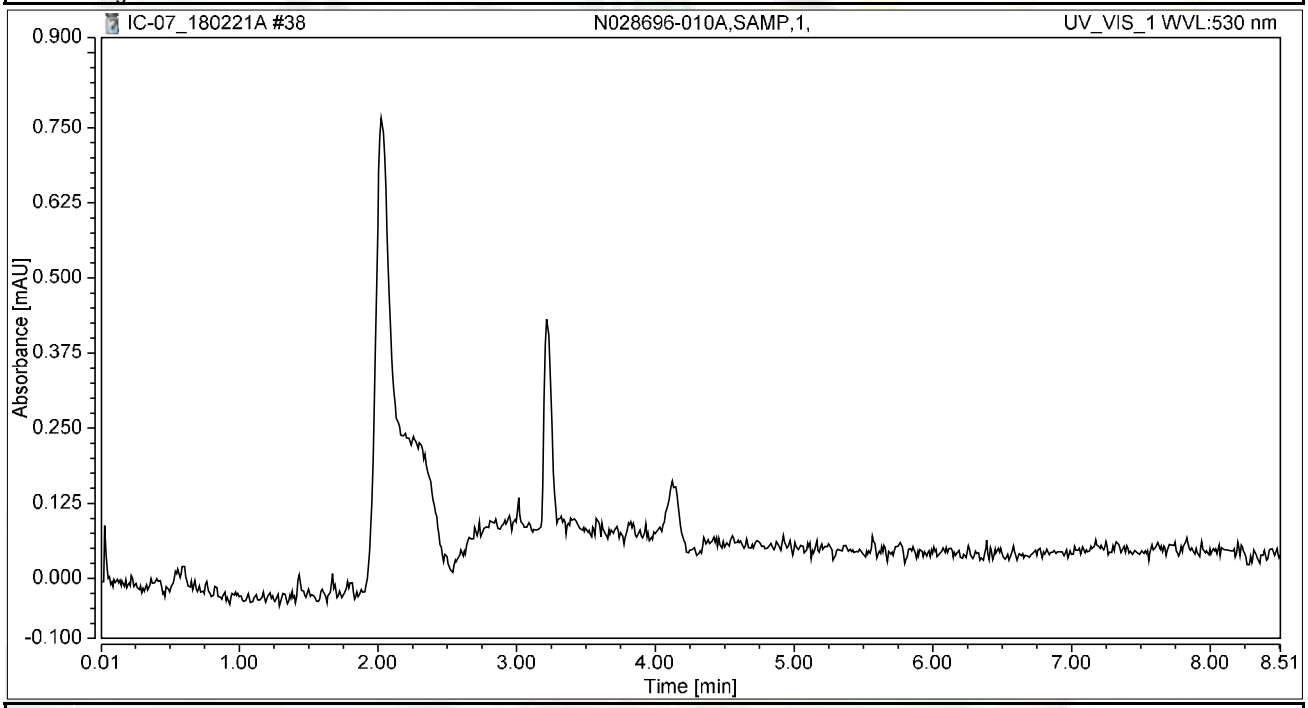
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

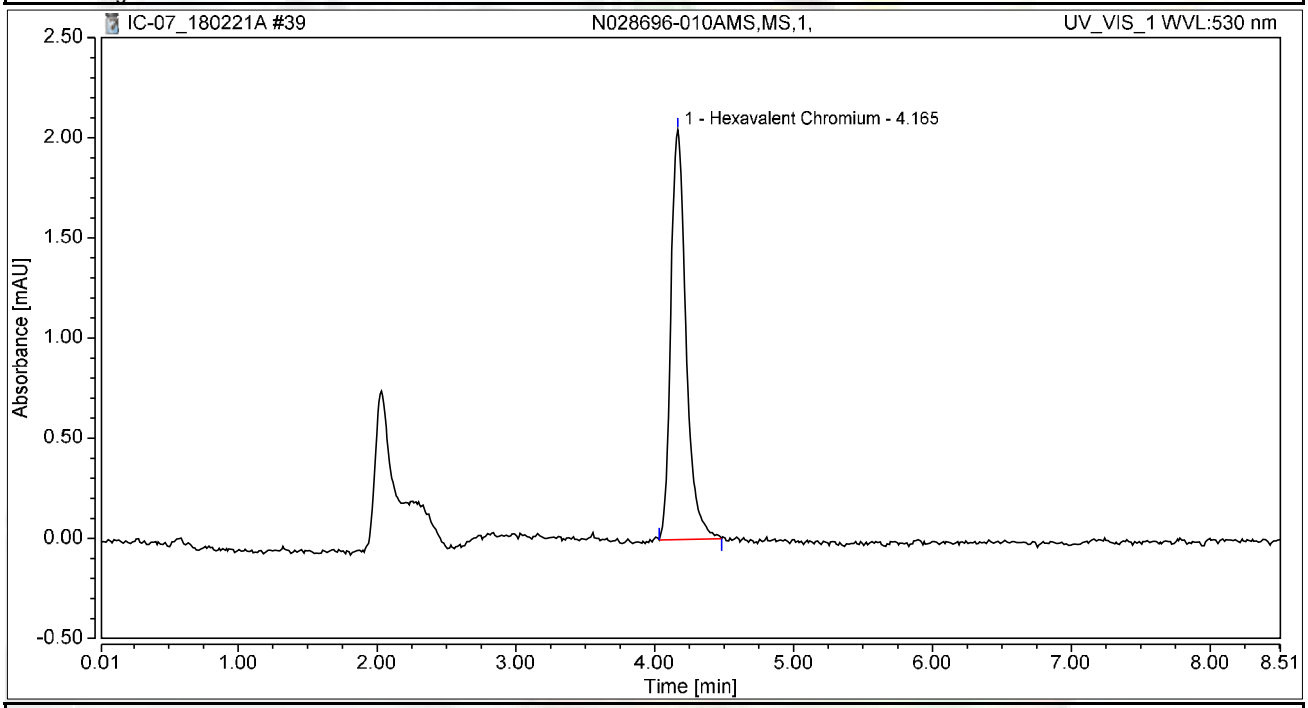
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

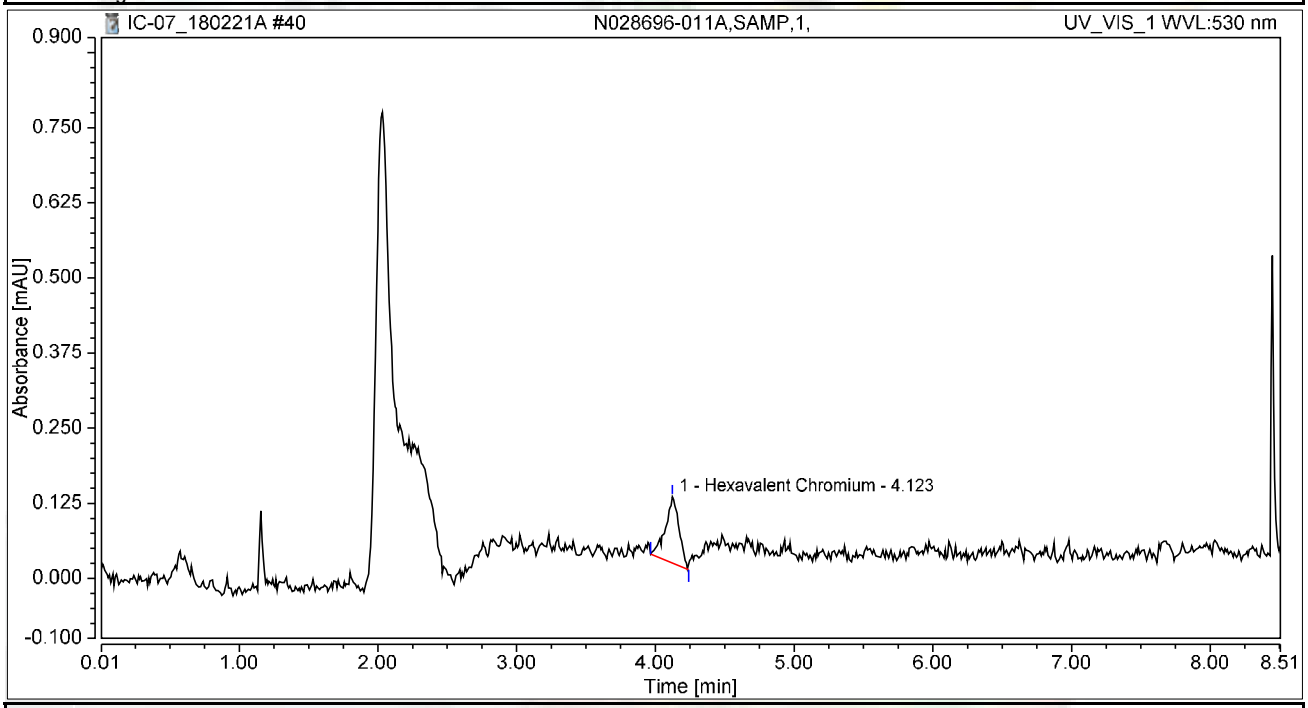
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.261	2.046	100.00	100.00	1.0436
Total:			**0.261**	**2.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

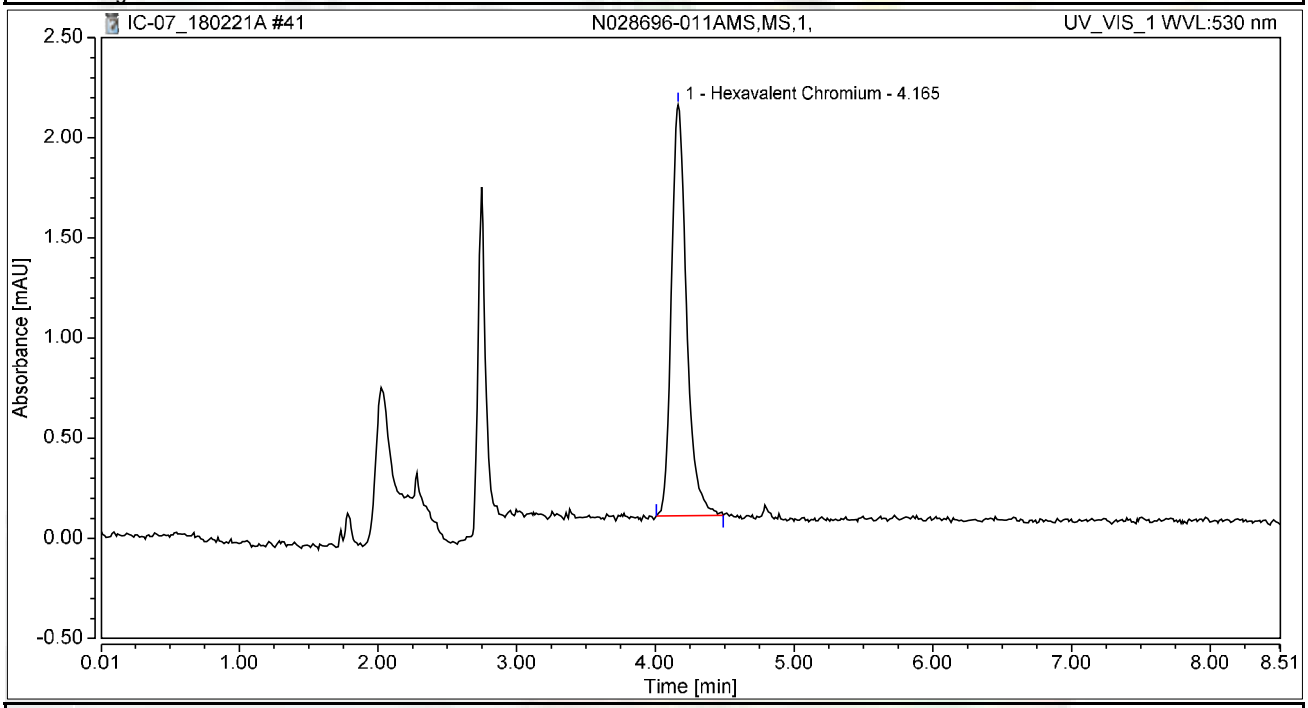
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.013	0.110	100.00	100.00	0.0504
Total:			**0.013**	**0.110**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

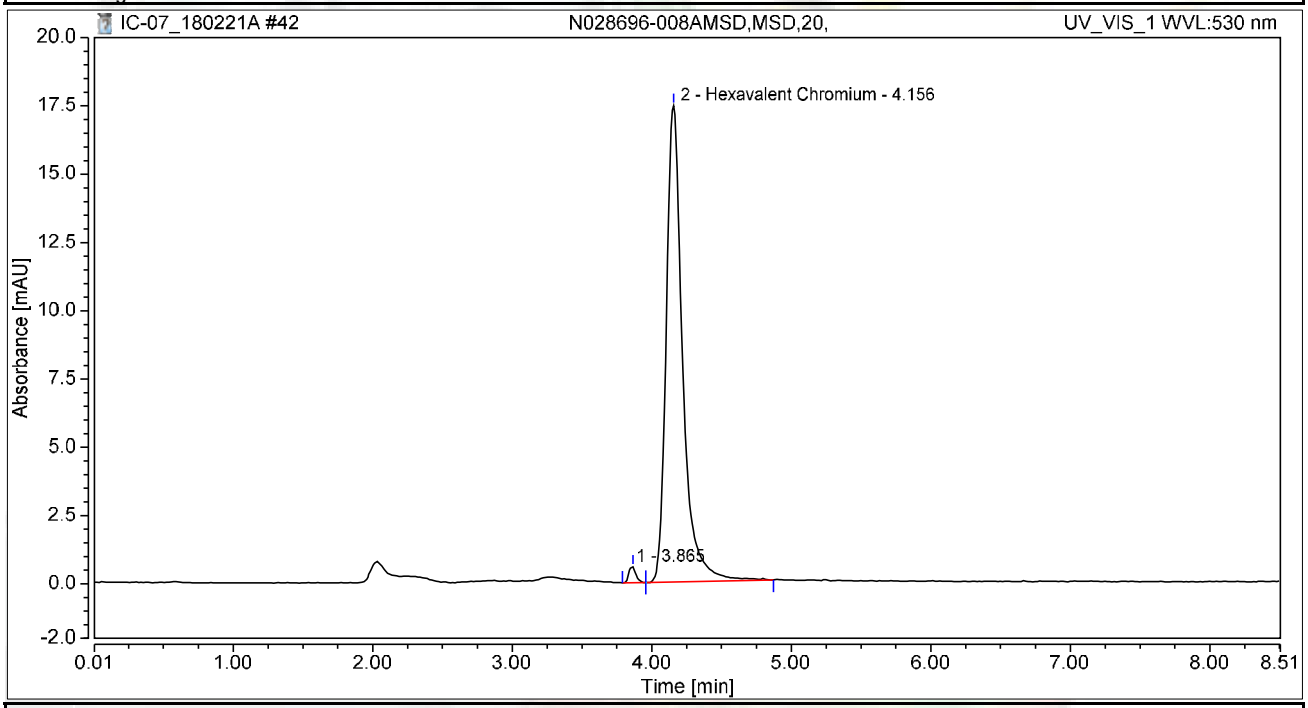
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.260	2.053	100.00	100.00	1.0397
Total:			**0.260**	**2.053**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-008AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

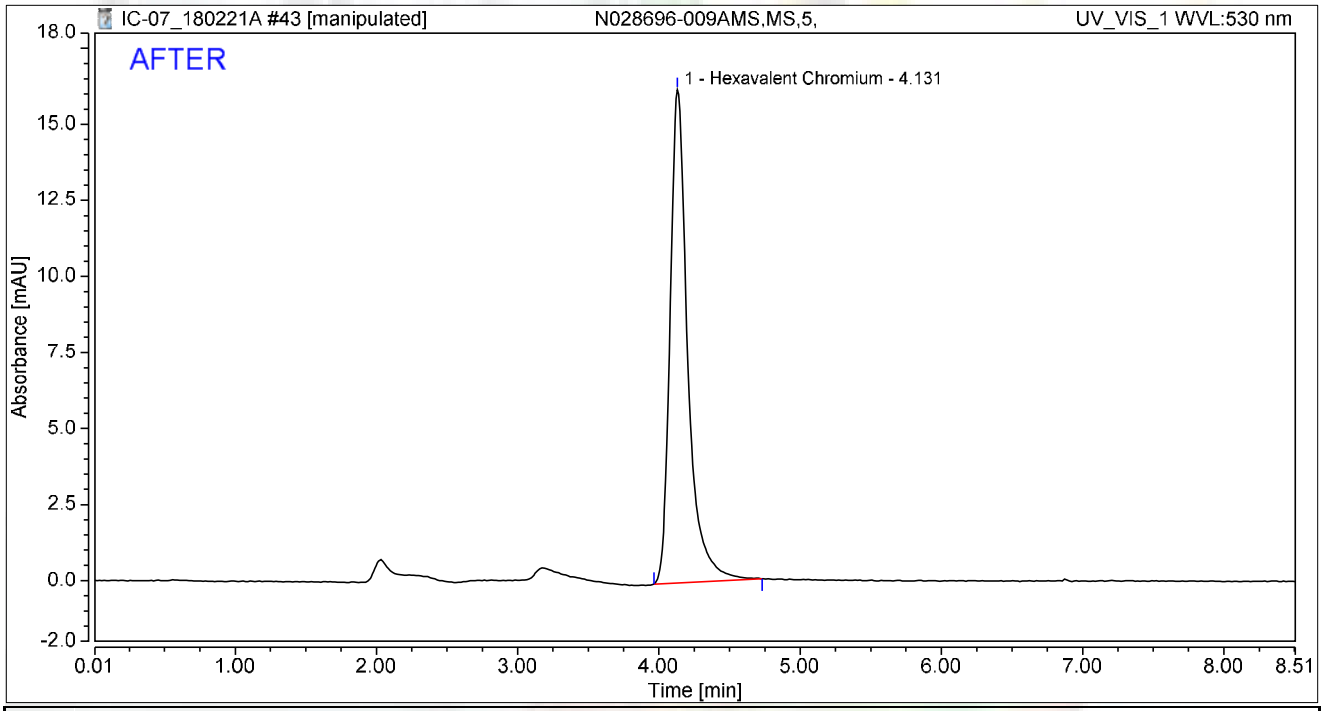
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.865	0.034	0.583	1.42	3.23	n.a.
2	Hexavalent Chromium	4.156	2.374	17.446	98.58	96.77	9.5089
Total:			**2.408**	**18.028**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.357	16.214	100.00	100.00	9.4430
Total:			**2.357**	**16.214**	**100.00**	**100.00**	

rba 2/25/2018

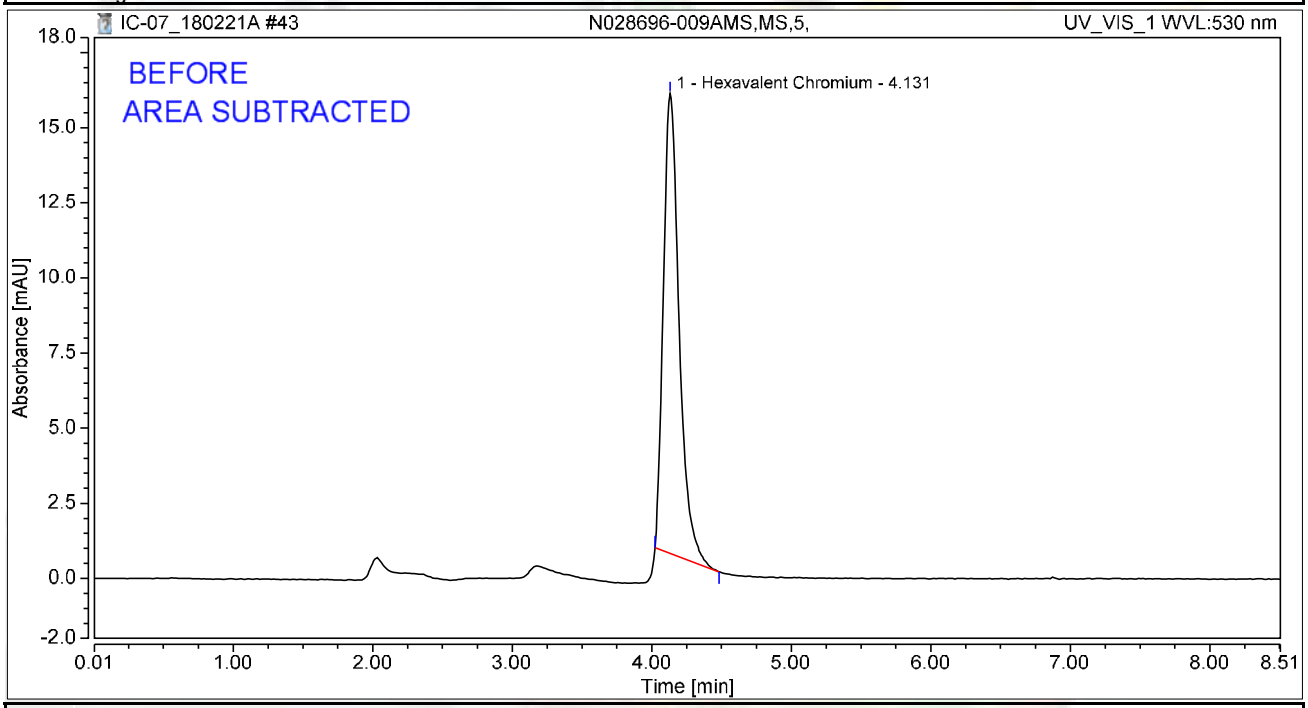
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.010	15.303	100.00	100.00	8.0515
Total:			**2.010**	**15.303**	**100.00**	**100.00**	

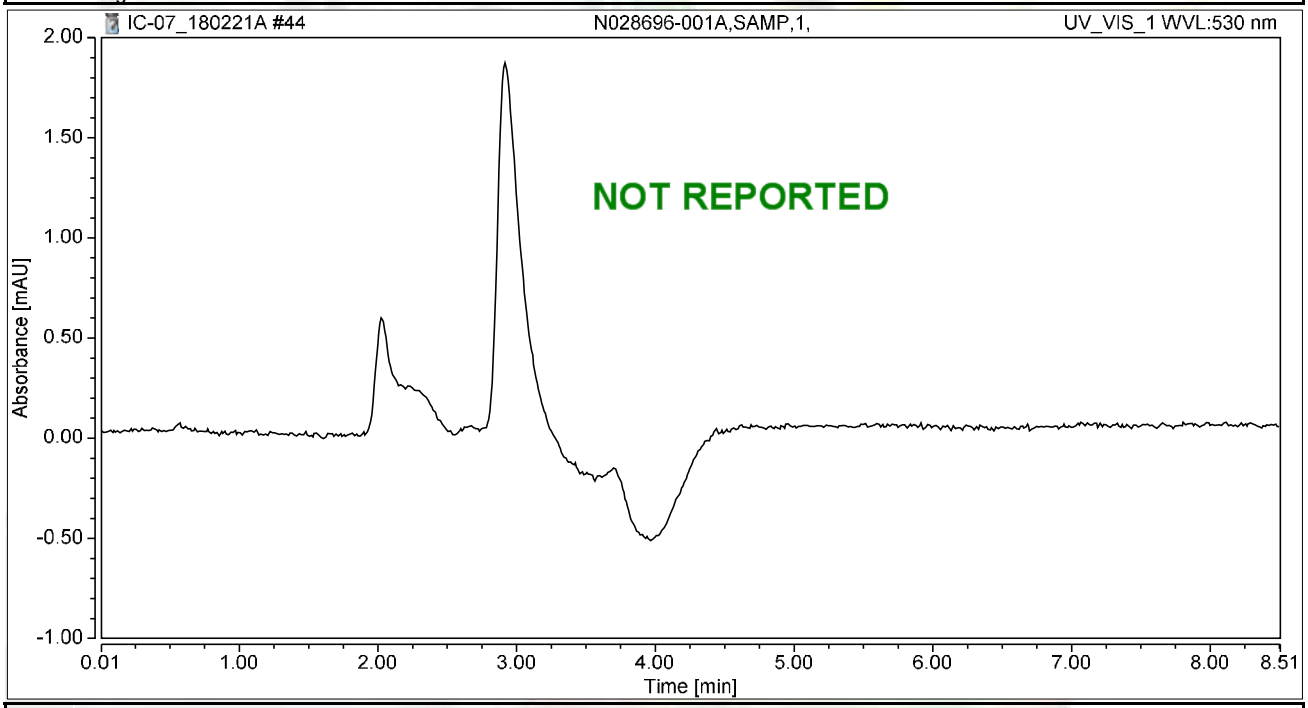
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

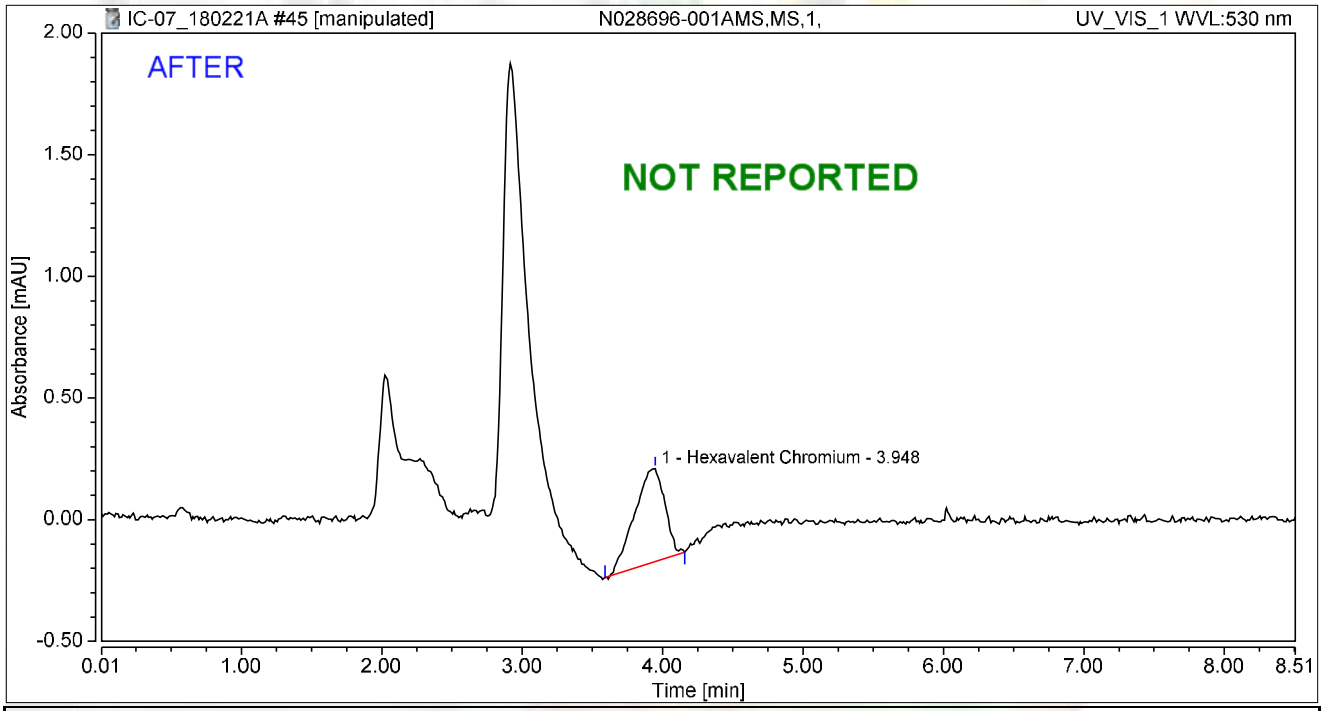
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.948	0.097	0.381	100.00	100.00	0.3872
Total:			**0.097**	**0.381**	**100.00**	**100.00**	

rba 2/25/2018

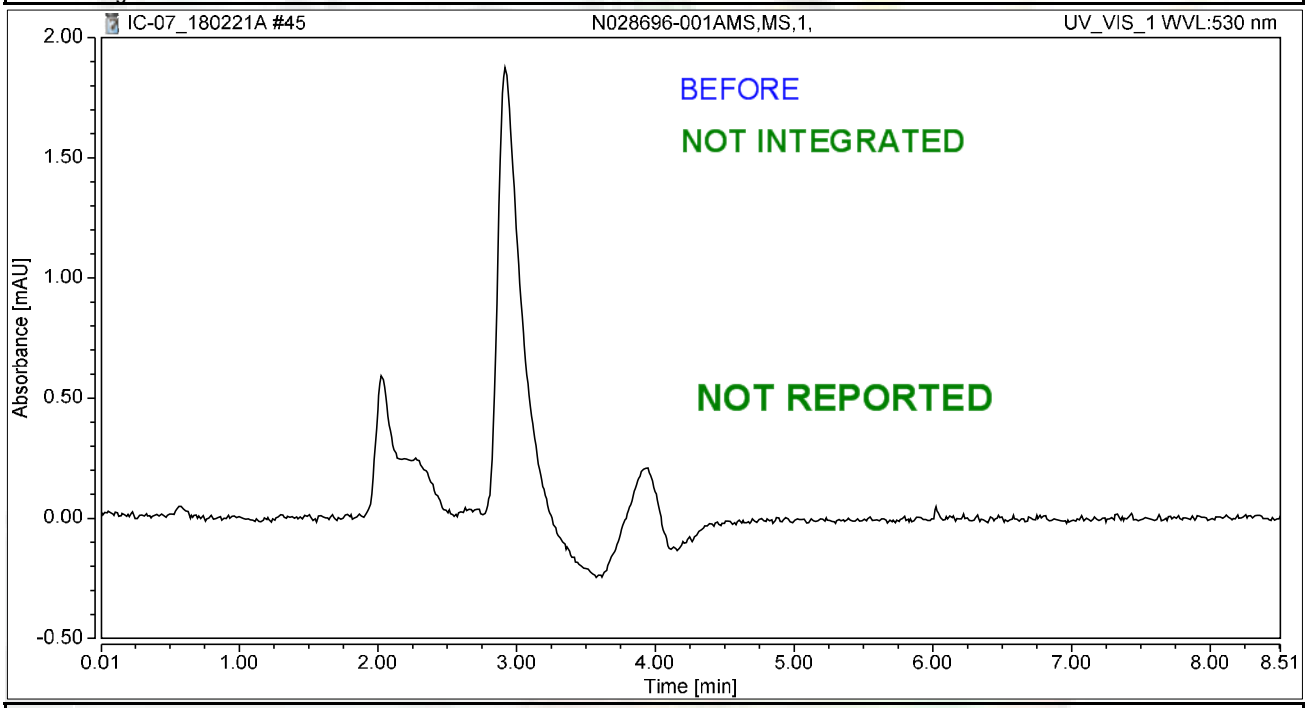
03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 14:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

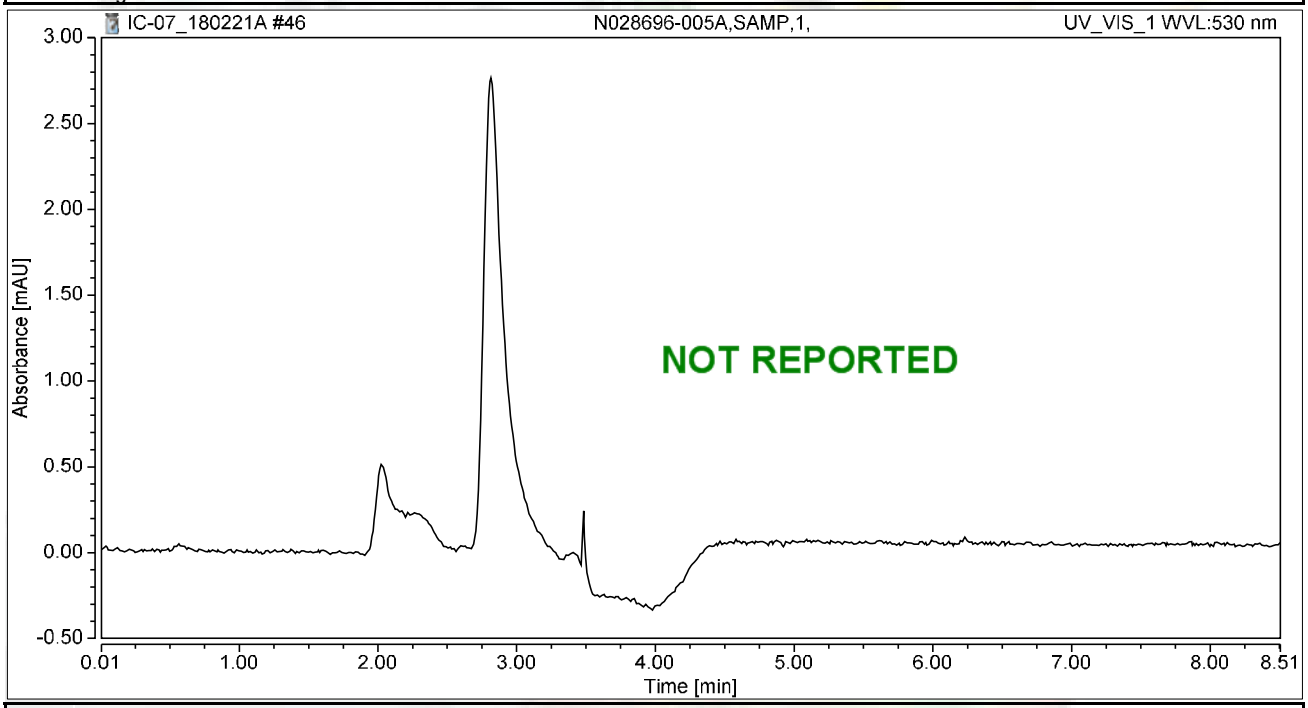
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

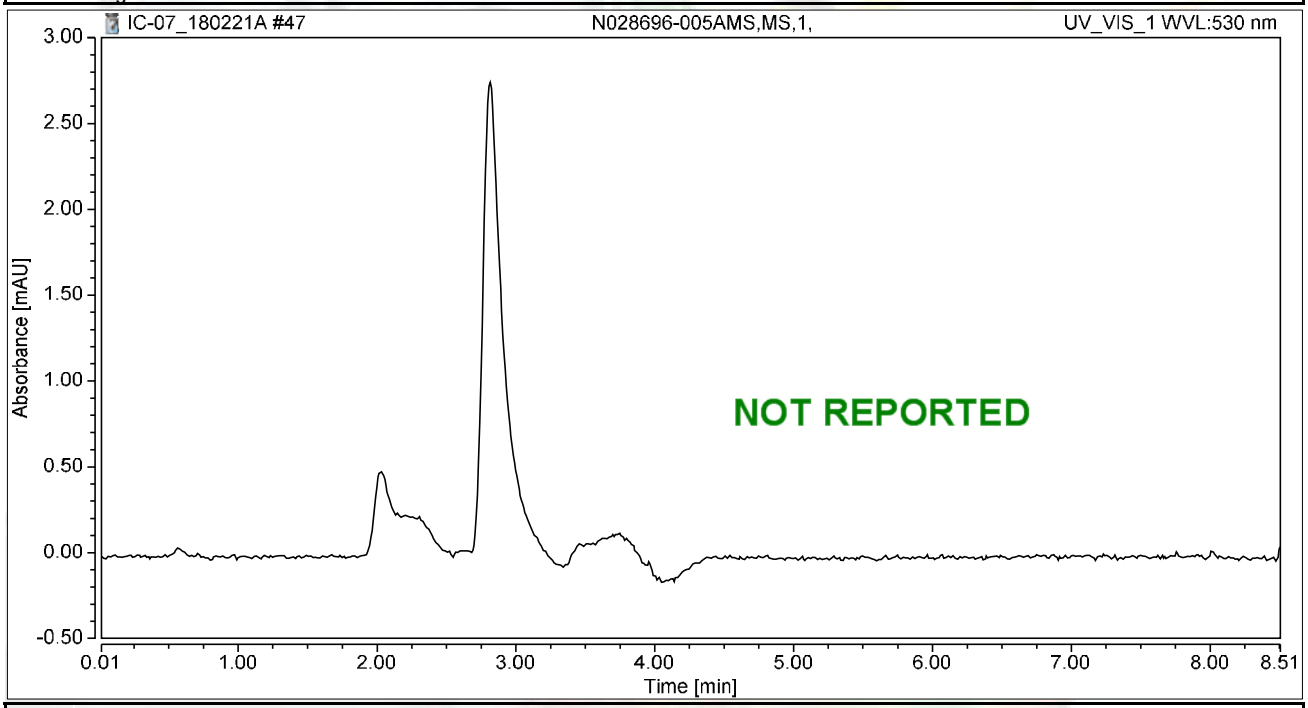
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

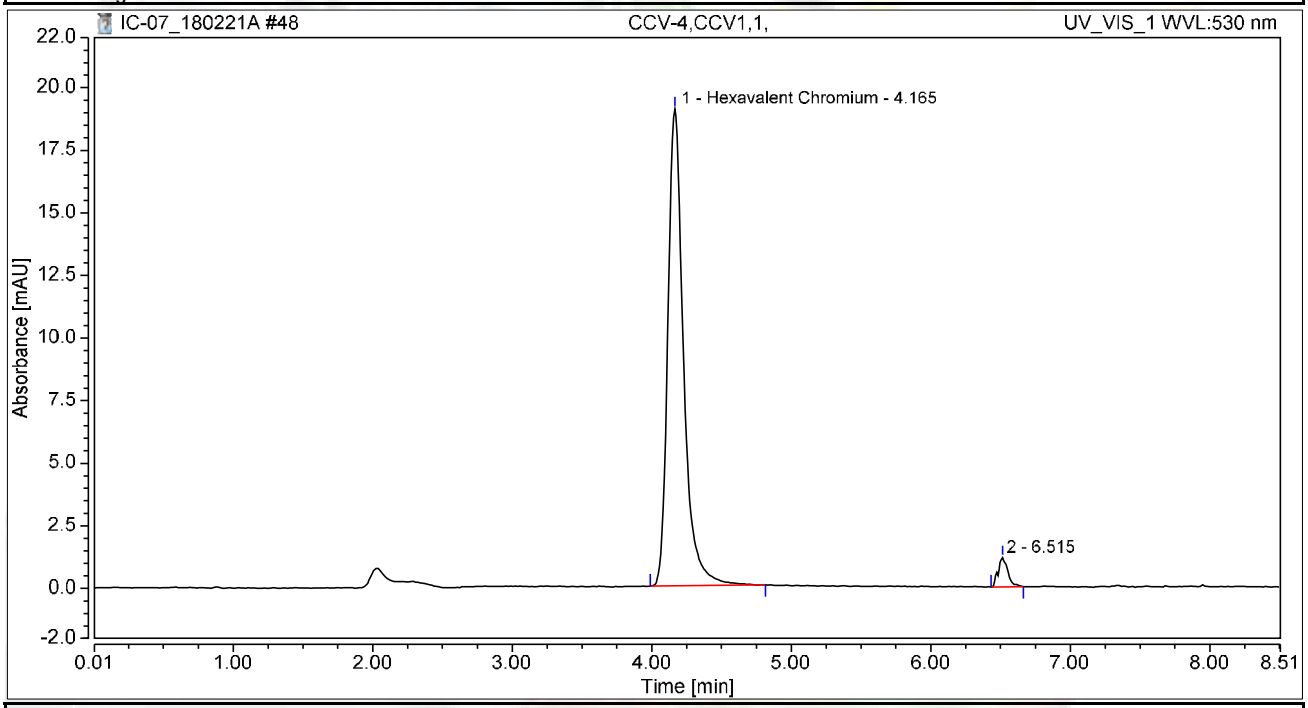
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

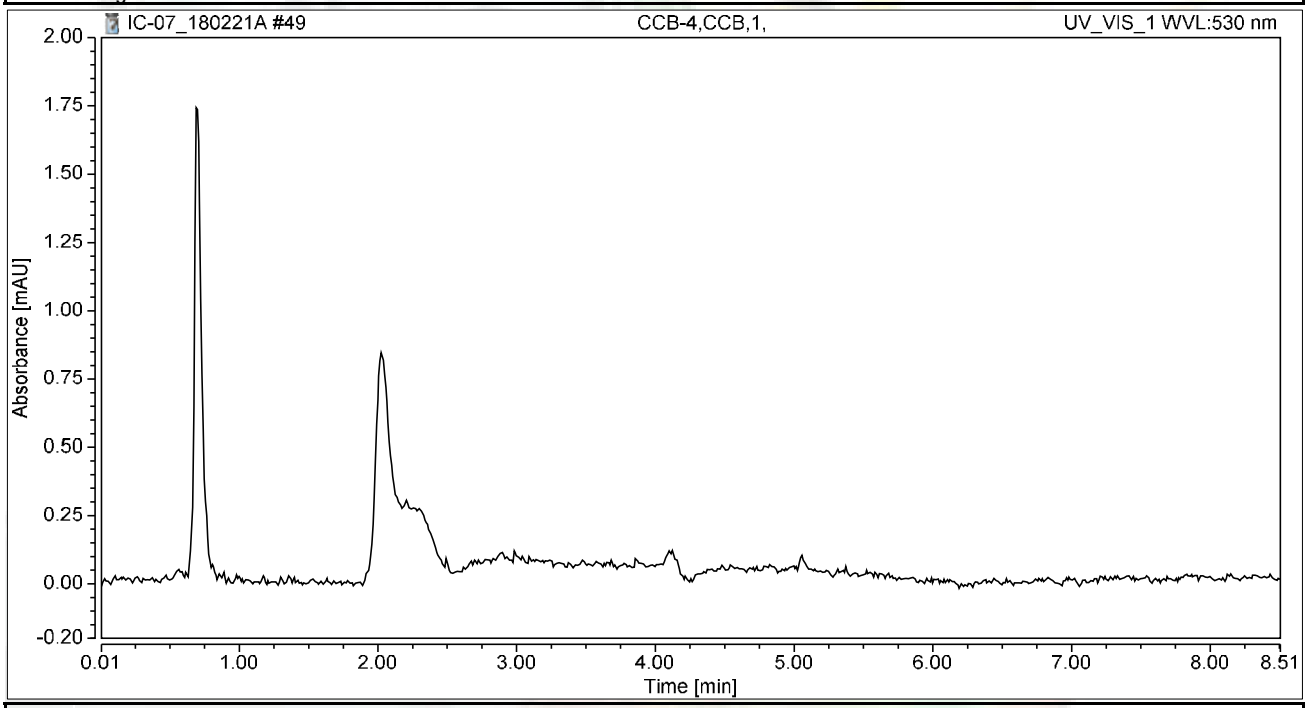
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.475	19.045	96.35	94.27	9.9128
2		6.515	0.094	1.158	3.65	5.73	n.a.
Total:			**2.568**	**20.203**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

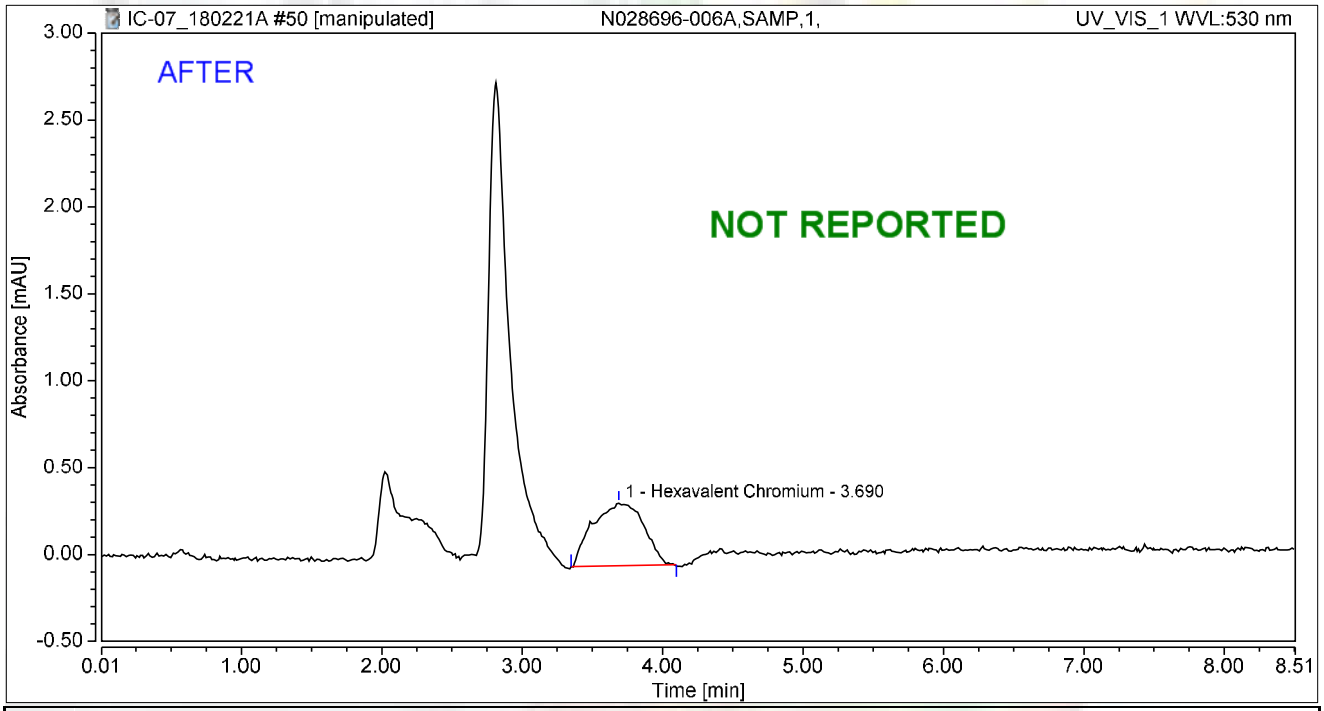
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.690	0.151	0.360	100.00	100.00	0.6039
Total:			**0.151**	**0.360**	**100.00**	**100.00**	

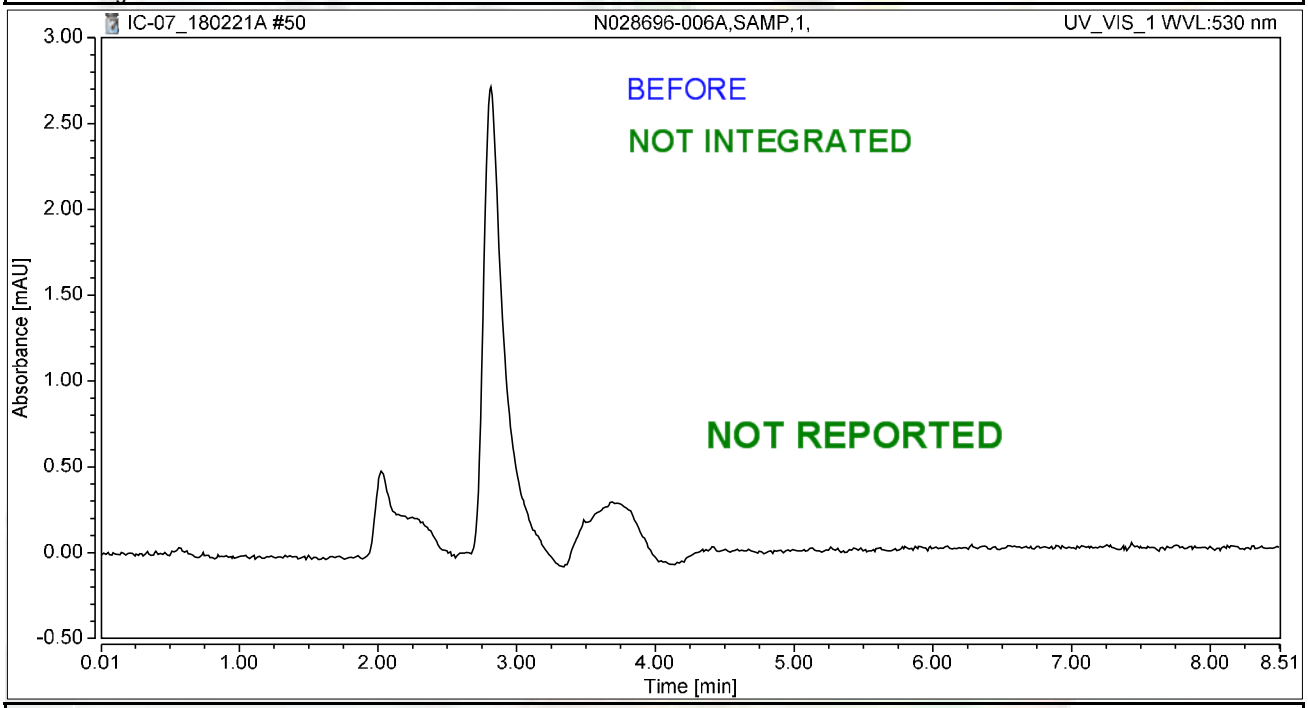
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

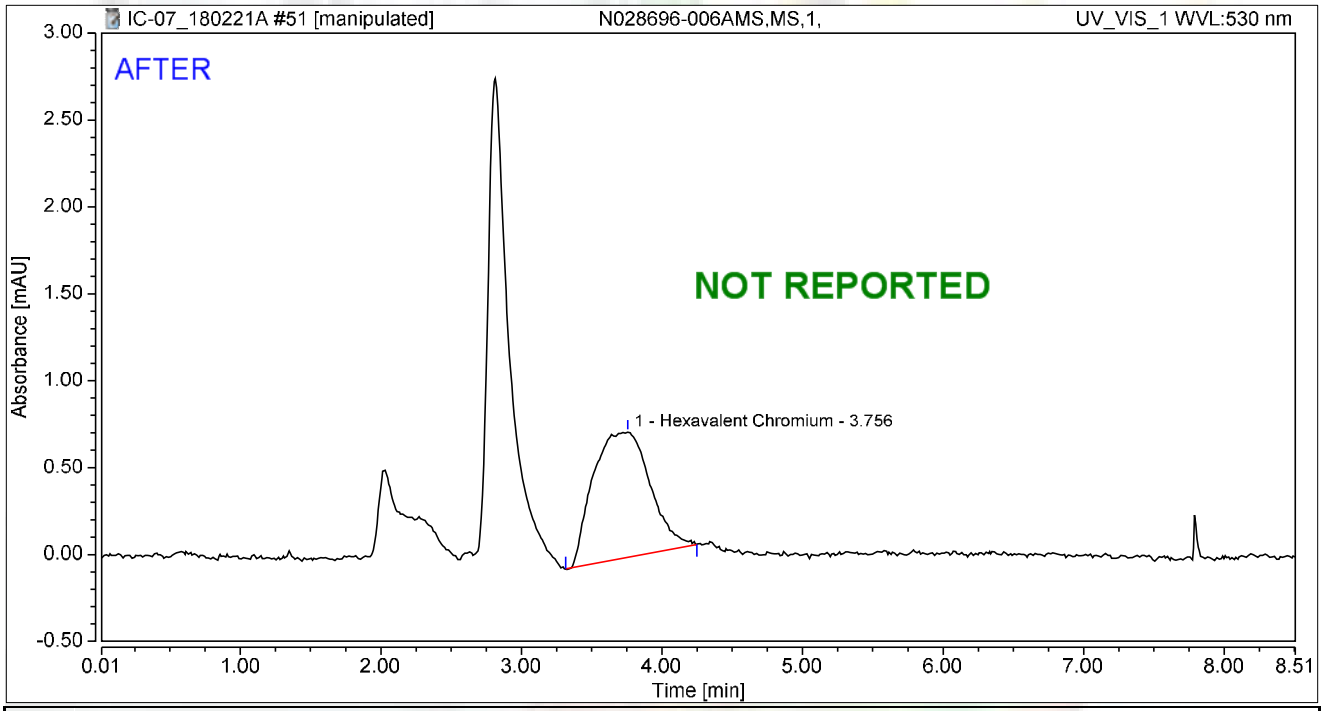
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.756	0.341	0.720	100.00	100.00	1.3648
Total:			**0.341**	**0.720**	**100.00**	**100.00**	

rba 2/25/2018

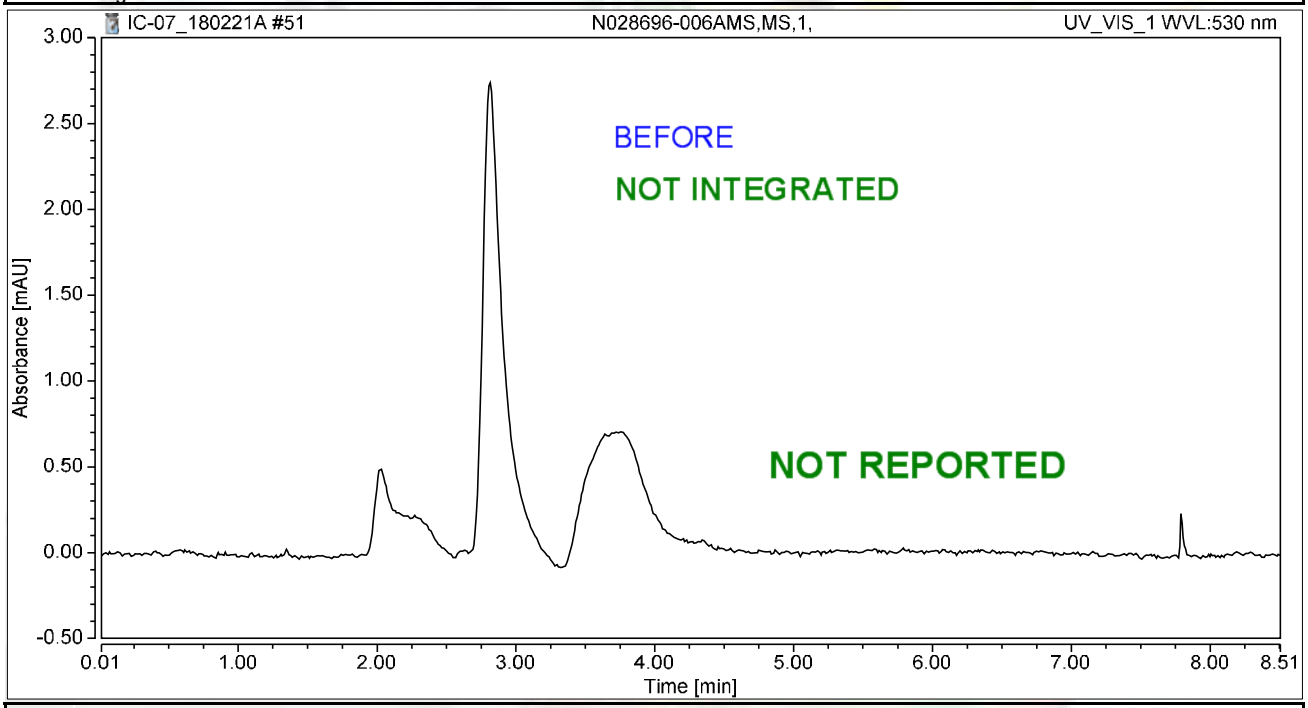
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

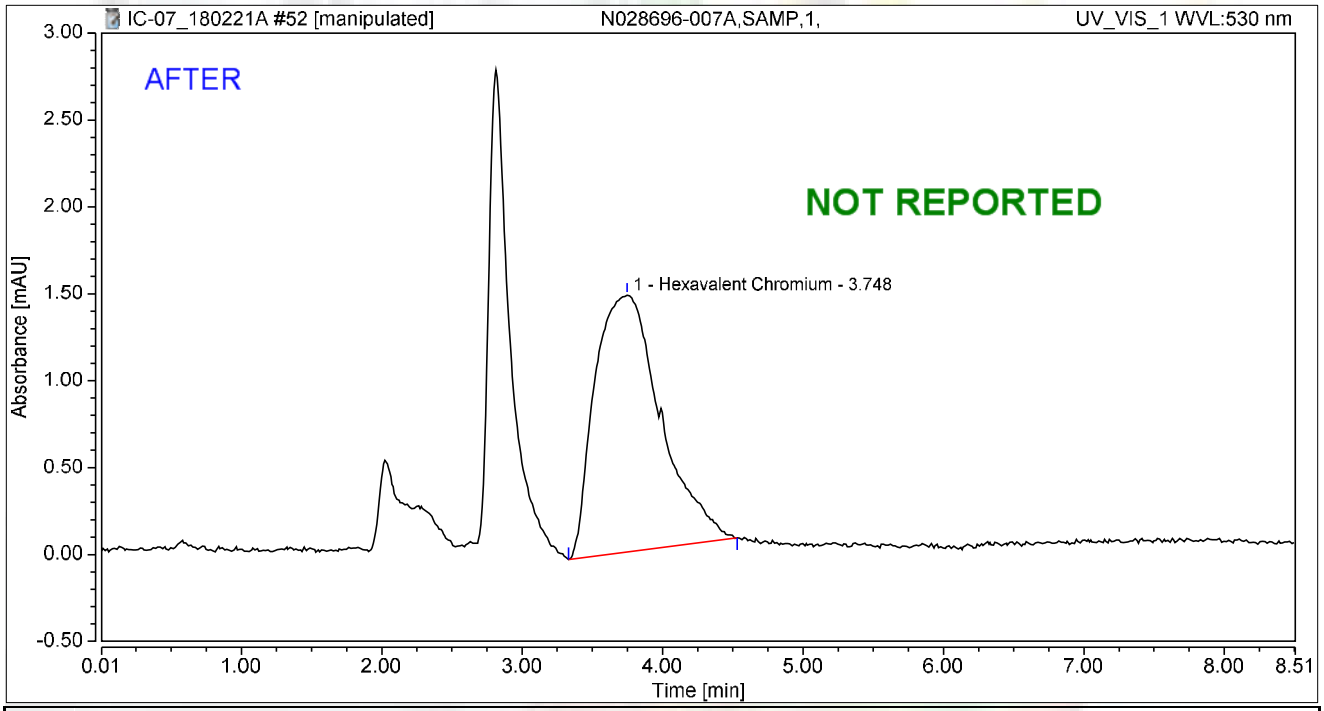
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.748	0.805	1.477	100.00	100.00	3.2244
Total:			**0.805**	**1.477**	**100.00**	**100.00**	

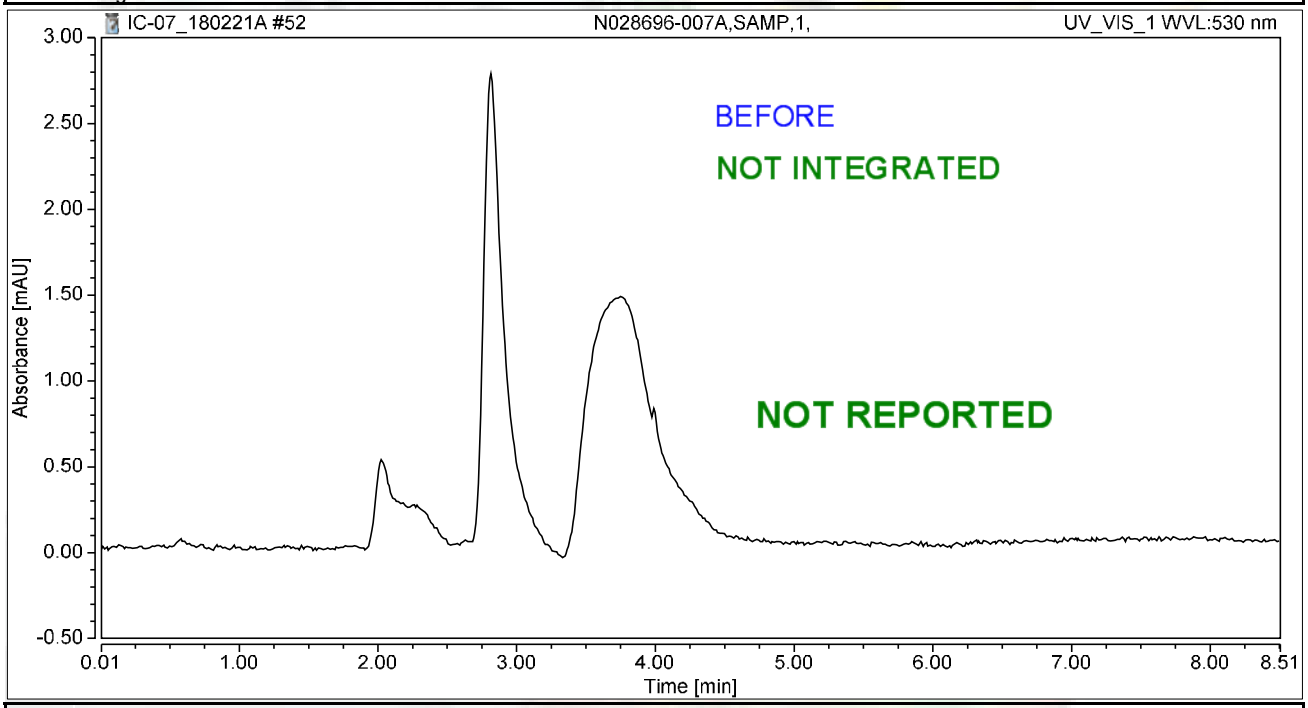
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

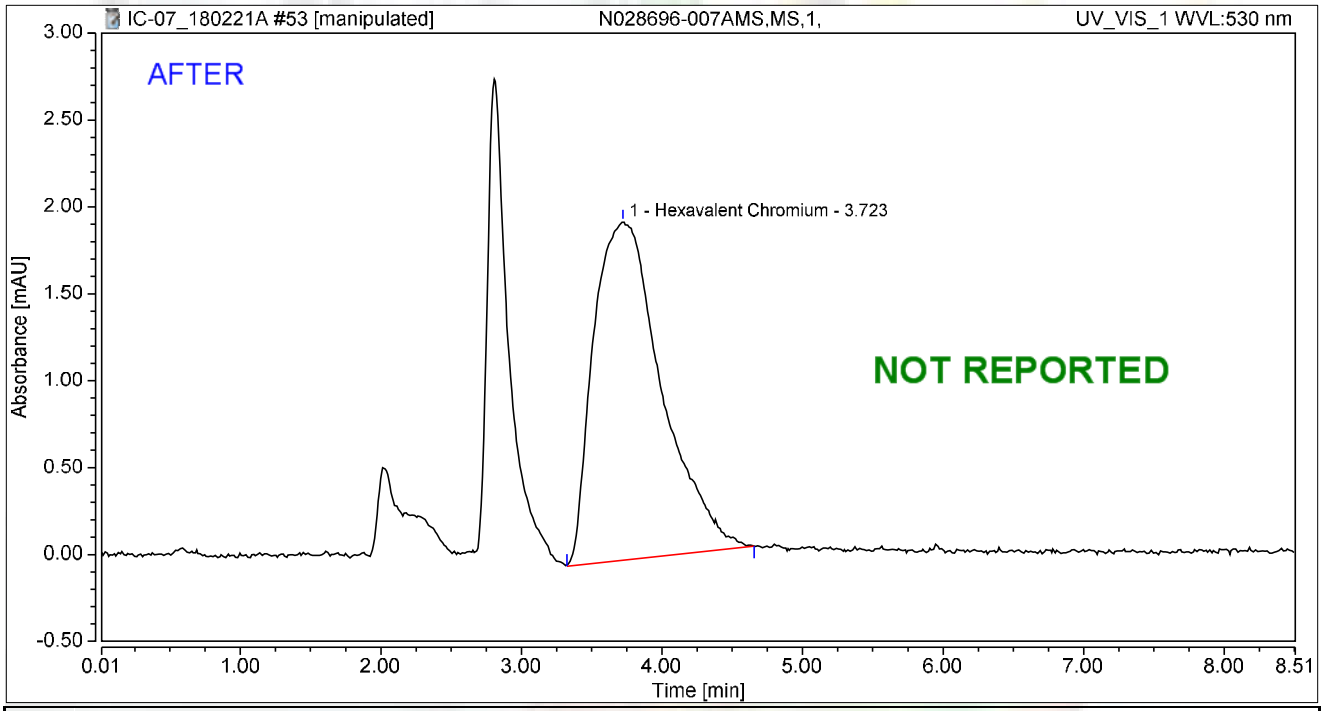
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.723	1.093	1.948	100.00	100.00	4.3785
Total:			**1.093**	**1.948**	**100.00**	**100.00**	

rba 2/25/2018

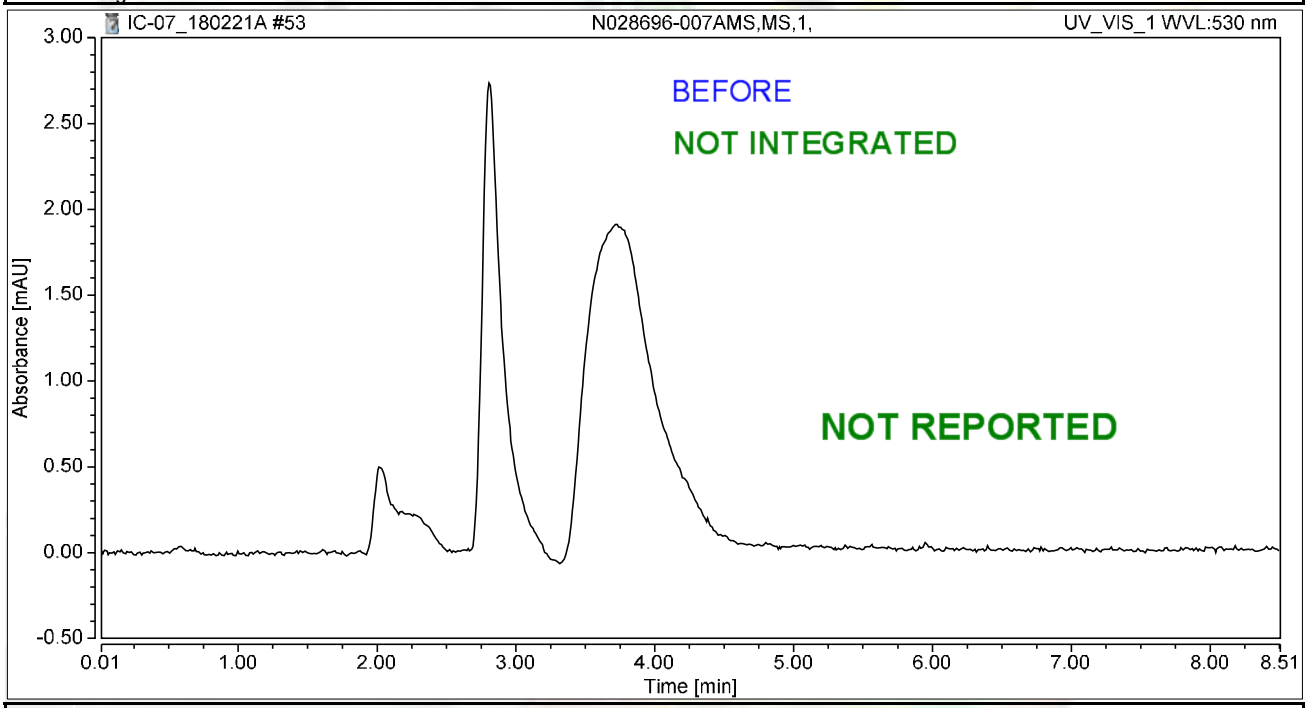
RB 03/05/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028696-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

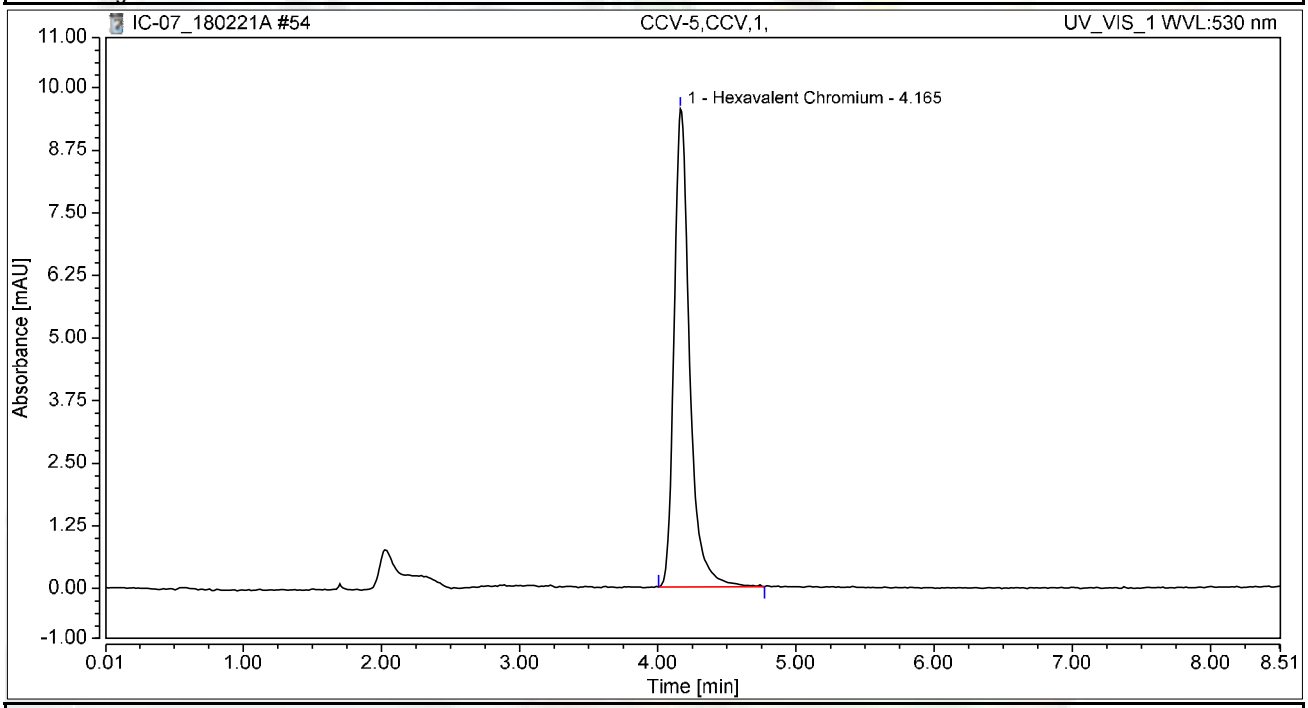
rba 2/25/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

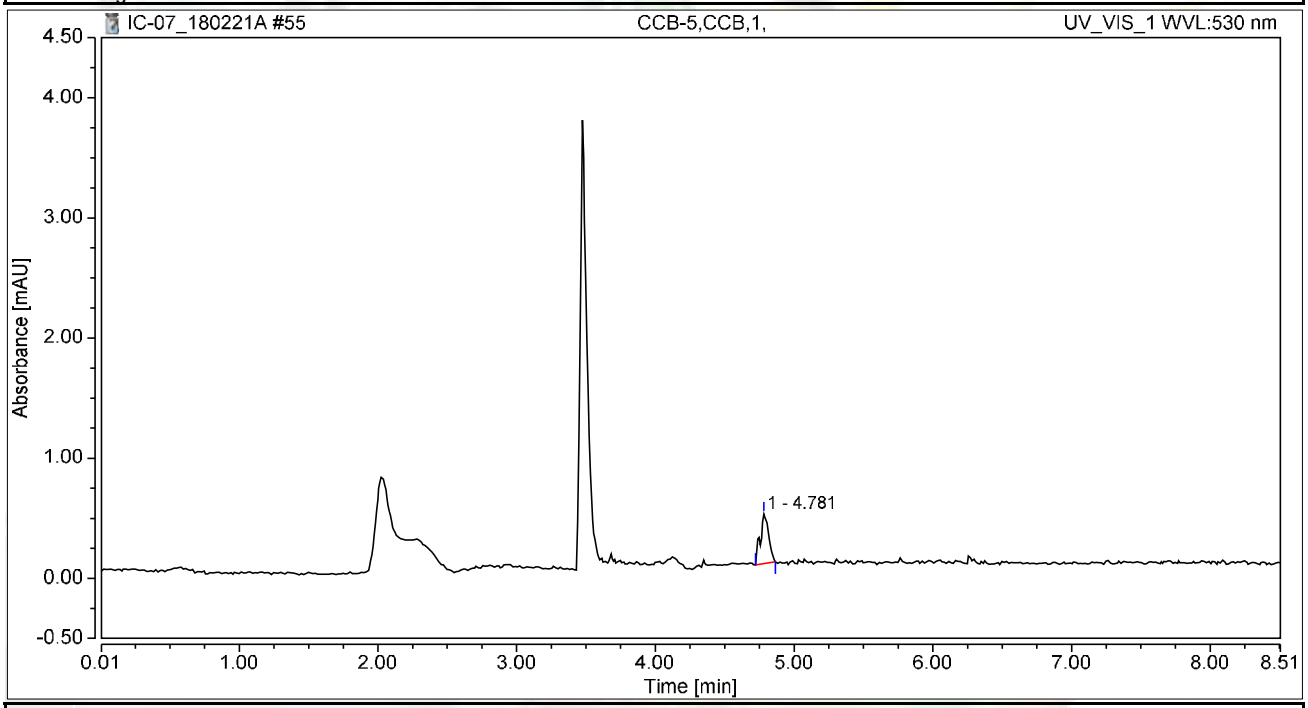
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.244	9.542	100.00	100.00	4.9843
Total:			**1.244**	**9.542**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/Feb/18 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

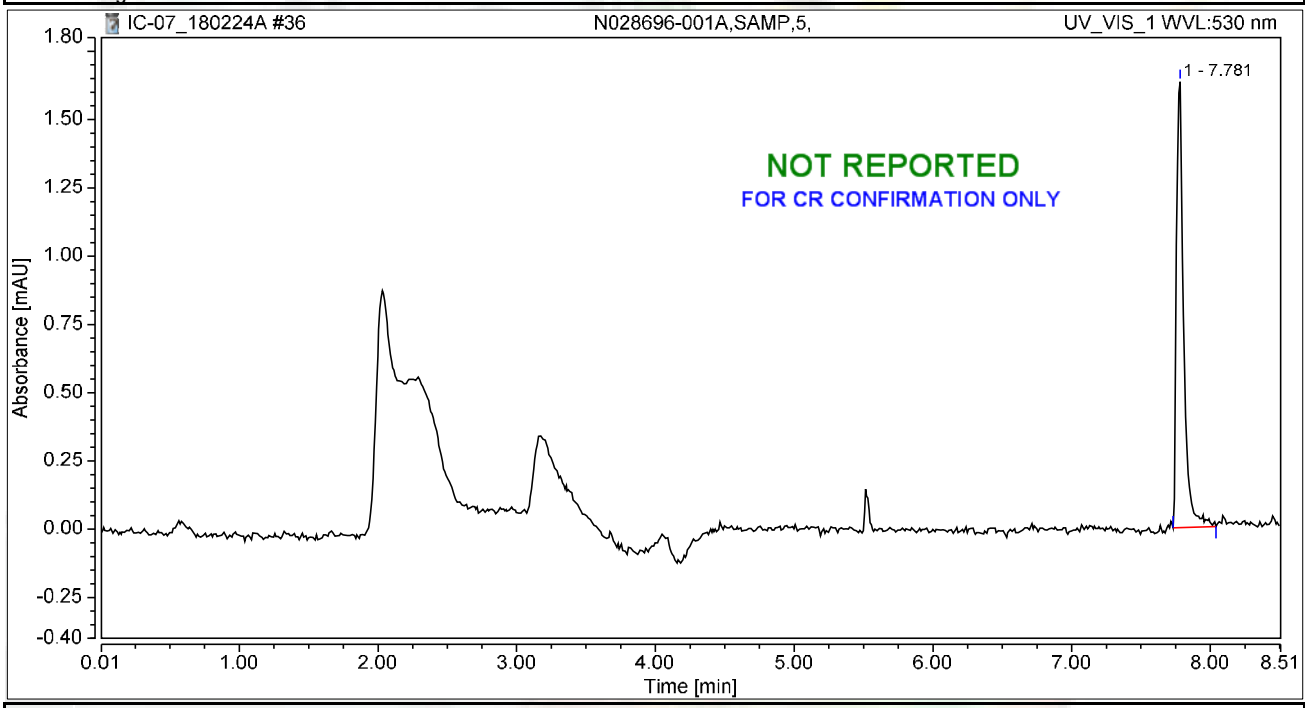
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.781	0.028	0.414	100.00	100.00	n.a.
Total:			**0.028**	**0.414**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Feb/18 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

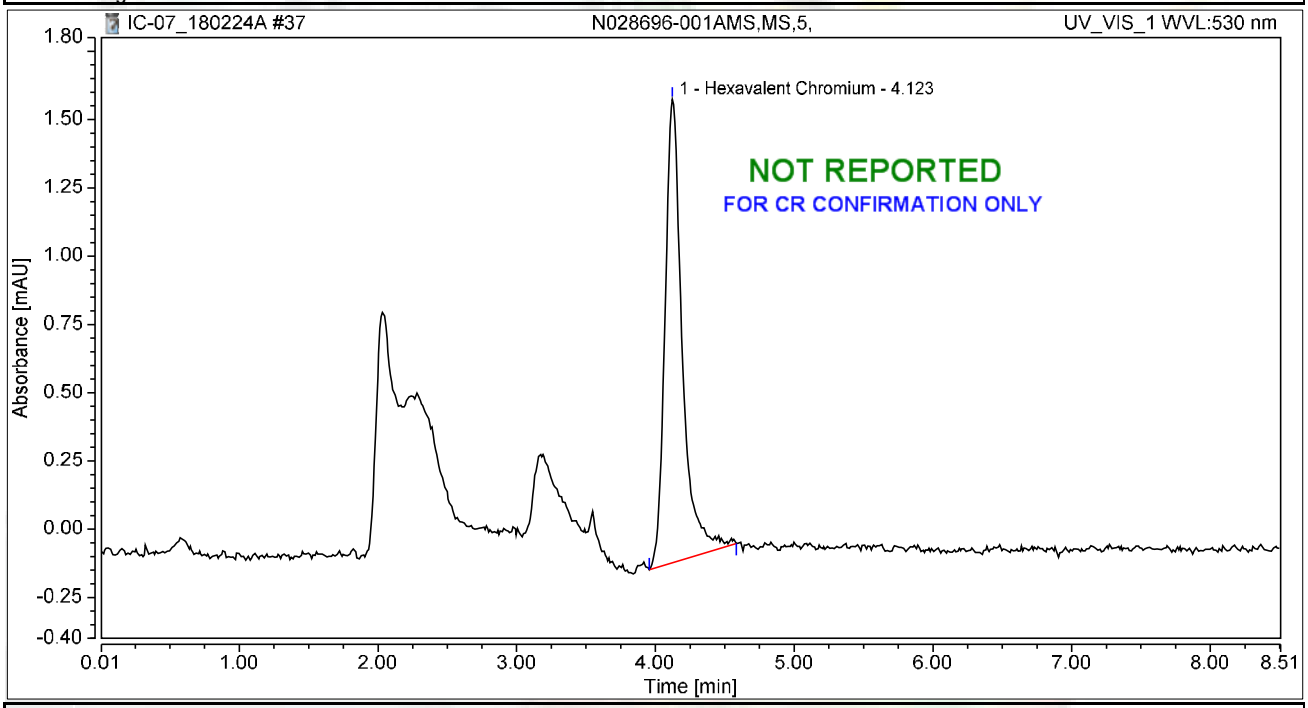
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.781	0.099	1.634	100.00	100.00	n.a.
Total:			**0.099**	**1.634**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Feb/18 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

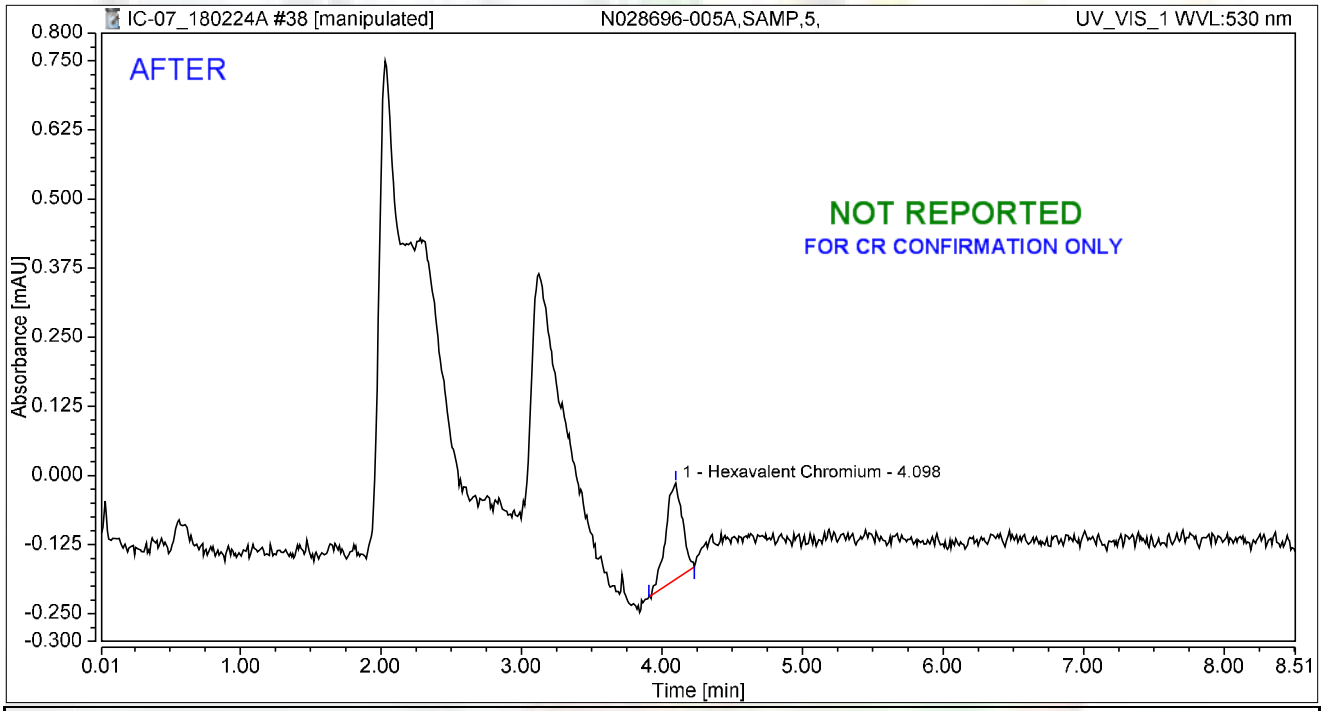
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.245	1.696	100.00	100.00	0.9813
Total:			**0.245**	**1.696**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Feb/18 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

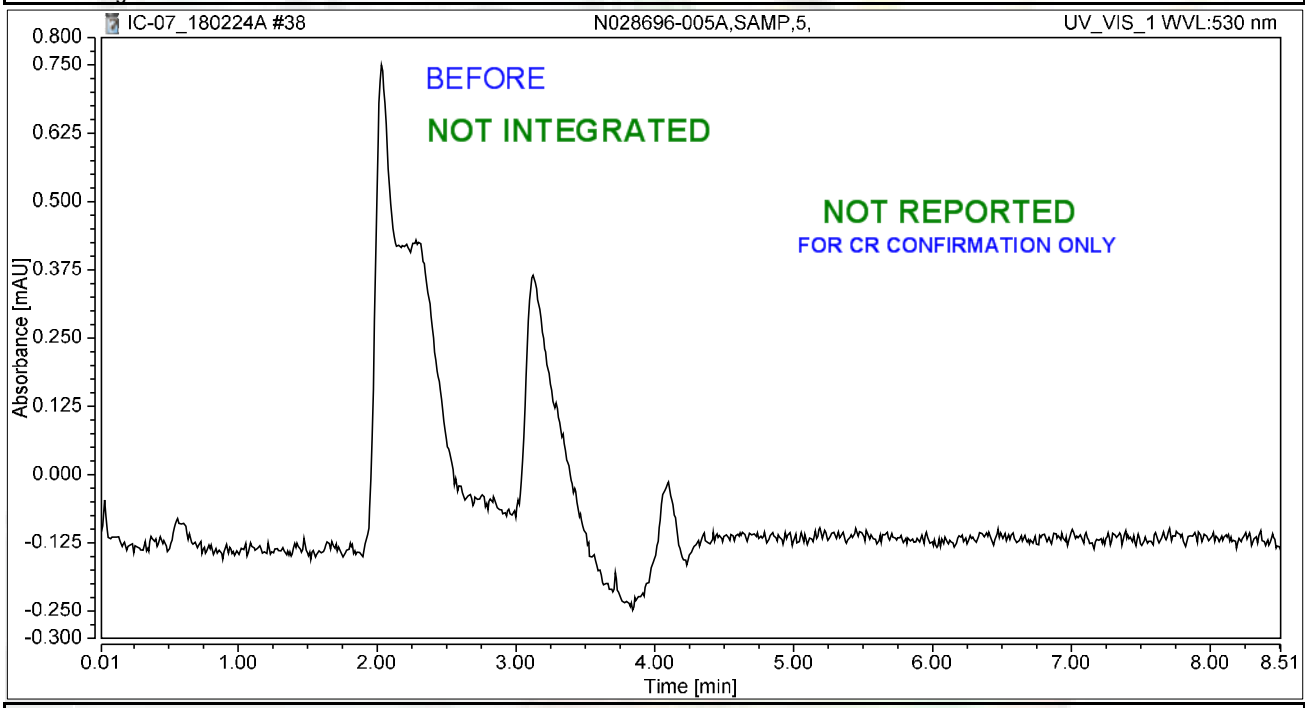
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.024	0.174	100.00	100.00	0.0968
Total:			**0.024**	**0.174**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Feb/18 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

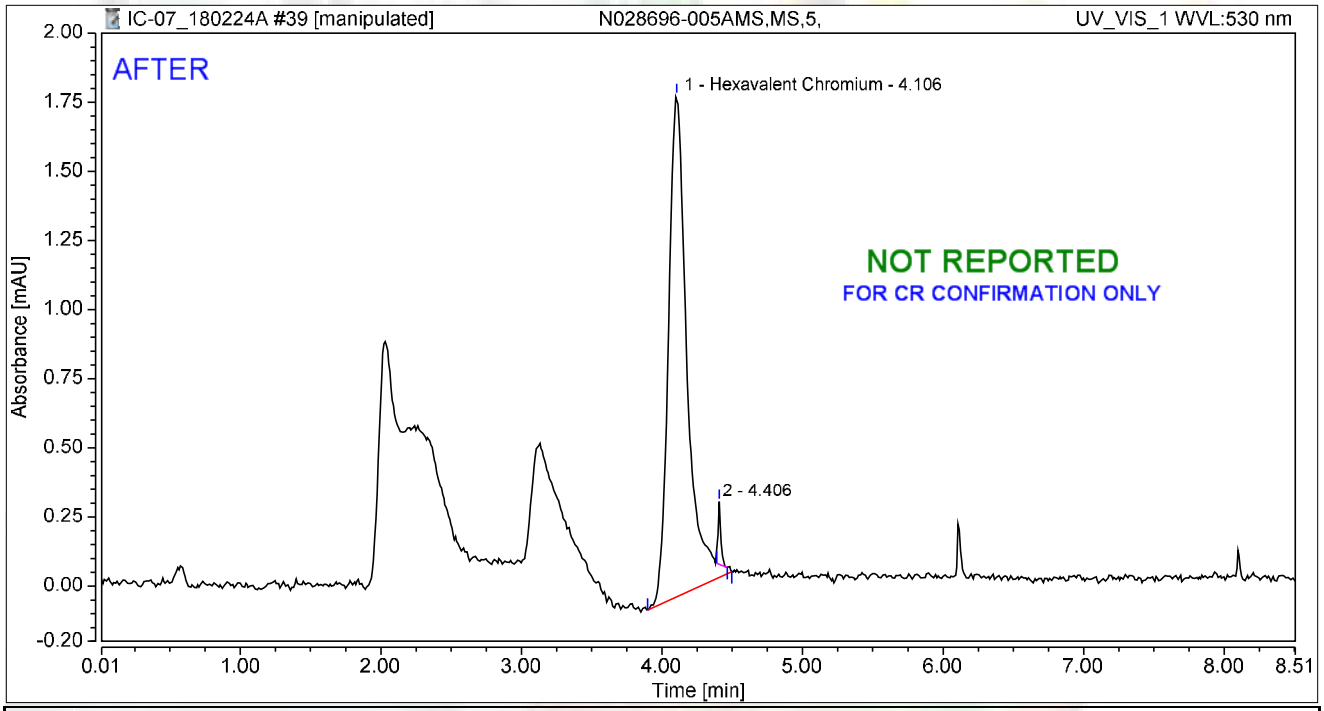
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Feb/18 12:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

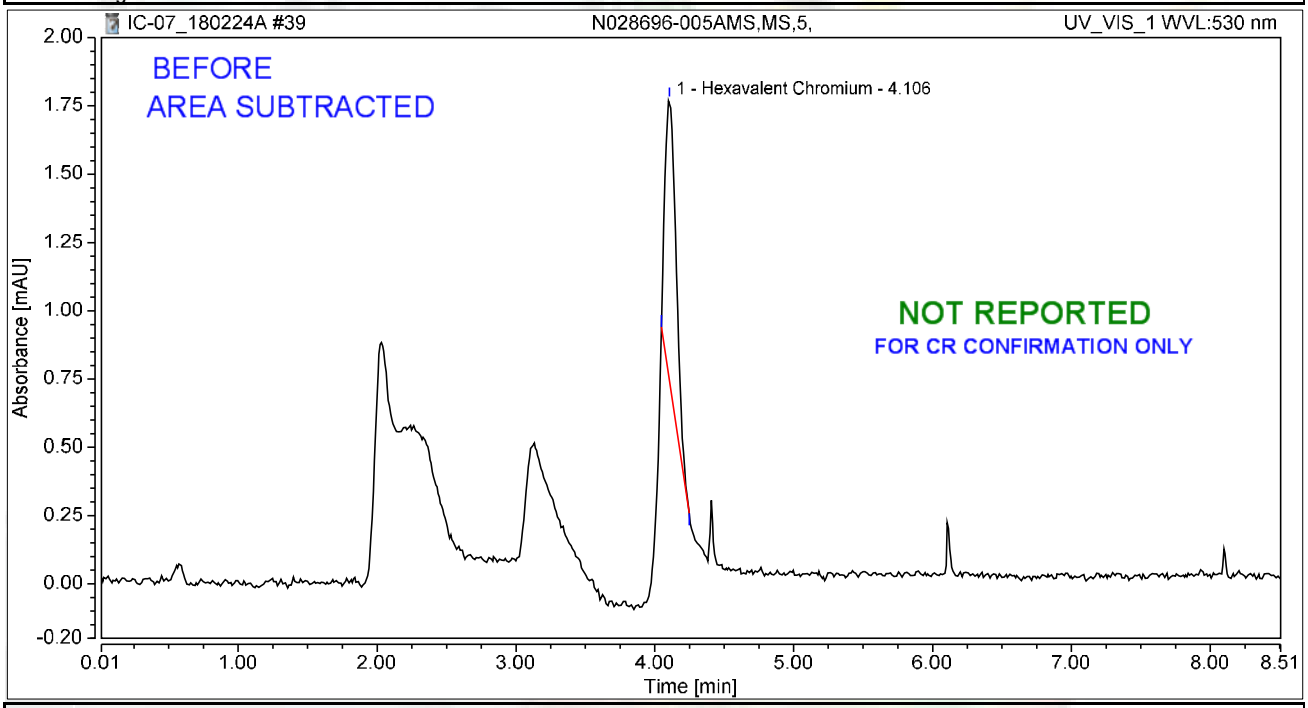
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.277	1.812	98.21	88.89	1.1081
2		4.406	0.005	0.226	1.79	11.11	n.a.
Total:			**0.282**	**2.039**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028696-005AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Feb/18 12:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.096	1.032	100.00	100.00	0.3836
Total:			**0.096**	**1.032**	**100.00**	**100.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122323 **Analyst:** QBM

ASSET #: N028679, 696, 726 **Date Analyzed:** 2/27/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
3. ICV within ± 10% of expected value.		X			X	
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.		X			X	
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in ICV failed, high bias. However, LCS is within ICV criteria.

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/5/2018

2nd Level Reviewer RJB 03/05/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122365 **Analyst:** QBM

ASSET #: N028727, 696, 726 **Date Analyzed:** 2/28/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
3. ICV within ± 10% of expected value.		X			X	
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.		X			X	
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/5/2018

2nd Level Reviewer RLB 03/05/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028696-002C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.0839	*	1
	=	0.0839	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.084 mg/L

RLB 03/05/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

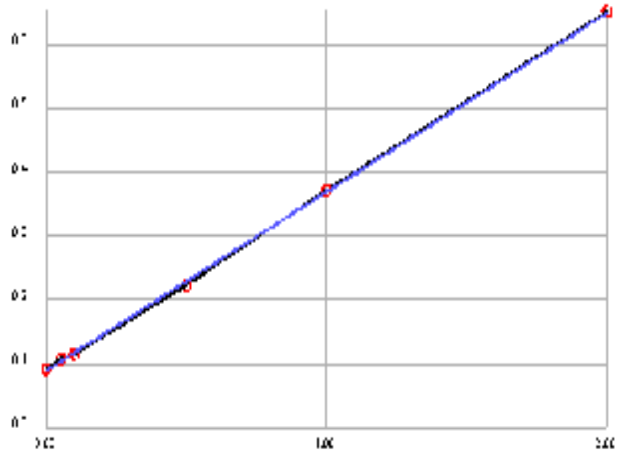
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2802x + 0.0906
Correlation	.999853

Calibrant	Energy	Set	Conc
1	0.0924	0.0000	0.0065
2	0.1094	0.0500	0.0671
3	0.1159	0.1000	0.0903
4	0.2248	0.5000	0.4791
5	0.3717	1.0000	1.0034
6	0.6519	2.0000	2.0036

Notes:

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

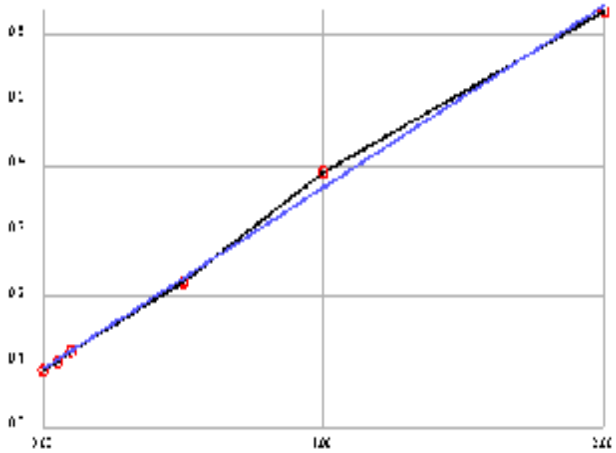
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2779x + 0.0901
Correlation	.998614

Calibrant	Energy	Set	Conc
1	0.0875	0.0000	-0.0093
2	0.1009	0.0500	0.0389
3	0.1169	0.1000	0.0964
4	0.2228	0.5000	0.4775
5	0.3905	1.0000	1.0809
6	0.6364	2.0000	1.9656

Notes:

03/05/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **ICV**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.555	0.050	0.5000	0	111	90	110				S

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCV**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.484	0.050	0.5000	0	96.9	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCV**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **ICV**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCV**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCV**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.481	0.050	0.5000	0	96.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **ICB**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCB**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122323**
Client ID: **CCB**	Batch ID: **R122323**	TestNo: **SM4500-NO3**		Analysis Date: **2/27/2018**	SeqNo: **2941682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **ICB**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCB**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCB**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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Time start: 02-27-2018 14:06
Time end: 02-27-2018 16:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:18:08	0.0118		0.0939
2	<BLANK>	16:19:07	-0.0053		0.0891
3	<CAL1>	16:20:03	0.0065	[0]	0.0924
4	<CAL2>	16:20:58	0.0671	[0.05]	0.1094
5	<CAL3>	16:22:00	0.0903	[0.1]	0.1159
6	<CAL4>	16:22:54	0.4791	[0.5]	0.2248
7	<CAL5>	16:23:50	1.0034	[1]	0.3717
8	<CAL6>	16:24:45	2.0036	[2]	0.6519
9	,BLANK,BLANK,1,	16:25:45	1.2040		0.4279
10	,ICV,ICV,1,	16:26:41	0.5547		0.2460
11	,ICB,ICB,1,	16:27:42	0.0125		0.0941
12	,MB-H2O,MBLK,1,	16:28:38	-0.0189		0.0853
13	,LCS-H2O,LCS,1,	16:29:32	0.5212		0.2366
14	,N028717-001D,SAMP,5,	16:30:34	0.0493		0.1044
15	,N028679-002C,SAMP,1,	16:31:29	0.0122		0.0940
16	,N028679-004C,SAMP,5,	16:32:23	0.9131		0.3464
17	,N028679-004CDUP,DUP,5,	16:33:25	1.0027		0.3715
18	,N028679-005C,SAMP,5,	16:34:21	0.9420		0.3545
19	,N028679-005CMS,MS,5,	16:35:16	1.4882		0.5075
20	,N028679-005CMSD,MSD,5,	16:36:17	1.4164		0.4874
21	,BLANK,	16:37:12	0.0511		0.1049
22	,CCV-1,CCV,1,	16:38:08	0.4844		0.2263
23	,CCB-1,CCB,1,	16:39:08	0.0186		0.0958
24	,N028679-003C,SAMP,1,	16:40:03	0.0154		0.0949
25	,N028696-001C,SAMP,1,	16:40:59	0.0040		0.0917
26	,N028696-002C,SAMP,1,	16:42:02	0.0839		0.1141

RLB 03/05/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N028696-003C,SAMP,1,	16:42:44	0.0607		0.1076
28	,N028696-005C,SAMP,1, NOT REPORTED	16:43:28	0.0518		0.1051
29	,N028696-006C,SAMP,1, NOT REPORTED	16:44:16	0.0975		0.1179
30	,N028696-007C,SAMP,1, NOT REPORTED	16:44:59	0.1075		0.1207
31	,N028696-004C,SAMP,1,	16:45:47	1.2497		0.4407
32	,N028679-001C,SAMP,1,	16:46:31	1.0006		0.3709
33	,BLANK,	16:47:14	0.0093		0.0932
34	,CCV-2,CCV,1,	16:48:02	0.5258		0.2379
35	,CCB-2,CCB,1,	16:48:45	-0.0317		0.0817
36	,N028726-001C,SAMP,1, NOT REPORTED	16:49:33	-0.0096		0.0879
37	,N028726-004C,SAMP,1,	16:50:17	0.1860		0.1427
38	,N028726-005C,SAMP,1,	16:50:59	0.1871		0.1430
39	,N028726-003C,SAMP,1,	16:51:48	0.1557		0.1342
40	,N028726-002C,SAMP,1,	16:52:32	0.8681		0.3338
41	,N028696-008C,SAMP,1,	16:53:14	0.5833		0.2540
42	,N028696-009C,SAMP,5,	16:53:57	0.6429		0.2707
43	,BLANK,	16:54:45	-0.0182		0.0855
44	,CCV-3,CCV,1,	16:55:28	0.4237		0.2093
45	,CCB-3,CCB,1,	16:56:16	-0.0150		0.0864

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 2/27/2018
Time Analyzed: 2:03 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028679-001C		8.13							
N028679-002C		7.50							
N028679-003C		7.72							
N028679-004C		7.09							
N028679-005C		7.90							
N028696-001C		7.88							
N028696-002C		7.96							
N028696-003C		7.57							
N028696-004C		7.85							
N028696-005C		7.8							
N028696-006C		7.76							
N028696-007C		7.49							
N028696-008C		7.16							
N028696-009C		7.83							
N028717-001D		8.22							
N028726-001C		8.17							
N028726-002C		7.40							
N028726-003C		7.81							
N028726-004C		8.32							
N028726-005C		8.20							

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RJB 03/05/2018

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Time start: 02-28-2018 14:32
Time end: 02-28-2018 17:23

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	16:43:39	-0.0165		0.0855
2	<BLANK> NOT REPORTED	16:44:38	-0.0061		0.0884
3	<CAL1>	16:45:34	-0.0093	[0]	0.0875
4	<CAL2>	16:46:29	0.0389	[0.05]	0.1009
5	<CAL3>	16:47:31	0.0964	[0.1]	0.1169
6	<CAL4>	16:48:25	0.4775	[0.5]	0.2228
7	<CAL5>	16:49:20	1.0809	[1]	0.3905
8	<CAL6>	16:50:22	1.9656	[2]	0.6364
9	,BLANK,BLANK,1, NOT REPORTED	16:51:16	0.0540		0.1051
10	,ICV,ICV,1,	16:52:11	0.5023		0.2297
11	,ICB,ICB,1,	16:53:13	0.0018		0.0906
12	,MB-H2O,MBLK,1,	16:54:08	-0.0137		0.0863
13	,LCS-H2O,LCS,1,	16:55:09	0.4904		0.2264
14	,N028726-001C,SAMP,1,	16:56:04	0.0133		0.0938
15	,N028726-002C,SAMP,1,	16:57:00	0.8686		0.3315
16	,N028726-002CDUP,DUP,1,	16:58:00	0.9179		0.3452
17	,N028696-008C,SAMP,1,	16:58:56	0.6322		0.2658
18	,N028696-009C,SAMP,5,	16:59:51	0.6887		0.2815
19	,N028696-009CMS,MS,5,	17:00:47	1.2579		0.4397
20	,N028696-009CMSD,MSD,5,	17:01:47	1.1820		0.4186
21	,BLANK, NOT REPORTED	17:02:43	0.0159		0.0945
22	,CCV-1,CCV,1,	17:03:38	0.5084		0.2314
23	,CCB-1,CCB,1,	17:04:39	-0.0079		0.0879
24	,N028696-005C,SAMP,1,	17:05:34	0.0472		0.1032
25	,N028696-006C,SAMP,1,	17:06:36	0.0932		0.1160
26	,N028696-007C,SAMP,1,	17:07:31	0.1094		0.1205

RLB 03/05/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028726-003C,SAMP,1,	17:08:19	0.1727		0.1381
28	,N028726-004C,SAMP,1,	17:09:03	0.1882		0.1424
29	,N028726-005C,SAMP,1,	17:09:51	0.2130		0.1493
30	,N028727-002E,SAMP,1, NOT REPORTED	17:10:34	0.4984		0.2286
31	,N028727-003E,SAMP,1, NOT REPORTED	17:11:16	0.5055		0.2306
32	,N028727-004E,SAMP,1, NOT REPORTED	17:12:06	0.4649		0.2193
33	,BLANK, NOT REPORTED	17:12:49	-0.0298		0.0818
34	,CCV-2,CCV,1,	17:13:31	0.4807		0.2237
35	,CCB-2,CCB,1,	17:14:20	-0.0388		0.0793
36	,N028727-005E,SAMP,1, NOT REPORTED	17:15:02	0.4044		0.2025
37	,N028727-006E,SAMP,1, NOT REPORTED	17:15:46	0.4422		0.2130
38	,N028727-007E,SAMP,1, NOT REPORTED	17:16:34	0.4224		0.2075
39	,N028727-008E,SAMP,1, NOT REPORTED	17:17:17	0.4354		0.2111
40	,N028727-009E,SAMP,1, NOT REPORTED	17:18:01	0.4613		0.2183
41	,N028727-010E,SAMP,1, NOT REPORTED	17:18:49	0.4325		0.2103
42	,N028727-011E,SAMP,1, NOT REPORTED	17:19:32	0.4620		0.2185
43	,BLANK, NOT REPORTED	17:20:14	-0.0388		0.0793
44	,CCV-3,CCV,1, NOT REPORTED	17:21:04	0.4239		0.2079
45	,CCB-3,CCB,1, NOT REPORTED	17:21:46	-0.0266		0.0827

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 2/28/2018
Time Analyzed: 2:29 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028696-005C		7.80							
N028696-006C		7.76							
N028696-007C		7.49							
N028696-008C		7.16							
N028696-009C		7.83							
N028726-001C		8.17							
N028726-002C		7.40							
N028726-003C		7.81							
N028726-004C		8.32							
N028726-005C		8.2							
N028727-002E		7.91							
N028727-003E		6.73							
N028727-004E		7.88							
N028727-005E		7.94							
N028727-006E		8.31							
N028727-007E		7.87							
N028727-008E		7.57							
N028727-009E		7.03							
N028727-010E		7.92							
N028727-011E		8.44							

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MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66863
ASSET #: N028696

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/26/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X			X	
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Confirmation:
N028696-001B (6020) = 1.5 ug/L :confirmation: 1.6 ug/L ; N028696-001A (218.6) = <1.0 ug/L :confirmation: 0.28 ug/L

with confirmation also for N028696-005

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/5/18

2nd Level Reviewer 3/5/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028696-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.50607 * 1 * (25/25)

Chromium , ug/L = 1.50607

Reporting results in two significant figures,

Chromium , ug/L = 1.5

% RSD SUMMARY

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.17	1.036	15	PASS	0.12	20.13	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.61	1.7	15	PASS	0.51	5.37	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	1.71	15	PASS	4.88	1.7	15	PASS
Std4-10/100 ppb	ICAL	1	10.15	1.18	15	PASS	9.91	1.35	15	PASS
Std5-20/200 ppb	ICAL	1	19.96	0.29	15	PASS	19.89	1.088	15	PASS
Std6-40/400 ppb	ICAL	1	39.69	0.95	15	PASS	39.26	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	97.62	0.54	15	PASS	98.023	0.49	15	PASS
Std8-200/2000 ppb	ICAL	1	201.25	1.4	15	PASS	201.15	0.55	15	PASS
ICV	ICV	1	10.034	0.12	15	PASS	10.064	0.39	15	PASS
ICB	ICB	1	0.0059	64.42	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.078	0.96	20	PASS	1.032	1.0046	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.071	25.026	15	<PQL
ICSAB1	ICSAB	1	16.84	1.16	15	PASS	19.093	0.14	15	PASS
MB-66863	MBLK	1	0.0058	57.019	15	<PQL	0.0025	276.13	15	<PQL
LCS-66863	LCS	1	10.068	0.18	15	PASS	10.21	2.17	15	PASS
N028679-001B	SAMP	1	101.078	0.43	15	PASS	11.44	0.93	15	PASS
N028679-001B	SAMP	5	21.25	1.11	15	PASS	2.49	2.95	15	PASS
N028679-001B	SAMP	25	2.53	2.61	15	PASS	0.53	1.011	15	PASS
N028679-001B-PS	PS	1	107.26	0.29	15	PASS	20.031	1.74	15	PASS
N028679-001B-PS	PS	5	22.29	0.15	15	PASS	4.26	0.42	15	PASS
N028679-001B-MS	MS	1	107.83	0.87	15	PASS	19.85	0.81	15	PASS
N028679-001B-MS	MS	5	22.23	0.9	15	PASS	4.26	1.63	15	PASS
N028679-001B-MSD	MSD	1	108.18	0.34	15	PASS	19.79	0.66	15	PASS
CCV1	CCV	1	21.08	0.32	15	PASS	19.38	0.28	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028679-001B-MSD	MSD	5	22.5	0.48	15	PASS	4.34	0.82	15	PASS
N028679-002B	SAMP	1	152.05	0.13	15	PASS	<0.000	N/A	15	<PQL
N028679-002B	SAMP	5	31.61	0.21	15	PASS	<0.000	N/A	15	<PQL
N028679-002B	SAMP	10	15.6	0.32	15	PASS	<0.000	N/A	15	<PQL
N028679-003B	SAMP	1	149.5	0.067	15	PASS	<0.000	N/A	15	<PQL
N028679-003B	SAMP	5	31.31	0.63	15	PASS	<0.000	N/A	15	<PQL
N028679-003B	SAMP	10	15.81	0.74	15	PASS	<0.000	N/A	15	<PQL
N028679-004B	SAMP	1	34.88	0.48	15	PASS	499.65	0.66	15	PASS
N028679-004B	SAMP	5	7.14	1.21	15	PASS	101.66	0.27	15	PASS
N028679-005B	SAMP	1	34.87	0.34	15	PASS	497.87	0.58	15	PASS
CCV2	CCV	1	21.098	0.63	15	PASS	19.73	0.98	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.018	66.42	15	<PQL
N028679-005B	SAMP	5	7.43	0.42	15	PASS	106.66	0.47	15	PASS
N028696-001B	SAMP	1	16.7	0.71	15	PASS	1.51	2.098	15	PASS
N028696-001B	SAMP	5	3.5	1.19	15	PASS	0.32	2.26	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	17.6	0.32	15	PASS	12.4	1.12	15	PASS
N028696-002B	SAMP	5	3.72	1.88	15	PASS	2.64	0.82	15	PASS
N028696-003B	SAMP	1	17.48	0.57	15	PASS	12.33	0.15	15	PASS
N028696-003B	SAMP	5	3.61	1.43	15	PASS	2.64	1.15	15	PASS
N028696-004B	SAMP	1	29.4	0.35	15	PASS	12.36	0.71	15	PASS
N028696-004B	SAMP	5	6.069	0.87	15	PASS	2.52	1.24	15	PASS
N028696-005B	SAMP	1	45.13	0.26	15	PASS	1.13	4.79	15	PASS
CCV3	CCV	1	21.25	1.23	15	PASS	19.72	0.57	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028696-005B	SAMP	5	9.1	0.85	15	PASS	0.26	6.13	15	PASS
N028696-006B	SAMP	1	41.38	0.56	15	PASS	2.15	2.46	15	PASS
N028696-006B	SAMP	5	8.43	1.79	15	PASS	0.46	3.84	15	PASS
N028696-007B	SAMP	1	33.79	0.46	15	PASS	4.35	1.13	15	PASS
N028696-007B	SAMP	5	7.029	0.89	15	PASS	0.92	1.51	15	PASS
N028696-008B	SAMP	1	61.081	0.52	15	PASS	78.37	0.41	15	PASS
N028696-008B	SAMP	5	12.29	0.85	15	PASS	16.53	1.13	15	PASS
N028696-009B	SAMP	1	151.89	0.1	15	PASS	21.11	0.62	15	PASS
N028696-009B	SAMP	5	31.57	0.6	15	PASS	4.52	2.13	15	PASS
CCV4	CCV	1	21	0.93	15	PASS	20.049	0.82	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.12	3.94	20	PASS	1.03	2.53	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.062	10.9	15	PASS
ICSAB2	ICSAB	1	17.72	0.71	15	PASS	19.2	1.74	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	10.38	1.035	15	PASS	10.33	1.52	15	PASS
N028726-001B	SAMP	1	39.055	0.11	15	PASS	0.68	3.25	15	PASS
N028726-001B	SAMP	5	8.073	1.38	15	PASS	0.13	7.15	15	PASS
N028726-001B	SAMP	25	<0.000	N/A	15	<PQL	0.013	39.31	15	<PQL
N028726-001B-PS	PS	1	47.9	0.27	15	PASS	10.032	0.56	15	PASS
N028726-001B-PS	PS	5	10.22	0.85	15	PASS	2.18	1.29	15	PASS
N028726-001B-MS	MS	1	49.047	0.57	15	PASS	9.9	2.44	15	PASS
N028726-001B-MS	MS	5	10.6	0.88	15	PASS	2.22	1.69	15	PASS
N028726-001B-MSD	MSD	1	48.85	0.23	15	PASS	9.83	1.17	15	PASS
CCV5	CCV	1	20.96	0.12	15	PASS	19.66	1.21	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	10.5	0.68	15	PASS	2.26	4.4	15	PASS
N028726-002B	SAMP	1	30.98	0.71	15	PASS	1.62	2.42	15	PASS
N028726-002B	SAMP	5	6.47	0.83	15	PASS	0.34	2.39	15	PASS
N028726-003B	SAMP	1	39.53	0.48	15	PASS	59.41	0.33	15	PASS
N028726-003B	SAMP	5	8.27	0.33	15	PASS	13.3	1.1	15	PASS
N028726-004B	SAMP	1	43.18	0.59	15	PASS	7.72	0.66	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	9.15	0.87	15	PASS	1.74	1.67	15	PASS
N028726-005B	SAMP	1	42.14	0.67	15	PASS	38.64	1.78	15	PASS
N028726-005B	SAMP	5	8.84	1.24	15	PASS	8.55	0.66	15	PASS
N028727-002B	SAMP	1	114.89	0.34	15	PASS	0.091	5.89	15	PASS
CCV6	CCV	1	20.97	0.91	15	PASS	19.74	0.96	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-002B	SAMP	5	23.63	0.52	15	PASS	0.013	50.24	15	<PQL
N028727-003B	SAMP	1	117.34	0.58	15	PASS	<0.000	N/A	15	<PQL
N028727-003B	SAMP	5	24.3	0.53	15	PASS	<0.000	N/A	15	<PQL
N028727-004B	SAMP	1	118.6	0.41	15	PASS	0.012	96.35	15	<PQL
N028727-004B	SAMP	5	24.81	0.33	15	PASS	<0.000	N/A	15	<PQL
N028727-005B	SAMP	1	116.13	0.48	15	PASS	<0.000	N/A	15	<PQL
N028727-005B	SAMP	5	23.54	0.37	15	PASS	0.00014	5401.72	15	<PQL
N028727-006B	SAMP	1	115.68	0.35	15	PASS	<0.000	N/A	15	<PQL
N028727-006B	SAMP	5	24.016	0.077	15	PASS	<0.000	N/A	15	<PQL
N028727-007B	SAMP	1	114.75	0.79	15	PASS	0.003	81.58	15	<PQL
CCV7	CCV	1	20.92	0.53	15	PASS	19.87	0.87	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	5	23.57	1.69	15	PASS	<0.000	N/A	15	<PQL
N028727-008B	SAMP	1	113.91	0.18	15	PASS	0.0093	160.85	15	<PQL
N028727-008B	SAMP	5	24.19	0.97	15	PASS	<0.000	N/A	15	<PQL
N028727-009B	SAMP	1	115.45	0.55	15	PASS	0.0073	27.26	15	<PQL
N028727-009B	SAMP	5	24.9	0.46	15	PASS	<0.000	N/A	15	<PQL
N028727-010B	SAMP	1	113.14	0.35	15	PASS	<0.000	N/A	15	<PQL
N028727-010B	SAMP	5	23.87	0.64	15	PASS	<0.000	N/A	15	<PQL
N028727-011B	SAMP	1	116.34	0.092	15	PASS	<0.000	N/A	15	<PQL
N028727-011B	SAMP	5	25.19	0.39	15	PASS	<0.000	N/A	15	<PQL
N028727-012B	SAMP	1	118.29	0.4	15	PASS	<0.000	N/A	15	<PQL
CCV8	CCV	1	20.87	0.61	15	PASS	19.75	1.18	15	PASS
CCB8	CCB	1	0.0018	221.42	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	25.042	0.47	15	PASS	<0.000	N/A	15	<PQL
N028727-013B	SAMP	1	115.14	0.58	15	PASS	0.027	32.76	15	<PQL
N028727-013B	SAMP	5	24.21	0.3	15	PASS	<0.000	N/A	15	<PQL
N028727-014C	SAMP	1	92.88	0.42	15	PASS	0.019	2.76	15	PASS
N028727-014C	SAMP	5	19.1	0.88	15	PASS	0.0088	14.77	15	PASS
N028727-015C	SAMP	1	106.65	0.68	15	PASS	0.0023	392.55	15	<PQL
N028727-015C	SAMP	5	22.16	1.058	15	PASS	<0.000	N/A	15	<PQL
CCV9	CCV	1	20.66	0.64	15	PASS	19.63	1.81	15	PASS
CCB9	CCB	1	0.0014	376.28	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.11	2.61	20	PASS	1.032	0.58	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.072	8.52	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	15.42	1.48	15	PASS	19.18	0.54	15	PASS
ICSAB3	ICSAB	1	18.015	0.45	15	PASS	19.87	1.52	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	14.066	15	PASS	0.9	1.28	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	5.81	15	PASS	1.6	26.21	15	<PQL
Std3-5/50 ppb	ICAL	1	5.017	0.68	15	PASS	6.0029	0.55	15	PASS
Std4-10/100 ppb	ICAL	1	10.093	0.49	15	PASS	10.77	0.85	15	PASS
Std5-20/200 ppb	ICAL	1	20.3	0.75	15	PASS	21.15	1.37	15	PASS
Std6-40/400 ppb	ICAL	1	40.46	1.36	15	PASS	41.6	0.62	15	PASS
Std7-100/1000 ppb	ICAL	1	100.83	0.59	15	PASS	101.14	0.58	15	PASS
Std8-200/2000 ppb	ICAL	1	199.46	0.29	15	PASS	198.93	0.88	15	PASS
ICV	ICV	1	104.43	1.42	15	PASS	105.3	1.2	15	PASS
ICB	ICB	1	0.0013	952.1	15	<PQL	0.025	77.3	15	<PQL
LLICV	CCV1	1	0.52	0.57	20	PASS	10.68	0.91	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.54	0.88	15	PASS	19.96	0.37	15	PASS
MB-66863	MBLK	1	<0.000	N/A	15	<PQL	0.03	45.78	15	<PQL
LCS-66863	LCS	1	104.14	1.82	15	PASS	105.23	1.59	15	PASS
N028679-001B	SAMP	1	269.51	0.34	15	PASS	21.92	0.27	15	PASS
N028679-001B	SAMP	5	58.26	1.099	15	PASS	4.49	2.55	15	PASS
N028679-001B	SAMP	25	12.16	1.95	15	PASS	0.93	8.63	15	PASS
N028679-001B-PS	PS	1	363.54	2.11	15	PASS	118.076	1.6	15	PASS
N028679-001B-PS	PS	5	74.37	0.69	15	PASS	25.44	1.095	15	PASS
N028679-001B-MS	MS	1	359.3	0.44	15	PASS	76.62	0.54	15	PASS
N028679-001B-MS	MS	5	74.55	1.94	15	PASS	16.87	1.21	15	PASS
N028679-001B-MSD	MSD	1	352.93	1.038	15	PASS	76.52	0.15	15	PASS
CCV1	CCV	1	19.91	0.33	15	PASS	20.46	0.52	15	PASS
CCB1	CCB	1	0.00095	902.59	15	<PQL	0.025	59.53	15	<PQL
N028679-001B-MSD	MSD	5	74.85	1.047	15	PASS	16.99	1.095	15	PASS
N028679-002B	SAMP	1	1047.14	1.84	15	PASS	544.77	1.65	15	PASS
N028679-002B	SAMP	5	221.54	1.16	15	PASS	118.46	1.11	15	PASS
N028679-002B	SAMP	10	110.61	0.76	15	PASS	60.21	0.47	15	PASS
N028679-003B	SAMP	1	1013.36	1.64	15	PASS	421.63	1.088	15	PASS
N028679-003B	SAMP	5	219.77	0.066	15	PASS	93.52	0.27	15	PASS
N028679-003B	SAMP	10	111.97	0.17	15	PASS	48.55	0.74	15	PASS
N028679-004B	SAMP	1	1.48	2.56	15	PASS	<0.000	N/A	15	<PQL
N028679-004B	SAMP	5	0.34	3.67	15	PASS	0.64	6.26	15	PASS
N028679-005B	SAMP	1	1.81	4.51	15	PASS	0.22	47.77	15	<PQL
CCV2	CCV	1	19.79	1.57	15	PASS	20.43	0.86	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.031	70.092	15	<PQL
N028679-005B	SAMP	5	0.39	1.41	15	PASS	0.35	16.55	15	<PQL
N028696-001B	SAMP	1	120.041	0.48	15	PASS	<0.000	N/A	15	<PQL
N028696-001B	SAMP	5	25.55	1.7	15	PASS	<0.000	N/A	15	<PQL

Fe is not reported

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	5.71	1.27	15	PASS	<0.000	N/A	15	<PQL
N028696-002B	SAMP	5	1.23	1.77	15	PASS	<0.000	N/A	15	<PQL
N028696-003B	SAMP	1	5.99	3.16	15	PASS	<0.000	N/A	15	<PQL
N028696-003B	SAMP	5	1.23	5.32	15	PASS	<0.000	N/A	15	<PQL
N028696-004B	SAMP	1	12.012	0.37	15	PASS	8.98	1.57	15	PASS
N028696-004B	SAMP	5	3.75	1.13	15	PASS	<0.000	N/A	15	<PQL
N028696-005B	SAMP	1	58.72	1	15	PASS	62.7	2.31	15	PASS
CCV3	CCV	1	20.35	0.56	15	PASS	20.78	1.03	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028696-005B	SAMP	5	12.58	0.54	15	PASS	13.68	0.89	15	PASS
N028696-006B	SAMP	1	26.99	0.82	15	PASS	<0.000	N/A	15	<PQL
N028696-006B	SAMP	5	5.85	0.31	15	PASS	<0.000	N/A	15	<PQL
N028696-007B	SAMP	1	12.64	0.88	15	PASS	<0.000	N/A	15	<PQL
N028696-007B	SAMP	5	2.75	2.66	15	PASS	<0.000	N/A	15	<PQL
N028696-008B	SAMP	1	52.64	0.59	15	PASS	<0.000	N/A	15	<PQL
N028696-008B	SAMP	5	11.029	0.97	15	PASS	<0.000	N/A	15	<PQL
N028696-009B	SAMP	1	4.91	1.89	15	PASS	95.66	0.69	15	PASS
N028696-009B	SAMP	5	1.07	8.34	15	PASS	21.56	1.14	15	PASS
CCV4	CCV	1	20.15	0.74	15	PASS	20.98	0.72	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.54	6.93	20	PASS	10.54	0.42	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.58	1.15	15	PASS	20.26	0.76	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	103.83	1.83	15	PASS	104.19	1.19	15	PASS
N028726-001B	SAMP	1	118.79	1.84	15	PASS	<0.000	N/A	15	<PQL
N028726-001B	SAMP	5	24.94	0.37	15	PASS	<0.000	N/A	15	<PQL
N028726-001B	SAMP	25	5.21	2.34	15	PASS	<0.000	N/A	15	<PQL
N028726-001B-PS	PS	1	203.96	0.56	15	PASS	79.92	0.21	15	PASS
N028726-001B-PS	PS	5	45.087	1.16	15	PASS	18.33	0.59	15	PASS
N028726-001B-MS	MS	1	207.55	1.00086	15	PASS	83.68	1.33	15	PASS
N028726-001B-MS	MS	5	46.72	0.39	15	PASS	19.62	1.13	15	PASS
N028726-001B-MSD	MSD	1	205.82	0.36	15	PASS	82.9	0.32	15	PASS
CCV5	CCV	1	20.14	0.32	15	PASS	20.67	1.12	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	46.55	0.82	15	PASS	19.64	1.83	15	PASS
N028726-002B	SAMP	1	34.62	1.19	15	PASS	0.83	14.43	15	PASS
N028726-002B	SAMP	5	7.5	0.82	15	PASS	0.49	11.56	15	PASS
N028726-003B	SAMP	1	10.67	1.77	15	PASS	<0.000	N/A	15	<PQL
N028726-003B	SAMP	5	2.28	1.75	15	PASS	<0.000	N/A	15	<PQL
N028726-004B	SAMP	1	20.9	0.58	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	4.64	0.69	15	PASS	0.52	45.12	15	<PQL
N028726-005B	SAMP	1	21.82	2.047	15	PASS	246.98	1.65	15	PASS
N028726-005B	SAMP	5	4.82	0.8	15	PASS	54.37	0.66	15	PASS
N028727-002B	SAMP	1	<0.000	N/A	15	<PQL	1.44	2.093	15	PASS
CCV6	CCV	1	20.072	1.064	15	PASS	20.71	1.2	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.0059	400.24	15	<PQL
N028727-002B	SAMP	5	<0.000	N/A	15	<PQL	0.33	8.84	15	PASS
N028727-003B	SAMP	1	0.65	4.062	15	PASS	0.89	8.47	15	PASS
N028727-003B	SAMP	5	0.17	13.14	15	PASS	0.96	1.2	15	PASS
N028727-004B	SAMP	1	<0.000	N/A	15	<PQL	3.74	37.16	15	<PQL
N028727-004B	SAMP	5	<0.000	N/A	15	<PQL	0.89	63.56	15	<PQL
N028727-005B	SAMP	1	<0.000	N/A	15	<PQL	1.67	8.55	15	PASS
N028727-005B	SAMP	5	<0.000	N/A	15	<PQL	0.34	5.31	15	PASS
N028727-006B	SAMP	1	<0.000	N/A	15	<PQL	0.62	2.84	15	PASS
N028727-006B	SAMP	5	<0.000	N/A	15	<PQL	0.29	32.6	15	<PQL
N028727-007B	SAMP	1	<0.000	N/A	15	<PQL	7.81	37.6	15	<PQL
CCV7	CCV	1	20.43	0.23	15	PASS	21.12	1.49	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	5	<0.000	N/A	15	<PQL	1.44	11.2	15	PASS
N028727-008B	SAMP	1	<0.000	N/A	15	<PQL	2.42	3.95	15	PASS
N028727-008B	SAMP	5	<0.000	N/A	15	<PQL	0.46	7.12	15	PASS
N028727-009B	SAMP	1	<0.000	N/A	15	<PQL	0.66	26.44	15	<PQL
N028727-009B	SAMP	5	<0.000	N/A	15	<PQL	3.71	2.12	15	PASS
N028727-010B	SAMP	1	<0.000	N/A	15	<PQL	3.53	3.71	15	PASS
N028727-010B	SAMP	5	<0.000	N/A	15	<PQL	0.81	6.23	15	PASS
N028727-011B	SAMP	1	<0.000	N/A	15	<PQL	3.42	0.37	15	PASS
N028727-011B	SAMP	5	<0.000	N/A	15	<PQL	0.51	7.28	15	PASS
N028727-012B	SAMP	1	<0.000	N/A	15	<PQL	3.34	3.69	15	PASS
CCV8	CCV	1	20.37	1.079	15	PASS	20.98	2.26	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	<0.000	N/A	15	<PQL	0.81	1.033	15	PASS
N028727-013B	SAMP	1	0.054	91.58	15	<PQL	15.22	2.92	15	PASS
N028727-013B	SAMP	5	<0.000	N/A	15	<PQL	1.72	0.55	15	PASS
N028727-014C	SAMP	1	17.29	1.95	15	PASS	91.45	1.83	15	PASS
N028727-014C	SAMP	5	3.67	0.93	15	PASS	19.0042	2.37	15	PASS
N028727-015C	SAMP	1	1.93	1.18	15	PASS	10.72	1.34	15	PASS
N028727-015C	SAMP	5	0.4	5.78	15	PASS	2.15	4.19	15	PASS
CCV9	CCV	1	20.43	1.63	15	PASS	20.94	1.57	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.0078	139.94	15	<PQL
LLCCV2	CCV2	1	0.52	10.23	20	PASS	10.55	0.72	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				56 Fe [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	21.5	0.29	15	PASS	20.45	1.2	15	PASS
ICSAB3	ICSAB	1	21.2	1.92	15	PASS	21.68	0.4	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	19.28	15	NR!	0.13	19.19	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	5.75	15	PASS	0.53	24.52	15	NR!
Std3-5/50 ppb	ICAL	1	5.0073	2.24	15	PASS	4.76	2.15	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	2.61	15	PASS	10.08	5.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.91	1.4	15	PASS	20.046	0.84	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	1.45	15	PASS	39.97	2.13	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	1.75	15	PASS	100.7	0.4	15	PASS
Std8-200/2000 ppb	ICAL	1	199.68	0.6	15	PASS	199.65	2.32	15	PASS
ICV	ICV	1	10.33	1.47	15	PASS	10.034	2.45	15	PASS
ICB	ICB	1	0.0076	46.65	15	<PQL	0.034	88.12	15	<PQL
LLICV	CCV1	1	0.12	12.17	20	PASS	0.55	18.035	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.011	134.88	15	<PQL
ICSAB1	ICSAB	1	20.73	0.88	15	PASS	18.88	4.26	15	PASS
MB-66863	MBLK	1	0.0064	229.043	15	<PQL	0.004	346.87	15	<PQL
LCS-66863	LCS	1	10.29	2.6	15	PASS	10.47	4.33	15	PASS
N028679-001B	SAMP	1	1.74	1.53	15	PASS	2.15	14.38	15	PASS
N028679-001B	SAMP	5	0.35	3.97	15	PASS	0.47	24.085	15	<PQL
N028679-001B	SAMP	25	0.079	6.37	15	PASS	0.093	62.88	15	<PQL
N028679-001B-PS	PS	1	12.087	1.48	15	PASS	10.93	4.41	15	PASS
N028679-001B-PS	PS	5	2.55	6.085	15	PASS	2.54	14.4	15	PASS
N028679-001B-MS	MS	1	12.26	2.45	15	PASS	11.57	0.91	15	PASS
N028679-001B-MS	MS	5	2.54	0.89	15	PASS	2.35	7.66	15	PASS
N028679-001B-MSD	MSD	1	12.24	0.66	15	PASS	11.72	6.59	15	PASS
CCV1	CCV	1	20.12	1.098	15	PASS	19.47	2.11	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0079	150.54	15	<PQL
N028679-001B-MSD	MSD	5	2.57	3.93	15	PASS	2.26	5.54	15	PASS
N028679-002B	SAMP	1	4.25	0.51	15	PASS	0.05	19.066	15	<PQL
N028679-002B	SAMP	5	0.82	5.3	15	PASS	0.0085	147.0063	15	<PQL
N028679-002B	SAMP	10	0.48	4.48	15	PASS	0.00018	4075.71	15	<PQL
N028679-003B	SAMP	1	4.091	3.64	15	PASS	0.08	74.99	15	<PQL
N028679-003B	SAMP	5	0.88	6.66	15	PASS	0.026	75.17	15	<PQL
N028679-003B	SAMP	10	0.38	1.065	15	PASS	0.00015	4840.17	15	<PQL
N028679-004B	SAMP	1	1.62	0.81	15	PASS	4.0041	2.98	15	PASS
N028679-004B	SAMP	5	0.3	1.17	15	PASS	0.87	29.51	15	NR!
N028679-005B	SAMP	1	1.56	2.014	15	PASS	3.82	1.84	15	PASS
CCV2	CCV	1	20.23	1.14	15	PASS	20.27	0.67	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0035	370.87	15	<PQL
N028679-005B	SAMP	5	0.29	17.36	15	NR!	0.93	12.15	15	PASS
N028696-001B	SAMP	1	1.23	2.052	15	PASS	0.032	100.45	15	<PQL
N028696-001B	SAMP	5	0.27	6.45	15	PASS	0.021	102.54	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	5.67	1.071	15	PASS	0.12	51.52	15	<PQL
N028696-002B	SAMP	5	1.13	4.15	15	PASS	0.025	103.7	15	<PQL
N028696-003B	SAMP	1	5.63	0.1	15	PASS	0.13	31.59	15	<PQL
N028696-003B	SAMP	5	1.13	3.16	15	PASS	0.012	114.95	15	<PQL
N028696-004B	SAMP	1	2.26	2.75	15	PASS	0.85	9.12	15	PASS
N028696-004B	SAMP	5	0.43	8.04	15	PASS	0.11	48.42	15	<PQL
N028696-005B	SAMP	1	12.61	1.11	15	PASS	0.2	1.78	15	PASS
CCV3	CCV	1	20.24	0.71	15	PASS	20.27	2.45	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.034	64.69	15	<PQL
N028696-005B	SAMP	5	2.69	0.44	15	PASS	0.046	61.7	15	<PQL
N028696-006B	SAMP	1	14.9	1.24	15	PASS	0.33	14.32	15	PASS
N028696-006B	SAMP	5	2.94	3.012	15	PASS	0.042	18.55	15	<PQL
N028696-007B	SAMP	1	15.21	0.55	15	PASS	0.35	23.23	15	<PQL
N028696-007B	SAMP	5	3.18	3.82	15	PASS	0.057	14.000022	15	PASS
N028696-008B	SAMP	1	10.78	1.048	15	PASS	1.0038	9.17	15	PASS
N028696-008B	SAMP	5	2.18	4.39	15	PASS	0.16	35.11	15	<PQL
N028696-009B	SAMP	1	1.7	7.1	15	PASS	4.2	2.69	15	PASS
N028696-009B	SAMP	5	0.33	7.35	15	PASS	0.73	4.42	15	PASS
CCV4	CCV	1	19.76	0.72	15	PASS	20.84	2.65	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0047	320.52	15	<PQL
LLCCV1	CCV2	1	0.11	5.28	20	PASS	0.54	12.19	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.015	145.12	15	<PQL
ICSAB2	ICSAB	1	20.2	1.41	15	PASS	20.68	2.068	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	0.021	119.32	15	<PQL
LCS-66882	LCS	1	10.27	3.047	15	PASS	11.055	0.77	15	PASS
N028726-001B	SAMP	1	6.74	1.67	15	PASS	0.53	20.92	15	NR!
N028726-001B	SAMP	5	1.43	3.57	15	PASS	0.11	46.54	15	<PQL
N028726-001B	SAMP	25	0.28	8.39	15	PASS	0.0096	141.25	15	<PQL
N028726-001B-PS	PS	1	16.95	1.71	15	PASS	10.87	2.66	15	PASS
N028726-001B-PS	PS	5	3.58	2.36	15	PASS	2.18	12.33	15	PASS
N028726-001B-MS	MS	1	17.084	0.82	15	PASS	10.59	3.015	15	PASS
N028726-001B-MS	MS	5	3.78	3.21	15	PASS	2.35	5.4	15	PASS
N028726-001B-MSD	MSD	1	17.35	1.27	15	PASS	10.67	4.53	15	PASS
CCV5	CCV	1	19.98	0.73	15	PASS	20.98	0.68	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.022	58.54	15	<PQL
N028726-001B-MSD	MSD	5	3.62	2.99	15	PASS	2.3	17.38	15	NR!
N028726-002B	SAMP	1	1.46	4.27	15	PASS	0.69	13.35	15	PASS
N028726-002B	SAMP	5	0.3	9.42	15	PASS	0.17	47.77	15	<PQL
N028726-003B	SAMP	1	7.61	1.83	15	PASS	2.72	11.86	15	PASS
N028726-003B	SAMP	5	1.6	1.8	15	PASS	0.52	30.97	15	NR!
N028726-004B	SAMP	1	3.97	5.67	15	PASS	2.9	13.86	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	0.79	2.68	15	PASS	0.52	10.62	15	PASS
N028726-005B	SAMP	1	4.56	3.086	15	PASS	3.019	8.58	15	PASS
N028726-005B	SAMP	5	0.94	9.42	15	PASS	0.53	10.95	15	PASS
N028727-002B	SAMP	1	2.14	2.019	15	PASS	1.62	1.96	15	PASS
CCV6	CCV	1	19.83	0.7	15	PASS	20.29	2.61	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.023	101.55	15	<PQL
N028727-002B	SAMP	5	0.42	6.65	15	PASS	0.39	13.46	15	PASS
N028727-003B	SAMP	1	2.25	3.86	15	PASS	1.6	9.63	15	PASS
N028727-003B	SAMP	5	0.45	5.54	15	PASS	0.32	18.64	15	<PQL
N028727-004B	SAMP	1	2.27	0.47	15	PASS	1.81	10.67	15	PASS
N028727-004B	SAMP	5	0.46	3.34	15	PASS	0.41	3.94	15	PASS
N028727-005B	SAMP	1	2.22	4.74	15	PASS	1.71	2.96	15	PASS
N028727-005B	SAMP	5	0.43	6.87	15	PASS	0.35	6.32	15	PASS
N028727-006B	SAMP	1	2.17	3.9	15	PASS	1.6	17.8	15	NR!
N028727-006B	SAMP	5	0.43	8.78	15	PASS	0.36	16.36	15	<PQL
N028727-007B	SAMP	1	2.1	5.097	15	PASS	1.47	8.16	15	PASS
CCV7	CCV	1	20.3	0.77	15	PASS	20.5	2.97	15	PASS
CCB7	CCB	1	0.0079	19.42	15	<PQL	0.015	54.22	15	<PQL
N028727-007B	SAMP	5	0.4	2.076	15	PASS	0.32	6.66	15	PASS
N028727-008B	SAMP	1	2.11	4.31	15	PASS	1.65	1.47	15	PASS
N028727-008B	SAMP	5	0.43	6.28	15	PASS	0.28	10.79	15	PASS
N028727-009B	SAMP	1	2.19	6.02	15	PASS	1.66	2.81	15	PASS
N028727-009B	SAMP	5	0.48	8.0061	15	PASS	0.31	37.55	15	<PQL
N028727-010B	SAMP	1	2.16	1.052	15	PASS	1.81	3.97	15	PASS
N028727-010B	SAMP	5	0.44	2.97	15	PASS	0.33	13.57	15	PASS
N028727-011B	SAMP	1	2.21	4.91	15	PASS	1.56	5.79	15	PASS
N028727-011B	SAMP	5	0.46	7.17	15	PASS	0.45	14.37	15	PASS
N028727-012B	SAMP	1	2.2	5.3	15	PASS	1.87	2.18	15	PASS
CCV8	CCV	1	19.95	2.38	15	PASS	20.21	1.32	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.00083	1011.41	15	<PQL
N028727-012B	SAMP	5	0.47	2.93	15	PASS	0.3	32.83	15	<PQL
N028727-013B	SAMP	1	2.21	4.47	15	PASS	1.48	11.69	15	PASS
N028727-013B	SAMP	5	0.41	16.64	15	NR!	0.31	28.011	15	<PQL
N028727-014C	SAMP	1	1.52	3.33	15	PASS	0.96	12.46	15	PASS
N028727-014C	SAMP	5	0.29	4.83	15	PASS	0.2	28.6	15	<PQL
N028727-015C	SAMP	1	1.82	1.58	15	PASS	1.53	5.00092	15	PASS
N028727-015C	SAMP	5	0.36	5.14	15	PASS	0.29	27.76	15	<PQL
CCV9	CCV	1	19.95	0.44	15	PASS	20.29	3.12	15	PASS
CCB9	CCB	1	0.0095	57.5	15	<PQL	0.0012	767	15	<PQL
LLCCV2	CCV2	1	0.11	5.62	20	PASS	0.59	13.24	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.023	40.43	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	20.21	0.89	15	PASS	19.16	3.51	15	PASS
ICSAB3	ICSAB	1	20.085	3.65	15	PASS	18.84	4.12	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.084	16.48	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	1.87	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	1.84	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	0.44	15	PASS
Std5-20/200 ppb	ICAL	1	19.84	1.51	15	PASS
Std6-40/400 ppb	ICAL	1	39.77	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	100.49	1.52	15	PASS
Std8-200/2000 ppb	ICAL	1	199.83	0.91	15	PASS
ICV	ICV	1	10.68	0.4	15	PASS
ICB	ICB	1	0.18	4.16	15	PASS
LLICV	CCV1	1	0.56	2.84	20	PASS
ICSA1	ICSA	1	0.062	14.73	15	PASS
ICSAB1	ICSAB	1	21.76	1.7	15	PASS
MB-66863	MBLK	1	0.051	32.9	15	<PQL
LCS-66863	LCS	1	10.22	0.98	15	PASS
N028679-001B	SAMP	1	24.3	0.56	15	PASS
N028679-001B	SAMP	5	4.75	2.54	15	PASS
N028679-001B	SAMP	25	0.94	1.2	15	PASS
N028679-001B-PS	PS	1	34.68	0.4	15	PASS
N028679-001B-PS	PS	5	6.82	2.42	15	PASS
N028679-001B-MS	MS	1	34.3	0.85	15	PASS
N028679-001B-MS	MS	5	6.74	1.63	15	PASS
N028679-001B-MSD	MSD	1	34.63	2.18	15	PASS
CCV1	CCV	1	20.1	0.73	15	PASS
CCB1	CCB	1	0.069	14.47	15	PASS
N028679-001B-MSD	MSD	5	6.76	3.44	15	PASS
N028679-002B	SAMP	1	66.56	1.33	15	PASS
N028679-002B	SAMP	5	13.13	0.86	15	PASS
N028679-002B	SAMP	10	6.39	1.7	15	PASS
N028679-003B	SAMP	1	65.69	0.94	15	PASS
N028679-003B	SAMP	5	13.021	0.59	15	PASS
N028679-003B	SAMP	10	6.41	0.46	15	PASS
N028679-004B	SAMP	1	13.92	1.024	15	PASS
N028679-004B	SAMP	5	2.77	0.56	15	PASS
N028679-005B	SAMP	1	14.19	2.61	15	PASS
CCV2	CCV	1	20.051	0.66	15	PASS
CCB2	CCB	1	0.054	15.25	15	<PQL
N028679-005B	SAMP	5	2.85	1.91	15	PASS
N028696-001B	SAMP	1	49.27	1.63	15	PASS
N028696-001B	SAMP	5	9.72	2.13	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028696-002B	SAMP	1	84.2	0.88	15	PASS
N028696-002B	SAMP	5	16.62	1.45	15	PASS
N028696-003B	SAMP	1	83.053	1.73	15	PASS
N028696-003B	SAMP	5	16.044	0.81	15	PASS
N028696-004B	SAMP	1	196.038	0.12	15	PASS
N028696-004B	SAMP	5	37.69	0.49	15	PASS
N028696-005B	SAMP	1	77.37	2.64	15	PASS
CCV3	CCV	1	20.11	1.9	15	PASS
CCB3	CCB	1	0.11	17.14	15	<PQL
N028696-005B	SAMP	5	14.84	0.84	15	PASS
N028696-006B	SAMP	1	81.63	1.083	15	PASS
N028696-006B	SAMP	5	15.52	0.8	15	PASS
N028696-007B	SAMP	1	80.031	0.99	15	PASS
N028696-007B	SAMP	5	15.8	0.42	15	PASS
N028696-008B	SAMP	1	76.75	0.89	15	PASS
N028696-008B	SAMP	5	14.4	1.3	15	PASS
N028696-009B	SAMP	1	26.89	0.61	15	PASS
N028696-009B	SAMP	5	5.2	1.21	15	PASS
CCV4	CCV	1	19.76	1.34	15	PASS
CCB4	CCB	1	0.076	15.11	15	<PQL
LLCCV1	CCV2	1	0.52	5.76	20	PASS
ICSA2	ICSA	1	0.04	21.79	15	<PQL
ICSAB2	ICSAB	1	21.93	0.66	15	PASS
MB-66882	MBLK	1	0.054	14.31	15	PASS
LCS-66882	LCS	1	10.046	1.93	15	PASS
N028726-001B	SAMP	1	67.21	0.75	15	PASS
N028726-001B	SAMP	5	13.11	1.67	15	PASS
N028726-001B	SAMP	25	2.64	3.016	15	PASS
N028726-001B-PS	PS	1	75.56	0.86	15	PASS
N028726-001B-PS	PS	5	15.32	0.74	15	PASS
N028726-001B-MS	MS	1	78.32	1.7	15	PASS
N028726-001B-MS	MS	5	16.13	0.45	15	PASS
N028726-001B-MSD	MSD	1	78.79	1.13	15	PASS
CCV5	CCV	1	20.015	0.2	15	PASS
CCB5	CCB	1	0.12	12.7	15	PASS
N028726-001B-MSD	MSD	5	15.94	1.18	15	PASS
N028726-002B	SAMP	1	20.035	1.9	15	PASS
N028726-002B	SAMP	5	3.98	0.9	15	PASS
N028726-003B	SAMP	1	59.2	0.89	15	PASS
N028726-003B	SAMP	5	11.49	0.96	15	PASS
N028726-004B	SAMP	1	59.72	0.36	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028726-004B	SAMP	5	11.64	0.6	15	PASS
N028726-005B	SAMP	1	58.47	0.31	15	PASS
N028726-005B	SAMP	5	11.25	2.2	15	PASS
N028727-002B	SAMP	1	4.84	2.028	15	PASS
CCV6	CCV	1	19.98	0.29	15	PASS
CCB6	CCB	1	0.075	14.32	15	PASS
N028727-002B	SAMP	5	0.99	2.093	15	PASS
N028727-003B	SAMP	1	4.93	1.65	15	PASS
N028727-003B	SAMP	5	0.97	2.86	15	PASS
N028727-004B	SAMP	1	5.017	1.29	15	PASS
N028727-004B	SAMP	5	0.96	2.75	15	PASS
N028727-005B	SAMP	1	4.81	3.53	15	PASS
N028727-005B	SAMP	5	0.95	4.077	15	PASS
N028727-006B	SAMP	1	4.81	1.24	15	PASS
N028727-006B	SAMP	5	0.91	4.92	15	PASS
N028727-007B	SAMP	1	4.75	1.72	15	PASS
CCV7	CCV	1	19.95	0.91	15	PASS
CCB7	CCB	1	0.053	18.047	15	<PQL
N028727-007B	SAMP	5	0.97	3.5	15	PASS
N028727-008B	SAMP	1	4.77	1.26	15	PASS
N028727-008B	SAMP	5	1	2.76	15	PASS
N028727-009B	SAMP	1	4.84	0.8	15	PASS
N028727-009B	SAMP	5	1	2.62	15	PASS
N028727-010B	SAMP	1	4.74	0.65	15	PASS
N028727-010B	SAMP	5	0.95	2.0091	15	PASS
N028727-011B	SAMP	1	4.85	2.52	15	PASS
N028727-011B	SAMP	5	0.98	3.88	15	PASS
N028727-012B	SAMP	1	4.96	1.32	15	PASS
CCV8	CCV	1	19.66	1.0022	15	PASS
CCB8	CCB	1	0.054	8.73	15	PASS
N028727-012B	SAMP	5	0.98	2.17	15	PASS
N028727-013B	SAMP	1	4.95	1.96	15	PASS
N028727-013B	SAMP	5	0.97	3.41	15	PASS
N028727-014C	SAMP	1	5.86	0.59	15	PASS
N028727-014C	SAMP	5	1.13	0.73	15	PASS
N028727-015C	SAMP	1	5.19	1.56	15	PASS
N028727-015C	SAMP	5	1.017	3.98	15	PASS
CCV9	CCV	1	19.58	1.17	15	PASS
CCB9	CCB	1	0.063	15.76	15	<PQL
LLCCV2	CCV2	1	0.5	11.41	20	PASS
ICSA3	ICSA	1	0.019	52.069	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
ICSAB3	ICSAB	1	21.65	1.027	15	PASS
ICSAB3	ICSAB	1	21.33	0.97	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226001.D	RINSE	RINSE	1	02/26/18 5:11 PM
A0226002.D	Cal Blank	IBLK	1	02/26/18 5:16 PM
A0226003.D	Std1-0.1/1 ppb	ICAL	1	02/26/18 5:22 PM
A0226004.D	Std2-0.5/5 ppb	ICAL	1	02/26/18 5:27 PM
A0226005.D	Std3-5/50 ppb	ICAL	1	02/26/18 5:33 PM
A0226006.D	Std4-10/100 ppb	ICAL	1	02/26/18 5:39 PM
A0226007.D	Std5-20/200 ppb	ICAL	1	02/26/18 5:44 PM
A0226008.D	Std6-40/400 ppb	ICAL	1	02/26/18 5:50 PM
A0226009.D	Std7-100/1000 ppb	ICAL	1	02/26/18 5:55 PM
A0226010.D	Std8-200/2000 ppb	ICAL	1	02/26/18 6:01 PM
A0226011.D	ICV	ICV	1	02/26/18 6:07 PM
A0226012.D	ICB	ICB	1	02/26/18 6:12 PM
A0226013.D	LLICV	CCV1	1	02/26/18 6:18 PM
A0226014.D	ICSA1	ICSA	1	02/26/18 6:23 PM
A0226015.D	ICSAB1	ICSAB	1	02/26/18 6:29 PM
A0226016.D	MB-66863	MBLK	1	02/26/18 6:35 PM
A0226017.D	LCS-66863	LCS	1	02/26/18 6:40 PM
A0226018.D	N028679-001B	SAMP	1	02/26/18 6:46 PM
A0226019.D	N028679-001B	SAMP	5	02/26/18 6:51 PM
A0226020.D	N028679-001B	SAMP	25	02/26/18 6:57 PM
A0226021.D	N028679-001B-PS	PS	1	02/26/18 7:03 PM
A0226022.D	N028679-001B-PS	PS	5	02/26/18 7:08 PM
A0226023.D	N028679-001B-MS	MS	1	02/26/18 7:14 PM
A0226024.D	N028679-001B-MS	MS	5	02/26/18 7:20 PM
A0226025.D	N028679-001B-MSD	MSD	1	02/26/18 7:25 PM
A0226026.D	CCV1	CCV	1	02/26/18 7:31 PM
A0226027.D	CCB1	CCB	1	02/26/18 7:36 PM
A0226028.D	N028679-001B-MSD	MSD	5	02/26/18 7:42 PM
A0226029.D	N028679-002B	SAMP	1	02/26/18 7:48 PM
A0226030.D	N028679-002B	SAMP	5	02/26/18 7:53 PM
A0226031.D	N028679-002B	SAMP	10	02/26/18 7:59 PM
A0226032.D	N028679-003B	SAMP	1	02/26/18 8:04 PM
A0226033.D	N028679-003B	SAMP	5	02/26/18 8:10 PM
A0226034.D	N028679-003B	SAMP	10	02/26/18 8:16 PM
A0226035.D	N028679-004B	SAMP	1	02/26/18 8:21 PM
A0226036.D	N028679-004B	SAMP	5	02/26/18 8:27 PM
A0226037.D	N028679-005B	SAMP	1	02/26/18 8:32 PM
A0226038.D	CCV2	CCV	1	02/26/18 8:38 PM
A0226039.D	CCB2	CCB	1	02/26/18 8:44 PM
A0226040.D	N028679-005B	SAMP	5	02/26/18 8:49 PM
A0226041.D	N028696-001B	SAMP	1	02/26/18 8:55 PM
A0226042.D	N028696-001B	SAMP	5	02/26/18 9:00 PM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226043.D	N028696-002B	SAMP	1	02/26/18 9:06 PM
A0226044.D	N028696-002B	SAMP	5	02/26/18 9:12 PM
A0226045.D	N028696-003B	SAMP	1	02/26/18 9:17 PM
A0226046.D	N028696-003B	SAMP	5	02/26/18 9:23 PM
A0226047.D	N028696-004B	SAMP	1	02/26/18 9:29 PM
A0226048.D	N028696-004B	SAMP	5	02/26/18 9:34 PM
A0226049.D	N028696-005B	SAMP	1	02/26/18 9:41 PM
A0226050.D	CCV3	CCV	1	02/26/18 9:47 PM
A0226051.D	CCB3	CCB	1	02/26/18 9:53 PM
A0226052.D	N028696-005B	SAMP	5	02/26/18 9:58 PM
A0226053.D	N028696-006B	SAMP	1	02/26/18 10:04 PM
A0226054.D	N028696-006B	SAMP	5	02/26/18 10:09 PM
A0226055.D	N028696-007B	SAMP	1	02/26/18 10:15 PM
A0226056.D	N028696-007B	SAMP	5	02/26/18 10:21 PM
A0226057.D	N028696-008B	SAMP	1	02/26/18 10:26 PM
A0226058.D	N028696-008B	SAMP	5	02/26/18 10:32 PM
A0226059.D	N028696-009B	SAMP	1	02/26/18 10:38 PM
A0226060.D	N028696-009B	SAMP	5	02/26/18 10:43 PM
A0226061.D	CCV4	CCV	1	02/26/18 10:49 PM
A0226062.D	CCB4	CCB	1	02/26/18 10:54 PM
A0226063.D	LLCCV1	CCV2	1	02/26/18 11:00 PM
A0226064.D	ICSA2	ICSA	1	02/26/18 11:06 PM
A0226065.D	ICSAB2	ICSAB	1	02/26/18 11:11 PM
A0226066.D	MB-66882	MBLK	1	02/26/18 11:17 PM
A0226067.D	LCS-66882	LCS	1	02/26/18 11:22 PM
A0226068.D	N028726-001B	SAMP	1	02/26/18 11:28 PM
A0226069.D	N028726-001B	SAMP	5	02/26/18 11:34 PM
A0226070.D	N028726-001B	SAMP	25	02/26/18 11:39 PM
A0226071.D	N028726-001B-PS	PS	1	02/26/18 11:45 PM
A0226072.D	N028726-001B-PS	PS	5	02/26/18 11:50 PM
A0226073.D	N028726-001B-MS	MS	1	02/26/18 11:56 PM
A0226074.D	N028726-001B-MS	MS	5	02/27/18 12:02 AM
A0226075.D	N028726-001B-MSD	MSD	1	02/27/18 12:07 AM
A0226076.D	CCV5	CCV	1	02/27/18 12:13 AM
A0226077.D	CCB5	CCB	1	02/27/18 12:18 AM
A0226078.D	N028726-001B-MSD	MSD	5	02/27/18 12:24 AM
A0226079.D	N028726-002B	SAMP	1	02/27/18 12:30 AM
A0226080.D	N028726-002B	SAMP	5	02/27/18 12:35 AM
A0226081.D	N028726-003B	SAMP	1	02/27/18 12:41 AM
A0226082.D	N028726-003B	SAMP	5	02/27/18 12:47 AM
A0226083.D	N028726-004B	SAMP	1	02/27/18 12:52 AM
A0226084.D	N028726-004B	SAMP	5	02/27/18 12:58 AM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226085.D	N028726-005B	SAMP	1	02/27/18 1:03 AM
A0226086.D	N028726-005B	SAMP	5	02/27/18 1:09 AM
A0226087.D	N028727-002B	SAMP	1	02/27/18 1:15 AM
A0226088.D	CCV6	CCV	1	02/27/18 1:20 AM
A0226089.D	CCB6	CCB	1	02/27/18 1:26 AM
A0226090.D	N028727-002B	SAMP	5	02/27/18 1:31 AM
A0226091.D	N028727-003B	SAMP	1	02/27/18 1:37 AM
A0226092.D	N028727-003B	SAMP	5	02/27/18 1:43 AM
A0226093.D	N028727-004B	SAMP	1	02/27/18 1:48 AM
A0226094.D	N028727-004B	SAMP	5	02/27/18 1:54 AM
A0226095.D	N028727-005B	SAMP	1	02/27/18 2:00 AM
A0226096.D	N028727-005B	SAMP	5	02/27/18 2:05 AM
A0226097.D	N028727-006B	SAMP	1	02/27/18 2:11 AM
A0226098.D	N028727-006B	SAMP	5	02/27/18 2:16 AM
A0226099.D	N028727-007B	SAMP	1	02/27/18 2:22 AM
A0226100.D	CCV7	CCV	1	02/27/18 2:28 AM
A0226101.D	CCB7	CCB	1	02/27/18 2:33 AM
A0226102.D	N028727-007B	SAMP	5	02/27/18 2:39 AM
A0226103.D	N028727-008B	SAMP	1	02/27/18 2:44 AM
A0226104.D	N028727-008B	SAMP	5	02/27/18 2:50 AM
A0226105.D	N028727-009B	SAMP	1	02/27/18 2:56 AM
A0226106.D	N028727-009B	SAMP	5	02/27/18 3:01 AM
A0226107.D	N028727-010B	SAMP	1	02/27/18 3:07 AM
A0226108.D	N028727-010B	SAMP	5	02/27/18 3:13 AM
A0226109.D	N028727-011B	SAMP	1	02/27/18 3:18 AM
A0226110.D	N028727-011B	SAMP	5	02/27/18 3:24 AM
A0226111.D	N028727-012B	SAMP	1	02/27/18 3:29 AM
A0226112.D	CCV8	CCV	1	02/27/18 3:35 AM
A0226113.D	CCB8	CCB	1	02/27/18 3:41 AM
A0226114.D	N028727-012B	SAMP	5	02/27/18 3:46 AM
A0226115.D	N028727-013B	SAMP	1	02/27/18 3:52 AM
A0226116.D	N028727-013B	SAMP	5	02/27/18 3:58 AM
A0226117.D	N028727-014C	SAMP	1	02/27/18 4:03 AM
A0226118.D	N028727-014C	SAMP	5	02/27/18 4:09 AM
A0226119.D	N028727-015C	SAMP	1	02/27/18 4:14 AM
A0226120.D	N028727-015C	SAMP	5	02/27/18 4:20 AM
A0226121.D	CCV9	CCV	1	02/27/18 4:26 AM
A0226122.D	CCB9	CCB	1	02/27/18 4:31 AM
A0226123.D	LLCCV2	CCV2	1	02/27/18 4:37 AM
A0226124.D	ICSA3	ICSA	1	02/27/18 4:43 AM
A0226125.D	ICSAB3	ICSAB	1	02/27/18 4:48 AM
A0226126.D	ICSAB3	ICSAB	1	02/27/18 4:57 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/21/2018 12:00:00**
Prep End Date: **2/21/2018 4:00:00**
Prep Batch **66863** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 3/5/2018
Initials/ Date: 3/5/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66863	Aqueous		25	☐	0	0	25	1.000		
MB-66863	Aqueous		25	☐	0	0	25	1.000		
N028679-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028679-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-005B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/21/2018 12:00:00**
Prep End Date: **2/21/2018 4:00:00**

Reviewed/ Date: 3/5/2018
Initials/ Date: 3/5/2018

Prep Batch **66863** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028696-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028696-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 26 Feb 2018 02:40:46 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	166688.00	0.00	
24 Mg	675728.00	0.00	
25 Mg	87808.20	0.00	
26 Mg	101444.00	0.00	
59 Co	617412.00	0.00	
115 In	1016020.00	0.00	
206 Pb	323115.00	0.00	
207 Pb	282293.00	0.00	
208 Pb	693360.00	0.00	

RSD (%)

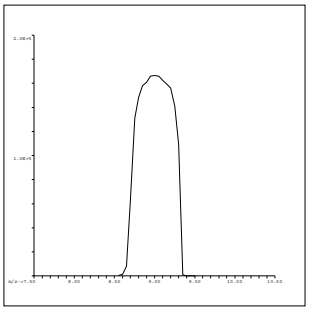
Element	Actual	Required	Flag
9 Be	0.55	5.00	
24 Mg	0.89	5.00	
25 Mg	1.10	5.00	
26 Mg	0.39	5.00	
59 Co	0.82	5.00	
115 In	0.34	5.00	
206 Pb	0.62	5.00	
207 Pb	0.42	5.00	
208 Pb	0.30	5.00	

Ion Ratio

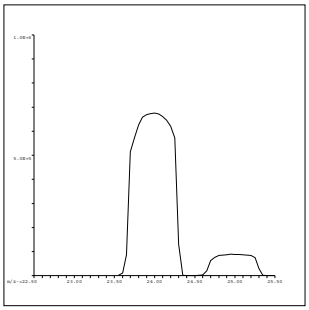
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

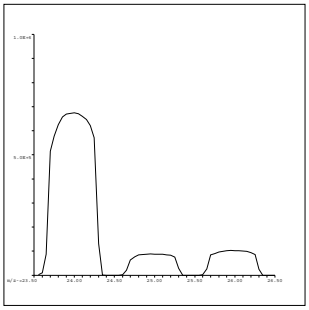
Element	Actual	Required	Flag



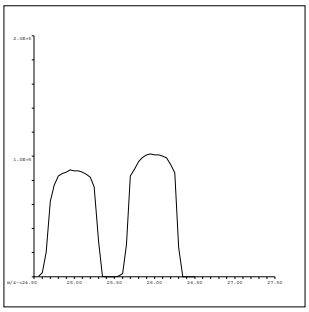
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



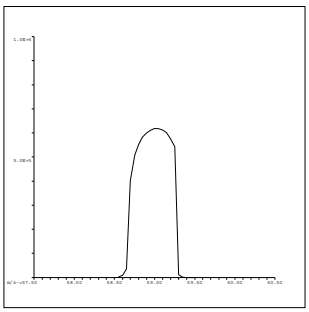
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



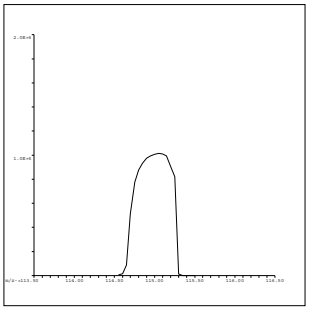
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



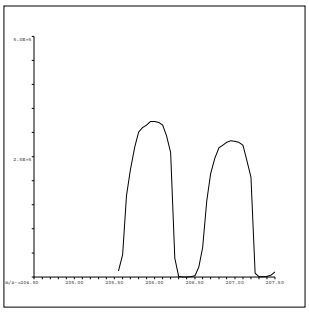
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



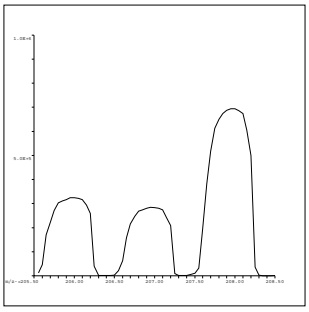
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



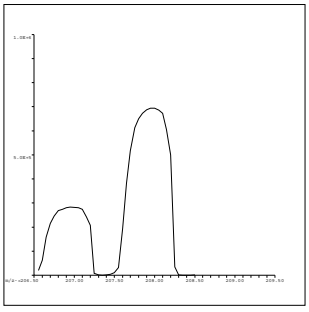
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180226A

Instrument ID: ICPMS-02

Analyte	Data File	A0226002.D	A0226003.D	A0226004.D	A0226005.D	A0226006.D	A0226007.D	A0226008.D	A0226009.D	A0226010.D	
	Acq. Date-Time	02/26/2018 05:16 PM	02/26/2018 05:22 PM	02/26/2018 05:27 PM	02/26/2018 05:33 PM	02/26/2018 05:39 PM	02/26/2018 05:44 PM	02/26/2018 05:50 PM	02/26/2018 05:55 PM	02/26/2018 06:01 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	97491.9		97945.1	97691.6	94822.4	88561.2	91066.6	85636.2	85948.9	
56 Fe [2]	CPS	2632.6		13029	41678.3	70553	127081.6	254683.2	578914.2	1140535	1.0000
55 Mn [2]	CPS	269.9		2378.4	19781.2	38358.4	71806.6	146920.4	343945.9	682609.3	1.0000
52 Cr [2]	CPS	411.9		4521.6	39593	77543.1	145044.6	293996.6	689672.6	1420039.1	0.9999
72 Ge (ISTD) [1]	CPS	78725.2		80838.6	79724.2	77940.1	73997.6	75191.7	70909.3	71589.1	
78 Se [1]	CPS	1.1		151.1	1324.6	2741.4	5176.6	10488.2	24915.4	49860.4	1.0000
72 Ge (ISTD) [2]	CPS	66539.2	68691.3	67509.8	66547.1	65096.8	61880.1	63082.1	59057.1	59377.4	
75 As [2]	CPS	25.8	117.8	430.2	3941.8	7812.1	14504.3	29856.1	69819.3	139372.4	1.0000
103 Rh (ISTD) [2]	CPS	2010768.1		2077477	2060452.4	2039726.9	1928892.8	1979255.7	1857828.9	1871094.3	
95 Mo [2]	CPS	155.6		2488.1	24050.9	47649.2	91115.4	187293.5	443969	889014.6	1.0000
159 Tb (ISTD) [3]	CPS	5729624.3		5937860.3	5973070.7	5993532.6	5784712.1	6047619.1	5817437.6	5855236.7	
137 Ba [3]	CPS	115.8		5844.7	49168.6	96703.5	183434.1	381224.1	901764.1	1870877.4	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

Fe is not reported

3/5/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.329	0.10	10.00	0	103	90	110				
Manganese	104.434	0.50	100.0	0	104	90	110				
Molybdenum	10.677	0.50	10.00	0	107	90	110				
Selenium	10.034	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.116	0.10	0.1000	0	116	80	120				
Manganese	0.524	0.50	0.5000	0	105	80	120				
Molybdenum	0.564	0.50	0.5000	0	113	80	120				
Selenium	0.545	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.116	0.10	20.00	0	101	90	110				
Manganese	19.912	0.50	20.00	0	99.6	90	110				
Molybdenum	20.101	0.50	20.00	0	101	90	110				
Selenium	19.466	0.50	20.00	0	97.3	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.231	0.10	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.795	0.50	20.00	0	99.0	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	20.269	0.50	20.00	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.239	0.10	20.00	0	101	90	110				
Manganese	20.353	0.50	20.00	0	102	90	110				
Molybdenum	20.110	0.50	20.00	0	101	90	110				
Selenium	20.272	0.50	20.00	0	101	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.758	0.10	20.00	0	98.8	90	110				
Manganese	20.149	0.50	20.00	0	101	90	110				
Molybdenum	19.756	0.50	20.00	0	98.8	90	110				
Selenium	20.839	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ZZZZZZ** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Manganese	0.542	0.50	0.5000	0	108	70	130				
Molybdenum	0.523	0.50	0.5000	0	105	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.544	0.50	0.5000	0	109	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Manganese	20.136	0.50	20.00	0	101	90	110				
Molybdenum	20.015	0.50	20.00	0	100	90	110				
Selenium	20.980	0.50	20.00	0	105	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.834	0.10	20.00	0	99.2	90	110				
Manganese	20.072	0.50	20.00	0	100	90	110				
Molybdenum	19.983	0.50	20.00	0	99.9	90	110				
Selenium	20.293	0.50	20.00	0	101	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.305	0.10	20.00	0	102	90	110				
Manganese	20.434	0.50	20.00	0	102	90	110				
Molybdenum	19.950	0.50	20.00	0	99.7	90	110				
Selenium	20.505	0.50	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.952	0.10	20.00	0	99.8	90	110				
Manganese	20.373	0.50	20.00	0	102	90	110				
Molybdenum	19.657	0.50	20.00	0	98.3	90	110				
Selenium	20.206	0.50	20.00	0	101	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.953	0.10	20.00	0	99.8	90	110				
Manganese	20.426	0.50	20.00	0	102	90	110				
Molybdenum	19.576	0.50	20.00	0	97.9	90	110				
Selenium	20.287	0.50	20.00	0	101	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ZZZZZZ** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.497	0.50	0.5000	0	99.3	70	130				
Selenium	0.585	0.50	0.5000	0	117	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.064	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.377	1.0	20.00	0	96.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.731	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.721	1.0	20.00	0	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.049	1.0	20.00	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.656	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.741	1.0	20.00	0	98.7	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.867	1.0	20.00	0	99.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.755	1.0	20.00	0	98.8	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.627	1.0	20.00	0	98.1	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSA	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941823

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSAB	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941824

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.726	0.10	20.00	0	104	80	120				
Manganese	20.545	0.50	20.00	0	103	80	120				
Molybdenum	21.758	0.50	20.00	0	109	80	120				
Selenium	18.881	0.50	20.00	0	94.4	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSA	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941873

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSAB	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.200	0.10	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.579	0.50	20.00	0	103	80	120				
Molybdenum	21.928	0.50	20.00	0	110	80	120				
Selenium	20.681	0.50	20.00	0	103	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSA** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

not reported

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.211	0.10	20.00	0	101	80	120				
Manganese	21.505	0.50	20.00	0	108	80	120				
Molybdenum	21.649	0.50	20.00	0	108	80	120				
Selenium	19.163	0.50	20.00	0	95.8	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.085	0.10	20.00	0	100	80	120				
Manganese	21.203	0.50	20.00	0	106	80	120				
Molybdenum	21.332	0.50	20.00	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/5/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.838	0.50	20.00	0	94.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSA**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.093	1.0	20.00	0	95.5	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSA**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.196	1.0	20.00	0	96.0	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSA**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.874	1.0	20.00	0	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5729624.3	5729624.3	100	PASS	70-125	97491.9	97491.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5949790.2	5729624.3	103.84	PASS	70-125	100434.5	97491.9	103.02	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5937860.3	5729624.3	103.63	PASS	70-125	97945.1	97491.9	100.46	PASS	70-125
Std3-5/50 ppb	ICAL	1	5973070.7	5729624.3	104.25	PASS	70-125	97691.6	97491.9	100.2	PASS	70-125
Std4-10/100 ppb	ICAL	1	5993532.6	5729624.3	104.61	PASS	70-125	94822.4	97491.9	97.26	PASS	70-125
Std5-20/200 ppb	ICAL	1	5784712.1	5729624.3	100.96	PASS	70-125	88561.2	97491.9	90.84	PASS	70-125
Std6-40/400 ppb	ICAL	1	6047619.1	5729624.3	105.55	PASS	70-125	91066.6	97491.9	93.41	PASS	70-125
Std7-100/1000 ppb	ICAL	1	5817437.6	5729624.3	101.53	PASS	70-125	85636.2	97491.9	87.84	PASS	70-125
Std8-200/2000 ppb	ICAL	1	5855236.7	5729624.3	102.19	PASS	70-125	85948.9	97491.9	88.16	PASS	70-125
ICV	ICV	1	5444260.4	5729624.3	95.02	PASS	70-125	76934	97491.9	78.91	PASS	70-125
ICB	ICB	1	5497481	5729624.3	95.95	PASS	70-125	78632.4	97491.9	80.66	PASS	70-125
LLICV	CCV1	1	4935809.7	5729624.3	86.15	PASS	70-125	70762.9	97491.9	72.58	PASS	70-125
ICSA1	ICSA	1	4872186.1	5729624.3	85.035	PASS	70-125	80525.3	97491.9	82.6	PASS	70-125
ICSAB1	ICSAB	1	5962027.8	5729624.3	104.06	PASS	70-125	103061.5	97491.9	105.71	PASS	70-125
MB-66863	MBLK	1	5747470.5	5729624.3	100.31	PASS	70-125	91781.9	97491.9	94.14	PASS	70-125
LCS-66863	LCS	1	5536970.7	5729624.3	96.64	PASS	70-125	82735.2	97491.9	84.86	PASS	70-125
N028679-001B	SAMP	1	4592397.8	5729624.3	80.15	PASS	70-125	83205.1	97491.9	85.35	PASS	70-125
N028679-001B	SAMP	5	5190260.9	5729624.3	90.59	PASS	70-125	88980.2	97491.9	91.27	PASS	70-125
N028679-001B	SAMP	25	5477508.7	5729624.3	95.6	PASS	70-125	91523.1	97491.9	93.88	PASS	70-125
N028679-001B-PS	PS	1	4787976.5	5729624.3	83.57	PASS	70-125	91127.5	97491.9	93.47	PASS	70-125
N028679-001B-PS	PS	5	5475821.2	5729624.3	95.57	PASS	70-125	95726.3	97491.9	98.19	PASS	70-125
N028679-001B-MS	MS	1	4860872.9	5729624.3	84.84	PASS	70-125	96210.9	97491.9	98.69	PASS	70-125
N028679-001B-MS	MS	5	5615897	5729624.3	98.015	PASS	70-125	98662	97491.9	101.2	PASS	70-125
N028679-001B-MSD	MSD	1	4844160.8	5729624.3	84.55	PASS	70-125	96689.5	97491.9	99.18	PASS	70-125
CCV1	CCV	1	6128092.4	5729624.3	106.95	PASS	70-125	107973.1	97491.9	110.75	PASS	70-125
CCB1	CCB	1	5859270.4	5729624.3	102.26	PASS	70-125	99382.8	97491.9	101.94	PASS	70-125
N028679-001B-MSD	MSD	5	5380363.3	5729624.3	93.9	PASS	70-125	94336.1	97491.9	96.76	PASS	70-125
N028679-002B	SAMP	1	4213410.9	5729624.3	73.54	PASS	70-125	90584.5	97491.9	92.91	PASS	70-125
N028679-002B	SAMP	5	5544587.4	5729624.3	96.77	PASS	70-125	102491.2	97491.9	105.13	PASS	70-125
N028679-002B	SAMP	10	5989843.6	5729624.3	104.54	PASS	70-125	107596.7	97491.9	110.36	PASS	70-125
N028679-003B	SAMP	1	4286340	5729624.3	74.81	PASS	70-125	94766.4	97491.9	97.2	PASS	70-125
N028679-003B	SAMP	5	5530836.6	5729624.3	96.53	PASS	70-125	102224	97491.9	104.85	PASS	70-125
N028679-003B	SAMP	10	5664617.1	5729624.3	98.87	PASS	70-125	102121.4	97491.9	104.75	PASS	70-125
N028679-004B	SAMP	1	5042700.3	5729624.3	88.011	PASS	70-125	98429.5	97491.9	100.96	PASS	70-125
N028679-004B	SAMP	5	5743795.5	5729624.3	100.25	PASS	70-125	106475.1	97491.9	109.21	PASS	70-125
N028679-005B	SAMP	1	5050456.7	5729624.3	88.15	PASS	70-125	102097.8	97491.9	104.72	PASS	70-125
CCV2	CCV	1	6710152.9	5729624.3	117.11	PASS	70-125	120410.7	97491.9	123.51	PASS	70-125
CCB2	CCB	1	6363665.9	5729624.3	111.07	PASS	70-125	109554.6	97491.9	112.37	PASS	70-125
N028679-005B	SAMP	5	5887522.1	5729624.3	102.76	PASS	70-125	104569.8	97491.9	107.26	PASS	70-125
N028696-001B	SAMP	1	4395561.9	5729624.3	76.72	PASS	70-125	93402	97491.9	95.8	PASS	70-125
N028696-001B	SAMP	5	5537206.9	5729624.3	96.64	PASS	70-125	104002.5	97491.9	106.68	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028696-002B	SAMP	1	4510057.5	5729624.3	78.71	PASS	70-125	99623.1	97491.9	102.19	PASS	70-125
N028696-002B	SAMP	5	5747900.6	5729624.3	100.32	PASS	70-125	104611.1	97491.9	107.3	PASS	70-125
N028696-003B	SAMP	1	4632057.8	5729624.3	80.84	PASS	70-125	100411.4	97491.9	102.99	PASS	70-125
N028696-003B	SAMP	5	5838690.4	5729624.3	101.9	PASS	70-125	106461.7	97491.9	109.2	PASS	70-125
N028696-004B	SAMP	1	3640563.2	5729624.3	63.54	NR!	70-125	85036.1	97491.9	87.22	PASS	70-125
N028696-004B	SAMP	5	5307408.5	5729624.3	92.63	PASS	70-125	96440.1	97491.9	98.92	PASS	70-125
N028696-005B	SAMP	1	4035636.4	5729624.3	70.43	PASS	70-125	90072.8	97491.9	92.39	PASS	70-125
CCV3	CCV	1	6560641.3	5729624.3	114.5	PASS	70-125	112320.7	97491.9	115.21	PASS	70-125
CCB3	CCB	1	5725121.2	5729624.3	99.92	PASS	70-125	96025.7	97491.9	98.5	PASS	70-125
N028696-005B	SAMP	5	5534888.2	5729624.3	96.6	PASS	70-125	95767.4	97491.9	98.23	PASS	70-125
N028696-006B	SAMP	1	3915805.4	5729624.3	68.34	NR!	70-125	87648.7	97491.9	89.9	PASS	70-125
N028696-006B	SAMP	5	5490117.3	5729624.3	95.82	PASS	70-125	97417.9	97491.9	99.92	PASS	70-125
N028696-007B	SAMP	1	4077105.4	5729624.3	71.16	PASS	70-125	92139.6	97491.9	94.51	PASS	70-125
N028696-007B	SAMP	5	5718015.7	5729624.3	99.8	PASS	70-125	103159.7	97491.9	105.81	PASS	70-125
N028696-008B	SAMP	1	4097490	5729624.3	71.51	PASS	70-125	91650.2	97491.9	94.008	PASS	70-125
N028696-008B	SAMP	5	5604745.4	5729624.3	97.82	PASS	70-125	98302.2	97491.9	100.83	PASS	70-125
N028696-009B	SAMP	1	4592865.2	5729624.3	80.16	PASS	70-125	94650.1	97491.9	97.085	PASS	70-125
N028696-009B	SAMP	5	5868413.7	5729624.3	102.42	PASS	70-125	101155.3	97491.9	103.76	PASS	70-125
CCV4	CCV	1	6705398.5	5729624.3	117.03	PASS	70-125	109876.2	97491.9	112.7	PASS	70-125
CCB4	CCB	1	5887453	5729624.3	102.75	PASS	70-125	94427.5	97491.9	96.86	PASS	70-125
LLCCV1	CCV2	1	5737983.5	5729624.3	100.15	PASS	70-125	90255.9	97491.9	92.58	PASS	70-125
ICSA2	ICSA	1	5295032.6	5729624.3	92.42	PASS	70-125	88048.9	97491.9	90.31	PASS	70-125
ICSAB2	ICSAB	1	6508218.2	5729624.3	113.59	PASS	70-125	110466.8	97491.9	113.31	PASS	70-125
MB-66882	MBLK	1	6001938.1	5729624.3	104.75	PASS	70-125	98448.5	97491.9	100.98	PASS	70-125
LCS-66882	LCS	1	6241214.8	5729624.3	108.93	PASS	70-125	95321.8	97491.9	97.77	PASS	70-125
N028726-001B	SAMP	1	4134627.6	5729624.3	72.16	PASS	70-125	78220.3	97491.9	80.23	PASS	70-125
N028726-001B	SAMP	5	5100749.7	5729624.3	89.024	PASS	70-125	87873.9	97491.9	90.13	PASS	70-125
N028726-001B	SAMP	25	5520483.9	5729624.3	96.35	PASS	70-125	91735.9	97491.9	94.096	PASS	70-125
N028726-001B-PS	PS	1	4291868	5729624.3	74.91	PASS	70-125	84189.7	97491.9	86.36	PASS	70-125
N028726-001B-PS	PS	5	5116934.8	5729624.3	89.31	PASS	70-125	91115.1	97491.9	93.46	PASS	70-125
N028726-001B-MS	MS	1	4264718.5	5729624.3	74.43	PASS	70-125	86611.7	97491.9	88.84	PASS	70-125
N028726-001B-MS	MS	5	5266257	5729624.3	91.91	PASS	70-125	90829.2	97491.9	93.17	PASS	70-125
N028726-001B-MSD	MSD	1	4287631.7	5729624.3	74.83	PASS	70-125	88147.9	97491.9	90.42	PASS	70-125
CCV5	CCV	1	6659693	5729624.3	116.23	PASS	70-125	111627.4	97491.9	114.5	PASS	70-125
CCB5	CCB	1	5860670.5	5729624.3	102.29	PASS	70-125	94469	97491.9	96.9	PASS	70-125
N028726-001B-MSD	MSD	5	4870213.2	5729624.3	85.001	PASS	70-125	82691.4	97491.9	84.82	PASS	70-125
N028726-002B	SAMP	1	4644837.1	5729624.3	81.067	PASS	70-125	84436.7	97491.9	86.61	PASS	70-125
N028726-002B	SAMP	5	5308939.5	5729624.3	92.66	PASS	70-125	90747.2	97491.9	93.082	PASS	70-125
N028726-003B	SAMP	1	3461445.6	5729624.3	60.41	NR!	70-125	78086.2	97491.9	80.095	PASS	70-125
N028726-003B	SAMP	5	4896369	5729624.3	85.46	PASS	70-125	86845.9	97491.9	89.08	PASS	70-125
N028726-004B	SAMP	1	3563500.8	5729624.3	62.19	NR!	70-125	78356.4	97491.9	80.37	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-004B	SAMP	5	4968782.4	5729624.3	86.72	PASS	70-125	85699.8	97491.9	87.9	PASS	70-125
N028726-005B	SAMP	1	3487803	5729624.3	60.87	NR!	70-125	74442	97491.9	76.36	PASS	70-125
N028726-005B	SAMP	5	4945116.3	5729624.3	86.31	PASS	70-125	83256.7	97491.9	85.4	PASS	70-125
N028727-002B	SAMP	1	5490620.8	5729624.3	95.83	PASS	70-125	90604.4	97491.9	92.94	PASS	70-125
CCV6	CCV	1	6419302.8	5729624.3	112.04	PASS	70-125	104208	97491.9	106.89	PASS	70-125
CCB6	CCB	1	5685205.8	5729624.3	99.22	PASS	70-125	88402.7	97491.9	90.68	PASS	70-125
N028727-002B	SAMP	5	5348752.9	5729624.3	93.35	PASS	70-125	81951.4	97491.9	84.06	PASS	70-125
N028727-003B	SAMP	1	5333516.3	5729624.3	93.087	PASS	70-125	82292.8	97491.9	84.41	PASS	70-125
N028727-003B	SAMP	5	5344457.3	5729624.3	93.28	PASS	70-125	82509.6	97491.9	84.63	PASS	70-125
N028727-004B	SAMP	1	5391255.4	5729624.3	94.094	PASS	70-125	82936.2	97491.9	85.07	PASS	70-125
N028727-004B	SAMP	5	5268869.4	5729624.3	91.96	PASS	70-125	79856.5	97491.9	81.91	PASS	70-125
N028727-005B	SAMP	1	5262523.7	5729624.3	91.85	PASS	70-125	80298.7	97491.9	82.36	PASS	70-125
N028727-005B	SAMP	5	5252623.5	5729624.3	91.67	PASS	70-125	79619	97491.9	81.67	PASS	70-125
N028727-006B	SAMP	1	5302626.7	5729624.3	92.55	PASS	70-125	80417.8	97491.9	82.49	PASS	70-125
N028727-006B	SAMP	5	5284698.3	5729624.3	92.23	PASS	70-125	79645.5	97491.9	81.69	PASS	70-125
N028727-007B	SAMP	1	5281808.6	5729624.3	92.18	PASS	70-125	79449.4	97491.9	81.49	PASS	70-125
CCV7	CCV	1	6239376.7	5729624.3	108.9	PASS	70-125	95063.1	97491.9	97.51	PASS	70-125
CCB7	CCB	1	5553368.5	5729624.3	96.92	PASS	70-125	82329.9	97491.9	84.45	PASS	70-125
N028727-007B	SAMP	5	5250568	5729624.3	91.64	PASS	70-125	76286.1	97491.9	78.25	PASS	70-125
N028727-008B	SAMP	1	5501214.5	5729624.3	96.014	PASS	70-125	81578.3	97491.9	83.68	PASS	70-125
N028727-008B	SAMP	5	5377218.7	5729624.3	93.85	PASS	70-125	78540.6	97491.9	80.56	PASS	70-125
N028727-009B	SAMP	1	5622614.6	5729624.3	98.13	PASS	70-125	82728.3	97491.9	84.86	PASS	70-125
N028727-009B	SAMP	5	5318241.1	5729624.3	92.82	PASS	70-125	78082.8	97491.9	80.092	PASS	70-125
N028727-010B	SAMP	1	5467283.2	5729624.3	95.42	PASS	70-125	79295.1	97491.9	81.34	PASS	70-125
N028727-010B	SAMP	5	5278731.2	5729624.3	92.13	PASS	70-125	76995.8	97491.9	78.98	PASS	70-125
N028727-011B	SAMP	1	5501131.4	5729624.3	96.012	PASS	70-125	80059.8	97491.9	82.12	PASS	70-125
N028727-011B	SAMP	5	5198401.2	5729624.3	90.73	PASS	70-125	76820.3	97491.9	78.8	PASS	70-125
N028727-012B	SAMP	1	5350804.4	5729624.3	93.39	PASS	70-125	77720	97491.9	79.72	PASS	70-125
CCV8	CCV	1	6119692.3	5729624.3	106.81	PASS	70-125	90708.2	97491.9	93.042	PASS	70-125
CCB8	CCB	1	5403214.8	5729624.3	94.3	PASS	70-125	77030.1	97491.9	79.012	PASS	70-125
N028727-012B	SAMP	5	5216442.1	5729624.3	91.043	PASS	70-125	73495.7	97491.9	75.39	PASS	70-125
N028727-013B	SAMP	1	5246136.1	5729624.3	91.56	PASS	70-125	74036.7	97491.9	75.94	PASS	70-125
N028727-013B	SAMP	5	5158762.7	5729624.3	90.037	PASS	70-125	73750.1	97491.9	75.65	PASS	70-125
N028727-014C	SAMP	1	5115322.3	5729624.3	89.28	PASS	70-125	73097.1	97491.9	74.98	PASS	70-125
N028727-014C	SAMP	5	5058070.4	5729624.3	88.28	PASS	70-125	72005.8	97491.9	73.86	PASS	70-125
N028727-015C	SAMP	1	5127012.9	5729624.3	89.48	PASS	70-125	71828.4	97491.9	73.68	PASS	70-125
N028727-015C	SAMP	5	5109515	5729624.3	89.18	PASS	70-125	72605.2	97491.9	74.47	PASS	70-125
CCV9	CCV	1	5953435.7	5729624.3	103.91	PASS	70-125	85218.4	97491.9	87.41	PASS	70-125
CCB9	CCB	1	5254686.8	5729624.3	91.71	PASS	70-125	72795.9	97491.9	74.67	PASS	70-125
LLCCV2	CCV2	1	5116098.5	5729624.3	89.29	PASS	70-125	71367.5	97491.9	73.2	PASS	70-125
ICSA3	ICSA	1	4878337.2	5729624.3	85.14	PASS	70-125	71649.7	97491.9	73.49	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB3	ICSAB	1	5973149.1	5729624.3	104.25	PASS	70-125	91206.4	97491.9	93.55	PASS	70-125
ICSAB3	ICSAB	1	6446761.5	5729624.3	112.52	PASS	70-125	87311.7	97491.9	89.56	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66539.2	66539.2	100	PASS	70-125	78725.2	78725.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	68691.3	66539.2	103.23	PASS	70-125	81825.8	78725.2	103.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	67509.8	66539.2	101.46	PASS	70-125	80838.6	78725.2	102.68	PASS	70-125
Std3-5/50 ppb	ICAL	1	66547.1	66539.2	100.01	PASS	70-125	79724.2	78725.2	101.27	PASS	70-125
Std4-10/100 ppb	ICAL	1	65096.8	66539.2	97.83	PASS	70-125	77940.1	78725.2	99.003	PASS	70-125
Std5-20/200 ppb	ICAL	1	61880.1	66539.2	93	PASS	70-125	73997.6	78725.2	93.99	PASS	70-125
Std6-40/400 ppb	ICAL	1	63082.1	66539.2	94.8	PASS	70-125	75191.7	78725.2	95.51	PASS	70-125
Std7-100/1000 ppb	ICAL	1	59057.1	66539.2	88.76	PASS	70-125	70909.3	78725.2	90.072	PASS	70-125
Std8-200/2000 ppb	ICAL	1	59377.4	66539.2	89.24	PASS	70-125	71589.1	78725.2	90.94	PASS	70-125
ICV	ICV	1	55525.9	66539.2	83.45	PASS	70-125	65486.3	78725.2	83.18	PASS	70-125
ICB	ICB	1	56003.2	66539.2	84.17	PASS	70-125	66411.9	78725.2	84.36	PASS	70-125
LLICV	CCV1	1	50175.6	66539.2	75.41	PASS	70-125	60924.1	78725.2	77.39	PASS	70-125
ICSA1	ICSA	1	54391	66539.2	81.74	PASS	70-125	63380.1	78725.2	80.51	PASS	70-125
ICSAB1	ICSAB	1	67290.2	66539.2	101.13	PASS	70-125	80235.7	78725.2	101.92	PASS	70-125
MB-66863	MBLK	1	64437.4	66539.2	96.84	PASS	70-125	78888.1	78725.2	100.21	PASS	70-125
LCS-66863	LCS	1	58556.4	66539.2	88.003	PASS	70-125	69600.4	78725.2	88.41	PASS	70-125
N028679-001B	SAMP	1	53134.9	66539.2	79.86	PASS	70-125	60288.5	78725.2	76.58	PASS	70-125
N028679-001B	SAMP	5	59835.7	66539.2	89.93	PASS	70-125	69899.7	78725.2	88.79	PASS	70-125
N028679-001B	SAMP	25	62771.2	66539.2	94.34	PASS	70-125	75712	78725.2	96.17	PASS	70-125
N028679-001B-PS	PS	1	57779.5	66539.2	86.84	PASS	70-125	64728.7	78725.2	82.22	PASS	70-125
N028679-001B-PS	PS	5	63326.5	66539.2	95.17	PASS	70-125	74648.4	78725.2	94.82	PASS	70-125
N028679-001B-MS	MS	1	60164.6	66539.2	90.42	PASS	70-125	67114.8	78725.2	85.25	PASS	70-125
N028679-001B-MS	MS	5	65308.7	66539.2	98.15	PASS	70-125	76788.1	78725.2	97.54	PASS	70-125
N028679-001B-MSD	MSD	1	59641.7	66539.2	89.63	PASS	70-125	64835.7	78725.2	82.36	PASS	70-125
CCV1	CCV	1	72732.2	66539.2	109.31	PASS	70-125	85150.4	78725.2	108.16	PASS	70-125
CCB1	CCB	1	68019.8	66539.2	102.23	PASS	70-125	80183.2	78725.2	101.85	PASS	70-125
N028679-001B-MSD	MSD	5	63496	66539.2	95.43	PASS	70-125	72858.1	78725.2	92.55	PASS	70-125
N028679-002B	SAMP	1	54920.7	66539.2	82.54	PASS	70-125	59241.2	78725.2	75.25	PASS	70-125
N028679-002B	SAMP	5	67324.6	66539.2	101.18	PASS	70-125	75496.5	78725.2	95.9	PASS	70-125
N028679-002B	SAMP	10	68166.7	66539.2	102.45	PASS	70-125	75579.2	78725.2	96.004	PASS	70-125
N028679-003B	SAMP	1	56684.7	66539.2	85.19	PASS	70-125	61021	78725.2	77.51	PASS	70-125
N028679-003B	SAMP	5	67428.5	66539.2	101.34	PASS	70-125	74563.8	78725.2	94.71	PASS	70-125
N028679-003B	SAMP	10	67131.7	66539.2	100.89	PASS	70-125	76715.5	78725.2	97.45	PASS	70-125
N028679-004B	SAMP	1	63154.8	66539.2	94.91	PASS	70-125	69523.7	78725.2	88.31	PASS	70-125
N028679-004B	SAMP	5	71151.6	66539.2	106.93	PASS	70-125	78209.6	78725.2	99.35	PASS	70-125
N028679-005B	SAMP	1	65125.9	66539.2	97.88	PASS	70-125	71976.4	78725.2	91.43	PASS	70-125
CCV2	CCV	1	81919.5	66539.2	123.11	PASS	70-125	91998.2	78725.2	116.86	PASS	70-125
CCB2	CCB	1	75693.1	66539.2	113.76	PASS	70-125	84426.7	78725.2	107.24	PASS	70-125
N028679-005B	SAMP	5	70533.5	66539.2	106	PASS	70-125	77714.8	78725.2	98.72	PASS	70-125
N028696-001B	SAMP	1	58274.5	66539.2	87.58	PASS	70-125	61505.2	78725.2	78.13	PASS	70-125
N028696-001B	SAMP	5	68245	66539.2	102.56	PASS	70-125	75522.2	78725.2	95.93	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028696-002B	SAMP	1	62597.1	66539.2	94.076	PASS	70-125	65733.7	78725.2	83.5	PASS	70-125
N028696-002B	SAMP	5	70157.4	66539.2	105.44	PASS	70-125	77705.8	78725.2	98.71	PASS	70-125
N028696-003B	SAMP	1	63395.6	66539.2	95.28	PASS	70-125	66515.9	78725.2	84.49	PASS	70-125
N028696-003B	SAMP	5	71199.7	66539.2	107	PASS	70-125	77657.9	78725.2	98.64	PASS	70-125
N028696-004B	SAMP	1	52070.4	66539.2	78.26	PASS	70-125	55738.9	78725.2	70.8	PASS	70-125
N028696-004B	SAMP	5	63334.1	66539.2	95.18	PASS	70-125	69250.5	78725.2	87.96	PASS	70-125
N028696-005B	SAMP	1	57250.9	66539.2	86.041	PASS	70-125	57253.1	78725.2	72.73	PASS	70-125
CCV3	CCV	1	77979.2	66539.2	117.19	PASS	70-125	84635.6	78725.2	107.51	PASS	70-125
CCB3	CCB	1	67294.8	66539.2	101.14	PASS	70-125	74778	78725.2	94.99	PASS	70-125
N028696-005B	SAMP	5	64616.1	66539.2	97.11	PASS	70-125	69358.8	78725.2	88.1	PASS	70-125
N028696-006B	SAMP	1	54889.5	66539.2	82.49	PASS	70-125	54507.1	78725.2	69.24	NR!	70-125
N028696-006B	SAMP	5	66868.5	66539.2	100.49	PASS	70-125	69743.7	78725.2	88.59	PASS	70-125
N028696-007B	SAMP	1	57361.3	66539.2	86.21	PASS	70-125	57311.2	78725.2	72.8	PASS	70-125
N028696-007B	SAMP	5	68688.3	66539.2	103.23	PASS	70-125	73492.1	78725.2	93.35	PASS	70-125
N028696-008B	SAMP	1	57099.1	66539.2	85.81	PASS	70-125	57162.9	78725.2	72.61	PASS	70-125
N028696-008B	SAMP	5	67021.1	66539.2	100.72	PASS	70-125	71052.6	78725.2	90.25	PASS	70-125
N028696-009B	SAMP	1	59161	66539.2	88.91	PASS	70-125	60579.5	78725.2	76.95	PASS	70-125
N028696-009B	SAMP	5	69095.3	66539.2	103.84	PASS	70-125	73796.7	78725.2	93.74	PASS	70-125
CCV4	CCV	1	78099	66539.2	117.37	PASS	70-125	84537.2	78725.2	107.38	PASS	70-125
CCB4	CCB	1	67575.7	66539.2	101.56	PASS	70-125	73882.5	78725.2	93.85	PASS	70-125
LLCCV1	CCV2	1	64546.7	66539.2	97.006	PASS	70-125	70334.9	78725.2	89.34	PASS	70-125
ICSA2	ICSA	1	60795.8	66539.2	91.37	PASS	70-125	66152.2	78725.2	84.029	PASS	70-125
ICSAB2	ICSAB	1	75196.2	66539.2	113.01	PASS	70-125	80486.9	78725.2	102.24	PASS	70-125
MB-66882	MBLK	1	69518	66539.2	104.48	PASS	70-125	77464.7	78725.2	98.4	PASS	70-125
LCS-66882	LCS	1	68217.2	66539.2	102.52	PASS	70-125	76239	78725.2	96.84	PASS	70-125
N028726-001B	SAMP	1	51216.5	66539.2	76.97	PASS	70-125	52182.9	78725.2	66.28	NR!	70-125
N028726-001B	SAMP	5	59916	66539.2	90.046	PASS	70-125	63572.8	78725.2	80.75	PASS	70-125
N028726-001B	SAMP	25	64237.8	66539.2	96.54	PASS	70-125	69985.6	78725.2	88.9	PASS	70-125
N028726-001B-PS	PS	1	53997.6	66539.2	81.15	PASS	70-125	54977.6	78725.2	69.83	NR!	70-125
N028726-001B-PS	PS	5	62346.1	66539.2	93.7	PASS	70-125	65132.5	78725.2	82.73	PASS	70-125
N028726-001B-MS	MS	1	56394.6	66539.2	84.75	PASS	70-125	56551.9	78725.2	71.83	PASS	70-125
N028726-001B-MS	MS	5	61847.5	66539.2	92.95	PASS	70-125	66059.5	78725.2	83.91	PASS	70-125
N028726-001B-MSD	MSD	1	55896.3	66539.2	84.005	PASS	70-125	57439.3	78725.2	72.96	PASS	70-125
CCV5	CCV	1	77339.6	66539.2	116.23	PASS	70-125	85523.4	78725.2	108.64	PASS	70-125
CCB5	CCB	1	67228.5	66539.2	101.04	PASS	70-125	74002.2	78725.2	94.001	PASS	70-125
N028726-001B-MSD	MSD	5	57180.6	66539.2	85.94	PASS	70-125	62466.5	78725.2	79.35	PASS	70-125
N028726-002B	SAMP	1	56347.7	66539.2	84.68	PASS	70-125	58178.8	78725.2	73.9	PASS	70-125
N028726-002B	SAMP	5	62786.9	66539.2	94.36	PASS	70-125	68574.1	78725.2	87.11	PASS	70-125
N028726-003B	SAMP	1	49554.8	66539.2	74.47	PASS	70-125	50524.3	78725.2	64.18	NR!	70-125
N028726-003B	SAMP	5	58810.9	66539.2	88.39	PASS	70-125	62463.3	78725.2	79.34	PASS	70-125
N028726-004B	SAMP	1	49144.6	66539.2	73.86	PASS	70-125	49910.4	78725.2	63.4	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-004B	SAMP	5	58475.1	66539.2	87.88	PASS	70-125	62199	78725.2	79.008	PASS	70-125
N028726-005B	SAMP	1	47575.5	66539.2	71.5	PASS	70-125	48555.1	78725.2	61.68	NR!	70-125
N028726-005B	SAMP	5	56755.7	66539.2	85.3	PASS	70-125	59753	78725.2	75.9	PASS	70-125
N028727-002B	SAMP	1	63403.4	66539.2	95.29	PASS	70-125	67861.3	78725.2	86.2	PASS	70-125
CCV6	CCV	1	74045.7	66539.2	111.28	PASS	70-125	81056.2	78725.2	102.96	PASS	70-125
CCB6	CCB	1	63500.7	66539.2	95.43	PASS	70-125	70436.5	78725.2	89.47	PASS	70-125
N028727-002B	SAMP	5	58473	66539.2	87.88	PASS	70-125	64715.3	78725.2	82.2	PASS	70-125
N028727-003B	SAMP	1	59241.4	66539.2	89.032	PASS	70-125	64204.3	78725.2	81.55	PASS	70-125
N028727-003B	SAMP	5	58787.4	66539.2	88.35	PASS	70-125	65947.7	78725.2	83.77	PASS	70-125
N028727-004B	SAMP	1	59038.4	66539.2	88.73	PASS	70-125	65080.3	78725.2	82.67	PASS	70-125
N028727-004B	SAMP	5	58110.8	66539.2	87.33	PASS	70-125	64689.8	78725.2	82.17	PASS	70-125
N028727-005B	SAMP	1	57043.7	66539.2	85.73	PASS	70-125	62260.2	78725.2	79.085	PASS	70-125
N028727-005B	SAMP	5	57668	66539.2	86.67	PASS	70-125	64784.3	78725.2	82.29	PASS	70-125
N028727-006B	SAMP	1	57422.5	66539.2	86.3	PASS	70-125	63198.2	78725.2	80.28	PASS	70-125
N028727-006B	SAMP	5	56970.9	66539.2	85.62	PASS	70-125	65734.8	78725.2	83.5	PASS	70-125
N028727-007B	SAMP	1	57825.1	66539.2	86.9	PASS	70-125	64289.2	78725.2	81.66	PASS	70-125
CCV7	CCV	1	67562.1	66539.2	101.54	PASS	70-125	76973.8	78725.2	97.78	PASS	70-125
CCB7	CCB	1	59354.8	66539.2	89.2	PASS	70-125	67260	78725.2	85.44	PASS	70-125
N028727-007B	SAMP	5	56641.9	66539.2	85.13	PASS	70-125	62977.4	78725.2	80	PASS	70-125
N028727-008B	SAMP	1	59268	66539.2	89.072	PASS	70-125	66566.1	78725.2	84.56	PASS	70-125
N028727-008B	SAMP	5	57564	66539.2	86.51	PASS	70-125	65842.1	78725.2	83.64	PASS	70-125
N028727-009B	SAMP	1	59604.9	66539.2	89.58	PASS	70-125	66254.7	78725.2	84.16	PASS	70-125
N028727-009B	SAMP	5	57126.2	66539.2	85.85	PASS	70-125	65633.3	78725.2	83.37	PASS	70-125
N028727-010B	SAMP	1	57319.9	66539.2	86.14	PASS	70-125	64794.5	78725.2	82.3	PASS	70-125
N028727-010B	SAMP	5	56624.3	66539.2	85.099	PASS	70-125	65111.4	78725.2	82.71	PASS	70-125
N028727-011B	SAMP	1	58332.3	66539.2	87.67	PASS	70-125	65501.6	78725.2	83.2	PASS	70-125
N028727-011B	SAMP	5	55610.8	66539.2	83.58	PASS	70-125	63782.7	78725.2	81.019	PASS	70-125
N028727-012B	SAMP	1	56414.7	66539.2	84.78	PASS	70-125	64100.7	78725.2	81.42	PASS	70-125
CCV8	CCV	1	65314.1	66539.2	98.16	PASS	70-125	75036.6	78725.2	95.31	PASS	70-125
CCB8	CCB	1	57220.8	66539.2	86	PASS	70-125	65504.1	78725.2	83.21	PASS	70-125
N028727-012B	SAMP	5	54331.1	66539.2	81.65	PASS	70-125	62257.9	78725.2	79.083	PASS	70-125
N028727-013B	SAMP	1	52944.1	66539.2	79.57	PASS	70-125	60369.9	78725.2	76.68	PASS	70-125
N028727-013B	SAMP	5	54305.4	66539.2	81.61	PASS	70-125	61666.9	78725.2	78.33	PASS	70-125
N028727-014C	SAMP	1	52751.2	66539.2	79.28	PASS	70-125	59861.3	78725.2	76.038	PASS	70-125
N028727-014C	SAMP	5	53230.6	66539.2	80	PASS	70-125	60155.7	78725.2	76.41	PASS	70-125
N028727-015C	SAMP	1	52176.1	66539.2	78.41	PASS	70-125	59654	78725.2	75.77	PASS	70-125
N028727-015C	SAMP	5	53829.3	66539.2	80.9	PASS	70-125	62055	78725.2	78.82	PASS	70-125
CCV9	CCV	1	61184.9	66539.2	91.95	PASS	70-125	71776.8	78725.2	91.17	PASS	70-125
CCB9	CCB	1	53460.1	66539.2	80.34	PASS	70-125	61974.6	78725.2	78.72	PASS	70-125
LLCCV2	CCV2	1	52703.6	66539.2	79.21	PASS	70-125	60502.6	78725.2	76.85	PASS	70-125
ICSA3	ICSA	1	51542	66539.2	77.46	PASS	70-125	57865.4	78725.2	73.5	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSAB3	ICSAB	1	64014.6	66539.2	96.21	PASS	70-125	72605.8	78725.2	92.23	PASS	70-125
ICSAB3	ICSAB	1	60678.8	66539.2	91.19	PASS	70-125	63869.6	78725.2	81.13	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2010768.1	2010768.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2095079.1	2010768.1	104.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2077477	2010768.1	103.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	2060452.4	2010768.1	102.47	PASS	70-125
Std4-10/100 ppb	ICAL	1	2039726.9	2010768.1	101.44	PASS	70-125
Std5-20/200 ppb	ICAL	1	1928892.8	2010768.1	95.93	PASS	70-125
Std6-40/400 ppb	ICAL	1	1979255.7	2010768.1	98.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1857828.9	2010768.1	92.39	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1871094.3	2010768.1	93.054	PASS	70-125
ICV	ICV	1	1740741.6	2010768.1	86.57	PASS	70-125
ICB	ICB	1	1776890.2	2010768.1	88.37	PASS	70-125
LLICV	CCV1	1	1605452.4	2010768.1	79.84	PASS	70-125
ICSA1	ICSA	1	1549752.1	2010768.1	77.073	PASS	70-125
ICSAB1	ICSAB	1	1938163.7	2010768.1	96.39	PASS	70-125
MB-66863	MBLK	1	1983930.6	2010768.1	98.67	PASS	70-125
LCS-66863	LCS	1	1826402.3	2010768.1	90.83	PASS	70-125
N028679-001B	SAMP	1	1418184.7	2010768.1	70.53	PASS	70-125
N028679-001B	SAMP	5	1668822.2	2010768.1	82.99	PASS	70-125
N028679-001B	SAMP	25	1818653.1	2010768.1	90.45	PASS	70-125
N028679-001B-PS	PS	1	1525836.4	2010768.1	75.88	PASS	70-125
N028679-001B-PS	PS	5	1773387.8	2010768.1	88.19	PASS	70-125
N028679-001B-MS	MS	1	1616010.1	2010768.1	80.37	PASS	70-125
N028679-001B-MS	MS	5	1823471.3	2010768.1	90.69	PASS	70-125
N028679-001B-MSD	MSD	1	1595331.9	2010768.1	79.34	PASS	70-125
CCV1	CCV	1	2168755	2010768.1	107.86	PASS	70-125
CCB1	CCB	1	2029044.6	2010768.1	100.91	PASS	70-125
N028679-001B-MSD	MSD	5	1755329.1	2010768.1	87.3	PASS	70-125
N028679-002B	SAMP	1	1425056.3	2010768.1	70.87	PASS	70-125
N028679-002B	SAMP	5	1815897.1	2010768.1	90.31	PASS	70-125
N028679-002B	SAMP	10	1957259.7	2010768.1	97.34	PASS	70-125
N028679-003B	SAMP	1	1461508.9	2010768.1	72.68	PASS	70-125
N028679-003B	SAMP	5	1829052.5	2010768.1	90.96	PASS	70-125
N028679-003B	SAMP	10	1885487.2	2010768.1	93.77	PASS	70-125
N028679-004B	SAMP	1	1688221.7	2010768.1	83.96	PASS	70-125
N028679-004B	SAMP	5	1952020.9	2010768.1	97.078	PASS	70-125
N028679-005B	SAMP	1	1701226.5	2010768.1	84.61	PASS	70-125
CCV2	CCV	1	2393210.2	2010768.1	119.02	PASS	70-125
CCB2	CCB	1	2250124.4	2010768.1	111.9	PASS	70-125
N028679-005B	SAMP	5	1935353	2010768.1	96.25	PASS	70-125
N028696-001B	SAMP	1	1471088.7	2010768.1	73.16	PASS	70-125
N028696-001B	SAMP	5	1848277.7	2010768.1	91.92	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028696-002B	SAMP	1	1557649.3	2010768.1	77.47	PASS	70-125
N028696-002B	SAMP	5	1873638	2010768.1	93.18	PASS	70-125
N028696-003B	SAMP	1	1595599	2010768.1	79.35	PASS	70-125
N028696-003B	SAMP	5	1950279.1	2010768.1	96.99	PASS	70-125
N028696-004B	SAMP	1	1258354.8	2010768.1	62.58	NR!	70-125
N028696-004B	SAMP	5	1689693	2010768.1	84.032	PASS	70-125
N028696-005B	SAMP	1	1394259.9	2010768.1	69.34	NR!	70-125
CCV3	CCV	1	2295255.8	2010768.1	114.15	PASS	70-125
CCB3	CCB	1	2003532.9	2010768.1	99.64	PASS	70-125
N028696-005B	SAMP	5	1745928.6	2010768.1	86.83	PASS	70-125
N028696-006B	SAMP	1	1342534.7	2010768.1	66.77	NR!	70-125
N028696-006B	SAMP	5	1799168	2010768.1	89.48	PASS	70-125
N028696-007B	SAMP	1	1425087.2	2010768.1	70.87	PASS	70-125
N028696-007B	SAMP	5	1880154.9	2010768.1	93.5	PASS	70-125
N028696-008B	SAMP	1	1424477.9	2010768.1	70.84	PASS	70-125
N028696-008B	SAMP	5	1828763.1	2010768.1	90.95	PASS	70-125
N028696-009B	SAMP	1	1532685.3	2010768.1	76.22	PASS	70-125
N028696-009B	SAMP	5	1889452.8	2010768.1	93.97	PASS	70-125
CCV4	CCV	1	2320454.1	2010768.1	115.4	PASS	70-125
CCB4	CCB	1	2004189.3	2010768.1	99.67	PASS	70-125
LLCCV1	CCV2	1	1953812	2010768.1	97.17	PASS	70-125
ICSA2	ICSA	1	1707672.8	2010768.1	84.93	PASS	70-125
ICSAB2	ICSAB	1	2092410.1	2010768.1	104.06	PASS	70-125
MB-66882	MBLK	1	2076113	2010768.1	103.25	PASS	70-125
LCS-66882	LCS	1	2086702.8	2010768.1	103.78	PASS	70-125
N028726-001B	SAMP	1	1330086.5	2010768.1	66.15	NR!	70-125
N028726-001B	SAMP	5	1648017.7	2010768.1	81.96	PASS	70-125
N028726-001B	SAMP	25	1825172.8	2010768.1	90.77	PASS	70-125
N028726-001B-PS	PS	1	1400653.6	2010768.1	69.66	NR!	70-125
N028726-001B-PS	PS	5	1707259.8	2010768.1	84.91	PASS	70-125
N028726-001B-MS	MS	1	1429659.6	2010768.1	71.1	PASS	70-125
N028726-001B-MS	MS	5	1699479.6	2010768.1	84.52	PASS	70-125
N028726-001B-MSD	MSD	1	1431244.9	2010768.1	71.18	PASS	70-125
CCV5	CCV	1	2305999.9	2010768.1	114.68	PASS	70-125
CCB5	CCB	1	1998294.8	2010768.1	99.38	PASS	70-125
N028726-001B-MSD	MSD	5	1561012.5	2010768.1	77.63	PASS	70-125
N028726-002B	SAMP	1	1471449.5	2010768.1	73.18	PASS	70-125
N028726-002B	SAMP	5	1722795.2	2010768.1	85.68	PASS	70-125
N028726-003B	SAMP	1	1190218.4	2010768.1	59.19	NR!	70-125
N028726-003B	SAMP	5	1592652.8	2010768.1	79.21	PASS	70-125
N028726-004B	SAMP	1	1188477.1	2010768.1	59.11	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028726-004B	SAMP	5	1591614.5	2010768.1	79.15	PASS	70-125
N028726-005B	SAMP	1	1155126.8	2010768.1	57.45	NR!	70-125
N028726-005B	SAMP	5	1547529.4	2010768.1	76.96	PASS	70-125
N028727-002B	SAMP	1	1739322.7	2010768.1	86.5	PASS	70-125
CCV6	CCV	1	2174228.2	2010768.1	108.13	PASS	70-125
CCB6	CCB	1	1916207.5	2010768.1	95.3	PASS	70-125
N028727-002B	SAMP	5	1722986.2	2010768.1	85.69	PASS	70-125
N028727-003B	SAMP	1	1652928.3	2010768.1	82.2	PASS	70-125
N028727-003B	SAMP	5	1708473.3	2010768.1	84.97	PASS	70-125
N028727-004B	SAMP	1	1655160.3	2010768.1	82.31	PASS	70-125
N028727-004B	SAMP	5	1672703.8	2010768.1	83.19	PASS	70-125
N028727-005B	SAMP	1	1607880.3	2010768.1	79.96	PASS	70-125
N028727-005B	SAMP	5	1663533.4	2010768.1	82.73	PASS	70-125
N028727-006B	SAMP	1	1621225.6	2010768.1	80.63	PASS	70-125
N028727-006B	SAMP	5	1683116.1	2010768.1	83.71	PASS	70-125
N028727-007B	SAMP	1	1605423.2	2010768.1	79.84	PASS	70-125
CCV7	CCV	1	2037877.1	2010768.1	101.35	PASS	70-125
CCB7	CCB	1	1808461.6	2010768.1	89.94	PASS	70-125
N028727-007B	SAMP	5	1629968.8	2010768.1	81.062	PASS	70-125
N028727-008B	SAMP	1	1681174.1	2010768.1	83.61	PASS	70-125
N028727-008B	SAMP	5	1681144.4	2010768.1	83.61	PASS	70-125
N028727-009B	SAMP	1	1677140.7	2010768.1	83.41	PASS	70-125
N028727-009B	SAMP	5	1653064.8	2010768.1	82.21	PASS	70-125
N028727-010B	SAMP	1	1631165.8	2010768.1	81.12	PASS	70-125
N028727-010B	SAMP	5	1638981.2	2010768.1	81.51	PASS	70-125
N028727-011B	SAMP	1	1631839.2	2010768.1	81.16	PASS	70-125
N028727-011B	SAMP	5	1620506.3	2010768.1	80.59	PASS	70-125
N028727-012B	SAMP	1	1574991.3	2010768.1	78.33	PASS	70-125
CCV8	CCV	1	1964871.2	2010768.1	97.72	PASS	70-125
CCB8	CCB	1	1716413.8	2010768.1	85.36	PASS	70-125
N028727-012B	SAMP	5	1578017.7	2010768.1	78.48	PASS	70-125
N028727-013B	SAMP	1	1511555.5	2010768.1	75.17	PASS	70-125
N028727-013B	SAMP	5	1583952.2	2010768.1	78.77	PASS	70-125
N028727-014C	SAMP	1	1505818.4	2010768.1	74.89	PASS	70-125
N028727-014C	SAMP	5	1531041.6	2010768.1	76.14	PASS	70-125
N028727-015C	SAMP	1	1482370.5	2010768.1	73.72	PASS	70-125
N028727-015C	SAMP	5	1559278.5	2010768.1	77.55	PASS	70-125
CCV9	CCV	1	1881325.6	2010768.1	93.56	PASS	70-125
CCB9	CCB	1	1641016.7	2010768.1	81.61	PASS	70-125
LLCCV2	CCV2	1	1600866.2	2010768.1	79.61	PASS	70-125
ICSA3	ICSA	1	1449844.5	2010768.1	72.1	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB3	ICSAB	1	1780996.2	2010768.1	88.57	PASS	70-125
ICSAB3	ICSAB	1	1756751	2010768.1	87.37	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028696
Test Method: EPA 6020
Analysis Date: 2/26/2018

Matrix: Groundwater
Batch No.: 66863

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028679-001B DT 5X	Arsenic	ug/L	1.774336	NA	1.742236	1.84%	10
N028679-001B DT 5X	Chromium	ug/L	12.47202	NA	11.44148	9.01%	10
N028679-001B DT 25X	Manganese	ug/L	303.9595	PASS	291.3219	4.34%	10
N028679-001B DT 5X	Molybdenum	ug/L	23.76055	PASS	24.29756	2.21%	10
N028679-001B DT 5X	Selenium	ug/L	2.36312	NA	2.1495	9.94%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028679-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.087	0.10	10.00	1.742	103	80	120				
Molybdenum	34.681	0.50	10.00	24.30	104	80	120				
Selenium	10.933	0.50	10.00	2.149	87.8	80	120				

Sample ID	N028679-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	371.841	2.5	100.0	291.3	80.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028696
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028679-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66863	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941714

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.031	1.0	10.00	11.44	85.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 06, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028726

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 21, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.53 ug/L) for sample N028726-002 (MW-63-065-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (7.7 ug/L) and hexavalent chromium (0 ug/L) for sample N028726-004 (MW-60BR-245-LF_S-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (39 ug/L) and hexavalent chromium (4.1 ug/L) for sample N028726-005 (MW-60BR-245-LF_D-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N028726-001, -004 and -005 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N028726-001, -003, -004 and -005 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.53 ug/L) for sample N028726-002 (MW-63-065-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.8 and 0.97 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (7.7 ug/L) and hexavalent chromium (0 ug/L) for sample N028726-004 (MW-60BR-245-LF_S-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 7.9 and 3.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (39 ug/L) and hexavalent chromium (4.1 ug/L) for sample N028726-005 (MW-60BR-245-LF_D-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 42 and 16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N028726-001B-MS and N028726-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *06-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028726
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028726-001A	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-001B	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-001C	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-001D	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-002A	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-002B	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-002C	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-002D	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-003A	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-003B	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-003C	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-003D	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-004A	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-004B	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-004C	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-004D	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-005A	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-005B	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-005C	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-005D	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-006A	MW-713-Q118	Groundwater	2/21/2018 4:00:00 PM	2/21/2018	3/6/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	6800	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N028726-001DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **122226**
Client ID: **ZZZZZZ**	Batch ID: **R122226**	TestNo: **EPA 120.1**		Analysis Date: **2/22/2018**	SeqNo: **2938615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11190.000	0.10						11210	0.179	2	

Sample ID **N028727-014BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **122226**
Client ID: **ZZZZZZ**	Batch ID: **R122226**	TestNo: **EPA 120.1**		Analysis Date: **2/22/2018**	SeqNo: **2938663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1147.000	0.10						1144	0.262	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/22/2018 10:57 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/26/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.53	0.033	0.20		µg/L	1	2/22/2018 02:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	1.6	0.13	1.0		µg/L	1	2/27/2018 12:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028726
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028726-003

Client Sample ID: MW-60BR-245-3V-Q118
Collection Date: 2/21/2018 2:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	69	0.33	2.0		µg/L	10	2/22/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	59	0.13	1.0		µg/L	1	2/27/2018 12:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/22/2018 01:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	7.7	0.13	1.0		µg/L	1	2/27/2018 12:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.1	0.17	1.0		µg/L	5	2/22/2018 02:07 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	39	0.13	1.0		µg/L	1	2/27/2018 01:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-713-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 12:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122253**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **PBW**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122253**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **LCSW**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.981	0.20	5.000	0	99.6	90	110				

Sample ID **N028726-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.899	1.0	5.000	0	98.0	90	110				

Sample ID **N028726-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0.05200	99.2	90	110				

Sample ID **N028726-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.544	0.20	1.000	0.5270	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028726-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.672	2.0	50.00	68.66	98.0	90	110				

Sample ID **N028726-003AMSD**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	119.277	2.0	50.00	68.66	101	90	110	117.7	1.35	0	

Sample ID **N028726-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.525	1.0	5.000	0.5430	99.6	90	110				

Sample ID **N028726-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.001	1.0	5.000	4.108	97.9	90	110				

Sample ID **N028726-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	68.221	2.0						68.66	0.641	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939353

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID	N028727-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939355

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.04870	104	90	110				

Sample ID	N028727-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939359

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID	N028727-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939361

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N028727-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939363

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.04880	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939365

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20	1.000	0	105	90	110				

Sample ID	N028727-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939367

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110				

Sample ID	N028727-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.04650	101	90	110				

Sample ID	N028727-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	0	101	90	110				

Sample ID	N028727-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939375

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N028727-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Sample ID	N028727-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID	N028727-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939385

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66882	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66882	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.332	1.0	10.00	0	103	85	115				

Sample ID	N028726-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.899	1.0	10.00	0.6814	92.2	75	125				

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.833	1.0	10.00	0.6814	91.5	75	125	9.899	0.665	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.87	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.17	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.19	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.21	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122365	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	PBW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122365	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	LCSW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.490	0.050	0.5000	0	98.1	85	115				

Sample ID	N028726-002CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.918	0.050						0.8686	5.52	20	

Sample ID	N028696-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.290	0.25	2.500	3.444	114	75	125				

Sample ID	N028696-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.910	0.25	2.500	3.444	98.7	75	125	6.290	6.22	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	6.7	0.081	0.10		µg/L	1	2/26/2018 11:28 PM
Manganese	120	1.3	2.5		µg/L	5	2/26/2018 11:34 PM
Molybdenum	66	1.1	2.5		µg/L	5	2/26/2018 11:34 PM
Selenium	ND	1.8	2.5		µg/L	5	2/26/2018 11:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	1.5	0.081	0.10		µg/L	1	2/27/2018 12:30 AM
Manganese	35	0.26	0.50		µg/L	1	2/27/2018 12:30 AM
Molybdenum	20	0.21	0.50		µg/L	1	2/27/2018 12:30 AM
Selenium	0.69	0.36	0.50		µg/L	1	2/27/2018 12:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	7.6	0.081	0.10		µg/L	1	2/27/2018 12:41 AM
Manganese	11	0.26	0.50		µg/L	1	2/27/2018 12:41 AM
Molybdenum	57	1.1	2.5		µg/L	5	2/27/2018 12:47 AM
Selenium	2.8	1.8	2.5		µg/L	5	2/27/2018 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	4.0	0.081	0.10		µg/L	1	2/27/2018 12:52 AM
Manganese	21	0.26	0.50		µg/L	1	2/27/2018 12:52 AM
Molybdenum	58	1.1	2.5		µg/L	5	2/27/2018 12:58 AM
Selenium	2.6	1.8	2.5		µg/L	5	2/27/2018 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	4.6	0.081	0.10		µg/L	1	2/27/2018 01:03 AM
Manganese	22	0.26	0.50		µg/L	1	2/27/2018 01:03 AM
Molybdenum	56	1.1	2.5		µg/L	5	2/27/2018 01:09 AM
Selenium	2.7	1.8	2.5		µg/L	5	2/27/2018 01:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66882**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66882**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.273	0.10	10.00	0	103	85	115				
Manganese	103.833	0.50	100.0	0	104	85	115				
Molybdenum	10.046	0.50	10.00	0	100	85	115				
Selenium	11.055	0.50	10.00	0	111	85	115				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.084	0.10	10.00	6.737	103	75	125				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2941883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	233.603	2.5	100.0	124.7	109	75	125				
Molybdenum	80.626	2.5	10.00	65.53	151	75	125				S
Selenium	11.749	2.5	10.00	0	117	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.353	0.10	10.00	6.737	106	75	125	17.08	1.56	20	

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	232.759	2.5	100.0	124.7	108	75	125	233.6	0.362	20	
Molybdenum	79.690	2.5	10.00	65.53	142	75	125	80.63	1.17	20	S

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.074	2.5	10.00	0	111	75	125	11.75	5.92	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice; Sample Temp: 3.2°C
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift, SR. Technician	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Signature: Date: 2/21/18	Sampled By: Gary Clift		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: Date: 2/21/18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Manganese; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028726-01	MW-62-110-Q118	2/21/2018	1505		X		X	X	X		X		X					X	E	4	P	BN	
2	-02	MW-63-065-Q118	2/21/2018	851		X		X	X	X		X		X					X	E	4	P	BN	
3	-03	MW-60BR-245-3V-Q118	2/21/2018	1401		X		X	X	X		X		X					X	E	4	P	BN	
4	-04	MW-60-BR-245-LF S-Q118	2/21/2018	1001		X		X	X	X		X		X					X	E	4	P	BN	
5	-05	MW-60-BR-245-LF D-Q118	2/21/2018	1033		X		X	X	X		X		X					X	E	4	P	BN	
6	-06	MW-713-Q118	2/21/2018	1600		X														E	1	P	BN	
7																								
8																								
9																								
10																								

Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1605

Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1840

Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1605

Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1840

Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/21/2018	Workorder:	N028726
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: DA 3/5/2018

Reviewed By: 03/06/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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nancy@assetlaboratories.com

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Thursday, February 22, 2018 4:55 PM
To: 'nancy@assetlaboratories.com'
Cc: Madsen, Laura
Subject: Topock - ClientSampID Updates

Hi Nancy,

Could you please make the following updates to the ClientSampIDs:

Work Order	Lab Login ClientSampID	Correct ClientSampID
N028726	MW-60-BR-245-LF-D-Q118	MW-60BR-245-LF_D-Q118
N028726	MW-60-BR-245-LF S-Q118	MW-60BR-245-LF_S-Q118
N028727	R-63-Q118	R63-Q118

Thank you,
Tina

Tina Rice
Database Analyst

CRITIGEN

Tina.Rice@critigen.com
1 360 600 3562 Direct
1 360 600 3562 Mobile

critigen.com
critigen.co.uk

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028726

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028726-001A	MW-62-110-Q118	2/21/2018 3:05:00 PM	3/7/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-001B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-001C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-001D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-002A	MW-63-065-Q118	2/21/2018 8:51:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-002B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-002C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-002D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-003A	MW-60BR-245-3V-Q118	2/21/2018 2:01:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-003B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-003C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-003D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-004A	MW-60BR-245-LF_S-Q118	2/21/2018 10:01:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-004B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028726

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028726-004B	MW-60BR-245-LF_S-Q118	2/21/2018 10:01:00 AM	3/7/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-004C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-004D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-005A	MW-60BR-245-LF_D-Q118	2/21/2018 10:33:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-005B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-005C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-005D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-006A	MW-713-Q118	2/21/2018 4:00:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-007A	FOLDER	3/7/2018	3/7/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028726

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028726

Item	Page
Cover Page	1-6
Analytical Result/QC Summary Reports	7-37
Sample Receiving Items	38-44
List of Analysts	45
Raw Data	
EPA 120.1	46-49
EPA 218.6	50-210
SM 4500-NO3F	211-226
EPA 6020_Dissolved	227-311

March 06, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028726

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 21, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028726

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.53 ug/L) for sample N028726-002 (MW-63-065-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (7.7 ug/L) and hexavalent chromium (0 ug/L) for sample N028726-004 (MW-60BR-245-LF_S-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (39 ug/L) and hexavalent chromium (4.1 ug/L) for sample N028726-005 (MW-60BR-245-LF_D-Q118) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N028726-001, -004 and -005 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N028726-001, -003, -004 and -005 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.6 ug/L) and hexavalent chromium (0.53 ug/L) for sample N028726-002 (MW-63-065-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.8 and 0.97 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (7.7 ug/L) and hexavalent chromium (0 ug/L) for sample N028726-004 (MW-60BR-245-LF_S-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 7.9 and 3.3 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (39 ug/L) and hexavalent chromium (4.1 ug/L) for sample N028726-005 (MW-60BR-245-LF_D-Q118) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 42 and 16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N028726-001B-MS and N028726-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *06-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028726
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028726-001A	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-001B	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-001C	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-001D	MW-62-110-Q118	Groundwater	2/21/2018 3:05:00 PM	2/21/2018	3/6/2018
N028726-002A	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-002B	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-002C	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-002D	MW-63-065-Q118	Groundwater	2/21/2018 8:51:00 AM	2/21/2018	3/6/2018
N028726-003A	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-003B	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-003C	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-003D	MW-60BR-245-3V-Q118	Groundwater	2/21/2018 2:01:00 PM	2/21/2018	3/6/2018
N028726-004A	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-004B	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-004C	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-004D	MW-60BR-245-LF_S-Q118	Groundwater	2/21/2018 10:01:00 AM	2/21/2018	3/6/2018
N028726-005A	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-005B	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-005C	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-005D	MW-60BR-245-LF_D-Q118	Groundwater	2/21/2018 10:33:00 AM	2/21/2018	3/6/2018
N028726-006A	MW-713-Q118	Groundwater	2/21/2018 4:00:00 PM	2/21/2018	3/6/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	6800	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028726
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028726-005

Client Sample ID: MW-60BR-245-LF_D-Q118
Collection Date: 2/21/2018 10:33:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028726-001DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122226
Client ID:	ZZZZZZ	Batch ID:	R122226	TestNo:	EPA 120.1			Analysis Date:	2/22/2018	SeqNo:	2938615

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11190.000	0.10						11210	0.179	2	

Sample ID	N028727-014BDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122226
Client ID:	ZZZZZZ	Batch ID:	R122226	TestNo:	EPA 120.1			Analysis Date:	2/22/2018	SeqNo:	2938663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1147.000	0.10						1144	0.262	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028726
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028726-001

Client Sample ID: MW-62-110-Q118
Collection Date: 2/21/2018 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/22/2018 10:57 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/26/2018 11:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.53	0.033	0.20		µg/L	1	2/22/2018 02:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	1.6	0.13	1.0		µg/L	1	2/27/2018 12:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	69	0.33	2.0		µg/L	10	2/22/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	59	0.13	1.0		µg/L	1	2/27/2018 12:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/22/2018 01:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	7.7	0.13	1.0		µg/L	1	2/27/2018 12:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.1	0.17	1.0		µg/L	5	2/22/2018 02:07 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	39	0.13	1.0		µg/L	1	2/27/2018 01:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-713-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 12:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R122253**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID:	**PBW**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	**LCS-R122253**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID:	**LCSW**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.981	0.20	5.000	0	99.6	90	110				

Sample ID	**N028726-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID:	**ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.899	1.0	5.000	0	98.0	90	110				

Sample ID	**N028726-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID:	**ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0.05200	99.2	90	110				

Sample ID	**N028726-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID:	**ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.544	0.20	1.000	0.5270	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028726-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.672	2.0	50.00	68.66	98.0	90	110				

Sample ID **N028726-003AMSD**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	119.277	2.0	50.00	68.66	101	90	110	117.7	1.35	0	

Sample ID **N028726-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.525	1.0	5.000	0.5430	99.6	90	110				

Sample ID **N028726-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.001	1.0	5.000	4.108	97.9	90	110				

Sample ID **N028726-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	68.221	2.0						68.66	0.641	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028727-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N028727-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.04870	104	90	110				

Sample ID **N028727-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N028727-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N028727-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.04880	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028727-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20	1.000	0	105	90	110				

Sample ID **N028727-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110				

Sample ID **N028727-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.04650	101	90	110				

Sample ID **N028727-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	0	101	90	110				

Sample ID **N028727-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028727-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID **N028727-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Sample ID **N028727-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID **N028727-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66882**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122324**
Client ID: **PBW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66882**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122324**
Client ID: **LCSW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.332	1.0	10.00	0	103	85	115				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.899	1.0	10.00	0.6814	92.2	75	125				

Sample ID **N028726-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2941768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.833	1.0	10.00	0.6814	91.5	75	125	9.899	0.665	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.87	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.17	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.19	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:33:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180228B**	QC Batch: **R122365**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.21	0.032	0.050		mg/L	1	2/28/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122365	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	PBW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122365	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	LCSW	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.490	0.050	0.5000	0	98.1	85	115				

Sample ID	N028726-002CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.918	0.050						0.8686	5.52	20	

Sample ID	N028696-009CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.290	0.25	2.500	3.444	114	75	125				

Sample ID	N028696-009CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122365
Client ID:	ZZZZZZ	Batch ID:	R122365	TestNo:	SM4500-NO3			Analysis Date:	2/28/2018	SeqNo:	2944410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.910	0.25	2.500	3.444	98.7	75	125	6.290	6.22	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	6.7	0.081	0.10		µg/L	1	2/26/2018 11:28 PM
Manganese	120	1.3	2.5		µg/L	5	2/26/2018 11:34 PM
Molybdenum	66	1.1	2.5		µg/L	5	2/26/2018 11:34 PM
Selenium	ND	1.8	2.5		µg/L	5	2/26/2018 11:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 8:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	1.5	0.081	0.10		µg/L	1	2/27/2018 12:30 AM
Manganese	35	0.26	0.50		µg/L	1	2/27/2018 12:30 AM
Molybdenum	20	0.21	0.50		µg/L	1	2/27/2018 12:30 AM
Selenium	0.69	0.36	0.50		µg/L	1	2/27/2018 12:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	7.6	0.081	0.10		µg/L	1	2/27/2018 12:41 AM
Manganese	11	0.26	0.50		µg/L	1	2/27/2018 12:41 AM
Molybdenum	57	1.1	2.5		µg/L	5	2/27/2018 12:47 AM
Selenium	2.8	1.8	2.5		µg/L	5	2/27/2018 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q118
Lab Order:	N028726	**Collection Date:**	2/21/2018 10:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028726-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	2/27/2018 12:52 AM
Manganese	21	0.26	0.50		µg/L	1	2/27/2018 12:52 AM
Molybdenum	58	1.1	2.5		µg/L	5	2/27/2018 12:58 AM
Selenium	2.6	1.8	2.5		µg/L	5	2/27/2018 12:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028726
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028726-005

Client Sample ID: MW-60BR-245-LF_D-Q118
Collection Date: 2/21/2018 10:33:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	4.6	0.081	0.10		µg/L	1	2/27/2018 01:03 AM
Manganese	22	0.26	0.50		µg/L	1	2/27/2018 01:03 AM
Molybdenum	56	1.1	2.5		µg/L	5	2/27/2018 01:09 AM
Selenium	2.7	1.8	2.5		µg/L	5	2/27/2018 01:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66882**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66882**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.273	0.10	10.00	0	103	85	115				
Manganese	103.833	0.50	100.0	0	104	85	115				
Molybdenum	10.046	0.50	10.00	0	100	85	115				
Selenium	11.055	0.50	10.00	0	111	85	115				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.084	0.10	10.00	6.737	103	75	125				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2941883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	233.603	2.5	100.0	124.7	109	75	125				
Molybdenum	80.626	2.5	10.00	65.53	151	75	125				S
Selenium	11.749	2.5	10.00	0	117	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.353	0.10	10.00	6.737	106	75	125	17.08	1.56	20	

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	232.759	2.5	100.0	124.7	108	75	125	233.6	0.362	20	
Molybdenum	79.690	2.5	10.00	65.53	142	75	125	80.63	1.17	20	S

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.074	2.5	10.00	0	111	75	125	11.75	5.92	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	
SR. Technician	Phone: 916-786-3302 Fax:		

Signature: Date: 2/21/18
I hereby authorize ASSET Labs to perform the tests indicated below.

Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Sampled By: Gary Clift
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 2/21/18

Global ID:

Specify State:

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	
Sample Temp:	3.2°C	

Courier:

Tracking No.:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Manganese; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028726-01	MW-62-110-Q118	2/21/2018	1505		X		X	X	X		X		X					X	E	4	P	BN	
2	-02	MW-63-065-Q118	2/21/2018	851		X		X	X	X		X		X					X	E	4	P	BN	
3	-03	MW-60BR-245-3V-Q118	2/21/2018	1401		X		X	X	X		X		X					X	E	4	P	BN	
4	-04	MW-60-BR-245-LF S-Q118	2/21/2018	1001		X		X	X	X		X		X					X	E	4	P	BN	
5	-05	MW-60-BR-245-LF D-Q118	2/21/2018	1033		X		X	X	X		X		X					X	E	4	P	BN	
6	-06	MW-713-Q118	2/21/2018	1600		X														E	1	P	BN	
7																								
8																								
9																								
10																								

Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1605
Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1840
Reliquished by (Signature and Printed Name): Date/Time:

Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1605
Reliquished by (Signature and Printed Name): Date/Time: 2/21/18 1840
Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/21/2018	Workorder:	N028726
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: DA 3/5/2018

Reviewed By: 03/06/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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nancy@assetlaboratories.com

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Thursday, February 22, 2018 4:55 PM
To: 'nancy@assetlaboratories.com'
Cc: Madsen, Laura
Subject: Topock - ClientSampID Updates

Hi Nancy,

Could you please make the following updates to the ClientSampIDs:

Work Order	Lab Login ClientSampID	Correct ClientSampID
N028726	MW-60-BR-245-LF-D-Q118	MW-60BR-245-LF_D-Q118
N028726	MW-60-BR-245-LF S-Q118	MW-60BR-245-LF_S-Q118
N028727	R-63-Q118	R63-Q118

Thank you,
Tina

Tina Rice
Database Analyst

CRITIGEN

Tina.Rice@critigen.com
1 360 600 3562 Direct
1 360 600 3562 Mobile

critigen.com
critigen.co.uk

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028726

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028726-001A	MW-62-110-Q118	2/21/2018 3:05:00 PM	3/7/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-001B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-001C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-001D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-002A	MW-63-065-Q118	2/21/2018 8:51:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-002B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-002C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-002D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-003A	MW-60BR-245-3V-Q118	2/21/2018 2:01:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-003B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-003C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-003D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-004A	MW-60BR-245-LF_S-Q118	2/21/2018 10:01:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-004B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028726

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028726-004B	MW-60BR-245-LF_S-Q118	2/21/2018 10:01:00 AM	3/7/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-004C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-004D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-005A	MW-60BR-245-LF_D-Q118	2/21/2018 10:33:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-005B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028726-005C			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028726-005D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028726-006A	MW-713-Q118	2/21/2018 4:00:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028726-007A	FOLDER	3/7/2018	3/7/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028726

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122226 **Analyst:** LSR

ASSET #: N028726 **Date Analyzed:** 2/22/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/26/2018

2nd Level Reviewer: RB 03/06/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/22/18 1505

Analyst: LAP

	Standard	Std ID	Reading	Comments
	9.65 mS/cm	CINV - 180108A	9.89 @19.5°C	% Rec: (90-110%)
	1412	171121A	1456 @19.8°C	
	9987	180108B	10240 @19.7°C	
	99672	171121B	100500 @19.8°C	

	Sample ID	Matrix	Reading	Comments
1	NO28726-0010	H2O	11210 @19.5°C	
2	10DUP		11190 @19.3°C	
3	2D		6790 @19.3°C	
4	3D		17250 @19.6°C	
5	4D		17180 @19.8°C	
6	5D		17350 @19.9°C	
7	NO28727-0020		972 @19.7°C	MN 9/22
8	3D		960 @19.6°C	
9	4D		968 @19.5°C	
10	5D		969 @19.7°C	
Dup	6D		963 @19.8°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Julia Ramit 2/26/2018

Date:

Analyst: CONTD

RB 03/06/2018

	Standard	Std ID	Reading	Comments
	1413 mS/cm	CINV - 171121C	1452 @19.6°C	% Rec: (90-110%)
	10000	170822F	10442 @19.8°C	
	99672	171215A	99700 @19.9°C	

	Sample ID	Matrix	Reading	Comments
1	NO28727-0070	H2O	955 @19.2°C	
2	8D		968 @19.8°C	
3	9D		966 @19.7°C	
4	10D		968 @19.6°C	
5	11D		966 @19.7°C	
6	12D		963 @19.6°C	
7	13D		965 @19.6°C	
8	14B		1144 @19.2°C	
9	14BDUP	14B	1147 @18.9°C	
10	15B		994 @19.1°C	
Dup	1413 mS/cm	CINV - 171121C	1459 @19.3°C	Accept: 10% water, 20% soil
	Std Chk: 10000 99672	170822F 171215A	10490 @19.5°C 99800 @19.7°C	% Rec: (90-110%)

ASSET LABORATORIES
Serving Clients with Passion and Professionalism!
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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ELAP Cert 2676 | NV Cert NV00922

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R122253
ASSET #: N028726

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/22/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X			X		
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilution were necessary in N028726-001A/004A/005A due to matrix interference. MS rec and RT failed at lower dilutions.
N028726-002A = 0.53 ug/L ; N028726-002B (6020) = 1.6 ug/L **N028726-004A = 0.54 ug/L ; N028726-004B (6020) = 7.7 ug/L**
N028726-005A = 4.1 ug/L ; N028726-005B (6020) = 39 ug/L MS protocol performed. Recovery within criteria.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/4/2018

2nd Level Reviewer RLB 03/06/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028726-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.5270 * 1$$

$$Cr^{+6}, \mu g/L = 0.5270$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 0.53}$$

rba 3/4/2018

RB 03/06/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:31 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:42 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/22/18 9:51 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/22/18 10:01 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/22/18 10:10 AM	Reported
14	MB-R122253	MBLK	1	Hexavalent Chromium	02/22/18 10:20 AM	Reported
15	LCS-R122253	LCS	1	Hexavalent Chromium	02/22/18 10:29 AM	Reported
16	N028726-004A	SAMP	1	Hexavalent Chromium	02/22/18 10:39 AM	Not Reported
17	N028726-005A	SAMP	1	Hexavalent Chromium	02/22/18 10:48 AM	Not Reported
18	N028726-001A	SAMP	5	Hexavalent Chromium	02/22/18 10:57 AM	Reported
19	N028726-001AMS	MS	5	Hexavalent Chromium	02/22/18 11:07 AM	Reported
20	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 11:16 AM	Not Reported
21	N028726-002ADUP	DUP	1	Hexavalent Chromium	02/22/18 11:26 AM	Not Reported
22	N028726-003A	SAMP	100	Hexavalent Chromium	02/22/18 11:35 AM	Not Reported
23	N028726-003AMS	MS	100	Hexavalent Chromium	02/22/18 11:45 AM	Not Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/22/18 11:54 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/22/18 12:04 PM	Reported
26	N028726-006A	SAMP	1	Hexavalent Chromium	02/22/18 12:13 PM	Reported
27	N028726-006AMS	MS	1	Hexavalent Chromium	02/22/18 12:23 PM	Reported
28	N028726-004AMS	MS	1	Hexavalent Chromium	02/22/18 12:32 PM	Not Reported
29	N028726-005AMS	MS	1	Hexavalent Chromium	02/22/18 12:42 PM	Not Reported
30	N028726-002AMS	MS	1	Hexavalent Chromium	02/22/18 12:51 PM	Reported
31	N028726-003A	SAMP	10	Hexavalent Chromium	02/22/18 1:00 PM	Reported
32	N028726-003AMS	MS	10	Hexavalent Chromium	02/22/18 1:10 PM	Reported
33	N028726-003AMSD	MS	10	Hexavalent Chromium	02/22/18 1:19 PM	Reported
34	N028726-004A	SAMP	5	Hexavalent Chromium	02/22/18 1:29 PM	Reported
35	N028726-004AMS	MS	5	Hexavalent Chromium	02/22/18 1:38 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/22/18 1:48 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/22/18 1:57 PM	Reported
38	N028726-005A	SAMP	5	Hexavalent Chromium	02/22/18 2:07 PM	Reported
39	N028726-005AMS	MS	5	Hexavalent Chromium	02/22/18 2:16 PM	Reported
40	N028726-001A	SAMP	1	Hexavalent Chromium	02/22/18 2:26 PM	Not Reported
41	N028726-001AMS	MS	1	Hexavalent Chromium	02/22/18 2:35 PM	Not Reported
42	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 2:44 PM	Reported

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028726-003ADUP	DUP	10	Hexavalent Chromium	02/22/18 2:54 PM	Reported
44	N028727-002A	SAMP	1	Hexavalent Chromium	02/22/18 3:03 PM	Reported
45	N028727-002AMS	MS	1	Hexavalent Chromium	02/22/18 3:13 PM	Reported
46	N028727-003A	SAMP	1	Hexavalent Chromium	02/22/18 3:22 PM	Reported
47	N028727-003AMS	MS	1	Hexavalent Chromium	02/22/18 3:32 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/22/18 3:42 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/22/18 3:53 PM	Reported
50	N028727-004A	SAMP	1	Hexavalent Chromium	02/22/18 4:02 PM	Reported
51	N028727-004AMS	MS	1	Hexavalent Chromium	02/22/18 4:12 PM	Reported
52	N028727-005A	SAMP	1	Hexavalent Chromium	02/22/18 4:21 PM	Reported
53	N028727-005AMS	MS	1	Hexavalent Chromium	02/22/18 4:31 PM	Reported
54	N028727-006A	SAMP	1	Hexavalent Chromium	02/22/18 4:40 PM	Reported
55	N028727-006AMS	MS	1	Hexavalent Chromium	02/22/18 4:50 PM	Reported
56	N028727-007A	SAMP	1	Hexavalent Chromium	02/22/18 4:59 PM	Reported
57	N028727-007AMS	MS	1	Hexavalent Chromium	02/22/18 5:09 PM	Reported
58	N028727-008A	SAMP	1	Hexavalent Chromium	02/22/18 5:18 PM	Reported
59	N028727-008AMS	MS	1	Hexavalent Chromium	02/22/18 5:28 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/22/18 5:37 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/22/18 5:47 PM	Reported
62	N028727-009A	SAMP	1	Hexavalent Chromium	02/22/18 5:56 PM	Reported
63	N028727-009AMS	MS	1	Hexavalent Chromium	02/22/18 6:05 PM	Reported
64	N028727-010A	SAMP	1	Hexavalent Chromium	02/22/18 6:15 PM	Reported
65	N028727-010AMS	MS	1	Hexavalent Chromium	02/22/18 6:24 PM	Reported
66	N028727-011A	SAMP	1	Hexavalent Chromium	02/22/18 6:34 PM	Reported
67	N028727-011AMS	MS	1	Hexavalent Chromium	02/22/18 6:43 PM	Reported
68	N028727-012A	SAMP	1	Hexavalent Chromium	02/22/18 6:53 PM	Reported
69	N028727-012AMS	MS	1	Hexavalent Chromium	02/22/18 7:02 PM	Reported
70	N028727-013A	SAMP	1	Hexavalent Chromium	02/22/18 7:12 PM	Reported
71	N028727-013AMS	MS	1	Hexavalent Chromium	02/22/18 7:21 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	02/22/18 7:31 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	02/22/18 7:40 PM	Reported
74	N028727-014A	SAMP	1	Hexavalent Chromium	02/22/18 7:50 PM	Reported
75	N028727-014AMS	MS	1	Hexavalent Chromium	02/22/18 7:59 PM	Reported
76	N028727-015A	SAMP	1	Hexavalent Chromium	02/22/18 8:08 PM	Reported
77	N028727-015AMS	MS	1	Hexavalent Chromium	02/22/18 8:18 PM	Reported
78	CCV-7	CCV	1	Hexavalent Chromium	02/22/18 8:27 PM	Reported
79	CCB-7	CCB	1	Hexavalent Chromium	02/22/18 8:37 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180222A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**22/Feb/18 21:07:38**
No. of Injections:	**82**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/22/2018 09:31	Finished	BLANK
10	BLANK	2	1000	Unknown		02/22/2018 09:42	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/22/2018 09:51	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/22/2018 10:01	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/22/2018 10:10	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/22/2018 10:20	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/22/2018 10:29	Finished	LCS, IWST-180129B
16	N028726-004A,SAMF	8	1000	Unknown		02/22/2018 10:39	Finished	SAMP,10mL
17	N028726-005A,SAMF	9	1000	Unknown		02/22/2018 10:48	Finished	SAMP,10mL
18	N028726-001A,SAMF	10	1000	Unknown		02/22/2018 10:57	Finished	SAMP,2>10mL
19	N028726-001AMS,MS	11	1000	Unknown		02/22/2018 11:07	Finished	MS (1ppb), IWST-180129B,2>1
20	N028726-002A,SAMF	12	1000	Unknown		02/22/2018 11:16	Finished	SAMP,10mL
21	N028726-002ADUP,D	13	1000	Unknown		02/22/2018 11:26	Finished	DUP,10mL
22	N028726-003A,SAMF	14	1000	Unknown		02/22/2018 11:35	Finished	SAMP,0.1>10mL
23	N028726-003AMS,MS	15	1000	Unknown		02/22/2018 11:45	Finished	MS (5ppb), IWST-180129B,0.1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/22/2018 11:54	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/22/2018 12:04	Finished	CCB R180214B
26	N028726-006A,SAMF	18	1000	Unknown		02/22/2018 12:13	Finished	SAMP,10mL
27	N028726-006AMS,MS	19	1000	Unknown		02/22/2018 12:23	Finished	MS (1ppb), IWST-180129B,10
28	N028726-004AMS,MS	20	1000	Unknown		02/22/2018 12:32	Finished	MS (1ppb), IWST-180129B,10
29	N028726-005AMS,MS	21	1000	Unknown		02/22/2018 12:42	Finished	MS (1ppb), IWST-180129B,10
30	N028726-002AMS,MS	22	1000	Unknown		02/22/2018 12:51	Finished	MS (1ppb), IWST-180129B,10
31	N028726-003A,SAMF	23	1000	Unknown		02/22/2018 13:00	Finished	SAMP,1>10mL
32	N028726-003AMS,MS	24	1000	Unknown		02/22/2018 13:10	Finished	MS (5ppb), IWST-180129B,1>1
33	N028726-003AMSD,M	25	1000	Unknown		02/22/2018 13:19	Finished	MSD (5ppb), IWST-180129B,1>
34	N028726-004A,SAMF	26	1000	Unknown		02/22/2018 13:29	Finished	SAMP,2>10mL
35	N028726-004AMS,MS	27	1000	Unknown		02/22/2018 13:38	Finished	MS (1ppb), IWST-180129B,2>1
36	CCV-3,CCV,1,	28	1000	Unknown		02/22/2018 13:48	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/22/2018 13:57	Finished	CCB R180214B
38	N028726-005A,SAMF	30	1000	Unknown		02/22/2018 14:07	Finished	SAMP,2>10mL
39	N028726-005AMS,MS	31	1000	Unknown		02/22/2018 14:16	Finished	MS (1ppb), IWST-180129B,2>1
40	N028726-001A,SAMF	32	1000	Unknown		02/22/2018 14:26	Finished	SAMP,10mL
41	N028726-001AMS,MS	33	1000	Unknown		02/22/2018 14:35	Finished	MS (1ppb), IWST-180129B,10
42	N028726-002A,SAMF	34	1000	Unknown		02/22/2018 14:44	Finished	SAMP,10mL
43	N028726-003ADUP,D	35	1000	Unknown		02/22/2018 14:54	Finished	DUP,1>10mL
44	N028727-002A,SAMF	36	1000	Unknown		02/22/2018 15:03	Finished	SAMP,10mL
45	N028727-002AMS,MS	37	1000	Unknown		02/22/2018 15:13	Finished	MS (1ppb), IWST-180129B,10
46	N028727-003A,SAMF	38	1000	Unknown		02/22/2018 15:22	Finished	SAMP,10mL
47	N028727-003AMS,MS	39	1000	Unknown		02/22/2018 15:32	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	1	1000	Unknown		02/22/2018 15:42	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	2	1000	Unknown		02/22/2018 15:53	Finished	CCB R180214B
50	N028727-004A,SAMF	3	1000	Unknown		02/22/2018 16:02	Finished	SAMP,10mL
51	N028727-004AMS,MS	4	1000	Unknown		02/22/2018 16:12	Finished	MS (1ppb), IWST-180129B,10
52	N028727-005A,SAMF	5	1000	Unknown		02/22/2018 16:21	Finished	SAMP,10mL
53	N028727-005AMS,MS	6	1000	Unknown		02/22/2018 16:31	Finished	MS (1ppb), IWST-180129B,10
54	N028727-006A,SAMF	7	1000	Unknown		02/22/2018 16:40	Finished	SAMP,10mL
55	N028727-006AMS,MS	8	1000	Unknown		02/22/2018 16:50	Finished	MS (1ppb), IWST-180129B,10
56	N028727-007A,SAMF	9	1000	Unknown		02/22/2018 16:59	Finished	SAMP,10mL
57	N028727-007AMS,MS	10	1000	Unknown		02/22/2018 17:09	Finished	MS (1ppb), IWST-180129B,10
58	N028727-008A,SAMF	11	1000	Unknown		02/22/2018 17:18	Finished	SAMP,10mL
59	N028727-008AMS,MS	12	1000	Unknown		02/22/2018 17:28	Finished	MS (1ppb), IWST-180129B,10
60	CCV-5,CCV,1,	13	1000	Unknown		02/22/2018 17:37	Finished	CCV @5ppb, IWST-180129A

61	CCB-5,CCB,1,	14	1000	Unknown		02/22/2018 17:47	Finished	CCB R180214B
62	N028727-009A,SAMP	15	1000	Unknown		02/22/2018 17:56	Finished	SAMP,10mL
63	N028727-009AMS,MS	16	1000	Unknown		02/22/2018 18:05	Finished	MS (1ppb), IWST-180129B,10
64	N028727-010A,SAMP	17	1000	Unknown		02/22/2018 18:15	Finished	SAMP,10mL
65	N028727-010AMS,MS	18	1000	Unknown		02/22/2018 18:24	Finished	MS (1ppb), IWST-180129B,10
66	N028727-011A,SAMP	19	1000	Unknown		02/22/2018 18:34	Finished	SAMP,10mL
67	N028727-011AMS,MS	20	1000	Unknown		02/22/2018 18:43	Finished	MS (1ppb), IWST-180129B,10
68	N028727-012A,SAMP	21	1000	Unknown		02/22/2018 18:53	Finished	SAMP,10mL
69	N028727-012AMS,MS	22	1000	Unknown		02/22/2018 19:02	Finished	MS (1ppb), IWST-180129B,10
70	N028727-013A,SAMP	23	1000	Unknown		02/22/2018 19:12	Finished	SAMP,10mL
71	N028727-013AMS,MS	24	1000	Unknown		02/22/2018 19:21	Finished	MS (1ppb), IWST-180129B,10
72	CCV-6,CCV1,1,	25	1000	Unknown		02/22/2018 19:31	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	26	1000	Unknown		02/22/2018 19:40	Finished	CCB R180214B
74	N028727-014A,SAMP	27	1000	Unknown		02/22/2018 19:50	Finished	SAMP,10mL
75	N028727-014AMS,MS	28	1000	Unknown		02/22/2018 19:59	Finished	MS (1ppb), IWST-180129B,10
76	N028727-015A,SAMP	29	1000	Unknown		02/22/2018 20:08	Finished	SAMP,10mL
77	N028727-015AMS,MS	30	1000	Unknown		02/22/2018 20:18	Finished	MS (1ppb), IWST-180129B,10
78	CCV-7,CCV,1,	31	1000	Unknown		02/22/2018 20:27	Finished	CCV @5ppb, IWST-180129A
79	CCB-7,CCB,1,	32	1000	Unknown		02/22/2018 20:37	Finished	CCB R180214B
80	SHUTDOWN	33	1000	Unknown		02/22/2018 20:46	Finished	
81	Eluent: R180219A	34	1000	Unknown		n.a.	Finished	Eluent
82	PCR: R180219B	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/22/18
Time Prepared: 0913H
Prepared By: MSA

Slope: 95.67
pH 4: 4.00 @ 25.0°C
7: 6.99 @ 25.0°C
10: 9.96 @ 25.0°C
LCS:

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINU-171116A
NH4OH + NH4SO4 eluent: M802194
NH4OH + NH4SO4 buffer: M802148

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028726-001A	9.58	-	~240 mL	~250mL		
2)	2A	9.32	-				
3)	3A	9.65	-				
4)	4A	9.69	-				
5)	5A	9.68	-				
6)	6A	9.70	-				
7)	N028727-1A	9.65	-				1/1 HOLD
8)	2A	9.53	-				1/3
9)	2A	9.52	-				2/3
10)	2A	9.55	-				3/3
11)	3A	9.55	-				1/3
12)	3A	9.56	-				2/3
13)	3A	9.58	-				3/3
14)	4A	9.56	-				1/3
15)	4A	9.57	-				2/3
	4A	9.55	-				3/3

Sample Preparation

Date Prepared: 2/22/18
Time Prepared: 0913H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINU-171116A
NH4OH + NH4SO4 eluent: M802194
NH4OH + NH4SO4 buffer: M802148

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028727-5A	9.54	-	~250mL	~250mL		1/3
2)	5A	9.56	-				2/3
3)	5A	9.54	-				3/3
4)	6A	9.59	-				1/3
5)	6A	9.58	-				2/3
6)	6A	9.58	-				3/3
7)	7A	9.55	-				1/3
8)	7A	9.56	-				2/3
9)	7A	9.55	-				3/3
10)	8A	9.53	-				1/3
11)	8A	9.55	-				2/3
12)	8A	9.55	-				3/3
13)	9A	9.54	-				1/3
14)	9A	9.54	-				2/3
15)	9A	9.56	-				3/3
	10A	9.61	-				1/3

Logbook No. 14

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
SCAQMD ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV0[illegible]22
ORELAP/NELAP Cert 4046

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9998 7

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/06/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ICV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.960	0.20	5.000	0	99.2	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.186	0.20	0.2000	0	93.1	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.681	0.20	10.00	0	96.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.939	0.20	10.00	0	99.4	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.941	0.20	5.000	0	98.8	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.888	0.20	10.00	0	98.9	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.942	0.20	5.000	0	98.8	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ICB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.165
Actual RT Window	4.085 - 4.245
Applied RT Window	3.965 - 4.365

MB-R122253	N.A.	N.A.
LCS-R122253	4.156	PASS
N028726-004A	N.A.	N.A.
N028726-005A	N.A.	N.A.
N028726-001A	N.A.	N.A.
N028726-001AMS	4.131	PASS
N028726-002A	4.056	PASS
N028726-002ADUP	4.048	PASS
N028726-003A	4.165	PASS
N028726-003AMS	4.165	PASS
N028726-006A	4.115	PASS
N028726-006AMS	4.165	PASS
N028726-004AMS	N.A.	N.A.
N028726-005AMS	N.A.	N.A.
N028726-002AMS	4.065	PASS
N028726-003A	4.140	PASS
N028726-003AMS	4.140	PASS
N028726-003AMSD	4.140	PASS
N028726-004A	4.098	PASS
N028726-004AMS	4.106	PASS
N028726-005A	4.106	PASS

RLB 03/06/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028726-005AMS	4.106	PASS
N028726-001A	N.A.	N.A.
N028726-001AMS	3.940	FAIL
N028726-002A	4.056	PASS
N028726-003ADUP	4.123	PASS
N028727-002A	N.A.	N.A.
N028727-002AMS	4.156	PASS
N028727-003A	4.131	PASS
N028727-003AMS	4.156	PASS
N028727-004A	N.A.	N.A.
N028727-004AMS	4.156	PASS
N028727-005A	N.A.	N.A.
N028727-005AMS	4.156	PASS
N028727-006A	4.115	PASS
N028727-006AMS	4.165	PASS
N028727-007A	N.A.	N.A.
N028727-007AMS	4.165	PASS
N028727-008A	N.A.	N.A.
N028727-008AMS	4.156	PASS
N028727-009A	4.131	PASS
N028727-009AMS	4.156	PASS
N028727-010A	N.A.	N.A.



03/06/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028727-010AMS	4.156	PASS
N028727-011A	N.A.	N.A.
N028727-011AMS	4.156	PASS
N028727-012A	N.A.	N.A.
N028727-012AMS	4.156	PASS
N028727-013A	N.A.	N.A.
N028727-013AMS	4.156	PASS
N028727-014A	N.A.	N.A.
N028727-014AMS	4.148	PASS
N028727-015A	N.A.	N.A.
N028727-015AMS	4.156	PASS

RLB 03/06/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

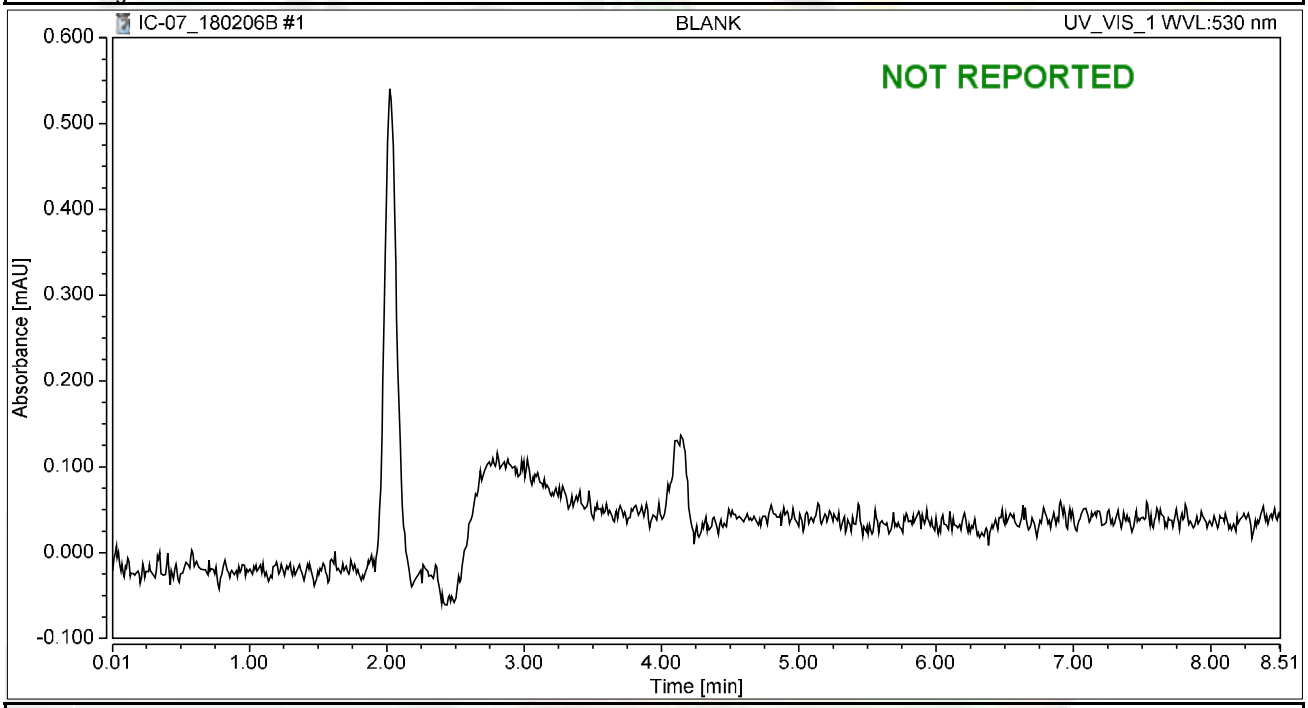
61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

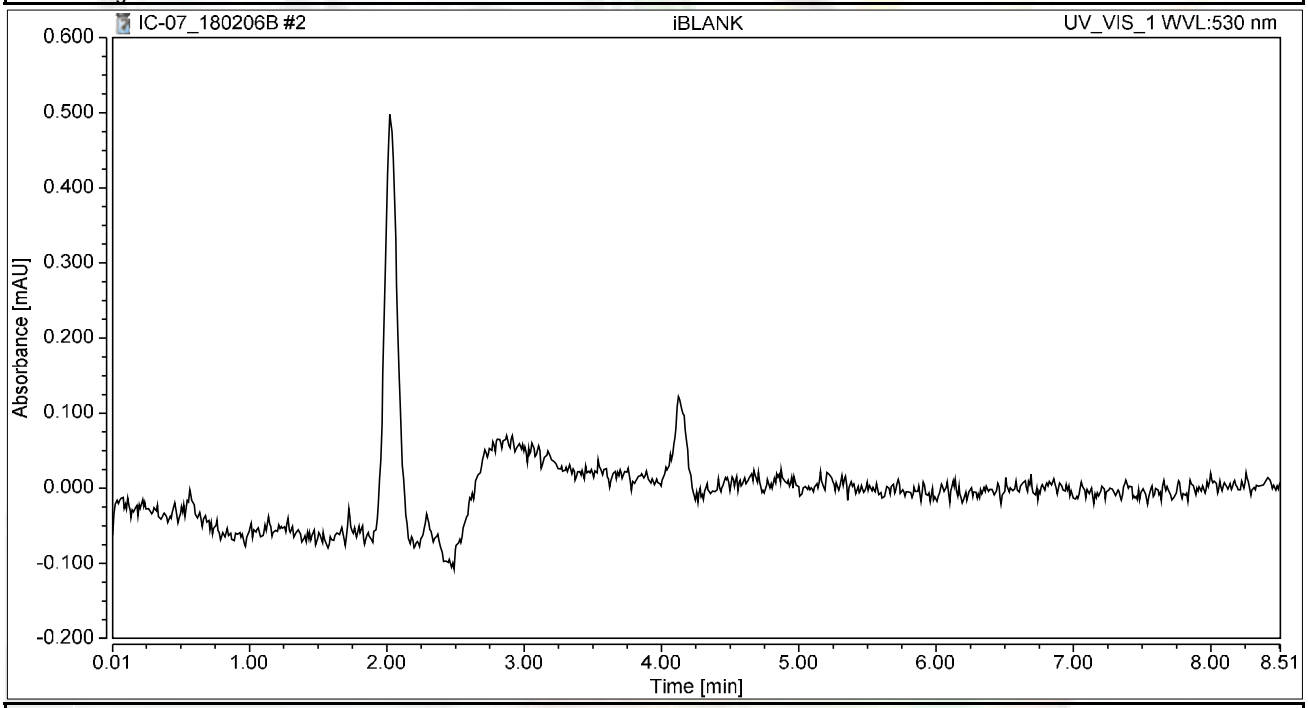
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

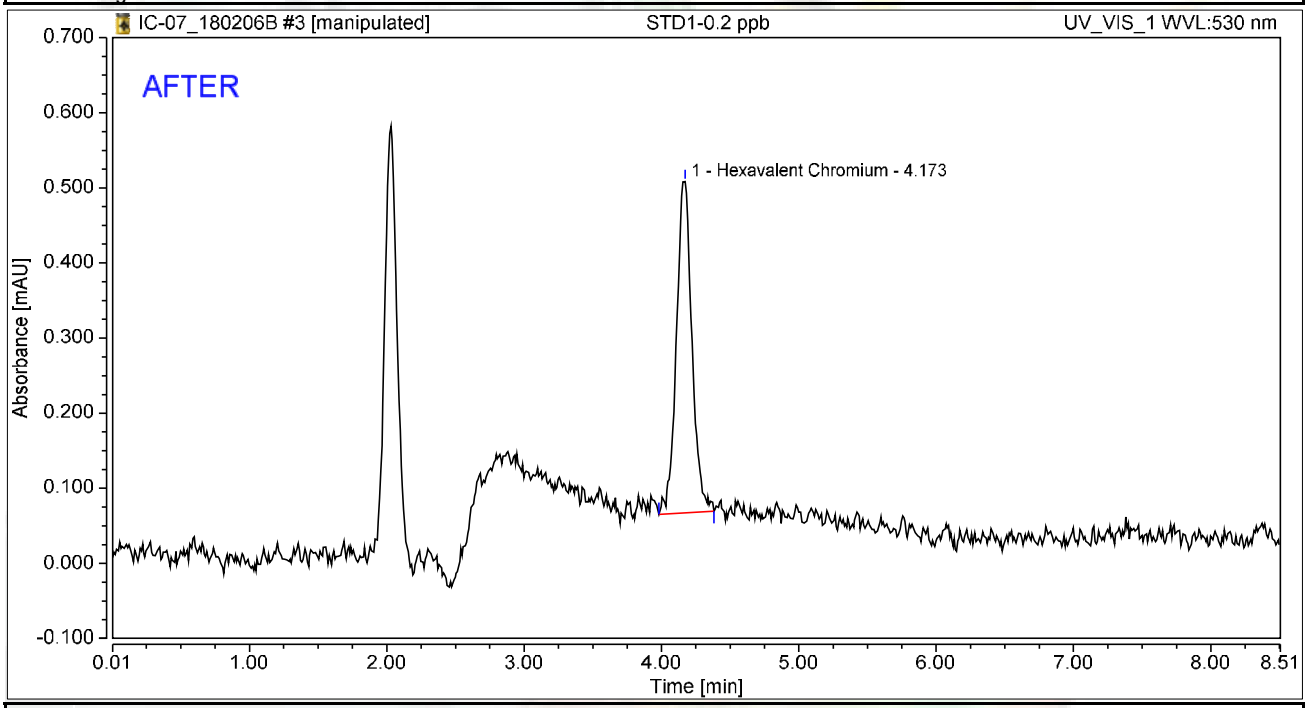
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

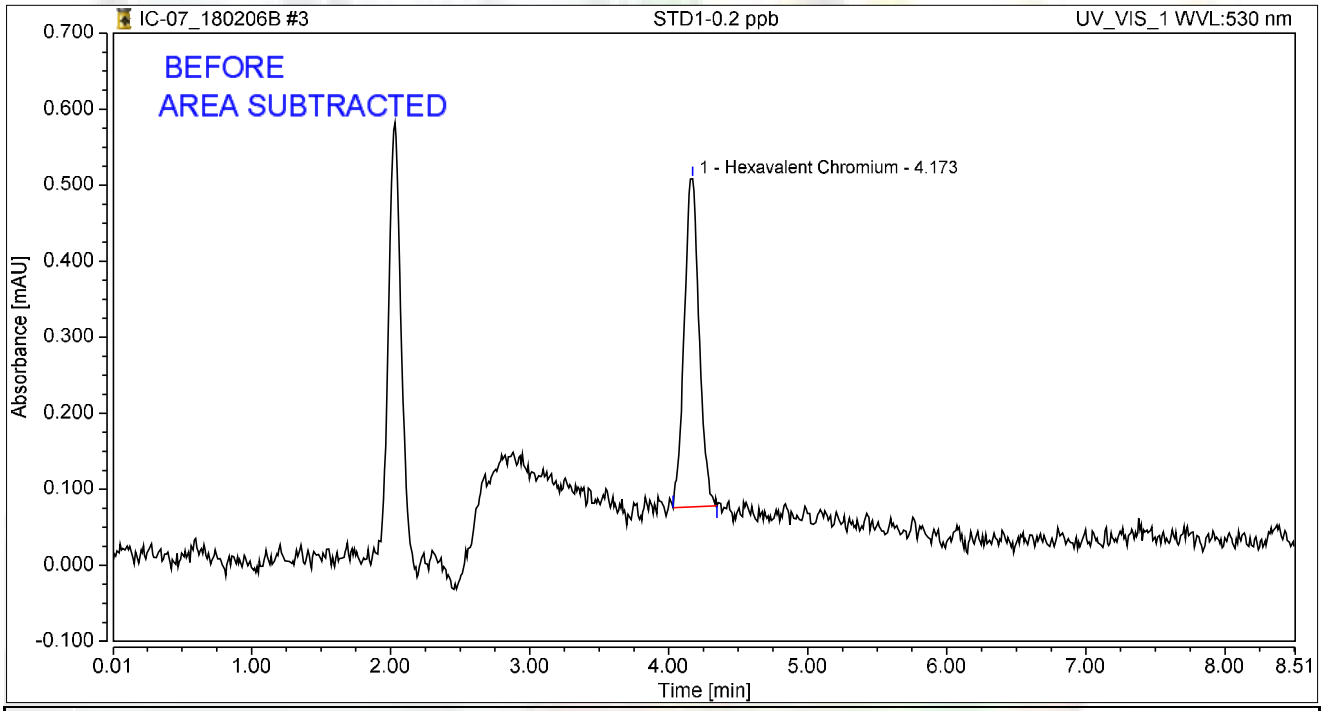
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

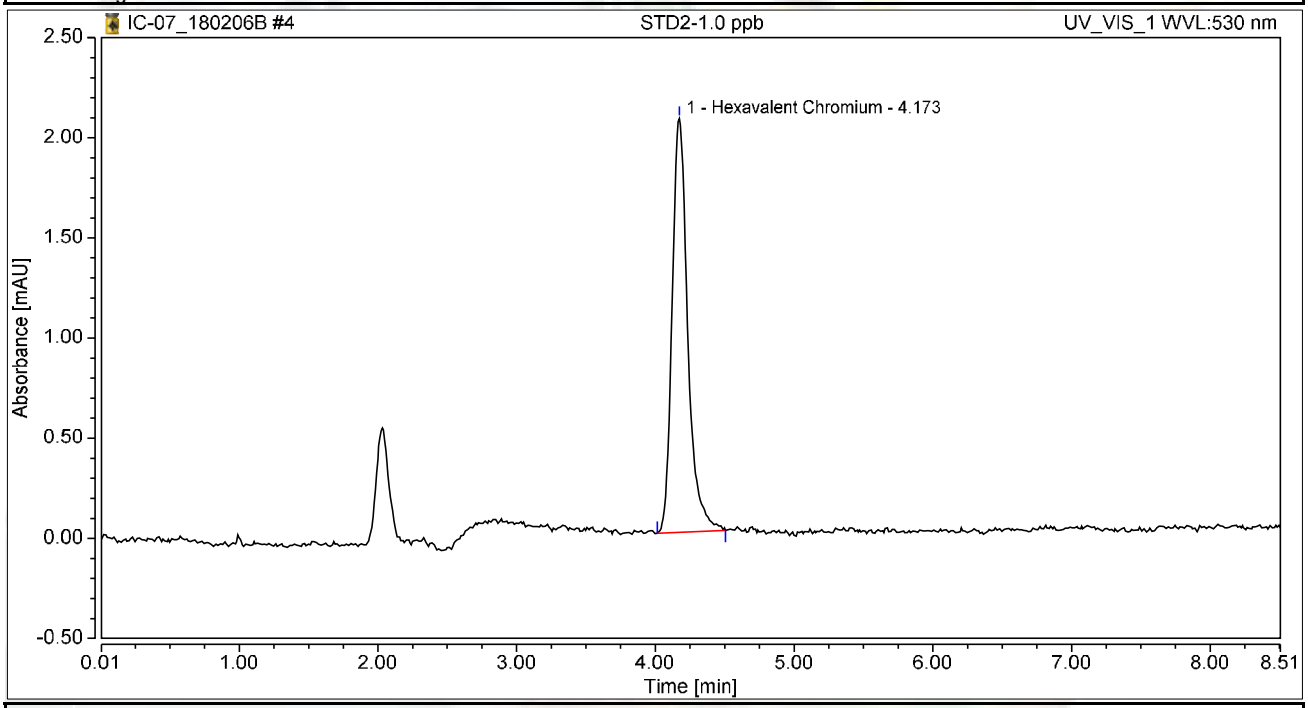
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

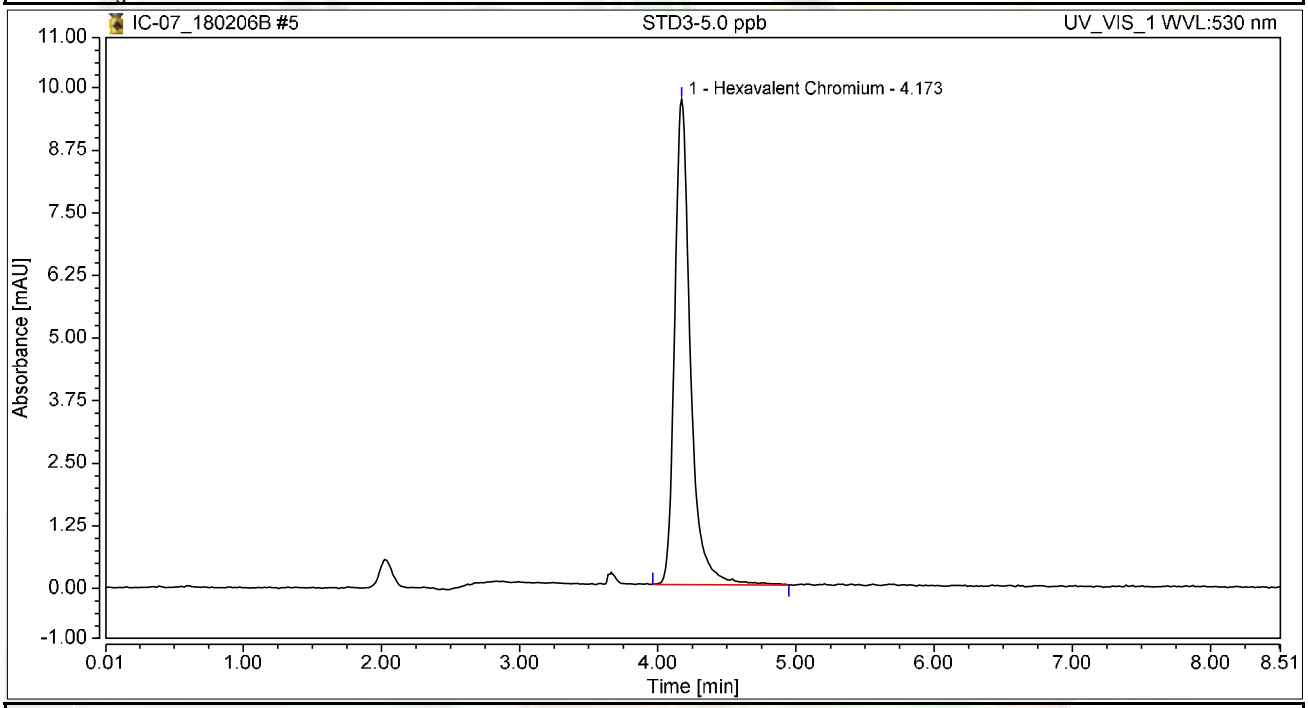
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

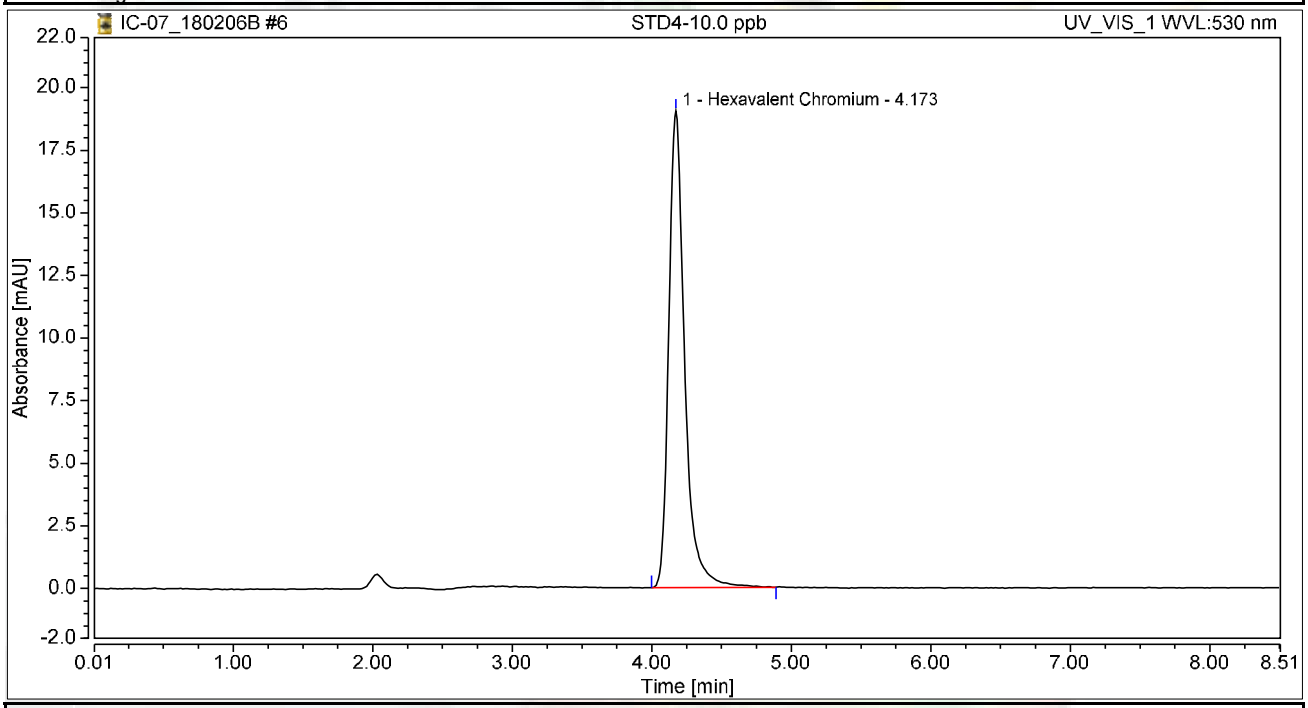
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

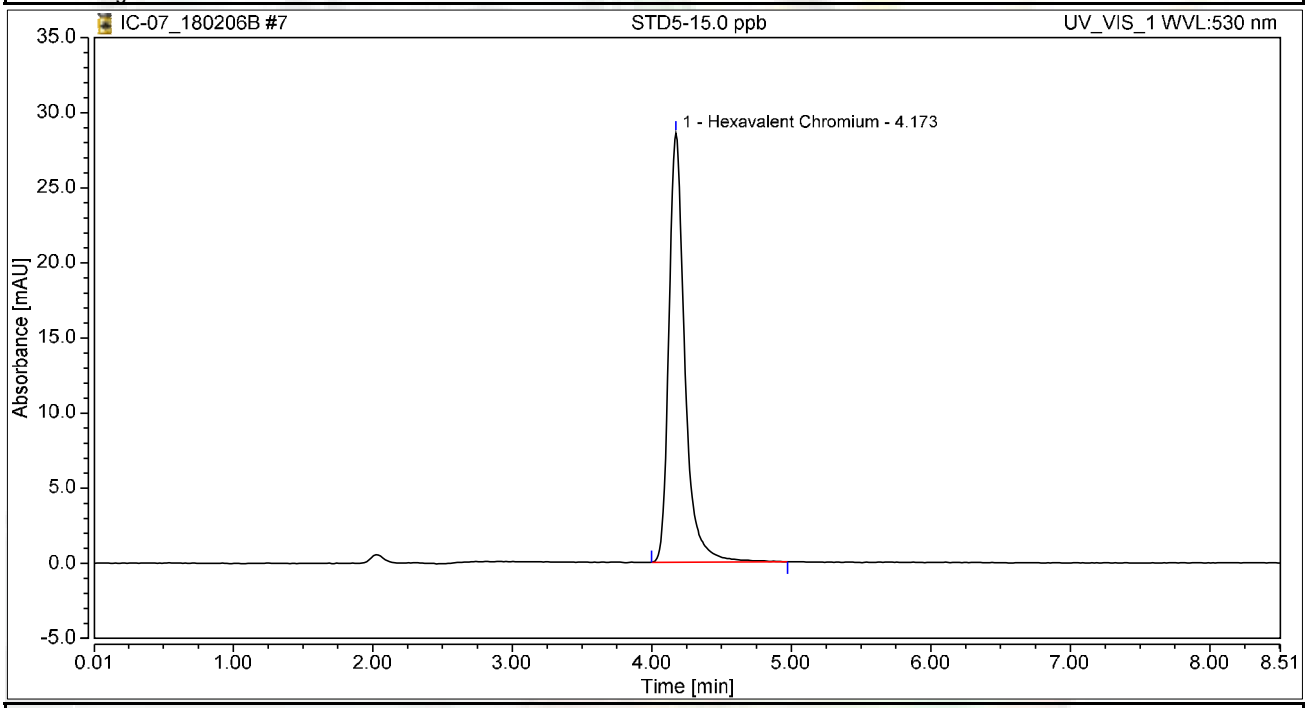
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

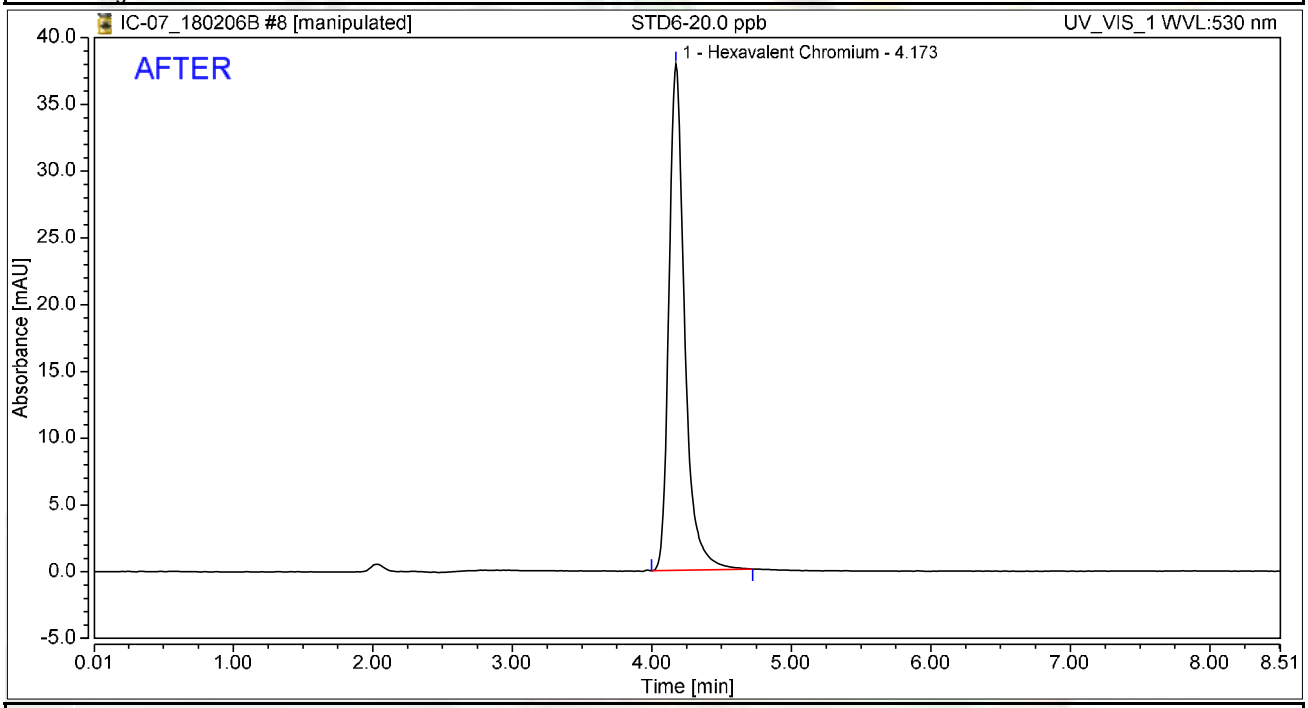
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

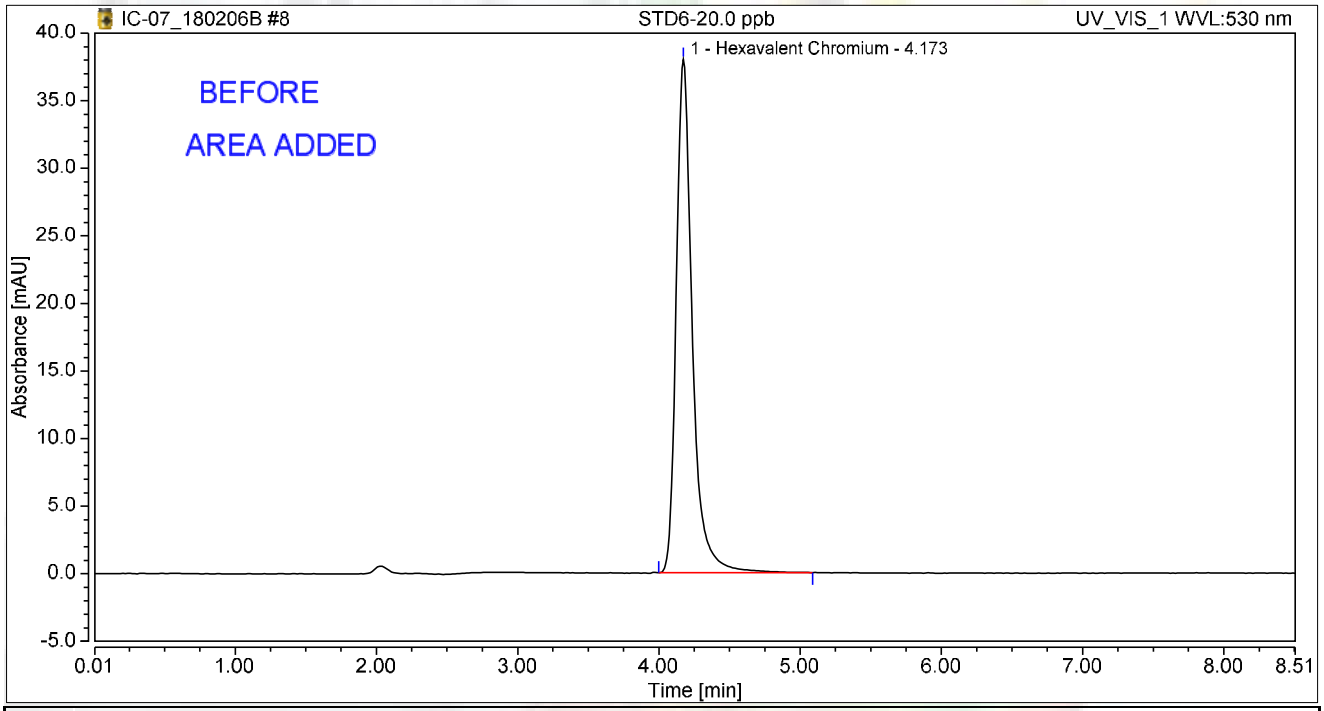
02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

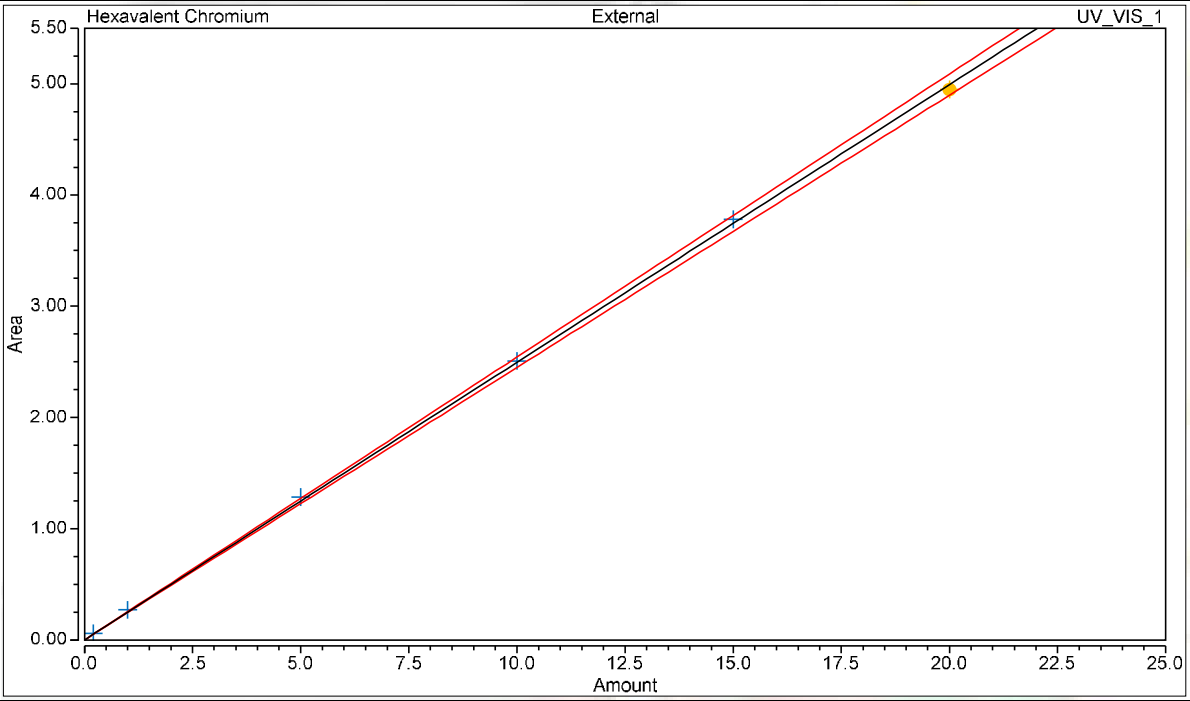
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

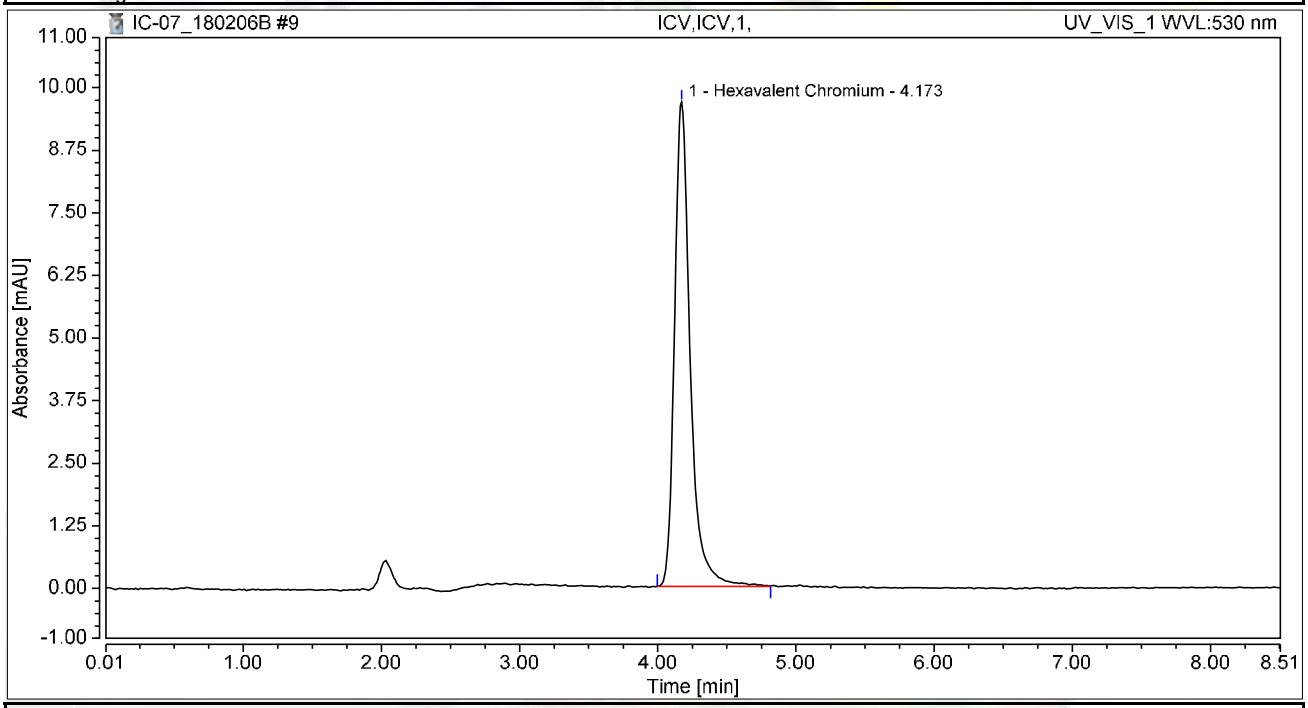
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

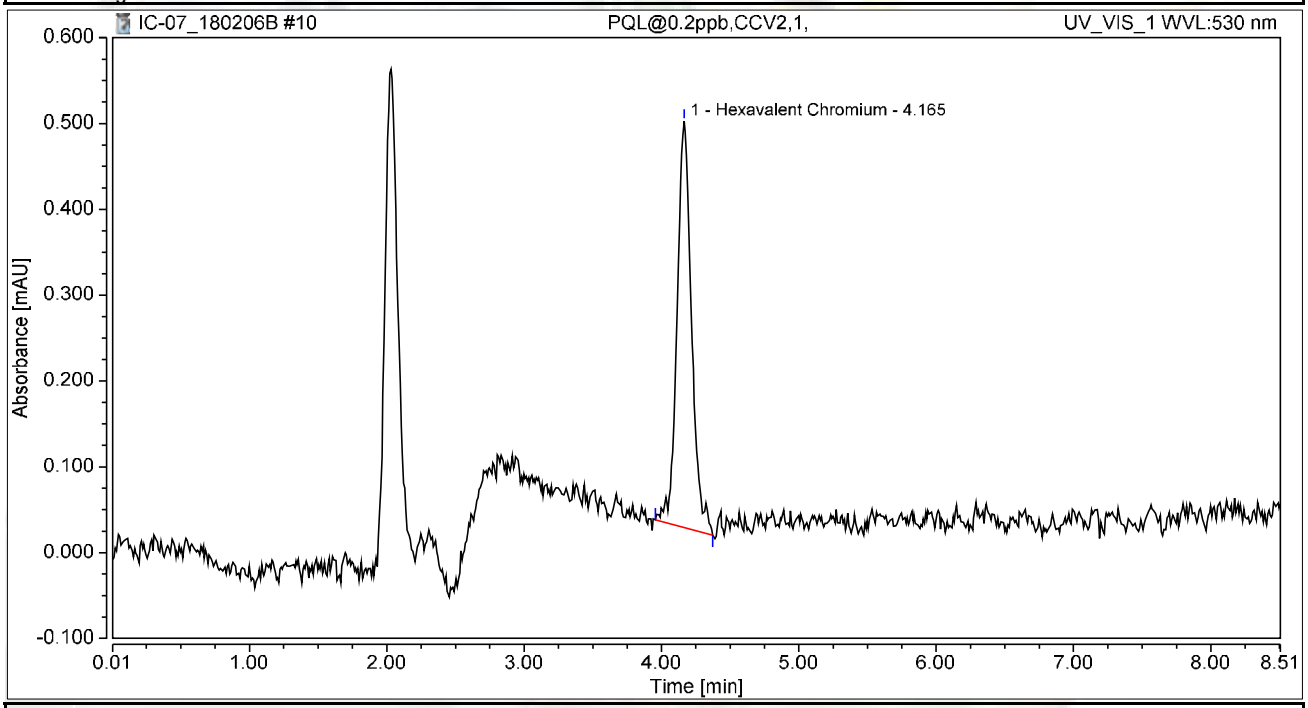
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

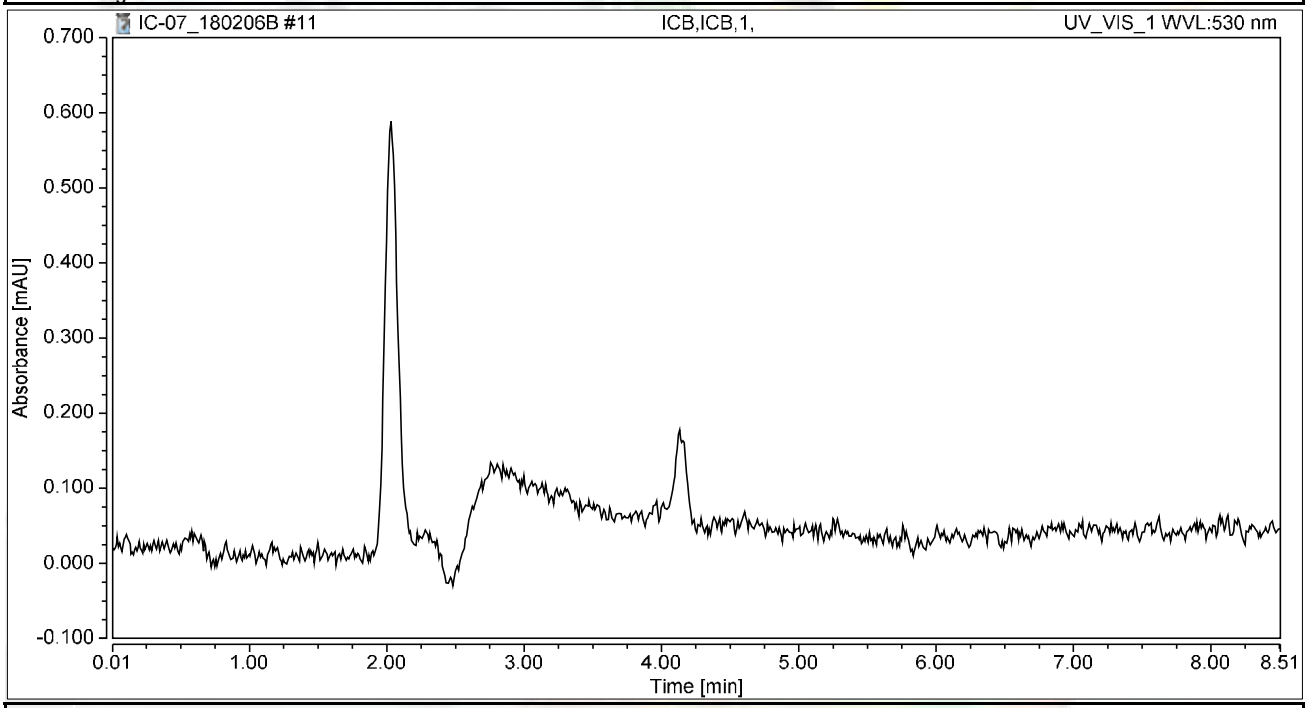
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:31 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:42 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/22/18 9:51 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/22/18 10:01 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/22/18 10:10 AM	Reported
14	MB-R122253	MBLK	1	Hexavalent Chromium	02/22/18 10:20 AM	Reported
15	LCS-R122253	LCS	1	Hexavalent Chromium	02/22/18 10:29 AM	Reported
16	N028726-004A	SAMP	1	Hexavalent Chromium	02/22/18 10:39 AM	Not Reported
17	N028726-005A	SAMP	1	Hexavalent Chromium	02/22/18 10:48 AM	Not Reported
18	N028726-001A	SAMP	5	Hexavalent Chromium	02/22/18 10:57 AM	Reported
19	N028726-001AMS	MS	5	Hexavalent Chromium	02/22/18 11:07 AM	Reported
20	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 11:16 AM	Not Reported
21	N028726-002ADUP	DUP	1	Hexavalent Chromium	02/22/18 11:26 AM	Not Reported
22	N028726-003A	SAMP	100	Hexavalent Chromium	02/22/18 11:35 AM	Not Reported
23	N028726-003AMS	MS	100	Hexavalent Chromium	02/22/18 11:45 AM	Not Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/22/18 11:54 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/22/18 12:04 PM	Reported
26	N028726-006A	SAMP	1	Hexavalent Chromium	02/22/18 12:13 PM	Reported
27	N028726-006AMS	MS	1	Hexavalent Chromium	02/22/18 12:23 PM	Reported
28	N028726-004AMS	MS	1	Hexavalent Chromium	02/22/18 12:32 PM	Not Reported
29	N028726-005AMS	MS	1	Hexavalent Chromium	02/22/18 12:42 PM	Not Reported
30	N028726-002AMS	MS	1	Hexavalent Chromium	02/22/18 12:51 PM	Reported
31	N028726-003A	SAMP	10	Hexavalent Chromium	02/22/18 1:00 PM	Reported
32	N028726-003AMS	MS	10	Hexavalent Chromium	02/22/18 1:10 PM	Reported
33	N028726-003AMSD	MS	10	Hexavalent Chromium	02/22/18 1:19 PM	Reported
34	N028726-004A	SAMP	5	Hexavalent Chromium	02/22/18 1:29 PM	Reported
35	N028726-004AMS	MS	5	Hexavalent Chromium	02/22/18 1:38 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/22/18 1:48 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/22/18 1:57 PM	Reported
38	N028726-005A	SAMP	5	Hexavalent Chromium	02/22/18 2:07 PM	Reported
39	N028726-005AMS	MS	5	Hexavalent Chromium	02/22/18 2:16 PM	Reported
40	N028726-001A	SAMP	1	Hexavalent Chromium	02/22/18 2:26 PM	Not Reported
41	N028726-001AMS	MS	1	Hexavalent Chromium	02/22/18 2:35 PM	Not Reported
42	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 2:44 PM	Reported

rba 3/4/2018

IC7 RBA 2/26/2018 10:20 AM

RLB 03/06/2018

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028726-003ADUP	DUP	10	Hexavalent Chromium	02/22/18 2:54 PM	Reported
44	N028727-002A	SAMP	1	Hexavalent Chromium	02/22/18 3:03 PM	Reported
45	N028727-002AMS	MS	1	Hexavalent Chromium	02/22/18 3:13 PM	Reported
46	N028727-003A	SAMP	1	Hexavalent Chromium	02/22/18 3:22 PM	Reported
47	N028727-003AMS	MS	1	Hexavalent Chromium	02/22/18 3:32 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/22/18 3:42 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/22/18 3:53 PM	Reported
50	N028727-004A	SAMP	1	Hexavalent Chromium	02/22/18 4:02 PM	Reported
51	N028727-004AMS	MS	1	Hexavalent Chromium	02/22/18 4:12 PM	Reported
52	N028727-005A	SAMP	1	Hexavalent Chromium	02/22/18 4:21 PM	Reported
53	N028727-005AMS	MS	1	Hexavalent Chromium	02/22/18 4:31 PM	Reported
54	N028727-006A	SAMP	1	Hexavalent Chromium	02/22/18 4:40 PM	Reported
55	N028727-006AMS	MS	1	Hexavalent Chromium	02/22/18 4:50 PM	Reported
56	N028727-007A	SAMP	1	Hexavalent Chromium	02/22/18 4:59 PM	Reported
57	N028727-007AMS	MS	1	Hexavalent Chromium	02/22/18 5:09 PM	Reported
58	N028727-008A	SAMP	1	Hexavalent Chromium	02/22/18 5:18 PM	Reported
59	N028727-008AMS	MS	1	Hexavalent Chromium	02/22/18 5:28 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/22/18 5:37 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/22/18 5:47 PM	Reported
62	N028727-009A	SAMP	1	Hexavalent Chromium	02/22/18 5:56 PM	Reported
63	N028727-009AMS	MS	1	Hexavalent Chromium	02/22/18 6:05 PM	Reported
64	N028727-010A	SAMP	1	Hexavalent Chromium	02/22/18 6:15 PM	Reported
65	N028727-010AMS	MS	1	Hexavalent Chromium	02/22/18 6:24 PM	Reported
66	N028727-011A	SAMP	1	Hexavalent Chromium	02/22/18 6:34 PM	Reported
67	N028727-011AMS	MS	1	Hexavalent Chromium	02/22/18 6:43 PM	Reported
68	N028727-012A	SAMP	1	Hexavalent Chromium	02/22/18 6:53 PM	Reported
69	N028727-012AMS	MS	1	Hexavalent Chromium	02/22/18 7:02 PM	Reported
70	N028727-013A	SAMP	1	Hexavalent Chromium	02/22/18 7:12 PM	Reported
71	N028727-013AMS	MS	1	Hexavalent Chromium	02/22/18 7:21 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	02/22/18 7:31 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	02/22/18 7:40 PM	Reported
74	N028727-014A	SAMP	1	Hexavalent Chromium	02/22/18 7:50 PM	Reported
75	N028727-014AMS	MS	1	Hexavalent Chromium	02/22/18 7:59 PM	Reported
76	N028727-015A	SAMP	1	Hexavalent Chromium	02/22/18 8:08 PM	Reported
77	N028727-015AMS	MS	1	Hexavalent Chromium	02/22/18 8:18 PM	Reported
78	CCV-7	CCV	1	Hexavalent Chromium	02/22/18 8:27 PM	Reported
79	CCB-7	CCB	1	Hexavalent Chromium	02/22/18 8:37 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180222A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**22/Feb/18 21:07:38**
No. of Injections:	**82**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/22/2018 09:31	Finished	BLANK
10	BLANK	2	1000	Unknown		02/22/2018 09:42	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/22/2018 09:51	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/22/2018 10:01	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/22/2018 10:10	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/22/2018 10:20	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/22/2018 10:29	Finished	LCS, IWST-180129B
16	N028726-004A,SAMF	8	1000	Unknown		02/22/2018 10:39	Finished	SAMP,10mL
17	N028726-005A,SAMF	9	1000	Unknown		02/22/2018 10:48	Finished	SAMP,10mL
18	N028726-001A,SAMF	10	1000	Unknown		02/22/2018 10:57	Finished	SAMP,2>10mL
19	N028726-001AMS,MS	11	1000	Unknown		02/22/2018 11:07	Finished	MS (1ppb), IWST-180129B,2>1
20	N028726-002A,SAMF	12	1000	Unknown		02/22/2018 11:16	Finished	SAMP,10mL
21	N028726-002ADUP,D	13	1000	Unknown		02/22/2018 11:26	Finished	DUP,10mL
22	N028726-003A,SAMF	14	1000	Unknown		02/22/2018 11:35	Finished	SAMP,0.1>10mL
23	N028726-003AMS,MS	15	1000	Unknown		02/22/2018 11:45	Finished	MS (5ppb), IWST-180129B,0.1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/22/2018 11:54	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/22/2018 12:04	Finished	CCB R180214B
26	N028726-006A,SAMF	18	1000	Unknown		02/22/2018 12:13	Finished	SAMP,10mL
27	N028726-006AMS,MS	19	1000	Unknown		02/22/2018 12:23	Finished	MS (1ppb), IWST-180129B,10
28	N028726-004AMS,MS	20	1000	Unknown		02/22/2018 12:32	Finished	MS (1ppb), IWST-180129B,10
29	N028726-005AMS,MS	21	1000	Unknown		02/22/2018 12:42	Finished	MS (1ppb), IWST-180129B,10
30	N028726-002AMS,MS	22	1000	Unknown		02/22/2018 12:51	Finished	MS (1ppb), IWST-180129B,10
31	N028726-003A,SAMF	23	1000	Unknown		02/22/2018 13:00	Finished	SAMP,1>10mL
32	N028726-003AMS,MS	24	1000	Unknown		02/22/2018 13:10	Finished	MS (5ppb), IWST-180129B,1>1
33	N028726-003AMSD,M	25	1000	Unknown		02/22/2018 13:19	Finished	MSD (5ppb), IWST-180129B,1>
34	N028726-004A,SAMF	26	1000	Unknown		02/22/2018 13:29	Finished	SAMP,2>10mL
35	N028726-004AMS,MS	27	1000	Unknown		02/22/2018 13:38	Finished	MS (1ppb), IWST-180129B,2>1
36	CCV-3,CCV,1,	28	1000	Unknown		02/22/2018 13:48	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/22/2018 13:57	Finished	CCB R180214B
38	N028726-005A,SAMF	30	1000	Unknown		02/22/2018 14:07	Finished	SAMP,2>10mL
39	N028726-005AMS,MS	31	1000	Unknown		02/22/2018 14:16	Finished	MS (1ppb), IWST-180129B,2>1
40	N028726-001A,SAMF	32	1000	Unknown		02/22/2018 14:26	Finished	SAMP,10mL
41	N028726-001AMS,MS	33	1000	Unknown		02/22/2018 14:35	Finished	MS (1ppb), IWST-180129B,10
42	N028726-002A,SAMF	34	1000	Unknown		02/22/2018 14:44	Finished	SAMP,10mL
43	N028726-003ADUP,D	35	1000	Unknown		02/22/2018 14:54	Finished	DUP,1>10mL
44	N028727-002A,SAMF	36	1000	Unknown		02/22/2018 15:03	Finished	SAMP,10mL
45	N028727-002AMS,MS	37	1000	Unknown		02/22/2018 15:13	Finished	MS (1ppb), IWST-180129B,10
46	N028727-003A,SAMF	38	1000	Unknown		02/22/2018 15:22	Finished	SAMP,10mL
47	N028727-003AMS,MS	39	1000	Unknown		02/22/2018 15:32	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	1	1000	Unknown		02/22/2018 15:42	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	2	1000	Unknown		02/22/2018 15:53	Finished	CCB R180214B
50	N028727-004A,SAMF	3	1000	Unknown		02/22/2018 16:02	Finished	SAMP,10mL
51	N028727-004AMS,MS	4	1000	Unknown		02/22/2018 16:12	Finished	MS (1ppb), IWST-180129B,10
52	N028727-005A,SAMF	5	1000	Unknown		02/22/2018 16:21	Finished	SAMP,10mL
53	N028727-005AMS,MS	6	1000	Unknown		02/22/2018 16:31	Finished	MS (1ppb), IWST-180129B,10
54	N028727-006A,SAMF	7	1000	Unknown		02/22/2018 16:40	Finished	SAMP,10mL
55	N028727-006AMS,MS	8	1000	Unknown		02/22/2018 16:50	Finished	MS (1ppb), IWST-180129B,10
56	N028727-007A,SAMF	9	1000	Unknown		02/22/2018 16:59	Finished	SAMP,10mL
57	N028727-007AMS,MS	10	1000	Unknown		02/22/2018 17:09	Finished	MS (1ppb), IWST-180129B,10
58	N028727-008A,SAMF	11	1000	Unknown		02/22/2018 17:18	Finished	SAMP,10mL
59	N028727-008AMS,MS	12	1000	Unknown		02/22/2018 17:28	Finished	MS (1ppb), IWST-180129B,10
60	CCV-5,CCV,1,	13	1000	Unknown		02/22/2018 17:37	Finished	CCV @5ppb, IWST-180129A

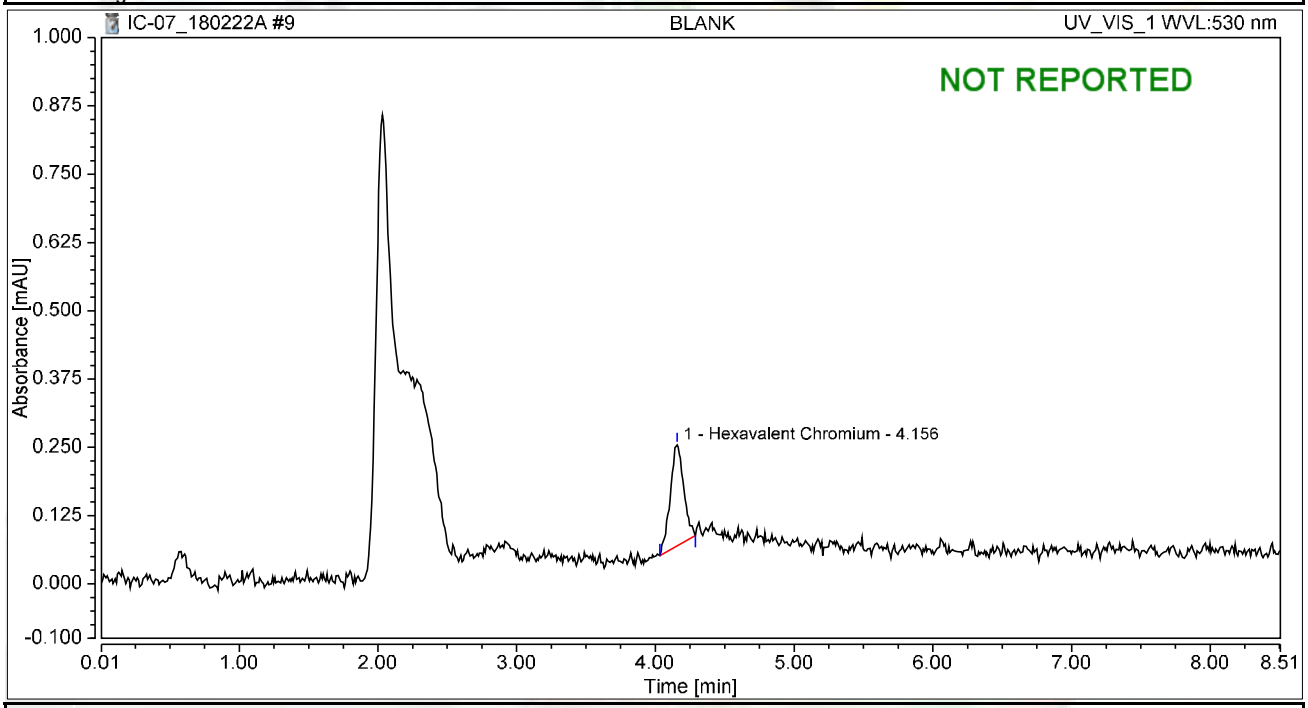
61	CCB-5,CCB,1,	14	1000	Unknown		02/22/2018 17:47	Finished	CCB R180214B
62	N028727-009A,SAMP	15	1000	Unknown		02/22/2018 17:56	Finished	SAMP,10mL
63	N028727-009AMS,MS	16	1000	Unknown		02/22/2018 18:05	Finished	MS (1ppb), IWST-180129B,10
64	N028727-010A,SAMP	17	1000	Unknown		02/22/2018 18:15	Finished	SAMP,10mL
65	N028727-010AMS,MS	18	1000	Unknown		02/22/2018 18:24	Finished	MS (1ppb), IWST-180129B,10
66	N028727-011A,SAMP	19	1000	Unknown		02/22/2018 18:34	Finished	SAMP,10mL
67	N028727-011AMS,MS	20	1000	Unknown		02/22/2018 18:43	Finished	MS (1ppb), IWST-180129B,10
68	N028727-012A,SAMP	21	1000	Unknown		02/22/2018 18:53	Finished	SAMP,10mL
69	N028727-012AMS,MS	22	1000	Unknown		02/22/2018 19:02	Finished	MS (1ppb), IWST-180129B,10
70	N028727-013A,SAMP	23	1000	Unknown		02/22/2018 19:12	Finished	SAMP,10mL
71	N028727-013AMS,MS	24	1000	Unknown		02/22/2018 19:21	Finished	MS (1ppb), IWST-180129B,10
72	CCV-6,CCV1,1,	25	1000	Unknown		02/22/2018 19:31	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	26	1000	Unknown		02/22/2018 19:40	Finished	CCB R180214B
74	N028727-014A,SAMP	27	1000	Unknown		02/22/2018 19:50	Finished	SAMP,10mL
75	N028727-014AMS,MS	28	1000	Unknown		02/22/2018 19:59	Finished	MS (1ppb), IWST-180129B,10
76	N028727-015A,SAMP	29	1000	Unknown		02/22/2018 20:08	Finished	SAMP,10mL
77	N028727-015AMS,MS	30	1000	Unknown		02/22/2018 20:18	Finished	MS (1ppb), IWST-180129B,10
78	CCV-7,CCV,1,	31	1000	Unknown		02/22/2018 20:27	Finished	CCV @5ppb, IWST-180129A
79	CCB-7,CCB,1,	32	1000	Unknown		02/22/2018 20:37	Finished	CCB R180214B
80	SHUTDOWN	33	1000	Unknown		02/22/2018 20:46	Finished	
81	Eluent: R180219A	34	1000	Unknown		n.a.	Finished	Eluent
82	PCR: R180219B	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

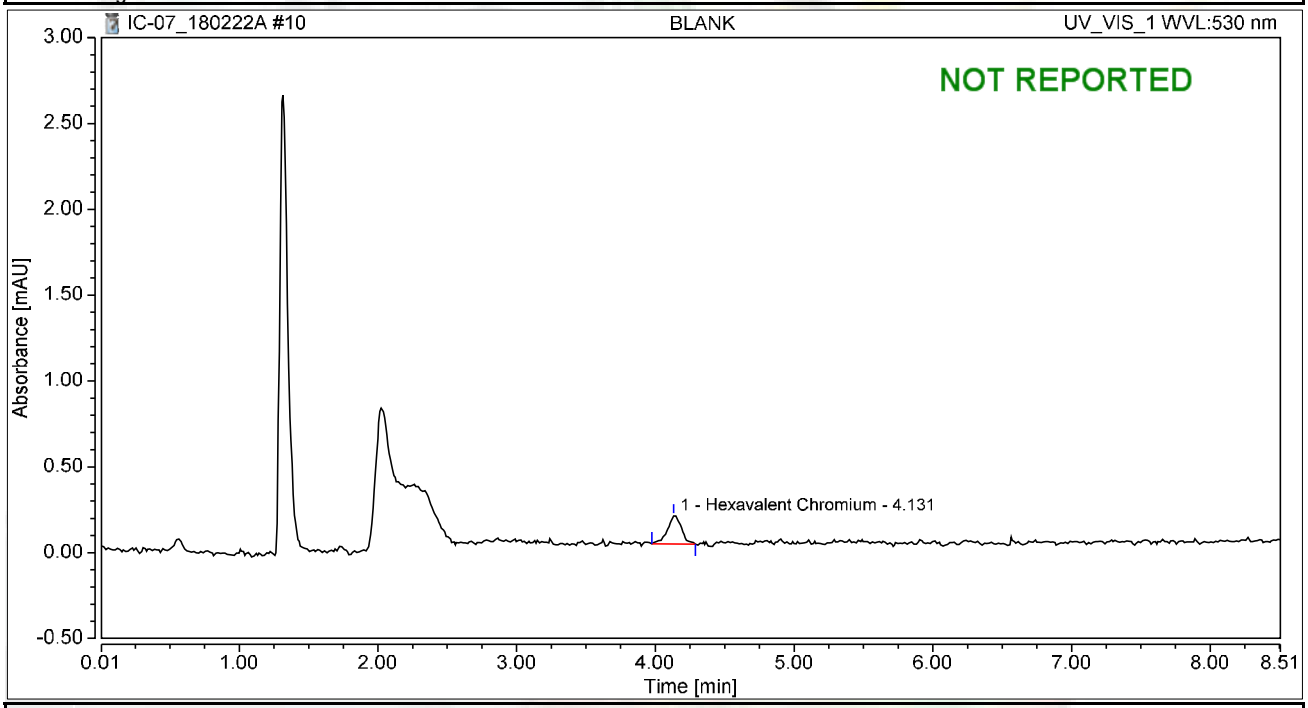
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.021	0.185	100.00	100.00	0.0835
Total:			**0.021**	**0.185**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

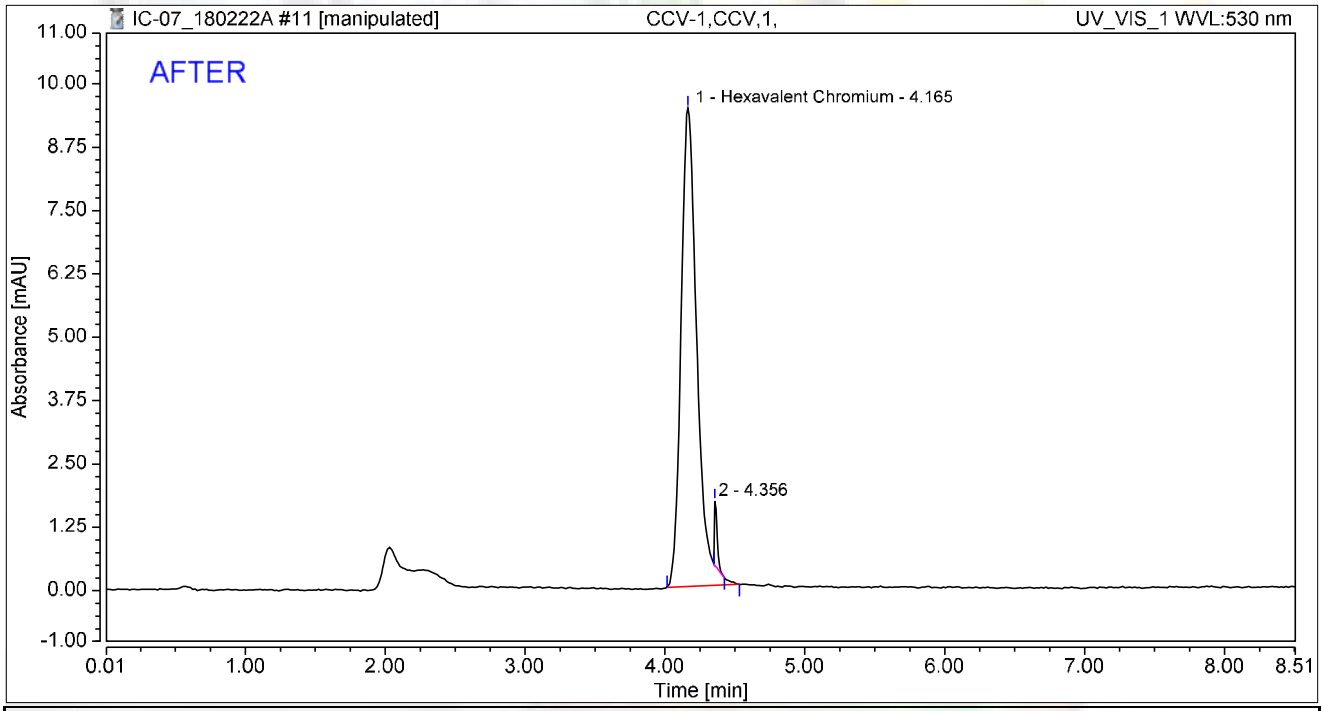
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.019	0.164	100.00	100.00	0.0773
Total:			**0.019**	**0.164**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.238	9.441	97.74	88.18	4.9599
2		4.356	0.029	1.265	2.26	11.82	n.a.
Total:			**1.267**	**10.707**	**100.00**	**100.00**	

rba 3/4/2018

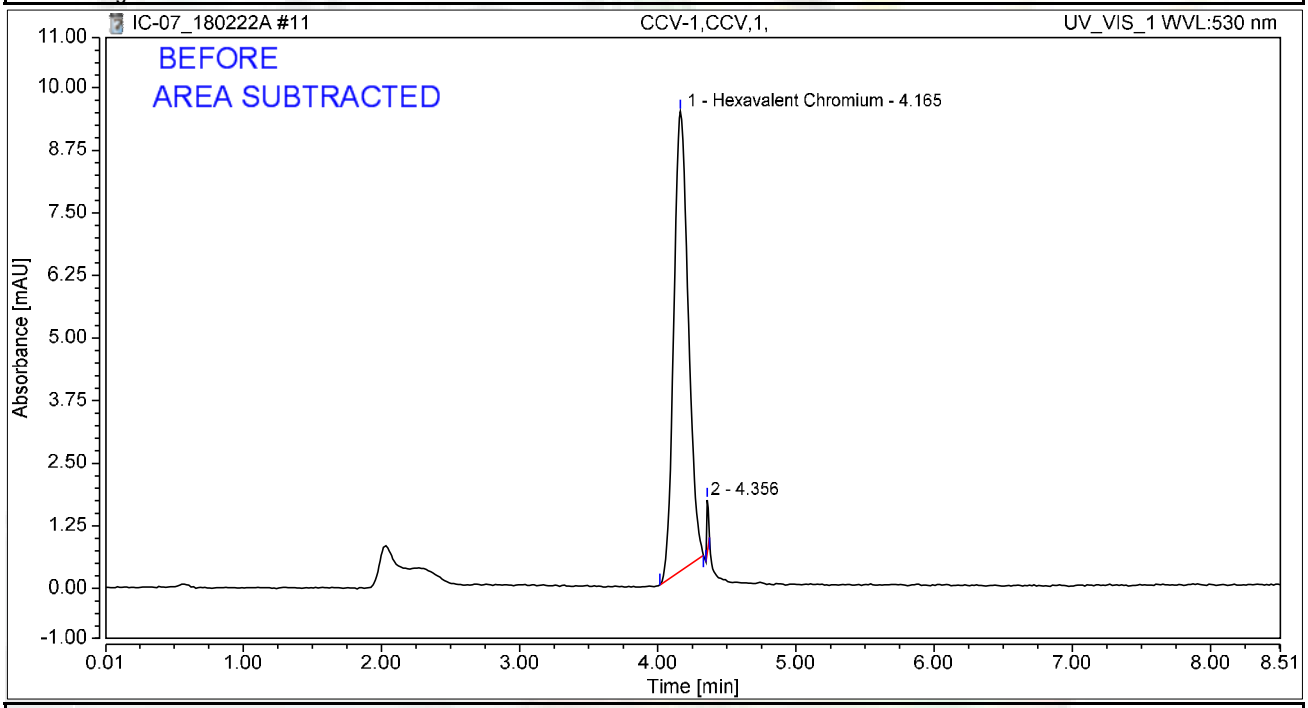
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.113	9.175	98.65	89.52	4.4580
2		4.356	0.015	1.074	1.35	10.48	n.a.
Total:			**1.128**	**10.249**	**100.00**	**100.00**	

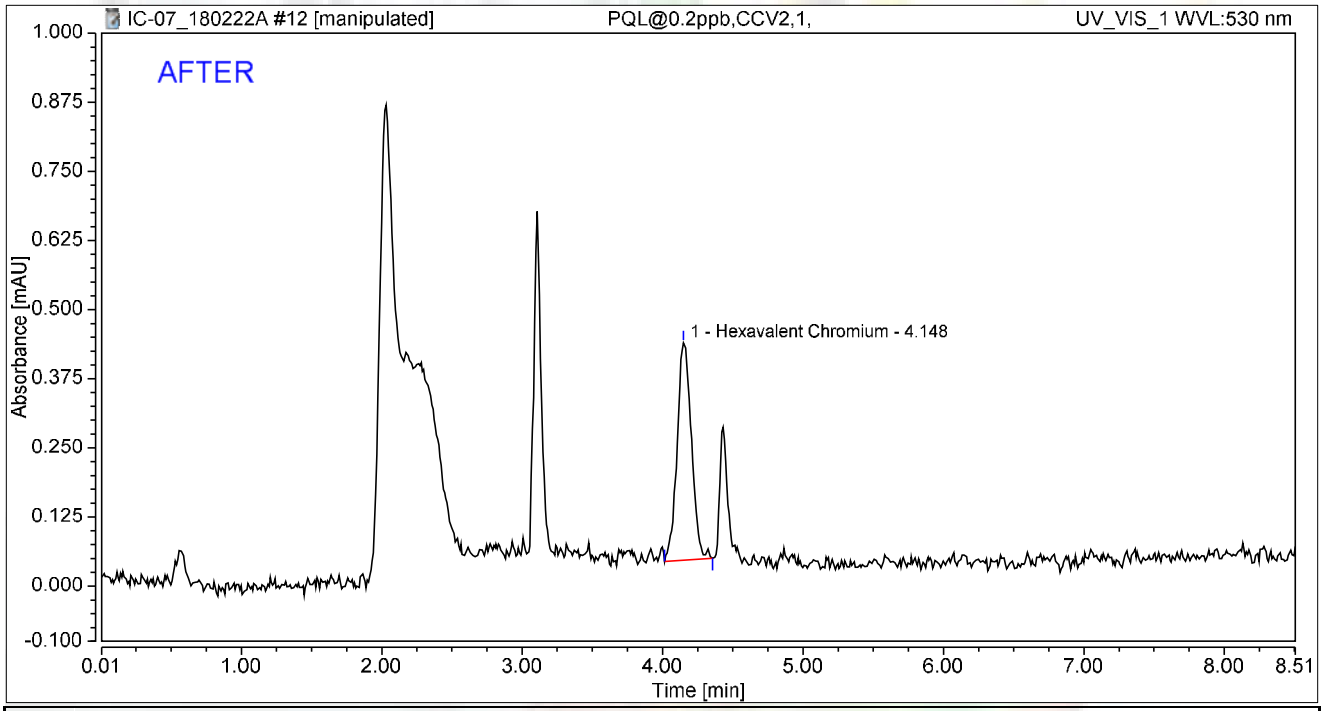
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.046	0.393	100.00	100.00	0.1862
Total:			**0.046**	**0.393**	**100.00**	**100.00**	

rba 3/4/2018

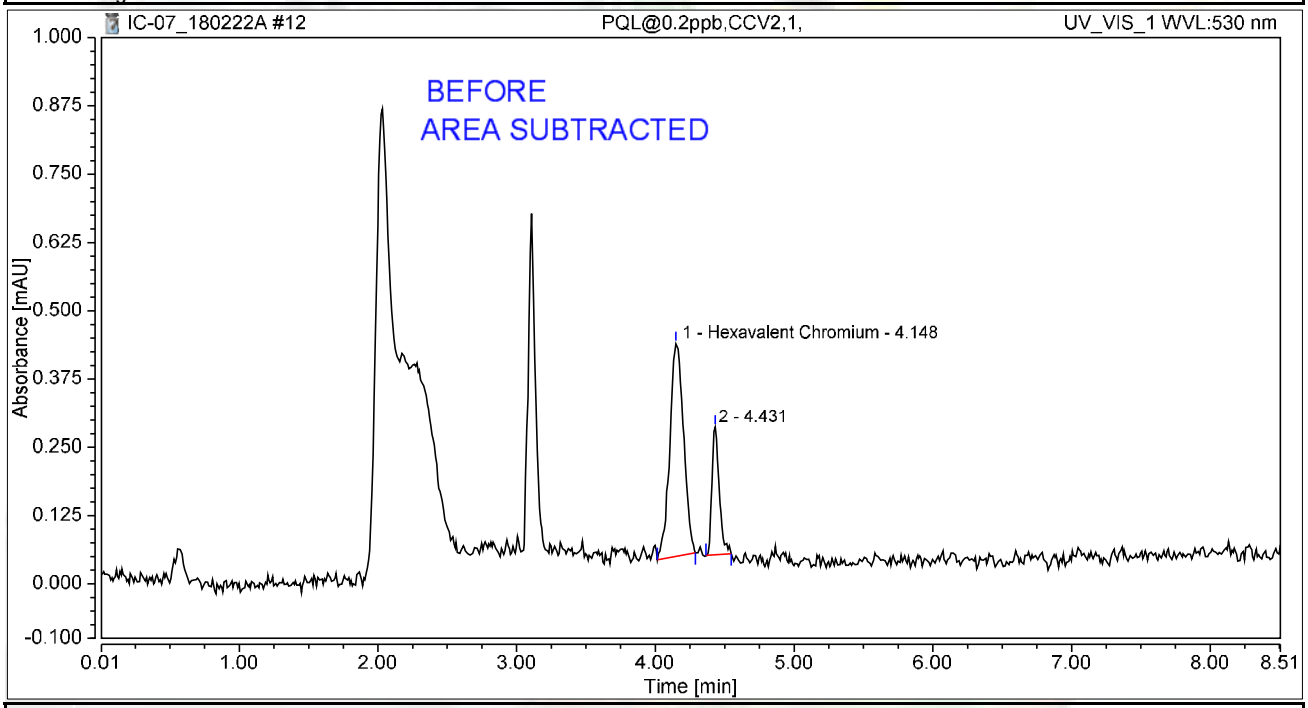
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.045	0.389	75.63	62.47	0.1798
2		4.431	0.014	0.234	24.37	37.53	n.a.
Total:			**0.059**	**0.623**	**100.00**	**100.00**	

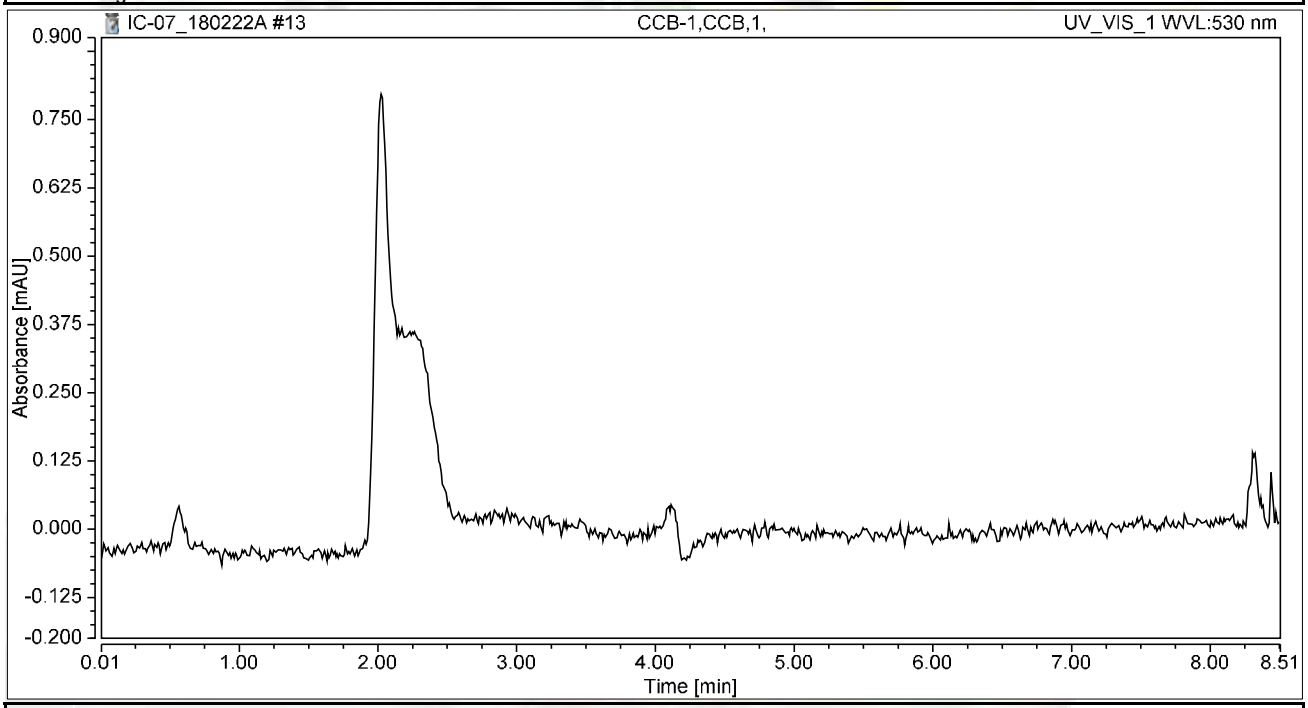
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

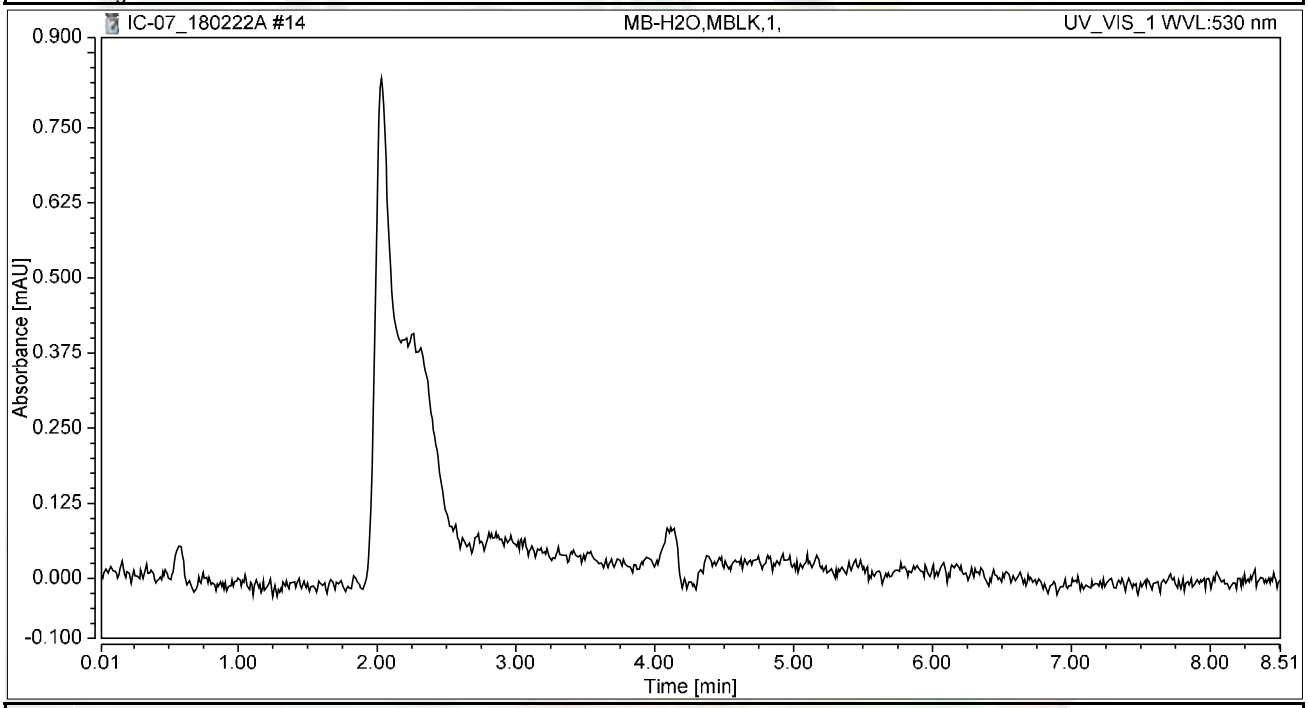
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

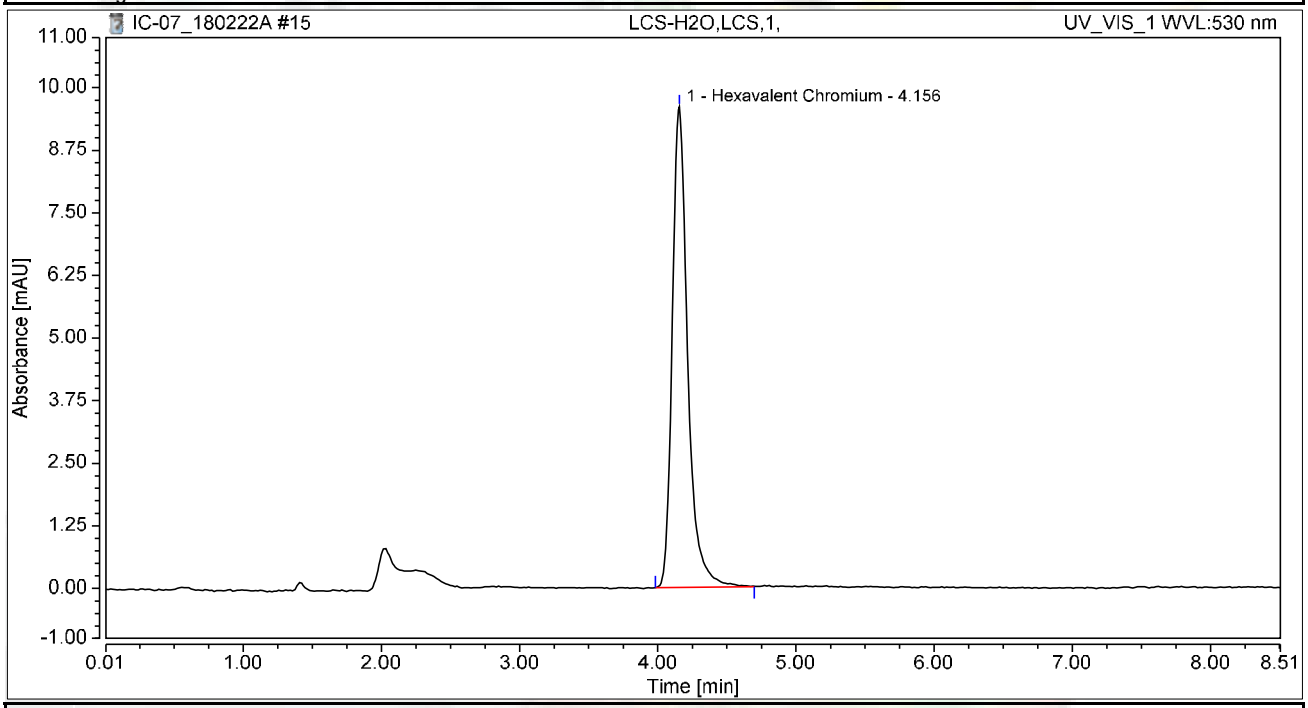
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

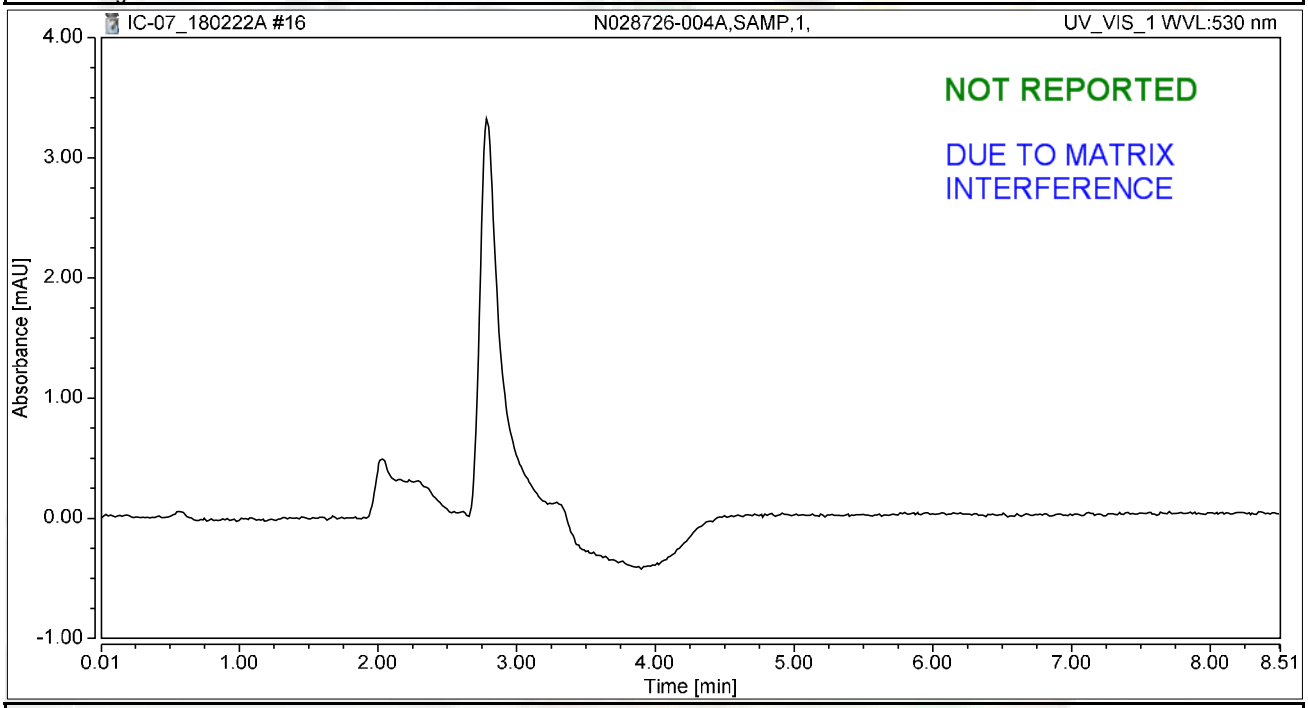
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.244	9.600	100.00	100.00	4.9812
Total:			**1.244**	**9.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

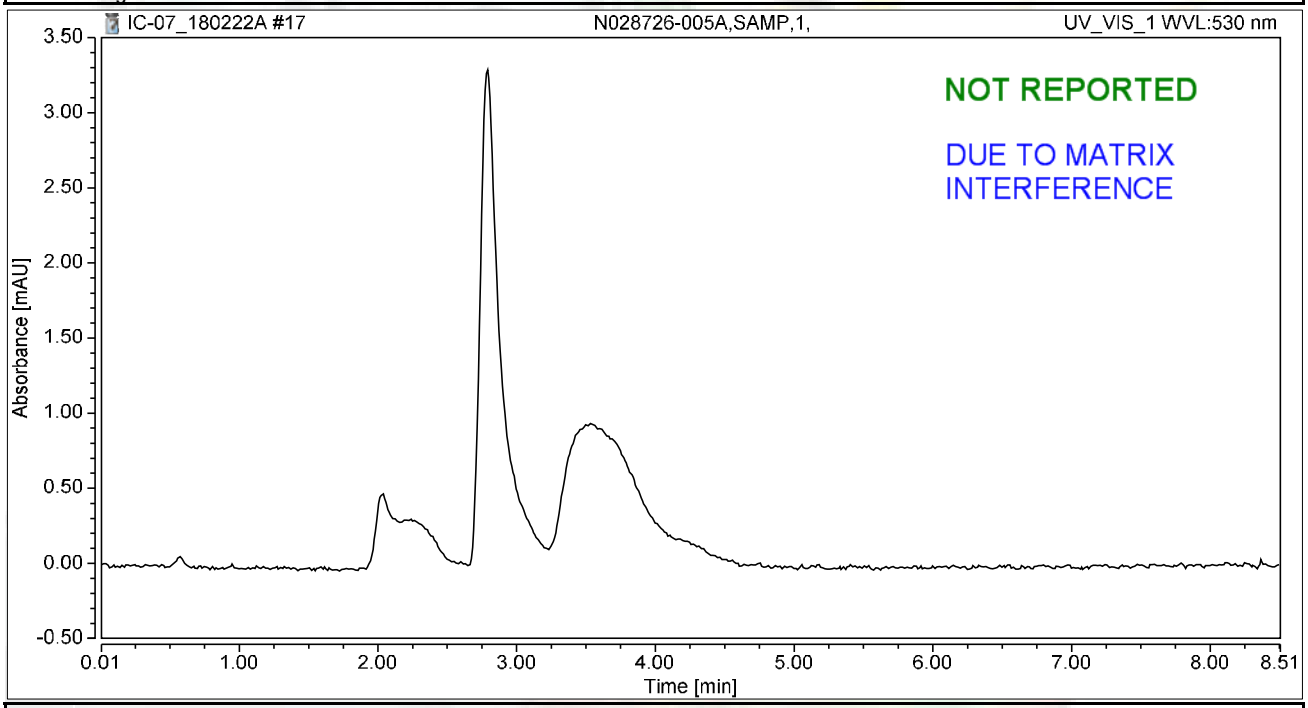
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

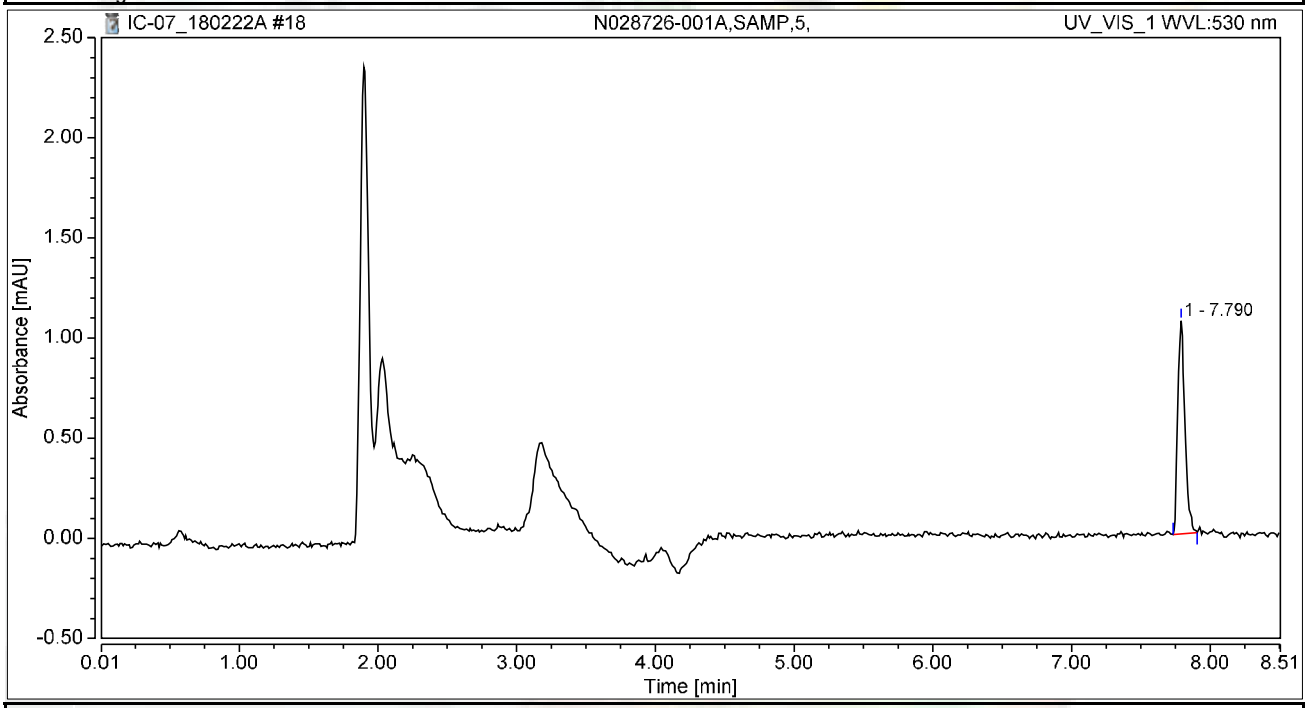
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

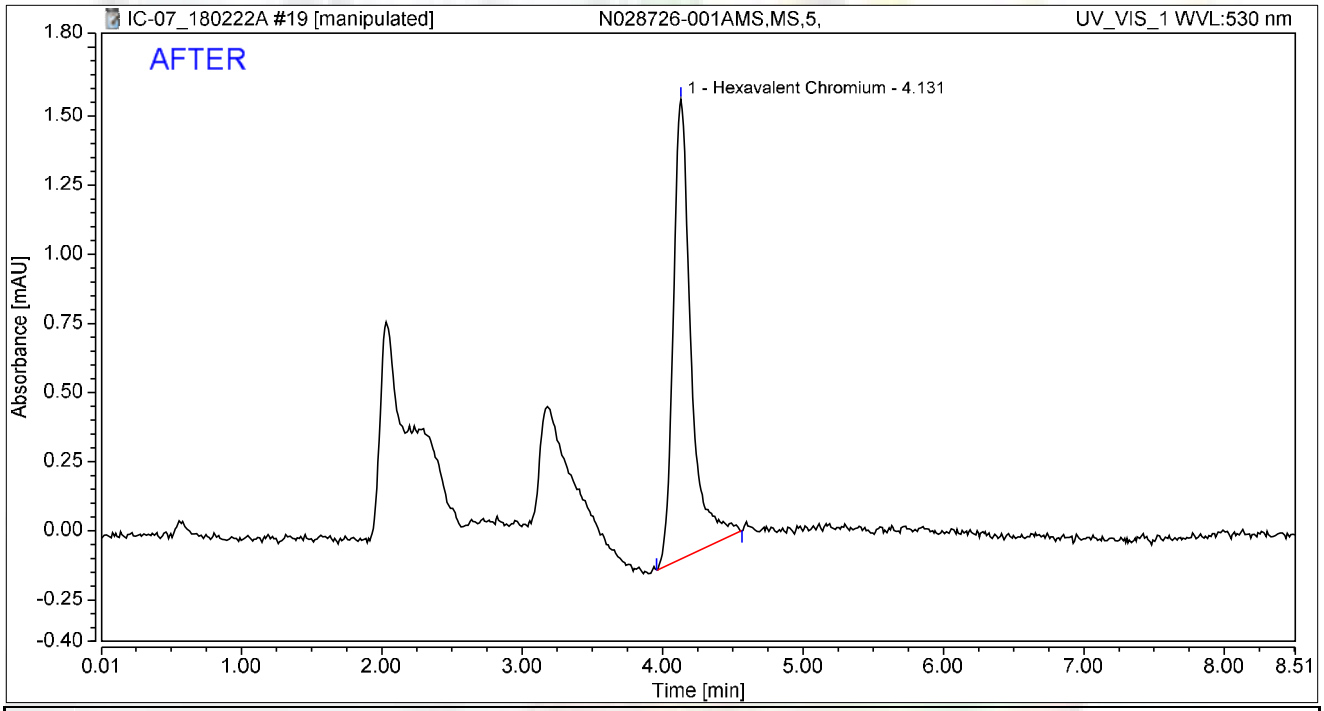
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.790	0.064	1.064	100.00	100.00	n.a.
Total:			**0.064**	**1.064**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.245	1.662	100.00	100.00	0.9797
Total:			**0.245**	**1.662**	**100.00**	**100.00**	

rba 3/4/2018

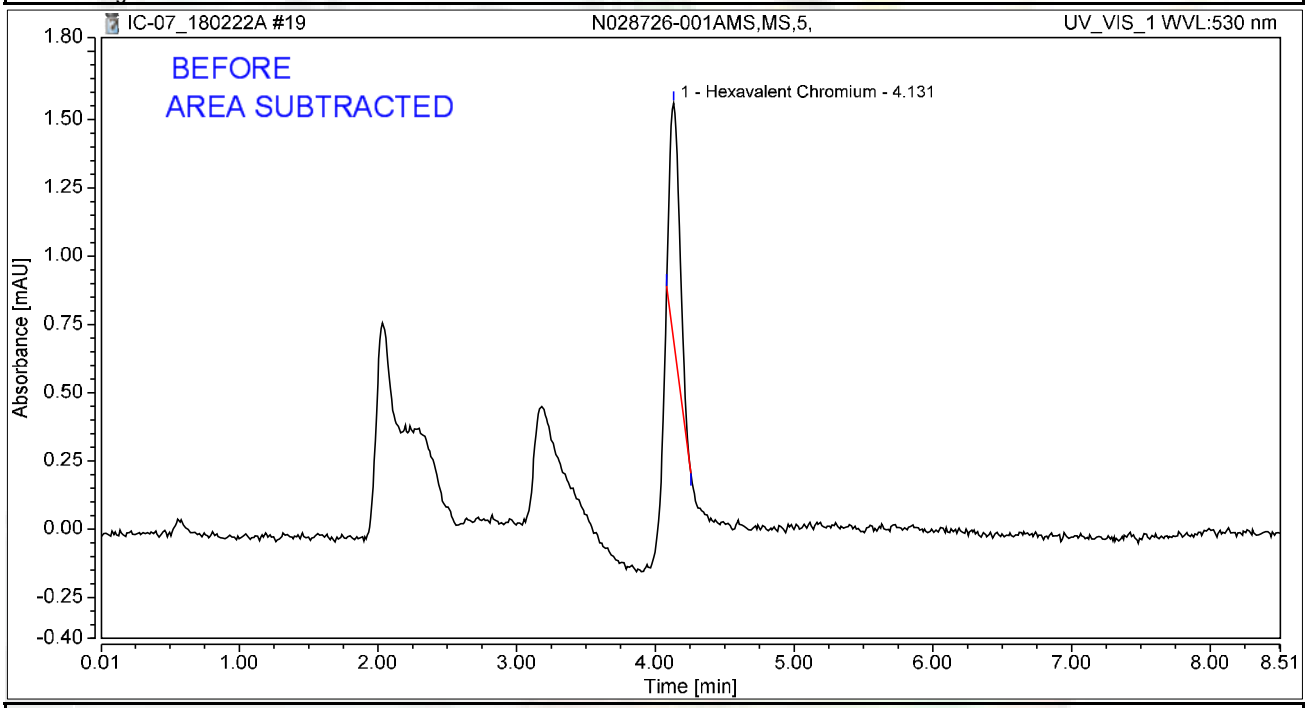
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.074	0.866	100.00	100.00	0.2954
Total:			**0.074**	**0.866**	**100.00**	**100.00**	

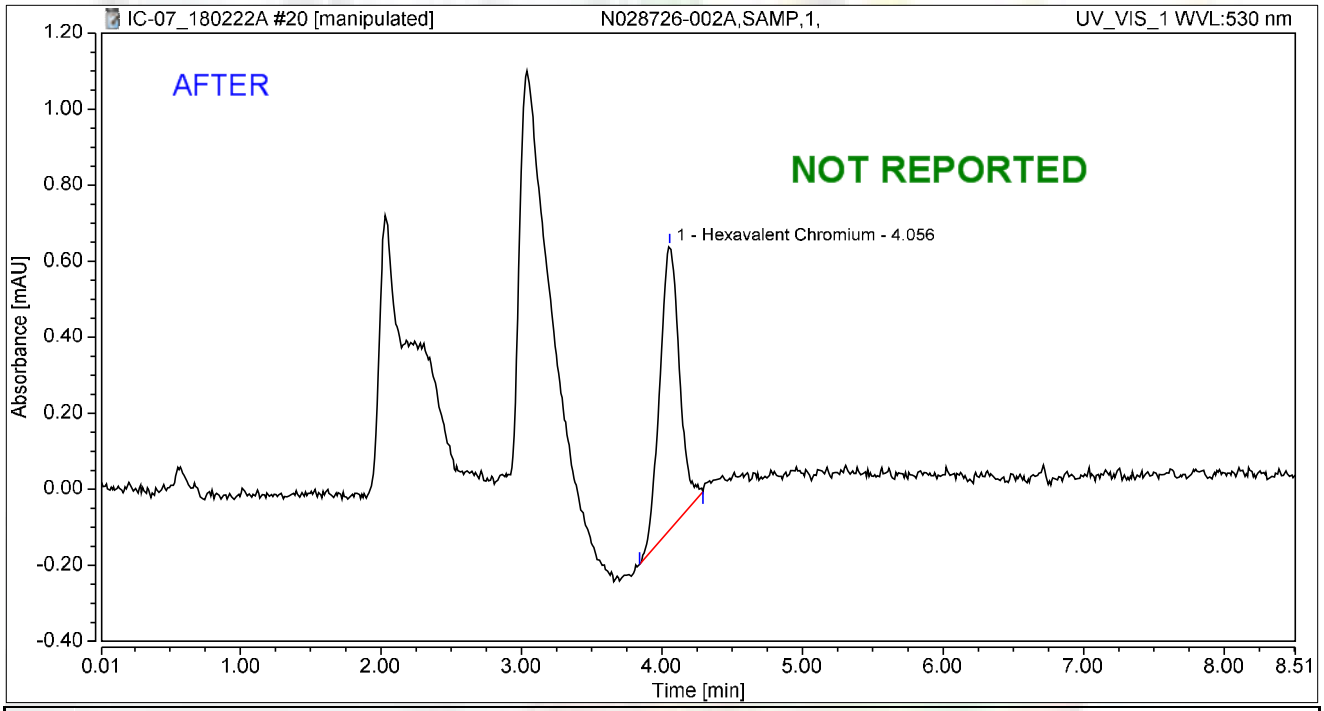
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.121	0.745	100.00	100.00	0.4854
Total:			**0.121**	**0.745**	**100.00**	**100.00**	

rba 3/4/2018

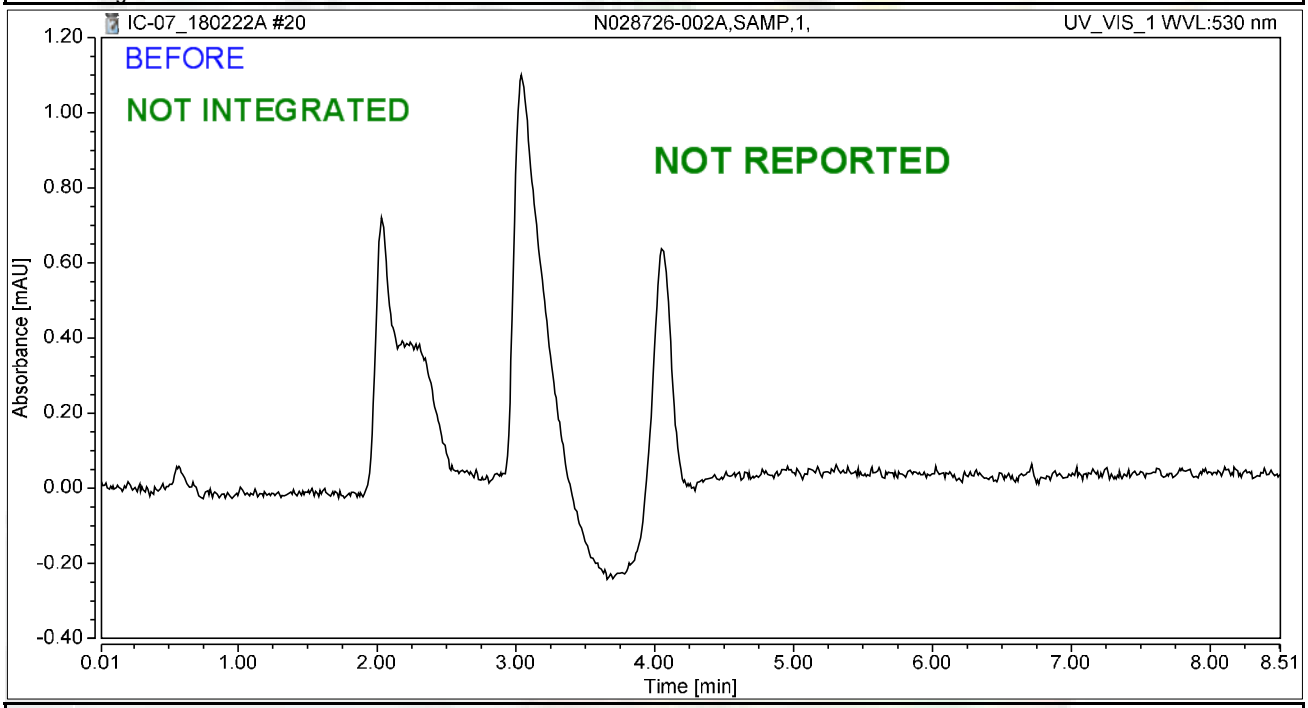
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

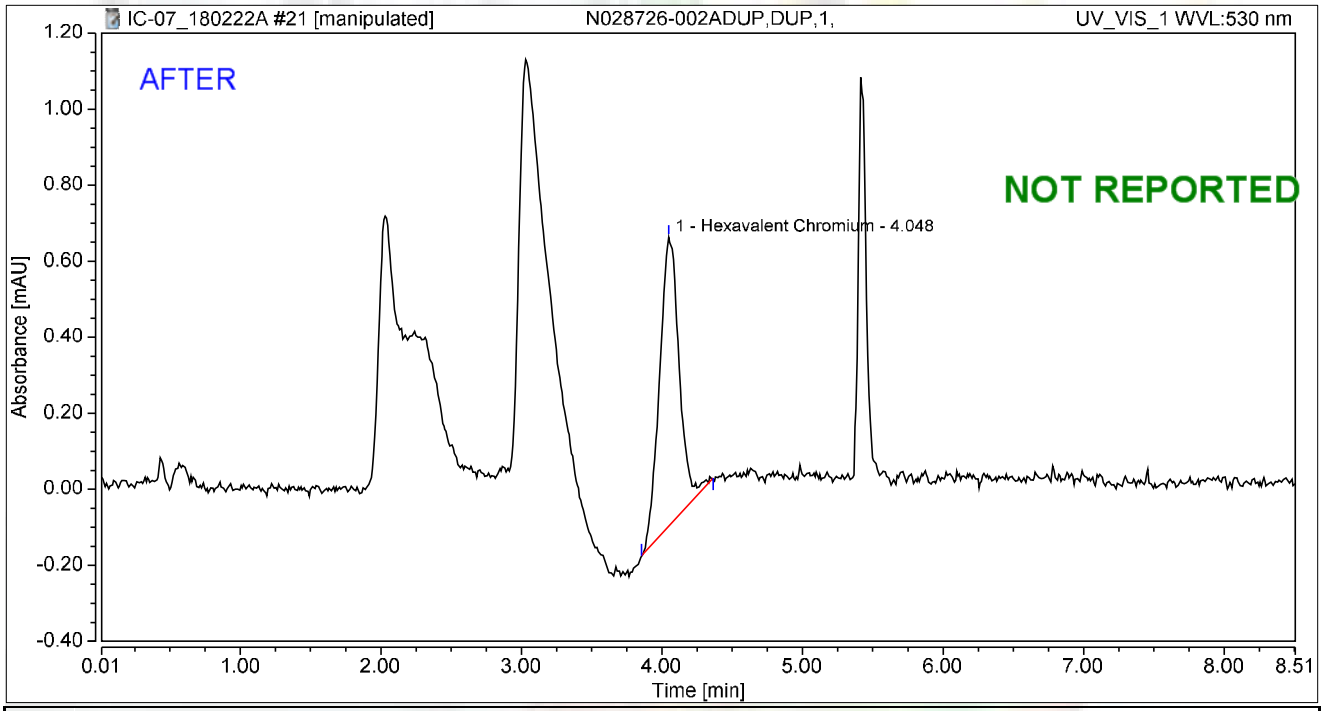
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.123	0.761	100.00	100.00	0.4923
Total:			**0.123**	**0.761**	**100.00**	**100.00**	

rba 3/4/2018

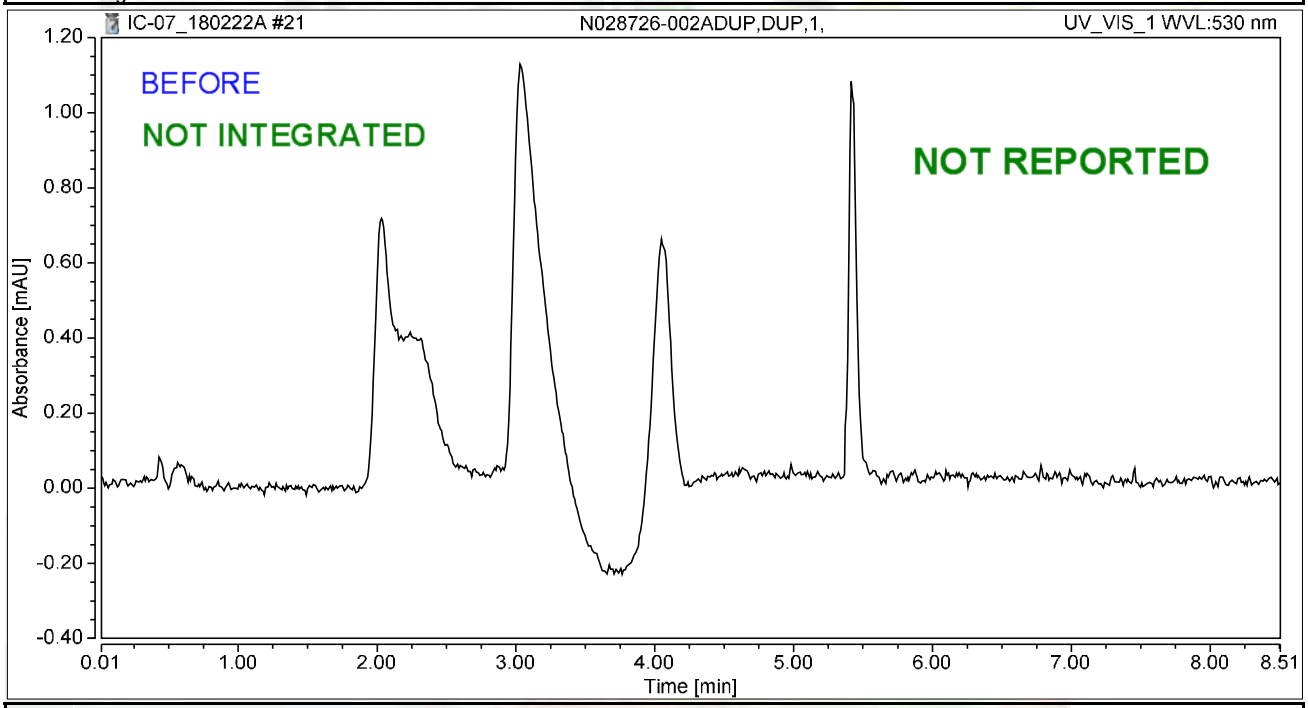
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

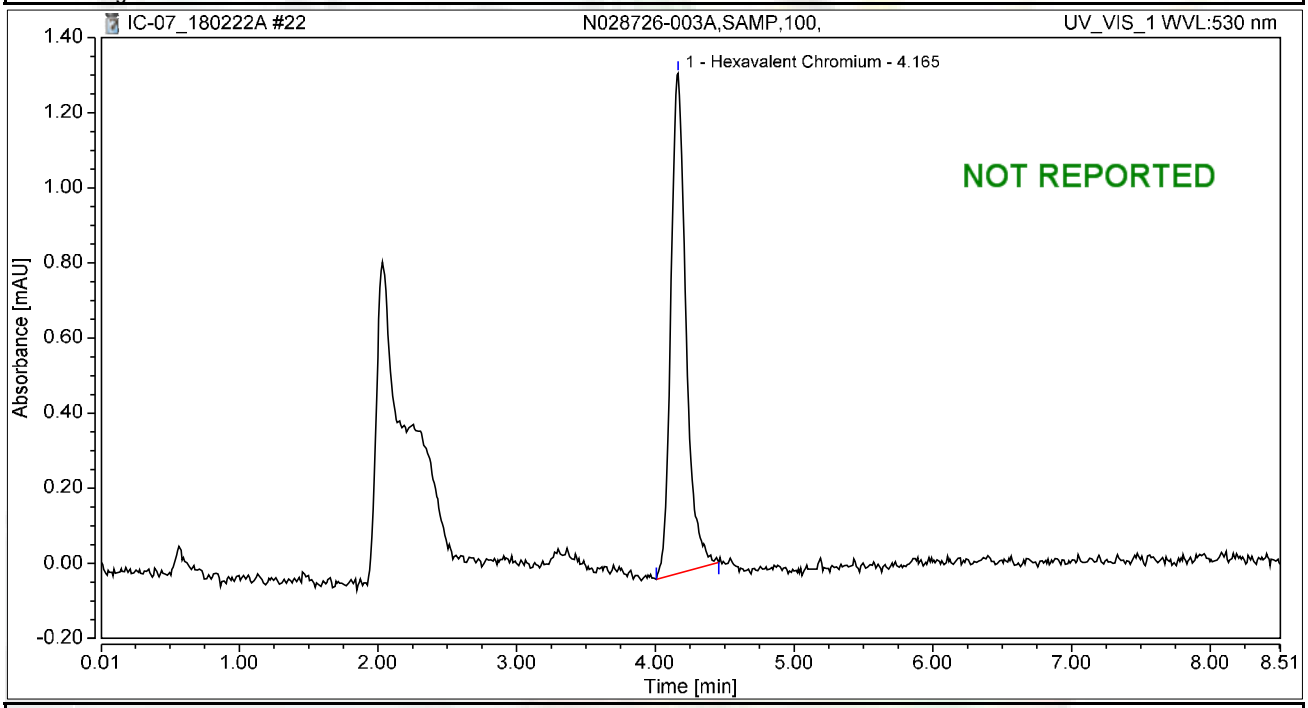
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

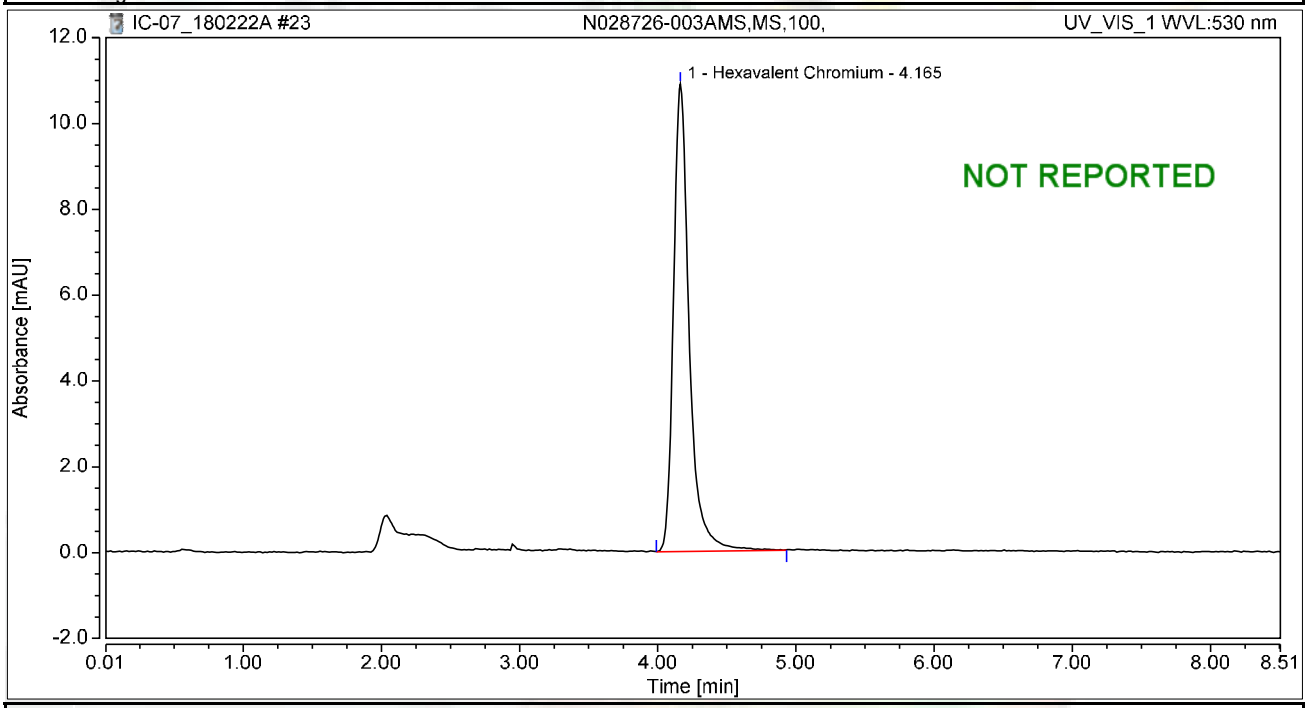
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.168	1.332	100.00	100.00	0.6749
Total:			**0.168**	**1.332**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

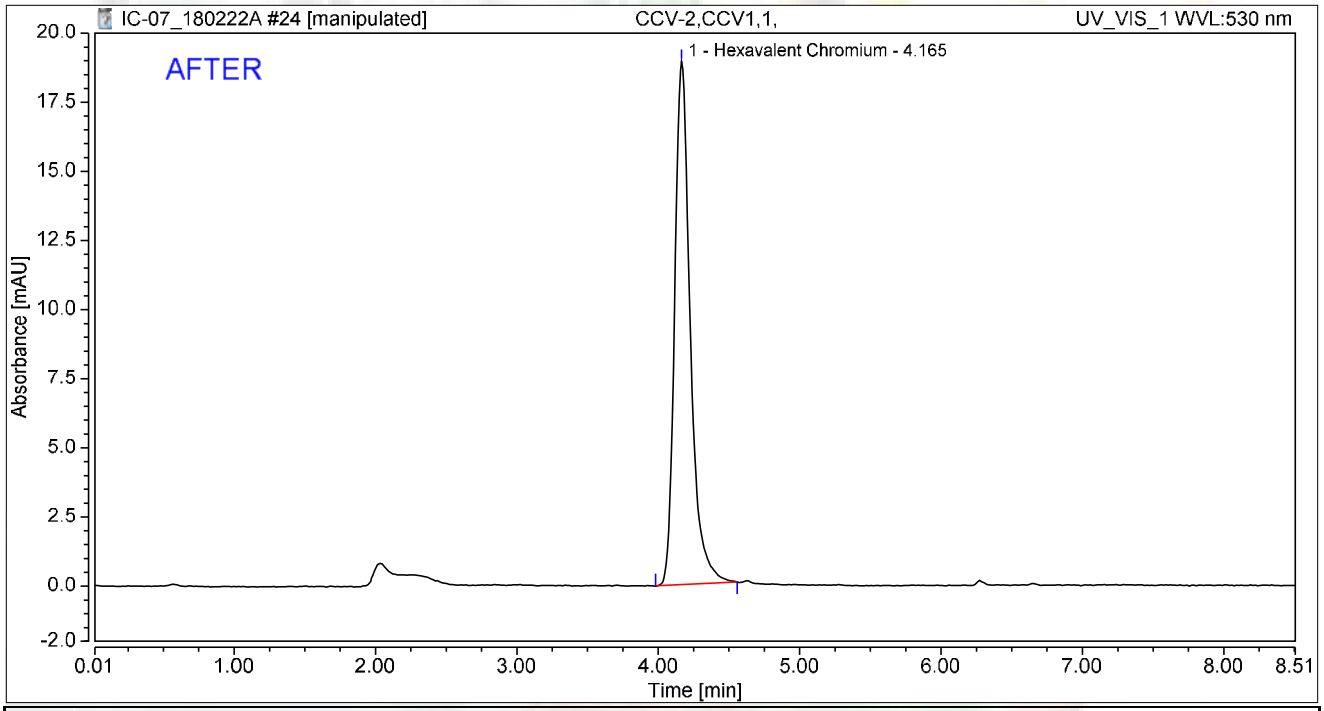
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.439	10.892	100.00	100.00	5.7626
Total:			**1.439**	**10.892**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.417	18.920	100.00	100.00	9.6809
Total:			**2.417**	**18.920**	**100.00**	**100.00**	

rba 3/4/2018

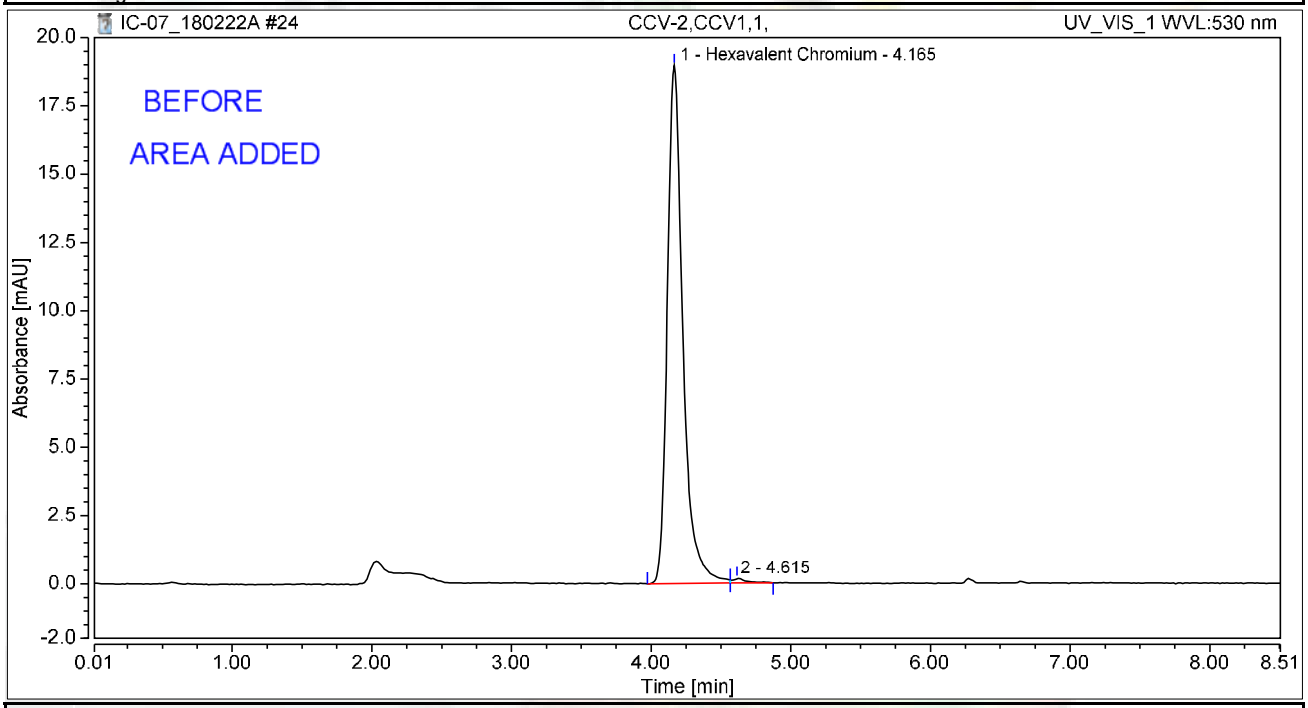
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.457	18.966	99.15	99.12	9.8400
2		4.615	0.021	0.169	0.85	0.88	n.a.
Total:			**2.478**	**19.136**	**100.00**	**100.00**	

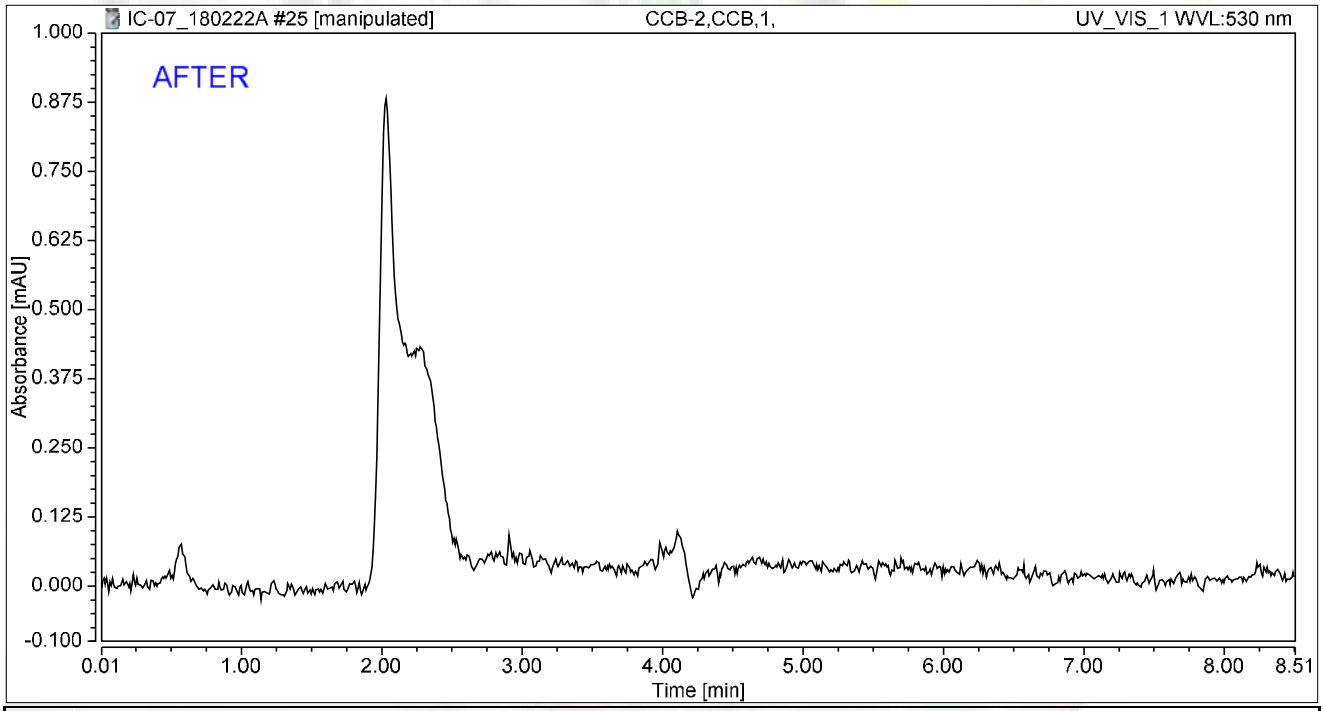
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 3/4/2018

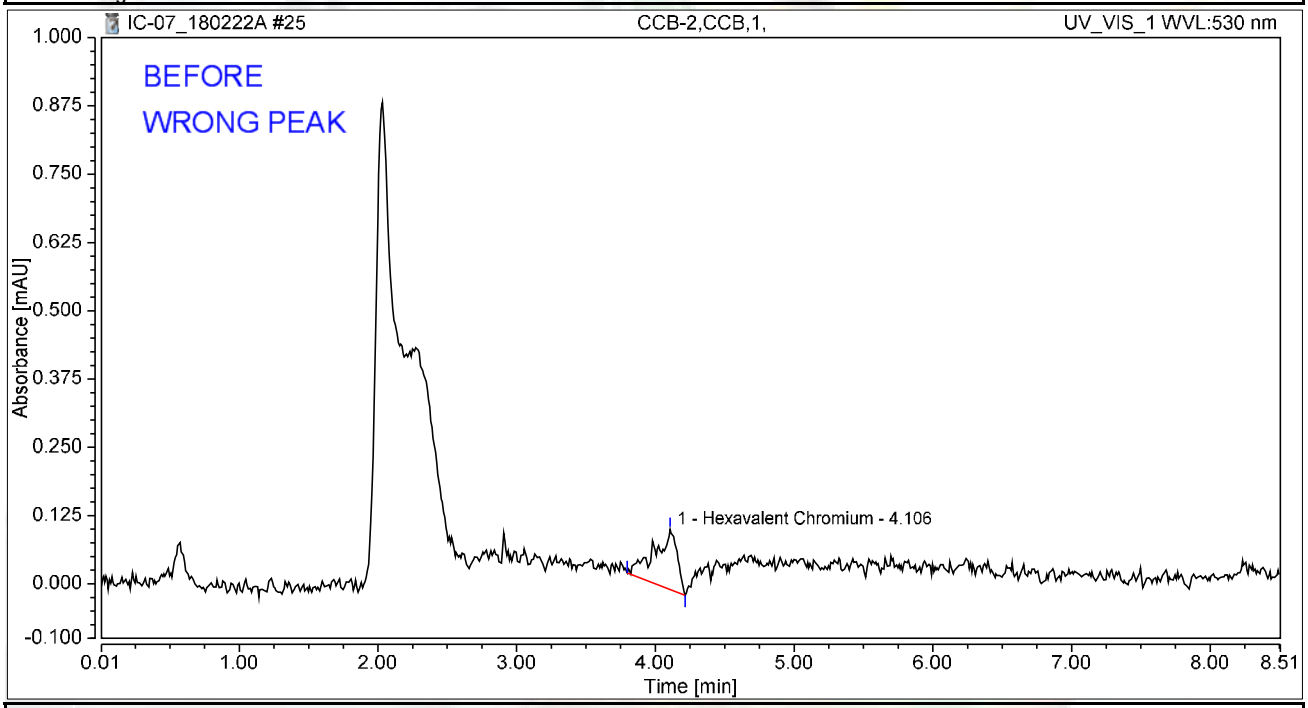
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.021	0.110	100.00	100.00	0.0825
Total:			**0.021**	**0.110**	**100.00**	**100.00**	

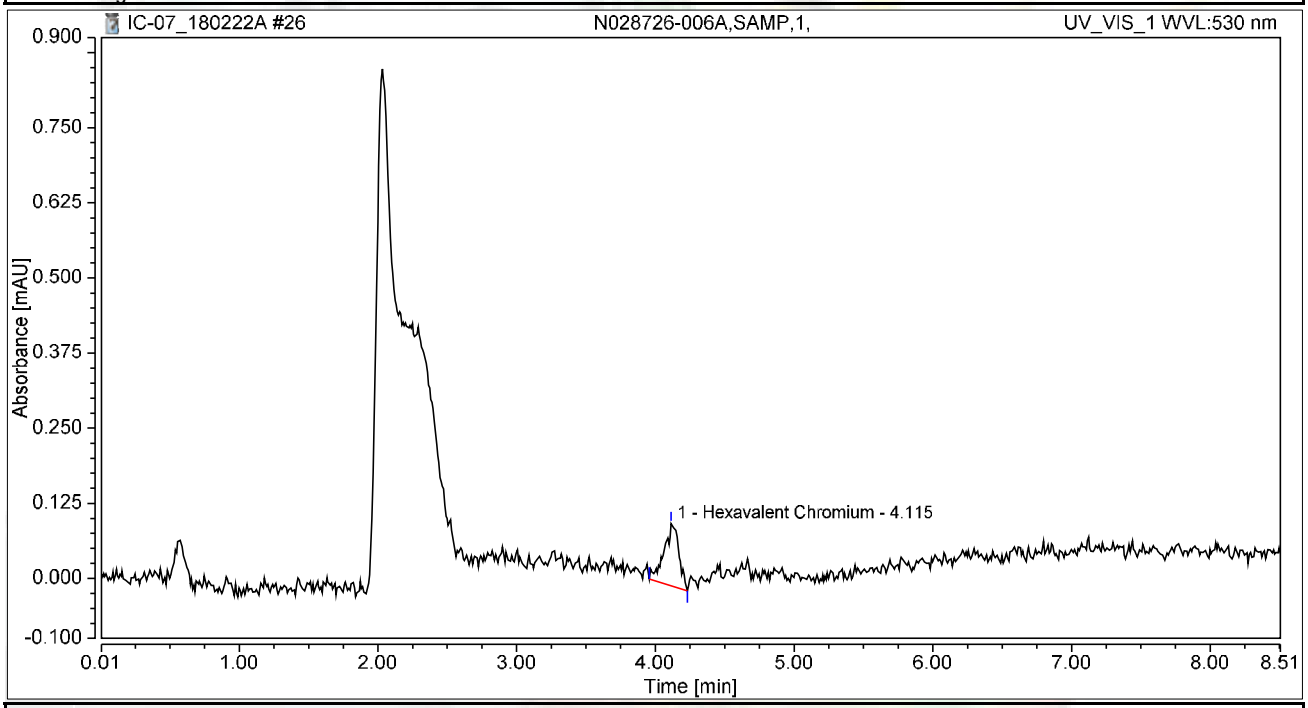
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

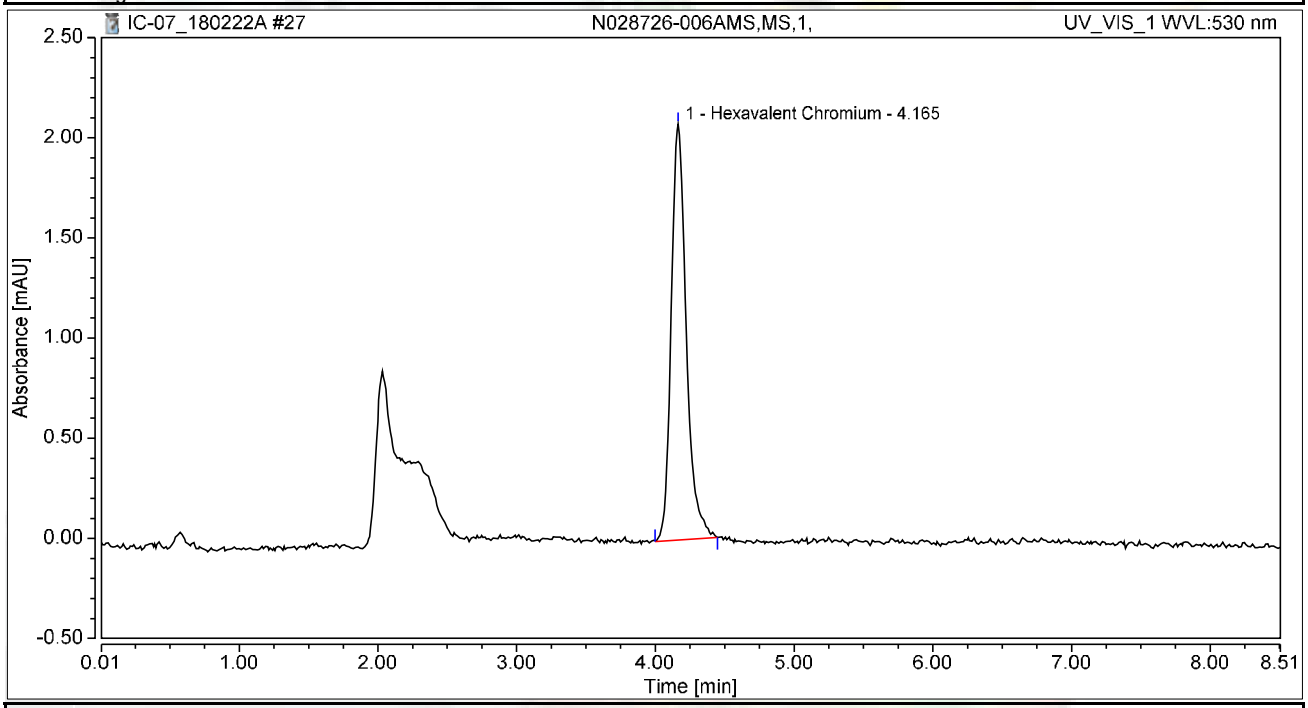
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.013	0.103	100.00	100.00	0.0520
Total:			**0.013**	**0.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

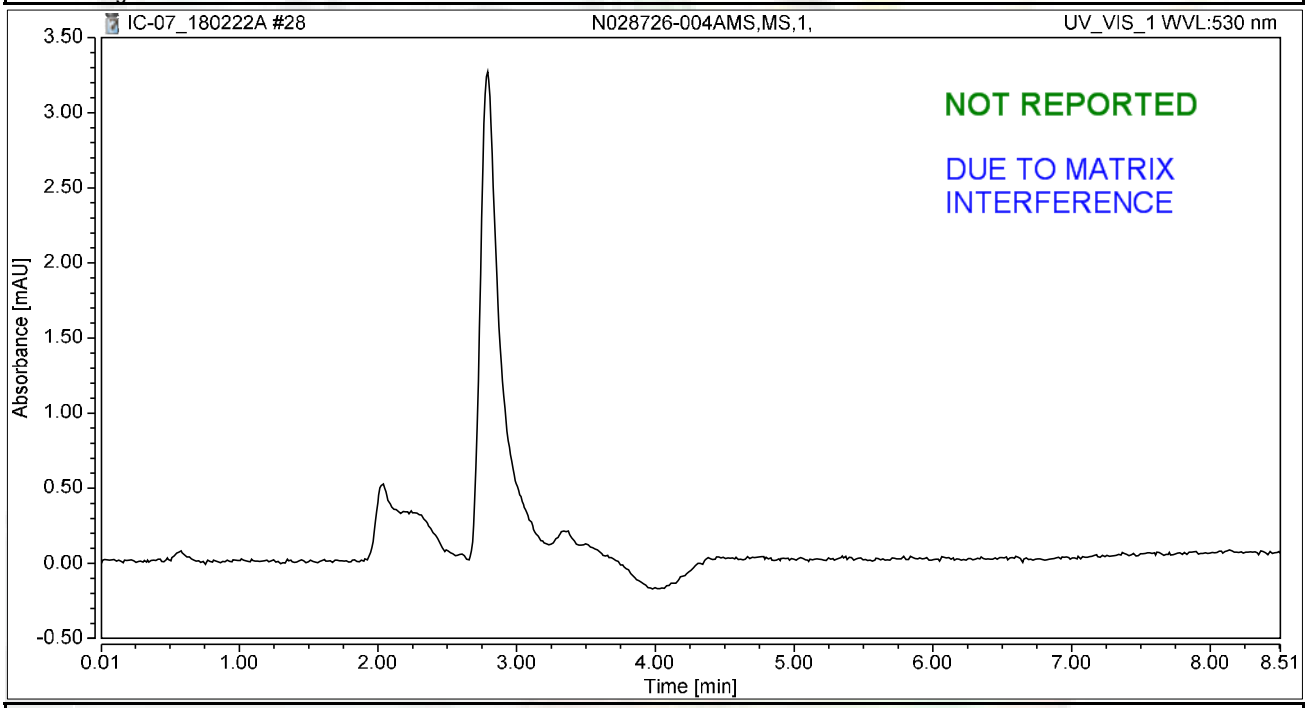
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.261	2.076	100.00	100.00	1.0443
Total:			**0.261**	**2.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

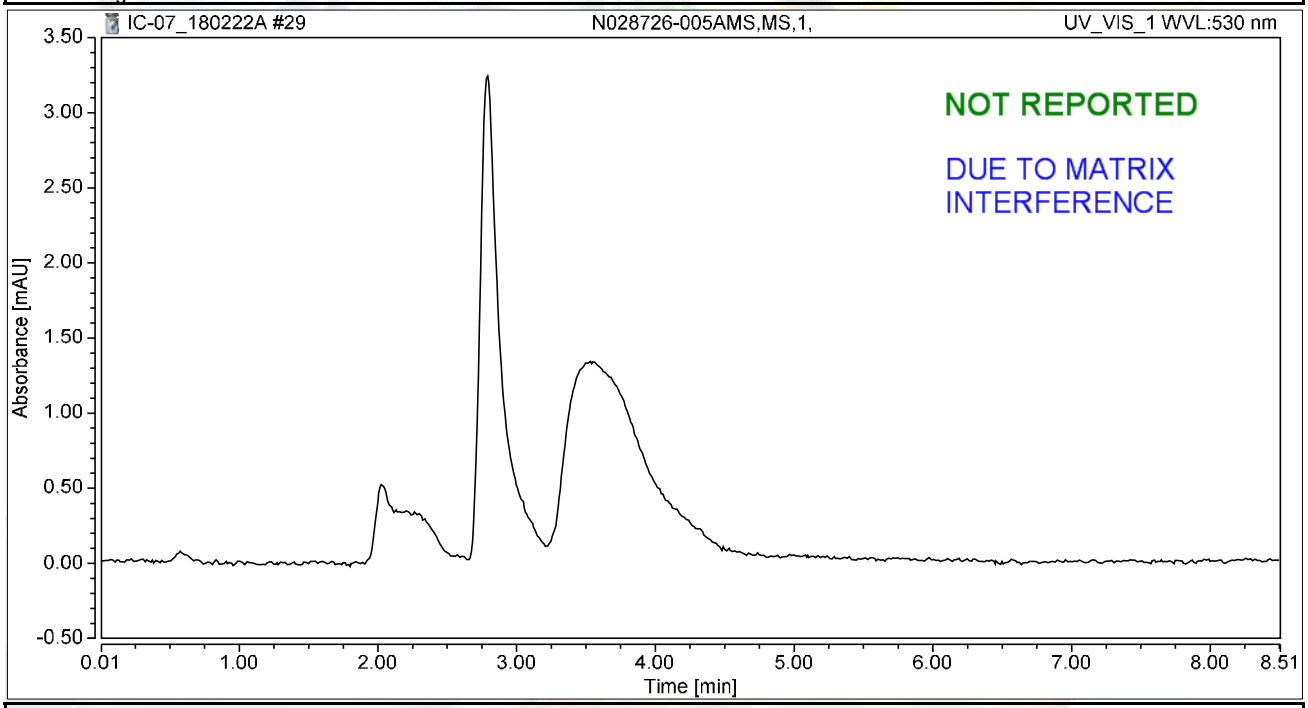
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

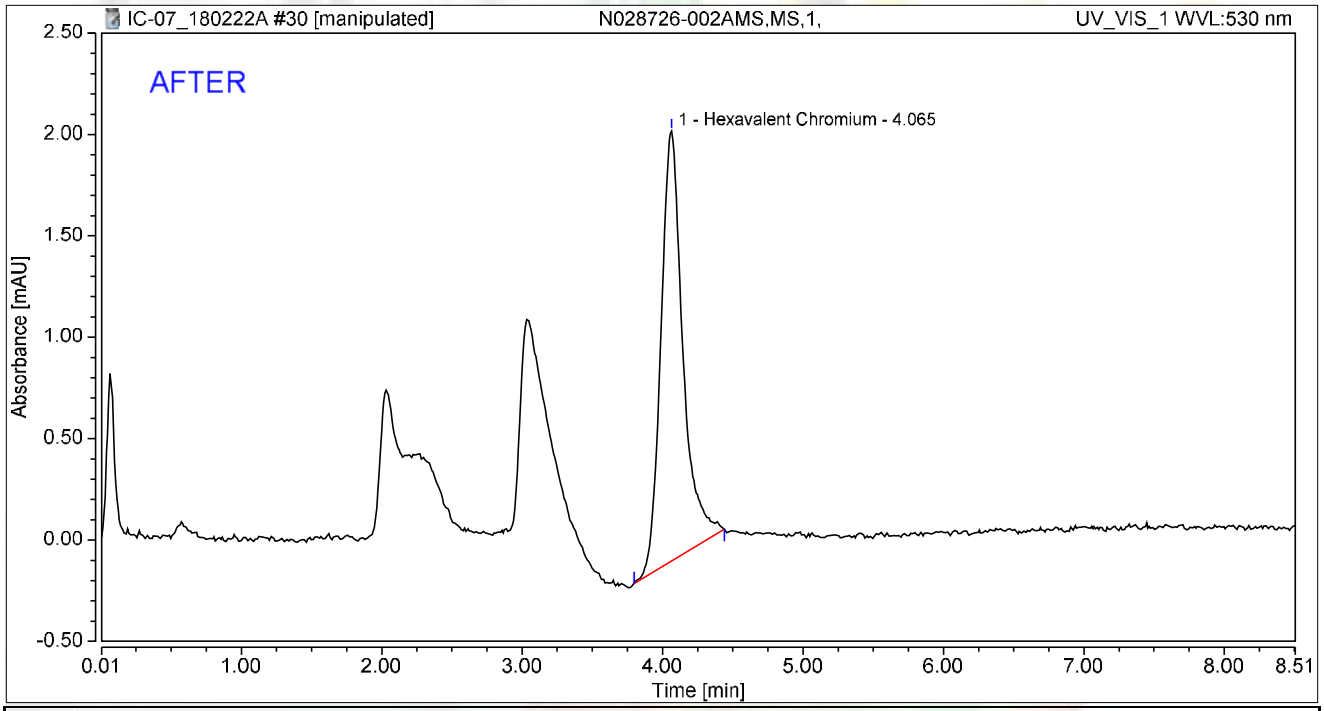
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.385	2.121	100.00	100.00	1.5440
Total:			**0.385**	**2.121**	**100.00**	**100.00**	

rba 3/4/2018

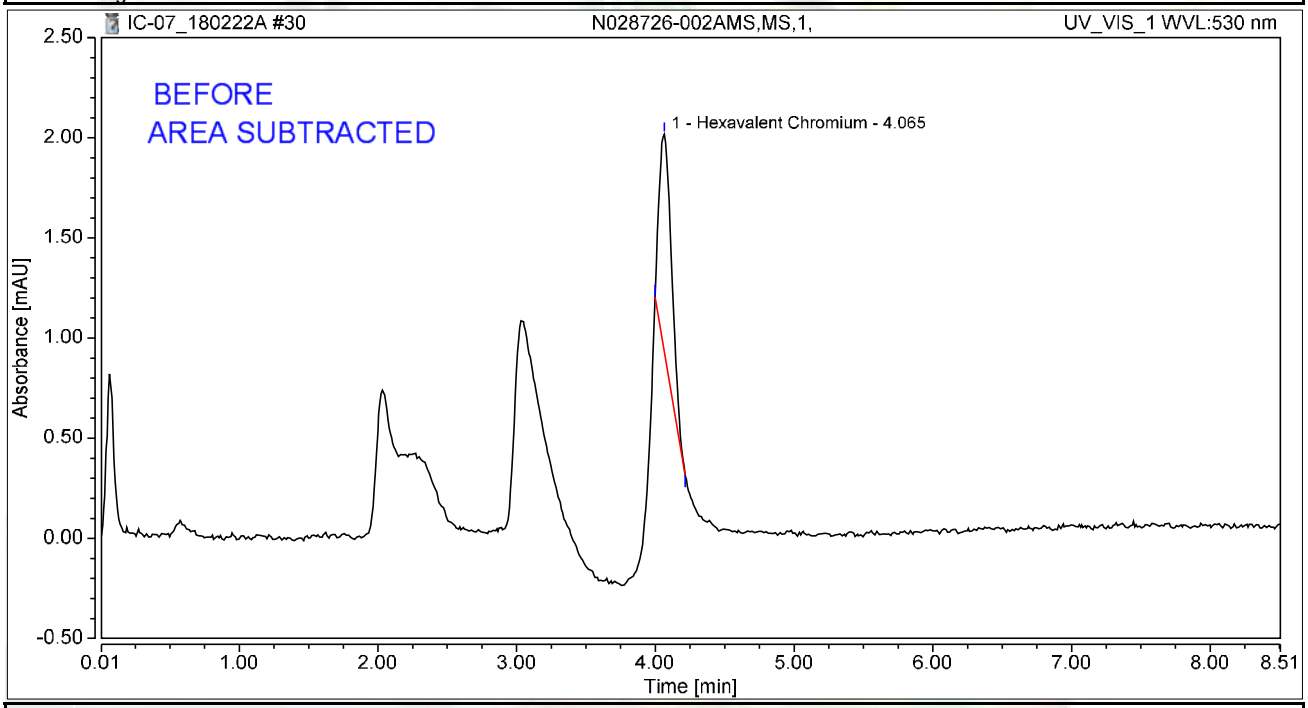
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.113	1.085	100.00	100.00	0.4533
Total:			**0.113**	**1.085**	**100.00**	**100.00**	

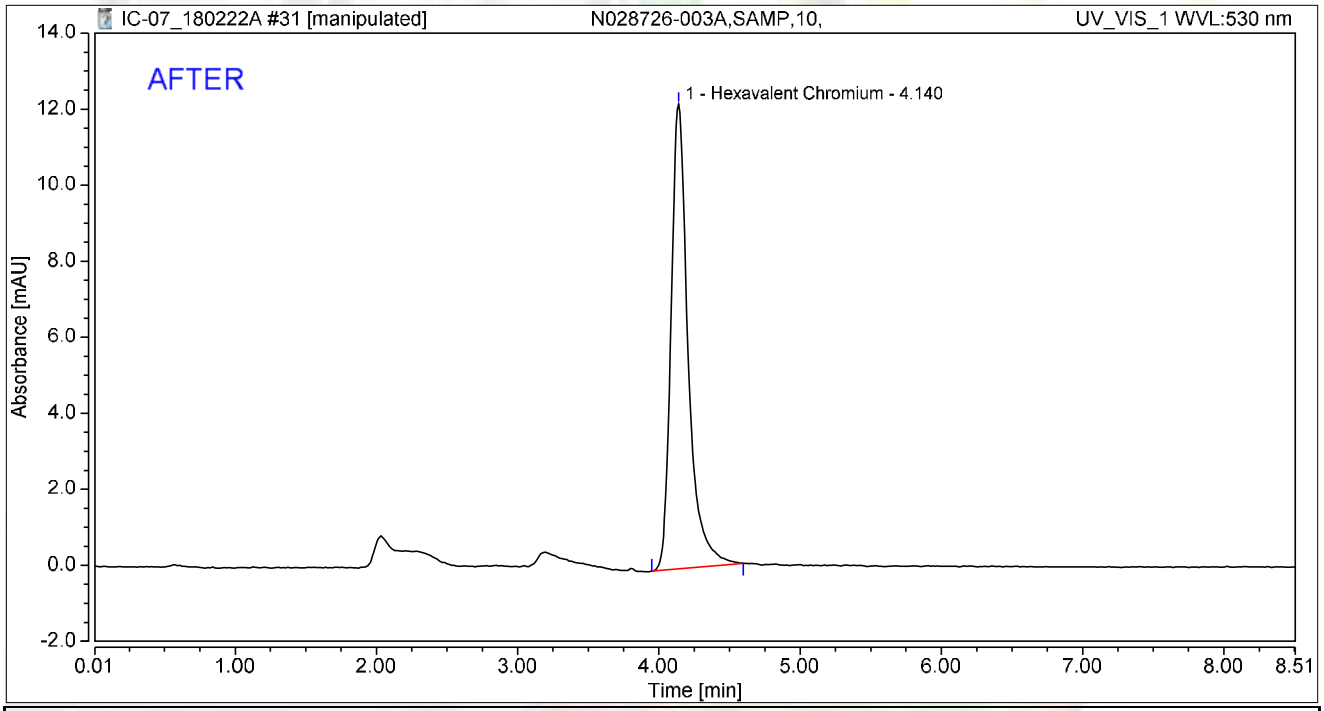
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.714	12.214	100.00	100.00	6.8660
Total:			**1.714**	**12.214**	**100.00**	**100.00**	

rba 3/4/2018

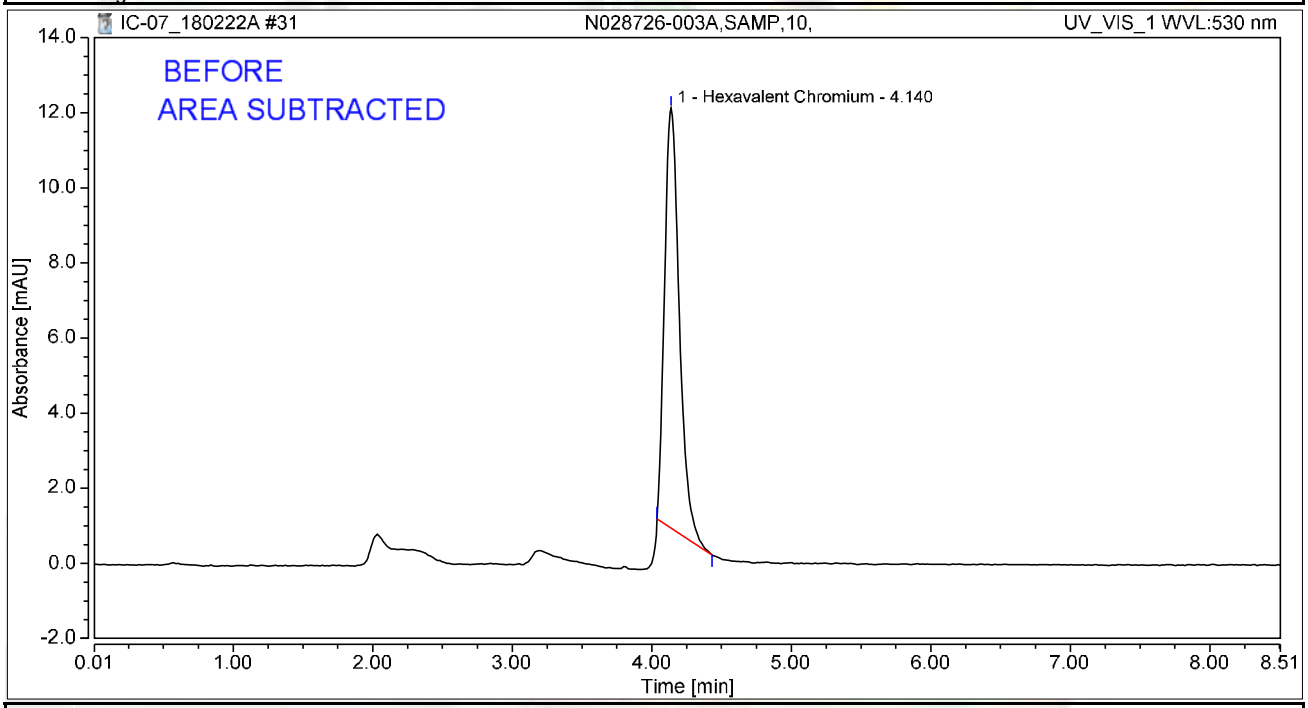
RLB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.373	11.180	100.00	100.00	5.5016
Total:			**1.373**	**11.180**	**100.00**	**100.00**	

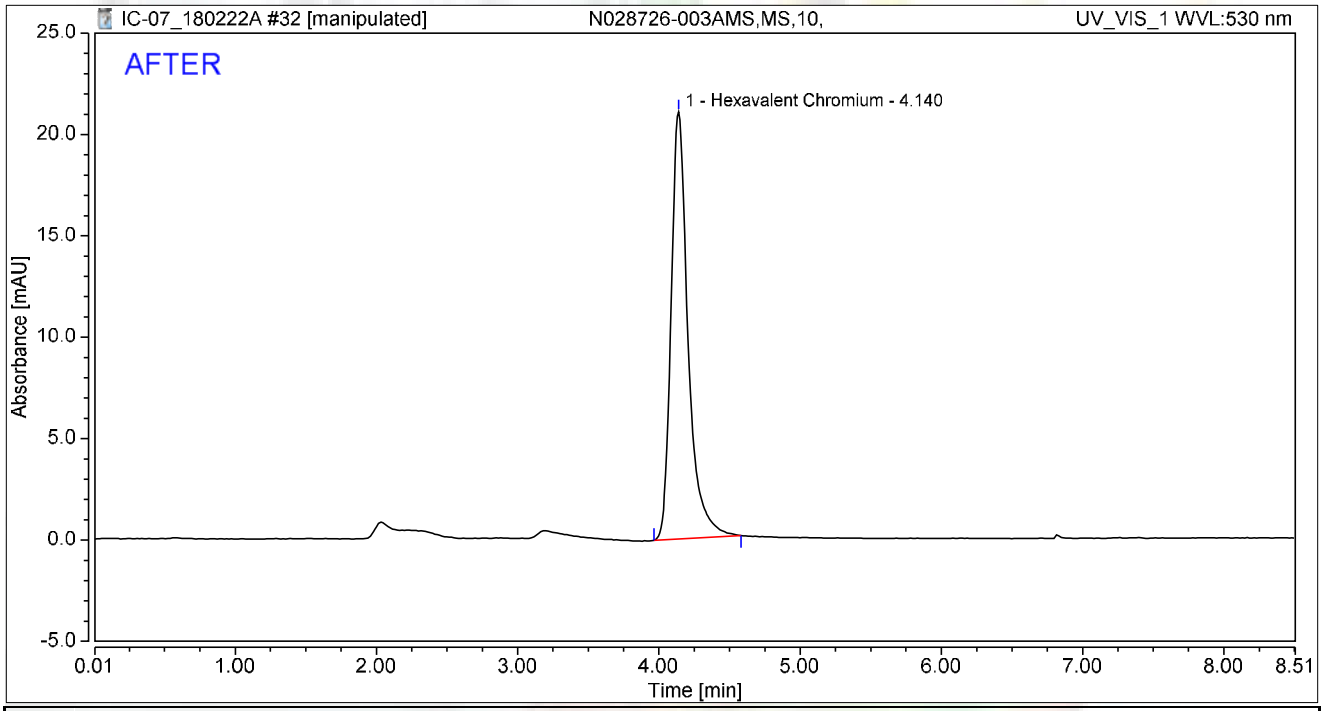
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.938	21.062	100.00	100.00	11.7672
Total:			**2.938**	**21.062**	**100.00**	**100.00**	

rba 3/4/2018

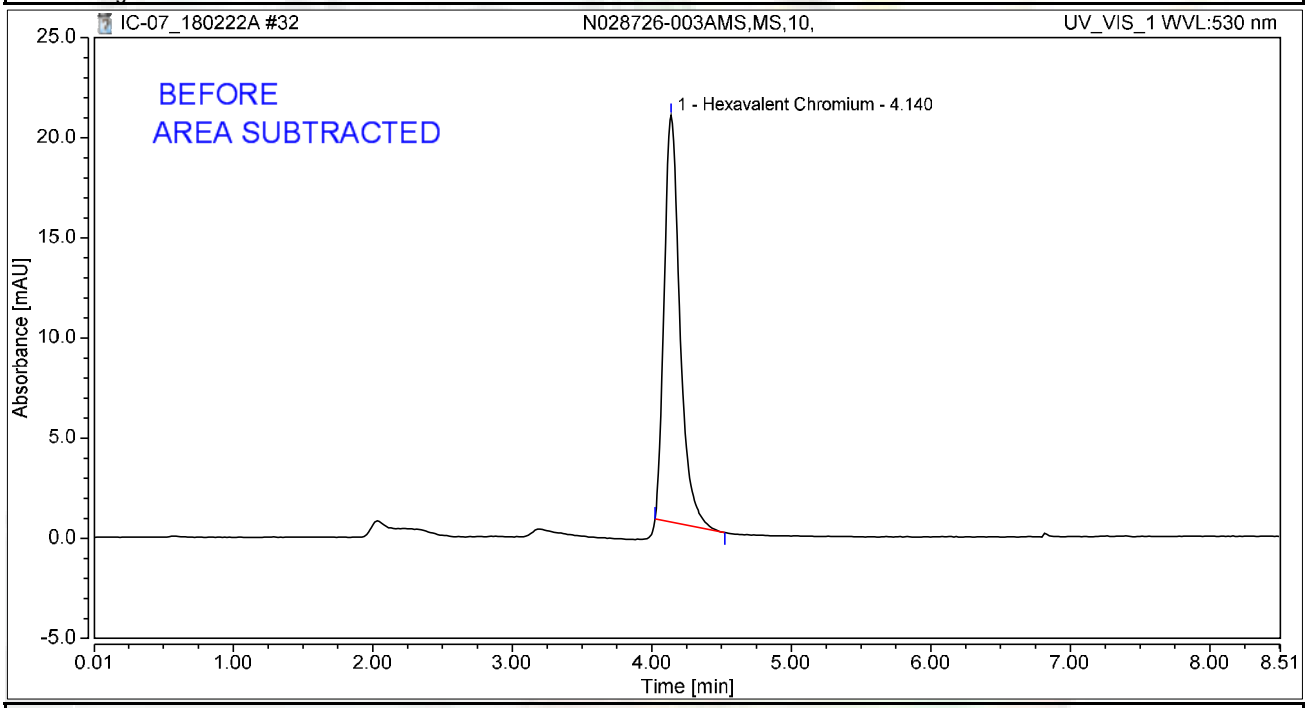
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.661	20.307	100.00	100.00	10.6574
Total:			**2.661**	**20.307**	**100.00**	**100.00**	

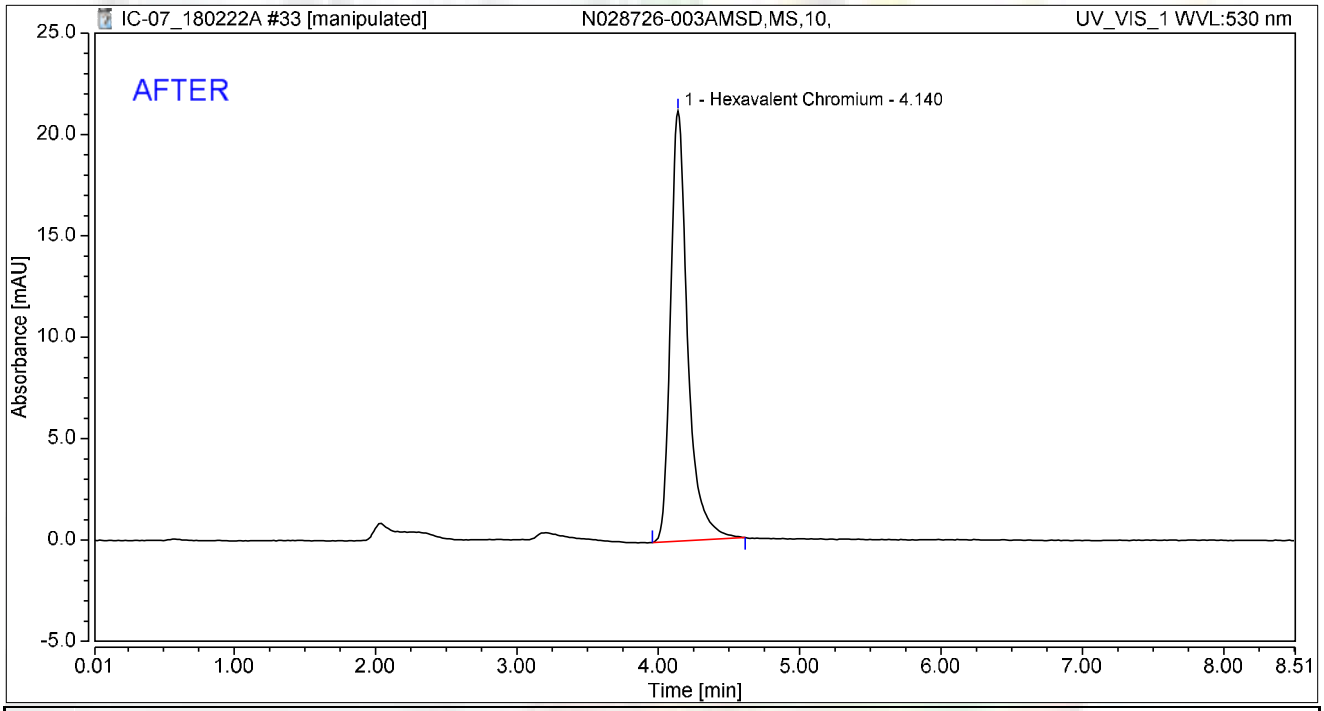
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMSD,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.978	21.209	100.00	100.00	11.9277
Total:			**2.978**	**21.209**	**100.00**	**100.00**	

rba 3/4/2018

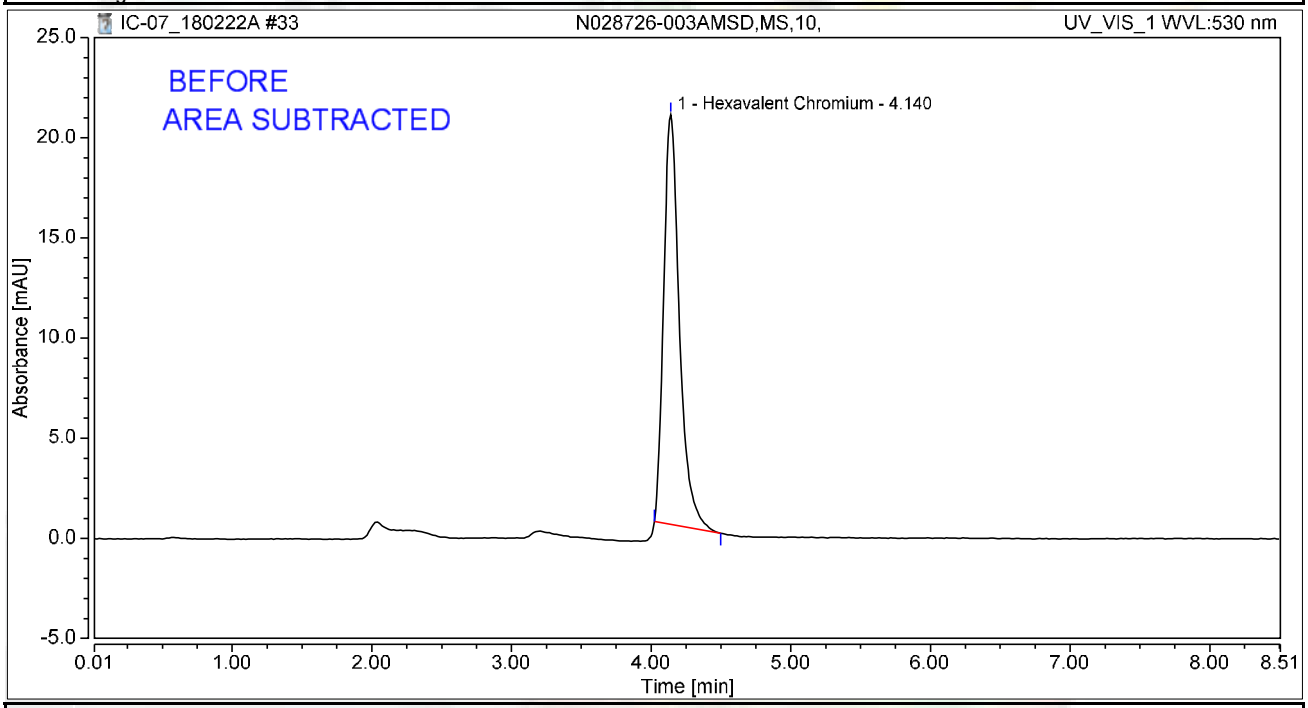
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMSD,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.691	20.459	100.00	100.00	10.7797
Total:			**2.691**	**20.459**	**100.00**	**100.00**	

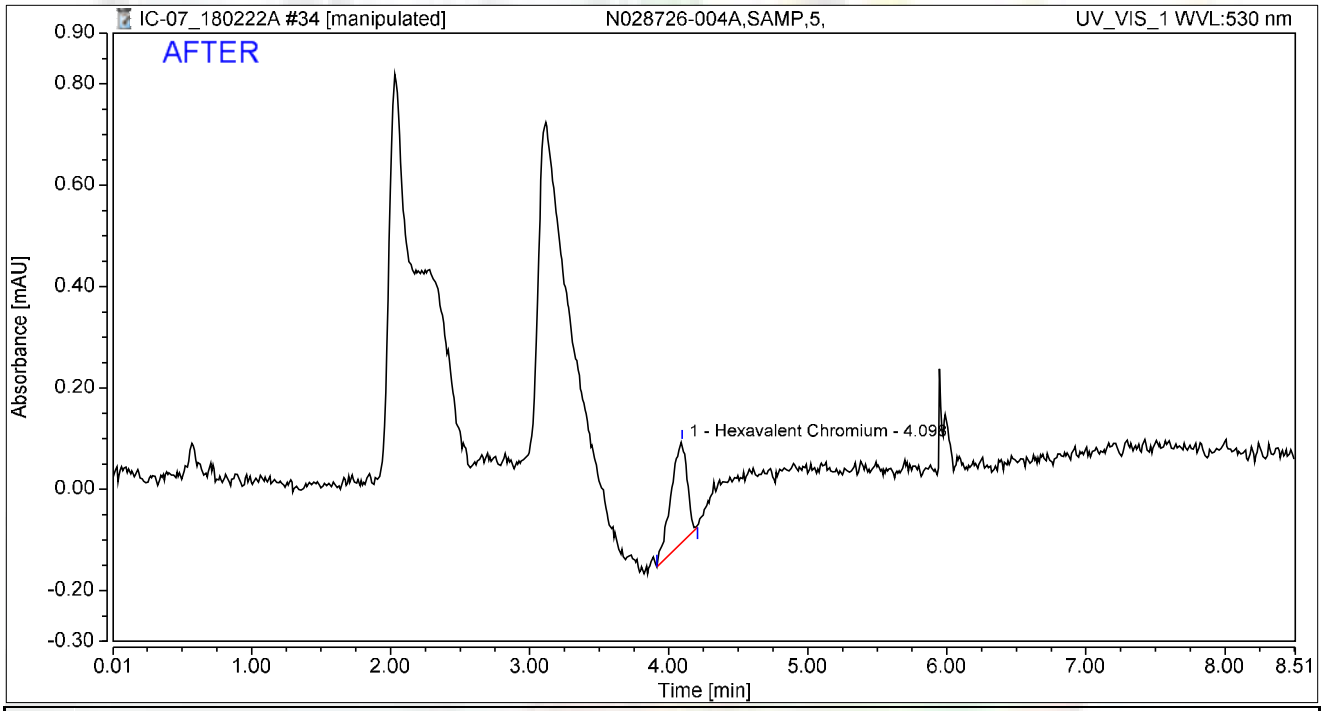
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.027	0.197	100.00	100.00	0.1086
Total:			**0.027**	**0.197**	**100.00**	**100.00**	

rba 3/4/2018

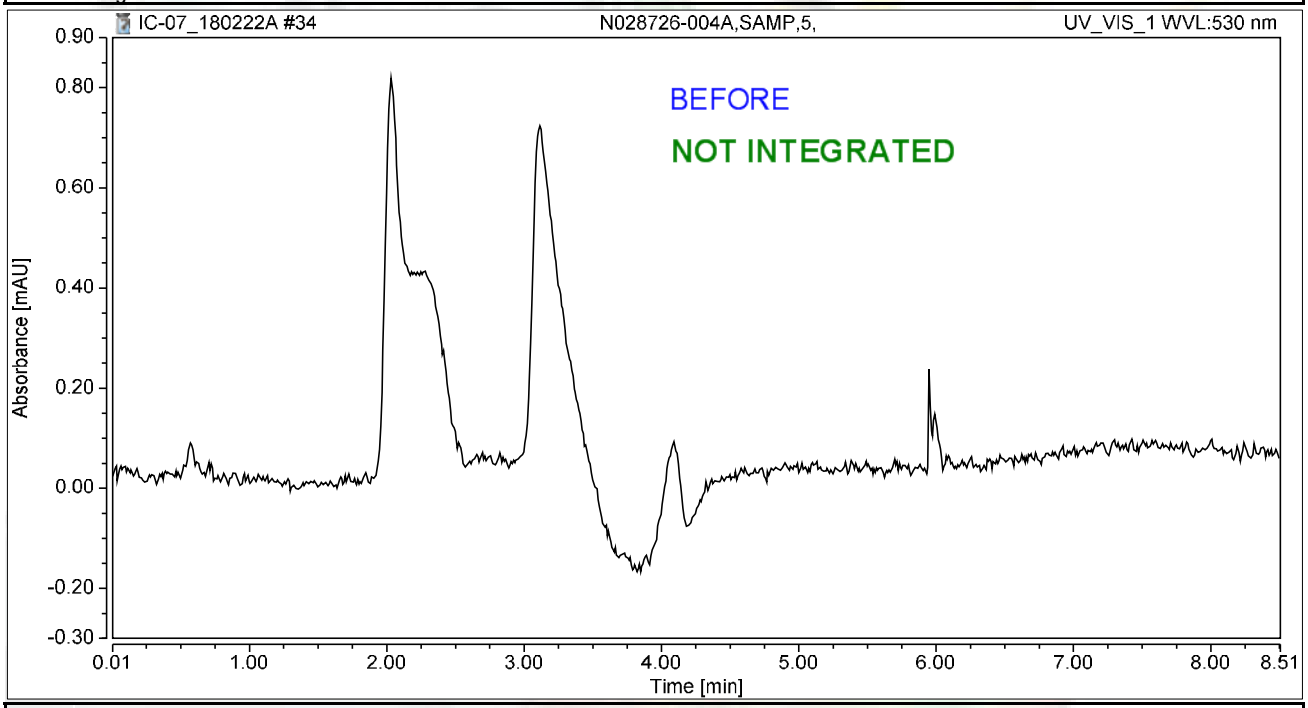
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

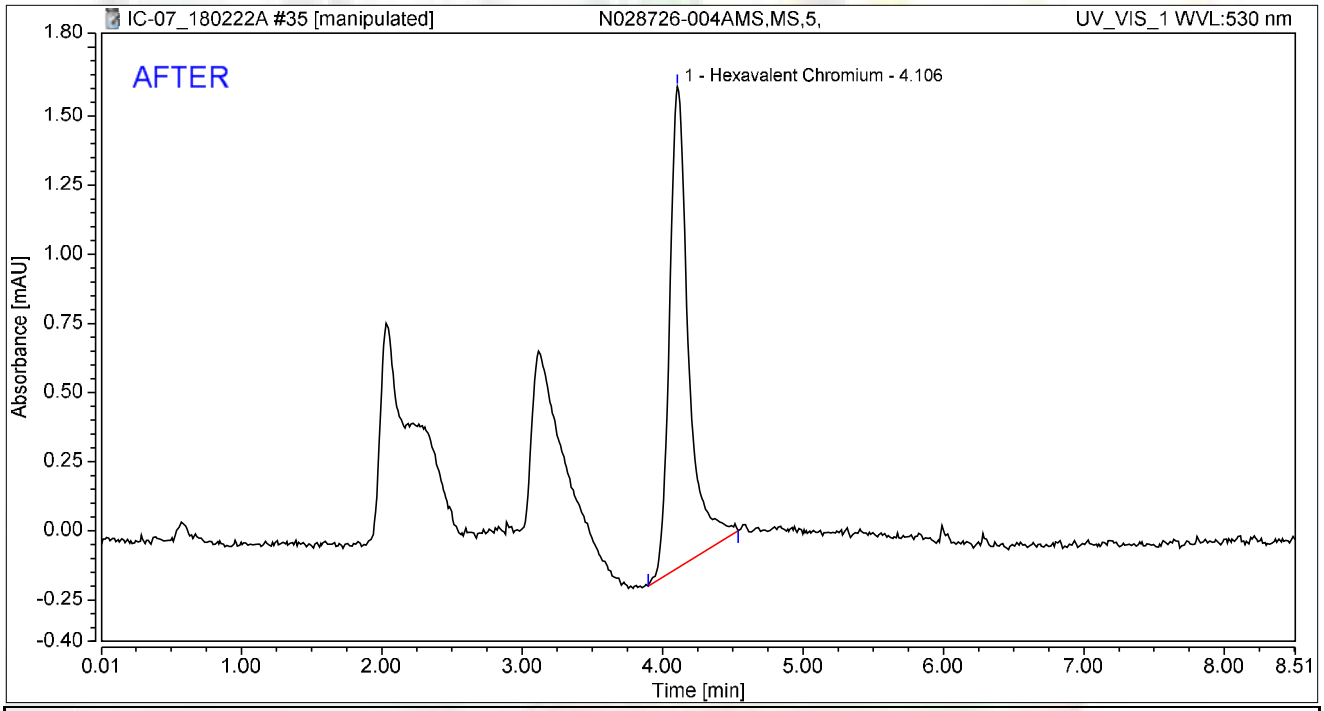
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.276	1.742	100.00	100.00	1.1049
Total:			**0.276**	**1.742**	**100.00**	**100.00**	

rba 3/4/2018

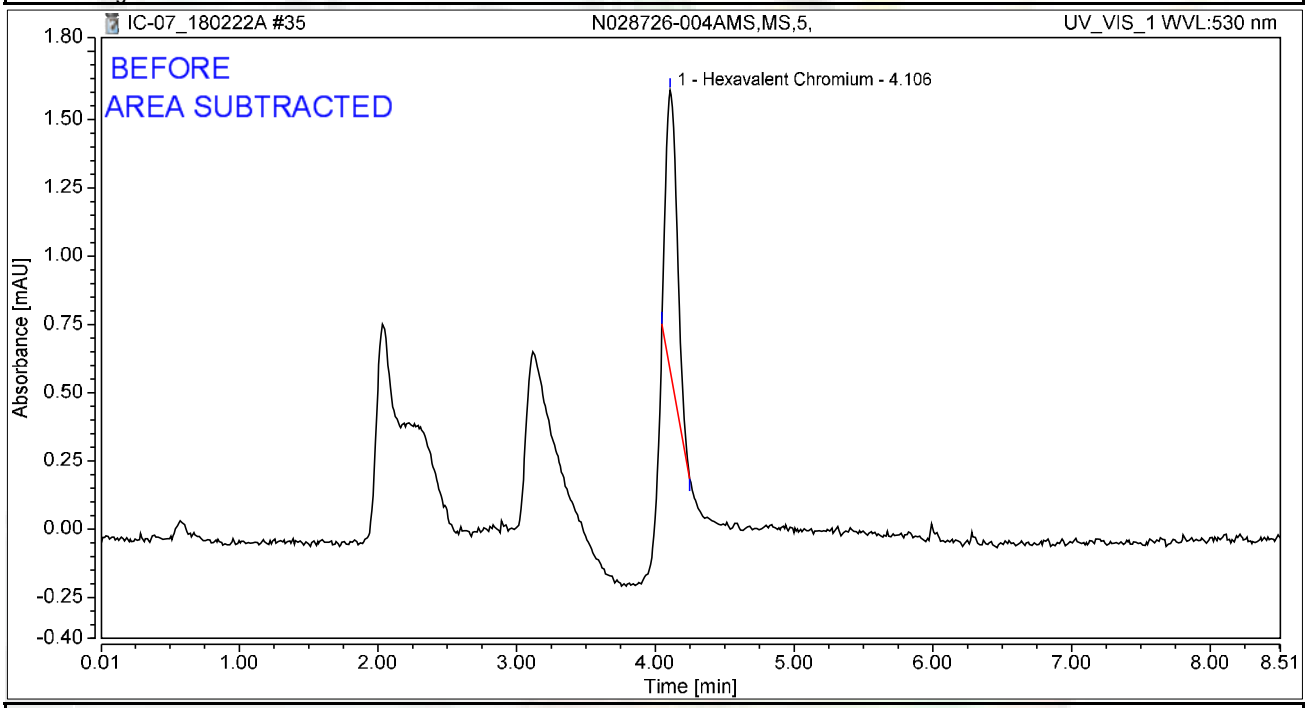
RLB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.099	1.019	100.00	100.00	0.3976
Total:			**0.099**	**1.019**	**100.00**	**100.00**	

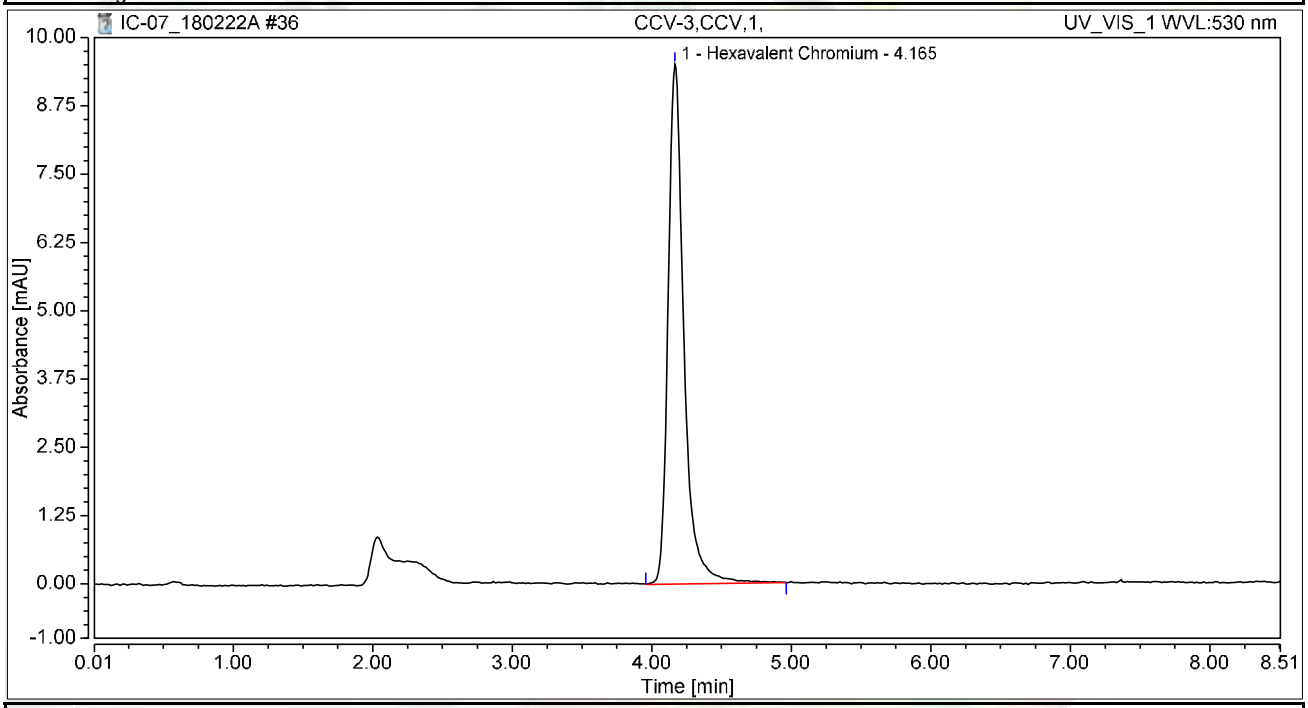
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

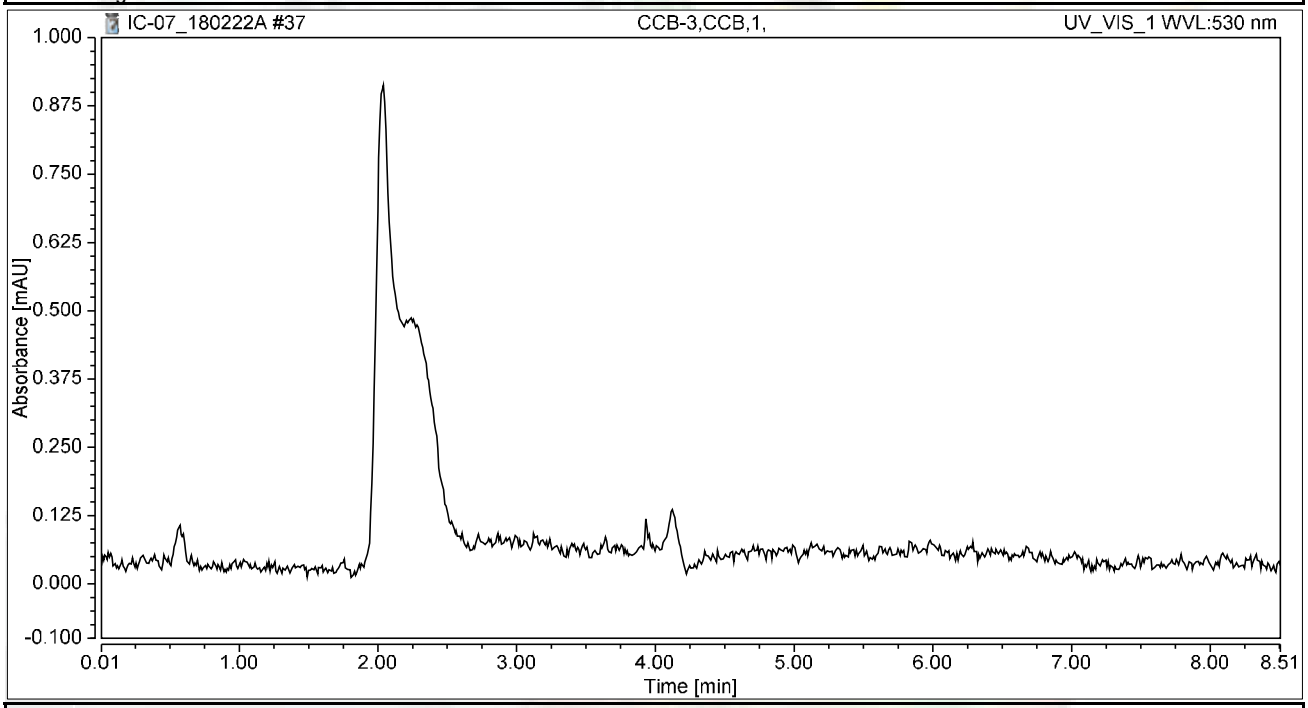
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.251	9.517	100.00	100.00	5.0091
Total:			**1.251**	**9.517**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

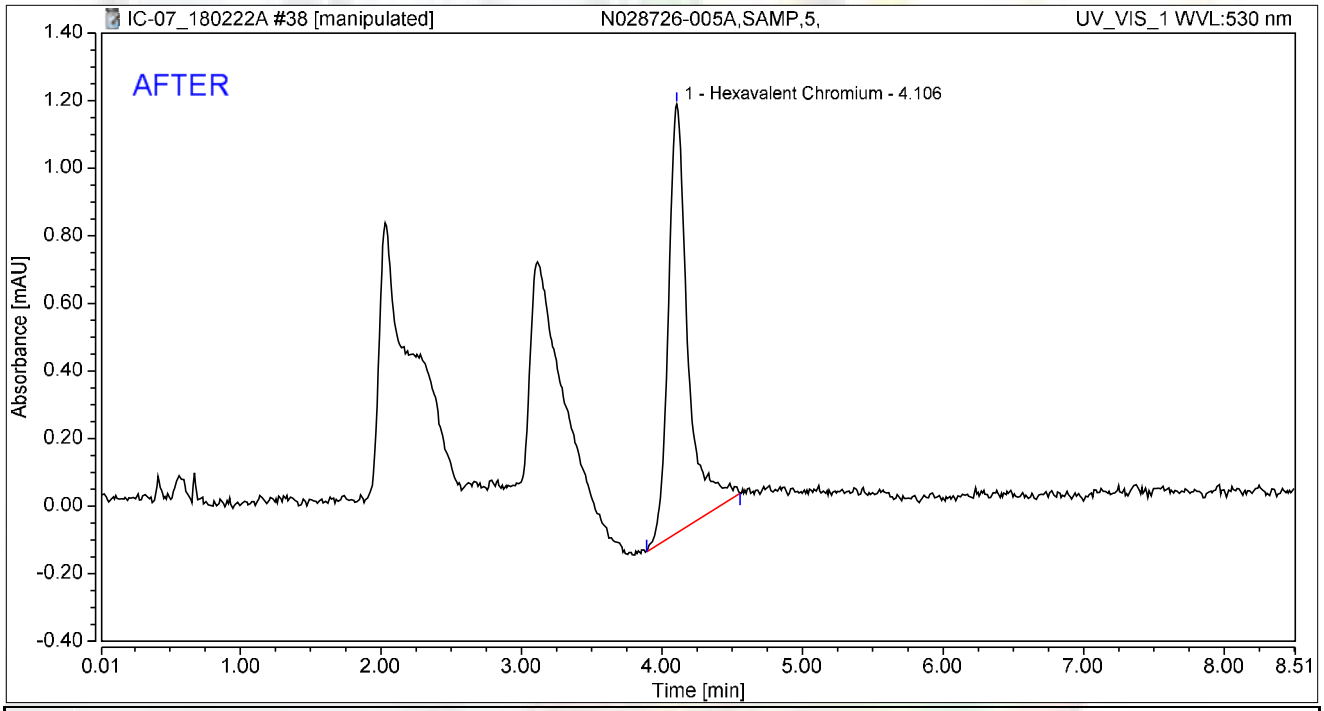
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.205	1.268	100.00	100.00	0.8215
Total:			**0.205**	**1.268**	**100.00**	**100.00**	

rba 3/4/2018

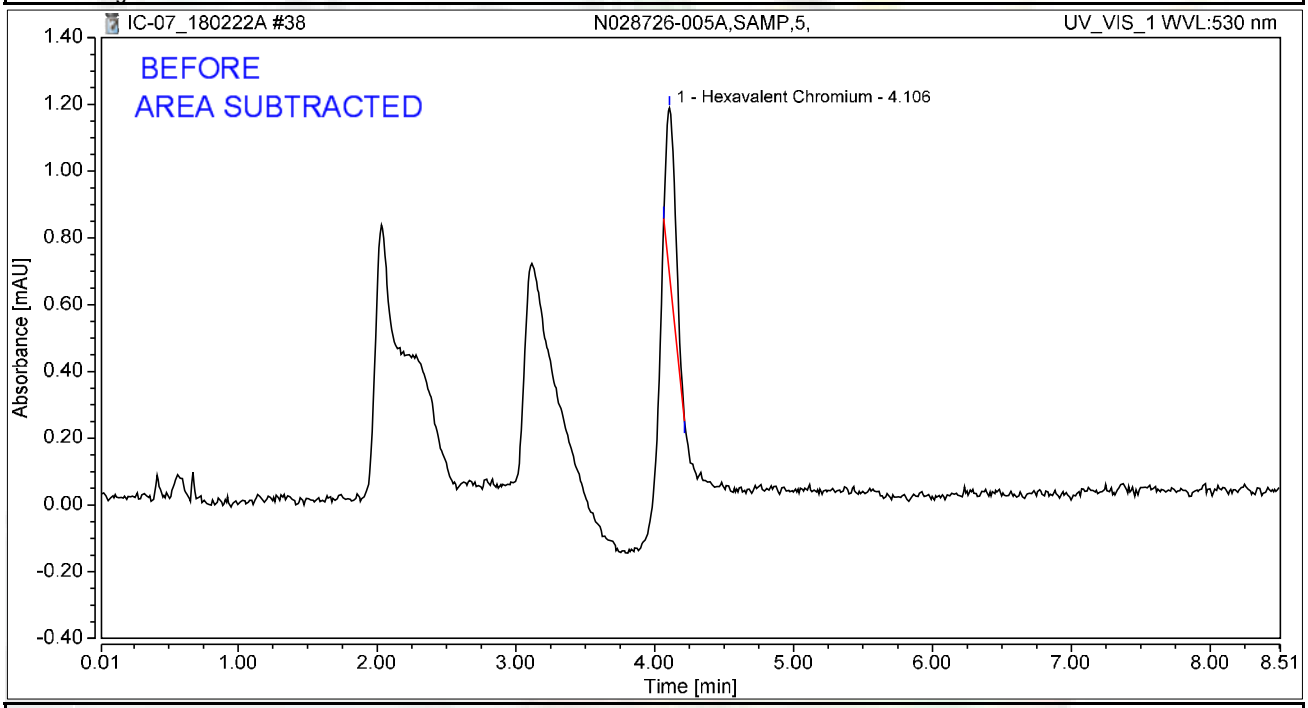
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.040	0.499	100.00	100.00	0.1620
Total:			**0.040**	**0.499**	**100.00**	**100.00**	

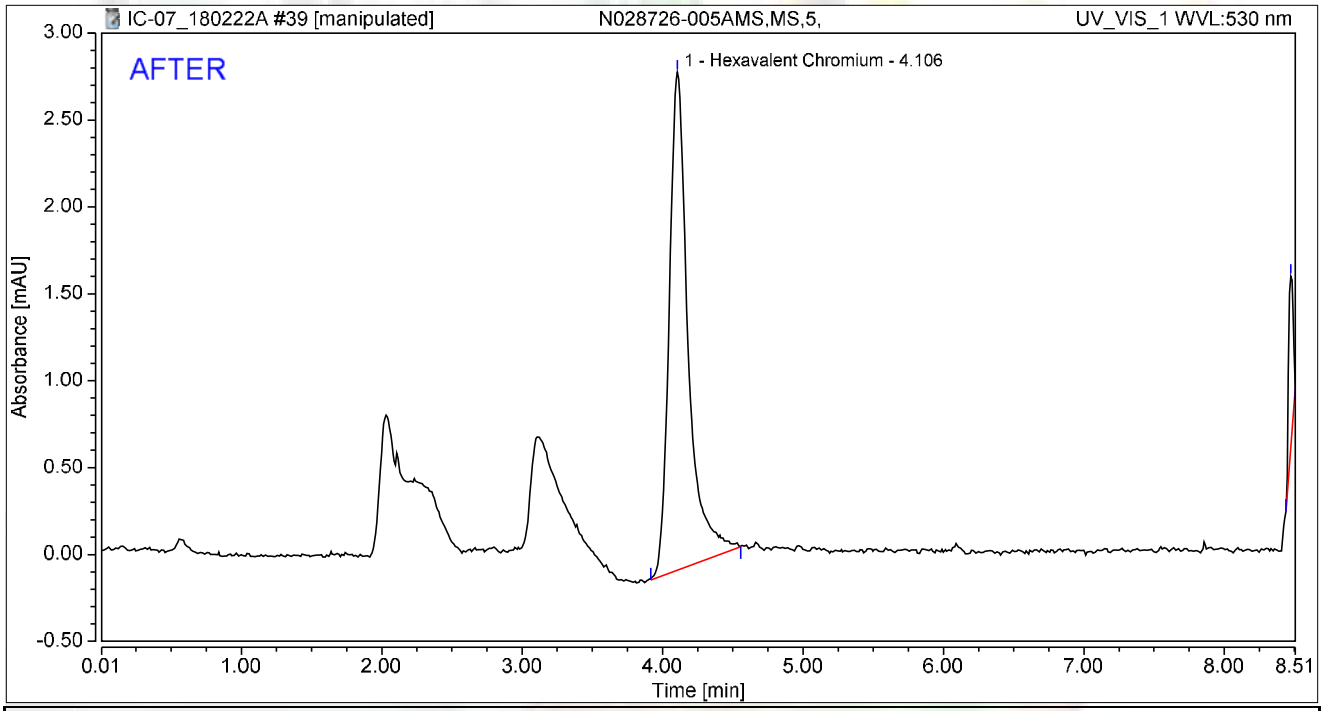
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.449	2.865	92.24	74.16	1.8001
2		8.473	0.038	0.998	7.76	25.84	n.a.
Total:			**0.487**	**3.863**	**100.00**	**100.00**	

rba 3/4/2018

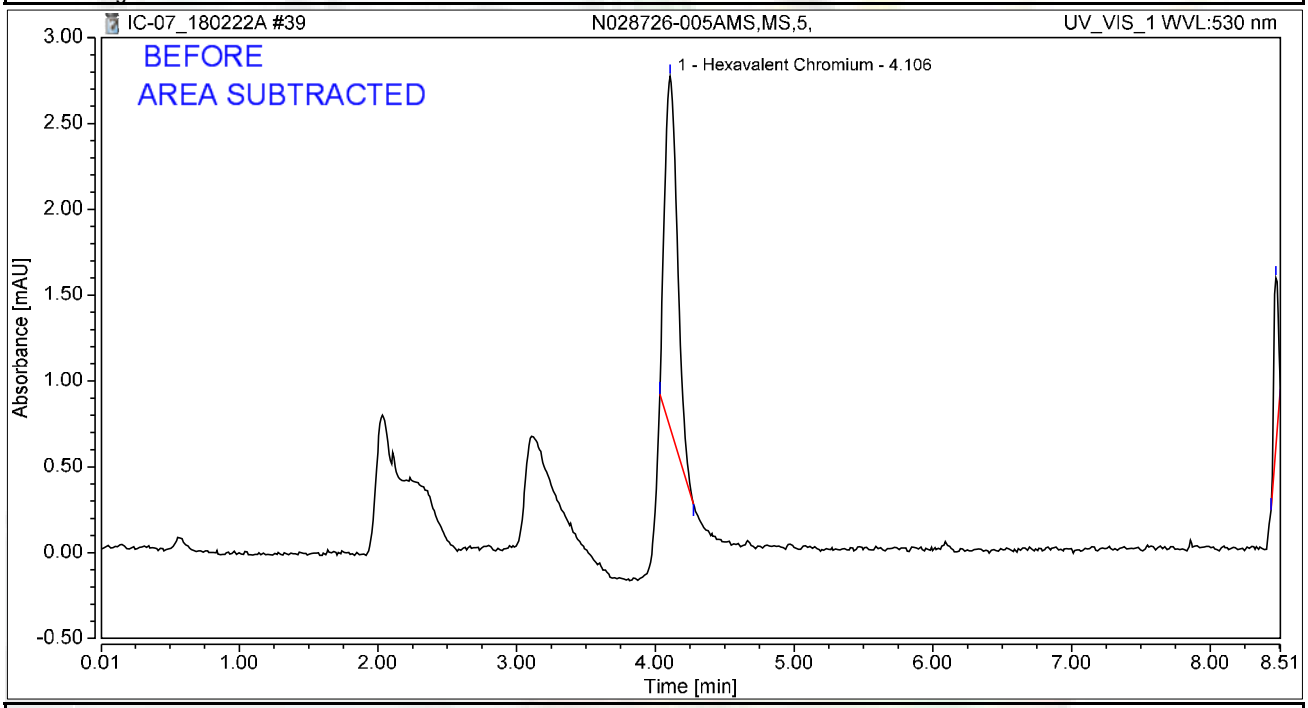
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.222	2.050	85.44	67.25	0.8893
2		8.473	0.038	0.998	14.56	32.75	n.a.
Total:			**0.260**	**3.049**	**100.00**	**100.00**	

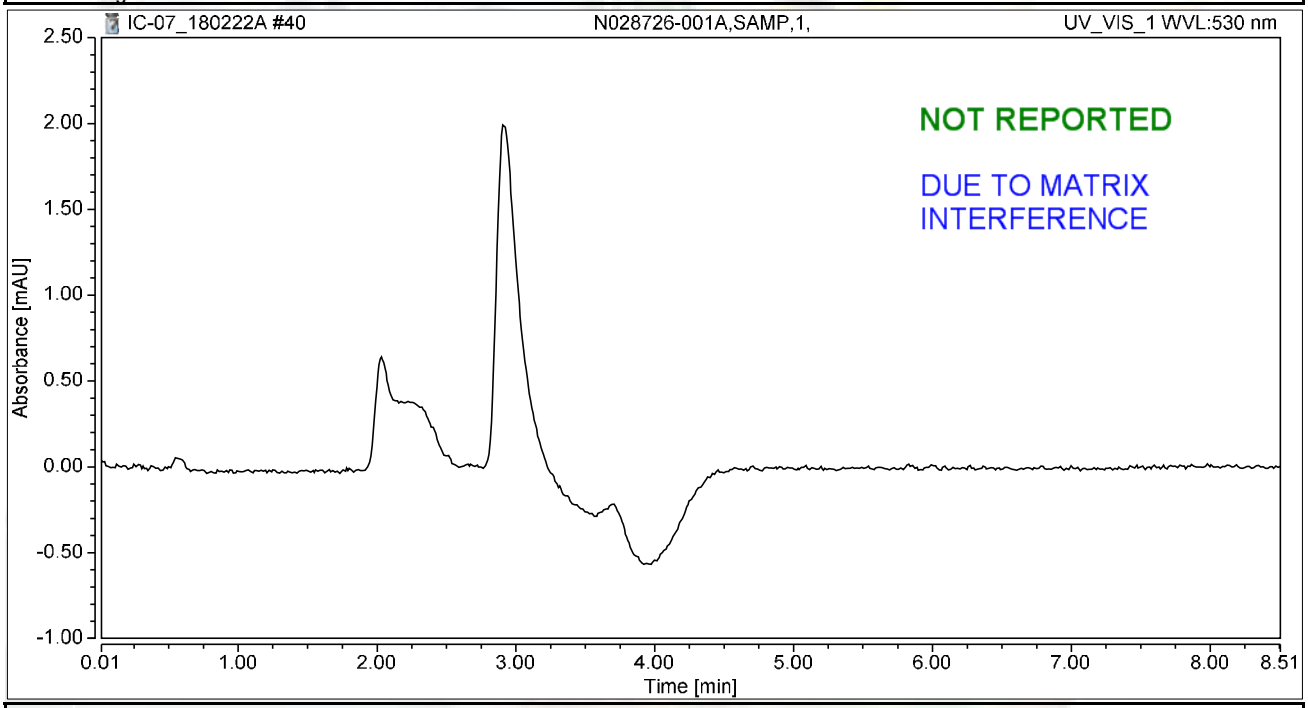
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

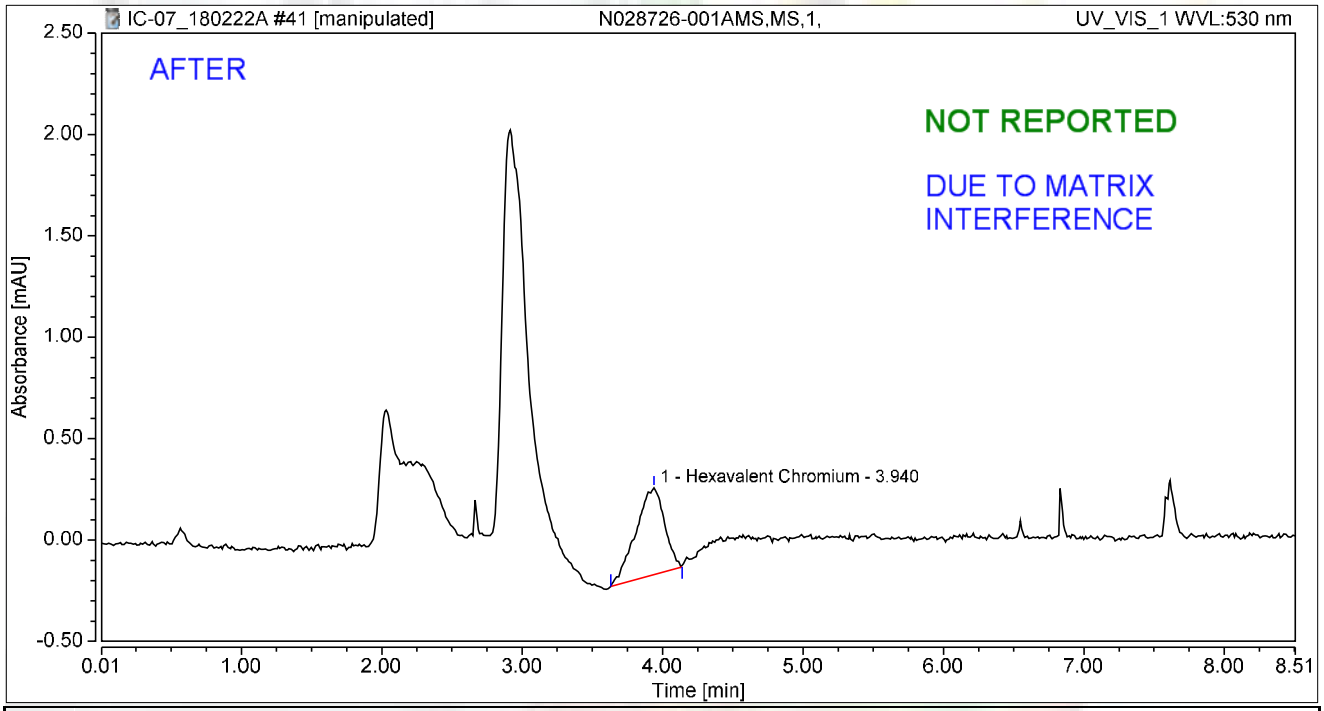
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.101	0.426	100.00	100.00	0.4063
Total:			**0.101**	**0.426**	**100.00**	**100.00**	

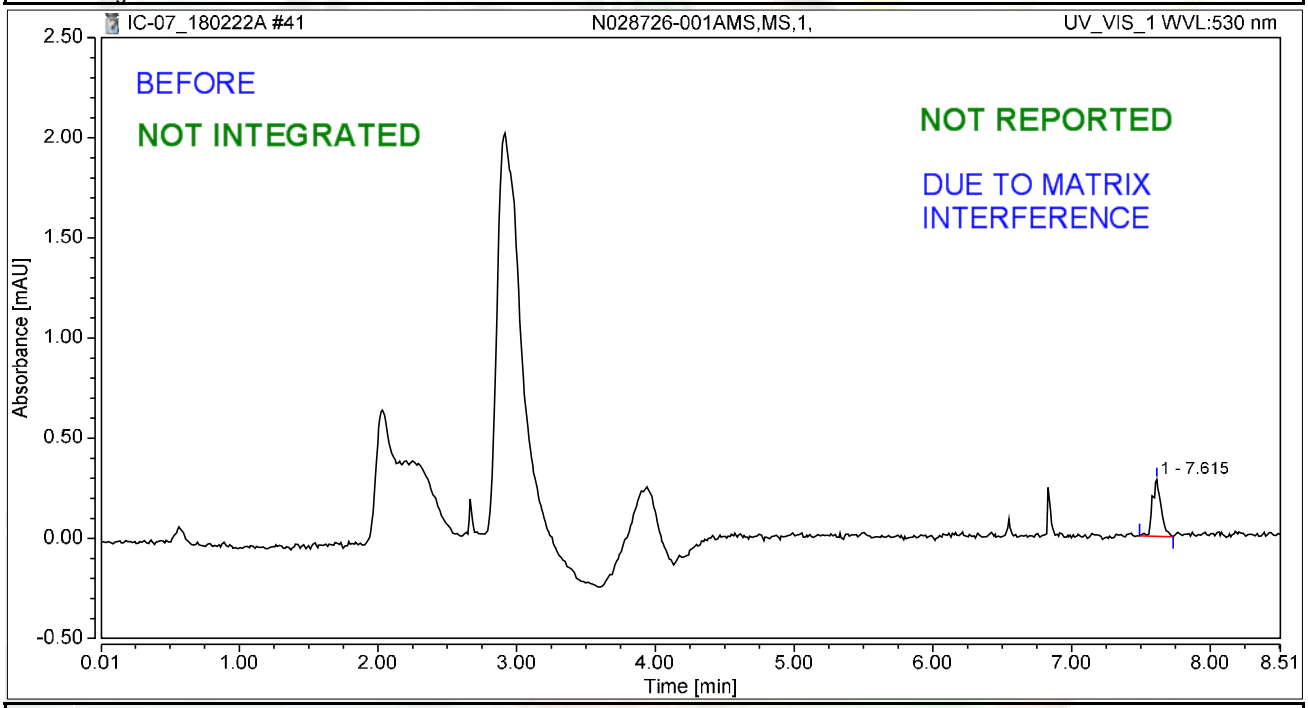
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.615	0.021	0.284	100.00	100.00	n.a.
Total:			**0.021**	**0.284**	**100.00**	**100.00**	

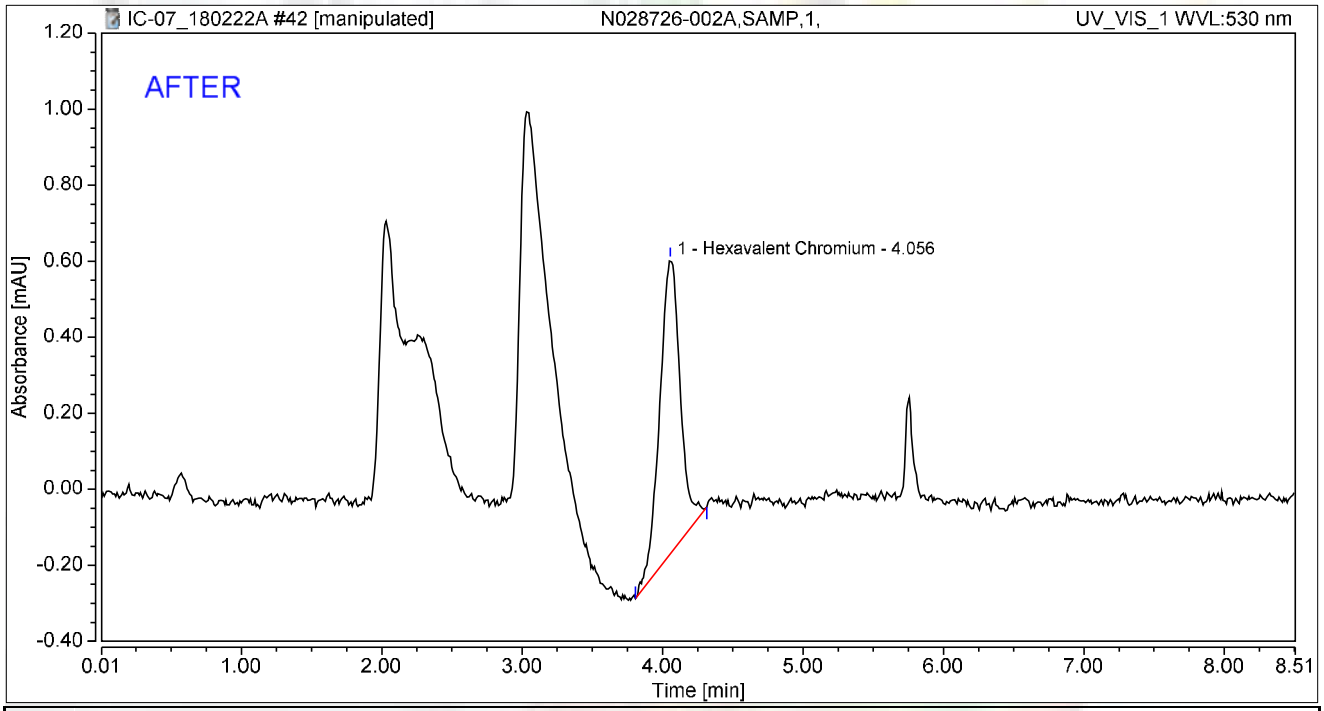
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.132	0.773	100.00	100.00	0.5270
Total:			**0.132**	**0.773**	**100.00**	**100.00**	

rba 3/4/2018

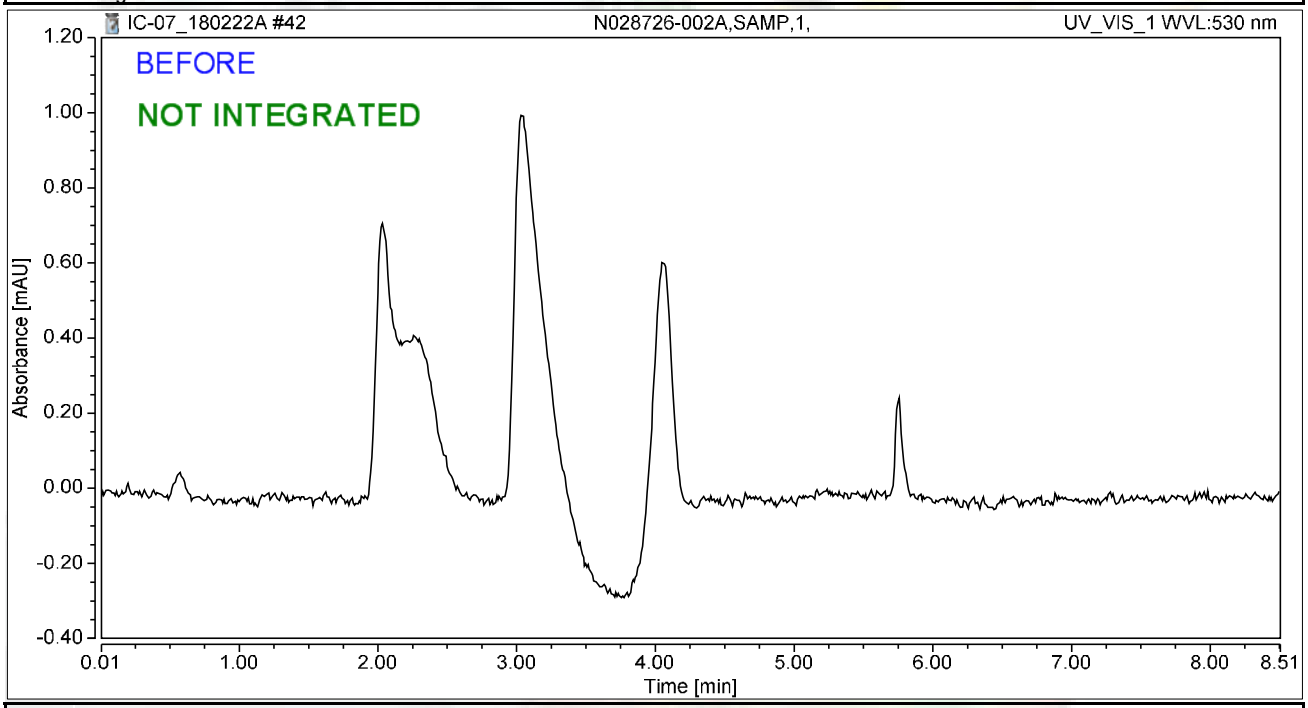
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

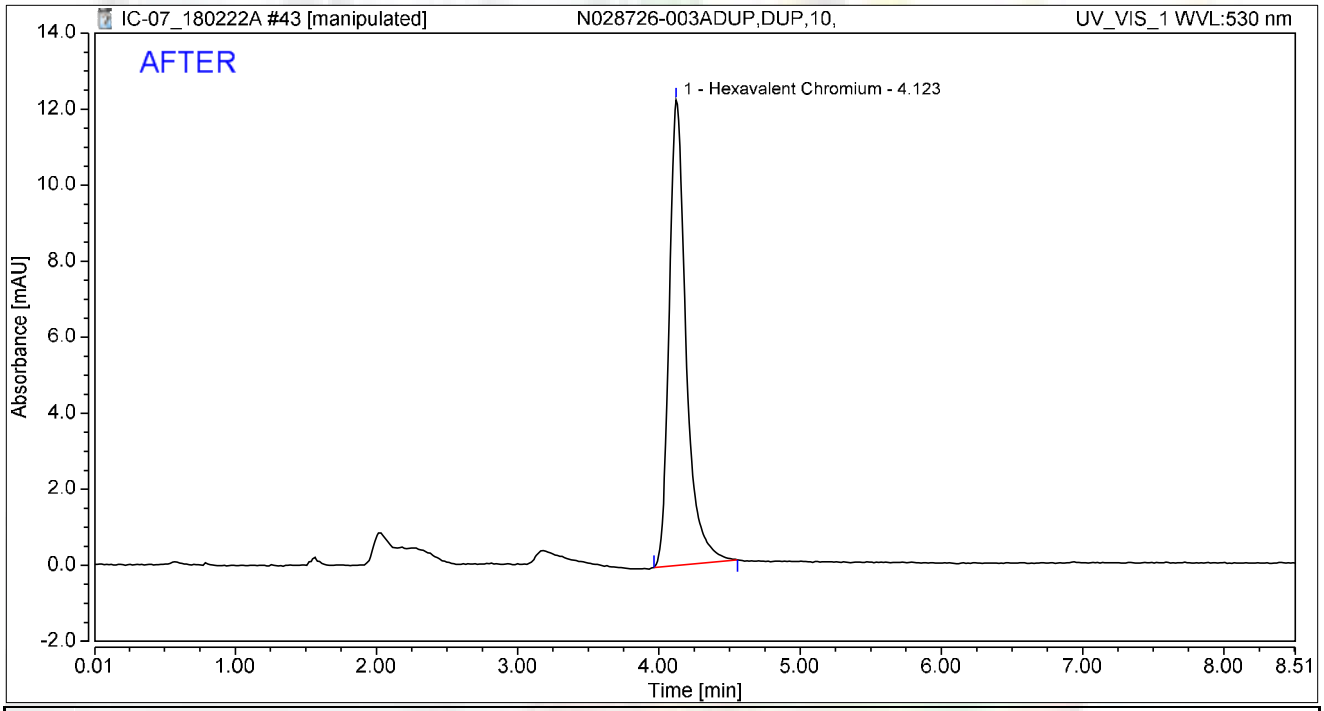
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003ADUP,DUP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.703	12.240	100.00	100.00	6.8221
Total:			**1.703**	**12.240**	**100.00**	**100.00**	

rba 3/4/2018

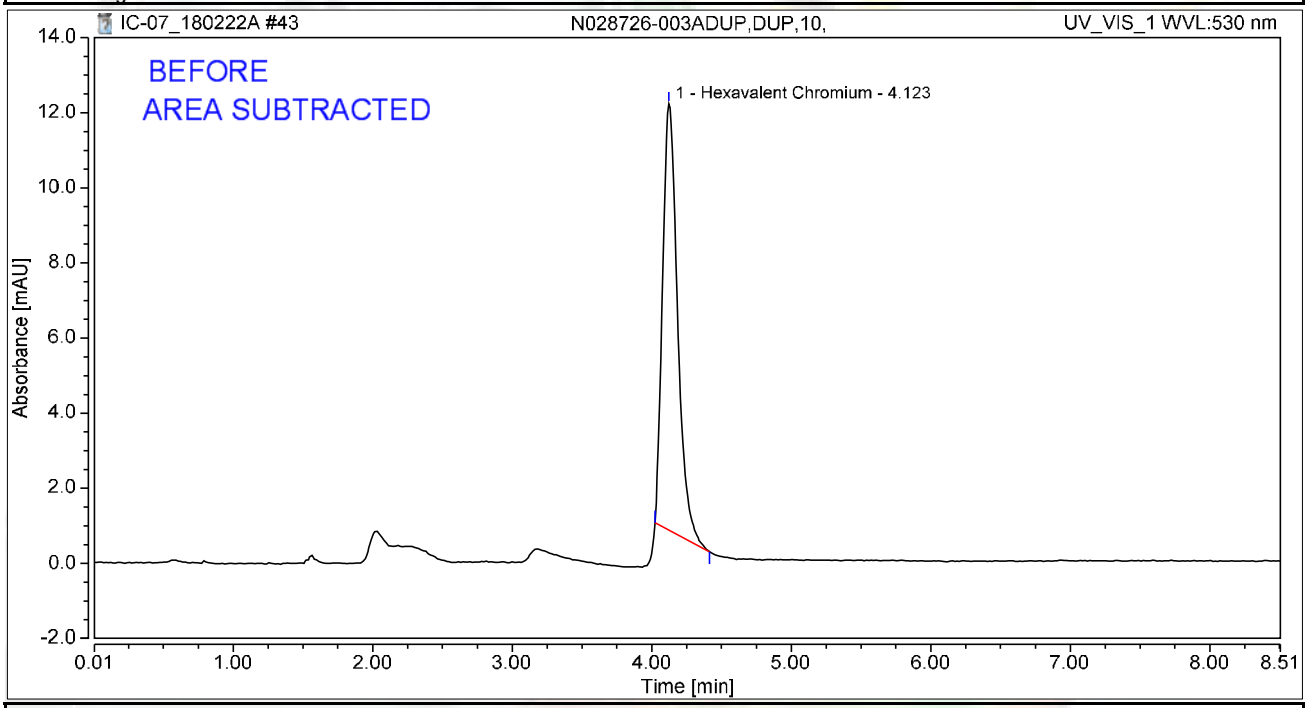
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003ADUP,DUP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.413	11.353	100.00	100.00	5.6593
Total:			**1.413**	**11.353**	**100.00**	**100.00**	

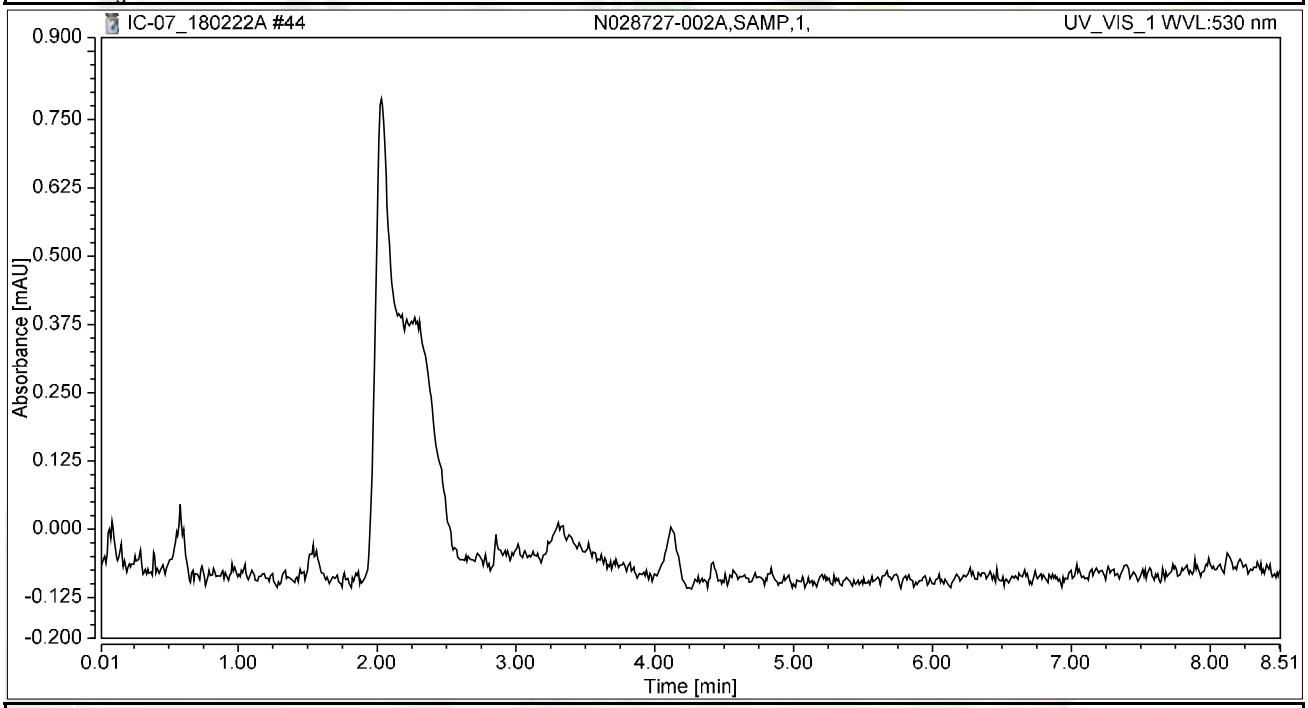
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

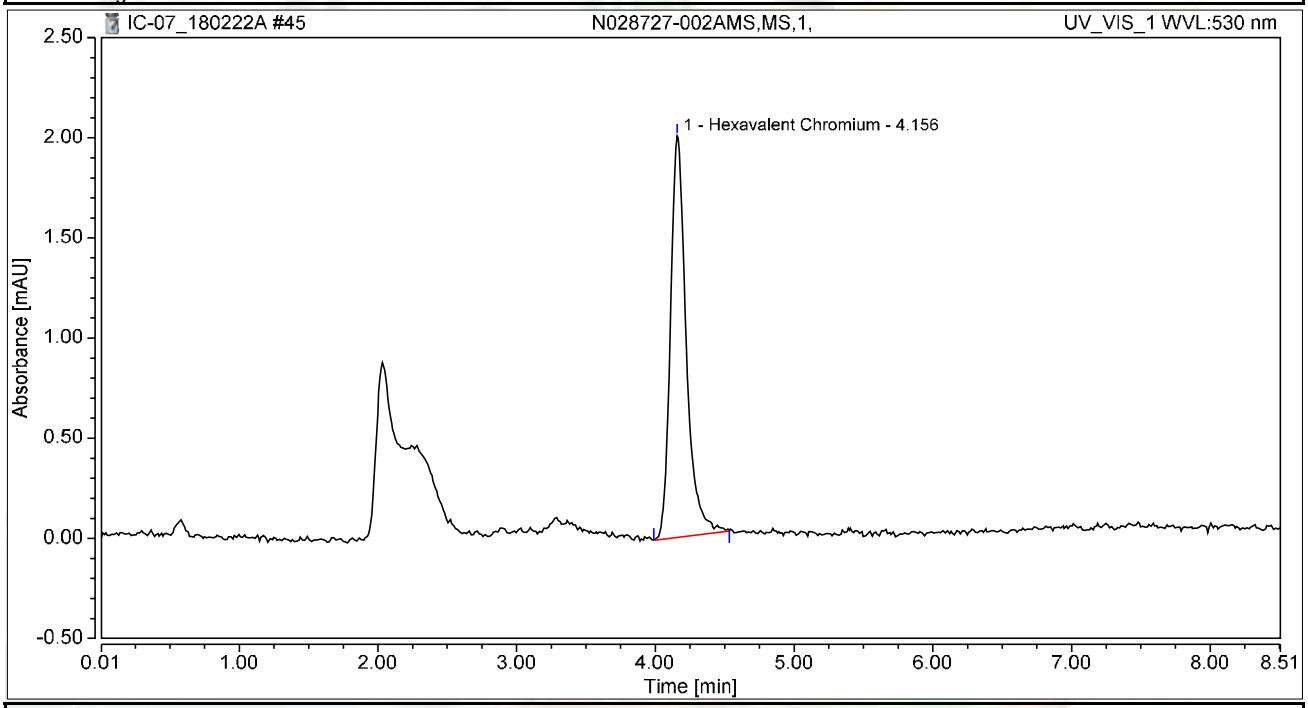
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

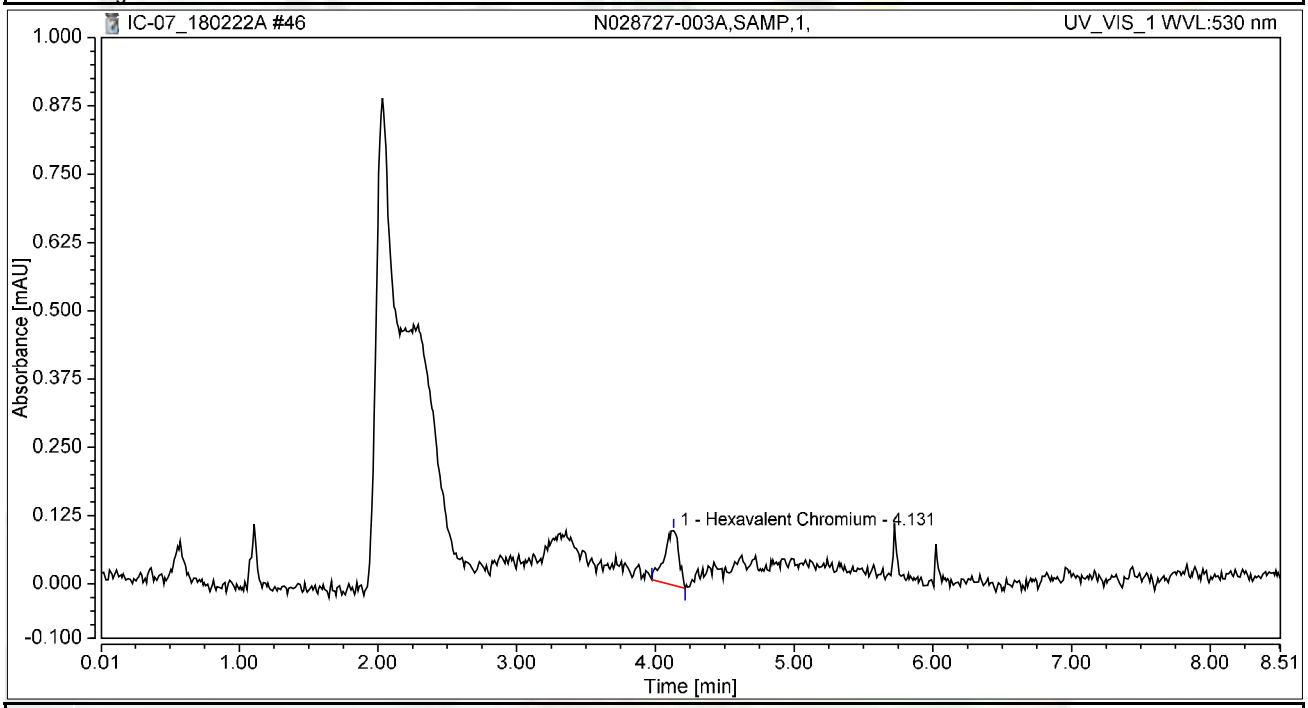
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	2.005	100.00	100.00	1.0590
Total:			**0.264**	**2.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

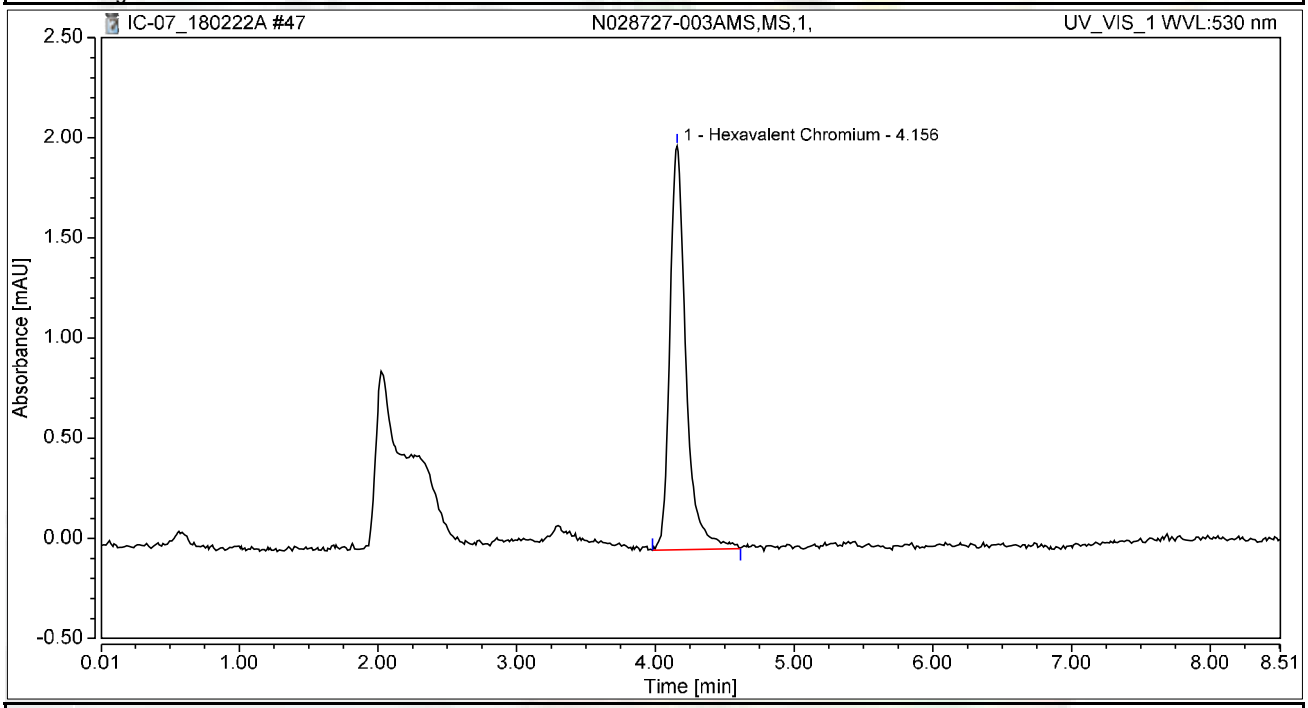
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.012	0.100	100.00	100.00	0.0487
Total:			**0.012**	**0.100**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

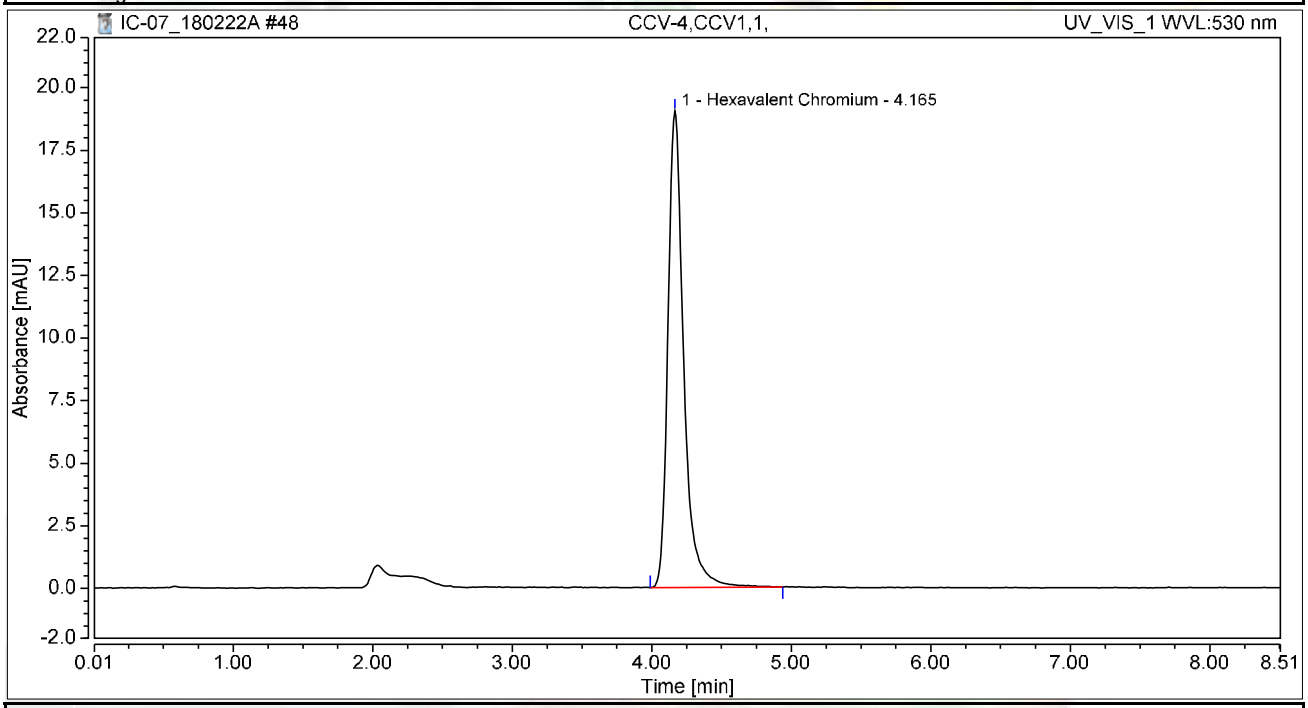
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.272	2.017	100.00	100.00	1.0880
Total:			**0.272**	**2.017**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

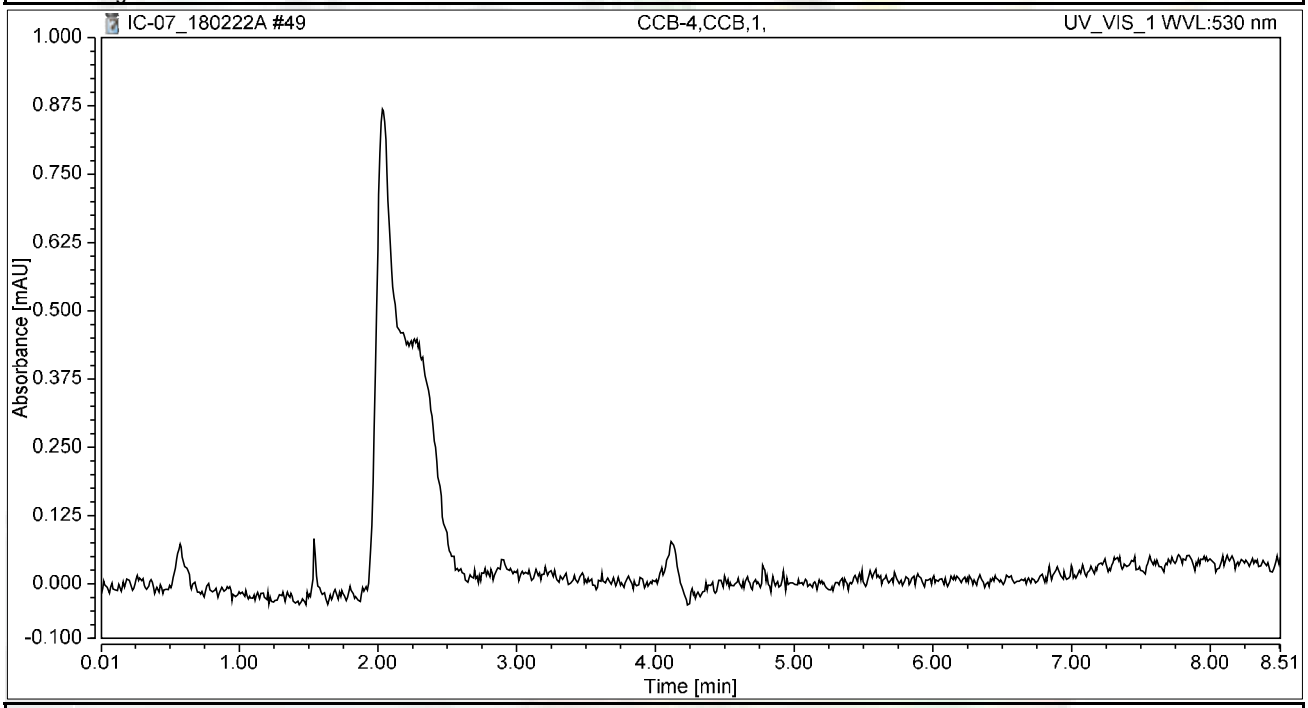
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.481	19.025	100.00	100.00	9.9393
Total:			**2.481**	**19.025**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

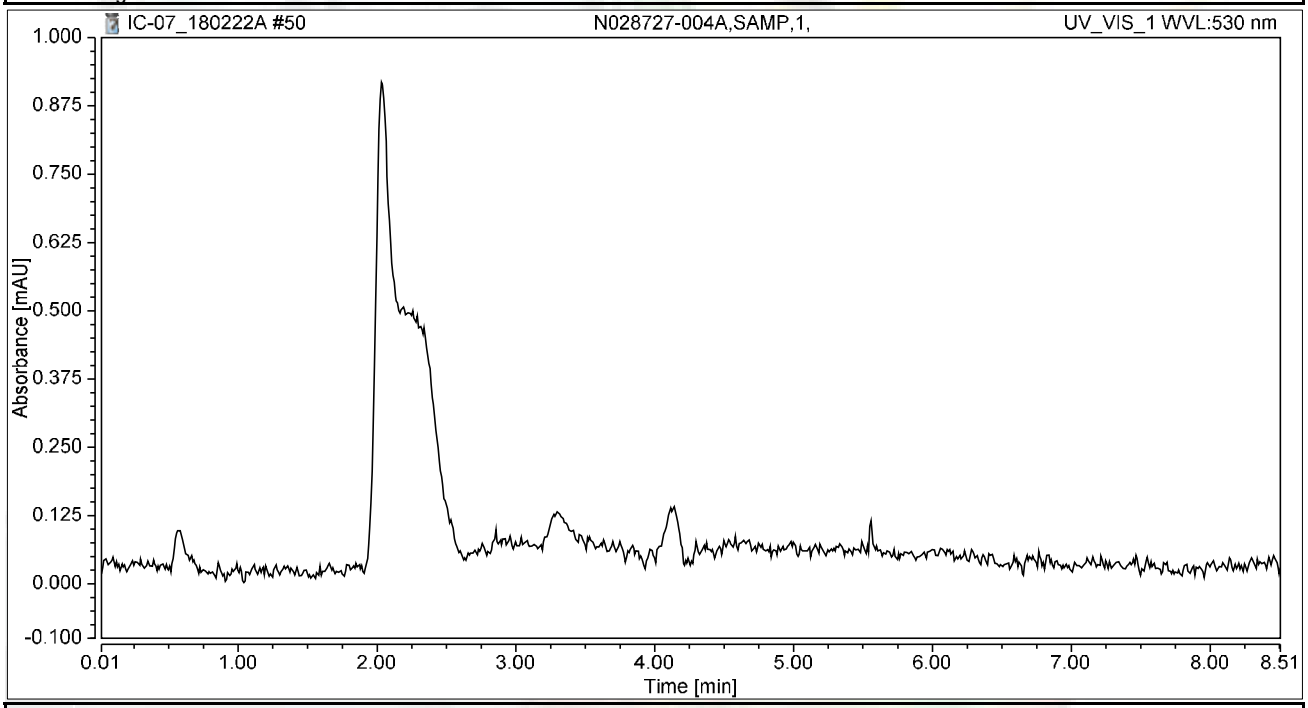
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

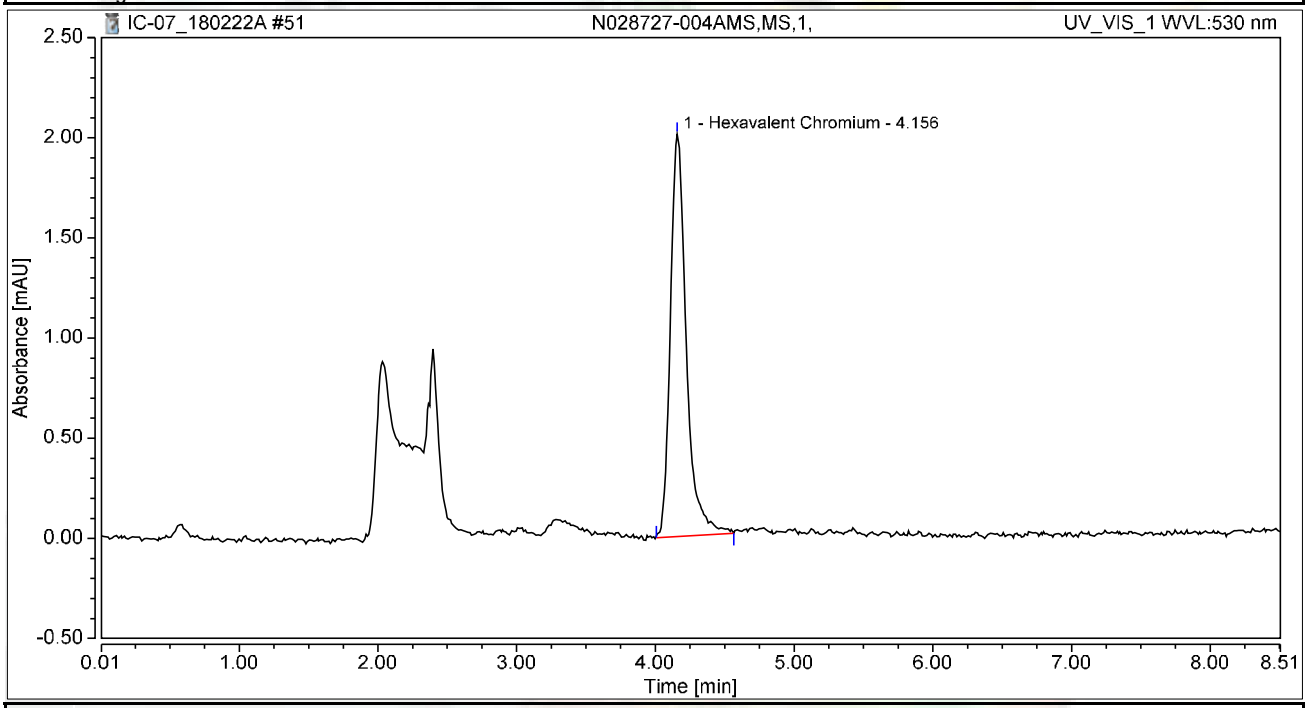
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

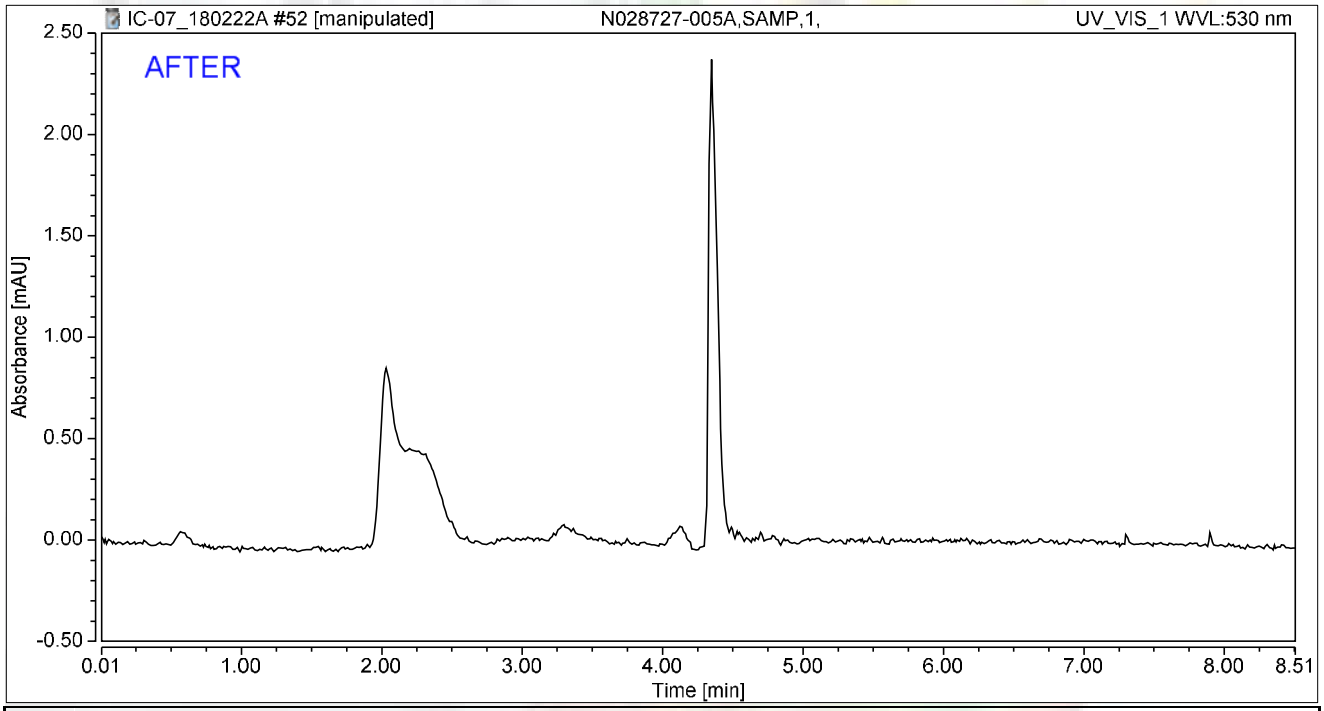
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	2.009	100.00	100.00	1.0706
Total:			**0.267**	**2.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 3/4/2018

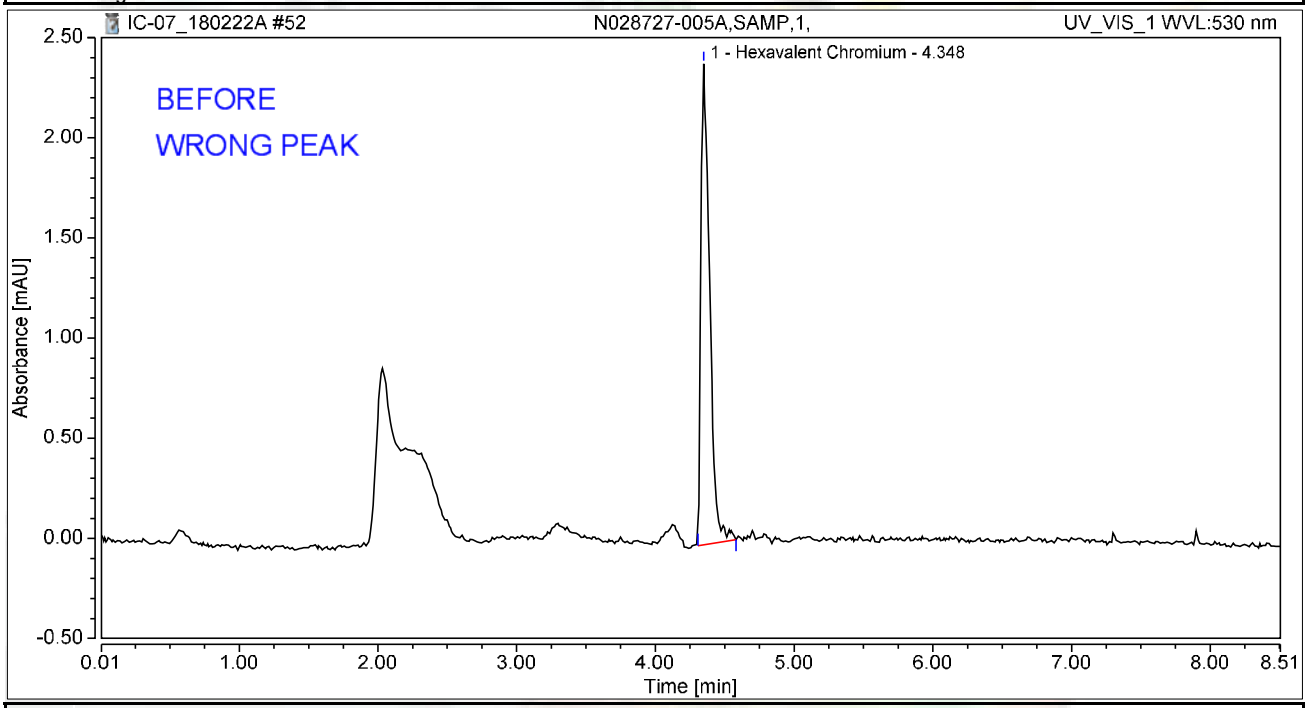
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.348	0.175	2.401	100.00	100.00	0.7024
Total:			**0.175**	**2.401**	**100.00**	**100.00**	

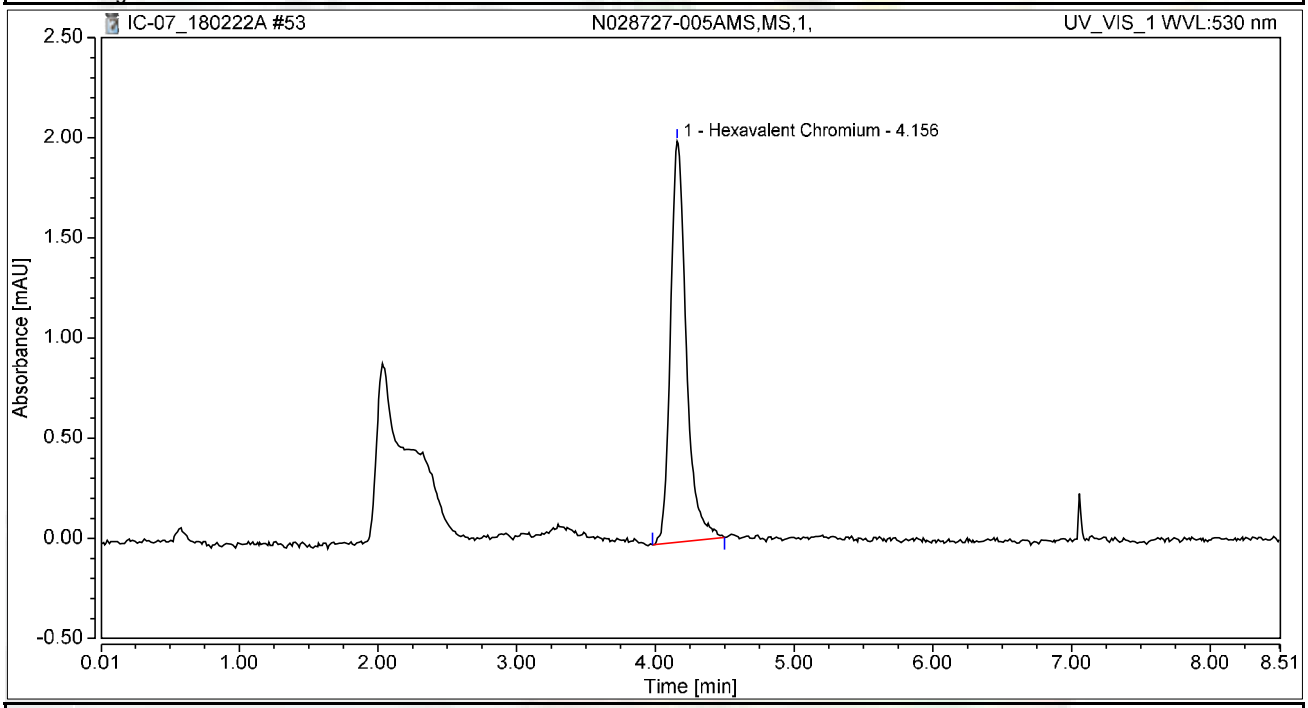
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	2.002	100.00	100.00	1.0557
Total:			**0.264**	**2.002**	**100.00**	**100.00**	

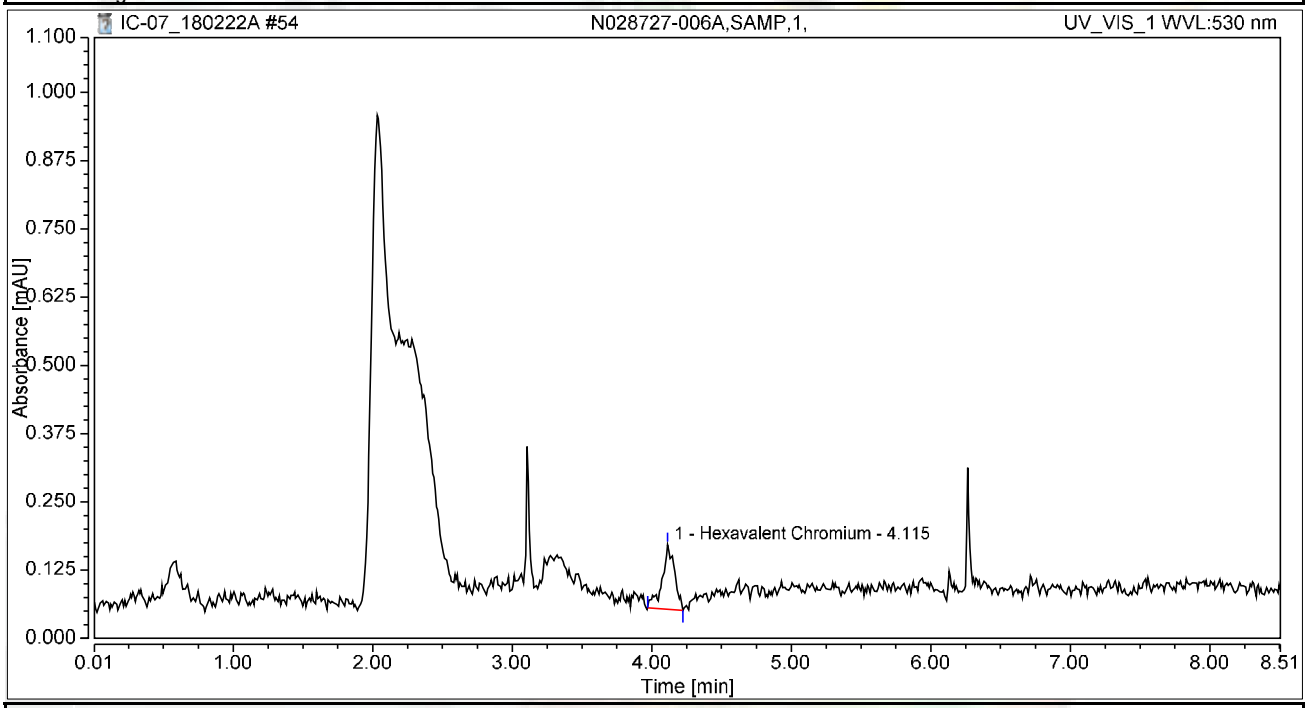
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

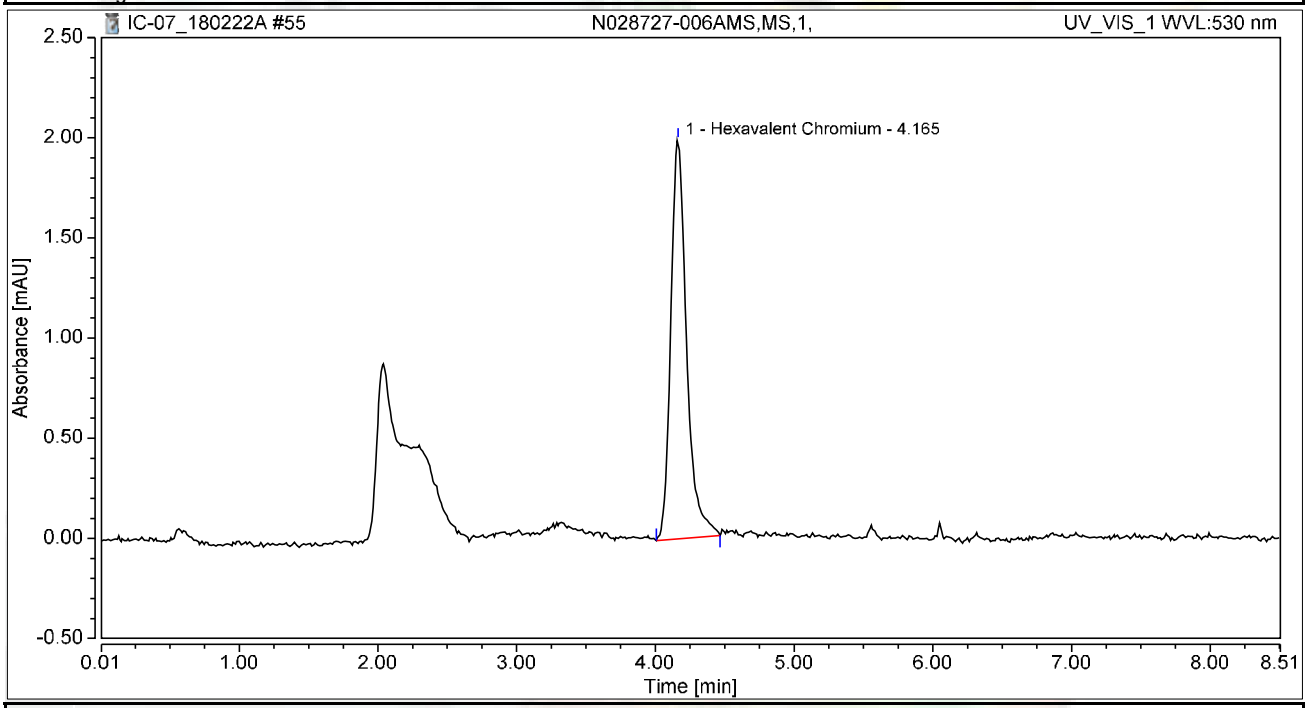
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.012	0.118	100.00	100.00	0.0488
Total:			**0.012**	**0.118**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

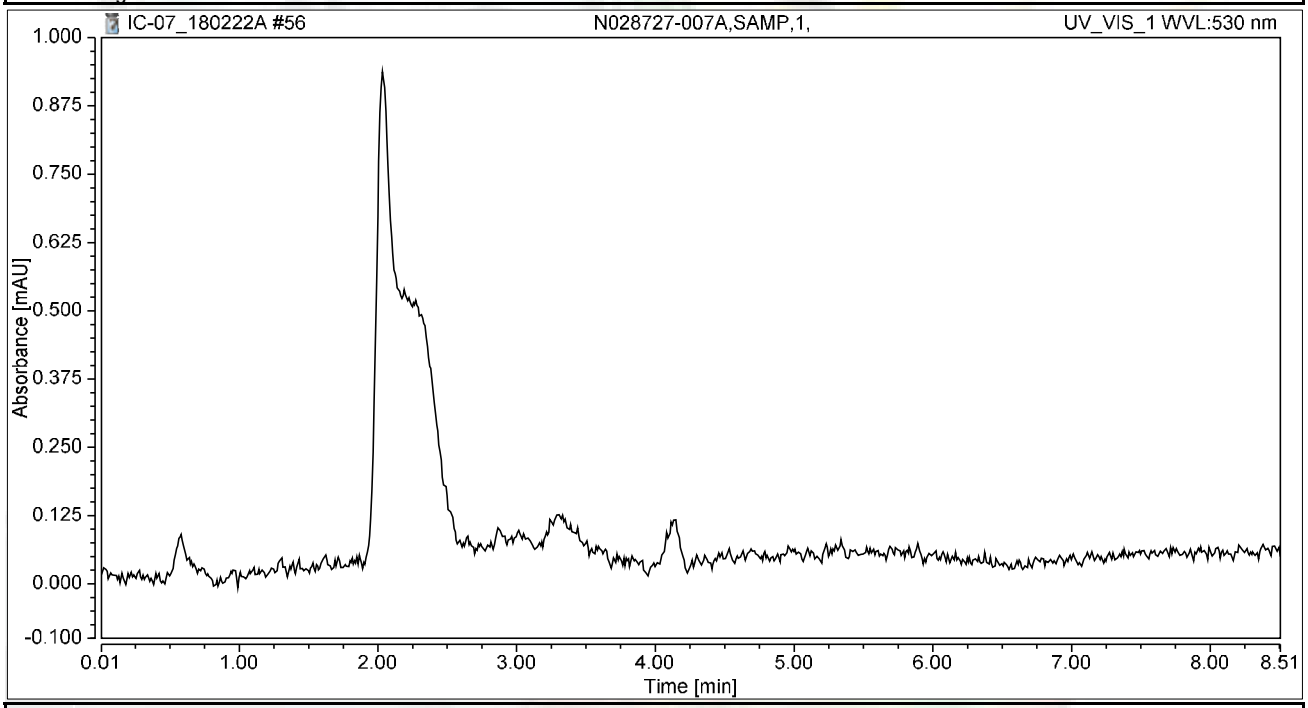
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.263	1.992	100.00	100.00	1.0519
Total:			**0.263**	**1.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

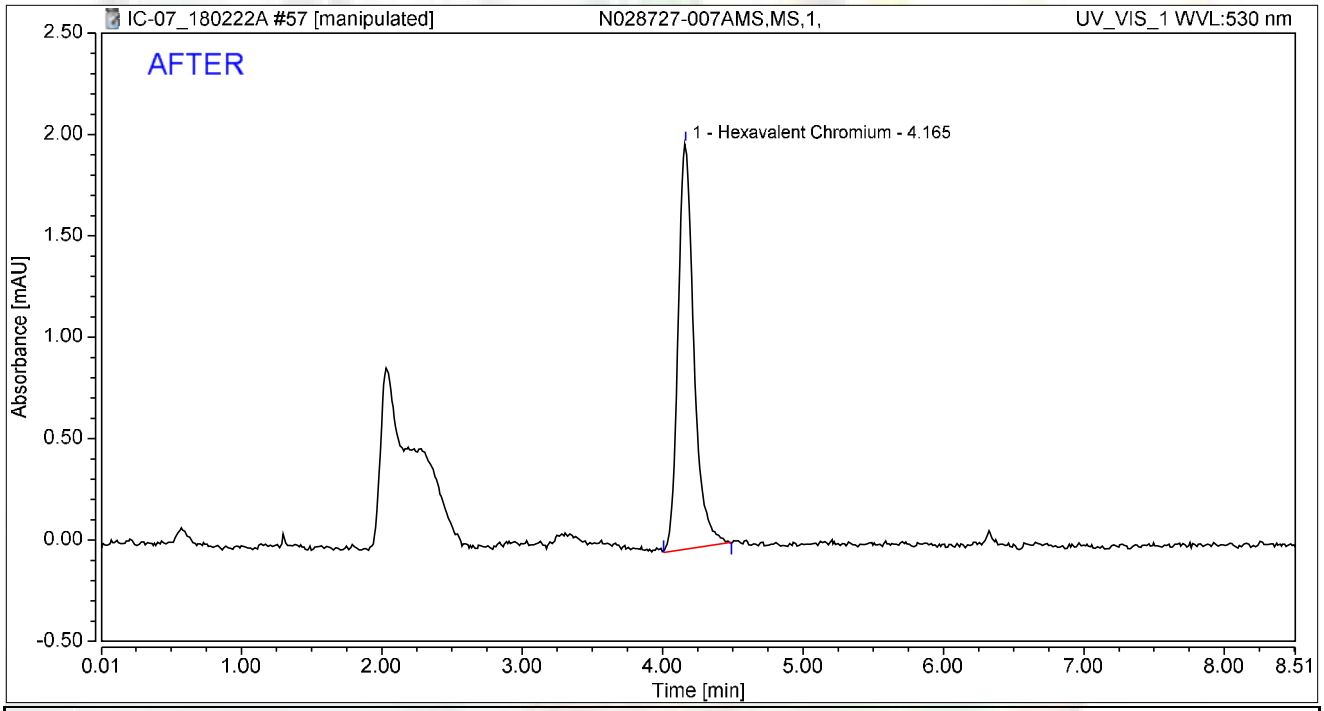
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.261	2.000	100.00	100.00	1.0452
Total:			**0.261**	**2.000**	**100.00**	**100.00**	

rba 3/4/2018

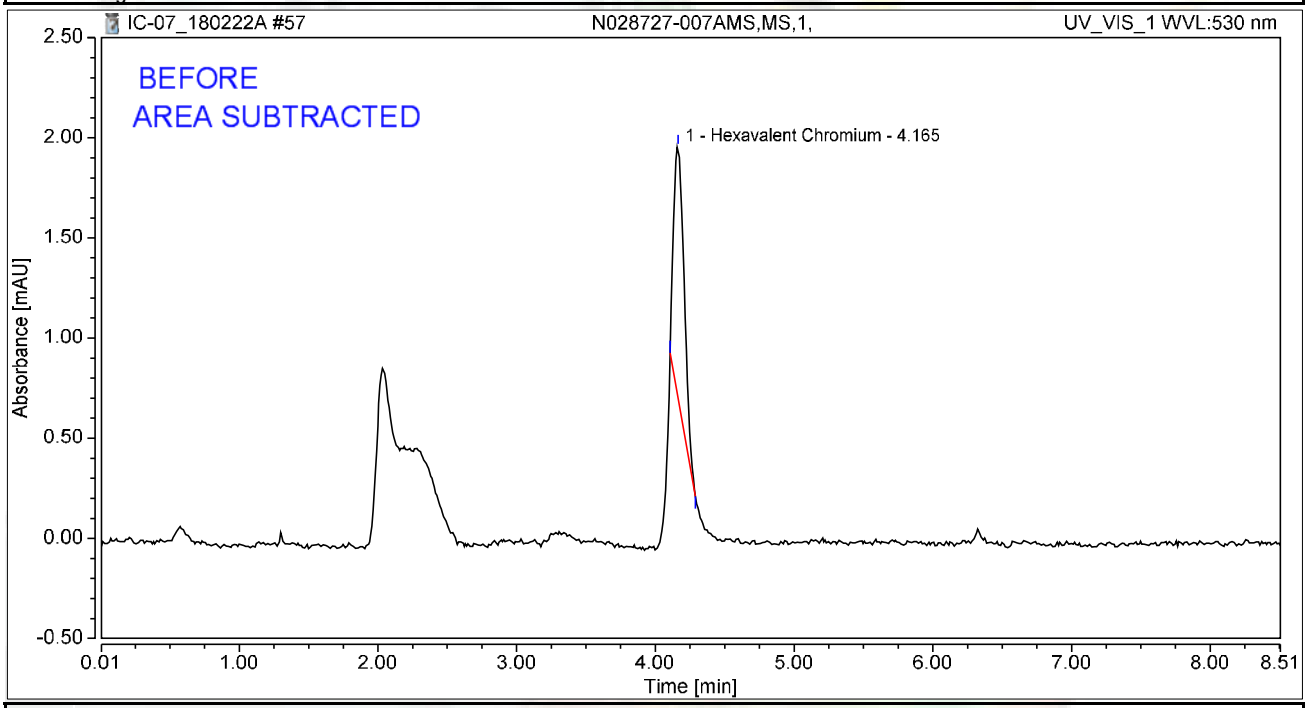
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.110	1.256	100.00	100.00	0.4396
Total:			**0.110**	**1.256**	**100.00**	**100.00**	

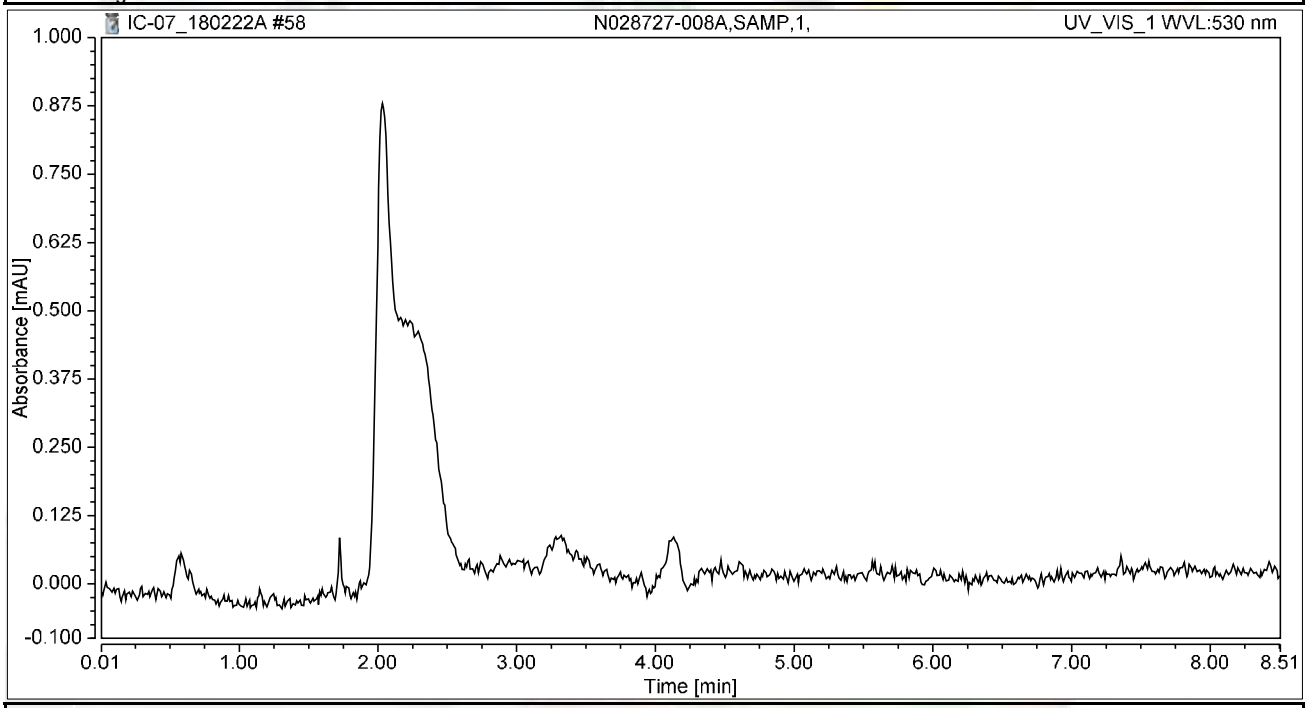
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

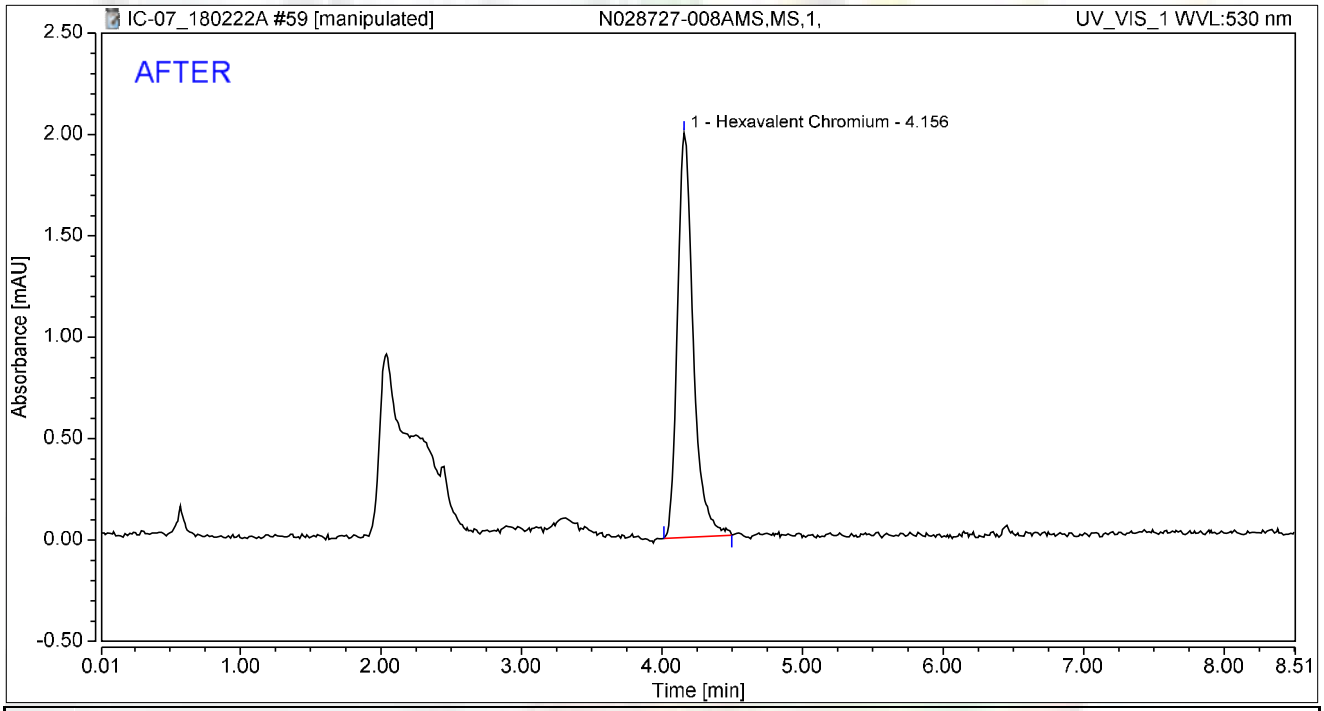
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.260	1.993	100.00	100.00	1.0407
Total:			**0.260**	**1.993**	**100.00**	**100.00**	

rba 3/4/2018

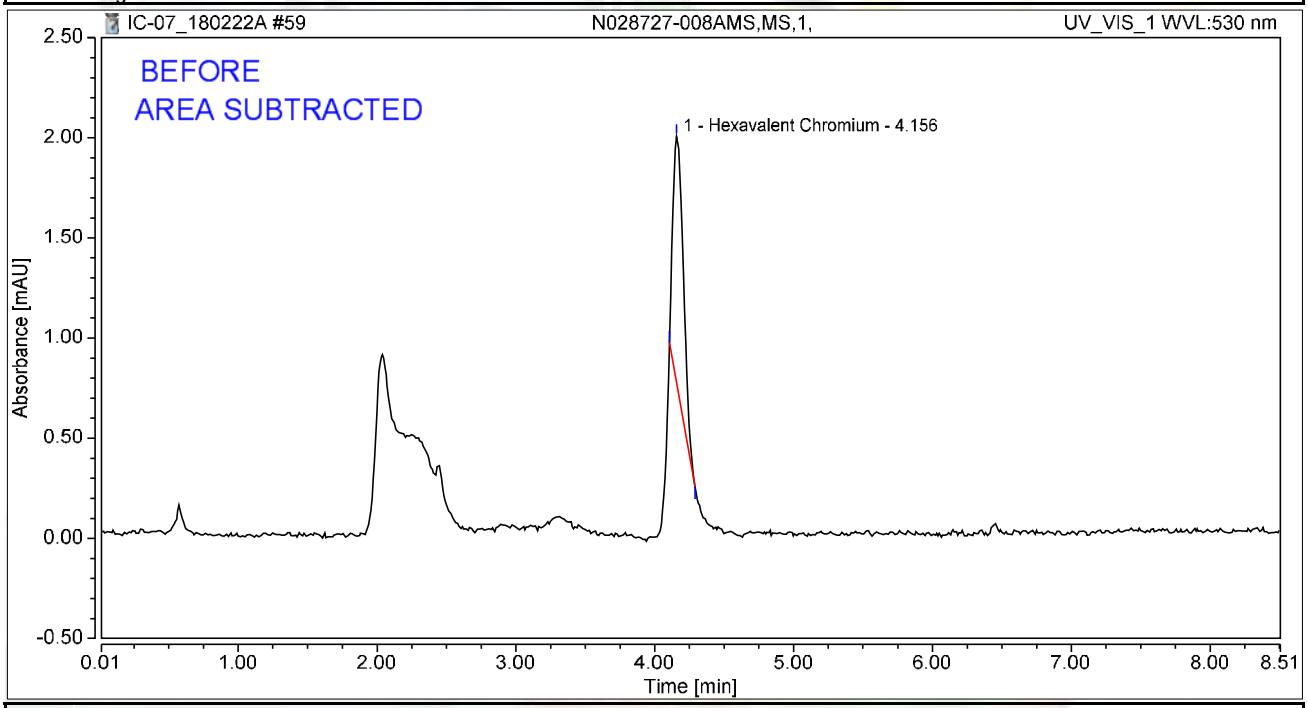
RLB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.109	1.225	100.00	100.00	0.4384
Total:			**0.109**	**1.225**	**100.00**	**100.00**	

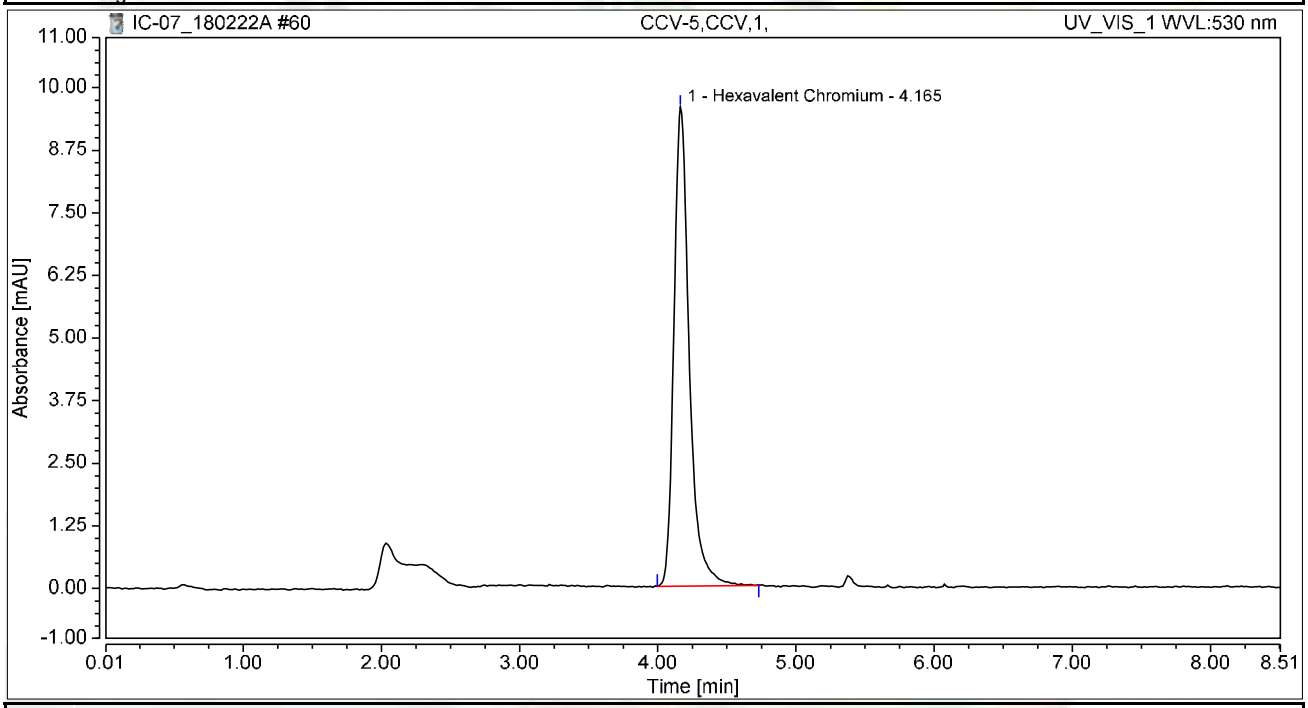
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

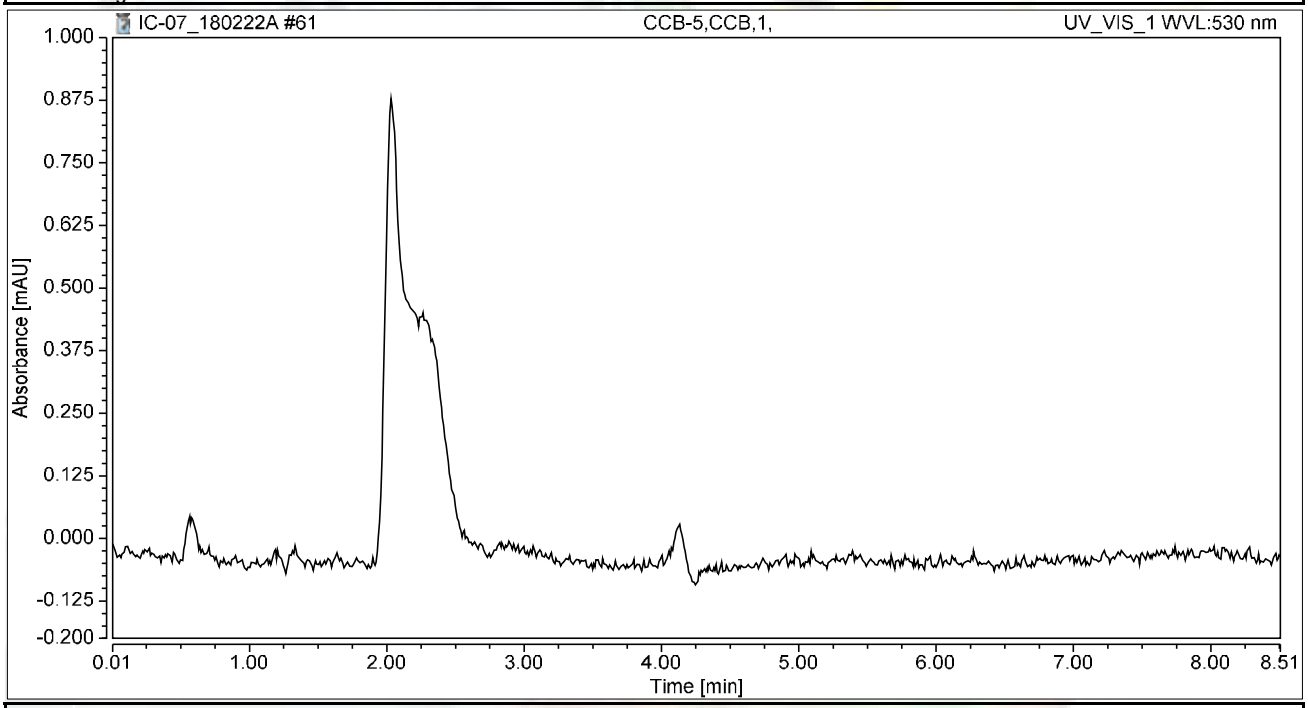
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.233	9.570	100.00	100.00	4.9408
Total:			**1.233**	**9.570**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

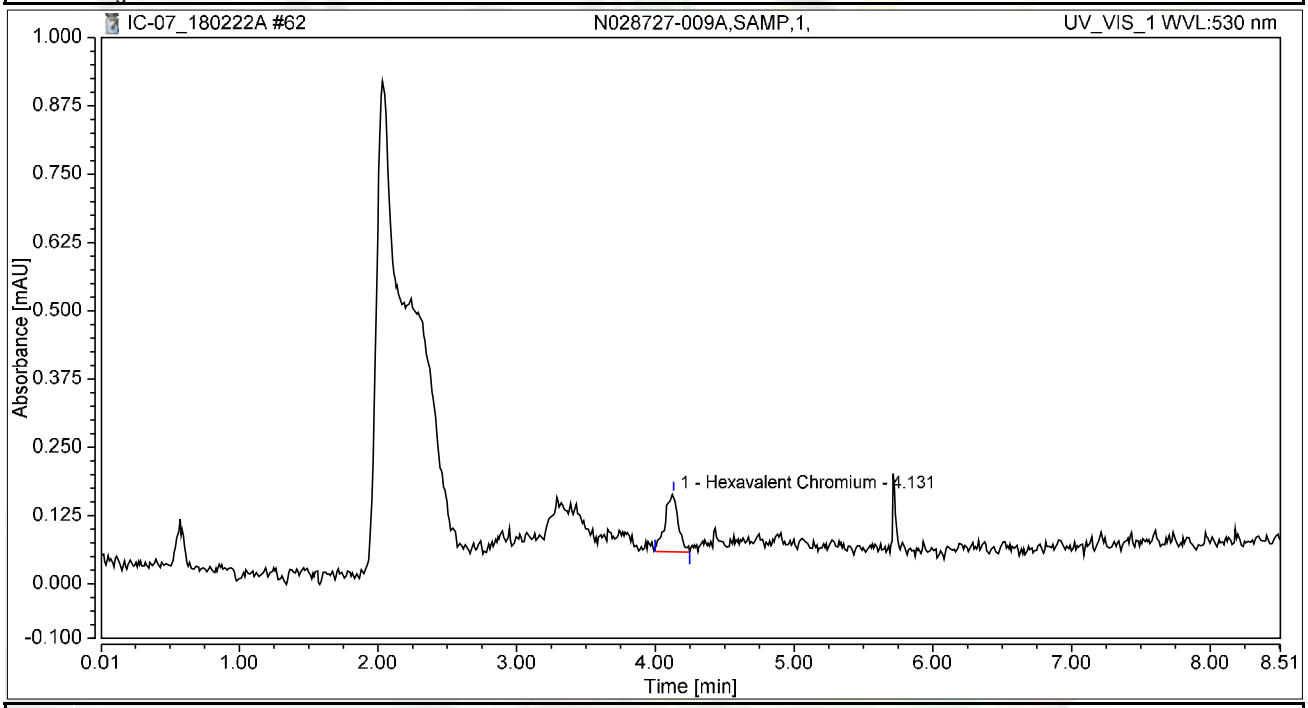
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

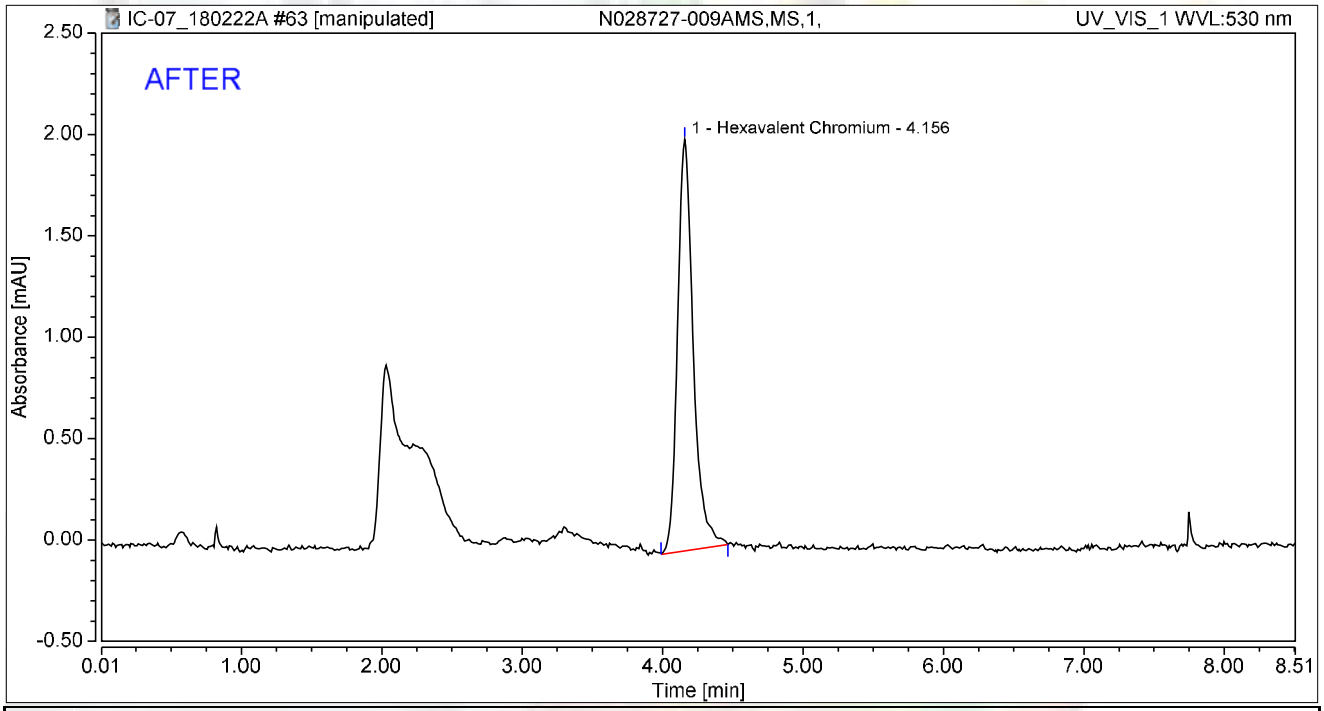
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.012	0.107	100.00	100.00	0.0465
Total:			**0.012**	**0.107**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.263	2.030	100.00	100.00	1.0545
Total:			**0.263**	**2.030**	**100.00**	**100.00**	

rba 3/4/2018

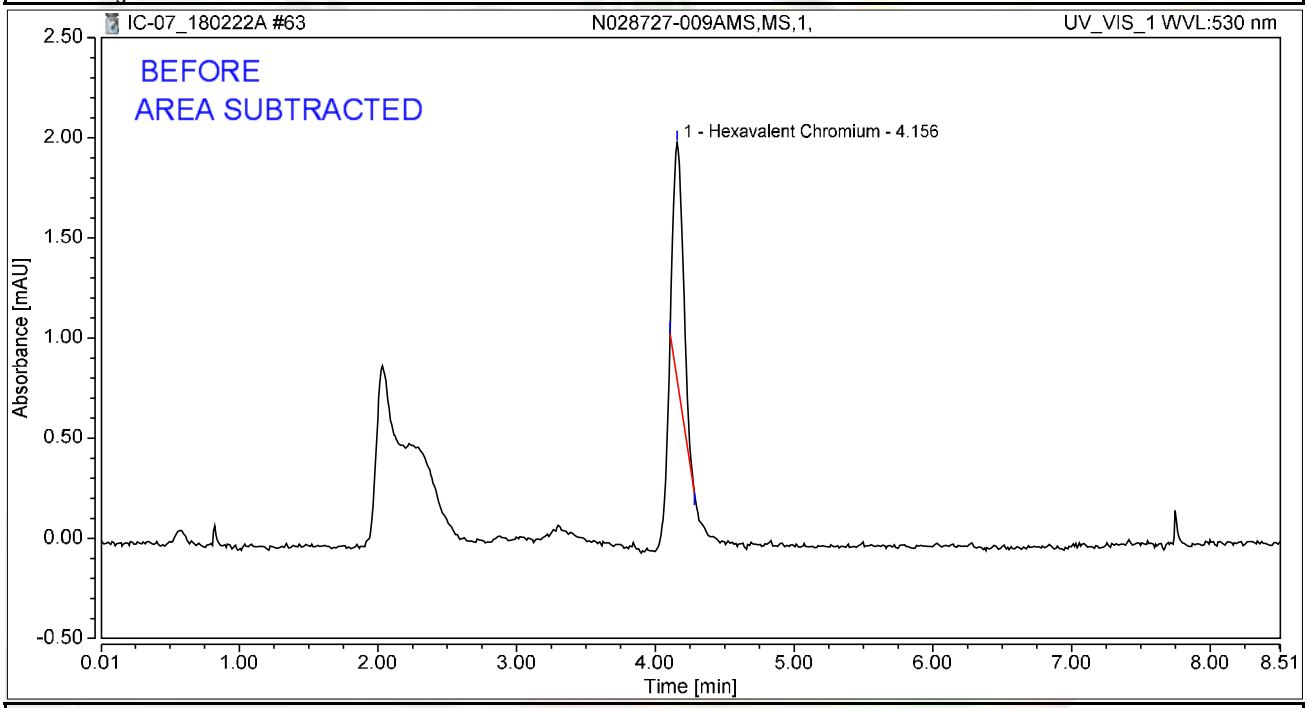
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.099	1.181	100.00	100.00	0.3978
Total:			**0.099**	**1.181**	**100.00**	**100.00**	

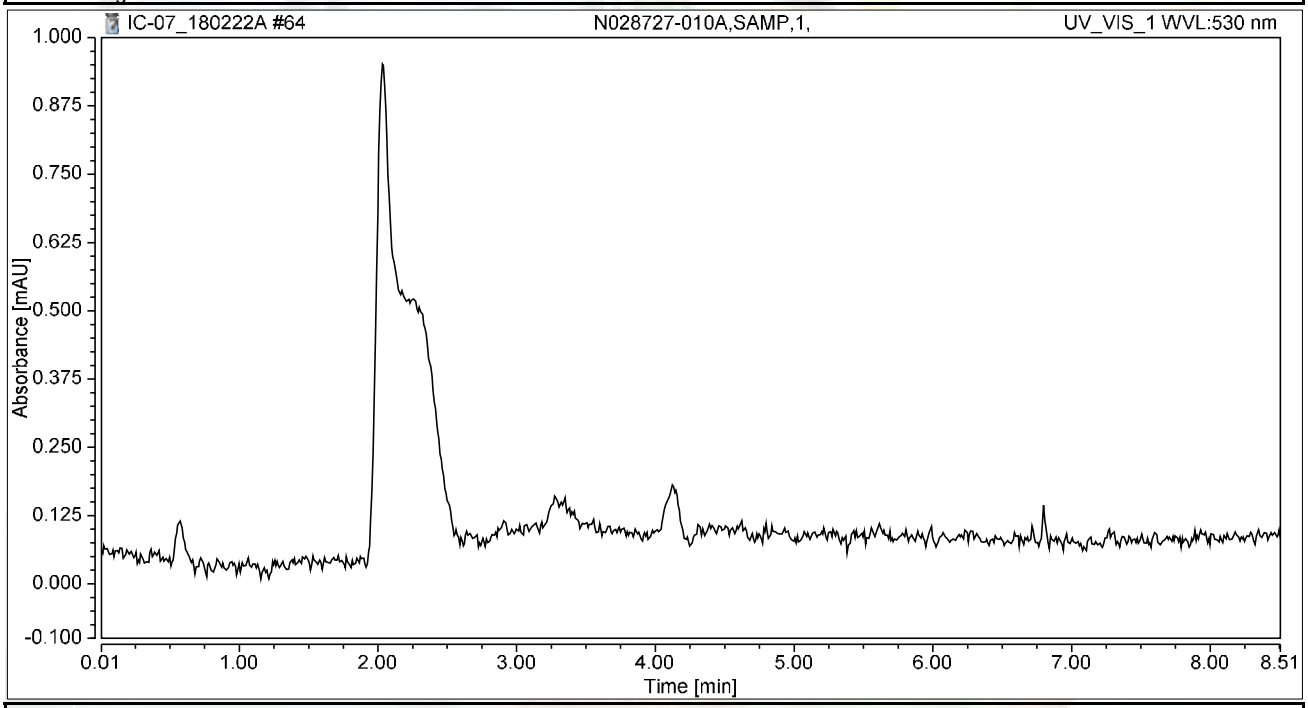
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

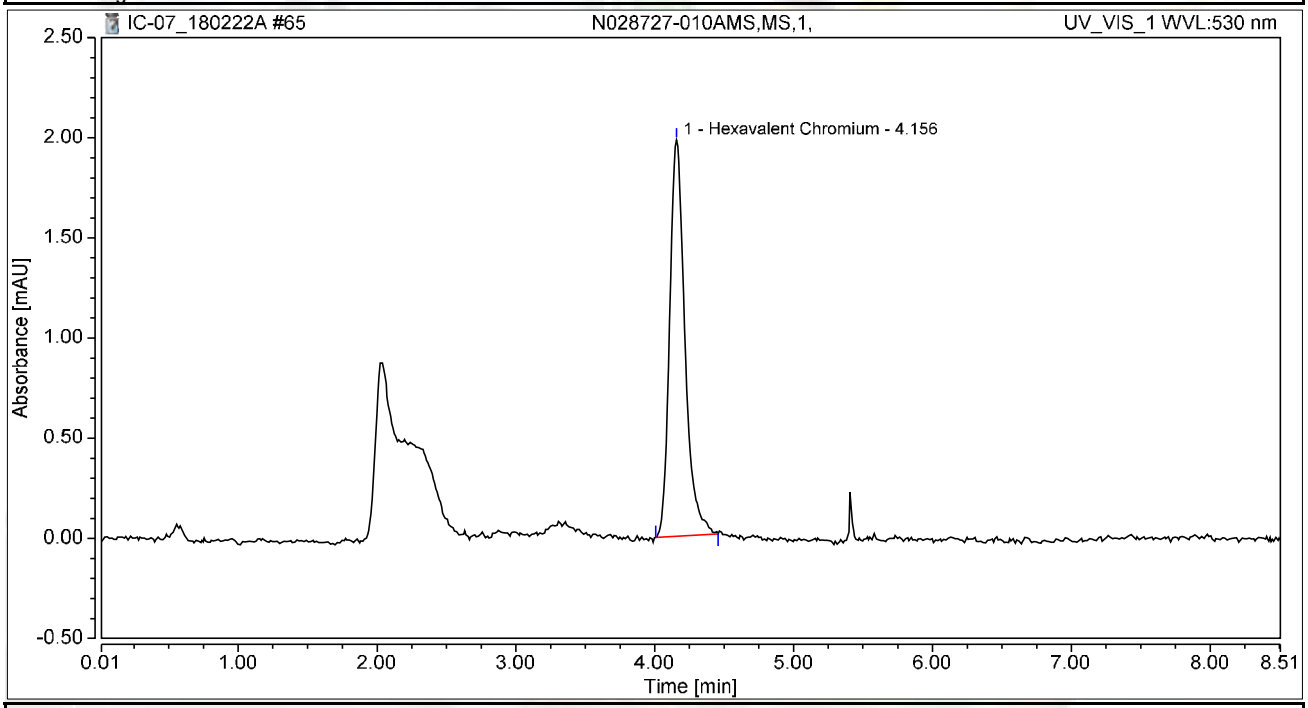
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

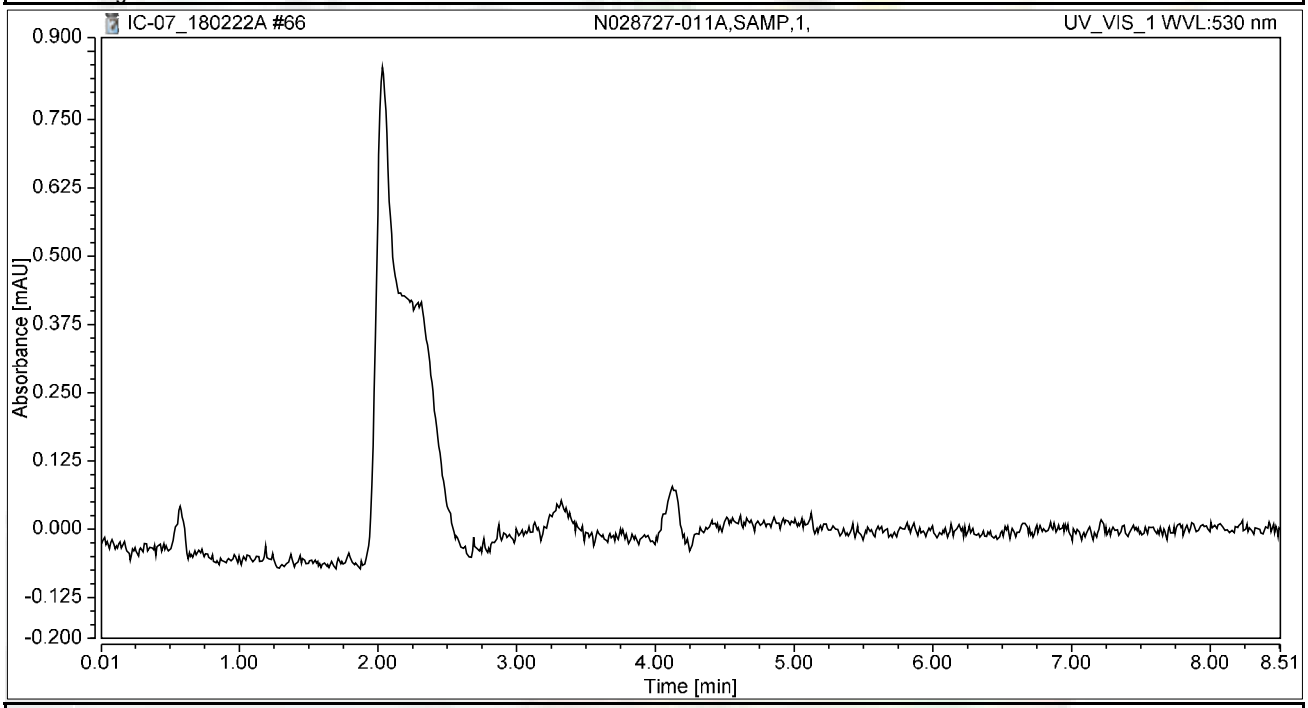
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.253	1.978	100.00	100.00	1.0137
Total:			**0.253**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

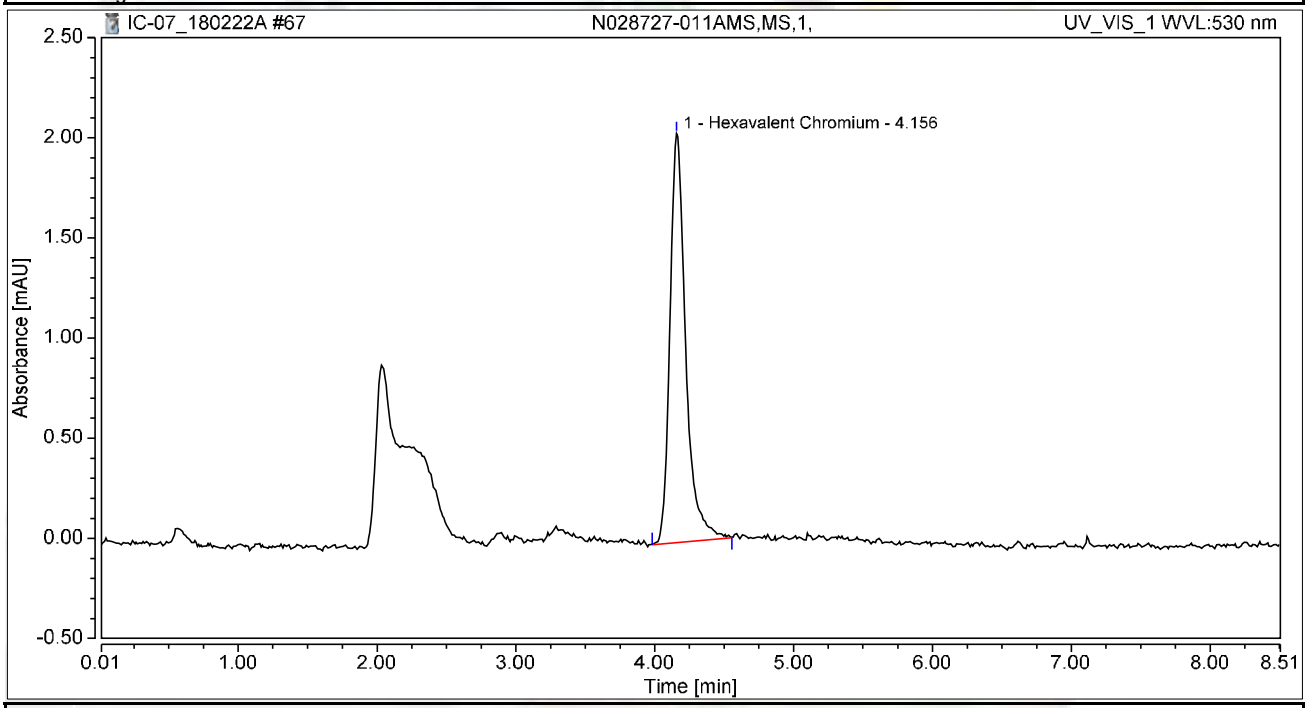
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

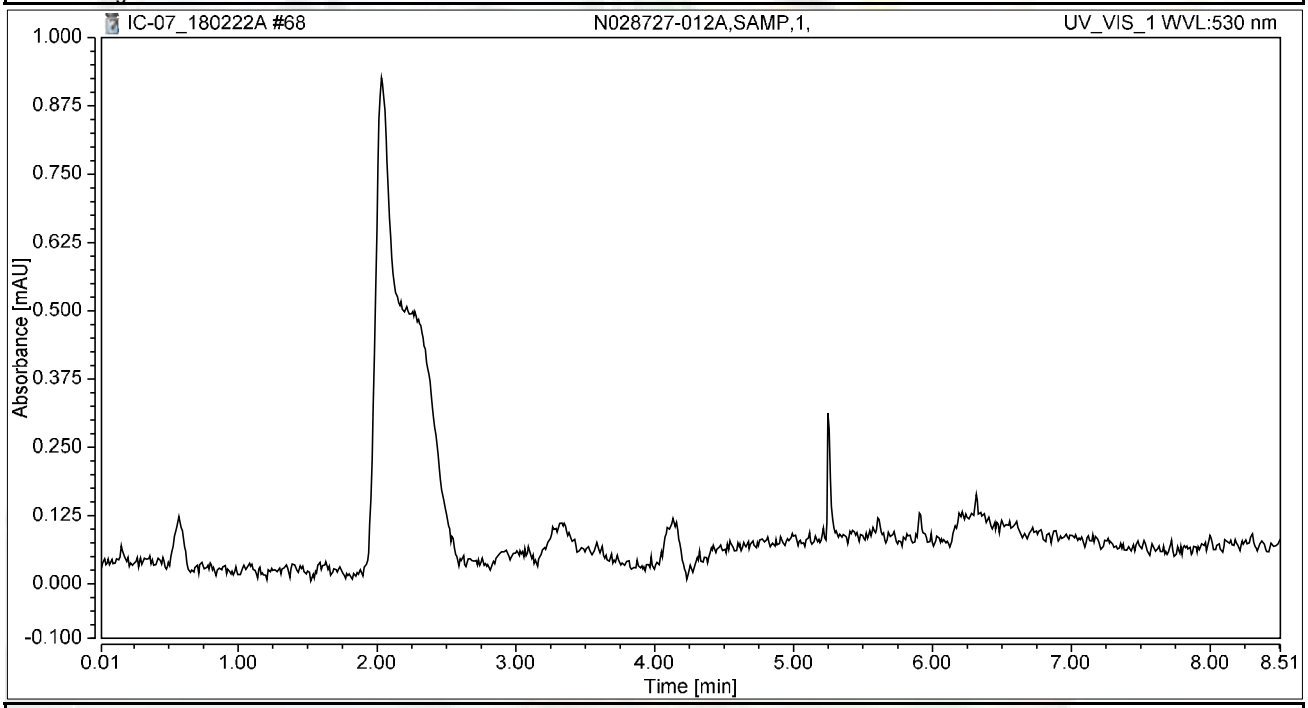
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.269	2.042	100.00	100.00	1.0782
Total:			**0.269**	**2.042**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-012A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

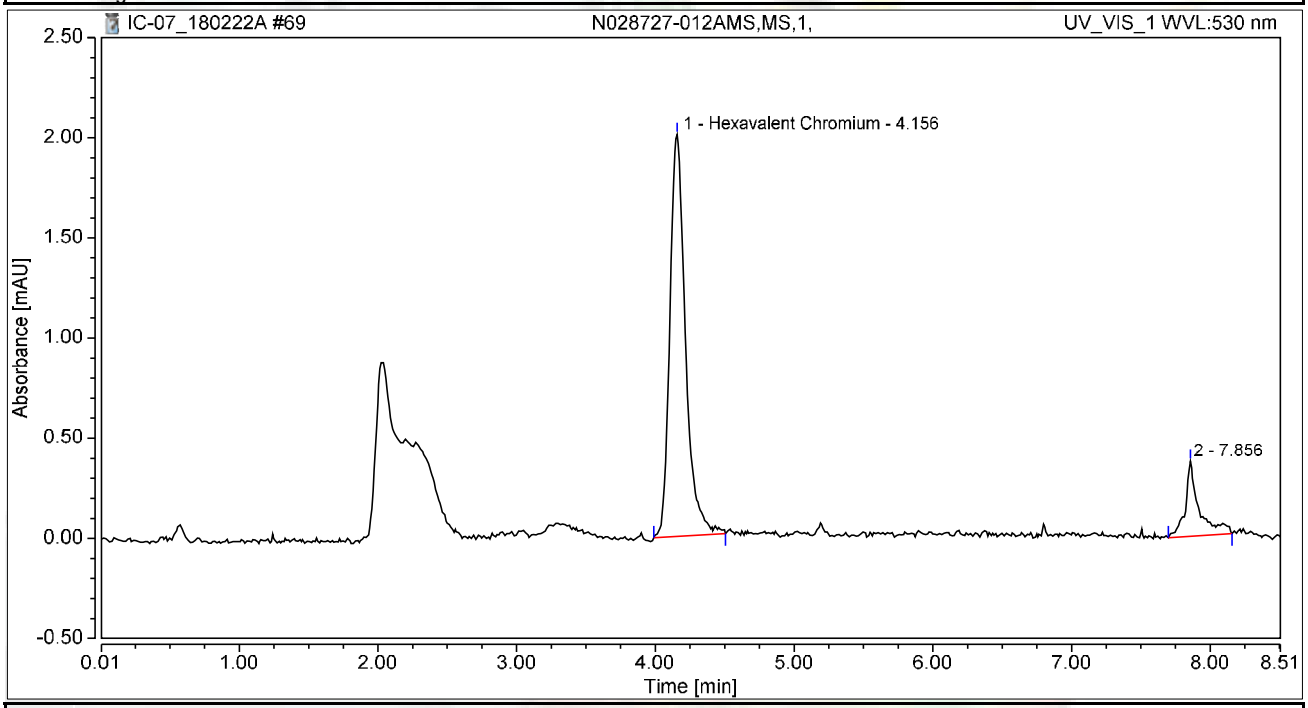
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

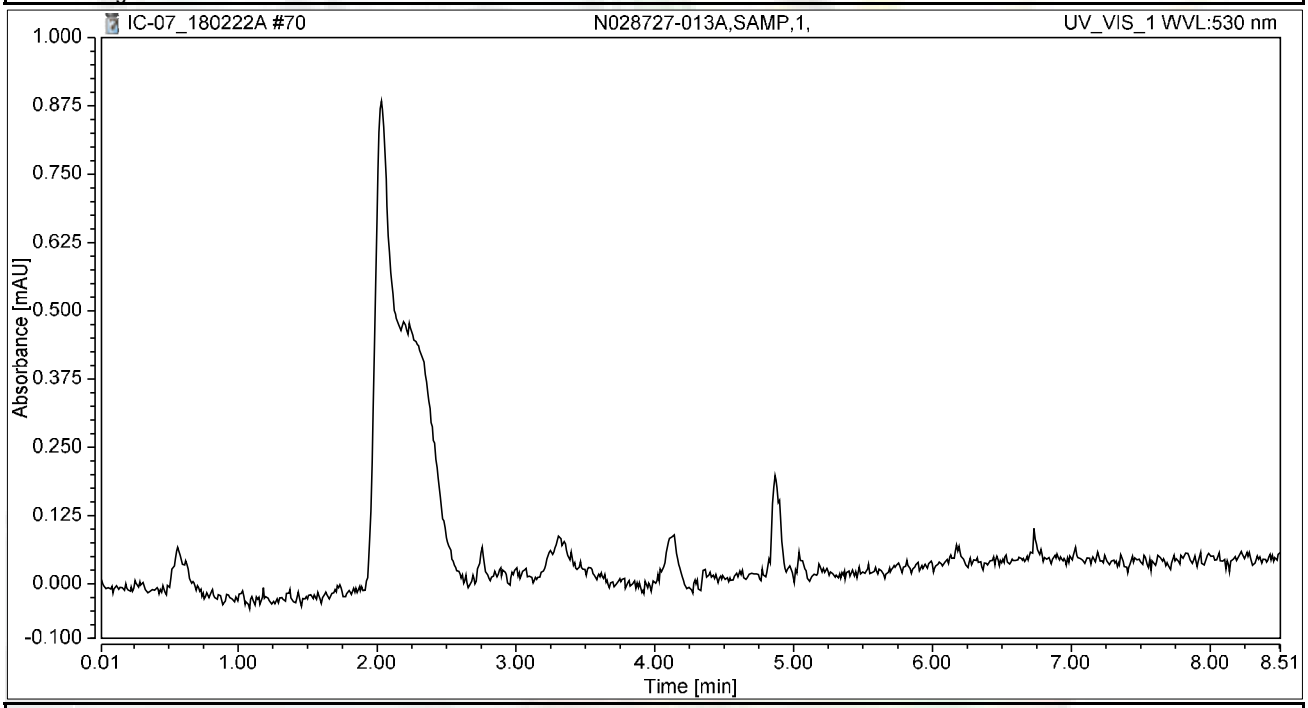
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.262	2.007	85.55	84.23	1.0486
2		7.856	0.044	0.376	14.45	15.77	n.a.
Total:			**0.306**	**2.383**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

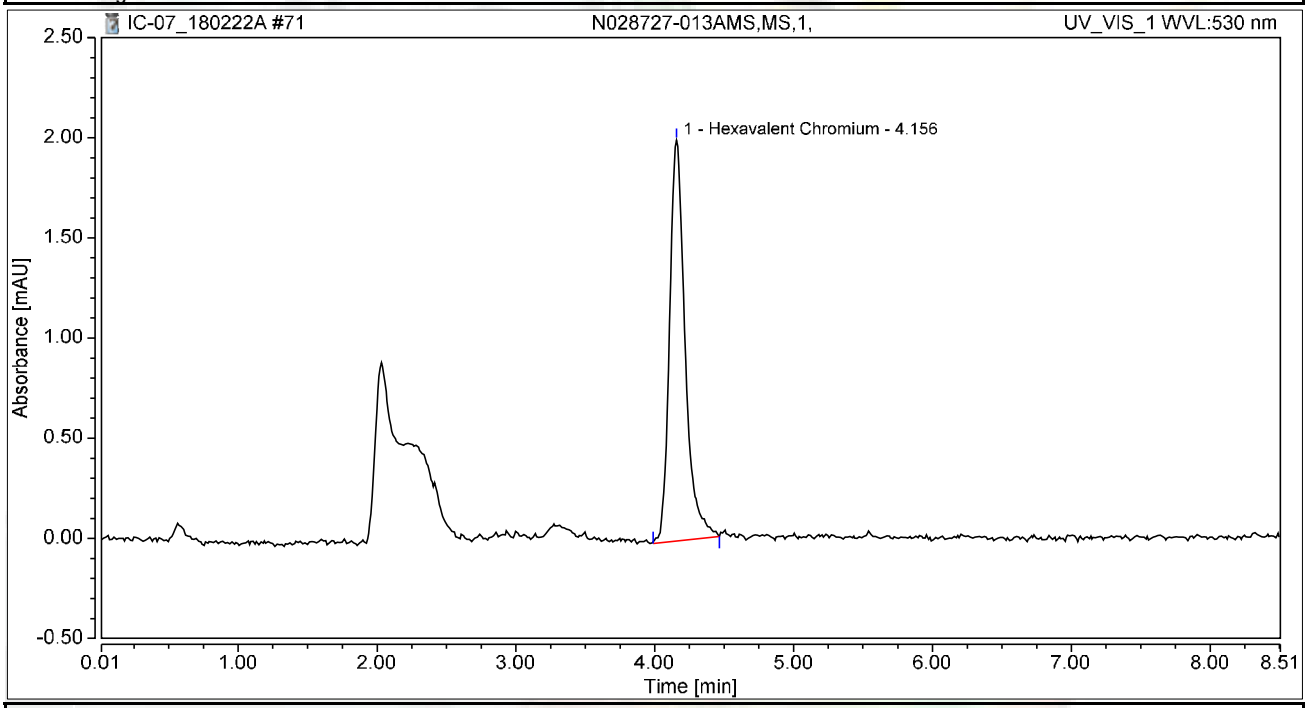
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-013AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

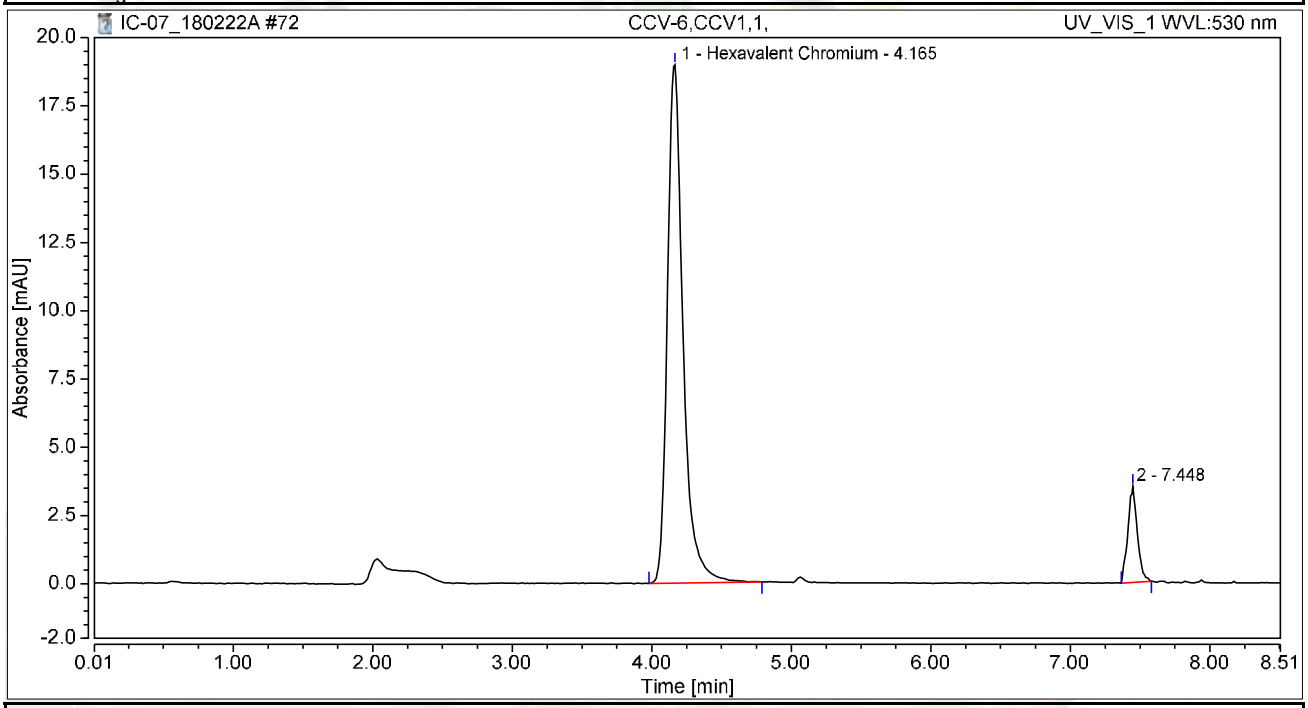
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.261	2.001	100.00	100.00	1.0456
Total:			**0.261**	**2.001**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

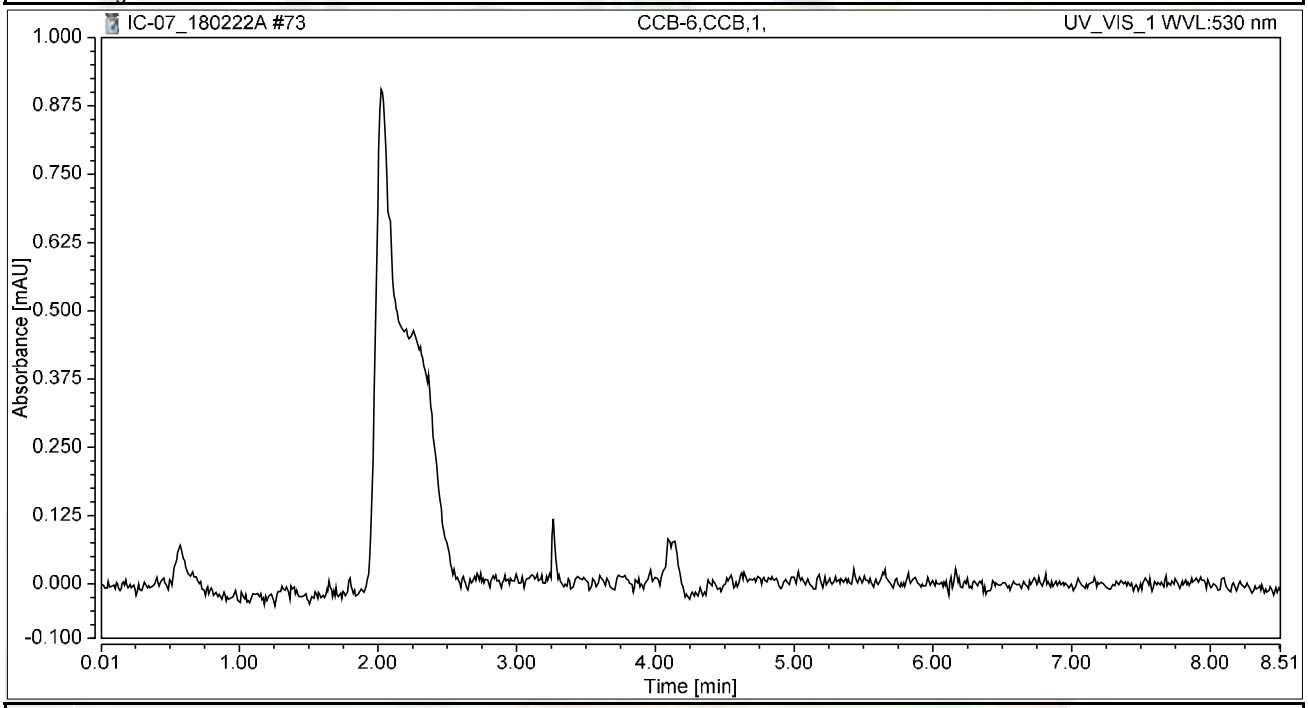
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.468	18.980	89.92	84.33	9.8875
2		7.448	0.277	3.526	10.08	15.67	n.a.
Total:			**2.745**	**22.506**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

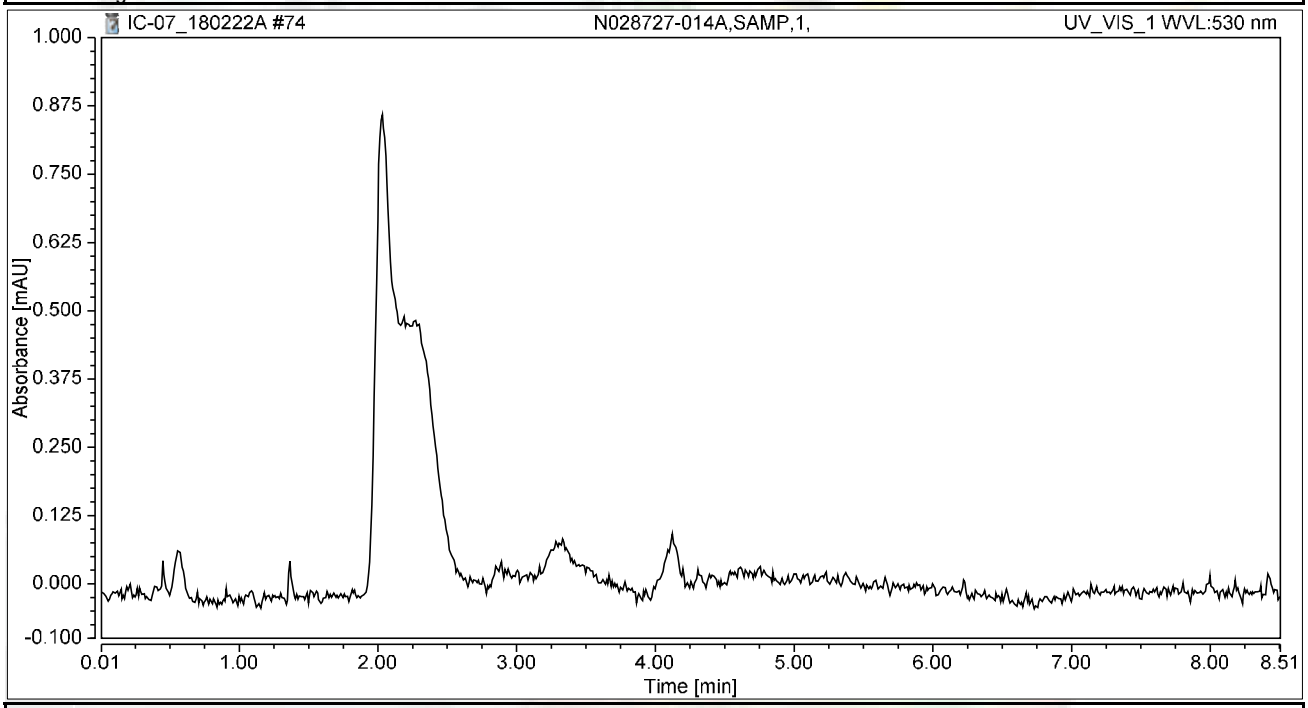
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

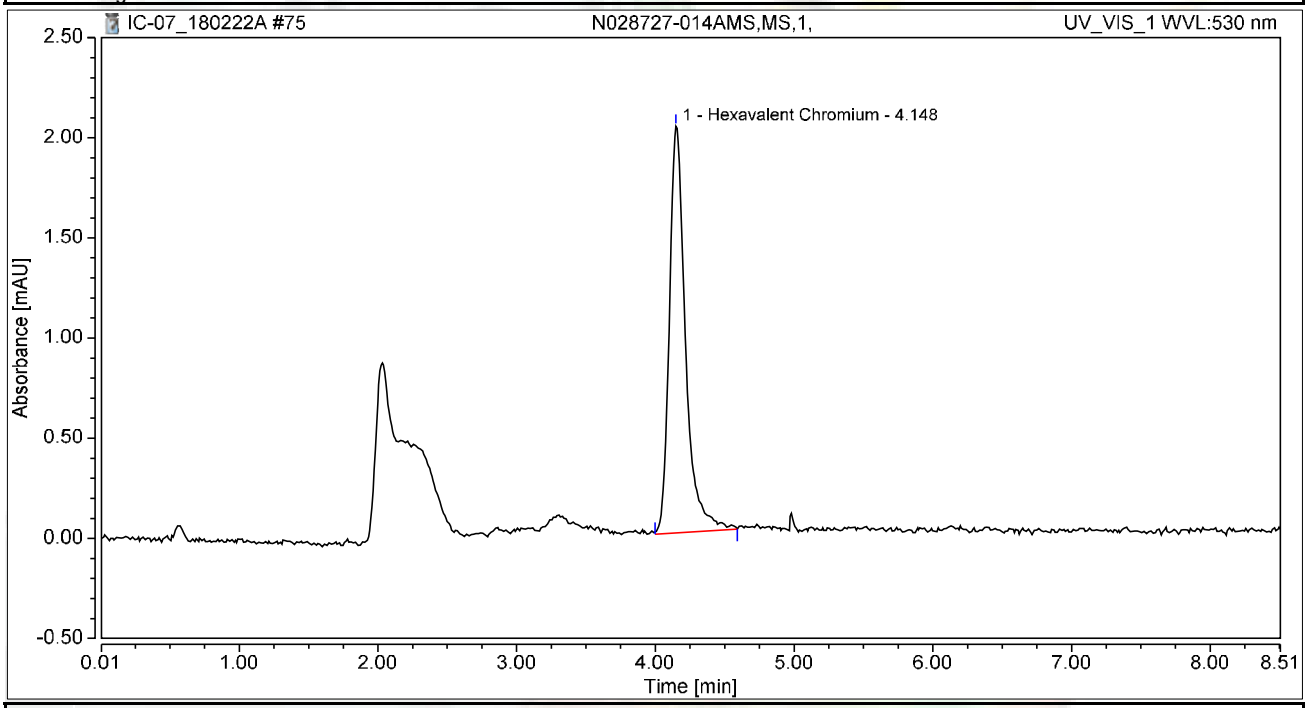
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

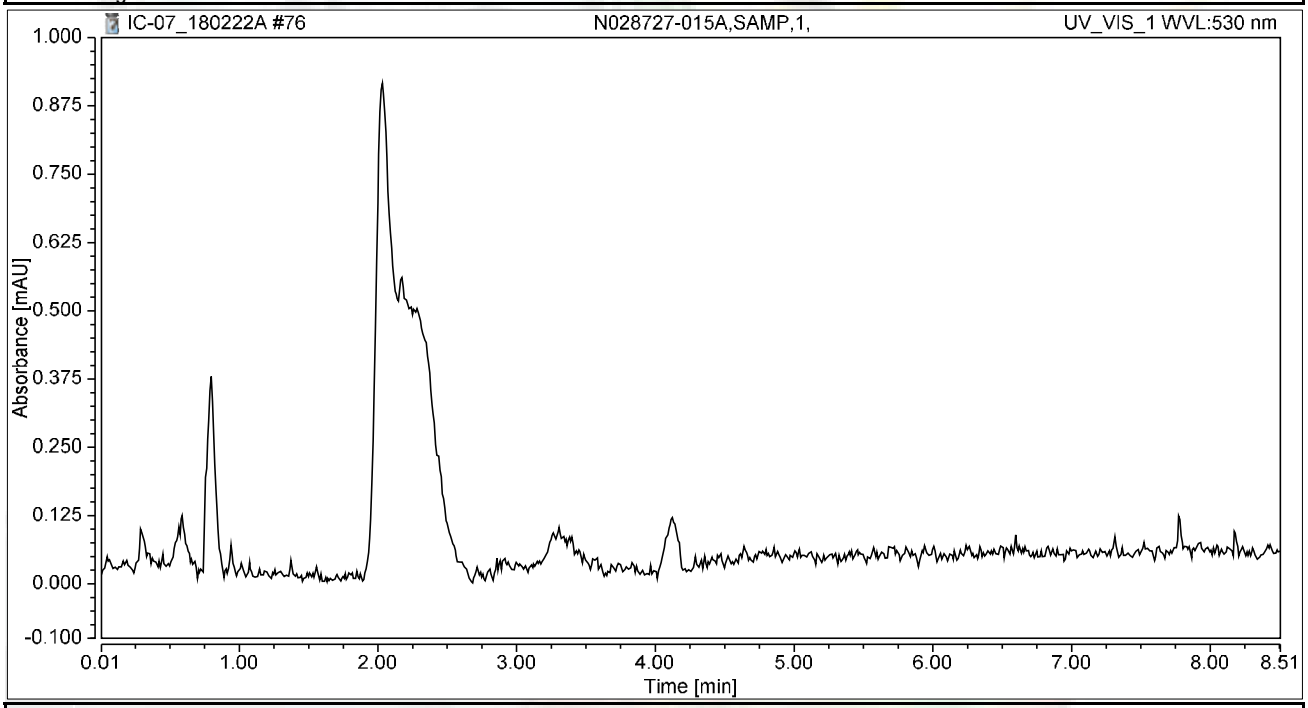
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.274	2.031	100.00	100.00	1.0975
Total:			**0.274**	**2.031**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

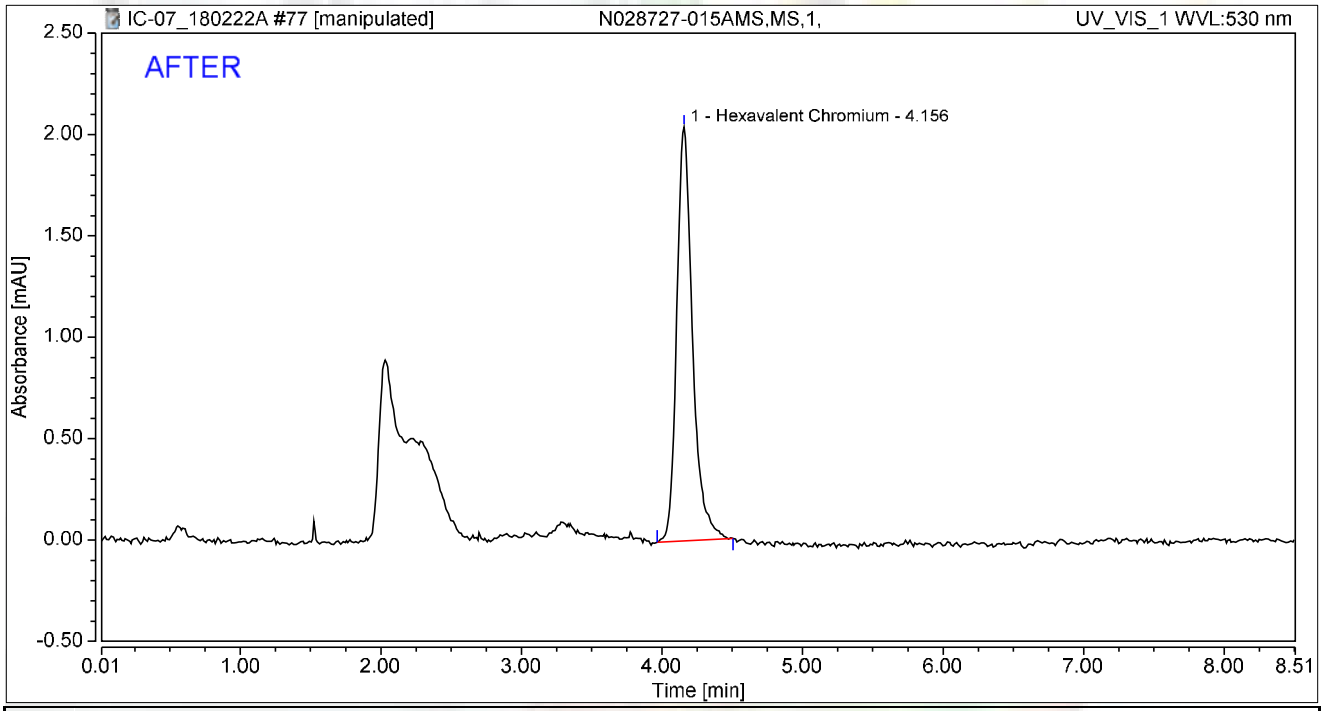
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-015AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.265	2.042	100.00	100.00	1.0631
Total:			**0.265**	**2.042**	**100.00**	**100.00**	

rba 3/4/2018

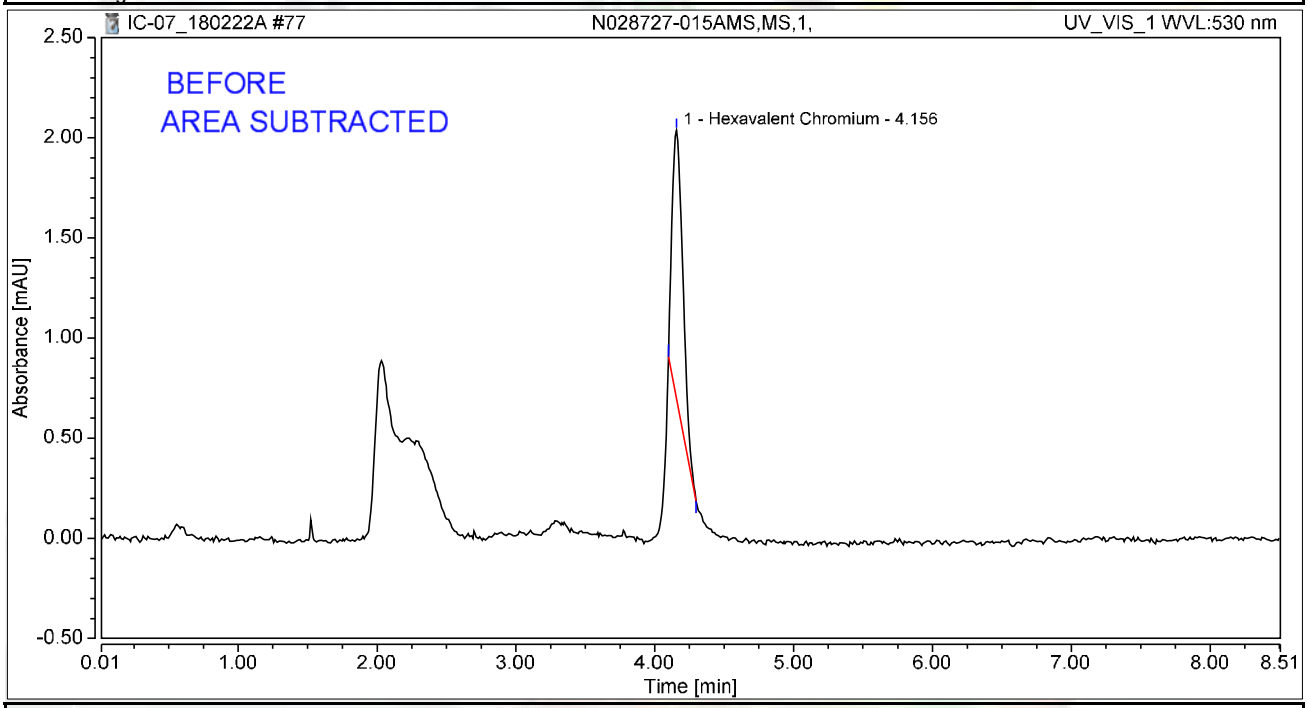
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-015AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.121	1.341	100.00	100.00	0.4845
Total:			**0.121**	**1.341**	**100.00**	**100.00**	

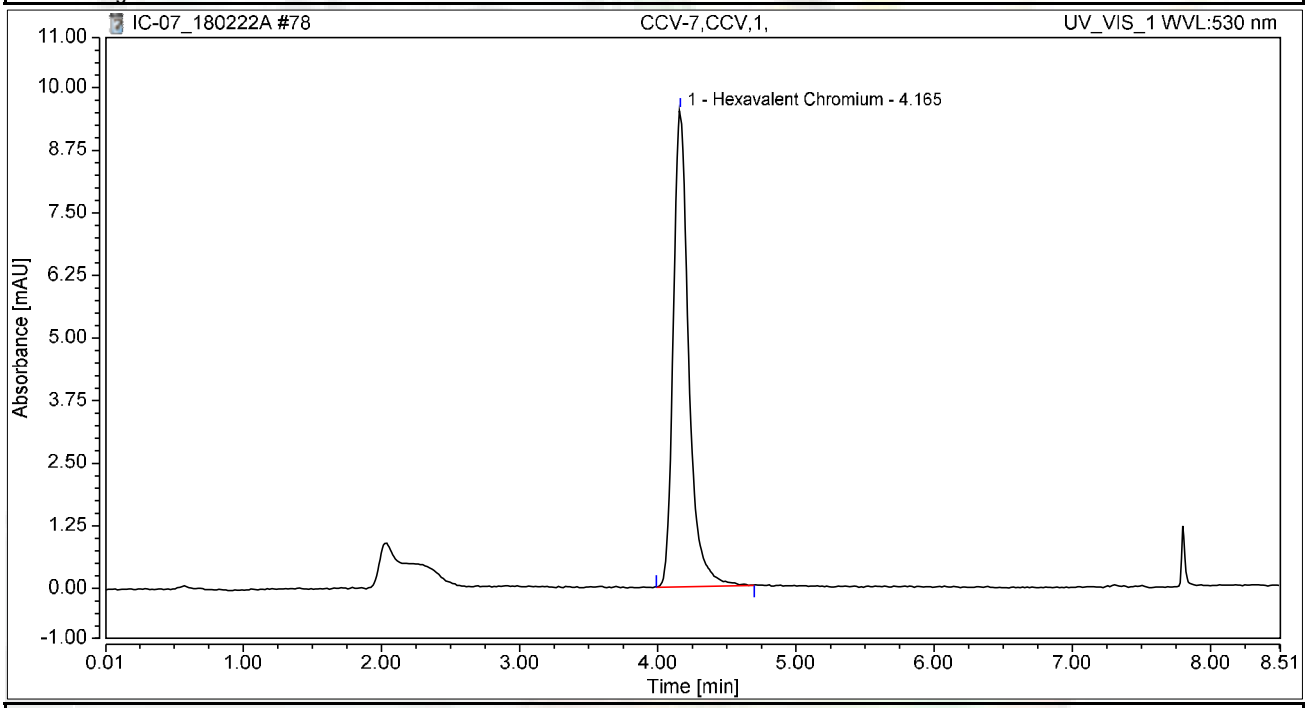
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

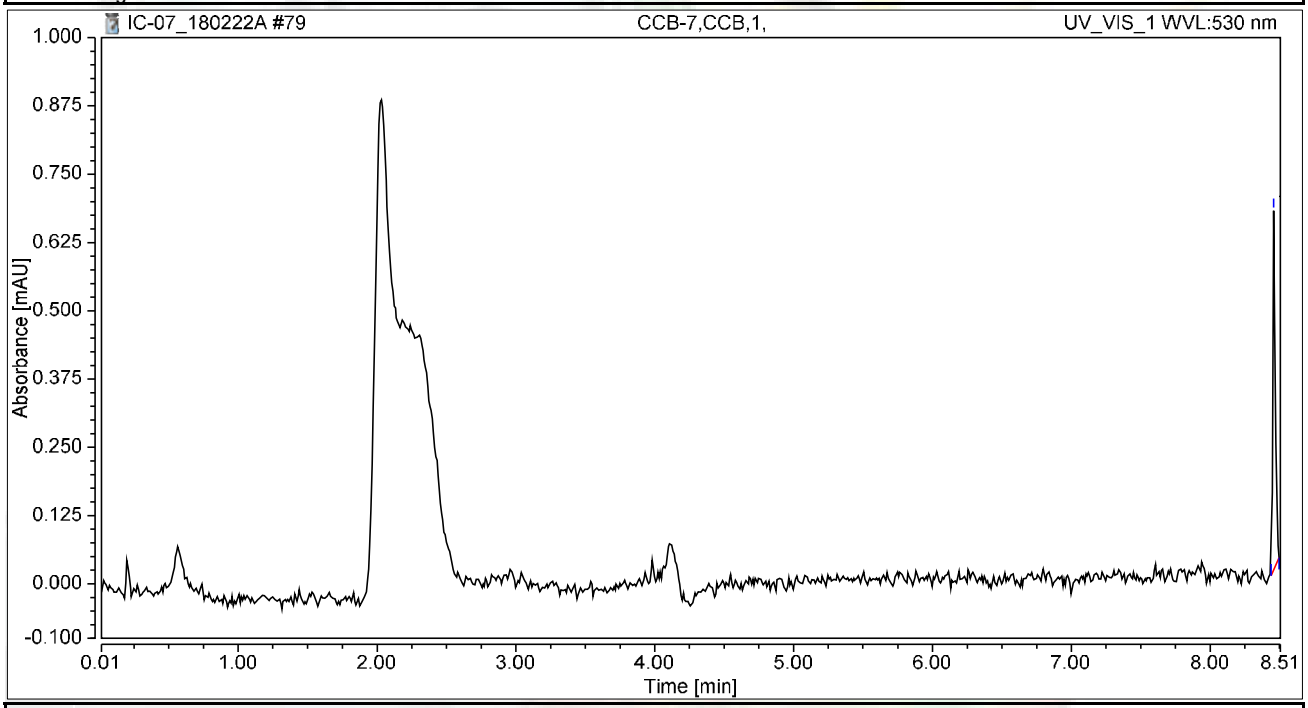
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.234	9.516	100.00	100.00	4.9423
Total:			**1.234**	**9.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

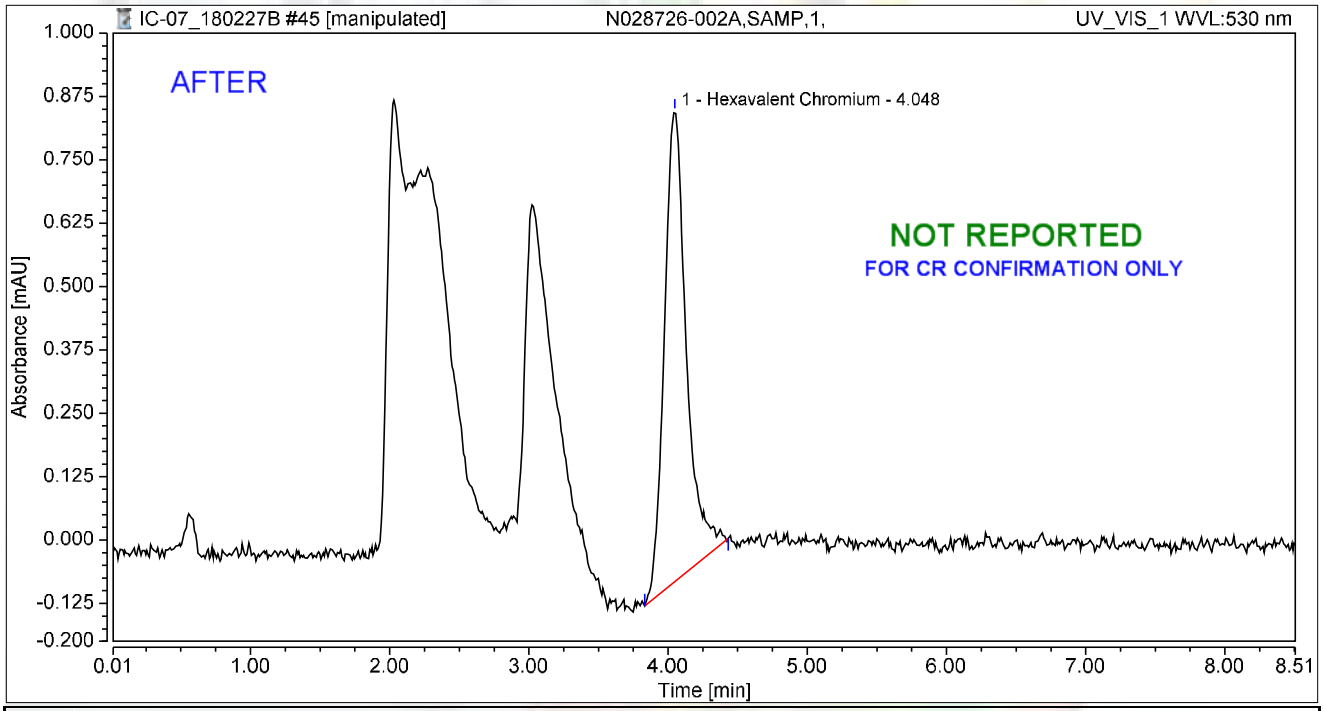
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.456	0.013	0.659	100.00	100.00	n.a.
Total:			**0.013**	**0.659**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.170	0.928	100.00	100.00	0.6826
Total:			**0.170**	**0.928**	**100.00**	**100.00**	

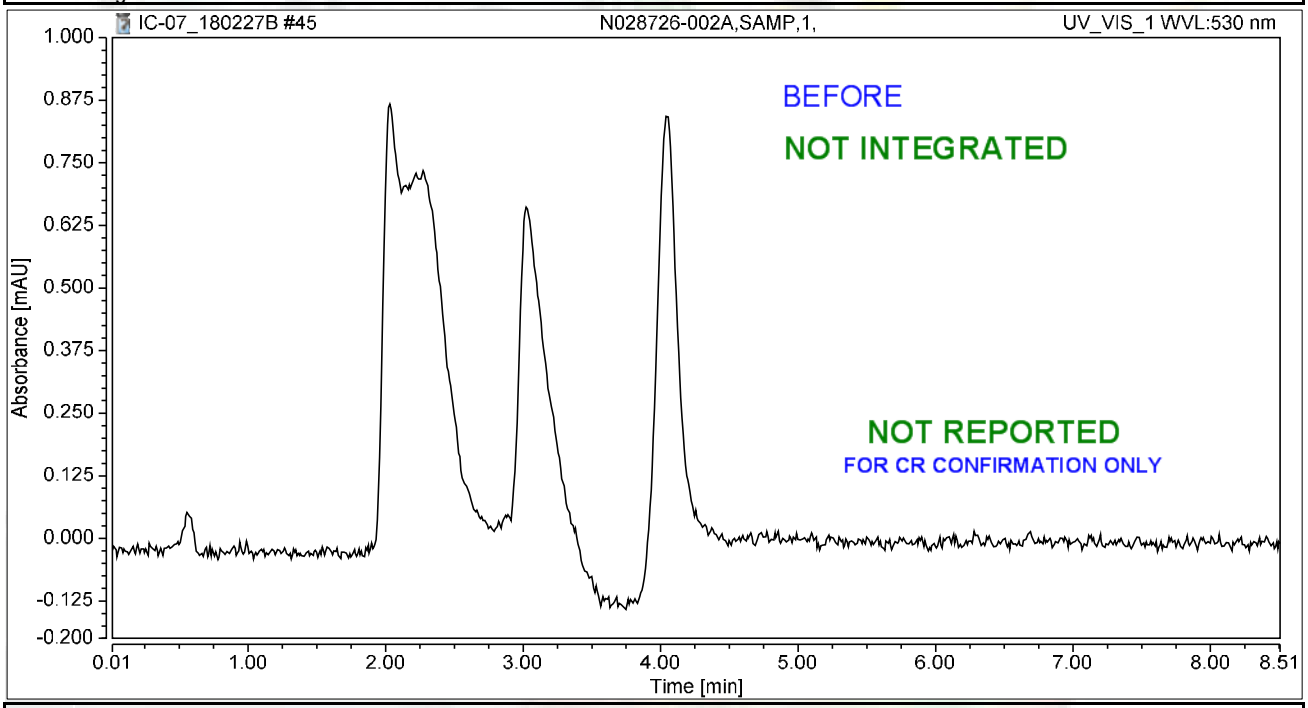
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

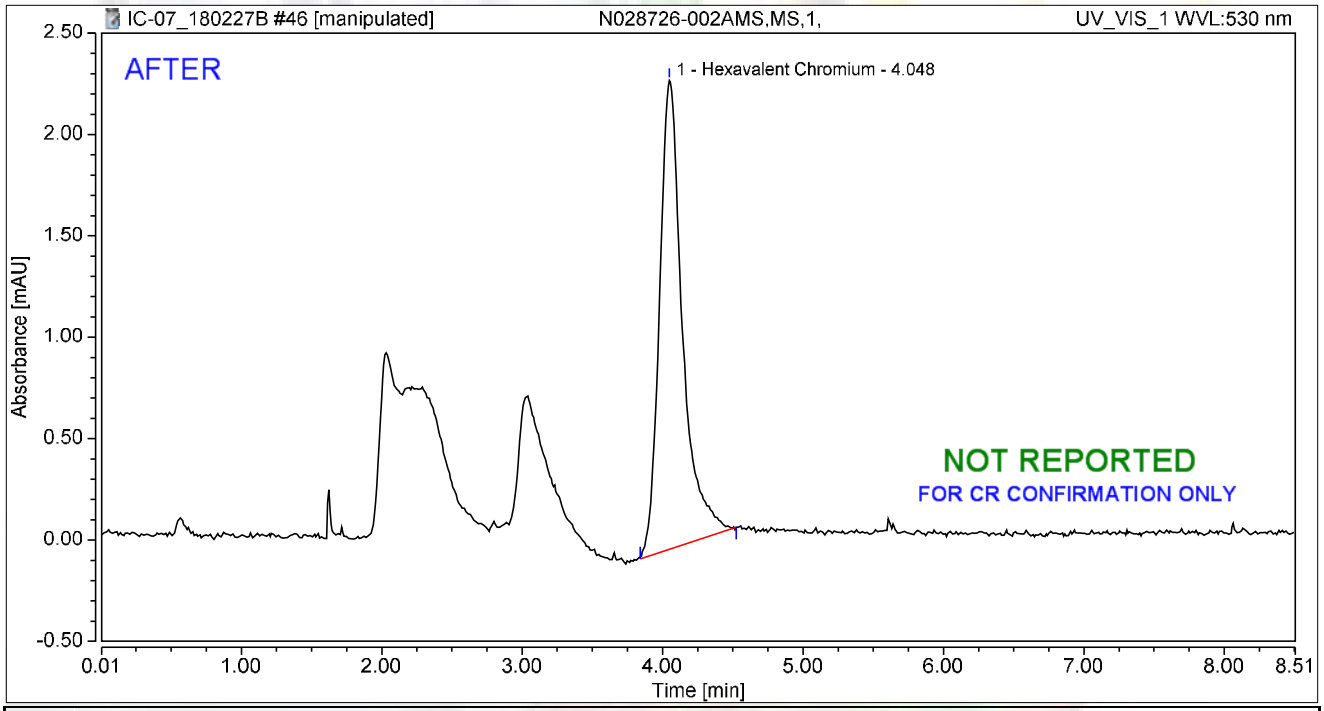
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.438	2.313	100.00	100.00	1.7560
Total:			**0.438**	**2.313**	**100.00**	**100.00**	

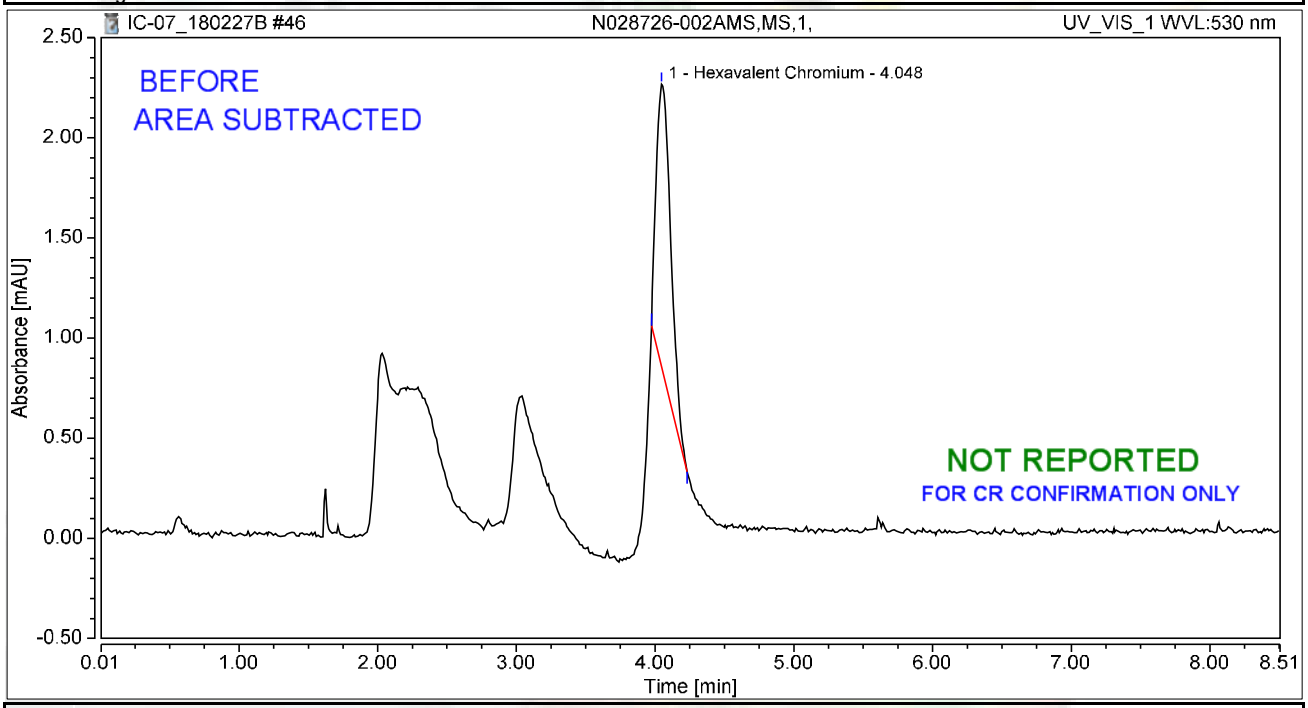
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

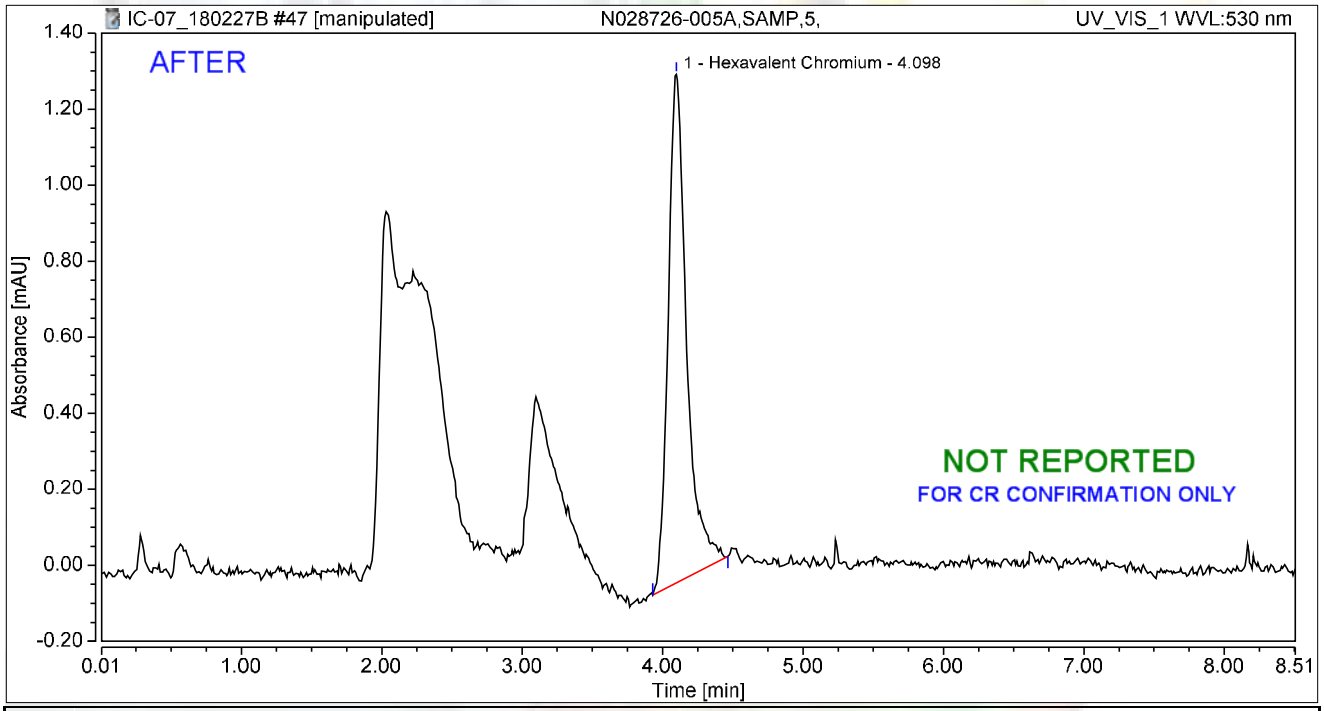
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.173	1.416	100.00	100.00	0.6936
Total:			**0.173**	**1.416**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.204	1.339	100.00	100.00	0.8177
Total:			**0.204**	**1.339**	**100.00**	**100.00**	

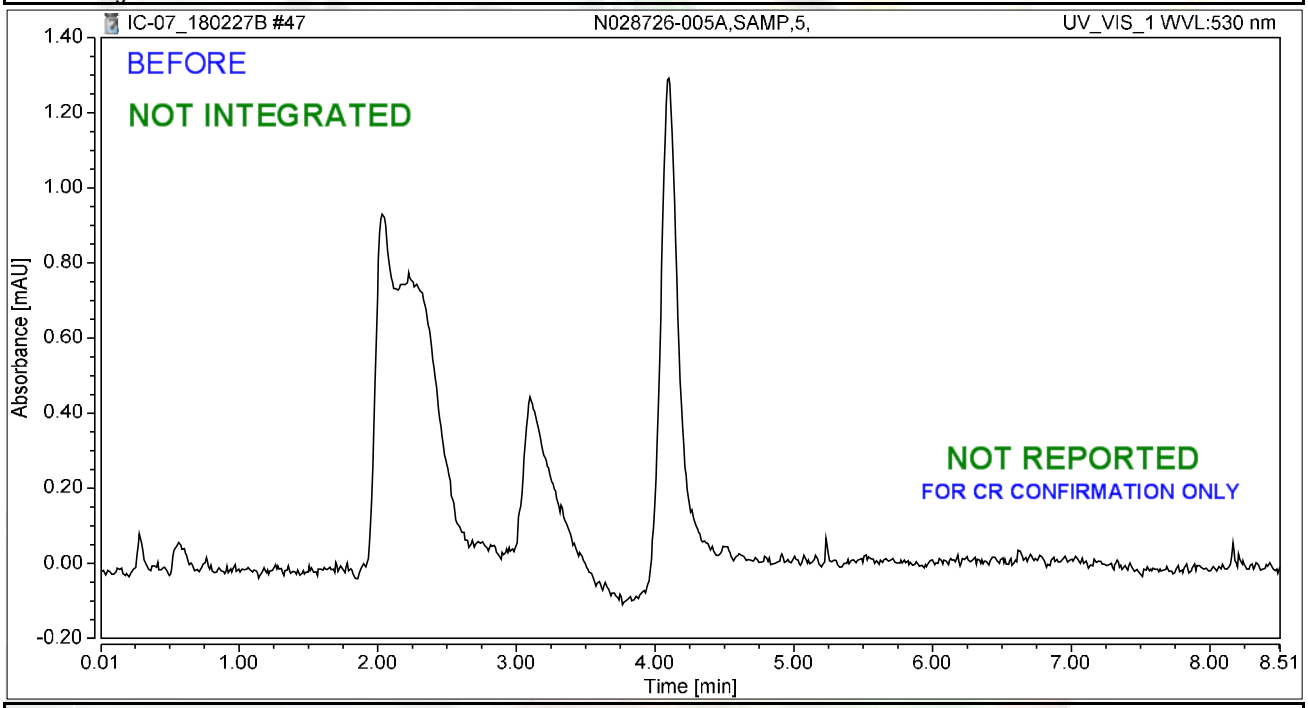
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

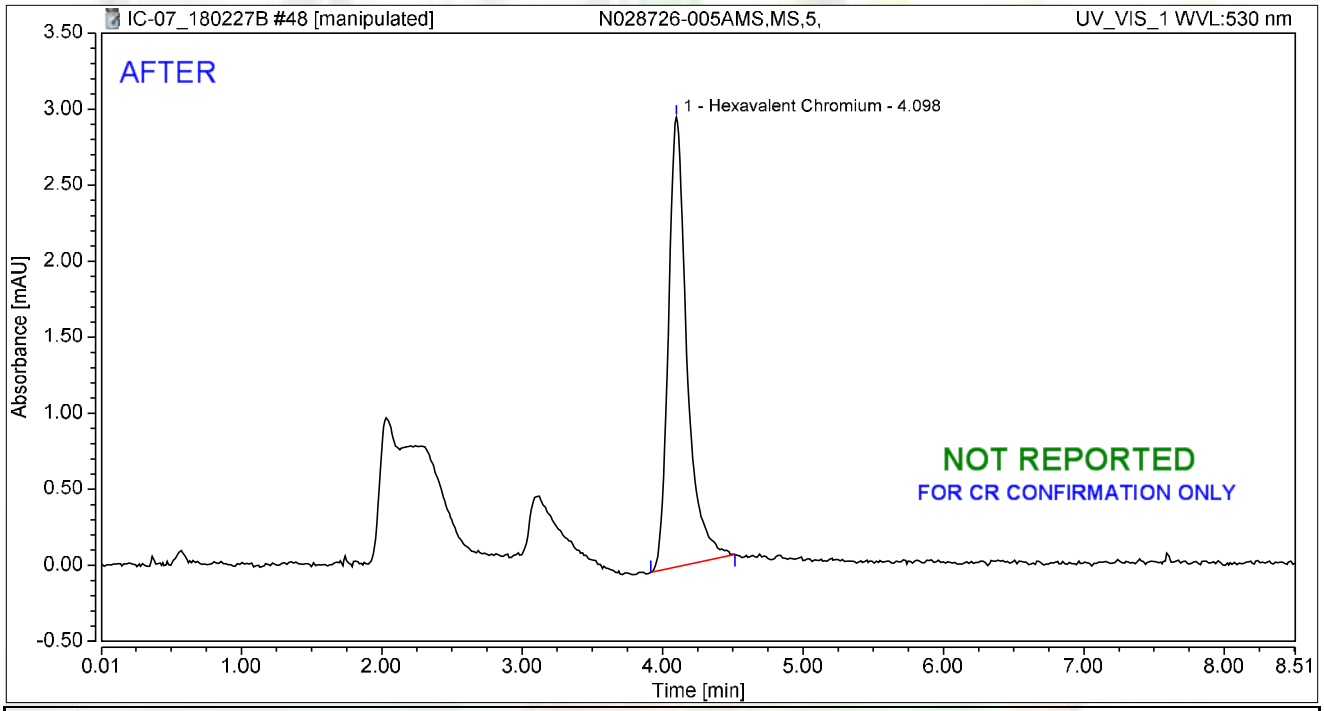
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

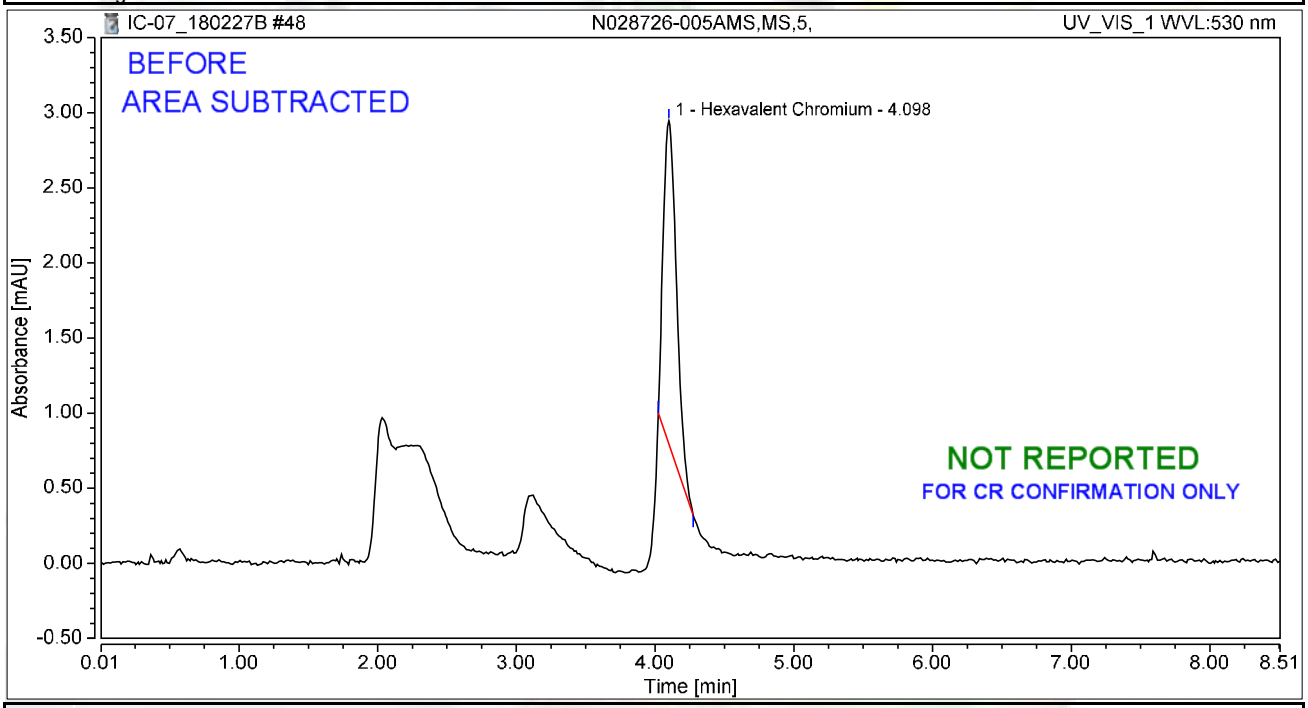
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.455	2.958	100.00	100.00	1.8240
Total:			**0.455**	**2.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 04:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

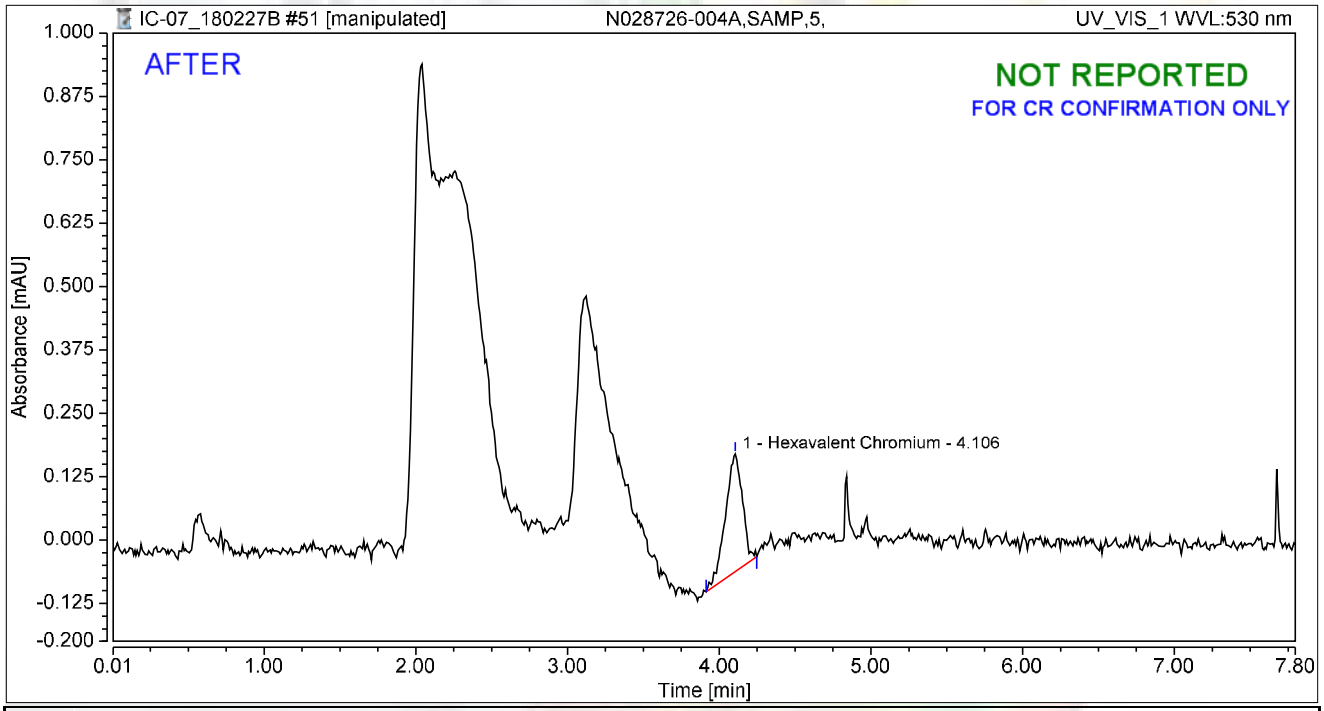
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.239	2.149	100.00	100.00	0.9557
Total:			**0.239**	**2.149**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,5,**	*Run Time (min):*	**7.79**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 05:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.030	0.232	100.00	100.00	0.1219
Total:			**0.030**	**0.232**	**100.00**	**100.00**	

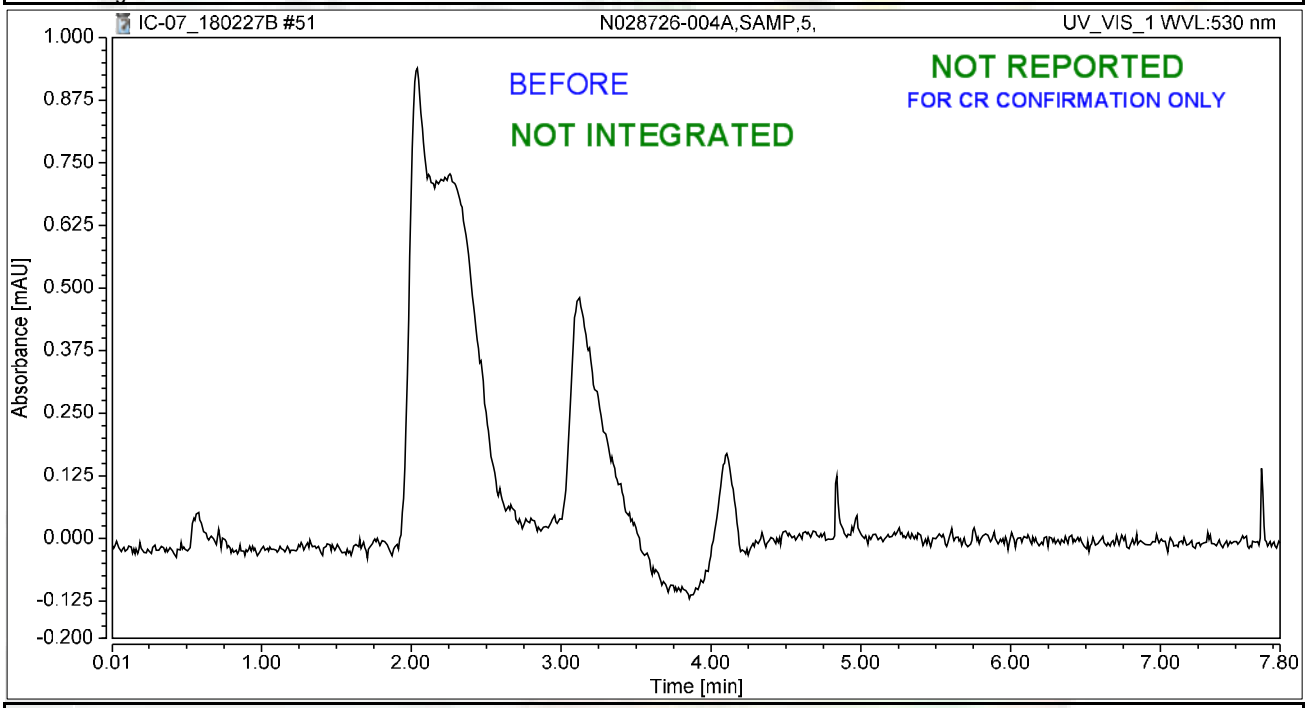
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,5,**	*Run Time (min):*	**7.79**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 05:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

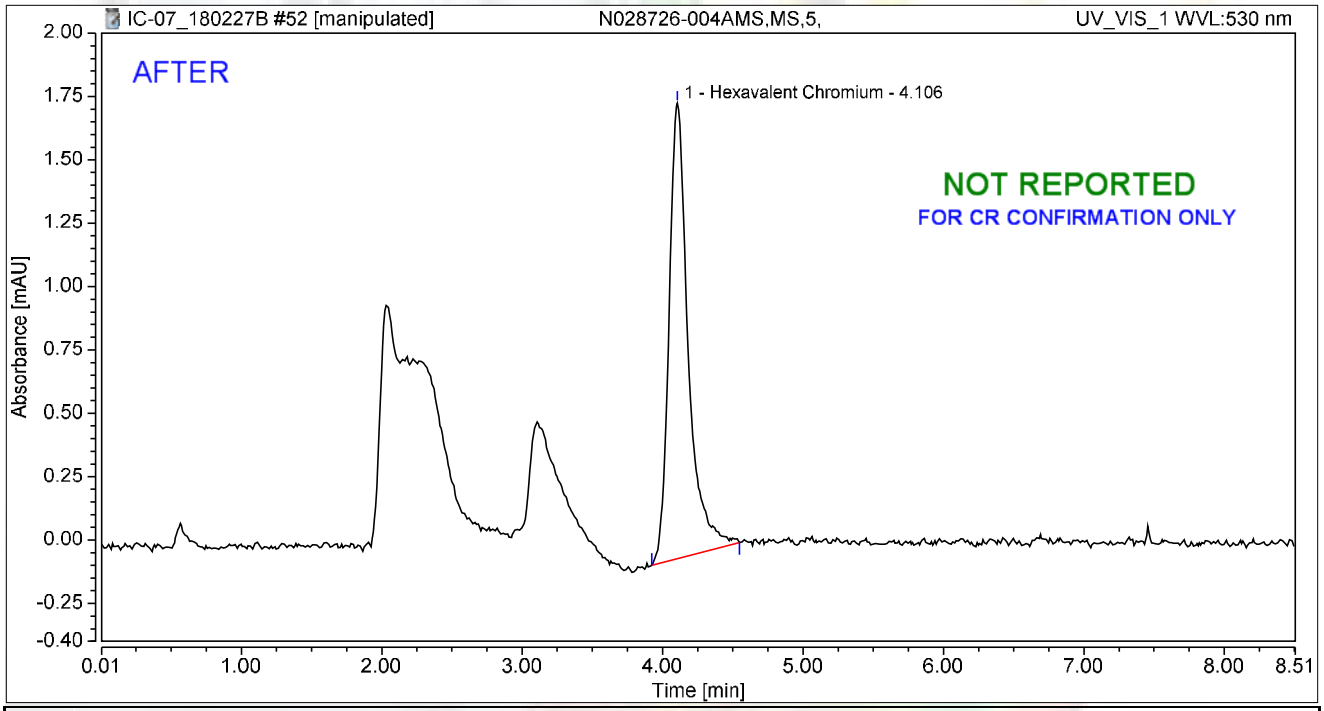
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 05:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.285	1.797	100.00	100.00	1.1416
Total:			**0.285**	**1.797**	**100.00**	**100.00**	

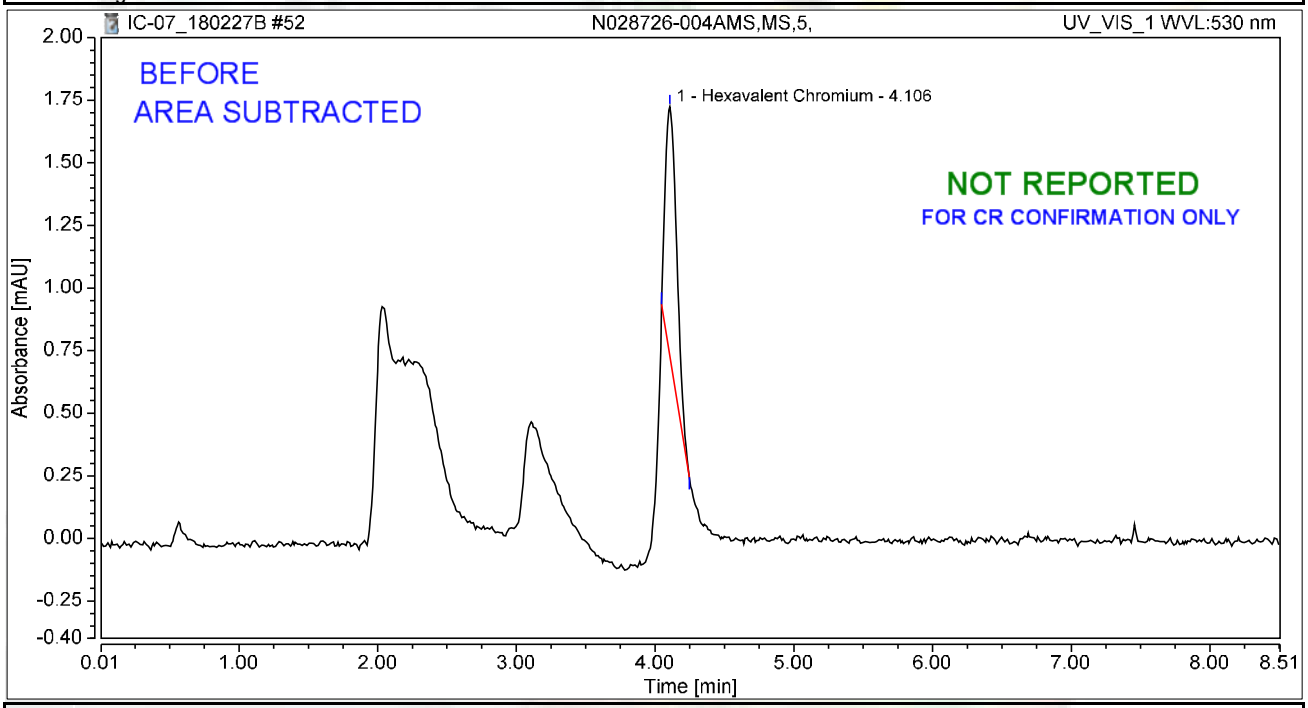
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**28/Feb/18 05:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.094	0.990	100.00	100.00	0.3780
Total:			**0.094**	**0.990**	**100.00**	**100.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122365 **Analyst:** QBM

ASSET #: N028727, 696, 726 **Date Analyzed:** 2/28/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
3. ICV within ± 10% of expected value.	X	~~X~~		X	~~X~~	
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.		X			X	
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/6/2018

2nd Level Reviewer RJB 03/06/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028726-002C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.8686	*	1
	=	0.8686	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.87 mg/L

RLB 03/06/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

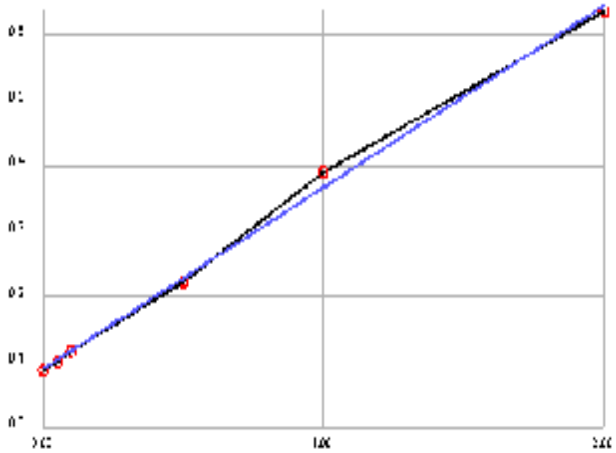
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2779x + 0.0901
Correlation	.998614

Calibrant	Energy	Set	Conc
1	0.0875	0.0000	-0.0093
2	0.1009	0.0500	0.0389
3	0.1169	0.1000	0.0964
4	0.2228	0.5000	0.4775
5	0.3905	1.0000	1.0809
6	0.6364	2.0000	1.9656

Notes:

03/05/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **ICV**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCV**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCV**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.481	0.050	0.5000	0	96.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **ICB**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCB**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122365**
Client ID: **CCB**	Batch ID: **R122365**	TestNo: **SM4500-NO3**		Analysis Date: **2/28/2018**	SeqNo: **2944423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 02-28-2018 14:32
Time end: 02-28-2018 17:23

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	16:43:39	-0.0165		0.0855
2	<BLANK> NOT REPORTED	16:44:38	-0.0061		0.0884
3	<CAL1>	16:45:34	-0.0093	[0]	0.0875
4	<CAL2>	16:46:29	0.0389	[0.05]	0.1009
5	<CAL3>	16:47:31	0.0964	[0.1]	0.1169
6	<CAL4>	16:48:25	0.4775	[0.5]	0.2228
7	<CAL5>	16:49:20	1.0809	[1]	0.3905
8	<CAL6>	16:50:22	1.9656	[2]	0.6364
9	,BLANK,BLANK,1, NOT REPORTED	16:51:16	0.0540		0.1051
10	,ICV,ICV,1,	16:52:11	0.5023		0.2297
11	,ICB,ICB,1,	16:53:13	0.0018		0.0906
12	,MB-H2O,MBLK,1,	16:54:08	-0.0137		0.0863
13	,LCS-H2O,LCS,1,	16:55:09	0.4904		0.2264
14	,N028726-001C,SAMP,1,	16:56:04	0.0133		0.0938
15	,N028726-002C,SAMP,1,	16:57:00	0.8686		0.3315
16	,N028726-002CDUP,DUP,1,	16:58:00	0.9179		0.3452
17	,N028696-008C,SAMP,1,	16:58:56	0.6322		0.2658
18	,N028696-009C,SAMP,5,	16:59:51	0.6887		0.2815
19	,N028696-009CMS,MS,5,	17:00:47	1.2579		0.4397
20	,N028696-009CMSD,MSD,5,	17:01:47	1.1820		0.4186
21	,BLANK, NOT REPORTED	17:02:43	0.0159		0.0945
22	,CCV-1,CCV,1,	17:03:38	0.5084		0.2314
23	,CCB-1,CCB,1,	17:04:39	-0.0079		0.0879
24	,N028696-005C,SAMP,1,	17:05:34	0.0472		0.1032
25	,N028696-006C,SAMP,1,	17:06:36	0.0932		0.1160
26	,N028696-007C,SAMP,1,	17:07:31	0.1094		0.1205

RLB 03/06/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028726-003C,SAMP,1,	17:08:19	0.1727		0.1381
28	,N028726-004C,SAMP,1,	17:09:03	0.1882		0.1424
29	,N028726-005C,SAMP,1,	17:09:51	0.2130		0.1493
30	,N028727-002E,SAMP,1, NOT REPORTED	17:10:34	0.4984		0.2286
31	,N028727-003E,SAMP,1, NOT REPORTED	17:11:16	0.5055		0.2306
32	,N028727-004E,SAMP,1, NOT REPORTED	17:12:06	0.4649		0.2193
33	,BLANK, NOT REPORTED	17:12:49	-0.0298		0.0818
34	,CCV-2,CCV,1,	17:13:31	0.4807		0.2237
35	,CCB-2,CCB,1,	17:14:20	-0.0388		0.0793
36	,N028727-005E,SAMP,1, NOT REPORTED	17:15:02	0.4044		0.2025
37	,N028727-006E,SAMP,1, NOT REPORTED	17:15:46	0.4422		0.2130
38	,N028727-007E,SAMP,1, NOT REPORTED	17:16:34	0.4224		0.2075
39	,N028727-008E,SAMP,1, NOT REPORTED	17:17:17	0.4354		0.2111
40	,N028727-009E,SAMP,1, NOT REPORTED	17:18:01	0.4613		0.2183
41	,N028727-010E,SAMP,1, NOT REPORTED	17:18:49	0.4325		0.2103
42	,N028727-011E,SAMP,1, NOT REPORTED	17:19:32	0.4620		0.2185
43	,BLANK, NOT REPORTED	17:20:14	-0.0388		0.0793
44	,CCV-3,CCV,1, NOT REPORTED	17:21:04	0.4239		0.2079
45	,CCB-3,CCB,1, NOT REPORTED	17:21:46	-0.0266		0.0827

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 2/28/2018
Time Analyzed: 2:29 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028696-005C		7.80							
N028696-006C		7.76							
N028696-007C		7.49							
N028696-008C		7.16							
N028696-009C		7.83							
N028726-001C		8.17							
N028726-002C		7.40							
N028726-003C		7.81							
N028726-004C		8.32							
N028726-005C		8.2							
N028727-002E		7.91							
N028727-003E		6.73							
N028727-004E		7.88							
N028727-005E		7.94							
N028727-006E		8.31							
N028727-007E		7.87							
N028727-008E		7.57							
N028727-009E		7.03							
N028727-010E		7.92							
N028727-011E		8.44							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 03/06/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66882
ASSET #: N028726

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/26/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in N028726-001B MSD failed >15%. For rerun,
%Rec of Mo in N028726-001B MS/MSD failed. However, LCS and DT passed criteria.

N028726-002B (6020) = 1.6 ug/L :confirmation: 1.8 ug/L ; N028726-002A (218.6) = 0.53 ug/L :confirmation: 0.97 ug/L
N028726-004B (6020) = 7.7 ug/L :confirmation: 7.9 ug/L ; N028726-004A (218.6) = 0.54 ug/L :confirmation: 3.3 ug/L
N028726-005B (6020) = 39 ug/L :confirmation: 42 ug/L ; N028726-005A (218.6) = 4.1 ug/L :confirmation: 16 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/5/18

2nd Level Reviewer 3/6/2018 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66882
ASSET #: N028726
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).			X			X
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X			X	
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/5/18

2nd Level Reviewer 3/6/2018 Date: ~

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028726-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.62418 * 1 * (25/25)

Chromium , ug/L = 1.62418

Reporting results in two significant figures,

Chromium , ug/L = 1.6

% RSD SUMMARY

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	20.13	15	<PQL	0.14	14.066	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	5.37	15	PASS	0.54	5.81	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	1.7	15	PASS	5.017	0.68	15	PASS
Std4-10/100 ppb	ICAL	1	9.91	1.35	15	PASS	10.093	0.49	15	PASS
Std5-20/200 ppb	ICAL	1	19.89	1.088	15	PASS	20.3	0.75	15	PASS
Std6-40/400 ppb	ICAL	1	39.26	0.68	15	PASS	40.46	1.36	15	PASS
Std7-100/1000 ppb	ICAL	1	98.023	0.49	15	PASS	100.83	0.59	15	PASS
Std8-200/2000 ppb	ICAL	1	201.15	0.55	15	PASS	199.46	0.29	15	PASS
ICV	ICV	1	10.064	0.39	15	PASS	104.43	1.42	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0013	952.1	15	<PQL
LLICV	CCV1	1	1.032	1.0046	20	PASS	0.52	0.57	20	PASS
ICSA1	ICSA	1	0.071	25.026	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.093	0.14	15	PASS	20.54	0.88	15	PASS
CCV1	CCV	1	19.38	0.28	15	PASS	19.91	0.33	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.00095	902.59	15	<PQL
CCV2	CCV	1	19.73	0.98	15	PASS	19.79	1.57	15	PASS
CCB2	CCB	1	0.018	66.42	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.72	0.57	15	PASS	20.35	0.56	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.049	0.82	15	PASS	20.15	0.74	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.03	2.53	20	PASS	0.54	6.93	20	PASS
ICSA2	ICSA	1	0.062	10.9	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.2	1.74	15	PASS	20.58	1.15	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	10.33	1.52	15	PASS	103.83	1.83	15	PASS
N028726-001B	SAMP	1	0.68	3.25	15	PASS	118.79	1.84	15	PASS
N028726-001B	SAMP	5	0.13	7.15	15	PASS	24.94	0.37	15	PASS
N028726-001B	SAMP	25	0.013	39.31	15	<PQL	5.21	2.34	15	PASS
N028726-001B-PS	PS	1	10.032	0.56	15	PASS	203.96	0.56	15	PASS
N028726-001B-PS	PS	5	2.18	1.29	15	PASS	45.087	1.16	15	PASS
N028726-001B-MS	MS	1	9.9	2.44	15	PASS	207.55	1.00086	15	PASS
N028726-001B-MS	MS	5	2.22	1.69	15	PASS	46.72	0.39	15	PASS
N028726-001B-MSD	MSD	1	9.83	1.17	15	PASS	205.82	0.36	15	PASS
CCV5	CCV	1	19.66	1.21	15	PASS	20.14	0.32	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	2.26	4.4	15	PASS	46.55	0.82	15	PASS
N028726-002B	SAMP	1	1.62	2.42	15	PASS	34.62	1.19	15	PASS
N028726-002B	SAMP	5	0.34	2.39	15	PASS	7.5	0.82	15	PASS
N028726-003B	SAMP	1	59.41	0.33	15	PASS	10.67	1.77	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-003B	SAMP	5	13.3	1.1	15	PASS	2.28	1.75	15	PASS
N028726-004B	SAMP	1	7.72	0.66	15	PASS	20.9	0.58	15	PASS
N028726-004B	SAMP	5	1.74	1.67	15	PASS	4.64	0.69	15	PASS
N028726-005B	SAMP	1	38.64	1.78	15	PASS	21.82	2.047	15	PASS
N028726-005B	SAMP	5	8.55	0.66	15	PASS	4.82	0.8	15	PASS
N028727-002B	SAMP	1	0.091	5.89	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	19.74	0.96	15	PASS	20.072	1.064	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-002B	SAMP	5	0.013	50.24	15	<PQL	<0.000	N/A	15	<PQL
N028727-003B	SAMP	1	<0.000	N/A	15	<PQL	0.65	4.062	15	PASS
N028727-003B	SAMP	5	<0.000	N/A	15	<PQL	0.17	13.14	15	PASS
N028727-004B	SAMP	1	0.012	96.35	15	<PQL	<0.000	N/A	15	<PQL
N028727-004B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-005B	SAMP	5	0.00014	5401.72	15	<PQL	<0.000	N/A	15	<PQL
N028727-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	1	0.003	81.58	15	<PQL	<0.000	N/A	15	<PQL
CCV7	CCV	1	19.87	0.87	15	PASS	20.43	0.23	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-008B	SAMP	1	0.0093	160.85	15	<PQL	<0.000	N/A	15	<PQL
N028727-008B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-009B	SAMP	1	0.0073	27.26	15	<PQL	<0.000	N/A	15	<PQL
N028727-009B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-010B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-010B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-011B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-011B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	19.75	1.18	15	PASS	20.37	1.079	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-013B	SAMP	1	0.027	32.76	15	<PQL	0.054	91.58	15	<PQL
N028727-013B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-014C	SAMP	1	0.019	2.76	15	PASS	17.29	1.95	15	PASS
N028727-014C	SAMP	5	0.0088	14.77	15	PASS	3.67	0.93	15	PASS
N028727-015C	SAMP	1	0.0023	392.55	15	<PQL	1.93	1.18	15	PASS
N028727-015C	SAMP	5	<0.000	N/A	15	<PQL	0.4	5.78	15	PASS
CCV9	CCV	1	19.63	1.81	15	PASS	20.43	1.63	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	1.032	0.58	20	PASS	0.52	10.23	20	PASS
ICSA3	ICSA	1	0.072	8.52	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.18	0.54	15	PASS	21.5	0.29	15	PASS
ICSAB3	ICSAB	1	19.87	1.52	15	PASS	21.2	1.92	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	19.28	15	NR!	0.13	19.19	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	5.75	15	PASS	0.53	24.52	15	NR!
Std3-5/50 ppb	ICAL	1	5.0073	2.24	15	PASS	4.76	2.15	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	2.61	15	PASS	10.08	5.43	15	PASS
Std5-20/200 ppb	ICAL	1	19.91	1.4	15	PASS	20.046	0.84	15	PASS
Std6-40/400 ppb	ICAL	1	40.24	1.45	15	PASS	39.97	2.13	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	1.75	15	PASS	100.7	0.4	15	PASS
Std8-200/2000 ppb	ICAL	1	199.68	0.6	15	PASS	199.65	2.32	15	PASS
ICV	ICV	1	10.33	1.47	15	PASS	10.034	2.45	15	PASS
ICB	ICB	1	0.0076	46.65	15	<PQL	0.034	88.12	15	<PQL
LLICV	CCV1	1	0.12	12.17	20	PASS	0.55	18.035	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.011	134.88	15	<PQL
ICSAB1	ICSAB	1	20.73	0.88	15	PASS	18.88	4.26	15	PASS
CCV1	CCV	1	20.12	1.098	15	PASS	19.47	2.11	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0079	150.54	15	<PQL
CCV2	CCV	1	20.23	1.14	15	PASS	20.27	0.67	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0035	370.87	15	<PQL
CCV3	CCV	1	20.24	0.71	15	PASS	20.27	2.45	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.034	64.69	15	<PQL
CCV4	CCV	1	19.76	0.72	15	PASS	20.84	2.65	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0047	320.52	15	<PQL
LLCCV1	CCV2	1	0.11	5.28	20	PASS	0.54	12.19	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.015	145.12	15	<PQL
ICSAB2	ICSAB	1	20.2	1.41	15	PASS	20.68	2.068	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	0.021	119.32	15	<PQL
LCS-66882	LCS	1	10.27	3.047	15	PASS	11.055	0.77	15	PASS
N028726-001B	SAMP	1	6.74	1.67	15	PASS	0.53	20.92	15	NR!
N028726-001B	SAMP	5	1.43	3.57	15	PASS	0.11	46.54	15	<PQL
N028726-001B	SAMP	25	0.28	8.39	15	PASS	0.0096	141.25	15	<PQL
N028726-001B-PS	PS	1	16.95	1.71	15	PASS	10.87	2.66	15	PASS
N028726-001B-PS	PS	5	3.58	2.36	15	PASS	2.18	12.33	15	PASS
N028726-001B-MS	MS	1	17.084	0.82	15	PASS	10.59	3.015	15	PASS
N028726-001B-MS	MS	5	3.78	3.21	15	PASS	2.35	5.4	15	PASS
N028726-001B-MSD	MSD	1	17.35	1.27	15	PASS	10.67	4.53	15	PASS
CCV5	CCV	1	19.98	0.73	15	PASS	20.98	0.68	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.022	58.54	15	<PQL
N028726-001B-MSD	MSD	5	3.62	2.99	15	PASS	2.3	17.38	15	NR!
N028726-002B	SAMP	1	1.46	4.27	15	PASS	0.69	13.35	15	PASS
N028726-002B	SAMP	5	0.3	9.42	15	PASS	0.17	47.77	15	<PQL
N028726-003B	SAMP	1	7.61	1.83	15	PASS	2.72	11.86	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-003B	SAMP	5	1.6	1.8	15	PASS	0.52	30.97	15	NR!
N028726-004B	SAMP	1	3.97	5.67	15	PASS	2.9	13.86	15	PASS
N028726-004B	SAMP	5	0.79	2.68	15	PASS	0.52	10.62	15	PASS
N028726-005B	SAMP	1	4.56	3.086	15	PASS	3.019	8.58	15	PASS
N028726-005B	SAMP	5	0.94	9.42	15	PASS	0.53	10.95	15	PASS
N028727-002B	SAMP	1	2.14	2.019	15	PASS	1.62	1.96	15	PASS
CCV6	CCV	1	19.83	0.7	15	PASS	20.29	2.61	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.023	101.55	15	<PQL
N028727-002B	SAMP	5	0.42	6.65	15	PASS	0.39	13.46	15	PASS
N028727-003B	SAMP	1	2.25	3.86	15	PASS	1.6	9.63	15	PASS
N028727-003B	SAMP	5	0.45	5.54	15	PASS	0.32	18.64	15	<PQL
N028727-004B	SAMP	1	2.27	0.47	15	PASS	1.81	10.67	15	PASS
N028727-004B	SAMP	5	0.46	3.34	15	PASS	0.41	3.94	15	PASS
N028727-005B	SAMP	1	2.22	4.74	15	PASS	1.71	2.96	15	PASS
N028727-005B	SAMP	5	0.43	6.87	15	PASS	0.35	6.32	15	PASS
N028727-006B	SAMP	1	2.17	3.9	15	PASS	1.6	17.8	15	NR!
N028727-006B	SAMP	5	0.43	8.78	15	PASS	0.36	16.36	15	<PQL
N028727-007B	SAMP	1	2.1	5.097	15	PASS	1.47	8.16	15	PASS
CCV7	CCV	1	20.3	0.77	15	PASS	20.5	2.97	15	PASS
CCB7	CCB	1	0.0079	19.42	15	<PQL	0.015	54.22	15	<PQL
N028727-007B	SAMP	5	0.4	2.076	15	PASS	0.32	6.66	15	PASS
N028727-008B	SAMP	1	2.11	4.31	15	PASS	1.65	1.47	15	PASS
N028727-008B	SAMP	5	0.43	6.28	15	PASS	0.28	10.79	15	PASS
N028727-009B	SAMP	1	2.19	6.02	15	PASS	1.66	2.81	15	PASS
N028727-009B	SAMP	5	0.48	8.0061	15	PASS	0.31	37.55	15	<PQL
N028727-010B	SAMP	1	2.16	1.052	15	PASS	1.81	3.97	15	PASS
N028727-010B	SAMP	5	0.44	2.97	15	PASS	0.33	13.57	15	PASS
N028727-011B	SAMP	1	2.21	4.91	15	PASS	1.56	5.79	15	PASS
N028727-011B	SAMP	5	0.46	7.17	15	PASS	0.45	14.37	15	PASS
N028727-012B	SAMP	1	2.2	5.3	15	PASS	1.87	2.18	15	PASS
CCV8	CCV	1	19.95	2.38	15	PASS	20.21	1.32	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.00083	1011.41	15	<PQL
N028727-012B	SAMP	5	0.47	2.93	15	PASS	0.3	32.83	15	<PQL
N028727-013B	SAMP	1	2.21	4.47	15	PASS	1.48	11.69	15	PASS
N028727-013B	SAMP	5	0.41	16.64	15	NR!	0.31	28.011	15	<PQL
N028727-014C	SAMP	1	1.52	3.33	15	PASS	0.96	12.46	15	PASS
N028727-014C	SAMP	5	0.29	4.83	15	PASS	0.2	28.6	15	<PQL
N028727-015C	SAMP	1	1.82	1.58	15	PASS	1.53	5.00092	15	PASS
N028727-015C	SAMP	5	0.36	5.14	15	PASS	0.29	27.76	15	<PQL
CCV9	CCV	1	19.95	0.44	15	PASS	20.29	3.12	15	PASS
CCB9	CCB	1	0.0095	57.5	15	<PQL	0.0012	767	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.11	5.62	20	PASS	0.59	13.24	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.023	40.43	15	<PQL
ICSAB3	ICSAB	1	20.21	0.89	15	PASS	19.16	3.51	15	PASS
ICSAB3	ICSAB	1	20.085	3.65	15	PASS	18.84	4.12	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.084	16.48	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	1.87	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	1.84	15	PASS
Std4-10/100 ppb	ICAL	1	9.79	0.44	15	PASS
Std5-20/200 ppb	ICAL	1	19.84	1.51	15	PASS
Std6-40/400 ppb	ICAL	1	39.77	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	100.49	1.52	15	PASS
Std8-200/2000 ppb	ICAL	1	199.83	0.91	15	PASS
ICV	ICV	1	10.68	0.4	15	PASS
ICB	ICB	1	0.18	4.16	15	PASS
LLICV	CCV1	1	0.56	2.84	20	PASS
ICSA1	ICSA	1	0.062	14.73	15	PASS
ICSAB1	ICSAB	1	21.76	1.7	15	PASS
CCV1	CCV	1	20.1	0.73	15	PASS
CCB1	CCB	1	0.069	14.47	15	PASS
CCV2	CCV	1	20.051	0.66	15	PASS
CCB2	CCB	1	0.054	15.25	15	<PQL
CCV3	CCV	1	20.11	1.9	15	PASS
CCB3	CCB	1	0.11	17.14	15	<PQL
CCV4	CCV	1	19.76	1.34	15	PASS
CCB4	CCB	1	0.076	15.11	15	<PQL
LLCCV1	CCV2	1	0.52	5.76	20	PASS
ICSA2	ICSA	1	0.04	21.79	15	<PQL
ICSAB2	ICSAB	1	21.93	0.66	15	PASS
MB-66882	MBLK	1	0.054	14.31	15	PASS
LCS-66882	LCS	1	10.046	1.93	15	PASS
N028726-001B	SAMP	1	67.21	0.75	15	PASS
N028726-001B	SAMP	5	13.11	1.67	15	PASS
N028726-001B	SAMP	25	2.64	3.016	15	PASS
N028726-001B-PS	PS	1	75.56	0.86	15	PASS
N028726-001B-PS	PS	5	15.32	0.74	15	PASS
N028726-001B-MS	MS	1	78.32	1.7	15	PASS
N028726-001B-MS	MS	5	16.13	0.45	15	PASS
N028726-001B-MSD	MSD	1	78.79	1.13	15	PASS
CCV5	CCV	1	20.015	0.2	15	PASS
CCB5	CCB	1	0.12	12.7	15	PASS
N028726-001B-MSD	MSD	5	15.94	1.18	15	PASS
N028726-002B	SAMP	1	20.035	1.9	15	PASS
N028726-002B	SAMP	5	3.98	0.9	15	PASS
N028726-003B	SAMP	1	59.2	0.89	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028726-003B	SAMP	5	11.49	0.96	15	PASS
N028726-004B	SAMP	1	59.72	0.36	15	PASS
N028726-004B	SAMP	5	11.64	0.6	15	PASS
N028726-005B	SAMP	1	58.47	0.31	15	PASS
N028726-005B	SAMP	5	11.25	2.2	15	PASS
N028727-002B	SAMP	1	4.84	2.028	15	PASS
CCV6	CCV	1	19.98	0.29	15	PASS
CCB6	CCB	1	0.075	14.32	15	PASS
N028727-002B	SAMP	5	0.99	2.093	15	PASS
N028727-003B	SAMP	1	4.93	1.65	15	PASS
N028727-003B	SAMP	5	0.97	2.86	15	PASS
N028727-004B	SAMP	1	5.017	1.29	15	PASS
N028727-004B	SAMP	5	0.96	2.75	15	PASS
N028727-005B	SAMP	1	4.81	3.53	15	PASS
N028727-005B	SAMP	5	0.95	4.077	15	PASS
N028727-006B	SAMP	1	4.81	1.24	15	PASS
N028727-006B	SAMP	5	0.91	4.92	15	PASS
N028727-007B	SAMP	1	4.75	1.72	15	PASS
CCV7	CCV	1	19.95	0.91	15	PASS
CCB7	CCB	1	0.053	18.047	15	<PQL
N028727-007B	SAMP	5	0.97	3.5	15	PASS
N028727-008B	SAMP	1	4.77	1.26	15	PASS
N028727-008B	SAMP	5	1	2.76	15	PASS
N028727-009B	SAMP	1	4.84	0.8	15	PASS
N028727-009B	SAMP	5	1	2.62	15	PASS
N028727-010B	SAMP	1	4.74	0.65	15	PASS
N028727-010B	SAMP	5	0.95	2.0091	15	PASS
N028727-011B	SAMP	1	4.85	2.52	15	PASS
N028727-011B	SAMP	5	0.98	3.88	15	PASS
N028727-012B	SAMP	1	4.96	1.32	15	PASS
CCV8	CCV	1	19.66	1.0022	15	PASS
CCB8	CCB	1	0.054	8.73	15	PASS
N028727-012B	SAMP	5	0.98	2.17	15	PASS
N028727-013B	SAMP	1	4.95	1.96	15	PASS
N028727-013B	SAMP	5	0.97	3.41	15	PASS
N028727-014C	SAMP	1	5.86	0.59	15	PASS
N028727-014C	SAMP	5	1.13	0.73	15	PASS
N028727-015C	SAMP	1	5.19	1.56	15	PASS
N028727-015C	SAMP	5	1.017	3.98	15	PASS
CCV9	CCV	1	19.58	1.17	15	PASS
CCB9	CCB	1	0.063	15.76	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.5	11.41	20	PASS
ICSA3	ICSA	1	0.019	52.069	15	<PQL
ICSAB3	ICSAB	1	21.65	1.027	15	PASS
ICSAB3	ICSAB	1	21.33	0.97	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.086	57.34	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	19.27	15	NR!
Std3-5/50 ppb	ICAL	1	5.015	8.17	15	PASS
Std4-10/100 ppb	ICAL	1	9.86	5.61	15	PASS
Std5-20/200 ppb	ICAL	1	19.72	2.077	15	PASS
Std6-40/400 ppb	ICAL	1	40.13	4.25	15	PASS
Std7-100/1000 ppb	ICAL	1	100.19	1.56	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	1.53	15	PASS
ICV	ICV	1	10.17	3.49	15	PASS
ICB	ICB	1	0.029	59.41	15	<PQL
LLICV	CCV1	1	0.47	20.13	20	<PQL
ICSA1	ICSA	1	0.012	151.17	15	<PQL
ICSAB1	ICSAB	1	17.36	4.053	15	PASS
LLICV	CCV1	1	0.5	18.72	20	PASS
CCV1	CCV	1	19.41	2.69	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.26	3.42	15	PASS
CCB2	CCB	1	0.0047	196.16	15	<PQL
CCV3	CCV	1	19.43	1.72	15	PASS
CCB3	CCB	1	0.036	89.66	15	<PQL
CCV4	CCV	1	19.64	3.32	15	PASS
CCB4	CCB	1	0.011	155.22	15	<PQL
CCV5	CCV	1	19.47	1.2	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	21.97	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.66	4.018	15	PASS
N028726-001B-MSD	MSD	5	2.21	6.48	15	PASS
N028726-003B	SAMP	5	0.56	13.76	15	PASS
N028727-006B	SAMP	1	1.8	10.85	15	PASS
CCV6	CCV	1	18.77	1.14	15	PASS
CCB6	CCB	1	0.021	45.37	15	<PQL
CCV7	CCV	1	19.38	0.73	15	PASS
CCB7	CCB	1	0.01	158.58	15	<PQL
CCV8	CCV	1	19.96	2.88	15	PASS
CCB8	CCB	1	0.046	38.65	15	<PQL
CCV9	CCV	1	17.82	4.35	15	PASS
CCB9	CCB	1	0.025	113.29	15	<PQL
CCV10	CCV	1	19.12	1.8	15	PASS
CCB10	CCB	1	0.013	2.041	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.45	14.31	20	PASS
ICSA3	ICSA	1	0.027	151.89	15	<PQL
ICSAB3	ICSAB	1	17.81	1.82	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226001.D	RINSE	RINSE	1	02/26/18 5:11 PM
A0226002.D	Cal Blank	IBLK	1	02/26/18 5:16 PM
A0226003.D	Std1-0.1/1 ppb	ICAL	1	02/26/18 5:22 PM
A0226004.D	Std2-0.5/5 ppb	ICAL	1	02/26/18 5:27 PM
A0226005.D	Std3-5/50 ppb	ICAL	1	02/26/18 5:33 PM
A0226006.D	Std4-10/100 ppb	ICAL	1	02/26/18 5:39 PM
A0226007.D	Std5-20/200 ppb	ICAL	1	02/26/18 5:44 PM
A0226008.D	Std6-40/400 ppb	ICAL	1	02/26/18 5:50 PM
A0226009.D	Std7-100/1000 ppb	ICAL	1	02/26/18 5:55 PM
A0226010.D	Std8-200/2000 ppb	ICAL	1	02/26/18 6:01 PM
A0226011.D	ICV	ICV	1	02/26/18 6:07 PM
A0226012.D	ICB	ICB	1	02/26/18 6:12 PM
A0226013.D	LLICV	CCV1	1	02/26/18 6:18 PM
A0226014.D	ICSA1	ICSA	1	02/26/18 6:23 PM
A0226015.D	ICSAB1	ICSAB	1	02/26/18 6:29 PM
A0226016.D	MB-66863	MBLK	1	02/26/18 6:35 PM
A0226017.D	LCS-66863	LCS	1	02/26/18 6:40 PM
A0226018.D	N028679-001B	SAMP	1	02/26/18 6:46 PM
A0226019.D	N028679-001B	SAMP	5	02/26/18 6:51 PM
A0226020.D	N028679-001B	SAMP	25	02/26/18 6:57 PM
A0226021.D	N028679-001B-PS	PS	1	02/26/18 7:03 PM
A0226022.D	N028679-001B-PS	PS	5	02/26/18 7:08 PM
A0226023.D	N028679-001B-MS	MS	1	02/26/18 7:14 PM
A0226024.D	N028679-001B-MS	MS	5	02/26/18 7:20 PM
A0226025.D	N028679-001B-MSD	MSD	1	02/26/18 7:25 PM
A0226026.D	CCV1	CCV	1	02/26/18 7:31 PM
A0226027.D	CCB1	CCB	1	02/26/18 7:36 PM
A0226028.D	N028679-001B-MSD	MSD	5	02/26/18 7:42 PM
A0226029.D	N028679-002B	SAMP	1	02/26/18 7:48 PM
A0226030.D	N028679-002B	SAMP	5	02/26/18 7:53 PM
A0226031.D	N028679-002B	SAMP	10	02/26/18 7:59 PM
A0226032.D	N028679-003B	SAMP	1	02/26/18 8:04 PM
A0226033.D	N028679-003B	SAMP	5	02/26/18 8:10 PM
A0226034.D	N028679-003B	SAMP	10	02/26/18 8:16 PM
A0226035.D	N028679-004B	SAMP	1	02/26/18 8:21 PM
A0226036.D	N028679-004B	SAMP	5	02/26/18 8:27 PM
A0226037.D	N028679-005B	SAMP	1	02/26/18 8:32 PM
A0226038.D	CCV2	CCV	1	02/26/18 8:38 PM
A0226039.D	CCB2	CCB	1	02/26/18 8:44 PM
A0226040.D	N028679-005B	SAMP	5	02/26/18 8:49 PM
A0226041.D	N028696-001B	SAMP	1	02/26/18 8:55 PM
A0226042.D	N028696-001B	SAMP	5	02/26/18 9:00 PM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226043.D	N028696-002B	SAMP	1	02/26/18 9:06 PM
A0226044.D	N028696-002B	SAMP	5	02/26/18 9:12 PM
A0226045.D	N028696-003B	SAMP	1	02/26/18 9:17 PM
A0226046.D	N028696-003B	SAMP	5	02/26/18 9:23 PM
A0226047.D	N028696-004B	SAMP	1	02/26/18 9:29 PM
A0226048.D	N028696-004B	SAMP	5	02/26/18 9:34 PM
A0226049.D	N028696-005B	SAMP	1	02/26/18 9:41 PM
A0226050.D	CCV3	CCV	1	02/26/18 9:47 PM
A0226051.D	CCB3	CCB	1	02/26/18 9:53 PM
A0226052.D	N028696-005B	SAMP	5	02/26/18 9:58 PM
A0226053.D	N028696-006B	SAMP	1	02/26/18 10:04 PM
A0226054.D	N028696-006B	SAMP	5	02/26/18 10:09 PM
A0226055.D	N028696-007B	SAMP	1	02/26/18 10:15 PM
A0226056.D	N028696-007B	SAMP	5	02/26/18 10:21 PM
A0226057.D	N028696-008B	SAMP	1	02/26/18 10:26 PM
A0226058.D	N028696-008B	SAMP	5	02/26/18 10:32 PM
A0226059.D	N028696-009B	SAMP	1	02/26/18 10:38 PM
A0226060.D	N028696-009B	SAMP	5	02/26/18 10:43 PM
A0226061.D	CCV4	CCV	1	02/26/18 10:49 PM
A0226062.D	CCB4	CCB	1	02/26/18 10:54 PM
A0226063.D	LLCCV1	CCV2	1	02/26/18 11:00 PM
A0226064.D	ICSA2	ICSA	1	02/26/18 11:06 PM
A0226065.D	ICSAB2	ICSAB	1	02/26/18 11:11 PM
A0226066.D	MB-66882	MBLK	1	02/26/18 11:17 PM
A0226067.D	LCS-66882	LCS	1	02/26/18 11:22 PM
A0226068.D	N028726-001B	SAMP	1	02/26/18 11:28 PM
A0226069.D	N028726-001B	SAMP	5	02/26/18 11:34 PM
A0226070.D	N028726-001B	SAMP	25	02/26/18 11:39 PM
A0226071.D	N028726-001B-PS	PS	1	02/26/18 11:45 PM
A0226072.D	N028726-001B-PS	PS	5	02/26/18 11:50 PM
A0226073.D	N028726-001B-MS	MS	1	02/26/18 11:56 PM
A0226074.D	N028726-001B-MS	MS	5	02/27/18 12:02 AM
A0226075.D	N028726-001B-MSD	MSD	1	02/27/18 12:07 AM
A0226076.D	CCV5	CCV	1	02/27/18 12:13 AM
A0226077.D	CCB5	CCB	1	02/27/18 12:18 AM
A0226078.D	N028726-001B-MSD	MSD	5	02/27/18 12:24 AM
A0226079.D	N028726-002B	SAMP	1	02/27/18 12:30 AM
A0226080.D	N028726-002B	SAMP	5	02/27/18 12:35 AM
A0226081.D	N028726-003B	SAMP	1	02/27/18 12:41 AM
A0226082.D	N028726-003B	SAMP	5	02/27/18 12:47 AM
A0226083.D	N028726-004B	SAMP	1	02/27/18 12:52 AM
A0226084.D	N028726-004B	SAMP	5	02/27/18 12:58 AM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226085.D	N028726-005B	SAMP	1	02/27/18 1:03 AM
A0226086.D	N028726-005B	SAMP	5	02/27/18 1:09 AM
A0226087.D	N028727-002B	SAMP	1	02/27/18 1:15 AM
A0226088.D	CCV6	CCV	1	02/27/18 1:20 AM
A0226089.D	CCB6	CCB	1	02/27/18 1:26 AM
A0226090.D	N028727-002B	SAMP	5	02/27/18 1:31 AM
A0226091.D	N028727-003B	SAMP	1	02/27/18 1:37 AM
A0226092.D	N028727-003B	SAMP	5	02/27/18 1:43 AM
A0226093.D	N028727-004B	SAMP	1	02/27/18 1:48 AM
A0226094.D	N028727-004B	SAMP	5	02/27/18 1:54 AM
A0226095.D	N028727-005B	SAMP	1	02/27/18 2:00 AM
A0226096.D	N028727-005B	SAMP	5	02/27/18 2:05 AM
A0226097.D	N028727-006B	SAMP	1	02/27/18 2:11 AM
A0226098.D	N028727-006B	SAMP	5	02/27/18 2:16 AM
A0226099.D	N028727-007B	SAMP	1	02/27/18 2:22 AM
A0226100.D	CCV7	CCV	1	02/27/18 2:28 AM
A0226101.D	CCB7	CCB	1	02/27/18 2:33 AM
A0226102.D	N028727-007B	SAMP	5	02/27/18 2:39 AM
A0226103.D	N028727-008B	SAMP	1	02/27/18 2:44 AM
A0226104.D	N028727-008B	SAMP	5	02/27/18 2:50 AM
A0226105.D	N028727-009B	SAMP	1	02/27/18 2:56 AM
A0226106.D	N028727-009B	SAMP	5	02/27/18 3:01 AM
A0226107.D	N028727-010B	SAMP	1	02/27/18 3:07 AM
A0226108.D	N028727-010B	SAMP	5	02/27/18 3:13 AM
A0226109.D	N028727-011B	SAMP	1	02/27/18 3:18 AM
A0226110.D	N028727-011B	SAMP	5	02/27/18 3:24 AM
A0226111.D	N028727-012B	SAMP	1	02/27/18 3:29 AM
A0226112.D	CCV8	CCV	1	02/27/18 3:35 AM
A0226113.D	CCB8	CCB	1	02/27/18 3:41 AM
A0226114.D	N028727-012B	SAMP	5	02/27/18 3:46 AM
A0226115.D	N028727-013B	SAMP	1	02/27/18 3:52 AM
A0226116.D	N028727-013B	SAMP	5	02/27/18 3:58 AM
A0226117.D	N028727-014C	SAMP	1	02/27/18 4:03 AM
A0226118.D	N028727-014C	SAMP	5	02/27/18 4:09 AM
A0226119.D	N028727-015C	SAMP	1	02/27/18 4:14 AM
A0226120.D	N028727-015C	SAMP	5	02/27/18 4:20 AM
A0226121.D	CCV9	CCV	1	02/27/18 4:26 AM
A0226122.D	CCB9	CCB	1	02/27/18 4:31 AM
A0226123.D	LLCCV2	CCV2	1	02/27/18 4:37 AM
A0226124.D	ICSA3	ICSA	1	02/27/18 4:43 AM
A0226125.D	ICSAB3	ICSAB	1	02/27/18 4:48 AM
A0226126.D	ICSAB3	ICSAB	1	02/27/18 4:57 AM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227001.D	RINSE	RINSE	1	02/27/18 9:32 AM
A0227002.D	Cal Blank	IBLK	1	02/27/18 9:38 AM
A0227003.D	Std1-0.1/1 ppb	ICAL	1	02/27/18 9:44 AM
A0227004.D	Std2-0.5/5 ppb	ICAL	1	02/27/18 9:49 AM
A0227005.D	Std3-5/50 ppb	ICAL	1	02/27/18 9:55 AM
A0227006.D	Std4-10/100 ppb	ICAL	1	02/27/18 10:00 AM
A0227007.D	Std5-20/200 ppb	ICAL	1	02/27/18 10:06 AM
A0227008.D	Std6-40/400 ppb	ICAL	1	02/27/18 10:12 AM
A0227009.D	Std7-100/1000 ppb	ICAL	1	02/27/18 10:17 AM
A0227010.D	Std8-200/2000 ppb	ICAL	1	02/27/18 10:23 AM
A0227011.D	ICV	ICV	1	02/27/18 10:29 AM
A0227012.D	ICB	ICB	1	02/27/18 10:34 AM
A0227013.D	LLICV	CCV1	1	02/27/18 10:40 AM
A0227014.D	ICSA1	ICSA	1	02/27/18 10:45 AM
A0227015.D	ICSAB1	ICSAB	1	02/27/18 10:51 AM
A0227016.D	LLICV	CCV1	1	02/27/18 10:57 AM
A0227017.D	MB-66914	MBLK	1	02/27/18 11:02 AM
A0227018.D	LCS-66914	LCS	1	02/27/18 11:08 AM
A0227019.D	N028744-001B	SAMP	1	02/27/18 11:13 AM
A0227020.D	N028744-001B	SAMP	5	02/27/18 11:19 AM
A0227021.D	N028744-001B	SAMP	25	02/27/18 11:25 AM
A0227022.D	N028744-001B-PS	PS	1	02/27/18 11:30 AM
A0227023.D	N028744-001B-PS	PS	5	02/27/18 11:36 AM
A0227024.D	N028744-001B-MS	MS	1	02/27/18 11:41 AM
A0227025.D	N028744-001B-MS	MS	5	02/27/18 11:47 AM
A0227026.D	N028744-001B-MSD	MSD	1	02/27/18 11:53 AM
A0227027.D	CCV1	CCV	1	02/27/18 11:58 AM
A0227028.D	CCB1	CCB	1	02/27/18 12:04 PM
A0227029.D	N028744-001B-MSD	MSD	5	02/27/18 12:10 PM
A0227030.D	N028744-002B	SAMP	1	02/27/18 12:15 PM
A0227031.D	N028744-002B	SAMP	5	02/27/18 12:21 PM
A0227032.D	N028744-003B	SAMP	1	02/27/18 12:26 PM
A0227033.D	N028744-003B	SAMP	5	02/27/18 12:32 PM
A0227034.D	N028744-003B	SAMP	25	02/27/18 12:38 PM
A0227035.D	N028744-004B	SAMP	1	02/27/18 12:43 PM
A0227036.D	N028744-004B	SAMP	5	02/27/18 12:49 PM
A0227037.D	N028744-005B	SAMP	1	02/27/18 12:55 PM
A0227038.D	N028744-005B	SAMP	5	02/27/18 1:00 PM
A0227039.D	CCV2	CCV	1	02/27/18 1:06 PM
A0227040.D	CCB2	CCB	1	02/27/18 1:12 PM
A0227041.D	N028744-006B	SAMP	1	02/27/18 1:17 PM
A0227042.D	N028744-006B	SAMP	5	02/27/18 1:23 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227043.D	N028745-001B	SAMP	1	02/27/18 1:28 PM
A0227044.D	N028745-001B	SAMP	5	02/27/18 1:34 PM
A0227045.D	N028745-002B	SAMP	1	02/27/18 1:40 PM
A0227046.D	N028745-002B	SAMP	5	02/27/18 1:45 PM
A0227047.D	N028745-003B	SAMP	1	02/27/18 1:51 PM
A0227048.D	N028745-003B	SAMP	5	02/27/18 1:57 PM
A0227049.D	N028745-004B	SAMP	1	02/27/18 2:02 PM
A0227050.D	N028745-004B	SAMP	5	02/27/18 2:08 PM
A0227051.D	CCV3	CCV	1	02/27/18 2:14 PM
A0227052.D	CCB3	CCB	1	02/27/18 2:19 PM
A0227053.D	N028745-005B	SAMP	1	02/27/18 2:25 PM
A0227054.D	N028745-005B	SAMP	5	02/27/18 2:30 PM
A0227055.D	N028745-006B	SAMP	1	02/27/18 2:36 PM
A0227056.D	N028745-006B	SAMP	5	02/27/18 2:42 PM
A0227057.D	N028745-007B	SAMP	1	02/27/18 2:47 PM
A0227058.D	N028745-007B	SAMP	5	02/27/18 2:53 PM
A0227059.D	N028745-008B	SAMP	1	02/27/18 2:59 PM
A0227060.D	N028745-008B	SAMP	5	02/27/18 3:05 PM
A0227061.D	N028745-009B	SAMP	1	02/27/18 3:10 PM
A0227062.D	N028745-009B	SAMP	5	02/27/18 3:16 PM
A0227063.D	CCV4	CCV	1	02/27/18 3:21 PM
A0227064.D	CCB4	CCB	1	02/27/18 3:27 PM
A0227065.D	N028745-010B	SAMP	1	02/27/18 3:33 PM
A0227066.D	N028745-010B	SAMP	5	02/27/18 3:40 PM
A0227067.D	N028745-011B	SAMP	1	02/27/18 3:45 PM
A0227068.D	N028745-011B	SAMP	5	02/27/18 3:51 PM
A0227069.D	N028745-012B	SAMP	1	02/27/18 3:57 PM
A0227070.D	N028745-012B	SAMP	5	02/27/18 4:03 PM
A0227071.D	N028745-014B	SAMP	1	02/27/18 4:08 PM
A0227072.D	N028745-014B	SAMP	5	02/27/18 4:14 PM
A0227073.D	N028745-015B	SAMP	1	02/27/18 4:20 PM
A0227074.D	N028745-015B	SAMP	5	02/27/18 4:25 PM
A0227075.D	CCV5	CCV	1	02/27/18 4:31 PM
A0227076.D	CCB5	CCB	1	02/27/18 4:37 PM
A0227077.D	LLCCV1	CCV2	1	02/27/18 4:42 PM
A0227078.D	ICSA2	ICSA	1	02/27/18 4:48 PM
A0227079.D	ICSAB2	ICSAB	1	02/27/18 4:54 PM
A0227080.D	N028745-005B	SAMP	1	02/27/18 4:59 PM
A0227081.D	N028745-009B	SAMP	1	02/27/18 5:06 PM
A0227082.D	N028745-012B	SAMP	1	02/27/18 5:12 PM
A0227083.D	N028745-015B	SAMP	1	02/27/18 5:17 PM
A0227084.D	N028744-003B	SAMP	250	02/27/18 5:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227085.D	N028744-005B	SAMP	25	02/27/18 5:28 PM
A0227086.D	N028726-001B-MSD	MSD	5	02/27/18 5:35 PM
A0227087.D	N028726-003B	SAMP	5	02/27/18 5:39 PM
A0227088.D	N028727-006B	SAMP	1	02/27/18 5:45 PM
A0227089.D	N028745-015B	SAMP	1	02/27/18 5:51 PM
A0227090.D	CCV6	CCV	1	02/27/18 5:56 PM
A0227091.D	CCB6	CCB	1	02/27/18 6:02 PM
A0227092.D	N028717-001C	SAMP	25	02/27/18 6:08 PM
A0227093.D	N028696-001B	SAMP	1	02/27/18 6:14 PM
A0227094.D	N028696-001A	SAMP	1	02/27/18 6:20 PM
A0227095.D	N028696-005B	SAMP	1	02/27/18 6:25 PM
A0227096.D	N028696-005A	SAMP	1	02/27/18 6:31 PM
A0227097.D	MB-66941	MBLK	1	02/27/18 6:37 PM
A0227098.D	LCS-66941	LCS	1	02/27/18 6:43 PM
A0227099.D	N028790-001A	SAMP	1	02/27/18 6:48 PM
A0227100.D	N028790-001A	SAMP	5	02/27/18 6:53 PM
A0227101.D	N028790-001A-PS	PS	1	02/27/18 6:59 PM
A0227102.D	CCV7	CCV	1	02/27/18 7:05 PM
A0227103.D	CCB7	CCB	1	02/27/18 7:11 PM
A0227104.D	N028790-001A-MS	MS	1	02/27/18 7:16 PM
A0227105.D	N028790-001A-MSD	MSD	1	02/27/18 7:22 PM
A0227106.D	N028790-002A	SAMP	1	02/27/18 7:28 PM
A0227107.D	N028790-003A	SAMP	1	02/27/18 7:34 PM
A0227108.D	N028790-004A	SAMP	1	02/27/18 7:39 PM
A0227109.D	N028792-005A	SAMP	1	02/27/18 7:45 PM
A0227110.D	N028792-010A	SAMP	1	02/27/18 7:51 PM
A0227111.D	N028792-015A	SAMP	1	02/27/18 7:56 PM
A0227112.D	N028792-020A	SAMP	1	02/27/18 8:02 PM
A0227113.D	N028792-025A	SAMP	1	02/27/18 8:08 PM
A0227114.D	CCV8	CCV	1	02/27/18 8:13 PM
A0227115.D	CCB8	CCB	1	02/27/18 8:19 PM
A0227116.D	N028738-005A	SAMP	1	02/27/18 8:26 PM
A0227117.D	MB-66959	MBLK	1	02/27/18 8:31 PM
A0227118.D	LCS-66959	LCS	1	02/27/18 8:37 PM
A0227119.D	N028808-001A	SAMP	1	02/27/18 8:42 PM
A0227120.D	N028808-001A	SAMP	5	02/27/18 8:48 PM
A0227121.D	N028808-001A-PS	PS	1	02/27/18 8:54 PM
A0227122.D	N028808-001A-MS	MS	1	02/27/18 8:59 PM
A0227123.D	N028808-001A-MSD	MSD	1	02/27/18 9:05 PM
A0227124.D	N028809-001A	SAMP	1	02/27/18 9:11 PM
A0227125.D	N028810-001A	SAMP	1	02/27/18 9:16 PM
A0227126.D	CCV9	CCV	1	02/27/18 9:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227127.D	CCB9	CCB	1	02/27/18 9:27 PM
A0227128.D	N028811-001A	SAMP	1	02/27/18 9:32 PM
A0227129.D	CCV10	CCV	1	02/27/18 9:39 PM
A0227130.D	CCB10	CCB	1	02/27/18 9:44 PM
A0227131.D	LLCCV2	CCV2	1	02/27/18 9:50 PM
A0227132.D	ICSA3	ICSA	1	02/27/18 9:55 PM
A0227133.D	ICSAB3	ICSAB	1	02/27/18 10:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2018 2:00:00**
Prep End Date: **2/22/2018 7:00:00**
Prep Batch **66882** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 3/6/2018
Initials/ Date: 3/6/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66882	Aqueous		25	☐	0	0	25	1.000		
MB-66882	Aqueous		25	☐	0	0	25	1.000		
N028726-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2018 2:00:00**
Prep End Date: **2/22/2018 7:00:00**
Prep Batch **66882** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 3/6/2018
Initials/ Date: 3/6/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028727-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-014C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-015C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 26 Feb 2018 02:40:46 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	166688.00	0.00	
24 Mg	675728.00	0.00	
25 Mg	87808.20	0.00	
26 Mg	101444.00	0.00	
59 Co	617412.00	0.00	
115 In	1016020.00	0.00	
206 Pb	323115.00	0.00	
207 Pb	282293.00	0.00	
208 Pb	693360.00	0.00	

RSD (%)

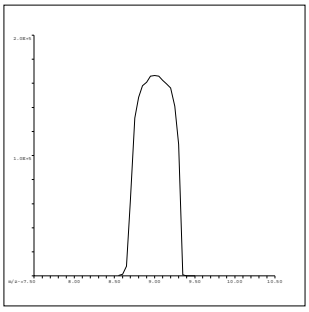
Element	Actual	Required	Flag
9 Be	0.55	5.00	
24 Mg	0.89	5.00	
25 Mg	1.10	5.00	
26 Mg	0.39	5.00	
59 Co	0.82	5.00	
115 In	0.34	5.00	
206 Pb	0.62	5.00	
207 Pb	0.42	5.00	
208 Pb	0.30	5.00	

Ion Ratio

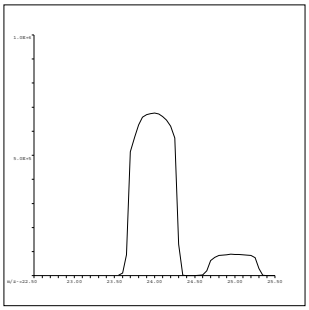
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

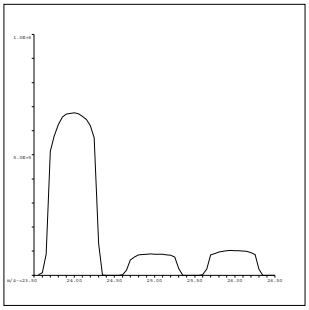
Element	Actual	Required	Flag



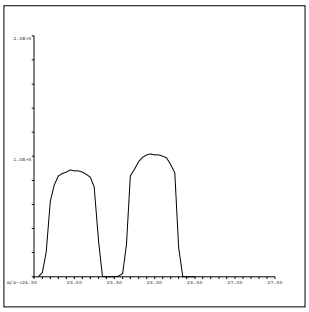
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



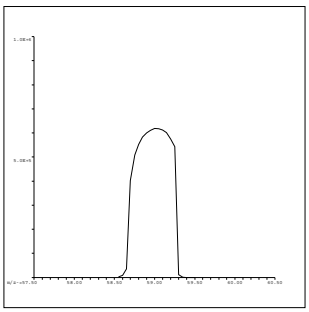
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



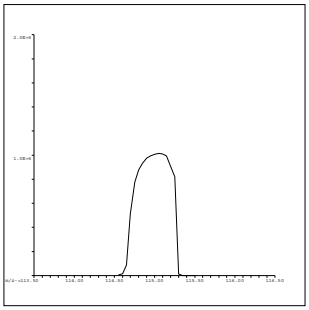
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



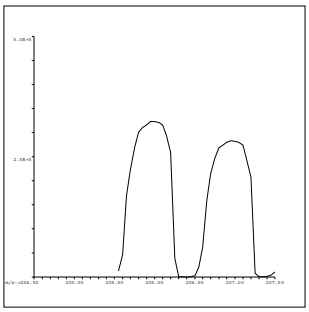
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



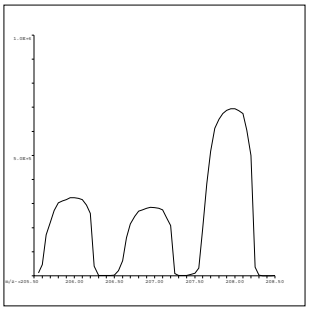
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



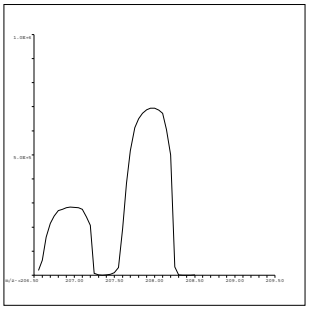
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 27 Feb 2018 07:52:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	89591.20	0.00	
24 Mg	338443.00	0.00	
25 Mg	44194.50	0.00	
26 Mg	52079.10	0.00	
59 Co	444006.00	0.00	
115 In	830117.00	0.00	
206 Pb	245728.00	0.00	
207 Pb	214689.00	0.00	
208 Pb	524452.00	0.00	

RSD (%)

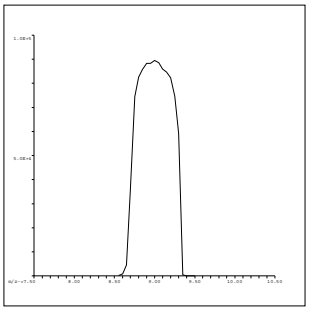
Element	Actual	Required	Flag
9 Be	1.09	5.00	
24 Mg	2.76	5.00	
25 Mg	1.42	5.00	
26 Mg	0.82	5.00	
59 Co	0.39	5.00	
115 In	0.53	5.00	
206 Pb	0.44	5.00	
207 Pb	0.39	5.00	
208 Pb	0.73	5.00	

Ion Ratio

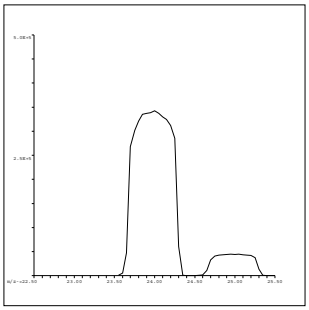
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

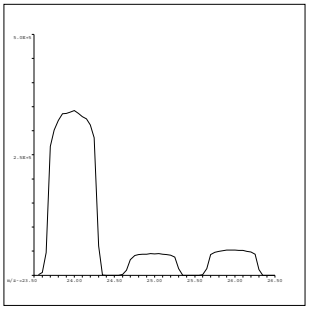
Element	Actual	Required	Flag



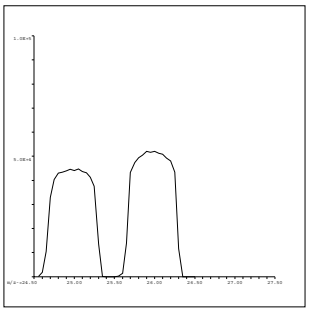
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



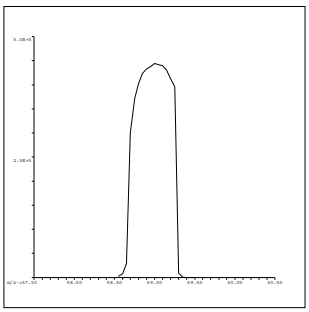
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



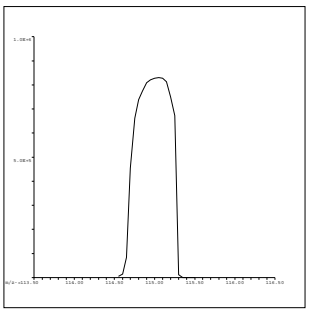
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



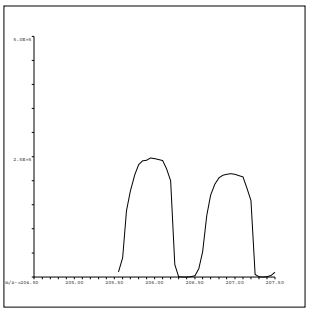
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



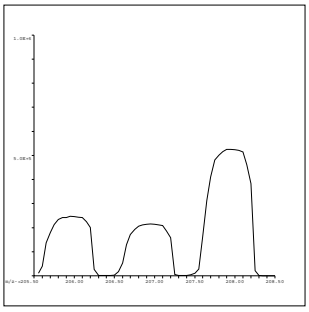
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



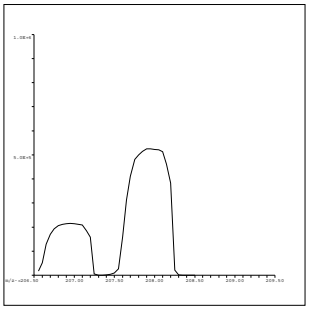
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180226A

Instrument ID: ICPMS-02

Analyte	Data File	A0226002.D	A0226003.D	A0226004.D	A0226005.D	A0226006.D	A0226007.D	A0226008.D	A0226009.D	A0226010.D	
	Acq. Date-Time	02/26/2018 05:16 PM	02/26/2018 05:22 PM	02/26/2018 05:27 PM	02/26/2018 05:33 PM	02/26/2018 05:39 PM	02/26/2018 05:44 PM	02/26/2018 05:50 PM	02/26/2018 05:55 PM	02/26/2018 06:01 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	97491.9		97945.1	97691.6	94822.4	88561.2	91066.6	85636.2	85948.9	
56 Fe [2]	CPS	2632.6		13029	41678.3	70553	127081.6	254683.2	578914.2	1140535	1.0000
55 Mn [2]	CPS	269.9		2378.4	19781.2	38358.4	71806.6	146920.4	343945.9	682609.3	1.0000
52 Cr [2]	CPS	411.9		4521.6	39593	77543.1	145044.6	293996.6	689672.6	1420039.1	0.9999
72 Ge (ISTD) [1]	CPS	78725.2		80838.6	79724.2	77940.1	73997.6	75191.7	70909.3	71589.1	
78 Se [1]	CPS	1.1		151.1	1324.6	2741.4	5176.6	10488.2	24915.4	49860.4	1.0000
72 Ge (ISTD) [2]	CPS	66539.2	68691.3	67509.8	66547.1	65096.8	61880.1	63082.1	59057.1	59377.4	
75 As [2]	CPS	25.8	117.8	430.2	3941.8	7812.1	14504.3	29856.1	69819.3	139372.4	1.0000
103 Rh (ISTD) [2]	CPS	2010768.1		2077477	2060452.4	2039726.9	1928892.8	1979255.7	1857828.9	1871094.3	
95 Mo [2]	CPS	155.6		2488.1	24050.9	47649.2	91115.4	187293.5	443969	889014.6	1.0000
159 Tb (ISTD) [3]	CPS	5729624.3		5937860.3	5973070.7	5993532.6	5784712.1	6047619.1	5817437.6	5855236.7	
137 Ba [3]	CPS	115.8		5844.7	49168.6	96703.5	183434.1	381224.1	901764.1	1870877.4	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

Ba Fe not reported

3/6/2018

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICPMS-02

Analyte	Data File	A0227002.D	A0227004.D	A0227005.D	A0227006.D	A0227007.D	A0227008.D	A0227009.D	A0227010.D	
	Acq. Date-Time	02/27/2018 09:38 AM	02/27/2018 09:49 AM	02/27/2018 09:55 AM	02/27/2018 10:00 AM	02/27/2018 10:06 AM	02/27/2018 10:12 AM	02/27/2018 10:17 AM	02/27/2018 10:23 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	53663.1	54328.8	54076.8	54085.8	54306.5	53351.1	54387.8	52916.4	
78 Se [1]	CPS	1.1	103.3	967.8	1901.3	3817.3	7629.8	19411.1	37683.4	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.329	0.10	10.00	0	103	90	110				
Manganese	104.434	0.50	100.0	0	104	90	110				
Molybdenum	10.677	0.50	10.00	0	107	90	110				
Selenium	10.034	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.116	0.10	0.1000	0	116	80	120				
Manganese	0.524	0.50	0.5000	0	105	80	120				
Molybdenum	0.564	0.50	0.5000	0	113	80	120				
Selenium	0.545	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.116	0.10	20.00	0	101	90	110				
Manganese	19.912	0.50	20.00	0	99.6	90	110				
Molybdenum	20.101	0.50	20.00	0	101	90	110				
Selenium	19.466	0.50	20.00	0	97.3	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.231	0.10	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.795	0.50	20.00	0	99.0	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	20.269	0.50	20.00	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.239	0.10	20.00	0	101	90	110				
Manganese	20.353	0.50	20.00	0	102	90	110				
Molybdenum	20.110	0.50	20.00	0	101	90	110				
Selenium	20.272	0.50	20.00	0	101	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **CCV** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.758	0.10	20.00	0	98.8	90	110				
Manganese	20.149	0.50	20.00	0	101	90	110				
Molybdenum	19.756	0.50	20.00	0	98.8	90	110				
Selenium	20.839	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ZZZZZZ** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Manganese	0.542	0.50	0.5000	0	108	70	130				
Molybdenum	0.523	0.50	0.5000	0	105	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.544	0.50	0.5000	0	109	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Manganese	20.136	0.50	20.00	0	101	90	110				
Molybdenum	20.015	0.50	20.00	0	100	90	110				
Selenium	20.980	0.50	20.00	0	105	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.834	0.10	20.00	0	99.2	90	110				
Manganese	20.072	0.50	20.00	0	100	90	110				
Molybdenum	19.983	0.50	20.00	0	99.9	90	110				
Selenium	20.293	0.50	20.00	0	101	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.305	0.10	20.00	0	102	90	110				
Manganese	20.434	0.50	20.00	0	102	90	110				
Molybdenum	19.950	0.50	20.00	0	99.7	90	110				
Selenium	20.505	0.50	20.00	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.952	0.10	20.00	0	99.8	90	110				
Manganese	20.373	0.50	20.00	0	102	90	110				
Molybdenum	19.657	0.50	20.00	0	98.3	90	110				
Selenium	20.206	0.50	20.00	0	101	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.953	0.10	20.00	0	99.8	90	110				
Manganese	20.426	0.50	20.00	0	102	90	110				
Molybdenum	19.576	0.50	20.00	0	97.9	90	110				
Selenium	20.287	0.50	20.00	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.497	0.50	0.5000	0	99.3	70	130				
Selenium	0.585	0.50	0.5000	0	117	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.170	0.10	10.00	0	102	90	110				
Chromium	10.519	1.0	10.00	0	105	90	110				
Manganese	104.573	0.50	100.0	0	105	90	110				
Molybdenum	10.864	0.50	10.00	0	109	90	110				
Selenium	10.172	0.50	10.00	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.113	0.10	0.1000	0	113	80	120				
Chromium	1.065	1.0	1.000	0	106	80	120				
Manganese	0.599	0.50	0.5000	0	120	80	120				
Molybdenum	0.596	0.50	0.5000	0	119	80	120				
Selenium	0.469	0.50	0.5000	0	93.9	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.289	0.10	20.00	0	101	90	110				
Chromium	21.298	1.0	20.00	0	106	90	110				
Manganese	20.639	0.50	20.00	0	103	90	110				
Molybdenum	19.795	0.50	20.00	0	99.0	90	110				
Selenium	19.408	0.50	20.00	0	97.0	90	110				

This run is for Se only.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.624	0.10	20.00	0	103	90	110				
Chromium	20.991	1.0	20.00	0	105	90	110				
Manganese	20.167	0.50	20.00	0	101	90	110				
Molybdenum	20.248	0.50	20.00	0	101	90	110				
Selenium	19.257	0.50	20.00	0	96.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.419	0.10	20.00	0	102	90	110				
Chromium	20.717	1.0	20.00	0	104	90	110				
Manganese	20.633	0.50	20.00	0	103	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	19.434	0.50	20.00	0	97.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.244	0.10	20.00	0	101	90	110				
Chromium	20.864	1.0	20.00	0	104	90	110				
Manganese	20.714	0.50	20.00	0	104	90	110				
Molybdenum	19.910	0.50	20.00	0	99.6	90	110				
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.330	0.10	20.00	0	102	90	110				
Chromium	20.806	1.0	20.00	0	104	90	110				
Manganese	20.858	0.50	20.00	0	104	90	110				
Molybdenum	19.971	0.50	20.00	0	99.9	90	110				
Selenium	19.472	0.50	20.00	0	97.4	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	94.1	70	130				
Chromium	1.117	1.0	1.000	0	112	70	130				
Manganese	0.557	0.50	0.5000	0	111	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.511	0.50	0.5000	0	102	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.178	0.10	20.00	0	101	90	110				
Chromium	20.745	1.0	20.00	0	104	90	110				
Manganese	20.559	0.50	20.00	0	103	90	110				
Molybdenum	20.111	0.50	20.00	0	101	90	110				
Selenium	18.767	0.50	20.00	0	93.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.655	0.10	20.00	0	103	90	110				
Chromium	20.155	1.0	20.00	0	101	90	110				
Manganese	20.193	0.50	20.00	0	101	90	110				
Molybdenum	20.173	0.50	20.00	0	101	90	110				
Selenium	19.376	0.50	20.00	0	96.9	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.807	0.10	20.00	0	104	90	110				
Chromium	20.123	1.0	20.00	0	101	90	110				
Manganese	20.017	0.50	20.00	0	100	90	110				
Molybdenum	19.696	0.50	20.00	0	98.5	90	110				
Selenium	19.964	0.50	20.00	0	99.8	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.039	0.10	20.00	0	100	90	110				
Chromium	20.975	1.0	20.00	0	105	90	110				
Manganese	20.982	0.50	20.00	0	105	90	110				
Molybdenum	20.193	0.50	20.00	0	101	90	110				
Selenium	17.816	0.50	20.00	0	89.1	90	110				S

No sample was affected by the low biased Se on CCV9.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.338	0.10	20.00	0	102	90	110				
Chromium	20.572	1.0	20.00	0	103	90	110				
Manganese	20.931	0.50	20.00	0	105	90	110				
Molybdenum	20.004	0.50	20.00	0	100	90	110				
Selenium	19.124	0.50	20.00	0	95.6	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				
Chromium	1.135	1.0	1.000	0	113	70	130				
Manganese	0.588	0.50	0.5000	0	118	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.447	0.50	0.5000	0	89.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.064	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.377	1.0	20.00	0	96.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.731	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.721	1.0	20.00	0	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.049	1.0	20.00	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.656	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.741	1.0	20.00	0	98.7	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.867	1.0	20.00	0	99.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.755	1.0	20.00	0	98.8	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.627	1.0	20.00	0	98.1	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.240	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	0.398	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

This run is for Se only.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSA**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.726	0.10	20.00	0	104	80	120				
Manganese	20.545	0.50	20.00	0	103	80	120				
Molybdenum	21.758	0.50	20.00	0	109	80	120				
Selenium	18.881	0.50	20.00	0	94.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSA**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.200	0.10	20.00	0	101	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/26/2018** SeqNo: **2941874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.579	0.50	20.00	0	103	80	120				
Molybdenum	21.928	0.50	20.00	0	110	80	120				
Selenium	20.681	0.50	20.00	0	103	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSA** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

not reported

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.211	0.10	20.00	0	101	80	120				
Manganese	21.505	0.50	20.00	0	108	80	120				
Molybdenum	21.649	0.50	20.00	0	108	80	120				
Selenium	19.163	0.50	20.00	0	95.8	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122325**
Client ID: **ICSAB** Batch ID: **R122325** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.085	0.10	20.00	0	100	80	120				
Manganese	21.203	0.50	20.00	0	106	80	120				
Molybdenum	21.332	0.50	20.00	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.838	0.50	20.00	0	94.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.173	0.10	20.00	0	95.9	80	120				
Chromium	19.434	1.0	20.00	0	97.2	80	120				
Manganese	22.748	0.50	20.00	0	114	80	120				
Molybdenum	20.428	0.50	20.00	0	102	80	120				
Selenium	17.363	0.50	20.00	0	86.8	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	0.143	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

This run is for Se only.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.288	0.10	20.00	0	96.4	80	120				
Chromium	19.609	1.0	20.00	0	98.0	80	120				
Manganese	22.886	0.50	20.00	0	114	80	120				
Molybdenum	20.479	0.50	20.00	0	102	80	120				
Selenium	17.660	0.50	20.00	0	88.3	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	0.131	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.518	0.10	20.00	0	97.6	80	120				
Chromium	18.767	1.0	20.00	0	93.8	80	120				
Manganese	23.612	0.50	20.00	0	118	80	120				
Molybdenum	20.691	0.50	20.00	0	103	80	120				
Selenium	17.809	0.50	20.00	0	89.0	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSA	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941707

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSAB	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941708

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.093	1.0	20.00	0	95.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSA	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941757

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSAB	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.196	1.0	20.00	0	96.0	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ICSA	Batch ID:	R122324	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2941817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.874	1.0	20.00	0	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	97491.9	97491.9	100	PASS	70-125	66539.2	66539.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	100434.5	97491.9	103.02	PASS	70-125	68691.3	66539.2	103.23	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	97945.1	97491.9	100.46	PASS	70-125	67509.8	66539.2	101.46	PASS	70-125
Std3-5/50 ppb	ICAL	1	97691.6	97491.9	100.2	PASS	70-125	66547.1	66539.2	100.01	PASS	70-125
Std4-10/100 ppb	ICAL	1	94822.4	97491.9	97.26	PASS	70-125	65096.8	66539.2	97.83	PASS	70-125
Std5-20/200 ppb	ICAL	1	88561.2	97491.9	90.84	PASS	70-125	61880.1	66539.2	93	PASS	70-125
Std6-40/400 ppb	ICAL	1	91066.6	97491.9	93.41	PASS	70-125	63082.1	66539.2	94.8	PASS	70-125
Std7-100/1000 ppb	ICAL	1	85636.2	97491.9	87.84	PASS	70-125	59057.1	66539.2	88.76	PASS	70-125
Std8-200/2000 ppb	ICAL	1	85948.9	97491.9	88.16	PASS	70-125	59377.4	66539.2	89.24	PASS	70-125
ICV	ICV	1	76934	97491.9	78.91	PASS	70-125	55525.9	66539.2	83.45	PASS	70-125
ICB	ICB	1	78632.4	97491.9	80.66	PASS	70-125	56003.2	66539.2	84.17	PASS	70-125
LLICV	CCV1	1	70762.9	97491.9	72.58	PASS	70-125	50175.6	66539.2	75.41	PASS	70-125
ICSA1	ICSA	1	80525.3	97491.9	82.6	PASS	70-125	54391	66539.2	81.74	PASS	70-125
ICSAB1	ICSAB	1	103061.5	97491.9	105.71	PASS	70-125	67290.2	66539.2	101.13	PASS	70-125
CCV1	CCV	1	107973.1	97491.9	110.75	PASS	70-125	72732.2	66539.2	109.31	PASS	70-125
CCB1	CCB	1	99382.8	97491.9	101.94	PASS	70-125	68019.8	66539.2	102.23	PASS	70-125
CCV2	CCV	1	120410.7	97491.9	123.51	PASS	70-125	81919.5	66539.2	123.11	PASS	70-125
CCB2	CCB	1	109554.6	97491.9	112.37	PASS	70-125	75693.1	66539.2	113.76	PASS	70-125
CCV3	CCV	1	112320.7	97491.9	115.21	PASS	70-125	77979.2	66539.2	117.19	PASS	70-125
CCB3	CCB	1	96025.7	97491.9	98.5	PASS	70-125	67294.8	66539.2	101.14	PASS	70-125
CCV4	CCV	1	109876.2	97491.9	112.7	PASS	70-125	78099	66539.2	117.37	PASS	70-125
CCB4	CCB	1	94427.5	97491.9	96.86	PASS	70-125	67575.7	66539.2	101.56	PASS	70-125
LLCCV1	CCV2	1	90255.9	97491.9	92.58	PASS	70-125	64546.7	66539.2	97.006	PASS	70-125
ICSA2	ICSA	1	88048.9	97491.9	90.31	PASS	70-125	60795.8	66539.2	91.37	PASS	70-125
ICSAB2	ICSAB	1	110466.8	97491.9	113.31	PASS	70-125	75196.2	66539.2	113.01	PASS	70-125
MB-66882	MBLK	1	98448.5	97491.9	100.98	PASS	70-125	69518	66539.2	104.48	PASS	70-125
LCS-66882	LCS	1	95321.8	97491.9	97.77	PASS	70-125	68217.2	66539.2	102.52	PASS	70-125
N028726-001B	SAMP	1	78220.3	97491.9	80.23	PASS	70-125	51216.5	66539.2	76.97	PASS	70-125
N028726-001B	SAMP	5	87873.9	97491.9	90.13	PASS	70-125	59916	66539.2	90.046	PASS	70-125
N028726-001B	SAMP	25	91735.9	97491.9	94.096	PASS	70-125	64237.8	66539.2	96.54	PASS	70-125
N028726-001B-PS	PS	1	84189.7	97491.9	86.36	PASS	70-125	53997.6	66539.2	81.15	PASS	70-125
N028726-001B-PS	PS	5	91115.1	97491.9	93.46	PASS	70-125	62346.1	66539.2	93.7	PASS	70-125
N028726-001B-MS	MS	1	86611.7	97491.9	88.84	PASS	70-125	56394.6	66539.2	84.75	PASS	70-125
N028726-001B-MS	MS	5	90829.2	97491.9	93.17	PASS	70-125	61847.5	66539.2	92.95	PASS	70-125
N028726-001B-MSD	MSD	1	88147.9	97491.9	90.42	PASS	70-125	55896.3	66539.2	84.005	PASS	70-125
CCV5	CCV	1	111627.4	97491.9	114.5	PASS	70-125	77339.6	66539.2	116.23	PASS	70-125
CCB5	CCB	1	94469	97491.9	96.9	PASS	70-125	67228.5	66539.2	101.04	PASS	70-125
N028726-001B-MSD	MSD	5	82691.4	97491.9	84.82	PASS	70-125	57180.6	66539.2	85.94	PASS	70-125
N028726-002B	SAMP	1	84436.7	97491.9	86.61	PASS	70-125	56347.7	66539.2	84.68	PASS	70-125
N028726-002B	SAMP	5	90747.2	97491.9	93.082	PASS	70-125	62786.9	66539.2	94.36	PASS	70-125
N028726-003B	SAMP	1	78086.2	97491.9	80.095	PASS	70-125	49554.8	66539.2	74.47	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-003B	SAMP	5	86845.9	97491.9	89.08	PASS	70-125	58810.9	66539.2	88.39	PASS	70-125
N028726-004B	SAMP	1	78356.4	97491.9	80.37	PASS	70-125	49144.6	66539.2	73.86	PASS	70-125
N028726-004B	SAMP	5	85699.8	97491.9	87.9	PASS	70-125	58475.1	66539.2	87.88	PASS	70-125
N028726-005B	SAMP	1	74442	97491.9	76.36	PASS	70-125	47575.5	66539.2	71.5	PASS	70-125
N028726-005B	SAMP	5	83256.7	97491.9	85.4	PASS	70-125	56755.7	66539.2	85.3	PASS	70-125
N028727-002B	SAMP	1	90604.4	97491.9	92.94	PASS	70-125	63403.4	66539.2	95.29	PASS	70-125
CCV6	CCV	1	104208	97491.9	106.89	PASS	70-125	74045.7	66539.2	111.28	PASS	70-125
CCB6	CCB	1	88402.7	97491.9	90.68	PASS	70-125	63500.7	66539.2	95.43	PASS	70-125
N028727-002B	SAMP	5	81951.4	97491.9	84.06	PASS	70-125	58473	66539.2	87.88	PASS	70-125
N028727-003B	SAMP	1	82292.8	97491.9	84.41	PASS	70-125	59241.4	66539.2	89.032	PASS	70-125
N028727-003B	SAMP	5	82509.6	97491.9	84.63	PASS	70-125	58787.4	66539.2	88.35	PASS	70-125
N028727-004B	SAMP	1	82936.2	97491.9	85.07	PASS	70-125	59038.4	66539.2	88.73	PASS	70-125
N028727-004B	SAMP	5	79856.5	97491.9	81.91	PASS	70-125	58110.8	66539.2	87.33	PASS	70-125
N028727-005B	SAMP	1	80298.7	97491.9	82.36	PASS	70-125	57043.7	66539.2	85.73	PASS	70-125
N028727-005B	SAMP	5	79619	97491.9	81.67	PASS	70-125	57668	66539.2	86.67	PASS	70-125
N028727-006B	SAMP	1	80417.8	97491.9	82.49	PASS	70-125	57422.5	66539.2	86.3	PASS	70-125
N028727-006B	SAMP	5	79645.5	97491.9	81.69	PASS	70-125	56970.9	66539.2	85.62	PASS	70-125
N028727-007B	SAMP	1	79449.4	97491.9	81.49	PASS	70-125	57825.1	66539.2	86.9	PASS	70-125
CCV7	CCV	1	95063.1	97491.9	97.51	PASS	70-125	67562.1	66539.2	101.54	PASS	70-125
CCB7	CCB	1	82329.9	97491.9	84.45	PASS	70-125	59354.8	66539.2	89.2	PASS	70-125
N028727-007B	SAMP	5	76286.1	97491.9	78.25	PASS	70-125	56641.9	66539.2	85.13	PASS	70-125
N028727-008B	SAMP	1	81578.3	97491.9	83.68	PASS	70-125	59268	66539.2	89.072	PASS	70-125
N028727-008B	SAMP	5	78540.6	97491.9	80.56	PASS	70-125	57564	66539.2	86.51	PASS	70-125
N028727-009B	SAMP	1	82728.3	97491.9	84.86	PASS	70-125	59604.9	66539.2	89.58	PASS	70-125
N028727-009B	SAMP	5	78082.8	97491.9	80.092	PASS	70-125	57126.2	66539.2	85.85	PASS	70-125
N028727-010B	SAMP	1	79295.1	97491.9	81.34	PASS	70-125	57319.9	66539.2	86.14	PASS	70-125
N028727-010B	SAMP	5	76995.8	97491.9	78.98	PASS	70-125	56624.3	66539.2	85.099	PASS	70-125
N028727-011B	SAMP	1	80059.8	97491.9	82.12	PASS	70-125	58332.3	66539.2	87.67	PASS	70-125
N028727-011B	SAMP	5	76820.3	97491.9	78.8	PASS	70-125	55610.8	66539.2	83.58	PASS	70-125
N028727-012B	SAMP	1	77720	97491.9	79.72	PASS	70-125	56414.7	66539.2	84.78	PASS	70-125
CCV8	CCV	1	90708.2	97491.9	93.042	PASS	70-125	65314.1	66539.2	98.16	PASS	70-125
CCB8	CCB	1	77030.1	97491.9	79.012	PASS	70-125	57220.8	66539.2	86	PASS	70-125
N028727-012B	SAMP	5	73495.7	97491.9	75.39	PASS	70-125	54331.1	66539.2	81.65	PASS	70-125
N028727-013B	SAMP	1	74036.7	97491.9	75.94	PASS	70-125	52944.1	66539.2	79.57	PASS	70-125
N028727-013B	SAMP	5	73750.1	97491.9	75.65	PASS	70-125	54305.4	66539.2	81.61	PASS	70-125
N028727-014C	SAMP	1	73097.1	97491.9	74.98	PASS	70-125	52751.2	66539.2	79.28	PASS	70-125
N028727-014C	SAMP	5	72005.8	97491.9	73.86	PASS	70-125	53230.6	66539.2	80	PASS	70-125
N028727-015C	SAMP	1	71828.4	97491.9	73.68	PASS	70-125	52176.1	66539.2	78.41	PASS	70-125
N028727-015C	SAMP	5	72605.2	97491.9	74.47	PASS	70-125	53829.3	66539.2	80.9	PASS	70-125
CCV9	CCV	1	85218.4	97491.9	87.41	PASS	70-125	61184.9	66539.2	91.95	PASS	70-125
CCB9	CCB	1	72795.9	97491.9	74.67	PASS	70-125	53460.1	66539.2	80.34	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	71367.5	97491.9	73.2	PASS	70-125	52703.6	66539.2	79.21	PASS	70-125
ICSA3	ICSA	1	71649.7	97491.9	73.49	PASS	70-125	51542	66539.2	77.46	PASS	70-125
ICSAB3	ICSAB	1	91206.4	97491.9	93.55	PASS	70-125	64014.6	66539.2	96.21	PASS	70-125
ICSAB3	ICSAB	1	87311.7	97491.9	89.56	PASS	70-125	60678.8	66539.2	91.19	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	78725.2	78725.2	100	PASS	70-125	2010768.1	2010768.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	81825.8	78725.2	103.94	PASS	70-125	2095079.1	2010768.1	104.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	80838.6	78725.2	102.68	PASS	70-125	2077477	2010768.1	103.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	79724.2	78725.2	101.27	PASS	70-125	2060452.4	2010768.1	102.47	PASS	70-125
Std4-10/100 ppb	ICAL	1	77940.1	78725.2	99.003	PASS	70-125	2039726.9	2010768.1	101.44	PASS	70-125
Std5-20/200 ppb	ICAL	1	73997.6	78725.2	93.99	PASS	70-125	1928892.8	2010768.1	95.93	PASS	70-125
Std6-40/400 ppb	ICAL	1	75191.7	78725.2	95.51	PASS	70-125	1979255.7	2010768.1	98.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	70909.3	78725.2	90.072	PASS	70-125	1857828.9	2010768.1	92.39	PASS	70-125
Std8-200/2000 ppb	ICAL	1	71589.1	78725.2	90.94	PASS	70-125	1871094.3	2010768.1	93.054	PASS	70-125
ICV	ICV	1	65486.3	78725.2	83.18	PASS	70-125	1740741.6	2010768.1	86.57	PASS	70-125
ICB	ICB	1	66411.9	78725.2	84.36	PASS	70-125	1776890.2	2010768.1	88.37	PASS	70-125
LLICV	CCV1	1	60924.1	78725.2	77.39	PASS	70-125	1605452.4	2010768.1	79.84	PASS	70-125
ICSA1	ICSA	1	63380.1	78725.2	80.51	PASS	70-125	1549752.1	2010768.1	77.073	PASS	70-125
ICSAB1	ICSAB	1	80235.7	78725.2	101.92	PASS	70-125	1938163.7	2010768.1	96.39	PASS	70-125
CCV1	CCV	1	85150.4	78725.2	108.16	PASS	70-125	2168755	2010768.1	107.86	PASS	70-125
CCB1	CCB	1	80183.2	78725.2	101.85	PASS	70-125	2029044.6	2010768.1	100.91	PASS	70-125
CCV2	CCV	1	91998.2	78725.2	116.86	PASS	70-125	2393210.2	2010768.1	119.02	PASS	70-125
CCB2	CCB	1	84426.7	78725.2	107.24	PASS	70-125	2250124.4	2010768.1	111.9	PASS	70-125
CCV3	CCV	1	84635.6	78725.2	107.51	PASS	70-125	2295255.8	2010768.1	114.15	PASS	70-125
CCB3	CCB	1	74778	78725.2	94.99	PASS	70-125	2003532.9	2010768.1	99.64	PASS	70-125
CCV4	CCV	1	84537.2	78725.2	107.38	PASS	70-125	2320454.1	2010768.1	115.4	PASS	70-125
CCB4	CCB	1	73882.5	78725.2	93.85	PASS	70-125	2004189.3	2010768.1	99.67	PASS	70-125
LLCCV1	CCV2	1	70334.9	78725.2	89.34	PASS	70-125	1953812	2010768.1	97.17	PASS	70-125
ICSA2	ICSA	1	66152.2	78725.2	84.029	PASS	70-125	1707672.8	2010768.1	84.93	PASS	70-125
ICSAB2	ICSAB	1	80486.9	78725.2	102.24	PASS	70-125	2092410.1	2010768.1	104.06	PASS	70-125
MB-66882	MBLK	1	77464.7	78725.2	98.4	PASS	70-125	2076113	2010768.1	103.25	PASS	70-125
LCS-66882	LCS	1	76239	78725.2	96.84	PASS	70-125	2086702.8	2010768.1	103.78	PASS	70-125
N028726-001B	SAMP	1	52182.9	78725.2	66.28	NR!	70-125	1330086.5	2010768.1	66.15	NR!	70-125
N028726-001B	SAMP	5	63572.8	78725.2	80.75	PASS	70-125	1648017.7	2010768.1	81.96	PASS	70-125
N028726-001B	SAMP	25	69985.6	78725.2	88.9	PASS	70-125	1825172.8	2010768.1	90.77	PASS	70-125
N028726-001B-PS	PS	1	54977.6	78725.2	69.83	NR!	70-125	1400653.6	2010768.1	69.66	NR!	70-125
N028726-001B-PS	PS	5	65132.5	78725.2	82.73	PASS	70-125	1707259.8	2010768.1	84.91	PASS	70-125
N028726-001B-MS	MS	1	56551.9	78725.2	71.83	PASS	70-125	1429659.6	2010768.1	71.1	PASS	70-125
N028726-001B-MS	MS	5	66059.5	78725.2	83.91	PASS	70-125	1699479.6	2010768.1	84.52	PASS	70-125
N028726-001B-MSD	MSD	1	57439.3	78725.2	72.96	PASS	70-125	1431244.9	2010768.1	71.18	PASS	70-125
CCV5	CCV	1	85523.4	78725.2	108.64	PASS	70-125	2305999.9	2010768.1	114.68	PASS	70-125
CCB5	CCB	1	74002.2	78725.2	94.001	PASS	70-125	1998294.8	2010768.1	99.38	PASS	70-125
N028726-001B-MSD	MSD	5	62466.5	78725.2	79.35	PASS	70-125	1561012.5	2010768.1	77.63	PASS	70-125
N028726-002B	SAMP	1	58178.8	78725.2	73.9	PASS	70-125	1471449.5	2010768.1	73.18	PASS	70-125
N028726-002B	SAMP	5	68574.1	78725.2	87.11	PASS	70-125	1722795.2	2010768.1	85.68	PASS	70-125
N028726-003B	SAMP	1	50524.3	78725.2	64.18	NR!	70-125	1190218.4	2010768.1	59.19	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-003B	SAMP	5	62463.3	78725.2	79.34	PASS	70-125	1592652.8	2010768.1	79.21	PASS	70-125
N028726-004B	SAMP	1	49910.4	78725.2	63.4	NR!	70-125	1188477.1	2010768.1	59.11	NR!	70-125
N028726-004B	SAMP	5	62199	78725.2	79.008	PASS	70-125	1591614.5	2010768.1	79.15	PASS	70-125
N028726-005B	SAMP	1	48555.1	78725.2	61.68	NR!	70-125	1155126.8	2010768.1	57.45	NR!	70-125
N028726-005B	SAMP	5	59753	78725.2	75.9	PASS	70-125	1547529.4	2010768.1	76.96	PASS	70-125
N028727-002B	SAMP	1	67861.3	78725.2	86.2	PASS	70-125	1739322.7	2010768.1	86.5	PASS	70-125
CCV6	CCV	1	81056.2	78725.2	102.96	PASS	70-125	2174228.2	2010768.1	108.13	PASS	70-125
CCB6	CCB	1	70436.5	78725.2	89.47	PASS	70-125	1916207.5	2010768.1	95.3	PASS	70-125
N028727-002B	SAMP	5	64715.3	78725.2	82.2	PASS	70-125	1722986.2	2010768.1	85.69	PASS	70-125
N028727-003B	SAMP	1	64204.3	78725.2	81.55	PASS	70-125	1652928.3	2010768.1	82.2	PASS	70-125
N028727-003B	SAMP	5	65947.7	78725.2	83.77	PASS	70-125	1708473.3	2010768.1	84.97	PASS	70-125
N028727-004B	SAMP	1	65080.3	78725.2	82.67	PASS	70-125	1655160.3	2010768.1	82.31	PASS	70-125
N028727-004B	SAMP	5	64689.8	78725.2	82.17	PASS	70-125	1672703.8	2010768.1	83.19	PASS	70-125
N028727-005B	SAMP	1	62260.2	78725.2	79.085	PASS	70-125	1607880.3	2010768.1	79.96	PASS	70-125
N028727-005B	SAMP	5	64784.3	78725.2	82.29	PASS	70-125	1663533.4	2010768.1	82.73	PASS	70-125
N028727-006B	SAMP	1	63198.2	78725.2	80.28	PASS	70-125	1621225.6	2010768.1	80.63	PASS	70-125
N028727-006B	SAMP	5	65734.8	78725.2	83.5	PASS	70-125	1683116.1	2010768.1	83.71	PASS	70-125
N028727-007B	SAMP	1	64289.2	78725.2	81.66	PASS	70-125	1605423.2	2010768.1	79.84	PASS	70-125
CCV7	CCV	1	76973.8	78725.2	97.78	PASS	70-125	2037877.1	2010768.1	101.35	PASS	70-125
CCB7	CCB	1	67260	78725.2	85.44	PASS	70-125	1808461.6	2010768.1	89.94	PASS	70-125
N028727-007B	SAMP	5	62977.4	78725.2	80	PASS	70-125	1629968.8	2010768.1	81.062	PASS	70-125
N028727-008B	SAMP	1	66566.1	78725.2	84.56	PASS	70-125	1681174.1	2010768.1	83.61	PASS	70-125
N028727-008B	SAMP	5	65842.1	78725.2	83.64	PASS	70-125	1681144.4	2010768.1	83.61	PASS	70-125
N028727-009B	SAMP	1	66254.7	78725.2	84.16	PASS	70-125	1677140.7	2010768.1	83.41	PASS	70-125
N028727-009B	SAMP	5	65633.3	78725.2	83.37	PASS	70-125	1653064.8	2010768.1	82.21	PASS	70-125
N028727-010B	SAMP	1	64794.5	78725.2	82.3	PASS	70-125	1631165.8	2010768.1	81.12	PASS	70-125
N028727-010B	SAMP	5	65111.4	78725.2	82.71	PASS	70-125	1638981.2	2010768.1	81.51	PASS	70-125
N028727-011B	SAMP	1	65501.6	78725.2	83.2	PASS	70-125	1631839.2	2010768.1	81.16	PASS	70-125
N028727-011B	SAMP	5	63782.7	78725.2	81.019	PASS	70-125	1620506.3	2010768.1	80.59	PASS	70-125
N028727-012B	SAMP	1	64100.7	78725.2	81.42	PASS	70-125	1574991.3	2010768.1	78.33	PASS	70-125
CCV8	CCV	1	75036.6	78725.2	95.31	PASS	70-125	1964871.2	2010768.1	97.72	PASS	70-125
CCB8	CCB	1	65504.1	78725.2	83.21	PASS	70-125	1716413.8	2010768.1	85.36	PASS	70-125
N028727-012B	SAMP	5	62257.9	78725.2	79.083	PASS	70-125	1578017.7	2010768.1	78.48	PASS	70-125
N028727-013B	SAMP	1	60369.9	78725.2	76.68	PASS	70-125	1511555.5	2010768.1	75.17	PASS	70-125
N028727-013B	SAMP	5	61666.9	78725.2	78.33	PASS	70-125	1583952.2	2010768.1	78.77	PASS	70-125
N028727-014C	SAMP	1	59861.3	78725.2	76.038	PASS	70-125	1505818.4	2010768.1	74.89	PASS	70-125
N028727-014C	SAMP	5	60155.7	78725.2	76.41	PASS	70-125	1531041.6	2010768.1	76.14	PASS	70-125
N028727-015C	SAMP	1	59654	78725.2	75.77	PASS	70-125	1482370.5	2010768.1	73.72	PASS	70-125
N028727-015C	SAMP	5	62055	78725.2	78.82	PASS	70-125	1559278.5	2010768.1	77.55	PASS	70-125
CCV9	CCV	1	71776.8	78725.2	91.17	PASS	70-125	1881325.6	2010768.1	93.56	PASS	70-125
CCB9	CCB	1	61974.6	78725.2	78.72	PASS	70-125	1641016.7	2010768.1	81.61	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	60502.6	78725.2	76.85	PASS	70-125	1600866.2	2010768.1	79.61	PASS	70-125
ICSA3	ICSA	1	57865.4	78725.2	73.5	PASS	70-125	1449844.5	2010768.1	72.1	PASS	70-125
ICSAB3	ICSAB	1	72605.8	78725.2	92.23	PASS	70-125	1780996.2	2010768.1	88.57	PASS	70-125
ICSAB3	ICSAB	1	63869.6	78725.2	81.13	PASS	70-125	1756751	2010768.1	87.37	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	53663.1	53663.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	54213.8	53663.1	101.03	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	54328.8	53663.1	101.24	PASS	70-125
Std3-5/50 ppb	ICAL	1	54076.8	53663.1	100.77	PASS	70-125
Std4-10/100 ppb	ICAL	1	54085.8	53663.1	100.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	54306.5	53663.1	101.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	53351.1	53663.1	99.42	PASS	70-125
Std7-100/1000 ppb	ICAL	1	54387.8	53663.1	101.35	PASS	70-125
Std8-200/2000 ppb	ICAL	1	52916.4	53663.1	98.61	PASS	70-125
ICV	ICV	1	59218	53663.1	110.35	PASS	70-125
ICB	ICB	1	52728	53663.1	98.26	PASS	70-125
LLICV	CCV1	1	55108	53663.1	102.69	PASS	70-125
ICSA1	ICSA	1	53017.8	53663.1	98.8	PASS	70-125
ICSAB1	ICSAB	1	46264	53663.1	86.21	PASS	70-125
LLICV	CCV1	1	63565	53663.1	118.45	PASS	70-125
CCV1	CCV	1	47776.3	53663.1	89.03	PASS	70-125
CCB1	CCB	1	62887.2	53663.1	117.19	PASS	70-125
CCV2	CCV	1	59691.9	53663.1	111.23	PASS	70-125
CCB2	CCB	1	59054.1	53663.1	110.05	PASS	70-125
CCV3	CCV	1	59191.1	53663.1	110.3	PASS	70-125
CCB3	CCB	1	58905.8	53663.1	109.77	PASS	70-125
CCV4	CCV	1	56869.6	53663.1	105.98	PASS	70-125
CCB4	CCB	1	56007.8	53663.1	104.37	PASS	70-125
CCV5	CCV	1	55567.4	53663.1	103.55	PASS	70-125
CCB5	CCB	1	54966.6	53663.1	102.43	PASS	70-125
LLCCV1	CCV2	1	55528.3	53663.1	103.48	PASS	70-125
ICSA2	ICSA	1	52542.9	53663.1	97.91	PASS	70-125
ICSAB2	ICSAB	1	45504.1	53663.1	84.8	PASS	70-125
N028726-001B-MSD	MSD	5	40918.7	53663.1	76.25	PASS	70-125
N028726-003B	SAMP	5	50949	53663.1	94.94	PASS	70-125
N028727-006B	SAMP	1	60230.4	53663.1	112.24	PASS	70-125
CCV6	CCV	1	59888.1	53663.1	111.6	PASS	70-125
CCB6	CCB	1	58142.9	53663.1	108.35	PASS	70-125
CCV7	CCV	1	58521.1	53663.1	109.05	PASS	70-125
CCB7	CCB	1	57833	53663.1	107.77	PASS	70-125
CCV8	CCV	1	54923.9	53663.1	102.35	PASS	70-125
CCB8	CCB	1	54207.3	53663.1	101.01	PASS	70-125
CCV9	CCV	1	51503	53663.1	95.97	PASS	70-125
CCB9	CCB	1	50053	53663.1	93.27	PASS	70-125
CCV10	CCV	1	50397.2	53663.1	93.91	PASS	70-125
CCB10	CCB	1	49587.2	53663.1	92.4	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	50928.7	53663.1	94.9	PASS	70-125
ICSA3	ICSA	1	47515.4	53663.1	88.54	PASS	70-125
ICSAB3	ICSAB	1	48206.3	53663.1	89.83	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028726
Test Method: EPA 6020
Analysis Date: 2/26/2018

Matrix: Groundwater
Batch No.: 66882

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028726-001B DT 5X	Arsenic	ug/L	7.132255	PASS	6.736628	5.87%	10
N028726-001B DT 5X	Chromium	ug/L	0	NA	0.681402	100.00%	10
N028726-001B DT 25X	Manganese	ug/L	130.2321	PASS	124.7163	4.42%	10
N028726-001B DT 25X	Molybdenum	ug/L	65.99337	PASS	65.53138	0.70%	10
N028726-001B DT 25X	Selenium	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028726-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941880

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.952	0.10	10.00	6.737	102	80	120				

Sample ID	N028726-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941881

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	225.437	2.5	100.0	124.7	101	80	120				
Molybdenum	76.614	2.5	10.00	65.53	111	80	120				
Selenium	10.892	2.5	10.00	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028726
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028726-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941764

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.032	1.0	10.00	0.6814	93.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 06, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028727

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 21, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Samples N028727-001(AB-1-Q118) and N028727-016 (AB-2-Q118) were not analyzed. Please see attached correspondence.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N028726-001B-MS and N028726-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N028775-004CMS and N028775-004CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028727-001A	AB-1-Q118	Groundwater	2/21/2018 8:45:00 AM	2/21/2018	3/6/2018
N028727-002A	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002B	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002C	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002D	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002E	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-003A	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003B	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003C	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003D	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003E	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-004A	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004B	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004C	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004D	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004E	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-005A	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005B	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005C	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005D	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005E	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-006A	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006B	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006C	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006D	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006E	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-007A	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-007B	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-007C	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028727-007D	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-007E	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-008A	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008B	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008C	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008D	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008E	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-009A	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009B	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009C	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009D	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009E	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-010A	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010B	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010C	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010D	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010E	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-011A	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011B	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011C	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011D	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011E	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-012A	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012B	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012C	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012D	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012E	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-013A	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-013B	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-013C	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028727-013D	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-013E	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-014A	SW1-Q118	Groundwater	2/21/2018 2:50:00 PM	2/21/2018	3/6/2018
N028727-014B	SW1-Q118	Groundwater	2/21/2018 2:50:00 PM	2/21/2018	3/6/2018
N028727-014C	SW1-Q118	Groundwater	2/21/2018 2:50:00 PM	2/21/2018	3/6/2018
N028727-015A	SW2-Q118	Groundwater	2/21/2018 3:20:00 PM	2/21/2018	3/6/2018
N028727-015B	SW2-Q118	Groundwater	2/21/2018 3:20:00 PM	2/21/2018	3/6/2018
N028727-015C	SW2-Q118	Groundwater	2/21/2018 3:20:00 PM	2/21/2018	3/6/2018
N028727-016A	AB-2-Q118	Groundwater	2/21/2018 1:40:00 PM	2/21/2018	3/6/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028726-001DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122226
Client ID:	ZZZZZZ	Batch ID:	R122226	TestNo:	EPA 120.1			Analysis Date:	2/22/2018	SeqNo:	2938615

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11190.000	0.10						11210	0.179	2	

Sample ID	N028727-014BDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122226
Client ID:	ZZZZZZ	Batch ID:	R122226	TestNo:	EPA 120.1			Analysis Date:	2/22/2018	SeqNo:	2938663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1147.000	0.10						1144	0.262	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-008

Client Sample ID: C-R27-S-Q118
Collection Date: 2/21/2018 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-011

Client Sample ID: MW-911-Q118
Collection Date: 2/21/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-012

Client Sample ID: R-28-Q118
Collection Date: 2/21/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-015

Client Sample ID: SW2-Q118
Collection Date: 2/21/2018 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028727-002DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **122225**
Client ID: **ZZZZZZ**	Batch ID: **R122225**	TestNo: **SM4500-H+B**		Analysis Date: **2/22/2018**	SeqNo: **2938597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.290	0.121	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N028727-012DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **122225**
Client ID: **ZZZZZZ**	Batch ID: **R122225**	TestNo: **SM4500-H+B**		Analysis Date: **2/22/2018**	SeqNo: **2938608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.220	0.485	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66888	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2018	RunNo:	122241
Client ID:	LCSW	Batch ID:	66888	TestNo:	SM2540D			Analysis Date:	2/22/2018	SeqNo:	2939016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID	MB-66888	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2018	RunNo:	122241
Client ID:	PBW	Batch ID:	66888	TestNo:	SM2540D			Analysis Date:	2/22/2018	SeqNo:	2939017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028727-002DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2018	RunNo:	122241
Client ID:	ZZZZZZ	Batch ID:	66888	TestNo:	SM2540D			Analysis Date:	2/22/2018	SeqNo:	2939019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66911	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	LCSW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	944.000	10	1000	0	94.4	80	120				

Sample ID	MB-66911	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	PBW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028745-011DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	ZZZZZZ	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940092

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 03:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 03:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:02 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:21 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 05:18 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 05:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 06:15 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 06:34 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 06:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 07:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 07:50 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 08:08 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R122253	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253		
Client ID:	PBW	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939330		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R122253	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253		
Client ID:	LCSW	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939331		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.981	0.20	5.000	0	99.6	90	110						

Sample ID	N028726-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253		
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939333		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.899	1.0	5.000	0	98.0	90	110						

Sample ID	N028726-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253		
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939339		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.044	0.20	1.000	0.05200	99.2	90	110						

Sample ID	N028726-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253		
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939340		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.544	0.20	1.000	0.5270	102	90	110						

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028726-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939342

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.672	2.0	50.00	68.66	98.0	90	110				

Sample ID	N028726-003AMSD	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	119.277	2.0	50.00	68.66	101	90	110	117.7	1.35	0	

Sample ID	N028726-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939345

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.525	1.0	5.000	0.5430	99.6	90	110				

Sample ID	N028726-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.001	1.0	5.000	4.108	97.9	90	110				

Sample ID	N028726-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939351

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	68.221	2.0						68.66	0.641	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939353

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID	N028727-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939355

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.04870	104	90	110				

Sample ID	N028727-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939359

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID	N028727-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939361

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N028727-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939363

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.04880	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939365

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20	1.000	0	105	90	110				

Sample ID	N028727-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939367

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110				

Sample ID	N028727-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.04650	101	90	110				

Sample ID	N028727-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939373

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	0	101	90	110				

Sample ID	N028727-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939375

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N028727-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Sample ID	N028727-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID	N028727-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939385

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66882	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66882	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.332	1.0	10.00	0	103	85	115				

Sample ID	N028726-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.899	1.0	10.00	0.6814	92.2	75	125				

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.833	1.0	10.00	0.6814	91.5	75	125	9.899	0.665	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.50	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.51	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.53	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.51	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.48	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.48	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.48	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122394**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **PBW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122394**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **LCSW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	85	115				

Sample ID **N028727-004EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050						0.4675	7.83	20	

Sample ID **N028775-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.986	0.50	5.000	5.309	93.5	75	125				

Sample ID **N028775-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.195	0.50	5.000	5.309	97.7	75	125	9.986	2.07	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122395**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **PBW**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122395**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **LCSW**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.0	85	115				

Sample ID **N028727-007EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ZZZZZZ**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.458	0.050						0.4871	6.07	20	

Sample ID **N028775-004CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ZZZZZZ**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	7.252	0.25	2.500	3.688	143	75	125				S

Sample ID **N028775-004CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ZZZZZZ**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.841	0.25	2.500	3.688	126	75	125	7.252	5.84	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 10:08 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	38	18	20		ug/L	1	2/27/2018 11:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 10:33 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	29	18	20		ug/L	1	2/27/2018 12:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	35	18	20		ug/L	1	2/27/2018 10:37 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	37	18	20		ug/L	1	2/27/2018 12:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-005

Client Sample ID: C-R22A-D-Q118
Collection Date: 2/21/2018 10:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	30	18	20		ug/L	1	2/27/2018 10:42 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	55	18	20		ug/L	1	2/27/2018 12:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	51	18	20		ug/L	1	2/27/2018 12:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	34	18	20		ug/L	1	2/27/2018 11:01 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	43	18	20		ug/L	1	2/27/2018 12:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-008

Client Sample ID: C-R27-S-Q118
Collection Date: 2/21/2018 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:06 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	50	18	20		ug/L	1	2/27/2018 12:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:11 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	83	18	20		ug/L	1	2/27/2018 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:16 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	43	18	20		ug/L	1	2/27/2018 01:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-011

Client Sample ID: MW-911-Q118
Collection Date: 2/21/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:21 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	58	18	20		ug/L	1	2/27/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-012

Client Sample ID: R-28-Q118
Collection Date: 2/21/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:26 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	36	18	20		ug/L	1	2/27/2018 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:30 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	64	18	20		ug/L	1	2/27/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66900**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **PBW**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66900**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **LCSW**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105.013	20	100.0	0	105	85	115				

Sample ID **N028727-002B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.404	20	100.0	0	118	75	125				

Sample ID **N028727-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	117.121	20	100.0	0	117	75	125	118.4	1.09	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66899	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	PBW	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942461

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66899	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	LCSW	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.430	20	100.0	0	102	85	115				

Sample ID	N028727-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.465	20	100.0	37.71	92.8	75	125				

Sample ID	N028727-002C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.212	20	100.0	37.71	92.5	75	125	130.5	0.194	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 01:15 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 01:15 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:15 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 01:15 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 01:37 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:37 AM
Manganese	0.65	0.26	0.50		µg/L	1	2/27/2018 01:37 AM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 01:37 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 01:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 01:48 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:48 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:48 AM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 01:48 AM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 01:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:00 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:00 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:00 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:00 AM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:11 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:11 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:11 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:11 AM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 05:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 02:22 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:22 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:22 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	2/27/2018 02:22 AM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-008

Client Sample ID: C-R27-S-Q118
Collection Date: 2/21/2018 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 02:44 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:44 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:44 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:44 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 02:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:56 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:56 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:56 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:56 AM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:07 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 03:07 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:07 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	2/27/2018 03:07 AM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 03:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:18 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:18 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:18 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 03:18 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 03:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:29 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:29 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:29 AM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 03:29 AM
Selenium	1.9	0.36	0.50		µg/L	1	2/27/2018 03:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:52 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:52 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:52 AM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 03:52 AM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 03:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66882**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66882**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.273	0.10	10.00	0	103	85	115				
Barium	10.381	1.0	10.00	0	104	85	115				
Manganese	103.833	0.50	100.0	0	104	85	115				
Molybdenum	10.046	0.50	10.00	0	100	85	115				
Selenium	11.055	0.50	10.00	0	111	85	115				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.084	0.10	10.00	6.737	103	75	125				
Barium	49.047	1.0	10.00	39.05	99.9	75	125				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2941883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	233.603	2.5	100.0	124.7	109	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028726-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	80.626	2.5	10.00	65.53	151	75	125				S
Selenium	11.749	2.5	10.00	0	117	75	125				

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.353	0.10	10.00	6.737	106	75	125	17.08	1.56	20	
Barium	48.851	1.0	10.00	39.05	98.0	75	125	49.05	0.399	20	

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	232.759	2.5	100.0	124.7	108	75	125	233.6	0.362	20	
Molybdenum	79.690	2.5	10.00	65.53	142	75	125	80.63	1.17	20	S

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.074	2.5	10.00	0	111	75	125	11.75	5.92	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

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CHAIN OF CUSTODY RECORD

Page 1 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200	Fax:	Others ✓	LEVEL III	3. Container Intact
Title: SR. Technician	Phone: 916-786-3302 Fax:			Specify: RWQCB	LEVEL IV	4. Seal Present
				Global ID:	Regulatory	5. IR number
					Specify State:	6. Method of Cooling: ice
Signature: Date: 2-21-18	Sampled By: GARY CLIFT					Sample Temp: 26°/2.9°/3.5°

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Signature: Date: 2-21-18

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 ml Poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr 1x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B 1x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba 1x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028727-01	AB-1-Q118	2/21/2018	0845			X	X					X	X			X	X	E	1	P	BN	
	-02	C-BNS-Q118	2/21/2018	1210		X		X		X	X		X	X			X	X	E	7	P	BN	
	-03	C-I-3-D-Q118	2/21/2018	0940		X		X		X	X		X	X			X	X	E	7	P	BN	
	-04	C-I-3-S-Q118	2/21/2018	0955		X		X		X	X		X	X			X	X	E	7	P	BN	
	-05	C-R22A-D-Q118	2/21/2018	1055		X		X		X	X		X	X			X	X	E	7	P	BN	
	-06	C-R22A-S-Q118	2/21/2018	1115		X		X		X	X		X	X			X	X	E	7	P	BN	
	-07	C-R27-D-Q118	2/21/2018	1245		X		X		X	X		X	X			X	X	E	7	P	BN	
	-08	C-R27-S-Q118	2/21/2018	1300		X		X		X	X		X	X			X	X	E	7	P	BN	
	-09	C-TAZ-D-Q118	2/21/2018	0830		X		X		X	X		X	X			X	X	E	7	P	BN	
	-10	C-TAZ-S-Q118	2/21/2018	855		X		X		X	X		X	X			X	X	E	7	P	BN	
	-11	MW-911-Q118	2/21/2018	905		X		X		X	X		X	X			X	X	E	7	P	BN	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
GARY CLIFT	2-21-18 1605		2/21/18 1625
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	2/21/18 1840		2/21/18 1840
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 2 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: Y N; 1. Chilled Y; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Global ID: Specify State:
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	6. Method of Cooling: Ice
Title: SR. Technician	Phone: 916-786-3302 Fax:		Sample Temp: 26/24C/3.5C
Signature: Date: 2-21-18	Sampled By: GARY CLIFT	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Tracking No.:
Project Name: PG&E Topock - RMP	Signature: Date: 2-21-18		
Project Number: RC000753.0801			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028727-12	R-28-Q118	2/21/2018	1325		X		X		X	X		X	X			X	X	E	7	P	BN	
	-13	R-63-Q118	2/21/2018	1020		X		X		X	X		X	X			X	X	E	7	P	BN	Hold
	-14	SW1-Q118	2/21/2018	1450		X	X						X	X					E	5	P	BN	Hold
	-15	SW2-Q118	2/21/2018	1520		X	X						X	X					E	5	P	BN	Hold
	-16	AB-2-Q118	2/21/2018	1340			X												E	1	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
GARY CLIFT	2-21-18 1605		
			2/21/18 1638
	2/21/18 1640		
			2/21/18 1640

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

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3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
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8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/21/2018	Workorder:	N028727
Rep sample Temp (Deg C):	2.6/2.9/3.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 2/22/2018

Reviewed By: MBC 2/27/2018

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-001A	AB-1-Q118	2/21/2018 8:45:00 AM	3/7/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N028727-002A	C-BNS-Q118	2/21/2018 12:10:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-002B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-002C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-002D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-002E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-003A	C-I-3-D-Q118	2/21/2018 9:40:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-003B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-003C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-003D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-003E	C-I-3-D-Q118	2/21/2018 9:40:00 AM	3/7/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-004A	C-I-3-S-Q118	2/21/2018 9:55:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-004B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-004C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-004D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-004E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-005A	C-R22A-D-Q118	2/21/2018 10:55:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-005B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-005C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-005D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-005D	C-R22A-D-Q118	2/21/2018 10:55:00 AM	3/7/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-005E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-006A	C-R22A-S-Q118	2/21/2018 11:15:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-006B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-006C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-006D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-006E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-007A	C-R27-D-Q118	2/21/2018 12:45:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-007B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-007C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-007D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-007D	C-R27-D-Q118	2/21/2018 12:45:00 PM	3/7/2018	Groundwater	SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-007E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-008A	C-R27-S-Q118	2/21/2018 1:00:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-008B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-008C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-008D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-008E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-009A	C-TAZ-D-Q118	2/21/2018 8:30:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-009B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-009C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-009D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-009D	C-TAZ-D-Q118	2/21/2018 8:30:00 AM	3/7/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-009E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-010A	C-TAZ-S-Q118	2/21/2018 8:55:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-010B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-010C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-010D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-010E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-011A	MW-911-Q118	2/21/2018 9:05:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-011B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-011C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-011D	MW-911-Q118	2/21/2018 9:05:00 AM	3/7/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-011E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-012A	R-28-Q118	2/21/2018 1:25:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-012B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-012C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-012D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-012E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-013A	R-63-Q118	2/21/2018 10:20:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-013B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-013C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-013C	R-63-Q118	2/21/2018 10:20:00 AM	3/7/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-013D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-013E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-014A	SW1-Q118	2/21/2018 2:50:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-014B			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N028727-015A	SW2-Q118	2/21/2018 3:20:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-015B			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N028727-016A	AB-2-Q118	2/21/2018 1:40:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N028727-017A	FOLDER	3/7/2018	3/7/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N028727)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/22/2018 3:56 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

The COC should have been checked for dissolved chromium for Samples #14 and 15.

Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, February 22, 2018 5:13 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: Re: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N028727)

Hi Laura,

We have another issue for this COC:

- Samples 14 and 15: Received 16 oz poly/HNO3, but there's no request for Metals in the COC.

Can you please confirm what tests should be run on these two samples?
FYI, received 3 x 8 oz poly/Ammonium buffer, 1 x 16 oz poly/HNO3 and 1 x 32 oz poly (Total of 5 containers).

Thanks,

On 2/22/2018 12:18 PM, Madsen, Laura wrote:

> Hi Yoandra,
> Please only put on hold sample #1 and #16, AB-1 and AB-2. The rest should be analyzed.
>
> Thanks,
> Laura
>
> -----Original Message-----
> From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
> Sent: Thursday, February 22, 2018 2:29 PM
> To: Madsen, Laura <Laura.Madsen@arcadis.com>
> Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
> Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N028727)
>
> Hi Laura,
>
> For the attached COC, please kindly confirm if samples 13, 14 and 15 should be on hold.
>
> Thanks,
>
> --

> Yoandra Rodriguez
> Sample Control Officer
> Asset Laboratories
>
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--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028727

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028727

Item	Page
Cover Page	1-7
Analytical Result/QC Summary Reports	8-113
Sample Receiving Items	114-126
List of Analysts	127
Raw Data	
EPA 120.1	128-131
SM 4500-H+B	132-135
SM 2540D	136-150
EPA 218.6	151-300
SM 4500-NO3F	301-323
EPA 6010B_Dissolved	324-360
EPA 6010B	361-397
EPA 6020_Dissolved	398-487

March 06, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028727

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 21, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Samples N028727-001(AB-1-Q118) and N028727-016 (AB-2-Q118) were not analyzed. Please see attached correspondence.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum in QC samples N028726-001B-MS and N028726-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N028775-004CMS and N028775-004CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *06-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028727-001A	AB-1-Q118	Groundwater	2/21/2018 8:45:00 AM	2/21/2018	3/6/2018
N028727-002A	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002B	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002C	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002D	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-002E	C-BNS-Q118	Groundwater	2/21/2018 12:10:00 PM	2/21/2018	3/6/2018
N028727-003A	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003B	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003C	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003D	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-003E	C-I-3-D-Q118	Groundwater	2/21/2018 9:40:00 AM	2/21/2018	3/6/2018
N028727-004A	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004B	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004C	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004D	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-004E	C-I-3-S-Q118	Groundwater	2/21/2018 9:55:00 AM	2/21/2018	3/6/2018
N028727-005A	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005B	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005C	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005D	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-005E	C-R22A-D-Q118	Groundwater	2/21/2018 10:55:00 AM	2/21/2018	3/6/2018
N028727-006A	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006B	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006C	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006D	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-006E	C-R22A-S-Q118	Groundwater	2/21/2018 11:15:00 AM	2/21/2018	3/6/2018
N028727-007A	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-007B	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-007C	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028727-007D	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-007E	C-R27-D-Q118	Groundwater	2/21/2018 12:45:00 PM	2/21/2018	3/6/2018
N028727-008A	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008B	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008C	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008D	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-008E	C-R27-S-Q118	Groundwater	2/21/2018 1:00:00 PM	2/21/2018	3/6/2018
N028727-009A	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009B	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009C	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009D	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-009E	C-TAZ-D-Q118	Groundwater	2/21/2018 8:30:00 AM	2/21/2018	3/6/2018
N028727-010A	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010B	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010C	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010D	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-010E	C-TAZ-S-Q118	Groundwater	2/21/2018 8:55:00 AM	2/21/2018	3/6/2018
N028727-011A	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011B	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011C	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011D	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-011E	MW-911-Q118	Groundwater	2/21/2018 9:05:00 AM	2/21/2018	3/6/2018
N028727-012A	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012B	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012C	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012D	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-012E	R-28-Q118	Groundwater	2/21/2018 1:25:00 PM	2/21/2018	3/6/2018
N028727-013A	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-013B	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-013C	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028727
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028727-013D	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-013E	R63-Q118	Groundwater	2/21/2018 10:20:00 AM	2/21/2018	3/6/2018
N028727-014A	SW1-Q118	Groundwater	2/21/2018 2:50:00 PM	2/21/2018	3/6/2018
N028727-014B	SW1-Q118	Groundwater	2/21/2018 2:50:00 PM	2/21/2018	3/6/2018
N028727-014C	SW1-Q118	Groundwater	2/21/2018 2:50:00 PM	2/21/2018	3/6/2018
N028727-015A	SW2-Q118	Groundwater	2/21/2018 3:20:00 PM	2/21/2018	3/6/2018
N028727-015B	SW2-Q118	Groundwater	2/21/2018 3:20:00 PM	2/21/2018	3/6/2018
N028727-015C	SW2-Q118	Groundwater	2/21/2018 3:20:00 PM	2/21/2018	3/6/2018
N028727-016A	AB-2-Q118	Groundwater	2/21/2018 1:40:00 PM	2/21/2018	3/6/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	1100	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-015

Client Sample ID: SW2-Q118
Collection Date: 2/21/2018 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180222B**	QC Batch: **R122226**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	2/22/2018 03:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028726-001DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122226
Client ID:	ZZZZZZ	Batch ID:	R122226	TestNo:	EPA 120.1			Analysis Date:	2/22/2018	SeqNo:	2938615

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11190.000	0.10						11210	0.179	2	

Sample ID	N028727-014BDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122226
Client ID:	ZZZZZZ	Batch ID:	R122226	TestNo:	EPA 120.1			Analysis Date:	2/22/2018	SeqNo:	2938663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1147.000	0.10						1144	0.262	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-002

Client Sample ID: C-BNS-Q118
Collection Date: 2/21/2018 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-004

Client Sample ID: C-I-3-S-Q118
Collection Date: 2/21/2018 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-005

Client Sample ID: C-R22A-D-Q118
Collection Date: 2/21/2018 10:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-006

Client Sample ID: C-R22A-S-Q118
Collection Date: 2/21/2018 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-007

Client Sample ID: C-R27-D-Q118
Collection Date: 2/21/2018 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-008

Client Sample ID: C-R27-S-Q118
Collection Date: 2/21/2018 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-010

Client Sample ID: C-TAZ-S-Q118
Collection Date: 2/21/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-012

Client Sample ID: R-28-Q118
Collection Date: 2/21/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-013

Client Sample ID: R63-Q118
Collection Date: 2/21/2018 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-014

Client Sample ID: SW1-Q118
Collection Date: 2/21/2018 2:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-015

Client Sample ID: SW2-Q118
Collection Date: 2/21/2018 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180222A**	QC Batch: **R122225**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	2/22/2018 02:15 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/22/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028727-002DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122225**
Client ID: **ZZZZZZ** Batch ID: **R122225** TestNo: **SM4500-H+B** Analysis Date: **2/22/2018** SeqNo: **2938597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.300	0.10						8.290	0.121	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N028727-012DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122225**
Client ID: **ZZZZZZ** Batch ID: **R122225** TestNo: **SM4500-H+B** Analysis Date: **2/22/2018** SeqNo: **2938608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.220	0.485	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**			PrepDate		**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180222C**	QC Batch: **66888**			PrepDate	**2/22/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180222C**	QC Batch: **66888**				PrepDate	**2/22/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/22/2018 10:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66888	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2018	RunNo:	122241
Client ID:	LCSW	Batch ID:	66888	TestNo:	SM2540D			Analysis Date:	2/22/2018	SeqNo:	2939016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	927.000	10	1000	0	92.7	80	120				

Sample ID	MB-66888	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2018	RunNo:	122241
Client ID:	PBW	Batch ID:	66888	TestNo:	SM2540D			Analysis Date:	2/22/2018	SeqNo:	2939017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028727-002DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/22/2018	RunNo:	122241
Client ID:	ZZZZZZ	Batch ID:	66888	TestNo:	SM2540D			Analysis Date:	2/22/2018	SeqNo:	2939019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66911	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	LCSW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	944.000	10	1000	0	94.4	80	120				

Sample ID	MB-66911	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	PBW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028745-011DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	ZZZZZZ	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940092

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 03:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 03:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**			PrepDate			**2/22/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:21 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 04:59 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 05:18 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 05:56 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 06:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-011

Client Sample ID: MW-911-Q118
Collection Date: 2/21/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 06:34 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180222A** QC Batch: **R122253** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 06:53 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180226A** QC Batch: **66882** PrepDate **2/22/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 07:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 2:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180222A** QC Batch: **R122253**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 07:50 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A** QC Batch: **66882**				PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 3:20:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180222A**	QC Batch: **R122253**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/22/2018 08:08 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180226A**	QC Batch: **66882**			PrepDate	**2/22/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:14 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R122253	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	PBW	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R122253	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	LCSW	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.981	0.20	5.000	0	99.6	90	110				

Sample ID	N028726-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.899	1.0	5.000	0	98.0	90	110				

Sample ID	N028726-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939339

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0.05200	99.2	90	110				

Sample ID	N028726-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939340

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.544	0.20	1.000	0.5270	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028726-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.672	2.0	50.00	68.66	98.0	90	110				

Sample ID **N028726-003AMSD** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	119.277	2.0	50.00	68.66	101	90	110	117.7	1.35	0	

Sample ID **N028726-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.525	1.0	5.000	0.5430	99.6	90	110				

Sample ID **N028726-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.001	1.0	5.000	4.108	97.9	90	110				

Sample ID **N028726-003ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	68.221	2.0						68.66	0.641	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939353

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID	N028727-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939355

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0.04870	104	90	110				

Sample ID	N028727-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939359

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID	N028727-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939361

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N028727-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939363

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.052	0.20	1.000	0.04880	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028727-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.045	0.20	1.000	0	105	90	110				

Sample ID **N028727-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110				

Sample ID **N028727-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.055	0.20	1.000	0.04650	101	90	110				

Sample ID **N028727-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	0	101	90	110				

Sample ID **N028727-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122253**
Client ID: **ZZZZZZ** Batch ID: **R122253** TestNo: **EPA 218.6** Analysis Date: **2/22/2018** SeqNo: **2939375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028727-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID	N028727-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939379

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Sample ID	N028727-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID	N028727-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122253
Client ID:	ZZZZZZ	Batch ID:	R122253	TestNo:	EPA 218.6			Analysis Date:	2/22/2018	SeqNo:	2939385

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66882	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	PBW	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941759

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66882	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	LCSW	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.332	1.0	10.00	0	103	85	115				

Sample ID	N028726-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.899	1.0	10.00	0.6814	92.2	75	125				

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.833	1.0	10.00	0.6814	91.5	75	125	9.899	0.665	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.50	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.51	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.53	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.51	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.48	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.48	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.48	0.032	0.050		mg/L	1	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122394**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **PBW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122394**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **LCSW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	85	115				

Sample ID **N028727-004EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050						0.4675	7.83	20	

Sample ID **N028775-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.986	0.50	5.000	5.309	93.5	75	125				

Sample ID **N028775-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.195	0.50	5.000	5.309	97.7	75	125	9.986	2.07	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122395	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	PBW	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945459		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	ND	0.050											

Sample ID	LCS-R122395	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	LCSW	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945460		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.0	85	115						

Sample ID	N028727-007EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945464		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.458	0.050						0.4871	6.07	20			

Sample ID	N028775-004CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945466		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	7.252	0.25	2.500	3.688	143	75	125				S		

Sample ID	N028775-004CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945467		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	6.841	0.25	2.500	3.688	126	75	125	7.252	5.84	20	S		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-002

Client Sample ID: C-BNS-Q118
Collection Date: 2/21/2018 12:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 10:08 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	38	18	20		ug/L	1	2/27/2018 11:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-003

Client Sample ID: C-I-3-D-Q118
Collection Date: 2/21/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 10:33 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	29	18	20		ug/L	1	2/27/2018 12:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-004

Client Sample ID: C-I-3-S-Q118
Collection Date: 2/21/2018 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	35	18	20		ug/L	1	2/27/2018 10:37 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	37	18	20		ug/L	1	2/27/2018 12:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-005

Client Sample ID: C-R22A-D-Q118
Collection Date: 2/21/2018 10:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	30	18	20		ug/L	1	2/27/2018 10:42 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	55	18	20		ug/L	1	2/27/2018 12:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-006

Client Sample ID: C-R22A-S-Q118
Collection Date: 2/21/2018 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	51	18	20		ug/L	1	2/27/2018 12:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	34	18	20		ug/L	1	2/27/2018 11:01 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	43	18	20		ug/L	1	2/27/2018 12:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-008

Client Sample ID: C-R27-S-Q118
Collection Date: 2/21/2018 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:06 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	50	18	20		ug/L	1	2/27/2018 12:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:11 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	83	18	20		ug/L	1	2/27/2018 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-010

Client Sample ID: C-TAZ-S-Q118
Collection Date: 2/21/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:16 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	43	18	20		ug/L	1	2/27/2018 01:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-011

Client Sample ID: MW-911-Q118
Collection Date: 2/21/2018 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:21 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	58	18	20		ug/L	1	2/27/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-012

Client Sample ID: R-28-Q118
Collection Date: 2/21/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:26 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	36	18	20		ug/L	1	2/27/2018 01:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-013

Client Sample ID: R63-Q118
Collection Date: 2/21/2018 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66900**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 11:30 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66899**			PrepDate	**2/23/2018**		Analyst: **CEI**
Iron	64	18	20		ug/L	1	2/27/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66900**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **PBW**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66900**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **LCSW**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105.013	20	100.0	0	105	85	115				

Sample ID **N028727-002B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.404	20	100.0	0	118	75	125				

Sample ID **N028727-002B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/23/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	117.121	20	100.0	0	117	75	125	118.4	1.09	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66899	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	PBW	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942461

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66899	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	LCSW	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.430	20	100.0	0	102	85	115				

Sample ID	N028727-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.465	20	100.0	37.71	92.8	75	125				

Sample ID	N028727-002C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/23/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66899	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.212	20	100.0	37.71	92.5	75	125	130.5	0.194	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:10:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 01:15 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 01:15 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:15 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 01:15 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 01:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *06-Mar-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 01:37 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:37 AM
Manganese	0.65	0.26	0.50		µg/L	1	2/27/2018 01:37 AM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 01:37 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 01:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 01:48 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:48 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:48 AM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 01:48 AM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 01:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:00 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:00 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:00 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:00 AM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:11 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:11 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:11 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:11 AM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 05:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 02:22 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:22 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:22 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	2/27/2018 02:22 AM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 02:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-008

Client Sample ID: C-R27-S-Q118
Collection Date: 2/21/2018 1:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 02:44 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:44 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:44 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:44 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 02:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-009

Client Sample ID: C-TAZ-D-Q118
Collection Date: 2/21/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:56 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:56 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:56 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 02:56 AM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028727
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028727-010

Client Sample ID: C-TAZ-S-Q118
Collection Date: 2/21/2018 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:07 AM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 03:07 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:07 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	2/27/2018 03:07 AM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 03:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:18 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:18 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:18 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 03:18 AM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 03:18 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**			PrepDate	**2/22/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:29 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:29 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:29 AM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 03:29 AM
Selenium	1.9	0.36	0.50		µg/L	1	2/27/2018 03:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q118
Lab Order:	N028727	**Collection Date:**	2/21/2018 10:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028727-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180226B**	QC Batch: **66882**				PrepDate	**2/22/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:52 AM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:52 AM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:52 AM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 03:52 AM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 03:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66882**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **PBW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66882**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **LCSW**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.273	0.10	10.00	0	103	85	115				
Barium	10.381	1.0	10.00	0	104	85	115				
Manganese	103.833	0.50	100.0	0	104	85	115				
Molybdenum	10.046	0.50	10.00	0	100	85	115				
Selenium	11.055	0.50	10.00	0	111	85	115				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/26/2018**	SeqNo: **2941882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.084	0.10	10.00	6.737	103	75	125				
Barium	49.047	1.0	10.00	39.05	99.9	75	125				

Sample ID **N028726-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/22/2018**	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **66882**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2941883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	233.603	2.5	100.0	124.7	109	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028726-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	80.626	2.5	10.00	65.53	151	75	125				S
Selenium	11.749	2.5	10.00	0	117	75	125				

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	17.353	0.10	10.00	6.737	106	75	125	17.08	1.56	20	
Barium	48.851	1.0	10.00	39.05	98.0	75	125	49.05	0.399	20	

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2941887

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	232.759	2.5	100.0	124.7	108	75	125	233.6	0.362	20	
Molybdenum	79.690	2.5	10.00	65.53	142	75	125	80.63	1.17	20	S

Sample ID	N028726-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/22/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.074	2.5	10.00	0	111	75	125	11.75	5.92	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200	Fax:	Others ✓	LEVEL III	3. Container Intact
Title: SR. Technician	Phone: 916-786-3302 Fax:			Specify: RWQCB	LEVEL IV	4. Seal Present
				Global ID:	Regulatory	5. IR number
					Specify State:	6. Method of Cooling: ice
Signature: Date: 2-21-18	Sampled By: GARY CLIFT					Sample Temp: 26°C/2.9°C/3.5°C

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for

Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Signature: Date: 2-21-18

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B), HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028727-01	AB-1-Q118	2/21/2018	0845			X												E	1	P	BN	
	-02	C-BNS-Q118	2/21/2018	1210		X		X		X	X		X	X			X	X	E	7	P	BN	
	-03	C-I-3-D-Q118	2/21/2018	0940		X		X		X	X		X	X			X	X	E	7	P	BN	
	-04	C-I-3-S-Q118	2/21/2018	0955		X		X		X	X		X	X			X	X	E	7	P	BN	
	-05	C-R22A-D-Q118	2/21/2018	1055		X		X		X	X		X	X			X	X	E	7	P	BN	
	-06	C-R22A-S-Q118	2/21/2018	1115		X		X		X	X		X	X			X	X	E	7	P	BN	
	-07	C-R27-D-Q118	2/21/2018	1245		X		X		X	X		X	X			X	X	E	7	P	BN	
	-08	C-R27-S-Q118	2/21/2018	1300		X		X		X	X		X	X			X	X	E	7	P	BN	
	-09	C-TAZ-D-Q118	2/21/2018	0830		X		X		X	X		X	X			X	X	E	7	P	BN	
	-10	C-TAZ-S-Q118	2/21/2018	855		X		X		X	X		X	X			X	X	E	7	P	BN	
	-11	MW-911-Q118	2/21/2018	905		X		X		X	X		X	X			X	X	E	7	P	BN	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
GARY CLIFT 2-21-18	1605	2/21/18	1625
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	2/21/18 1840		2/21/18 1840
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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CHAIN OF CUSTODY RECORD

Page 2 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: Y N; 1. Chilled Y; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Global ID: Specify State:
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Sample Temp: 26/24C/3.5C
Title: SR. Technician	Phone: 916-786-3302 Fax:		
Signature: Date: 2-21-18	Sampled By: GARY CLIFT		Courier:
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Tracking No.:
Project Name: PG&E Topock - RMP	Signature: Date: 2-21-18		
Project Number: RC000753.0801			

Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028727-12	R-28-Q118	2/21/2018	1325		X		X		X	X		X	X			X	X	E	7	P	BN	
	-13	R-63-Q118	2/21/2018	1020		X		X		X	X		X	X			X	X	E	7	P	BN	Hold
	-14	SW1-Q118	2/21/2018	1450		X	X						X	X					E	5	P	BN	Hold
	-15	SW2-Q118	2/21/2018	1520		X	X						X	X					E	5	P	BN	Hold
	-16	AB-2-Q118	2/21/2018	1340			X												E	1	P	BN	

Relinquished by (Signature and Printed Name): GARY CLIFT 2-21-18	Date/Time: 1605	Relinquished by (Signature and Printed Name):	Date/Time: 2/21/18 1624
Relinquished by (Signature and Printed Name):	Date/Time: 2/21/18 1640	Relinquished by (Signature and Printed Name):	Date/Time: 2/21/18 1640
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B (NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/21/2018	Workorder:	N028727
Rep sample Temp (Deg C):	2.6/2.9/3.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 2/22/2018

Reviewed By: MBC 2/27/2018

Subject: RE: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N028727)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/22/2018 3:56 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

The COC should have been checked for dissolved chromium for Samples #14 and 15.

Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Thursday, February 22, 2018 5:13 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: Re: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N028727)

Hi Laura,

We have another issue for this COC:

- Samples 14 and 15: Received 16 oz poly/HNO3, but there's no request for Metals in the COC.

Can you please confirm what tests should be run on these two samples?
FYI, received 3 x 8 oz poly/Ammonium buffer, 1 x 16 oz poly/HNO3 and 1 x 32 oz poly (Total of 5 containers).

Thanks,

On 2/22/2018 12:18 PM, Madsen, Laura wrote:

> Hi Yoandra,
> Please only put on hold sample #1 and #16, AB-1 and AB-2. The rest should be analyzed.
>
> Thanks,
> Laura
>
> -----Original Message-----
> From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
> Sent: Thursday, February 22, 2018 2:29 PM
> To: Madsen, Laura <Laura.Madsen@arcadis.com>
> Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
> Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N028727)
>
> Hi Laura,
>
> For the attached COC, please kindly confirm if samples 13, 14 and 15 should be on hold.
>
> Thanks,
>
> --

> Yoandra Rodriguez
> Sample Control Officer
> Asset Laboratories
>
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--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-001A	AB-1-Q118	2/21/2018 8:45:00 AM	3/7/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N028727-002A	C-BNS-Q118	2/21/2018 12:10:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-002B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-002C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-002D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-002E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-003A	C-I-3-D-Q118	2/21/2018 9:40:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-003B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-003C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-003D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-003E	C-I-3-D-Q118	2/21/2018 9:40:00 AM	3/7/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-004A	C-I-3-S-Q118	2/21/2018 9:55:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-004B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-004C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-004D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-004E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-005A	C-R22A-D-Q118	2/21/2018 10:55:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-005B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-005C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-005D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-005D	C-R22A-D-Q118	2/21/2018 10:55:00 AM	3/7/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-005E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-006A	C-R22A-S-Q118	2/21/2018 11:15:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-006B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-006C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-006D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-006E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-007A	C-R27-D-Q118	2/21/2018 12:45:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-007B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-007C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-007D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-007D	C-R27-D-Q118	2/21/2018 12:45:00 PM	3/7/2018	Groundwater	SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-007E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-008A	C-R27-S-Q118	2/21/2018 1:00:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-008B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-008C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-008D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-008E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-009A	C-TAZ-D-Q118	2/21/2018 8:30:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-009B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-009C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-009D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-009D	C-TAZ-D-Q118	2/21/2018 8:30:00 AM	3/7/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-009E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-010A	C-TAZ-S-Q118	2/21/2018 8:55:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-010B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-010C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-010D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-010E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-011A	MW-911-Q118	2/21/2018 9:05:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-011B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-011C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-011D	MW-911-Q118	2/21/2018 9:05:00 AM	3/7/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-011E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-012A	R-28-Q118	2/21/2018 1:25:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-012B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-012C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-012D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-012E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-013A	R-63-Q118	2/21/2018 10:20:00 AM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-013B			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028727-013C			3/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

22-Feb-18

WorkOrder: N028727

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/21/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028727-013C	R-63-Q118	2/21/2018 10:20:00 AM	3/7/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028727-013D			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/7/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/7/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028727-013E			3/7/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028727-014A	SW1-Q118	2/21/2018 2:50:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-014B			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N028727-015A	SW2-Q118	2/21/2018 3:20:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028727-015B			3/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/7/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N028727-016A	AB-2-Q118	2/21/2018 1:40:00 PM	3/7/2018		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N028727-017A	FOLDER	3/7/2018	3/7/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB
			3/7/2018		Folder	Folder	☐	☐	☐	LAB

N028727-014C	SW1-Q118	2/21/2018 2:50 PM	3/7/2018	EPA 3010A EPA 6020	AQPREP TOTAL METALS DISSOLVED METALS BY ICPMS
N028727-015C	SW2-Q118	2/21/2018 3:20 PM	3/7/2018	EPA 3010A EPA 6020	AQPREP TOTAL METALS DISSOLVED METALS BY ICPMS

List of Analysts

ASSET Laboratories Work Order: N028727

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122226 **Analyst:** LSR

ASSET #: N028727 **Date Analyzed:** 2/22/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/26/2018

2nd Level Reviewer: RLB 03/06/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/22/18 1505

Analyst: LR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV - 180108A	9.89 @19.5°C	% Rec: (90-110%)
1412	171121A	1456 @19.8°C	
9987	180108B	10240 @19.7°C	
99672	171121B	100500 @19.8°C	

	Sample ID	Matrix	Reading	Comments
1	N028726-001D	H_2O	11210 @19.5°C	
2	1D DUP		11190 @19.3°C	
3	2D		6790 @19.3°C	
4	3D		17250 @19.6°C	
5	4D		17180 @19.8°C	
6	5D		17350 @19.9°C	
7	N028727-002D		972 @19.7°C	[illegible]
8	3D		960 @19.6°C	
9	4D		968 @19.5°C	
10	5D		969 @19.7°C	
~~Dup~~	6D		963 @19.8°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Julia Ramit 2/26/2018

RB 03/06/2018

Date: 1

Analyst: CONT'D

Standard	Std ID	Reading	Comments
1413 uS/cm	CINV - 171121C	1456 @19.6°C	% Rec: (90-110%)
10000	170822F	10440 @19.8°C	
99672	171215A	99700 @19.9°C	

	Sample ID	Matrix	Reading	Comments
1	N028727-007D	H_2O	955 @19.2°C	
2	8D		968 @19.8°C	
3	9D		966 @19.7°C	
4	10D		968 @19.6°C	
5	11D		966 @19.7°C	
6	12D		963 @19.6°C	
7	13D		965 @19.6°C	
8	14B		1144 @19.2°C	
9	14B DUP 14B		1147 @18.9°C	
10	15B		994 @19.1°C	
Dup	1413 uS/cm	CINV - 171121C	1459 @19.3°C	Accept: 10% water, 20% soil
	Std Chk: 10000	170822F	10490 @19.5°C	% Rec: (90-110%)
	99672	171215A	99800 @19.7°C	

Logbook # 6

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122225 **Instrument ID:** pH meter

ASSET #: N028727 **Analyst:** LSR

Date Analyzed: 22-Feb

Method: EPA 150.1

pH Meter Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X			X		
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X			X	
QC Items						
5. Was a duplicate sample analyzed?	X			X		
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			X
7. Runlog complete and included in package.	X			X		
Preliminary Report						
8. Does the raw data match the preliminary report?	X			X		
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

Samples received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/28/2018

2nd Level Reviewer RLB 03/06/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/22/18 1415
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW - 171215D	6.99 @25.0°C	SLOPE: 95.6%
Buffer 4	171208A	4.00 @25.0°C	4.00
Buffer 10	170822B	9.96 @25.0°C	

	Sample ID	Matrix	pH	Comments
1	ND28727-002D	H_2O	8.29 @25.0°C	
2	2D DUP		8.30 @25.0°C	
3	3D		8.29 @25.0°C	
4	4D		8.29 @25.0°C	
5	5D		8.30 @25.0°C	
6	6D		8.30 @25.0°C	
7	7D		8.24 @25.0°C	
8	8D		8.26 @25.0°C	
9	9D		8.31 @25.0°C	
10	10D		8.32 @25.0°C	
Dup	11D		8.34 @25.0°C	Accept: 10% water, 20% soil
	Buffer (7), 4, 10	CIW - 171023A	7.02 @25.0°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Date:
Analyst:

Standard	Std ID	pH	Comments
Buffer 7			
Buffer 4	CONT'D		
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	ND28727-012D	H_2O	8.22 @25.0°C	
2	12D DUP		8.26 @25.0°C	
3	13D		8.31 @25.0°C	
4	14B		7.64 @25.0°C	
5	15B		7.69 @25.0°C	
6	ND28736-001D		7.71 @25.0°C	
7	1D DUP		7.74 @25.0°C	
8				
9				
10			Julia Ramit	2/28/2018
Dup				Accept: 10% water, 20% soil
	Buffer (7), 4, 10	CIW - 171023A	7.05 @25.0°C	Accept: +/-0.1 pH units from expected value

(Circle one)

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SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66888/66911 **Analyst:** LSR

ASSET #: N028727 **Date Analyzed:** 2/22,2/23/18

Method: EPA 160.2

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 2/26/2018

2nd Level Reviewer RLB 03/06/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N028727-002D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4139- 1.4133) *1000000}{100}$$

= 6 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 2/26/2018

RB 03/06/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2018 10:47:00**
Prep End Date:

Reviewed/ Date: RLB 03/06/2018

Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66888** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66888	Water	WET180208B	100	☐	0	0	100	1.000		
MB-66888	Water		100	☐	0	0	100	1.000		
N028727-002D	Groundwater		100	☐	0	0	100	1.000		
N028727-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N028727-003D	Groundwater		100	☐	0	0	100	1.000		
N028727-004D	Groundwater		100	☐	0	0	100	1.000		
N028727-005D	Groundwater		100	☐	0	0	100	1.000		
N028727-006D	Groundwater		100	☐	0	0	100	1.000		
N028727-007D	Groundwater		100	☐	0	0	100	1.000		
N028727-008D	Groundwater		100	☐	0	0	100	1.000		
N028727-009D	Groundwater		100	☐	0	0	100	1.000		
N028727-010D	Groundwater		100	☐	0	0	100	1.000		
N028727-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9699

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2018 10:47:00**
Prep End Date: **2/22/2018 4:15:00 P**

Reviewed/ Date: RLB 03/06/2018
Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66888** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66888	Water		100	☐	0	0	100	1.000		
MB-66888	Water		100	☐	0	0	100	1.000		
N028727-002D	Groundwater		100	☐	0	0	100	1.000		
N028727-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N028727-003D	Groundwater		100	☐	0	0	100	1.000		
N028727-004D	Groundwater		100	☐	0	0	100	1.000		
N028727-005D	Groundwater		100	☐	0	0	100	1.000		
N028727-006D	Groundwater		100	☐	0	0	100	1.000		
N028727-007D	Groundwater		100	☐	0	0	100	1.000		
N028727-008D	Groundwater		100	☐	0	0	100	1.000		
N028727-009D	Groundwater		100	☐	0	0	100	1.000		
N028727-010D	Groundwater		100	☐	0	0	100	1.000		
N028727-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208B	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 9:01:09 A**
Prep End Date:

Reviewed/ Date: RLB 03/06/2018

Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66911** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66911	Water	lwej180726B	100	☐	0	0	100	1.000		
MB-66911	Water		100	☐	0	0	100	1.000		
N028717-001A	Surface Water		100	☐	0	0	100	1.000		
N028727-012D	Groundwater		100	☐	0	0	100	1.000		
N028727-013D	Groundwater		100	☐	0	0	100	1.000		
N028739-001A	Groundwater		100	☐	0	0	100	1.000		
N028745-011D	Groundwater		100	☐	0	0	100	1.000		
N028745-011D-DU	Groundwater		100	☐	0	0	100	1.000		
N028745-012D	Groundwater		100	☐	0	0	100	1.000		
N028745-014D	Groundwater		100	☐	0	0	100	1.000		
N028745-015D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9699

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 9:01:09 A**
Prep End Date: **2/23/2018 3:00:00 P**

Reviewed/ Date: RB 03/06/2018

Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66911** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66911	Water		100	☐	0	0	100	1.000		
MB-66911	Water		100	☐	0	0	100	1.000		
N028717-001A	Surface Water		100	☐	0	0	100	1.000		
N028727-012D	Groundwater		100	☐	0	0	100	1.000		
N028727-013D	Groundwater		100	☐	0	0	100	1.000		
N028739-001A	Groundwater		100	☐	0	0	100	1.000		
N028745-011D	Groundwater		100	☐	0	0	100	1.000		
N028745-011D-DU	Groundwater		100	☐	0	0	100	1.000		
N028745-012D	Groundwater		100	☐	0	0	100	1.000		
N028745-014D	Groundwater		100	☐	0	0	100	1.000		
N028745-015D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208B	1000 ppm Talc	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST: (TSS) TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/22/18 1047	MB 66888	100	~~1.4137~~ 1.4243 1.4241	1.4239 1.4239	
	LCS 66888	100	1.4189 1.4196	1.5115 1.5117	
1	NO28727-002D	100	1.4131 1.4133	1.4137 1.4139	
DW	2D DUP	100	1.4197 1.4197	1.4204 1.4205	
2	3D	100	1.4141 1.4141	1.4142 1.4142	
3	4D	100	1.4048 1.4049	1.4050 1.4048	
4	5D	100	1.4160 1.4158	1.4161 1.4160	
5	6D	100	1.4018 1.4020	1.4021 1.4023	
6	7D	100	1.4118 1.4120	1.4124 1.4125	
7	8D	100	1.4153 1.4151	1.4152 1.4153	

Julia Ramit 2/26/2018
RB 03/06/2018

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CALIFORNIA | P:562.219.7435 F:562.219.7436
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ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert [illegible]22
ORELAP/NELAP Cert 4046

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/22/18 8	NO28737-009D	100	1.4085 1.4084	1.4088 1.4084	
9	10D	100	1.4119 1.4116	1.4117 1.4119	
10	11D	100	1.4162 1.4159	1.4162 1.4161	
	Silvia Ramit	2/26/2018			
	RB closing wt	03/06/2018 1.0002	2/22/18 1615		

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ELAP Cert 2676 | NV Cert

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/22/2018							
MB-66888	100	1.4241	1.4239	-2.0000	1.00	-2	MBLK
LCS-66888	100	1.4190	1.5117	927.0000	1.00	927	LCS
N028727-002D	100	1.4133	1.4139	6.0000	1.00	6	SAMP
N028727-002DDUP	100	1.4197	1.4205	8.0000	1.00	8	DUP
N028727-003D	100	1.4141	1.4142	1.0000	1.00	1	SAMP
N028727-004D	100	1.4049	1.4048	-1.0000	1.00	-1	SAMP
N028727-005D	100	1.4158	1.416	2.0000	1.00	2	SAMP
N028727-006D	100	1.402	1.4023	3.0000	1.00	3	SAMP
N028727-007D	100	1.412	1.4125	5.0000	1.00	5	SAMP
N028727-008D	100	1.4151	1.4153	2.0000	1.00	2	SAMP
N028727-009D	100	1.4084	1.4089	5.0000	1.00	5	SAMP
N028727-010D	100	1.4116	1.4119	3.0000	1.00	3	SAMP
N028727-011D	100	1.4159	1.4161	2.0000	1.00	2	SAMP

Silvia Ramit 2/26/2018

RLB 03/06/2018

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/18	MB	100	1.4188	1.4184	
901	66911		1.4186	1.4184	
	LCS	100	1.4147	1.5095	
	66911		1.4149	1.5093	
1	NO28717-001A	100	1.4215	1.4242	
			1.4216	1.4240	
2	NO28727-002D	100	1.4064	1.4070	
			1.4067	1.4070	
3	3D	100	1.4149	1.4147	
			1.4146	1.4146	
4	NO28739-001A	100	1.4263	1.4269	
			1.4263	1.4265	
5	NO28745-011D	100	1.4065	1.4069	
			1.4068	1.4070	
D1	11D DUP	100	1.4198	1.4201	
			1.4198	1.4202	
6	12D	100	1.4189	1.4188	
			1.4188	1.4187	
7	14D	100	1.4209	1.4204	
			1.4203	1.4205	

Julia Ramit 2/26/2018
03/06/2018

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TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/23/2018							
MB-66911	100	1.4186	1.4184	-2.0000	1.00	-2	MBLK
LCS-66911	100	1.4149	1.5093	944.0000	1.00	944	LCS
N028717-001A	100	1.4216	1.424	24.0000	1.00	24	SAMP
N028727-012D	100	1.4067	1.407	3.0000	1.00	3	SAMP
N028727-013D	100	1.4146	1.4146	0.0000	1.00	0	SAMP
N028739-001A	100	1.4263	1.4265	2.0000	1.00	2	SAMP
N028745-011D	100	1.4068	1.407	2.0000	1.00	2	SAMP
N028745-011DDUP	100	1.4198	1.4202	4.0000	1.00	4	DUP
N028745-012D	100	1.4188	1.4187	-1.0000	1.00	-1	SAMP
N028745-014D	100	1.4203	1.4205	2.0000	1.00	2	SAMP
N028745-015D	100	1.4072	1.4077	5.0000	1.00	5	SAMP

Julia Ramit 2/26/2018

RB 03/06/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R122253
ASSET #: N028727

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/22/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/4/2018

2nd Level Reviewer RLB 03/06/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028727-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.0000$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

rba 3/4/2018

RLB 03/06/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:31 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:42 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/22/18 9:51 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/22/18 10:01 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/22/18 10:10 AM	Reported
14	MB-R122253	MBLK	1	Hexavalent Chromium	02/22/18 10:20 AM	Reported
15	LCS-R122253	LCS	1	Hexavalent Chromium	02/22/18 10:29 AM	Reported
16	N028726-004A	SAMP	1	Hexavalent Chromium	02/22/18 10:39 AM	Not Reported
17	N028726-005A	SAMP	1	Hexavalent Chromium	02/22/18 10:48 AM	Not Reported
18	N028726-001A	SAMP	5	Hexavalent Chromium	02/22/18 10:57 AM	Reported
19	N028726-001AMS	MS	5	Hexavalent Chromium	02/22/18 11:07 AM	Reported
20	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 11:16 AM	Not Reported
21	N028726-002ADUP	DUP	1	Hexavalent Chromium	02/22/18 11:26 AM	Not Reported
22	N028726-003A	SAMP	100	Hexavalent Chromium	02/22/18 11:35 AM	Not Reported
23	N028726-003AMS	MS	100	Hexavalent Chromium	02/22/18 11:45 AM	Not Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/22/18 11:54 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/22/18 12:04 PM	Reported
26	N028726-006A	SAMP	1	Hexavalent Chromium	02/22/18 12:13 PM	Reported
27	N028726-006AMS	MS	1	Hexavalent Chromium	02/22/18 12:23 PM	Reported
28	N028726-004AMS	MS	1	Hexavalent Chromium	02/22/18 12:32 PM	Not Reported
29	N028726-005AMS	MS	1	Hexavalent Chromium	02/22/18 12:42 PM	Not Reported
30	N028726-002AMS	MS	1	Hexavalent Chromium	02/22/18 12:51 PM	Reported
31	N028726-003A	SAMP	10	Hexavalent Chromium	02/22/18 1:00 PM	Reported
32	N028726-003AMS	MS	10	Hexavalent Chromium	02/22/18 1:10 PM	Reported
33	N028726-003AMSD	MS	10	Hexavalent Chromium	02/22/18 1:19 PM	Reported
34	N028726-004A	SAMP	5	Hexavalent Chromium	02/22/18 1:29 PM	Reported
35	N028726-004AMS	MS	5	Hexavalent Chromium	02/22/18 1:38 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/22/18 1:48 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/22/18 1:57 PM	Reported
38	N028726-005A	SAMP	5	Hexavalent Chromium	02/22/18 2:07 PM	Reported
39	N028726-005AMS	MS	5	Hexavalent Chromium	02/22/18 2:16 PM	Reported
40	N028726-001A	SAMP	1	Hexavalent Chromium	02/22/18 2:26 PM	Not Reported
41	N028726-001AMS	MS	1	Hexavalent Chromium	02/22/18 2:35 PM	Not Reported
42	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 2:44 PM	Reported

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028726-003ADUP	DUP	10	Hexavalent Chromium	02/22/18 2:54 PM	Reported
44	N028727-002A	SAMP	1	Hexavalent Chromium	02/22/18 3:03 PM	Reported
45	N028727-002AMS	MS	1	Hexavalent Chromium	02/22/18 3:13 PM	Reported
46	N028727-003A	SAMP	1	Hexavalent Chromium	02/22/18 3:22 PM	Reported
47	N028727-003AMS	MS	1	Hexavalent Chromium	02/22/18 3:32 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/22/18 3:42 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/22/18 3:53 PM	Reported
50	N028727-004A	SAMP	1	Hexavalent Chromium	02/22/18 4:02 PM	Reported
51	N028727-004AMS	MS	1	Hexavalent Chromium	02/22/18 4:12 PM	Reported
52	N028727-005A	SAMP	1	Hexavalent Chromium	02/22/18 4:21 PM	Reported
53	N028727-005AMS	MS	1	Hexavalent Chromium	02/22/18 4:31 PM	Reported
54	N028727-006A	SAMP	1	Hexavalent Chromium	02/22/18 4:40 PM	Reported
55	N028727-006AMS	MS	1	Hexavalent Chromium	02/22/18 4:50 PM	Reported
56	N028727-007A	SAMP	1	Hexavalent Chromium	02/22/18 4:59 PM	Reported
57	N028727-007AMS	MS	1	Hexavalent Chromium	02/22/18 5:09 PM	Reported
58	N028727-008A	SAMP	1	Hexavalent Chromium	02/22/18 5:18 PM	Reported
59	N028727-008AMS	MS	1	Hexavalent Chromium	02/22/18 5:28 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/22/18 5:37 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/22/18 5:47 PM	Reported
62	N028727-009A	SAMP	1	Hexavalent Chromium	02/22/18 5:56 PM	Reported
63	N028727-009AMS	MS	1	Hexavalent Chromium	02/22/18 6:05 PM	Reported
64	N028727-010A	SAMP	1	Hexavalent Chromium	02/22/18 6:15 PM	Reported
65	N028727-010AMS	MS	1	Hexavalent Chromium	02/22/18 6:24 PM	Reported
66	N028727-011A	SAMP	1	Hexavalent Chromium	02/22/18 6:34 PM	Reported
67	N028727-011AMS	MS	1	Hexavalent Chromium	02/22/18 6:43 PM	Reported
68	N028727-012A	SAMP	1	Hexavalent Chromium	02/22/18 6:53 PM	Reported
69	N028727-012AMS	MS	1	Hexavalent Chromium	02/22/18 7:02 PM	Reported
70	N028727-013A	SAMP	1	Hexavalent Chromium	02/22/18 7:12 PM	Reported
71	N028727-013AMS	MS	1	Hexavalent Chromium	02/22/18 7:21 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	02/22/18 7:31 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	02/22/18 7:40 PM	Reported
74	N028727-014A	SAMP	1	Hexavalent Chromium	02/22/18 7:50 PM	Reported
75	N028727-014AMS	MS	1	Hexavalent Chromium	02/22/18 7:59 PM	Reported
76	N028727-015A	SAMP	1	Hexavalent Chromium	02/22/18 8:08 PM	Reported
77	N028727-015AMS	MS	1	Hexavalent Chromium	02/22/18 8:18 PM	Reported
78	CCV-7	CCV	1	Hexavalent Chromium	02/22/18 8:27 PM	Reported
79	CCB-7	CCB	1	Hexavalent Chromium	02/22/18 8:37 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180222A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**22/Feb/18 21:07:38**
No. of Injections:	**82**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/22/2018 09:31	Finished	BLANK
10	BLANK	2	1000	Unknown		02/22/2018 09:42	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/22/2018 09:51	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/22/2018 10:01	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/22/2018 10:10	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/22/2018 10:20	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/22/2018 10:29	Finished	LCS, IWST-180129B
16	N028726-004A,SAMF	8	1000	Unknown		02/22/2018 10:39	Finished	SAMP,10mL
17	N028726-005A,SAMF	9	1000	Unknown		02/22/2018 10:48	Finished	SAMP,10mL
18	N028726-001A,SAMF	10	1000	Unknown		02/22/2018 10:57	Finished	SAMP,2>10mL
19	N028726-001AMS,MS	11	1000	Unknown		02/22/2018 11:07	Finished	MS (1ppb), IWST-180129B,2>1
20	N028726-002A,SAMF	12	1000	Unknown		02/22/2018 11:16	Finished	SAMP,10mL
21	N028726-002ADUP,D	13	1000	Unknown		02/22/2018 11:26	Finished	DUP,10mL
22	N028726-003A,SAMF	14	1000	Unknown		02/22/2018 11:35	Finished	SAMP,0.1>10mL
23	N028726-003AMS,MS	15	1000	Unknown		02/22/2018 11:45	Finished	MS (5ppb), IWST-180129B,0.1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/22/2018 11:54	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/22/2018 12:04	Finished	CCB R180214B
26	N028726-006A,SAMF	18	1000	Unknown		02/22/2018 12:13	Finished	SAMP,10mL
27	N028726-006AMS,MS	19	1000	Unknown		02/22/2018 12:23	Finished	MS (1ppb), IWST-180129B,10
28	N028726-004AMS,MS	20	1000	Unknown		02/22/2018 12:32	Finished	MS (1ppb), IWST-180129B,10
29	N028726-005AMS,MS	21	1000	Unknown		02/22/2018 12:42	Finished	MS (1ppb), IWST-180129B,10
30	N028726-002AMS,MS	22	1000	Unknown		02/22/2018 12:51	Finished	MS (1ppb), IWST-180129B,10
31	N028726-003A,SAMF	23	1000	Unknown		02/22/2018 13:00	Finished	SAMP,1>10mL
32	N028726-003AMS,MS	24	1000	Unknown		02/22/2018 13:10	Finished	MS (5ppb), IWST-180129B,1>1
33	N028726-003AMSD,M	25	1000	Unknown		02/22/2018 13:19	Finished	MSD (5ppb), IWST-180129B,1>
34	N028726-004A,SAMF	26	1000	Unknown		02/22/2018 13:29	Finished	SAMP,2>10mL
35	N028726-004AMS,MS	27	1000	Unknown		02/22/2018 13:38	Finished	MS (1ppb), IWST-180129B,2>1
36	CCV-3,CCV,1,	28	1000	Unknown		02/22/2018 13:48	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/22/2018 13:57	Finished	CCB R180214B
38	N028726-005A,SAMF	30	1000	Unknown		02/22/2018 14:07	Finished	SAMP,2>10mL
39	N028726-005AMS,MS	31	1000	Unknown		02/22/2018 14:16	Finished	MS (1ppb), IWST-180129B,2>1
40	N028726-001A,SAMF	32	1000	Unknown		02/22/2018 14:26	Finished	SAMP,10mL
41	N028726-001AMS,MS	33	1000	Unknown		02/22/2018 14:35	Finished	MS (1ppb), IWST-180129B,10
42	N028726-002A,SAMF	34	1000	Unknown		02/22/2018 14:44	Finished	SAMP,10mL
43	N028726-003ADUP,D	35	1000	Unknown		02/22/2018 14:54	Finished	DUP,1>10mL
44	N028727-002A,SAMF	36	1000	Unknown		02/22/2018 15:03	Finished	SAMP,10mL
45	N028727-002AMS,MS	37	1000	Unknown		02/22/2018 15:13	Finished	MS (1ppb), IWST-180129B,10
46	N028727-003A,SAMF	38	1000	Unknown		02/22/2018 15:22	Finished	SAMP,10mL
47	N028727-003AMS,MS	39	1000	Unknown		02/22/2018 15:32	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	1	1000	Unknown		02/22/2018 15:42	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	2	1000	Unknown		02/22/2018 15:53	Finished	CCB R180214B
50	N028727-004A,SAMF	3	1000	Unknown		02/22/2018 16:02	Finished	SAMP,10mL
51	N028727-004AMS,MS	4	1000	Unknown		02/22/2018 16:12	Finished	MS (1ppb), IWST-180129B,10
52	N028727-005A,SAMF	5	1000	Unknown		02/22/2018 16:21	Finished	SAMP,10mL
53	N028727-005AMS,MS	6	1000	Unknown		02/22/2018 16:31	Finished	MS (1ppb), IWST-180129B,10
54	N028727-006A,SAMF	7	1000	Unknown		02/22/2018 16:40	Finished	SAMP,10mL
55	N028727-006AMS,MS	8	1000	Unknown		02/22/2018 16:50	Finished	MS (1ppb), IWST-180129B,10
56	N028727-007A,SAMF	9	1000	Unknown		02/22/2018 16:59	Finished	SAMP,10mL
57	N028727-007AMS,MS	10	1000	Unknown		02/22/2018 17:09	Finished	MS (1ppb), IWST-180129B,10
58	N028727-008A,SAMF	11	1000	Unknown		02/22/2018 17:18	Finished	SAMP,10mL
59	N028727-008AMS,MS	12	1000	Unknown		02/22/2018 17:28	Finished	MS (1ppb), IWST-180129B,10
60	CCV-5,CCV,1,	13	1000	Unknown		02/22/2018 17:37	Finished	CCV @5ppb, IWST-180129A

61	CCB-5,CCB,1,	14	1000	Unknown		02/22/2018 17:47	Finished	CCB R180214B
62	N028727-009A,SAMP	15	1000	Unknown		02/22/2018 17:56	Finished	SAMP,10mL
63	N028727-009AMS,MS	16	1000	Unknown		02/22/2018 18:05	Finished	MS (1ppb), IWST-180129B,10
64	N028727-010A,SAMP	17	1000	Unknown		02/22/2018 18:15	Finished	SAMP,10mL
65	N028727-010AMS,MS	18	1000	Unknown		02/22/2018 18:24	Finished	MS (1ppb), IWST-180129B,10
66	N028727-011A,SAMP	19	1000	Unknown		02/22/2018 18:34	Finished	SAMP,10mL
67	N028727-011AMS,MS	20	1000	Unknown		02/22/2018 18:43	Finished	MS (1ppb), IWST-180129B,10
68	N028727-012A,SAMP	21	1000	Unknown		02/22/2018 18:53	Finished	SAMP,10mL
69	N028727-012AMS,MS	22	1000	Unknown		02/22/2018 19:02	Finished	MS (1ppb), IWST-180129B,10
70	N028727-013A,SAMP	23	1000	Unknown		02/22/2018 19:12	Finished	SAMP,10mL
71	N028727-013AMS,MS	24	1000	Unknown		02/22/2018 19:21	Finished	MS (1ppb), IWST-180129B,10
72	CCV-6,CCV1,1,	25	1000	Unknown		02/22/2018 19:31	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	26	1000	Unknown		02/22/2018 19:40	Finished	CCB R180214B
74	N028727-014A,SAMP	27	1000	Unknown		02/22/2018 19:50	Finished	SAMP,10mL
75	N028727-014AMS,MS	28	1000	Unknown		02/22/2018 19:59	Finished	MS (1ppb), IWST-180129B,10
76	N028727-015A,SAMP	29	1000	Unknown		02/22/2018 20:08	Finished	SAMP,10mL
77	N028727-015AMS,MS	30	1000	Unknown		02/22/2018 20:18	Finished	MS (1ppb), IWST-180129B,10
78	CCV-7,CCV,1,	31	1000	Unknown		02/22/2018 20:27	Finished	CCV @5ppb, IWST-180129A
79	CCB-7,CCB,1,	32	1000	Unknown		02/22/2018 20:37	Finished	CCB R180214B
80	SHUTDOWN	33	1000	Unknown		02/22/2018 20:46	Finished	
81	Eluent: R180219A	34	1000	Unknown		n.a.	Finished	Eluent
82	PCR: R180219B	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/22/18
Time Prepared: 0913H
Prepared By: MSA

Slope: 95.6 %
pH 4: 4.00 @ 25.0°C
7: 6.99 @ 25.0°C
10: 9.96 @ 25.0°C
LCS:

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINU-171116A
NH4OH + NH4SO4 eluent: M802194
NH4OH + NH4SO4 buffer: M802148

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028726-001A	9.58	-	~240 mL	~250mL		
2)	2A	9.32	-				
3)	3A	9.65	-				
4)	4A	9.69	-				
5)	5A	9.68	-				
6)	6A	9.70	-				
7)	N028727-1A	9.65	-				1/1 HOLD
8)	2A	9.53	-				1/3
9)	2A	9.52	-				2/3
10)	2A	9.55	-				3/3
11)	3A	9.55	-				1/3
12)	3A	9.56	-				2/3
13)	3A	9.58	-				3/3
14)	4A	9.56	-				1/3
15)	4A	9.57	-				2/3
	4A	9.55	-				3/3

Sample Preparation

Date Prepared: 2/22/18
Time Prepared: 0913H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINU-171116A
NH4OH + NH4SO4 eluent: M802194
NH4OH + NH4SO4 buffer: M802148

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028727-5A	9.54	-	~250mL	~250mL		1/3
2)	5A	9.56	-				2/3
3)	5A	9.54	-				3/3
4)	6A	9.59	-				1/3
5)	6A	9.58	-				2/3
6)	6A	9.58	-				3/3
7)	7A	9.55	-				1/3
8)	7A	9.56	-				2/3
9)	7A	9.55	-				3/3
10)	8A	9.53	-				1/3
11)	8A	9.55	-				2/3
12)	8A	9.55	-				3/3
13)	9A	9.54	-				1/3
14)	9A	9.54	-				2/3
15)	9A	9.56	-				3/3
	10A	9.61	-				1/3

Logbook No. 14

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/22/18
Time Prepared: 0913H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M802194
NH4OH + NH4SO4 buffer: M802148

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NU28727-10A	9.54	-	~250ml	~250ml		2/3
2)	10A	9.52	-				3/3
3)	11A	9.52	-				1/3
4)	11A	9.59	-				2/3
5)	11A	9.57	-				3/3
6)	12A	9.58	-				1/3
7)	12A	9.60	-				2/3
8)	12A	9.58	-				3/3
9)	16A	9.69	-				1/1 HNO
10)	NU28726-1A						
11)	2A						
12)	3A						
13)	4A						Duplicate entry
14)	5A						
15)	6A						

Sample Preparation

Date Prepared: 2/22/18
Time Prepared: 0913H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M802194
NH4OH + NH4SO4 buffer: M802148

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NU28727-13A	9.57	-	~250ml	~250ml		1/3
2)	13A	9.57	-				2/3
3)	13A	9.59	-				3/3
4)	14A	9.53	-				1/3
5)	14A	9.51	-				2/3
6)	14A	9.50	-				3/3
7)	15A	9.57	-				1/3
8)	15A	9.57	-				2/3
9)	15A	9.55	-				3/3
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9998 7

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/06/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ICV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.960	0.20	5.000	0	99.2	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.186	0.20	0.2000	0	93.1	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.681	0.20	10.00	0	96.8	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.009	0.20	5.000	0	100	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.939	0.20	10.00	0	99.4	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.941	0.20	5.000	0	98.8	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ZZZZZZ**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.888	0.20	10.00	0	98.9	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCV**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.942	0.20	5.000	0	98.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **ICB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122253**
Client ID: **CCB**	Batch ID: **R122253**	TestNo: **EPA 218.6**		Analysis Date: **2/22/2018**	SeqNo: **2939387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.165
Actual RT Window	4.085 - 4.245
Applied RT Window	3.965 - 4.365

MB-R122253	N.A.	N.A.
LCS-R122253	4.156	PASS
N028726-004A	N.A.	N.A.
N028726-005A	N.A.	N.A.
N028726-001A	N.A.	N.A.
N028726-001AMS	4.131	PASS
N028726-002A	4.056	PASS
N028726-002ADUP	4.048	PASS
N028726-003A	4.165	PASS
N028726-003AMS	4.165	PASS
N028726-006A	4.115	PASS
N028726-006AMS	4.165	PASS
N028726-004AMS	N.A.	N.A.
N028726-005AMS	N.A.	N.A.
N028726-002AMS	4.065	PASS
N028726-003A	4.140	PASS
N028726-003AMS	4.140	PASS
N028726-003AMSD	4.140	PASS
N028726-004A	4.098	PASS
N028726-004AMS	4.106	PASS
N028726-005A	4.106	PASS

RLB 03/06/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028726-005AMS	4.106	PASS
N028726-001A	N.A.	N.A.
N028726-001AMS	3.940	FAIL
N028726-002A	4.056	PASS
N028726-003ADUP	4.123	PASS
N028727-002A	N.A.	N.A.
N028727-002AMS	4.156	PASS
N028727-003A	4.131	PASS
N028727-003AMS	4.156	PASS
N028727-004A	N.A.	N.A.
N028727-004AMS	4.156	PASS
N028727-005A	N.A.	N.A.
N028727-005AMS	4.156	PASS
N028727-006A	4.115	PASS
N028727-006AMS	4.165	PASS
N028727-007A	N.A.	N.A.
N028727-007AMS	4.165	PASS
N028727-008A	N.A.	N.A.
N028727-008AMS	4.156	PASS
N028727-009A	4.131	PASS
N028727-009AMS	4.156	PASS
N028727-010A	N.A.	N.A.

RLB 03/06/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/22/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.165	
Actual RT Window	4.085 - 4.245	
Applied RT Window	3.965 - 4.365	
N028727-010AMS	4.156	PASS
N028727-011A	N.A.	N.A.
N028727-011AMS	4.156	PASS
N028727-012A	N.A.	N.A.
N028727-012AMS	4.156	PASS
N028727-013A	N.A.	N.A.
N028727-013AMS	4.156	PASS
N028727-014A	N.A.	N.A.
N028727-014AMS	4.148	PASS
N028727-015A	N.A.	N.A.
N028727-015AMS	4.156	PASS



03/06/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

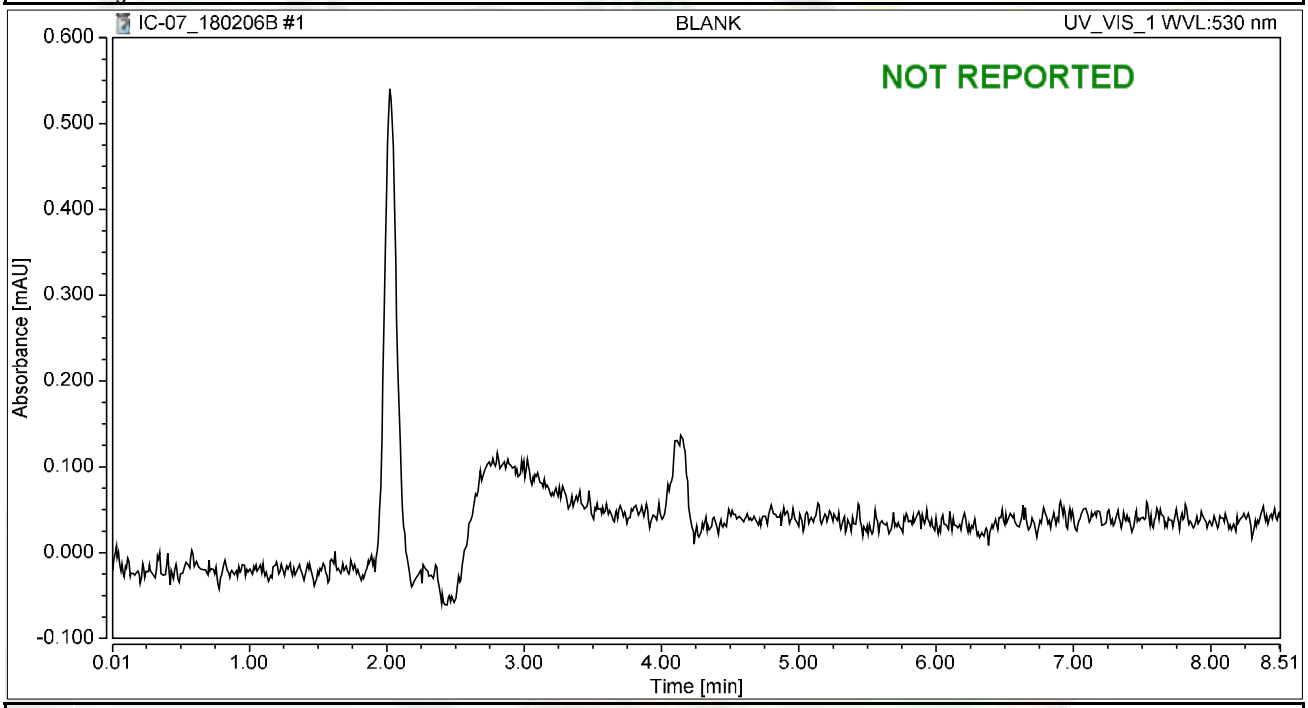
61	N028448-006A,SAMF	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMF	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMF	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMF	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMF	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMF	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMF	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMF	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

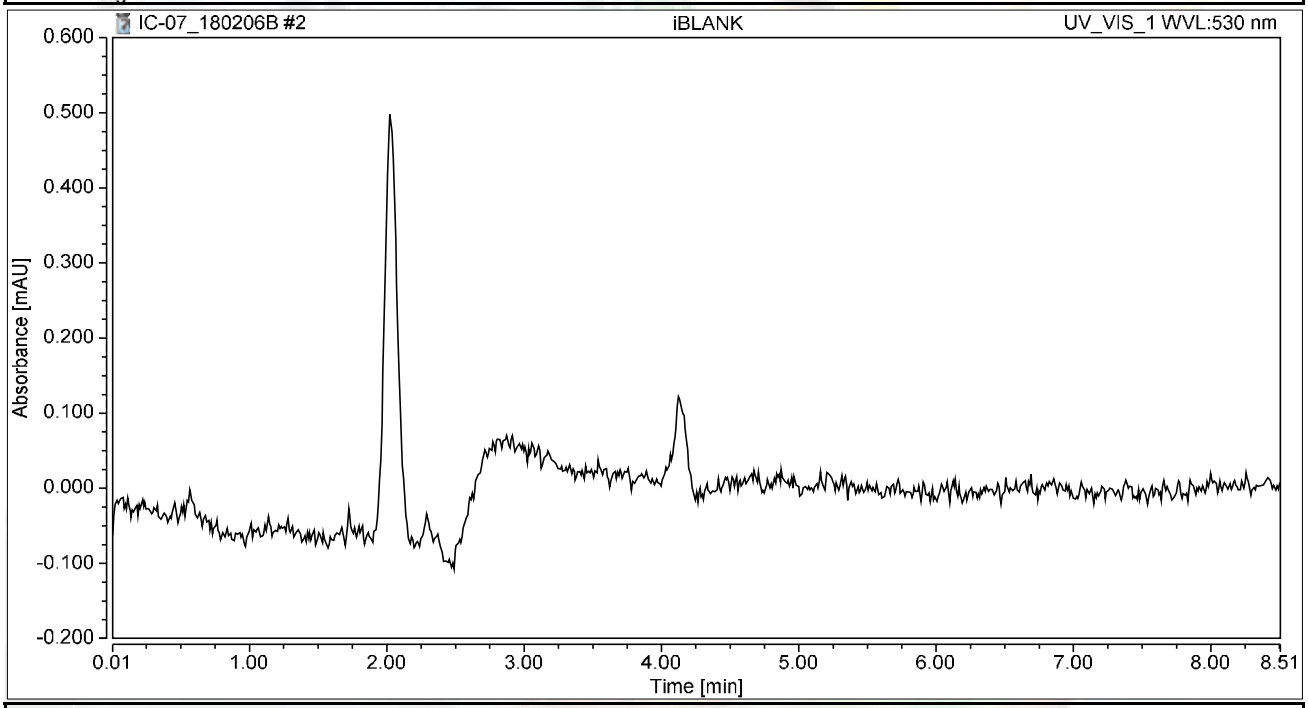
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

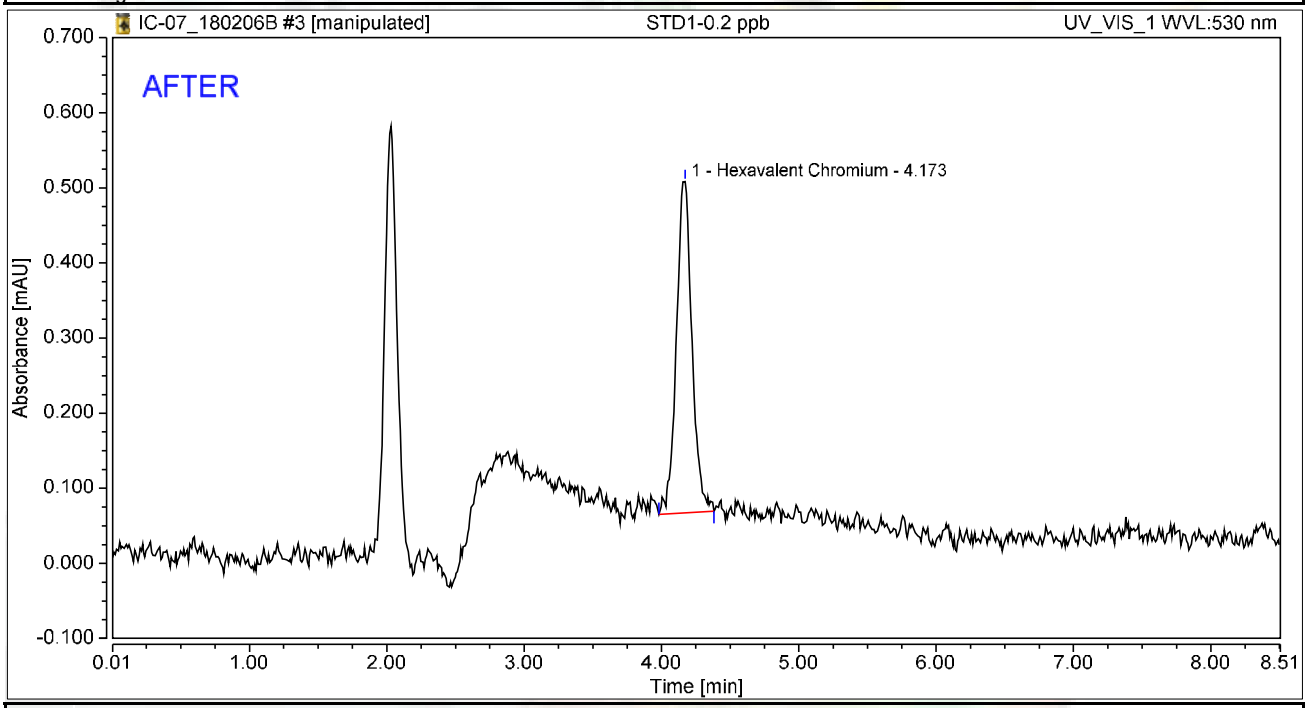
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

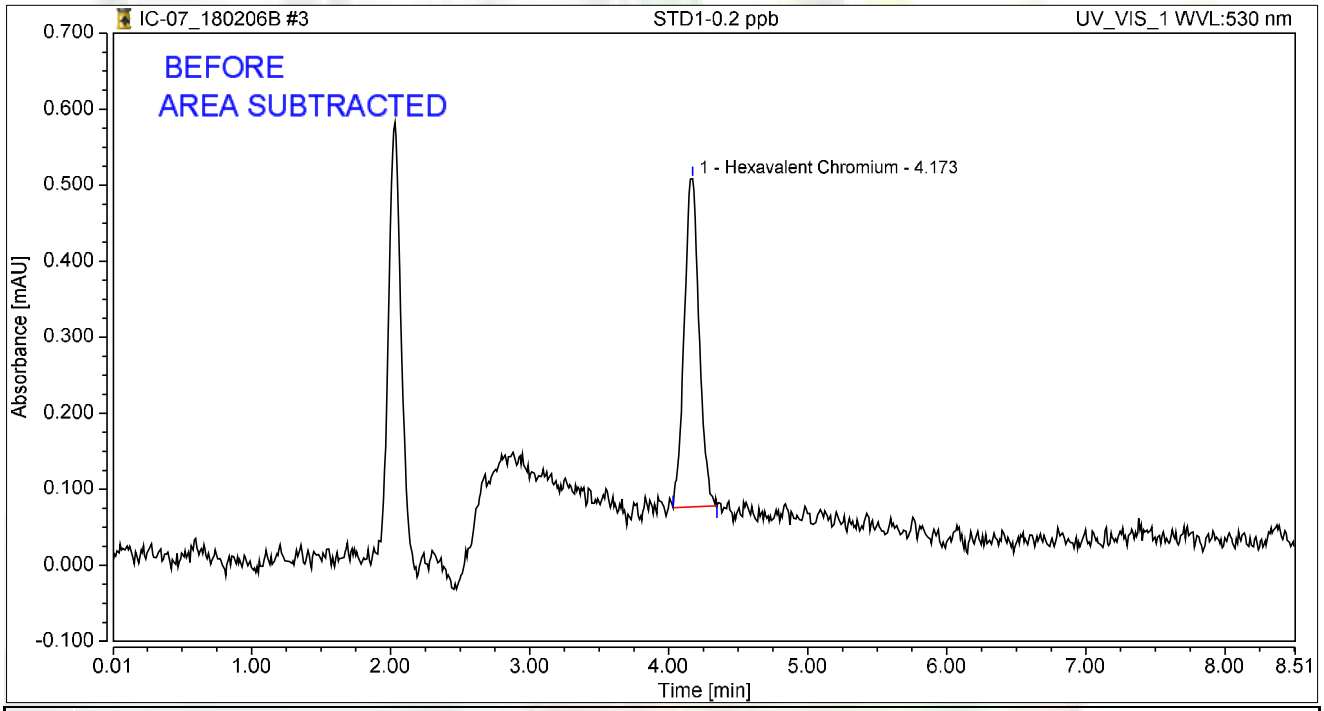
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

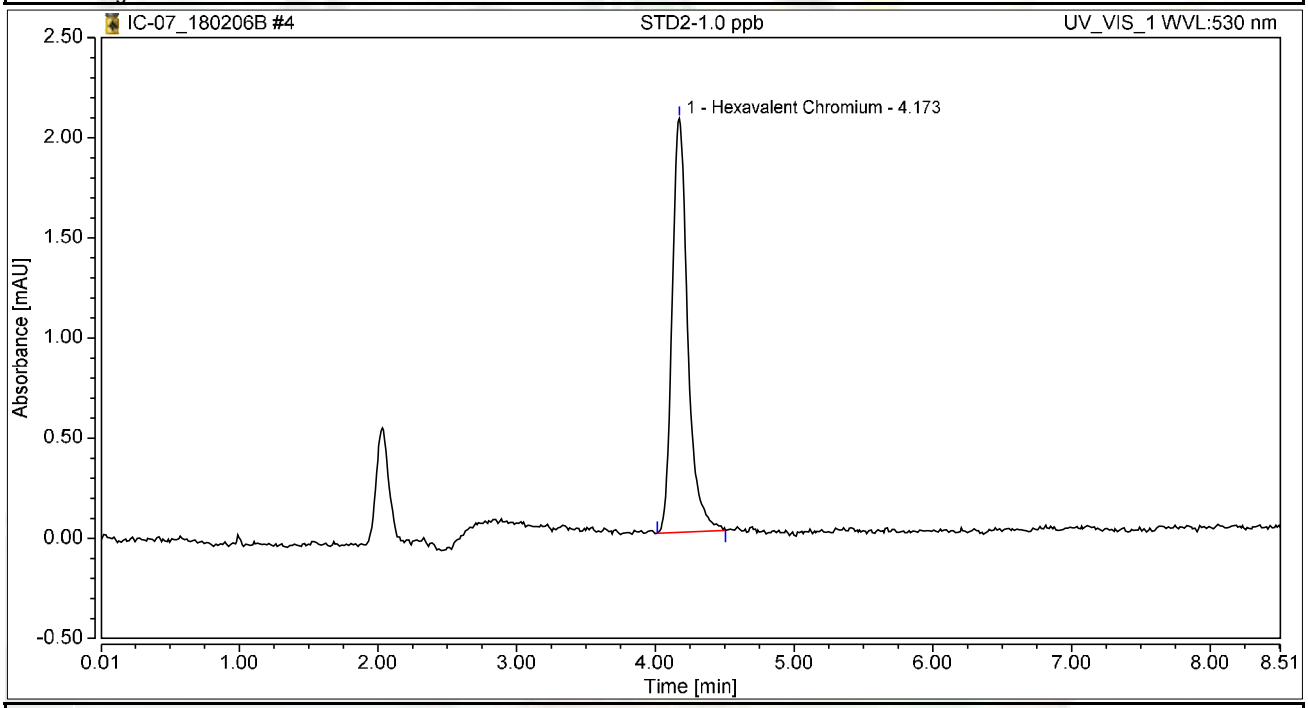
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

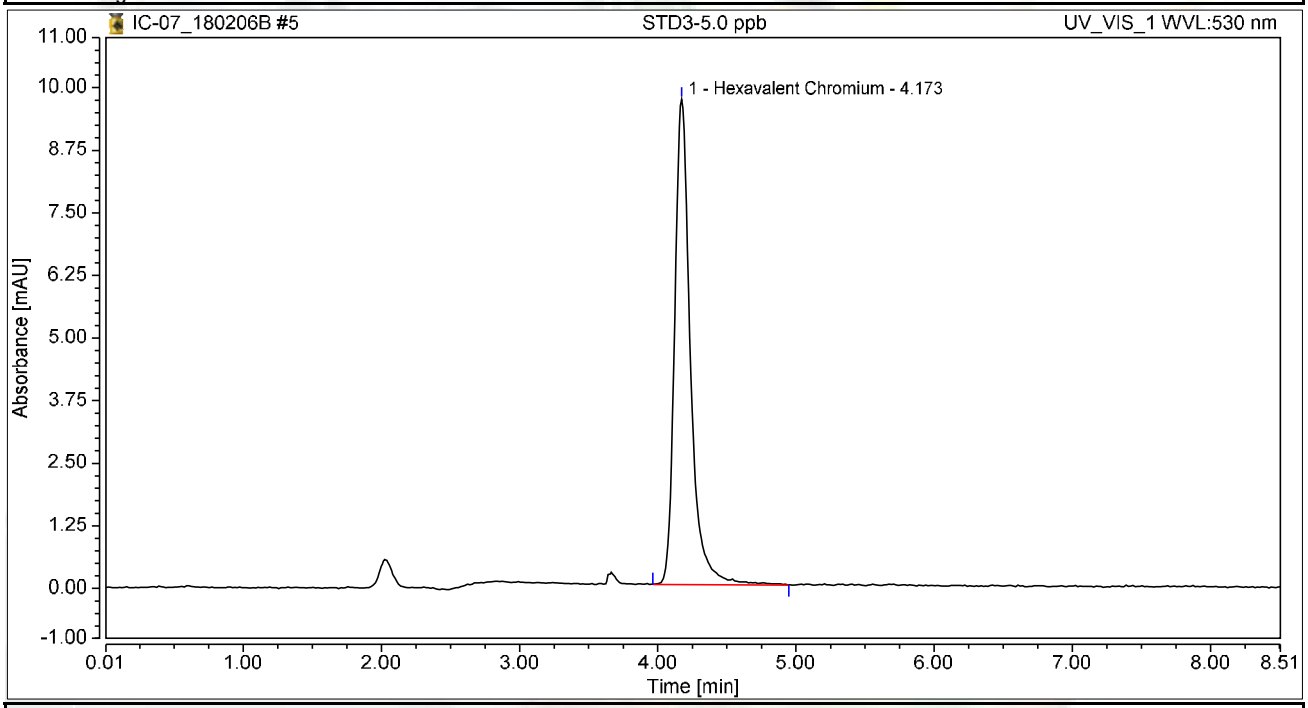
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

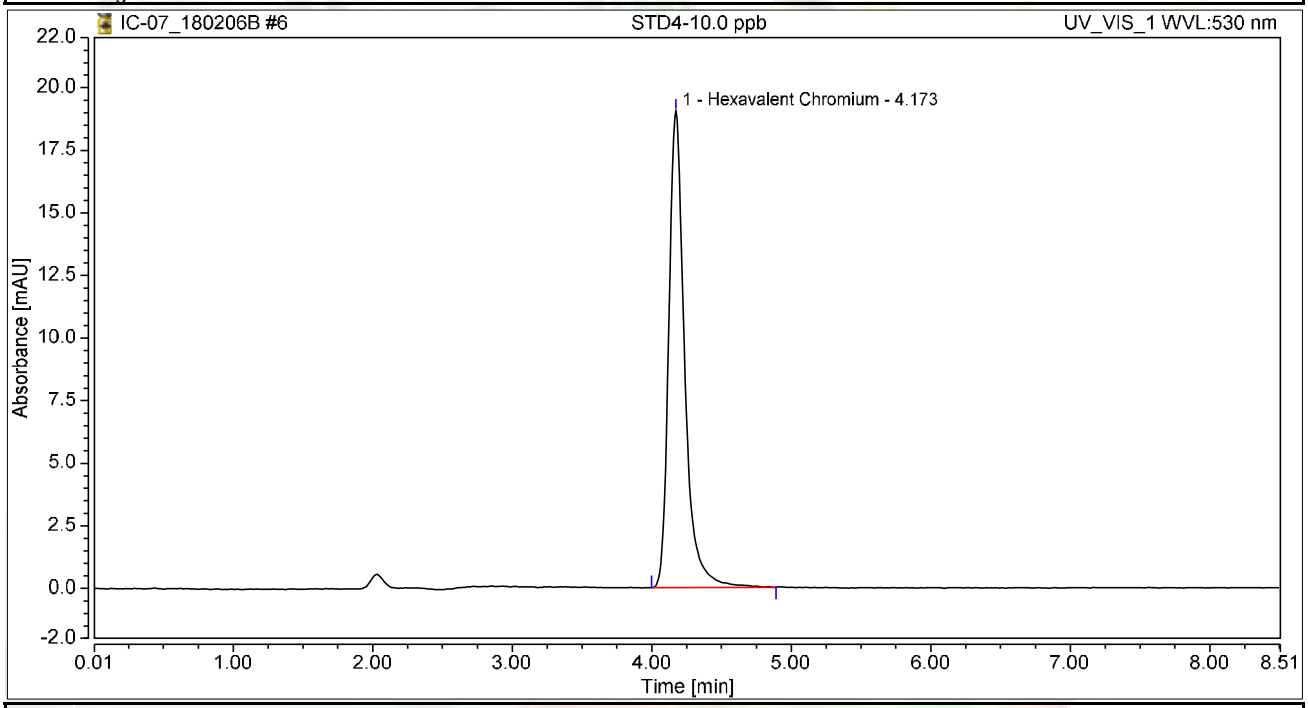
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

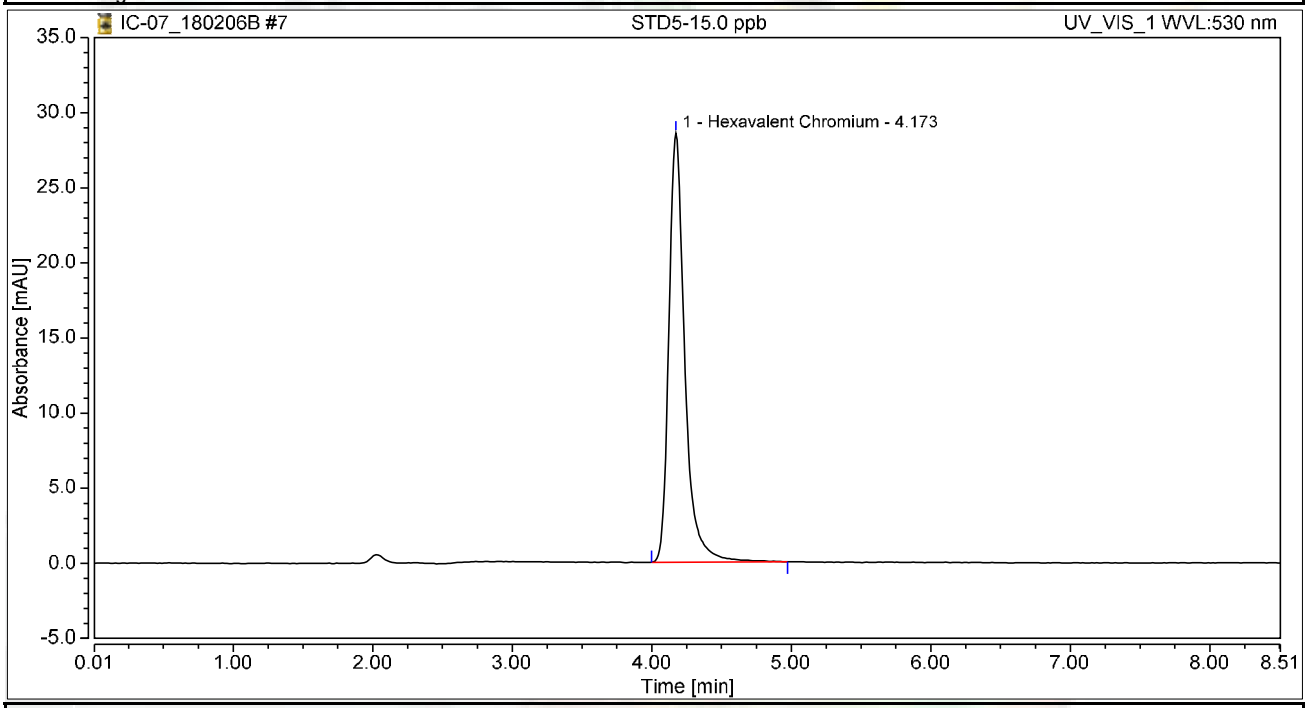
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

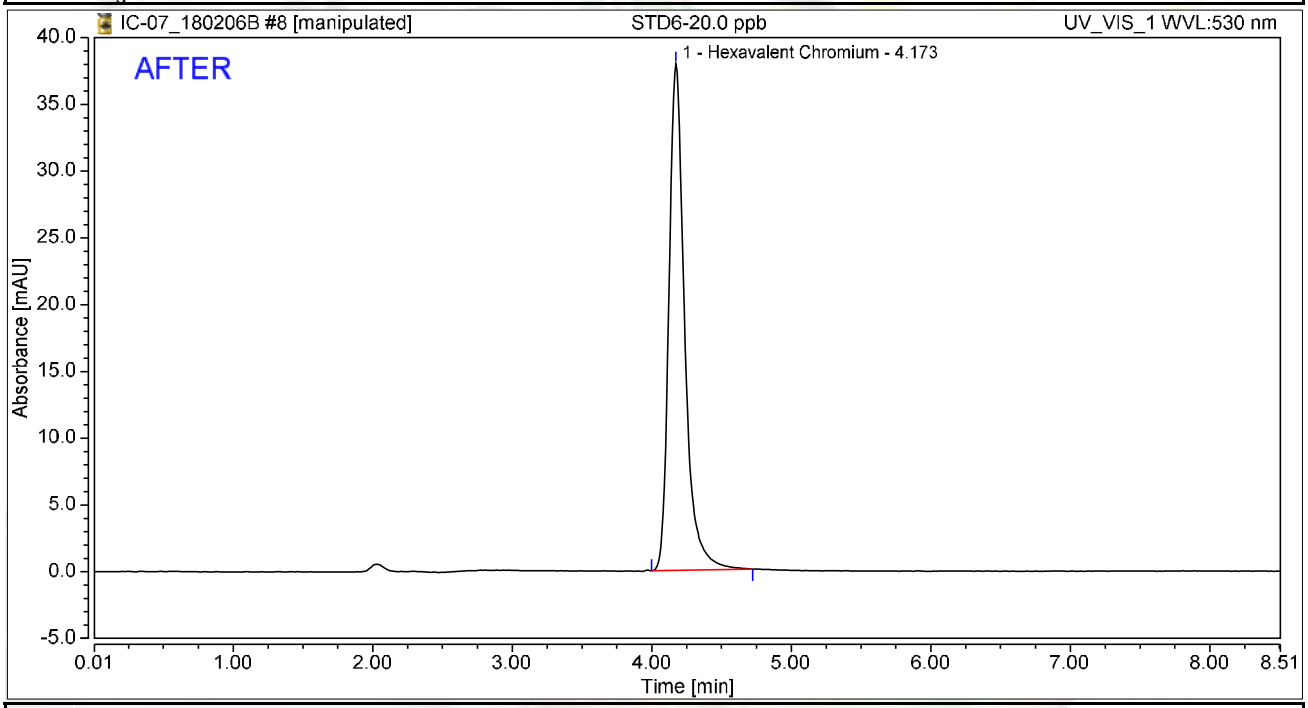
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

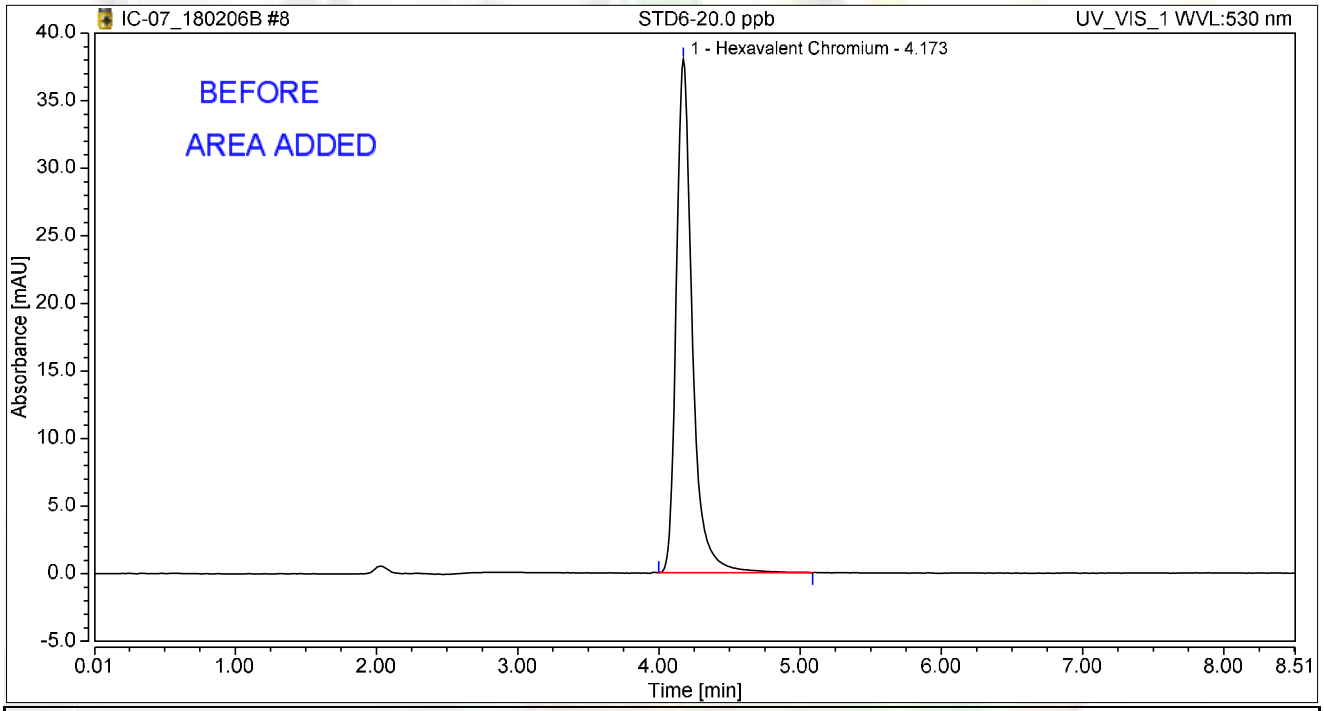
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

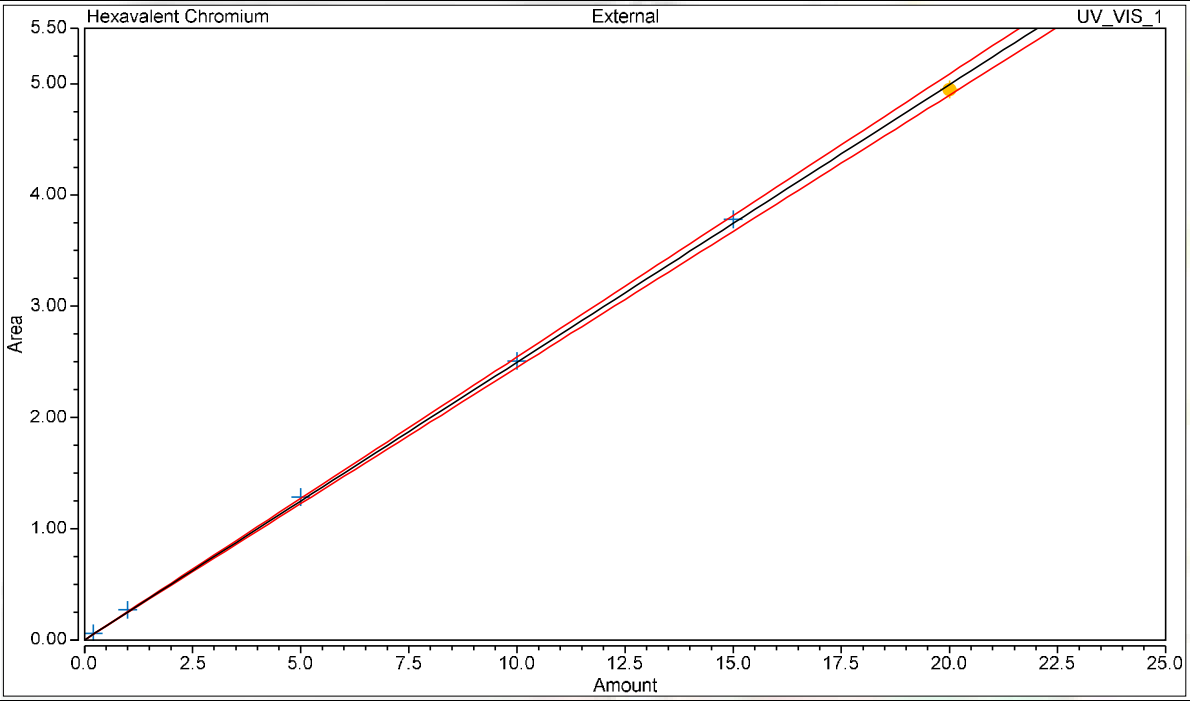
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

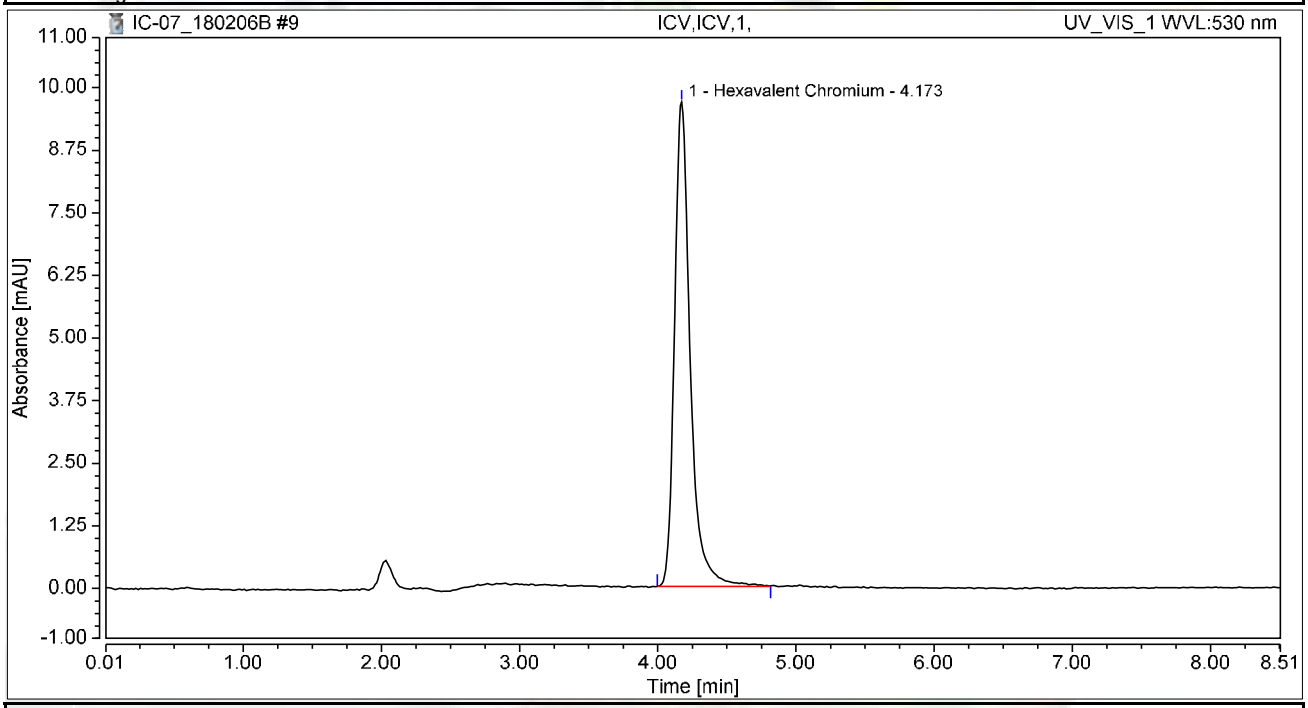
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

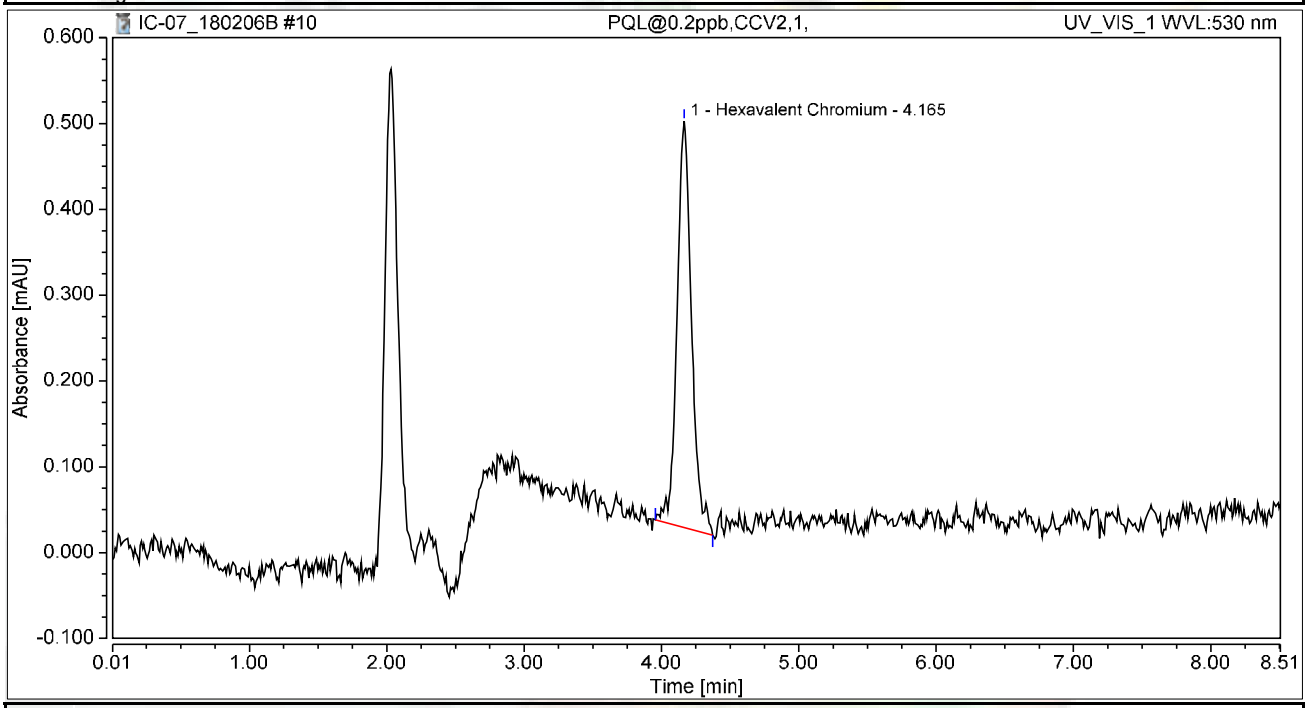
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

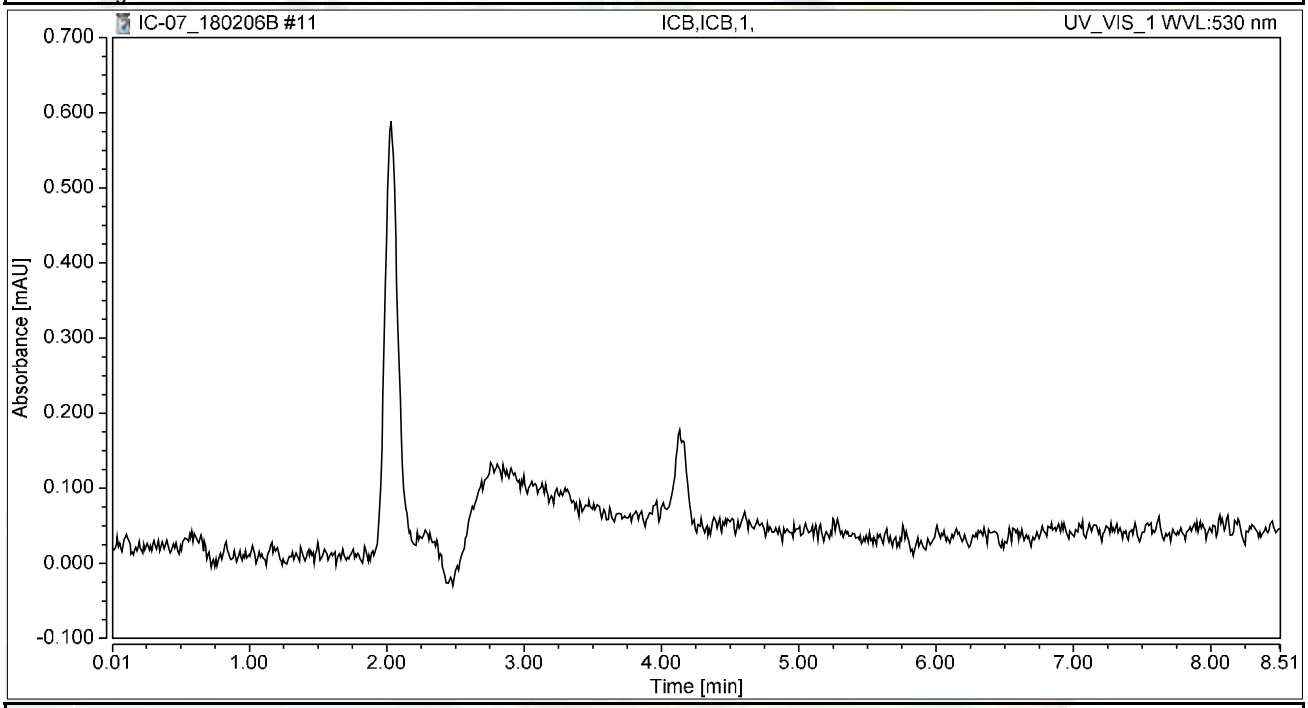
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:31 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/22/18 9:42 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/22/18 9:51 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/22/18 10:01 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/22/18 10:10 AM	Reported
14	MB-R122253	MBLK	1	Hexavalent Chromium	02/22/18 10:20 AM	Reported
15	LCS-R122253	LCS	1	Hexavalent Chromium	02/22/18 10:29 AM	Reported
16	N028726-004A	SAMP	1	Hexavalent Chromium	02/22/18 10:39 AM	Not Reported
17	N028726-005A	SAMP	1	Hexavalent Chromium	02/22/18 10:48 AM	Not Reported
18	N028726-001A	SAMP	5	Hexavalent Chromium	02/22/18 10:57 AM	Reported
19	N028726-001AMS	MS	5	Hexavalent Chromium	02/22/18 11:07 AM	Reported
20	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 11:16 AM	Not Reported
21	N028726-002ADUP	DUP	1	Hexavalent Chromium	02/22/18 11:26 AM	Not Reported
22	N028726-003A	SAMP	100	Hexavalent Chromium	02/22/18 11:35 AM	Not Reported
23	N028726-003AMS	MS	100	Hexavalent Chromium	02/22/18 11:45 AM	Not Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/22/18 11:54 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/22/18 12:04 PM	Reported
26	N028726-006A	SAMP	1	Hexavalent Chromium	02/22/18 12:13 PM	Reported
27	N028726-006AMS	MS	1	Hexavalent Chromium	02/22/18 12:23 PM	Reported
28	N028726-004AMS	MS	1	Hexavalent Chromium	02/22/18 12:32 PM	Not Reported
29	N028726-005AMS	MS	1	Hexavalent Chromium	02/22/18 12:42 PM	Not Reported
30	N028726-002AMS	MS	1	Hexavalent Chromium	02/22/18 12:51 PM	Reported
31	N028726-003A	SAMP	10	Hexavalent Chromium	02/22/18 1:00 PM	Reported
32	N028726-003AMS	MS	10	Hexavalent Chromium	02/22/18 1:10 PM	Reported
33	N028726-003AMSD	MS	10	Hexavalent Chromium	02/22/18 1:19 PM	Reported
34	N028726-004A	SAMP	5	Hexavalent Chromium	02/22/18 1:29 PM	Reported
35	N028726-004AMS	MS	5	Hexavalent Chromium	02/22/18 1:38 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/22/18 1:48 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/22/18 1:57 PM	Reported
38	N028726-005A	SAMP	5	Hexavalent Chromium	02/22/18 2:07 PM	Reported
39	N028726-005AMS	MS	5	Hexavalent Chromium	02/22/18 2:16 PM	Reported
40	N028726-001A	SAMP	1	Hexavalent Chromium	02/22/18 2:26 PM	Not Reported
41	N028726-001AMS	MS	1	Hexavalent Chromium	02/22/18 2:35 PM	Not Reported
42	N028726-002A	SAMP	1	Hexavalent Chromium	02/22/18 2:44 PM	Reported

rba 3/4/2018

IC7 RBA 2/26/2018 10:20 AM

RLB 03/06/2018

INJECTION LOG: 180222A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028726-003ADUP	DUP	10	Hexavalent Chromium	02/22/18 2:54 PM	Reported
44	N028727-002A	SAMP	1	Hexavalent Chromium	02/22/18 3:03 PM	Reported
45	N028727-002AMS	MS	1	Hexavalent Chromium	02/22/18 3:13 PM	Reported
46	N028727-003A	SAMP	1	Hexavalent Chromium	02/22/18 3:22 PM	Reported
47	N028727-003AMS	MS	1	Hexavalent Chromium	02/22/18 3:32 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/22/18 3:42 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/22/18 3:53 PM	Reported
50	N028727-004A	SAMP	1	Hexavalent Chromium	02/22/18 4:02 PM	Reported
51	N028727-004AMS	MS	1	Hexavalent Chromium	02/22/18 4:12 PM	Reported
52	N028727-005A	SAMP	1	Hexavalent Chromium	02/22/18 4:21 PM	Reported
53	N028727-005AMS	MS	1	Hexavalent Chromium	02/22/18 4:31 PM	Reported
54	N028727-006A	SAMP	1	Hexavalent Chromium	02/22/18 4:40 PM	Reported
55	N028727-006AMS	MS	1	Hexavalent Chromium	02/22/18 4:50 PM	Reported
56	N028727-007A	SAMP	1	Hexavalent Chromium	02/22/18 4:59 PM	Reported
57	N028727-007AMS	MS	1	Hexavalent Chromium	02/22/18 5:09 PM	Reported
58	N028727-008A	SAMP	1	Hexavalent Chromium	02/22/18 5:18 PM	Reported
59	N028727-008AMS	MS	1	Hexavalent Chromium	02/22/18 5:28 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	02/22/18 5:37 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	02/22/18 5:47 PM	Reported
62	N028727-009A	SAMP	1	Hexavalent Chromium	02/22/18 5:56 PM	Reported
63	N028727-009AMS	MS	1	Hexavalent Chromium	02/22/18 6:05 PM	Reported
64	N028727-010A	SAMP	1	Hexavalent Chromium	02/22/18 6:15 PM	Reported
65	N028727-010AMS	MS	1	Hexavalent Chromium	02/22/18 6:24 PM	Reported
66	N028727-011A	SAMP	1	Hexavalent Chromium	02/22/18 6:34 PM	Reported
67	N028727-011AMS	MS	1	Hexavalent Chromium	02/22/18 6:43 PM	Reported
68	N028727-012A	SAMP	1	Hexavalent Chromium	02/22/18 6:53 PM	Reported
69	N028727-012AMS	MS	1	Hexavalent Chromium	02/22/18 7:02 PM	Reported
70	N028727-013A	SAMP	1	Hexavalent Chromium	02/22/18 7:12 PM	Reported
71	N028727-013AMS	MS	1	Hexavalent Chromium	02/22/18 7:21 PM	Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	02/22/18 7:31 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	02/22/18 7:40 PM	Reported
74	N028727-014A	SAMP	1	Hexavalent Chromium	02/22/18 7:50 PM	Reported
75	N028727-014AMS	MS	1	Hexavalent Chromium	02/22/18 7:59 PM	Reported
76	N028727-015A	SAMP	1	Hexavalent Chromium	02/22/18 8:08 PM	Reported
77	N028727-015AMS	MS	1	Hexavalent Chromium	02/22/18 8:18 PM	Reported
78	CCV-7	CCV	1	Hexavalent Chromium	02/22/18 8:27 PM	Reported
79	CCB-7	CCB	1	Hexavalent Chromium	02/22/18 8:37 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180222A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**22/Feb/18 21:07:38**
No. of Injections:	**82**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/22/2018 09:31	Finished	BLANK
10	BLANK	2	1000	Unknown		02/22/2018 09:42	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/22/2018 09:51	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/22/2018 10:01	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/22/2018 10:10	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/22/2018 10:20	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/22/2018 10:29	Finished	LCS, IWST-180129B
16	N028726-004A,SAMF	8	1000	Unknown		02/22/2018 10:39	Finished	SAMP,10mL
17	N028726-005A,SAMF	9	1000	Unknown		02/22/2018 10:48	Finished	SAMP,10mL
18	N028726-001A,SAMF	10	1000	Unknown		02/22/2018 10:57	Finished	SAMP,2>10mL
19	N028726-001AMS,MS	11	1000	Unknown		02/22/2018 11:07	Finished	MS (1ppb), IWST-180129B,2>1
20	N028726-002A,SAMF	12	1000	Unknown		02/22/2018 11:16	Finished	SAMP,10mL
21	N028726-002ADUP,D	13	1000	Unknown		02/22/2018 11:26	Finished	DUP,10mL
22	N028726-003A,SAMF	14	1000	Unknown		02/22/2018 11:35	Finished	SAMP,0.1>10mL
23	N028726-003AMS,MS	15	1000	Unknown		02/22/2018 11:45	Finished	MS (5ppb), IWST-180129B,0.1
24	CCV-2,CCV1,1,	16	1000	Unknown		02/22/2018 11:54	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	17	1000	Unknown		02/22/2018 12:04	Finished	CCB R180214B
26	N028726-006A,SAMF	18	1000	Unknown		02/22/2018 12:13	Finished	SAMP,10mL
27	N028726-006AMS,MS	19	1000	Unknown		02/22/2018 12:23	Finished	MS (1ppb), IWST-180129B,10
28	N028726-004AMS,MS	20	1000	Unknown		02/22/2018 12:32	Finished	MS (1ppb), IWST-180129B,10
29	N028726-005AMS,MS	21	1000	Unknown		02/22/2018 12:42	Finished	MS (1ppb), IWST-180129B,10
30	N028726-002AMS,MS	22	1000	Unknown		02/22/2018 12:51	Finished	MS (1ppb), IWST-180129B,10
31	N028726-003A,SAMF	23	1000	Unknown		02/22/2018 13:00	Finished	SAMP,1>10mL
32	N028726-003AMS,MS	24	1000	Unknown		02/22/2018 13:10	Finished	MS (5ppb), IWST-180129B,1>1
33	N028726-003AMSD,M	25	1000	Unknown		02/22/2018 13:19	Finished	MSD (5ppb), IWST-180129B,1>
34	N028726-004A,SAMF	26	1000	Unknown		02/22/2018 13:29	Finished	SAMP,2>10mL
35	N028726-004AMS,MS	27	1000	Unknown		02/22/2018 13:38	Finished	MS (1ppb), IWST-180129B,2>1
36	CCV-3,CCV,1,	28	1000	Unknown		02/22/2018 13:48	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	29	1000	Unknown		02/22/2018 13:57	Finished	CCB R180214B
38	N028726-005A,SAMF	30	1000	Unknown		02/22/2018 14:07	Finished	SAMP,2>10mL
39	N028726-005AMS,MS	31	1000	Unknown		02/22/2018 14:16	Finished	MS (1ppb), IWST-180129B,2>1
40	N028726-001A,SAMF	32	1000	Unknown		02/22/2018 14:26	Finished	SAMP,10mL
41	N028726-001AMS,MS	33	1000	Unknown		02/22/2018 14:35	Finished	MS (1ppb), IWST-180129B,10
42	N028726-002A,SAMF	34	1000	Unknown		02/22/2018 14:44	Finished	SAMP,10mL
43	N028726-003ADUP,D	35	1000	Unknown		02/22/2018 14:54	Finished	DUP,1>10mL
44	N028727-002A,SAMF	36	1000	Unknown		02/22/2018 15:03	Finished	SAMP,10mL
45	N028727-002AMS,MS	37	1000	Unknown		02/22/2018 15:13	Finished	MS (1ppb), IWST-180129B,10
46	N028727-003A,SAMF	38	1000	Unknown		02/22/2018 15:22	Finished	SAMP,10mL
47	N028727-003AMS,MS	39	1000	Unknown		02/22/2018 15:32	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	1	1000	Unknown		02/22/2018 15:42	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	2	1000	Unknown		02/22/2018 15:53	Finished	CCB R180214B
50	N028727-004A,SAMF	3	1000	Unknown		02/22/2018 16:02	Finished	SAMP,10mL
51	N028727-004AMS,MS	4	1000	Unknown		02/22/2018 16:12	Finished	MS (1ppb), IWST-180129B,10
52	N028727-005A,SAMF	5	1000	Unknown		02/22/2018 16:21	Finished	SAMP,10mL
53	N028727-005AMS,MS	6	1000	Unknown		02/22/2018 16:31	Finished	MS (1ppb), IWST-180129B,10
54	N028727-006A,SAMF	7	1000	Unknown		02/22/2018 16:40	Finished	SAMP,10mL
55	N028727-006AMS,MS	8	1000	Unknown		02/22/2018 16:50	Finished	MS (1ppb), IWST-180129B,10
56	N028727-007A,SAMF	9	1000	Unknown		02/22/2018 16:59	Finished	SAMP,10mL
57	N028727-007AMS,MS	10	1000	Unknown		02/22/2018 17:09	Finished	MS (1ppb), IWST-180129B,10
58	N028727-008A,SAMF	11	1000	Unknown		02/22/2018 17:18	Finished	SAMP,10mL
59	N028727-008AMS,MS	12	1000	Unknown		02/22/2018 17:28	Finished	MS (1ppb), IWST-180129B,10
60	CCV-5,CCV,1,	13	1000	Unknown		02/22/2018 17:37	Finished	CCV @5ppb, IWST-180129A

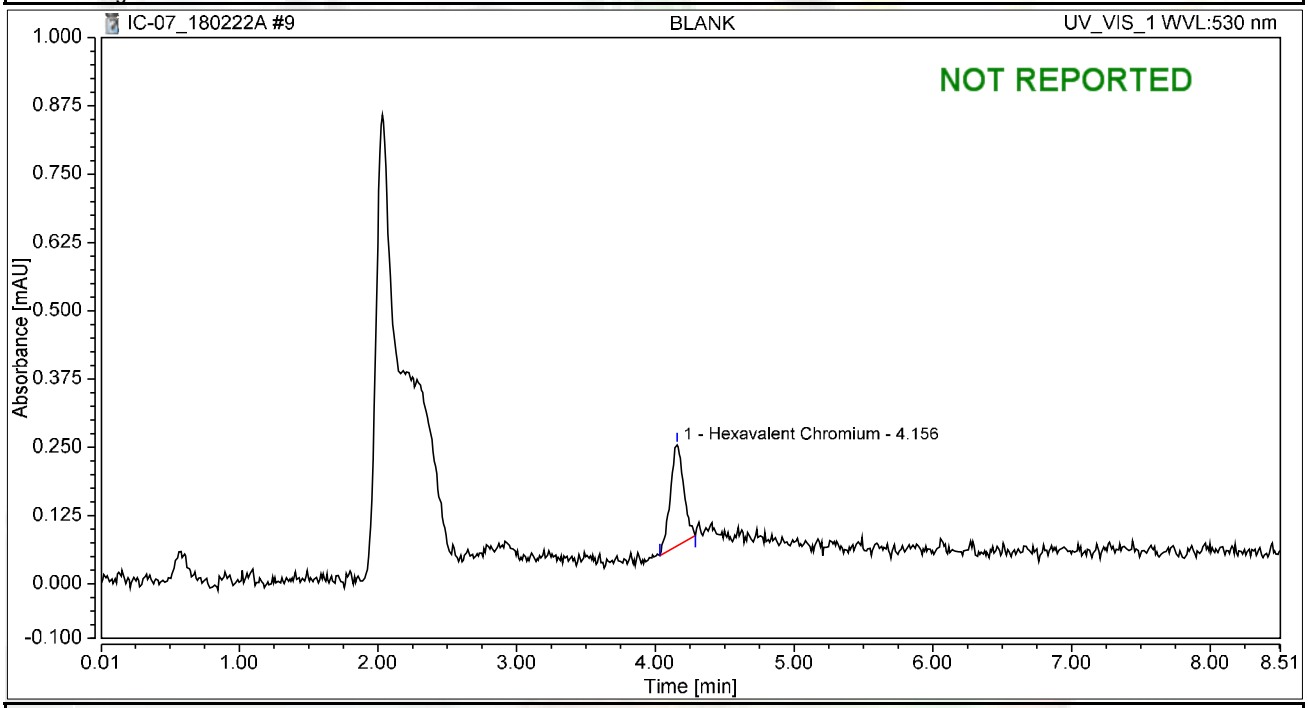
61	CCB-5,CCB,1,	14	1000	Unknown		02/22/2018 17:47	Finished	CCB R180214B
62	N028727-009A,SAMP	15	1000	Unknown		02/22/2018 17:56	Finished	SAMP,10mL
63	N028727-009AMS,MS	16	1000	Unknown		02/22/2018 18:05	Finished	MS (1ppb), IWST-180129B,10
64	N028727-010A,SAMP	17	1000	Unknown		02/22/2018 18:15	Finished	SAMP,10mL
65	N028727-010AMS,MS	18	1000	Unknown		02/22/2018 18:24	Finished	MS (1ppb), IWST-180129B,10
66	N028727-011A,SAMP	19	1000	Unknown		02/22/2018 18:34	Finished	SAMP,10mL
67	N028727-011AMS,MS	20	1000	Unknown		02/22/2018 18:43	Finished	MS (1ppb), IWST-180129B,10
68	N028727-012A,SAMP	21	1000	Unknown		02/22/2018 18:53	Finished	SAMP,10mL
69	N028727-012AMS,MS	22	1000	Unknown		02/22/2018 19:02	Finished	MS (1ppb), IWST-180129B,10
70	N028727-013A,SAMP	23	1000	Unknown		02/22/2018 19:12	Finished	SAMP,10mL
71	N028727-013AMS,MS	24	1000	Unknown		02/22/2018 19:21	Finished	MS (1ppb), IWST-180129B,10
72	CCV-6,CCV1,1,	25	1000	Unknown		02/22/2018 19:31	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	26	1000	Unknown		02/22/2018 19:40	Finished	CCB R180214B
74	N028727-014A,SAMP	27	1000	Unknown		02/22/2018 19:50	Finished	SAMP,10mL
75	N028727-014AMS,MS	28	1000	Unknown		02/22/2018 19:59	Finished	MS (1ppb), IWST-180129B,10
76	N028727-015A,SAMP	29	1000	Unknown		02/22/2018 20:08	Finished	SAMP,10mL
77	N028727-015AMS,MS	30	1000	Unknown		02/22/2018 20:18	Finished	MS (1ppb), IWST-180129B,10
78	CCV-7,CCV,1,	31	1000	Unknown		02/22/2018 20:27	Finished	CCV @5ppb, IWST-180129A
79	CCB-7,CCB,1,	32	1000	Unknown		02/22/2018 20:37	Finished	CCB R180214B
80	SHUTDOWN	33	1000	Unknown		02/22/2018 20:46	Finished	
81	Eluent: R180219A	34	1000	Unknown		n.a.	Finished	Eluent
82	PCR: R180219B	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

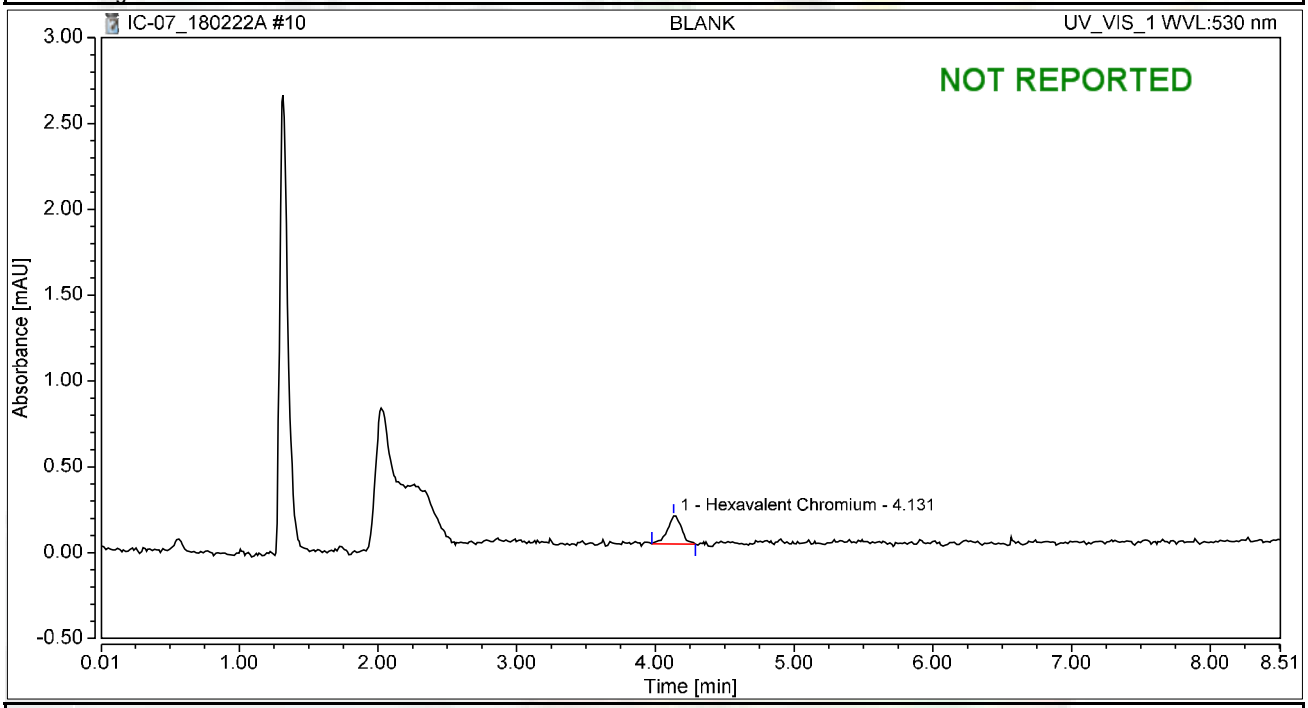
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.021	0.185	100.00	100.00	0.0835
Total:			**0.021**	**0.185**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

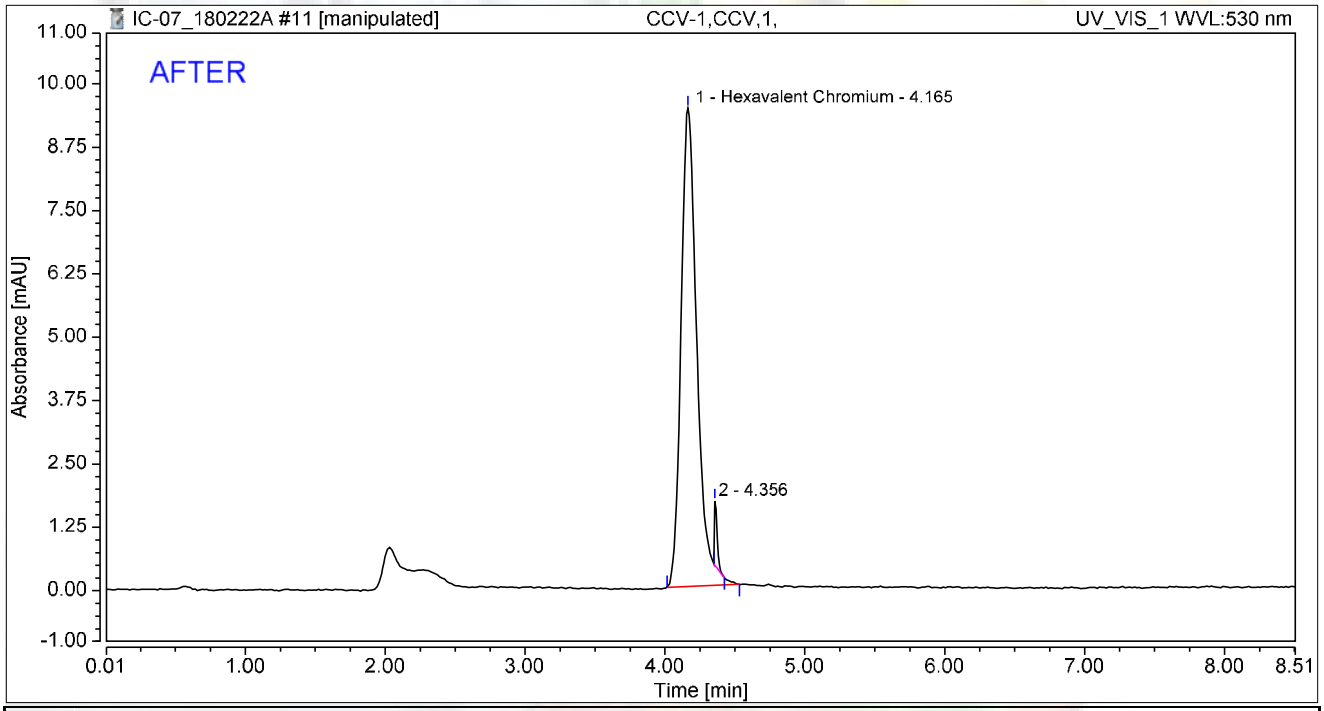
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.019	0.164	100.00	100.00	0.0773
Total:			**0.019**	**0.164**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.238	9.441	97.74	88.18	4.9599
2		4.356	0.029	1.265	2.26	11.82	n.a.
Total:			**1.267**	**10.707**	**100.00**	**100.00**	

rba 3/4/2018

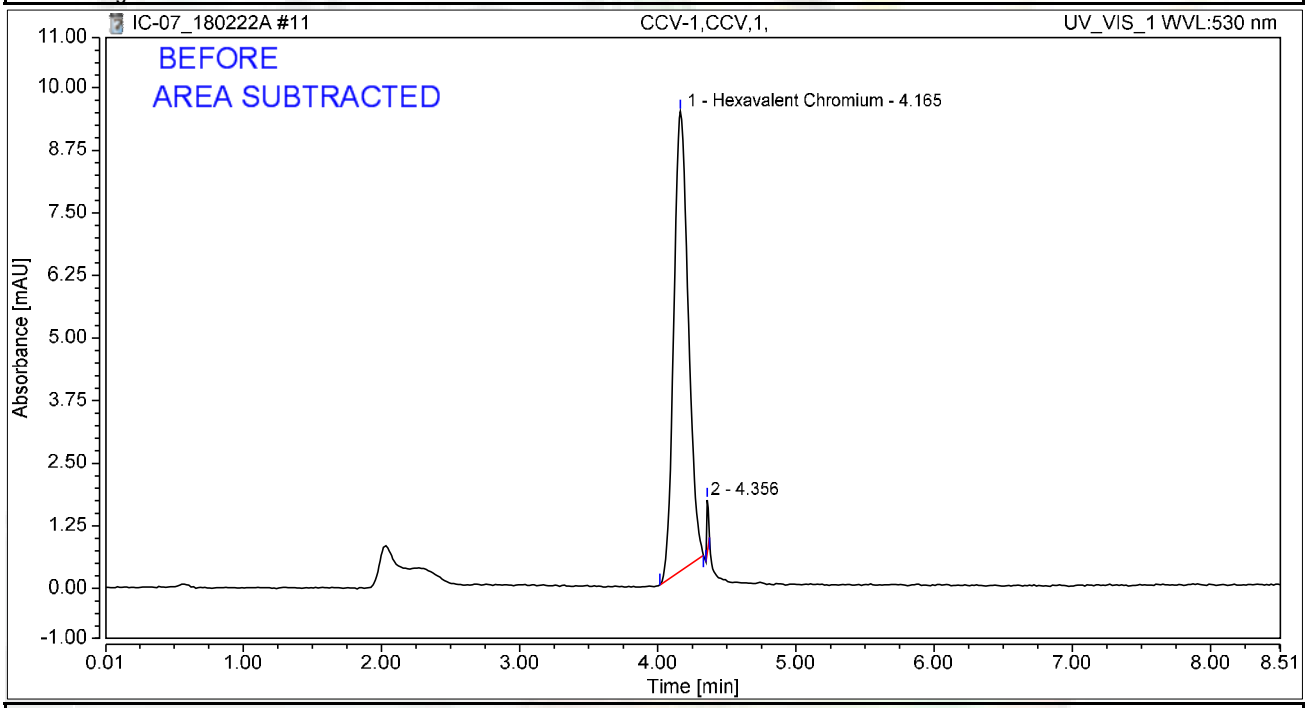
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.113	9.175	98.65	89.52	4.4580
2		4.356	0.015	1.074	1.35	10.48	n.a.
Total:			**1.128**	**10.249**	**100.00**	**100.00**	

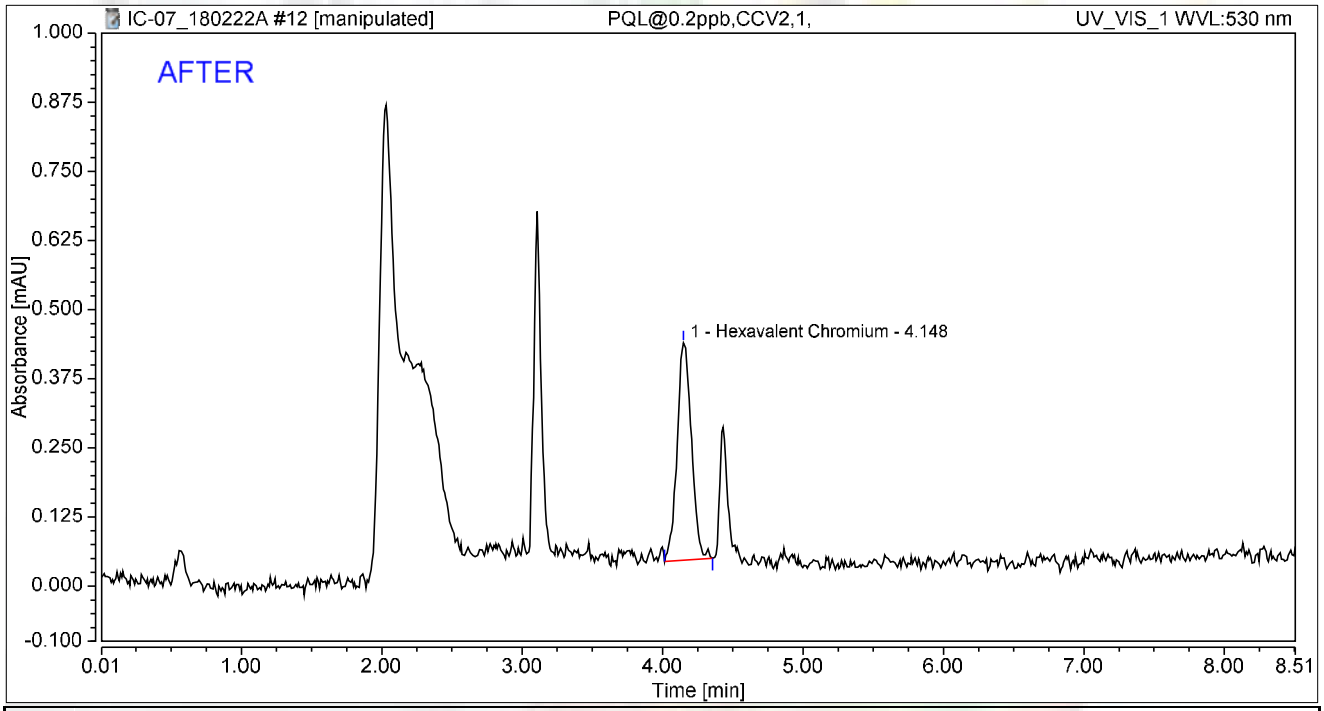
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.046	0.393	100.00	100.00	0.1862
Total:			**0.046**	**0.393**	**100.00**	**100.00**	

rba 3/4/2018

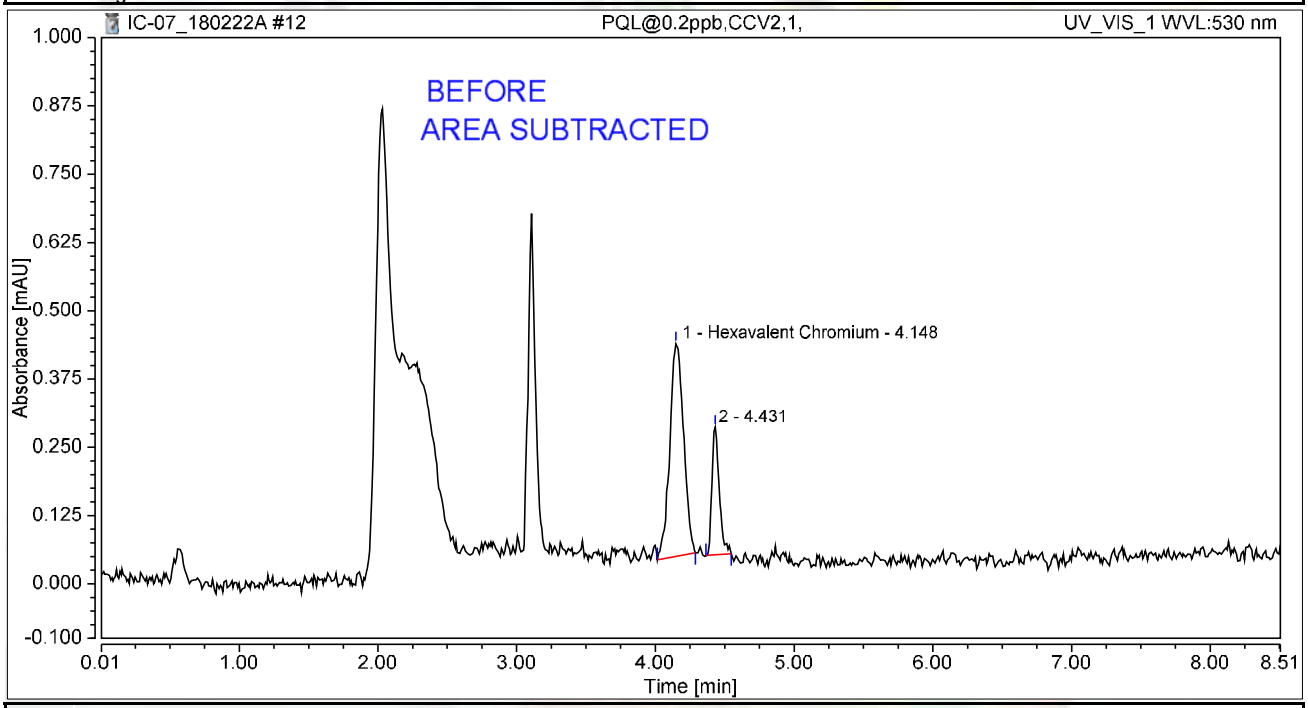
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.045	0.389	75.63	62.47	0.1798
2		4.431	0.014	0.234	24.37	37.53	n.a.
Total:			**0.059**	**0.623**	**100.00**	**100.00**	

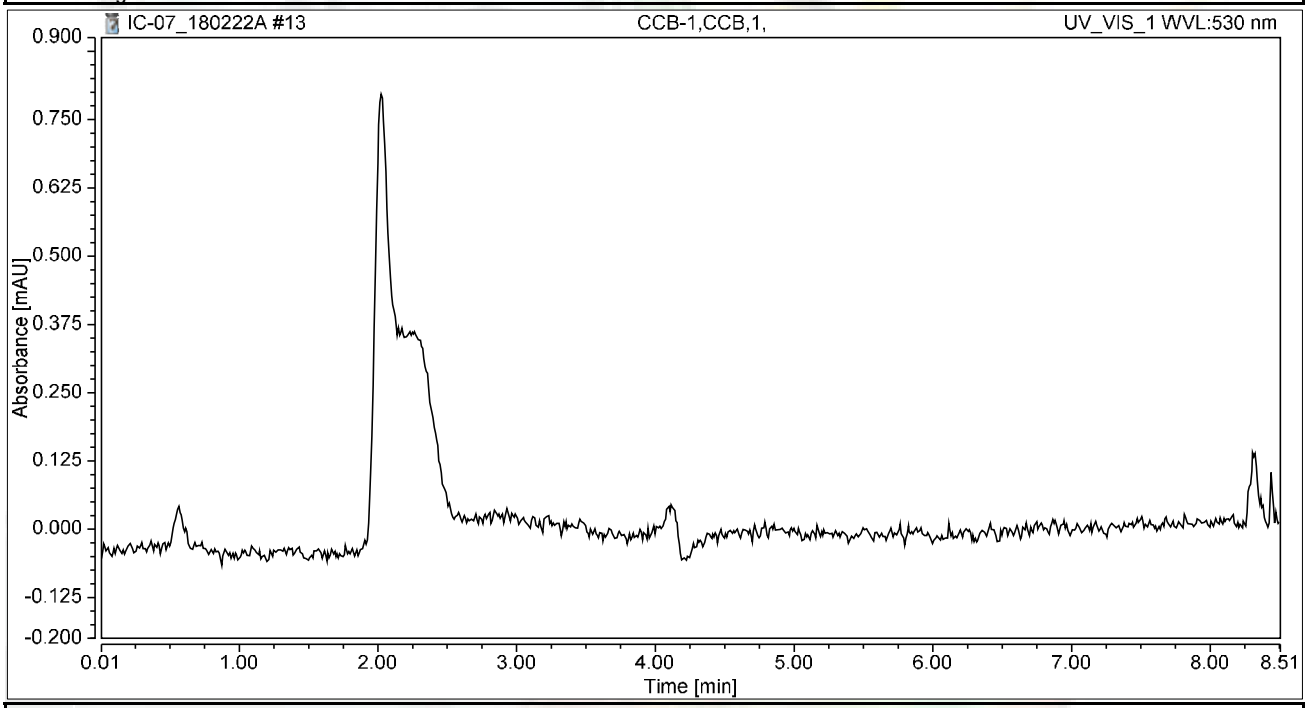
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

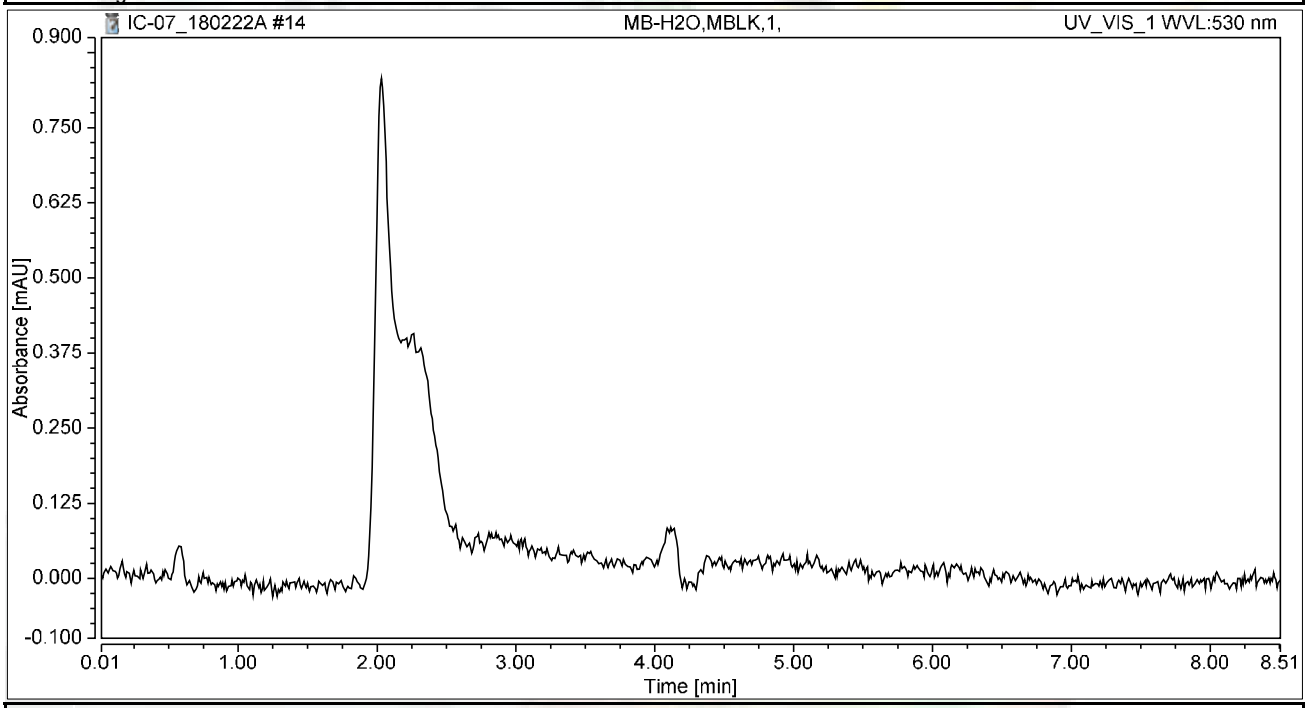
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

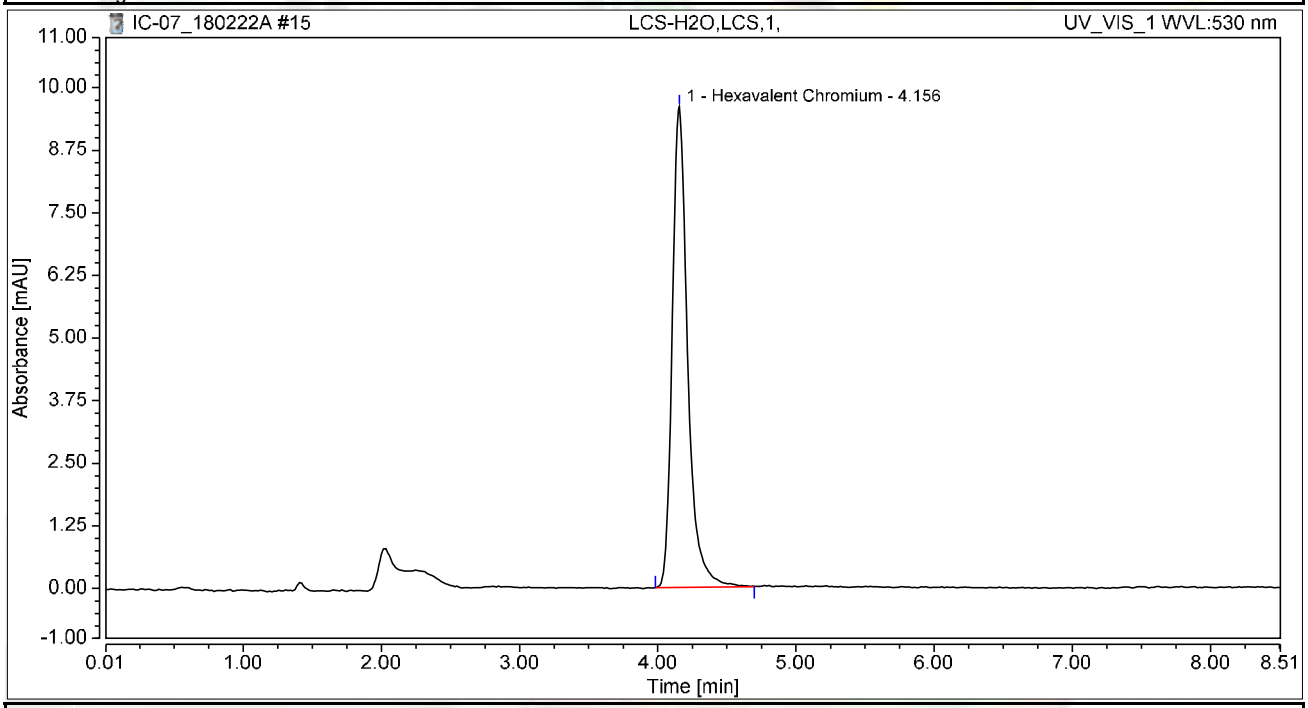
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

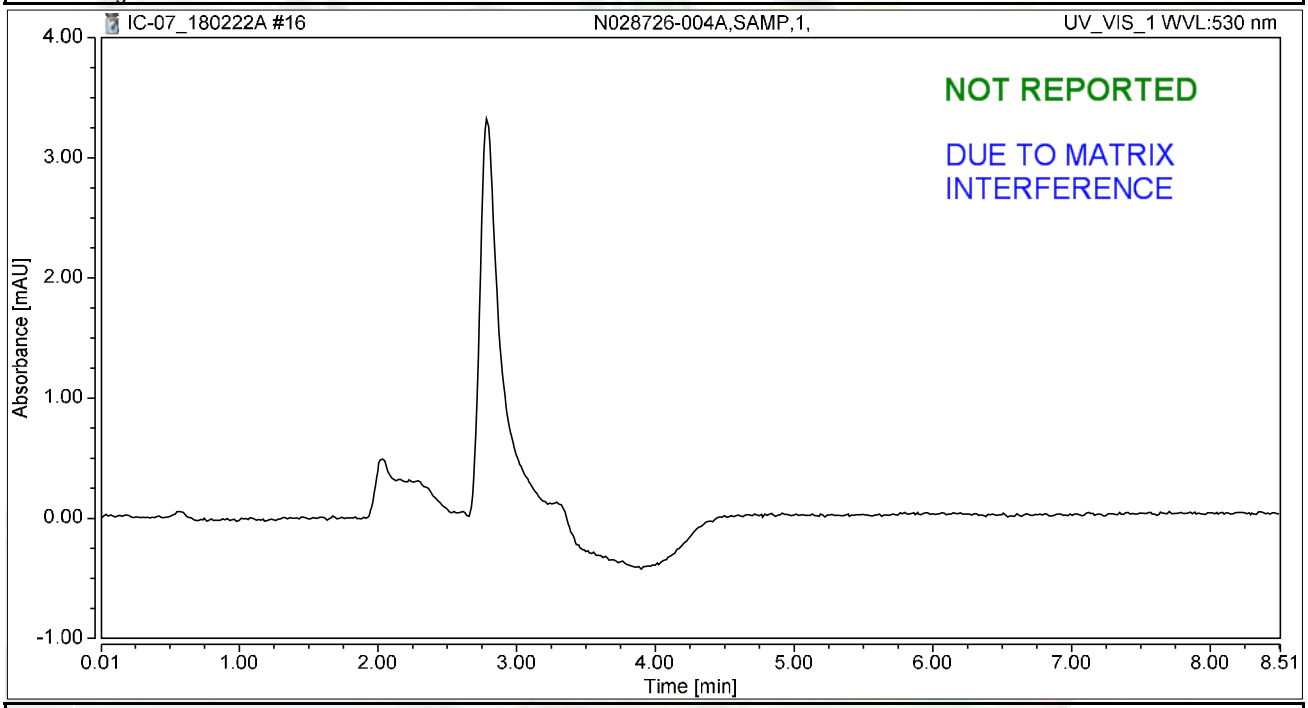
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.244	9.600	100.00	100.00	4.9812
Total:			**1.244**	**9.600**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

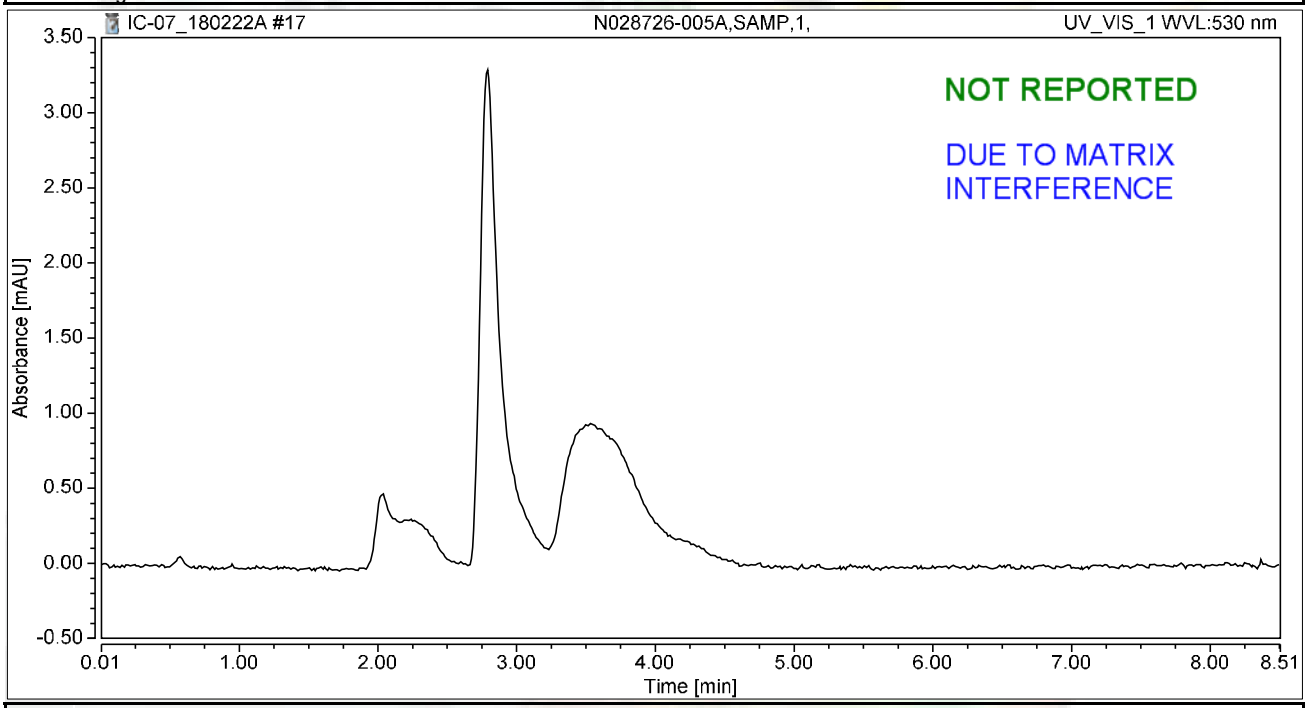
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

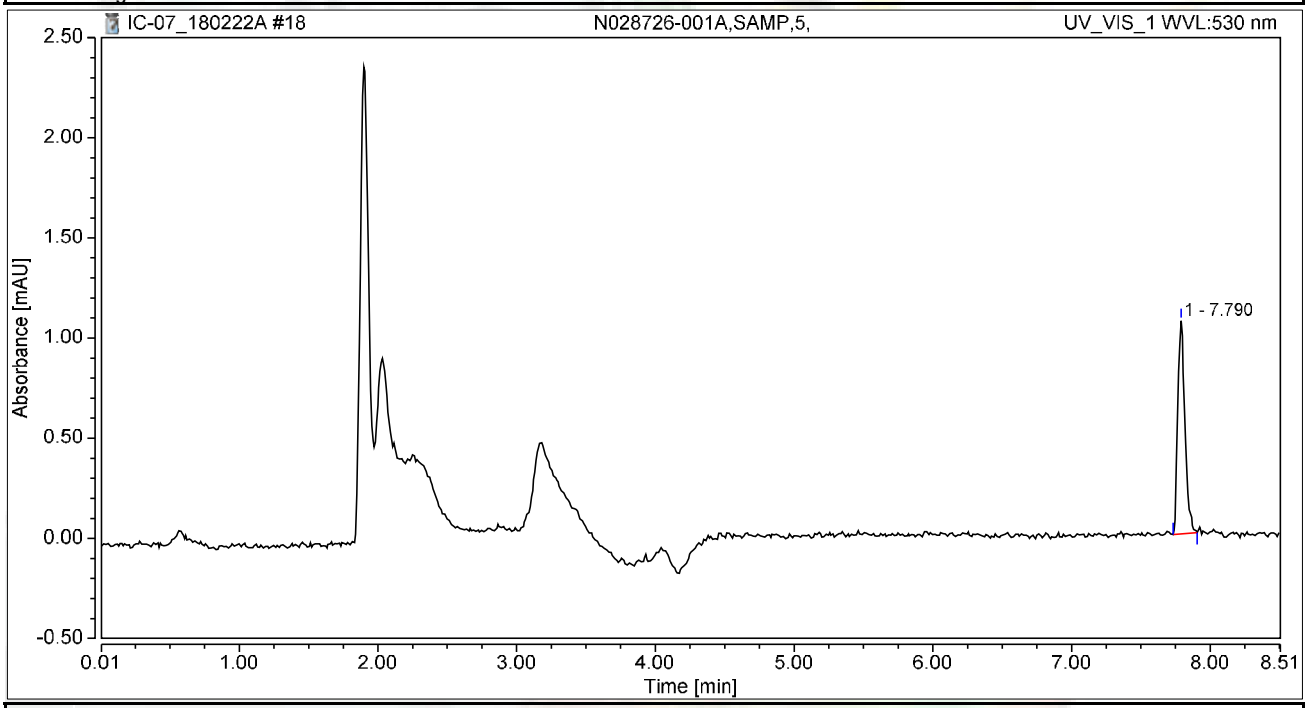
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

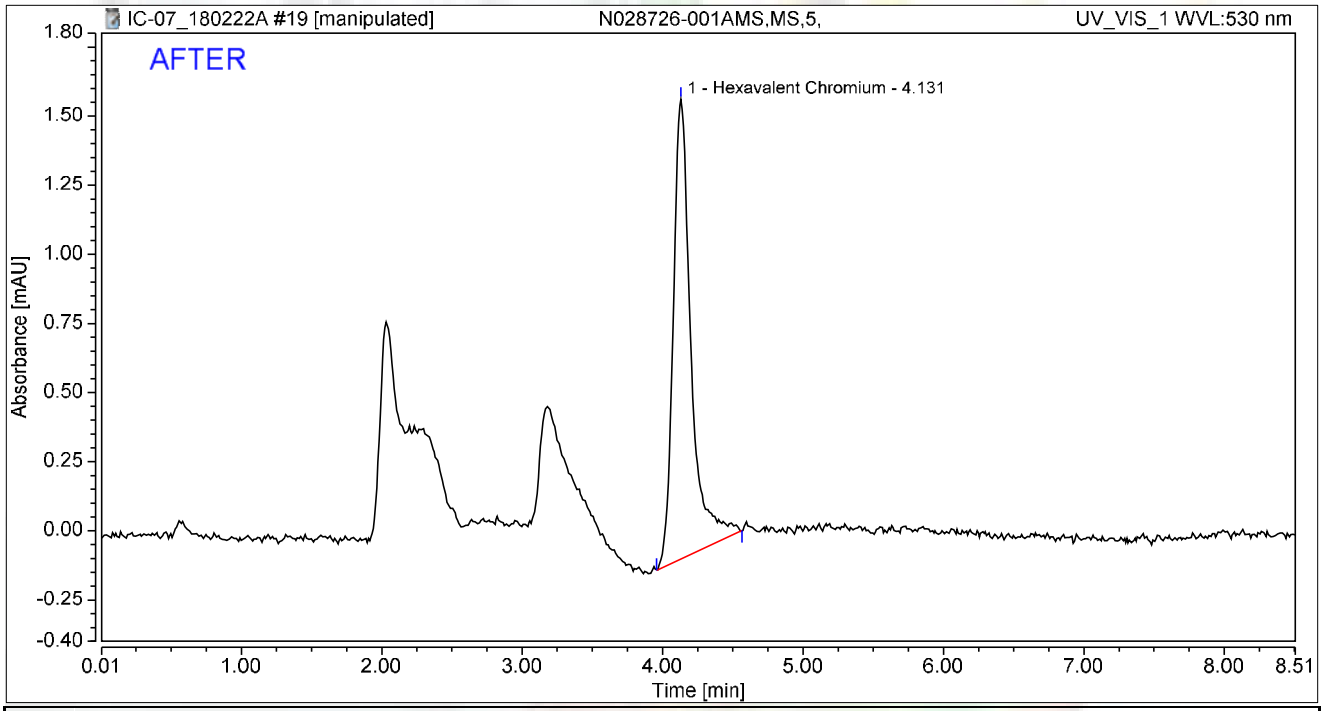
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.790	0.064	1.064	100.00	100.00	n.a.
Total:			**0.064**	**1.064**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.245	1.662	100.00	100.00	0.9797
Total:			**0.245**	**1.662**	**100.00**	**100.00**	

rba 3/4/2018

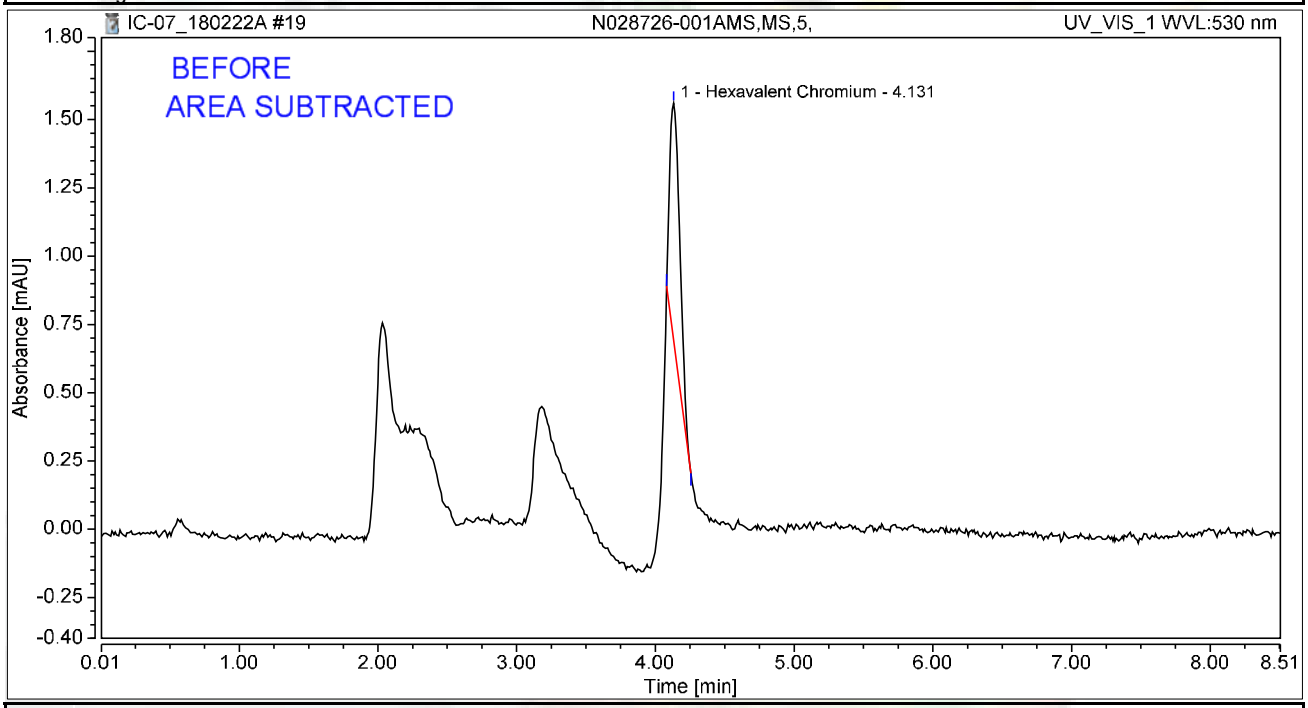
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.074	0.866	100.00	100.00	0.2954
Total:			**0.074**	**0.866**	**100.00**	**100.00**	

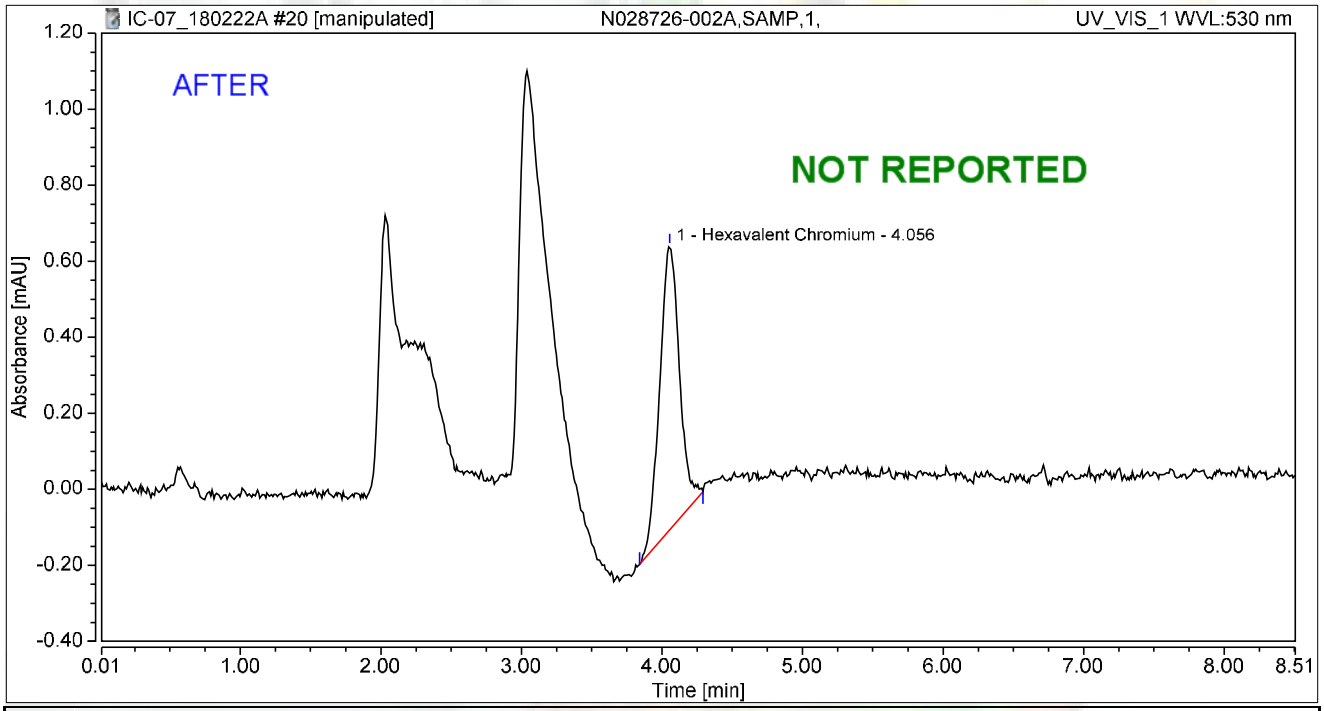
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.121	0.745	100.00	100.00	0.4854
Total:			**0.121**	**0.745**	**100.00**	**100.00**	

rba 3/4/2018

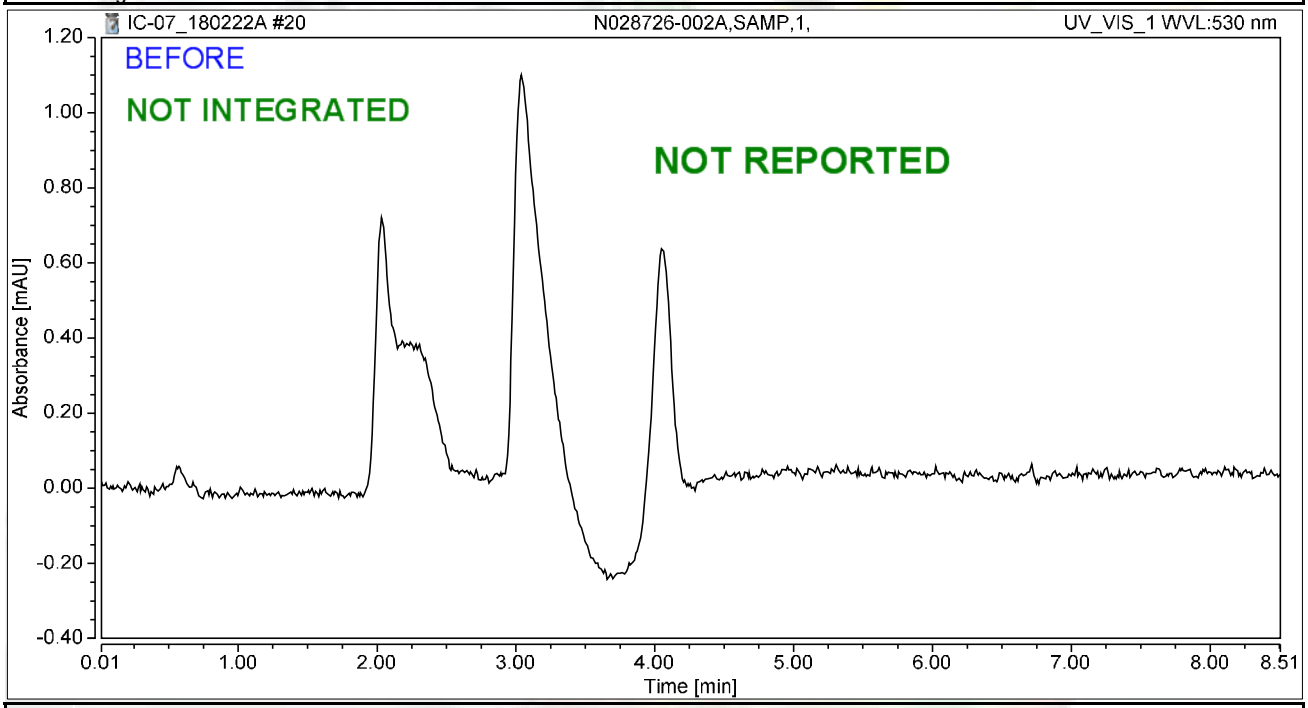
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

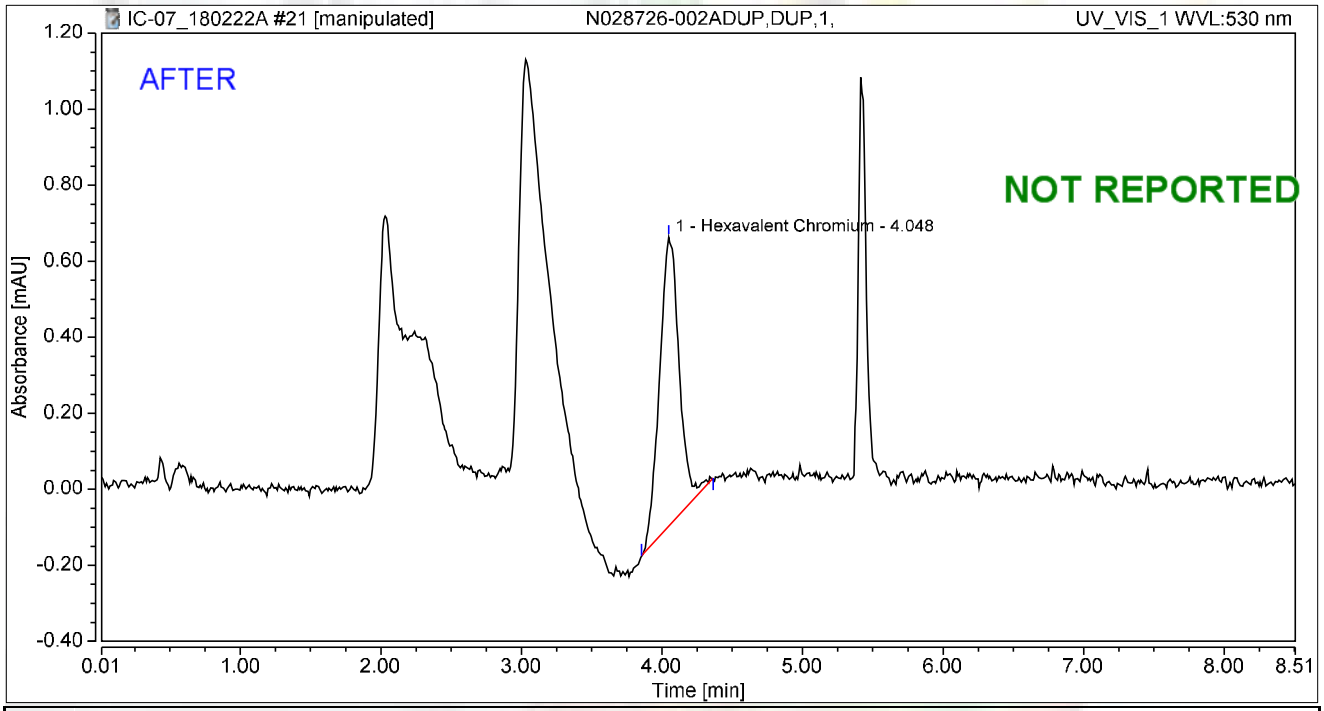
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	0.123	0.761	100.00	100.00	0.4923
Total:			**0.123**	**0.761**	**100.00**	**100.00**	

rba 3/4/2018

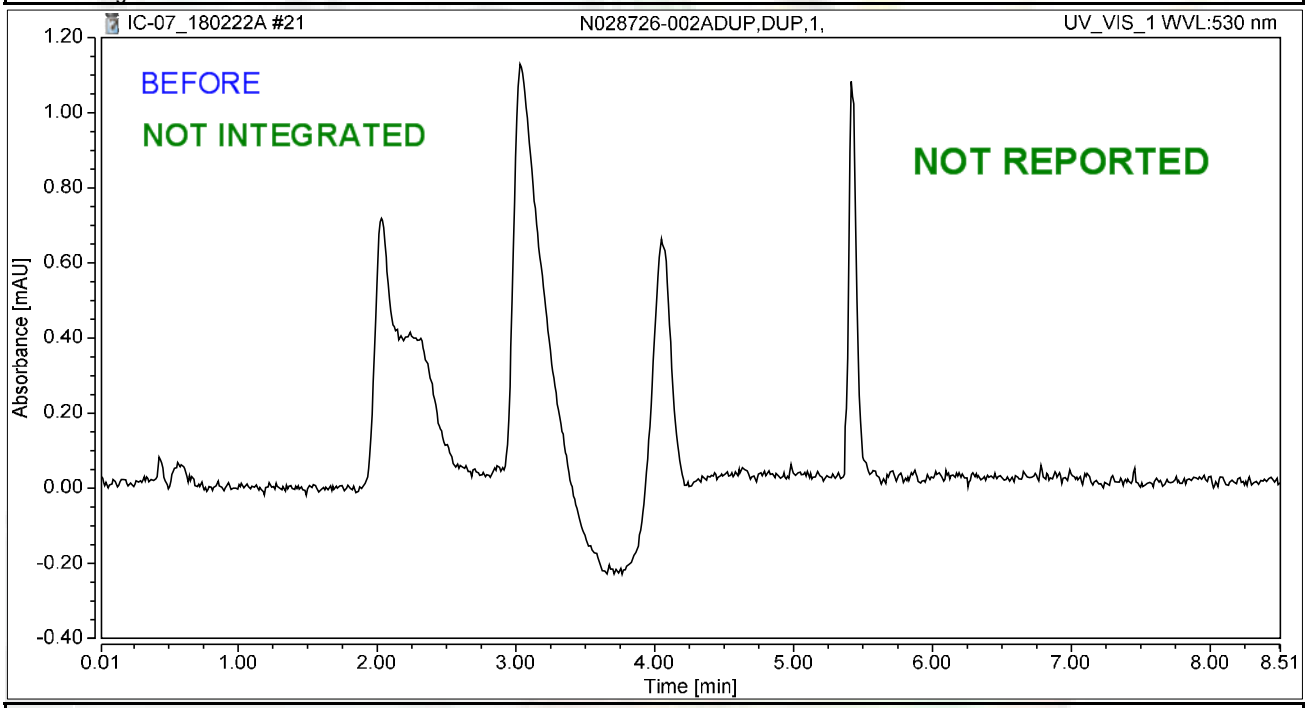
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

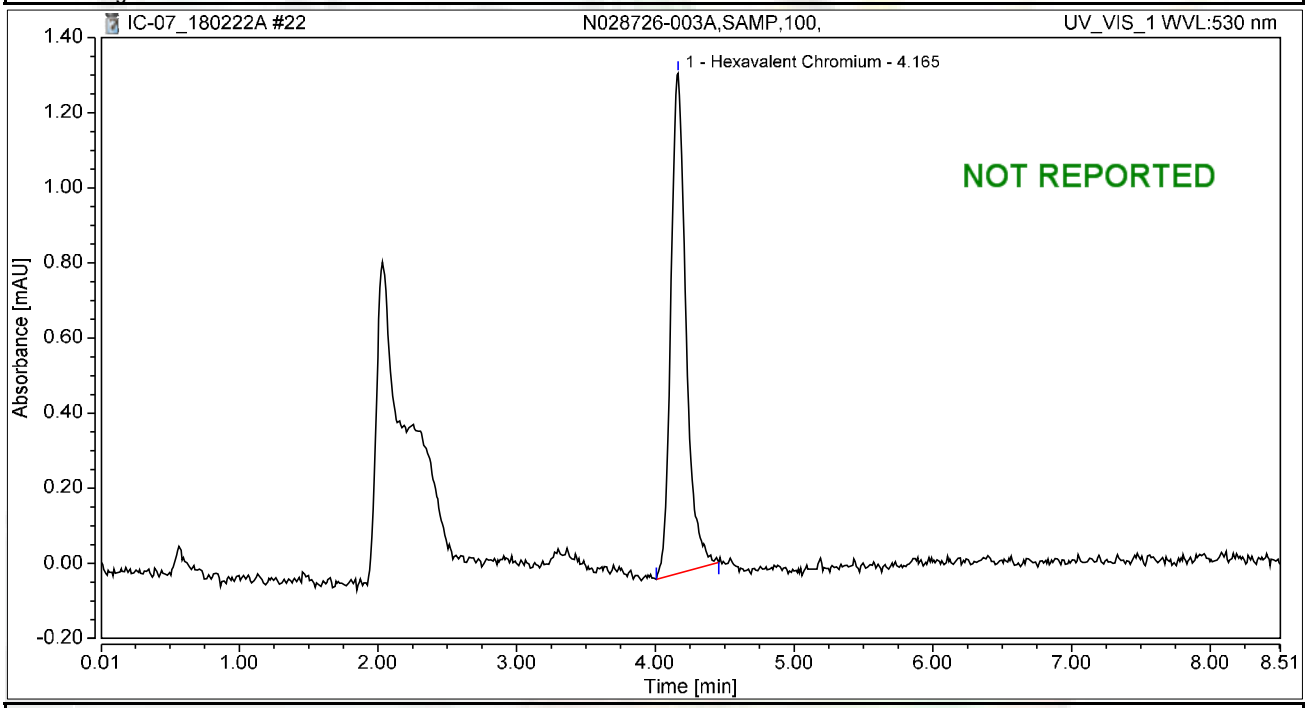
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

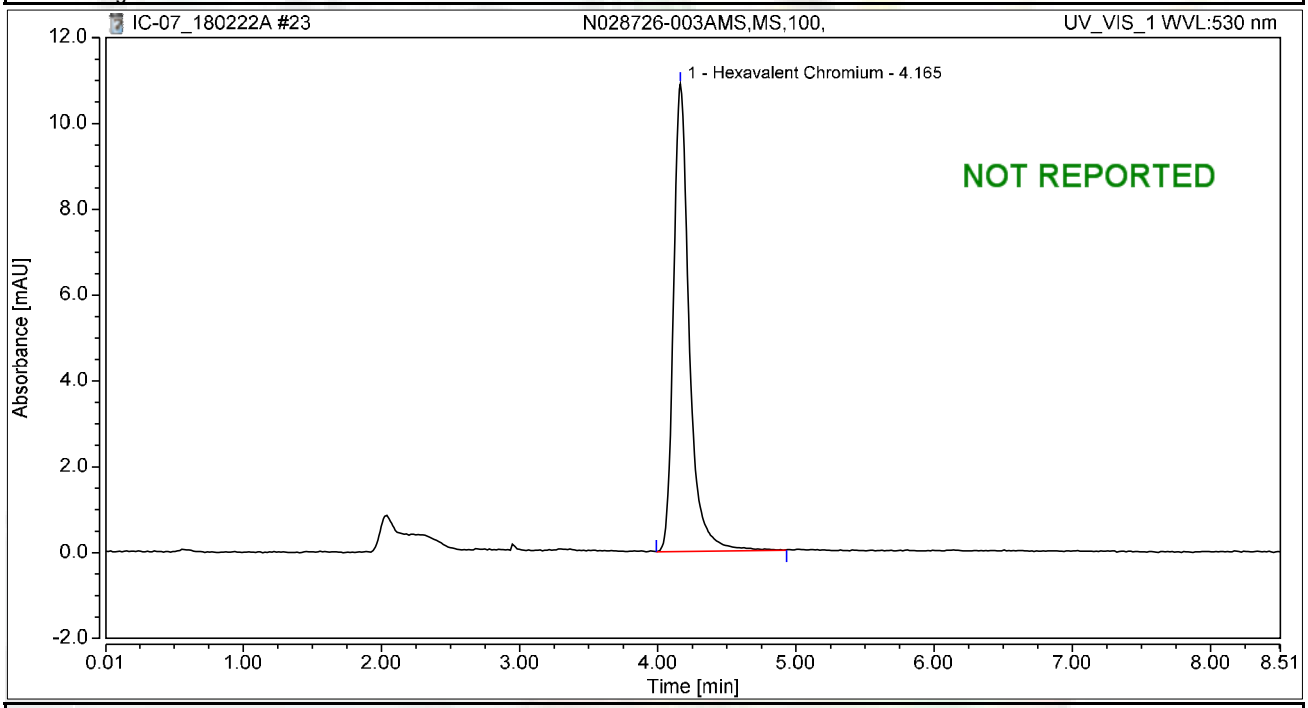
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.168	1.332	100.00	100.00	0.6749
Total:			**0.168**	**1.332**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

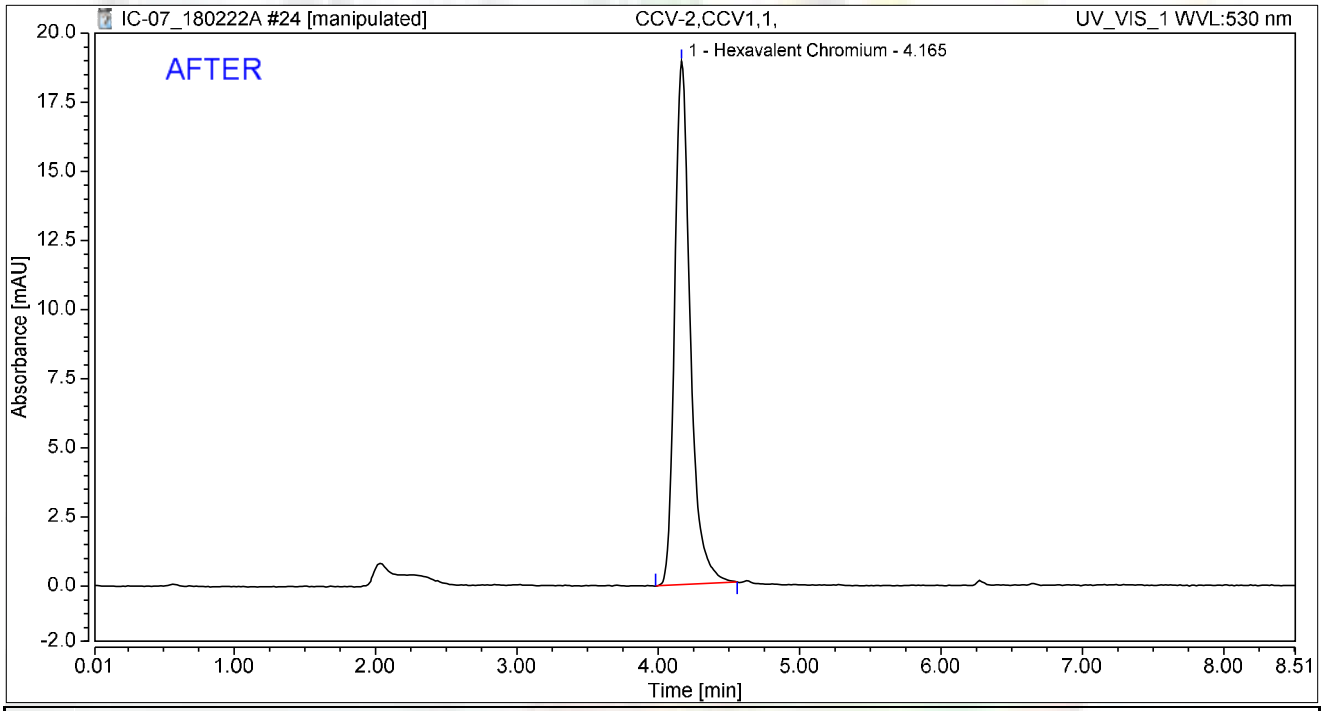
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.439	10.892	100.00	100.00	5.7626
Total:			**1.439**	**10.892**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.417	18.920	100.00	100.00	9.6809
Total:			**2.417**	**18.920**	**100.00**	**100.00**	

rba 3/4/2018

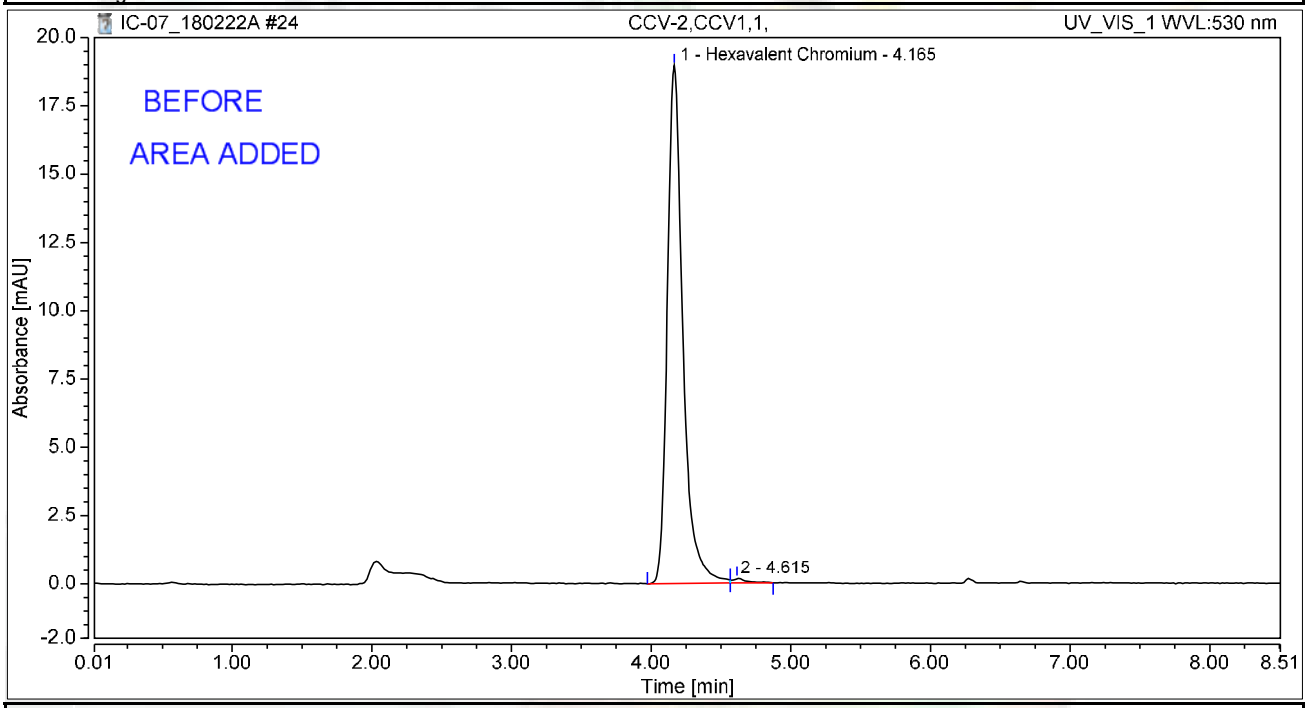
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.457	18.966	99.15	99.12	9.8400
2		4.615	0.021	0.169	0.85	0.88	n.a.
Total:			**2.478**	**19.136**	**100.00**	**100.00**	

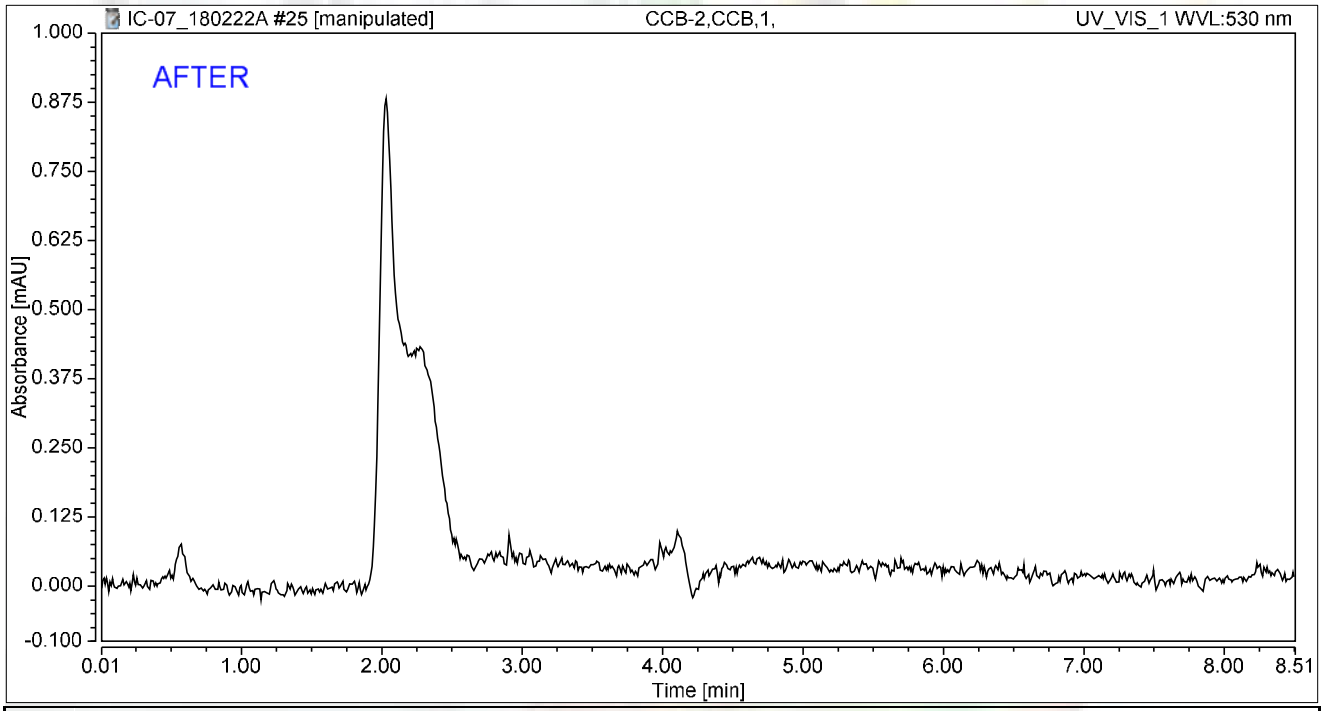
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 3/4/2018

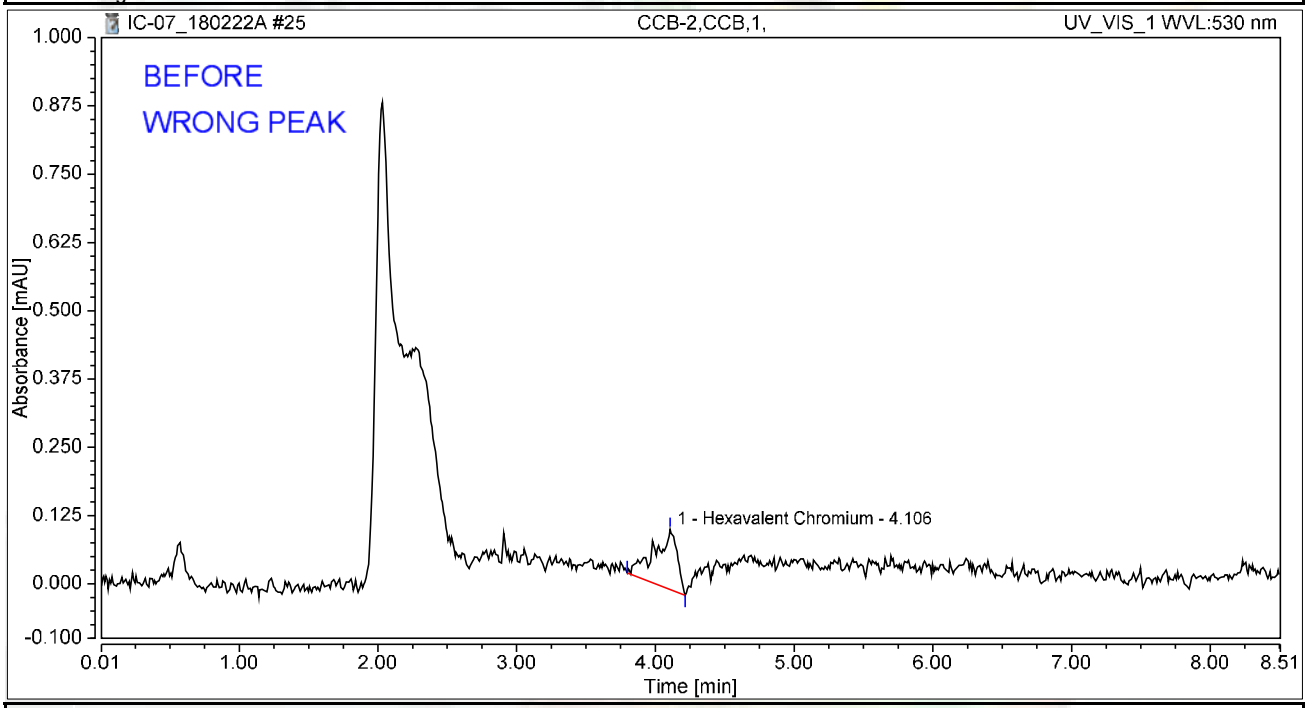
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.021	0.110	100.00	100.00	0.0825
Total:			**0.021**	**0.110**	**100.00**	**100.00**	

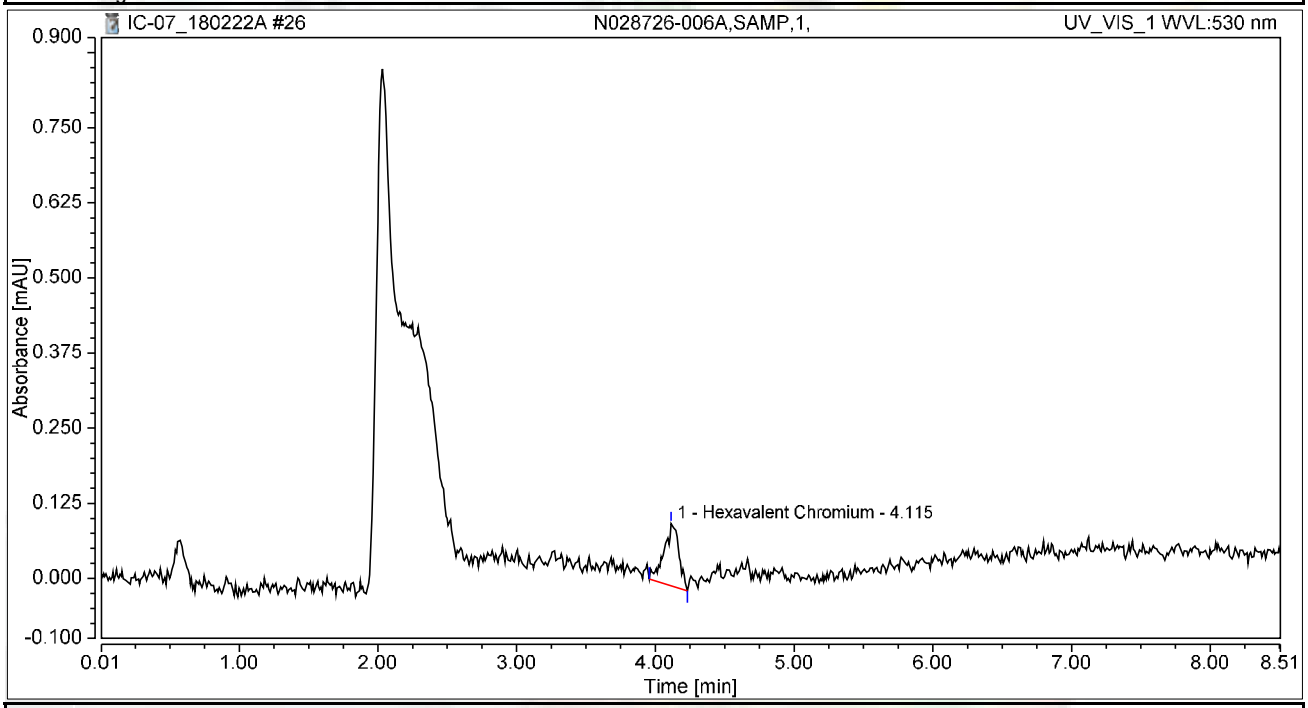
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

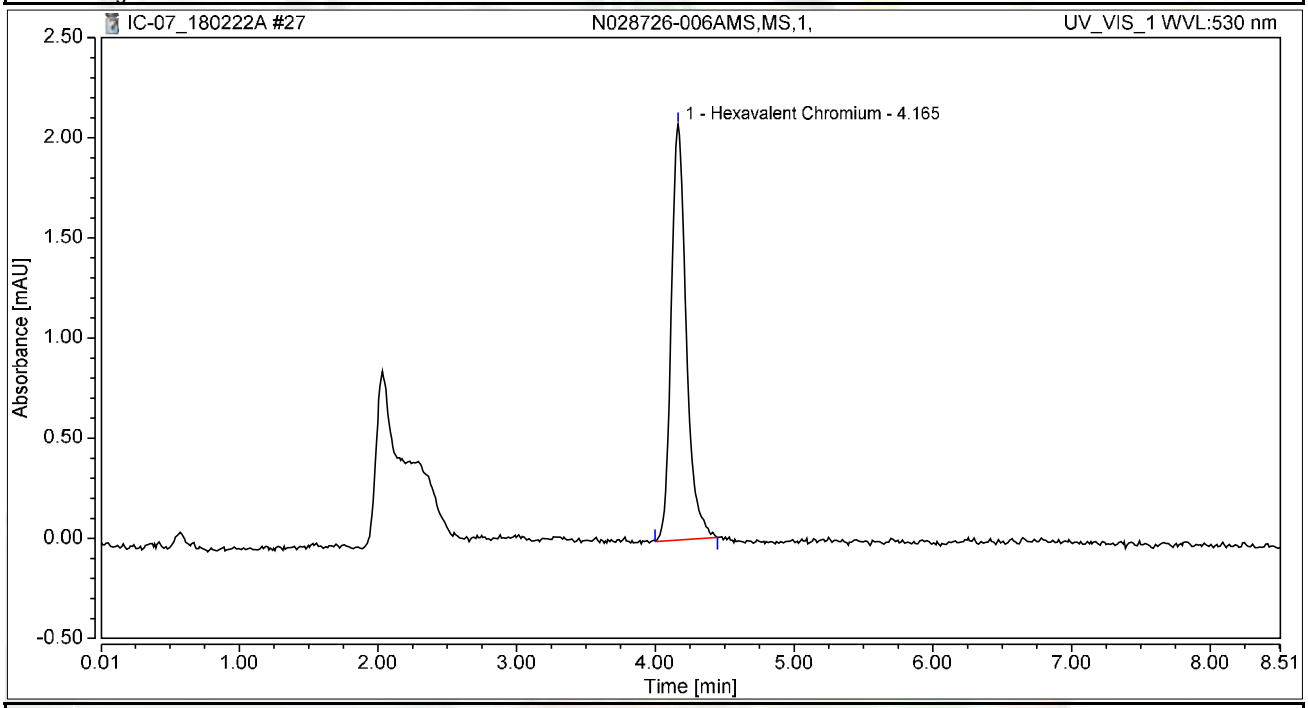
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.013	0.103	100.00	100.00	0.0520
Total:			**0.013**	**0.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

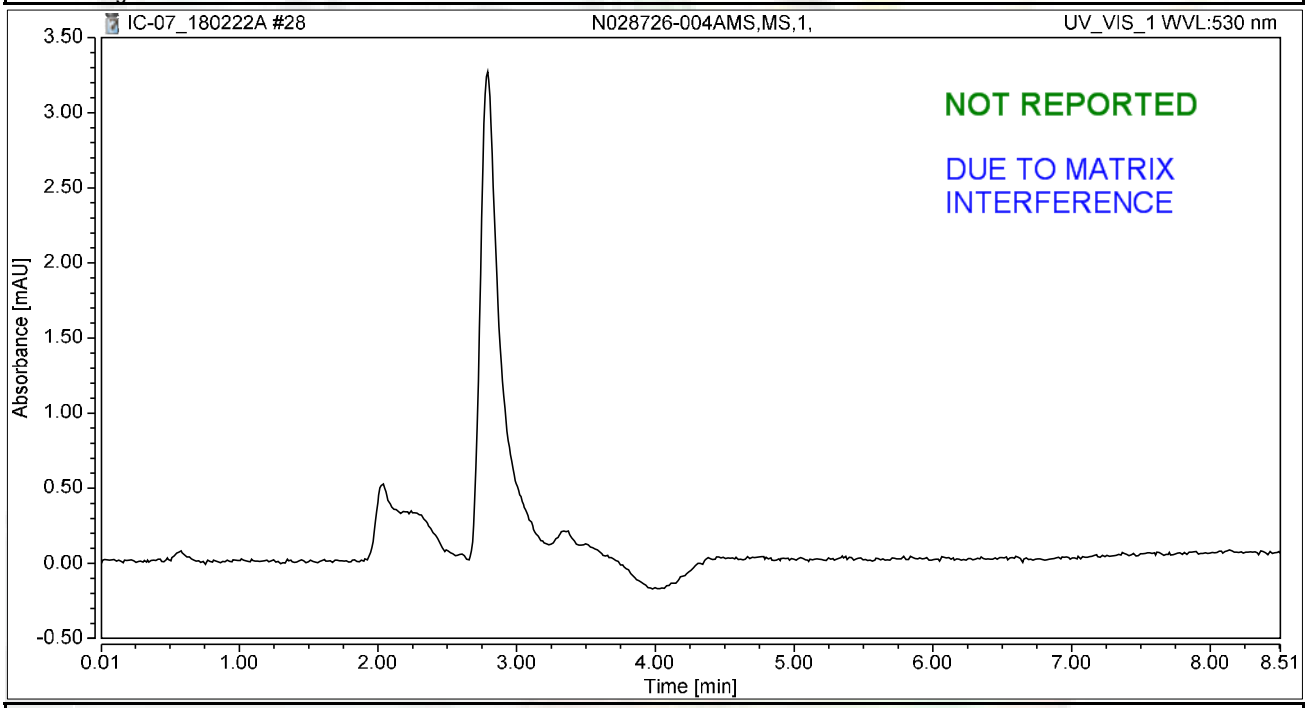
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.261	2.076	100.00	100.00	1.0443
Total:			**0.261**	**2.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

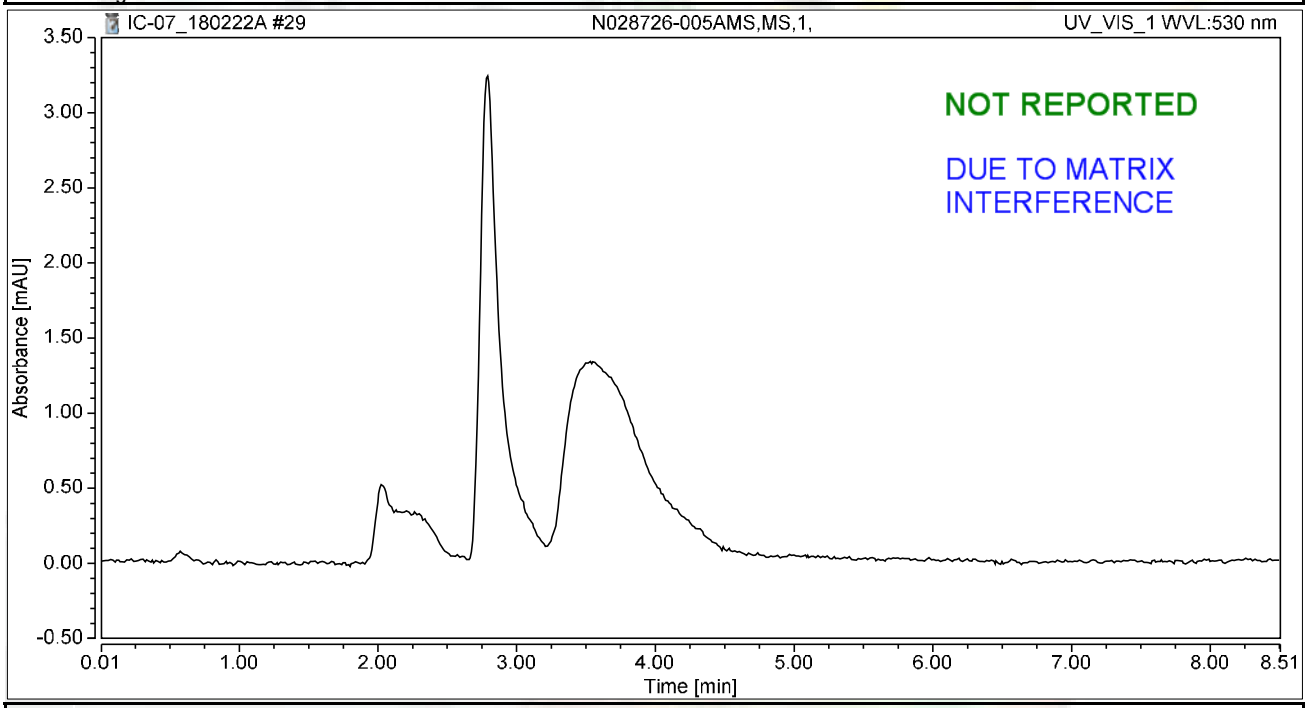
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

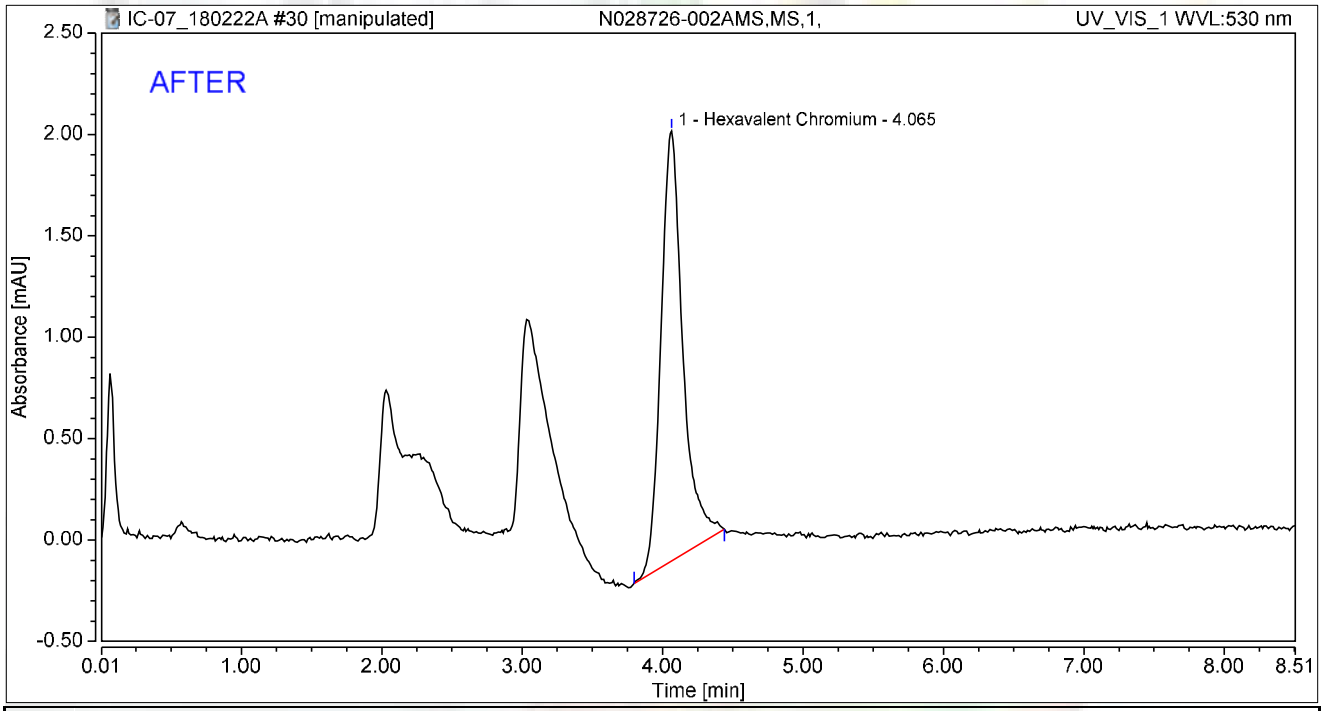
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.385	2.121	100.00	100.00	1.5440
Total:			**0.385**	**2.121**	**100.00**	**100.00**	

rba 3/4/2018

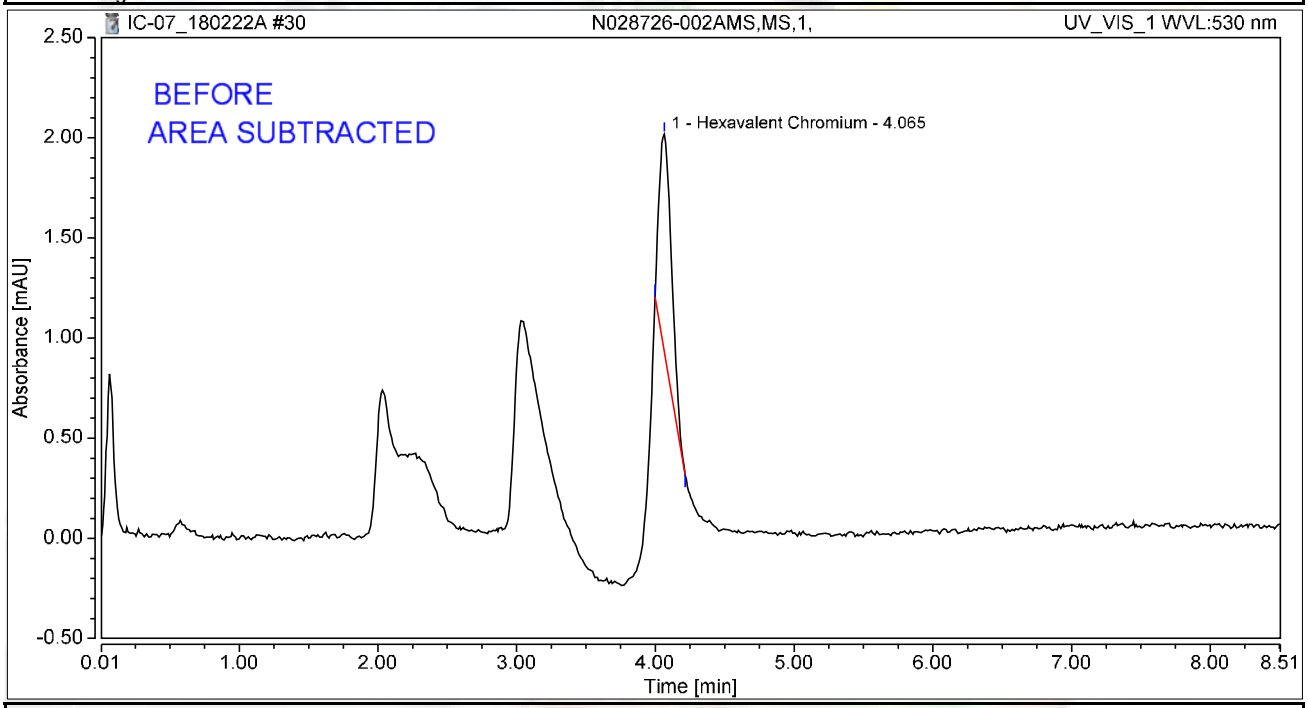
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.113	1.085	100.00	100.00	0.4533
Total:			**0.113**	**1.085**	**100.00**	**100.00**	

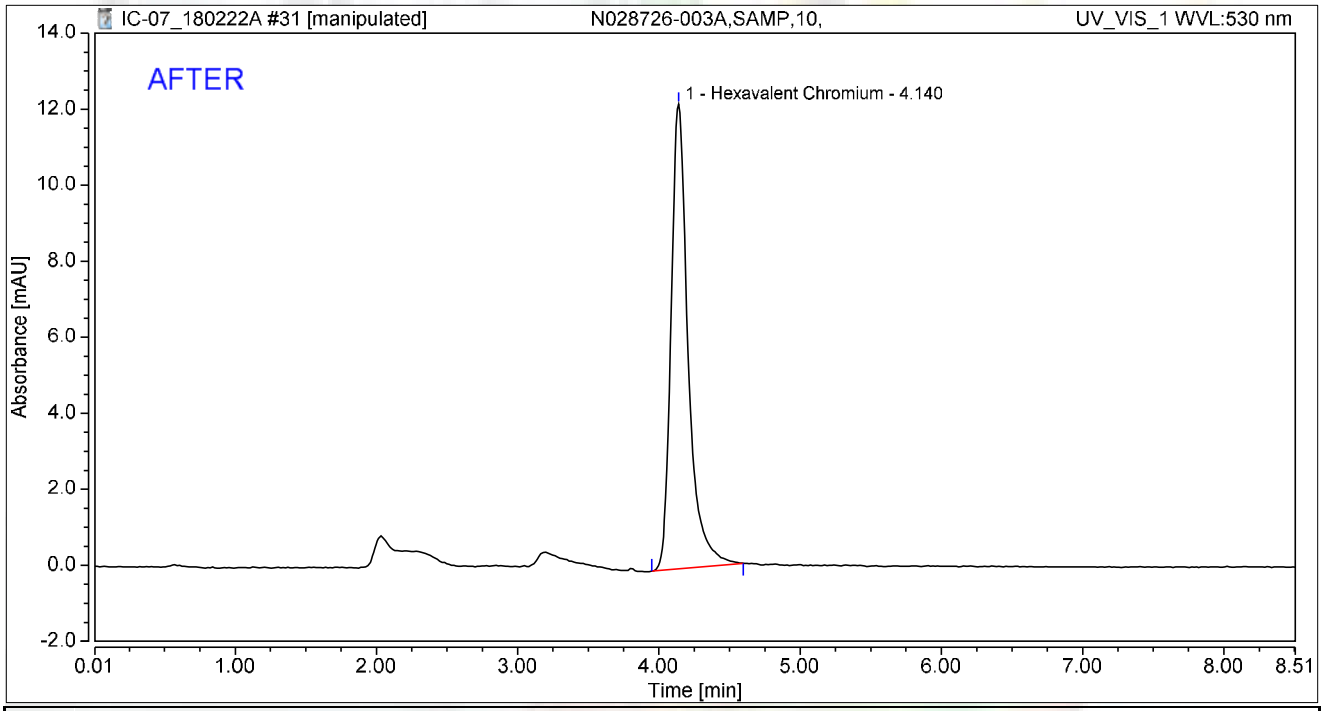
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.714	12.214	100.00	100.00	6.8660
Total:			**1.714**	**12.214**	**100.00**	**100.00**	

rba 3/4/2018

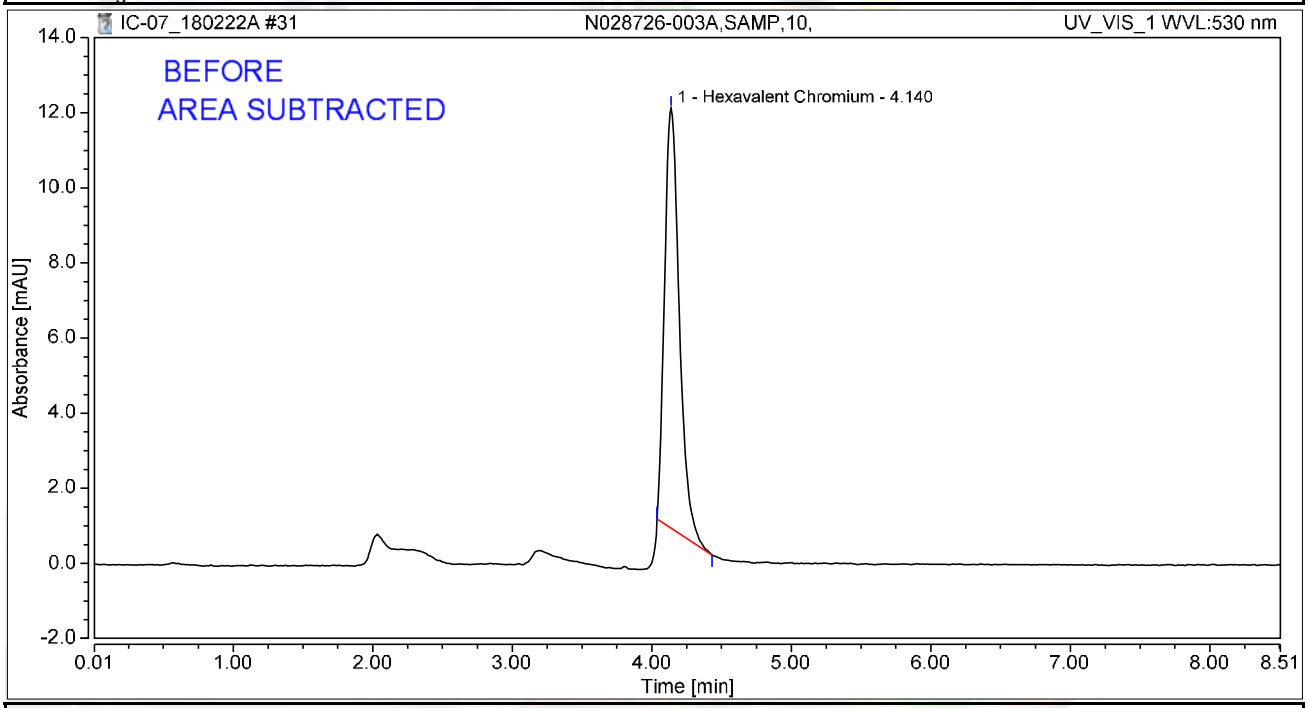
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.373	11.180	100.00	100.00	5.5016
Total:			**1.373**	**11.180**	**100.00**	**100.00**	

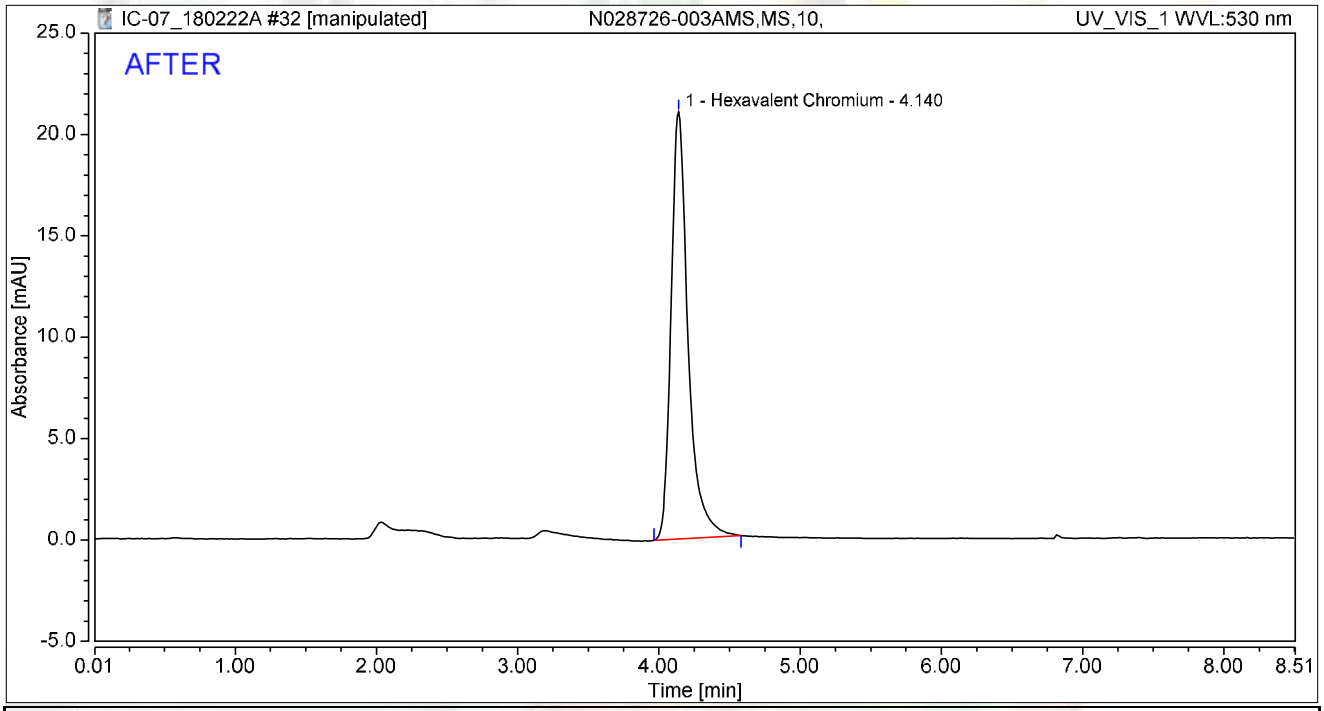
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.938	21.062	100.00	100.00	11.7672
Total:			**2.938**	**21.062**	**100.00**	**100.00**	

rba 3/4/2018

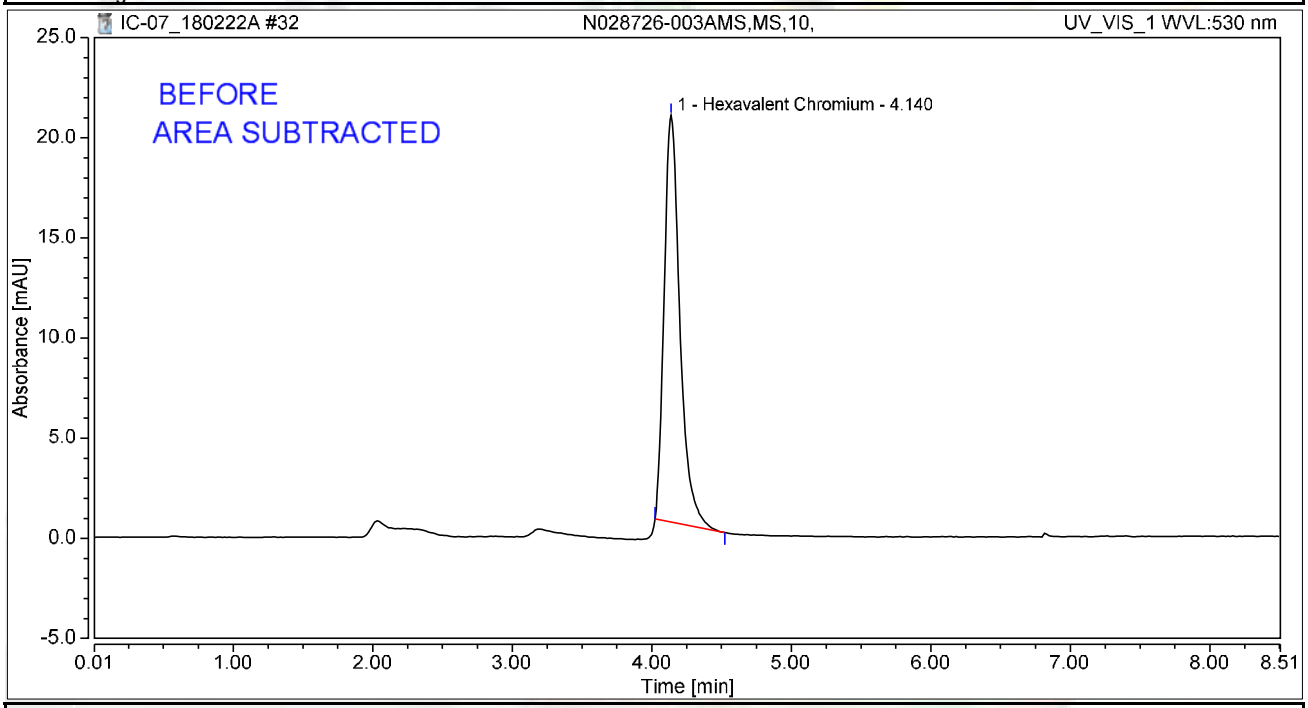
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.661	20.307	100.00	100.00	10.6574
Total:			**2.661**	**20.307**	**100.00**	**100.00**	

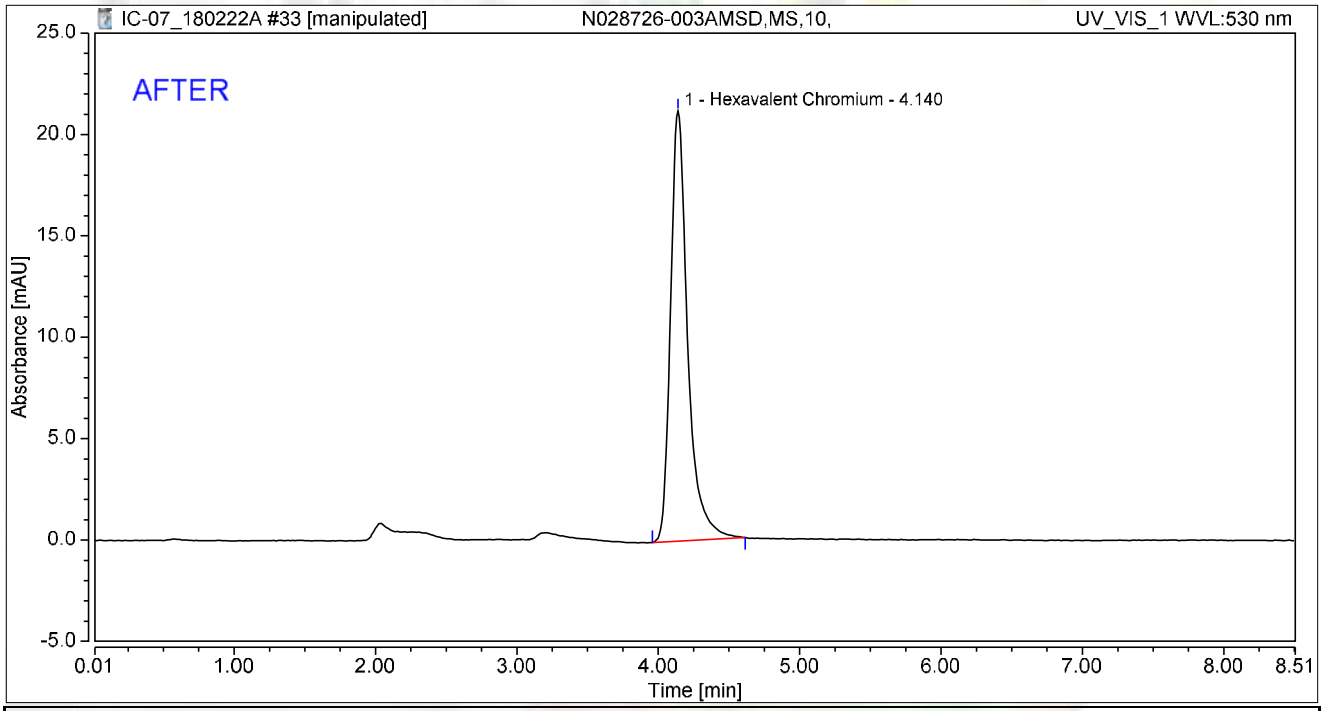
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMSD,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.978	21.209	100.00	100.00	11.9277
Total:			**2.978**	**21.209**	**100.00**	**100.00**	

rba 3/4/2018

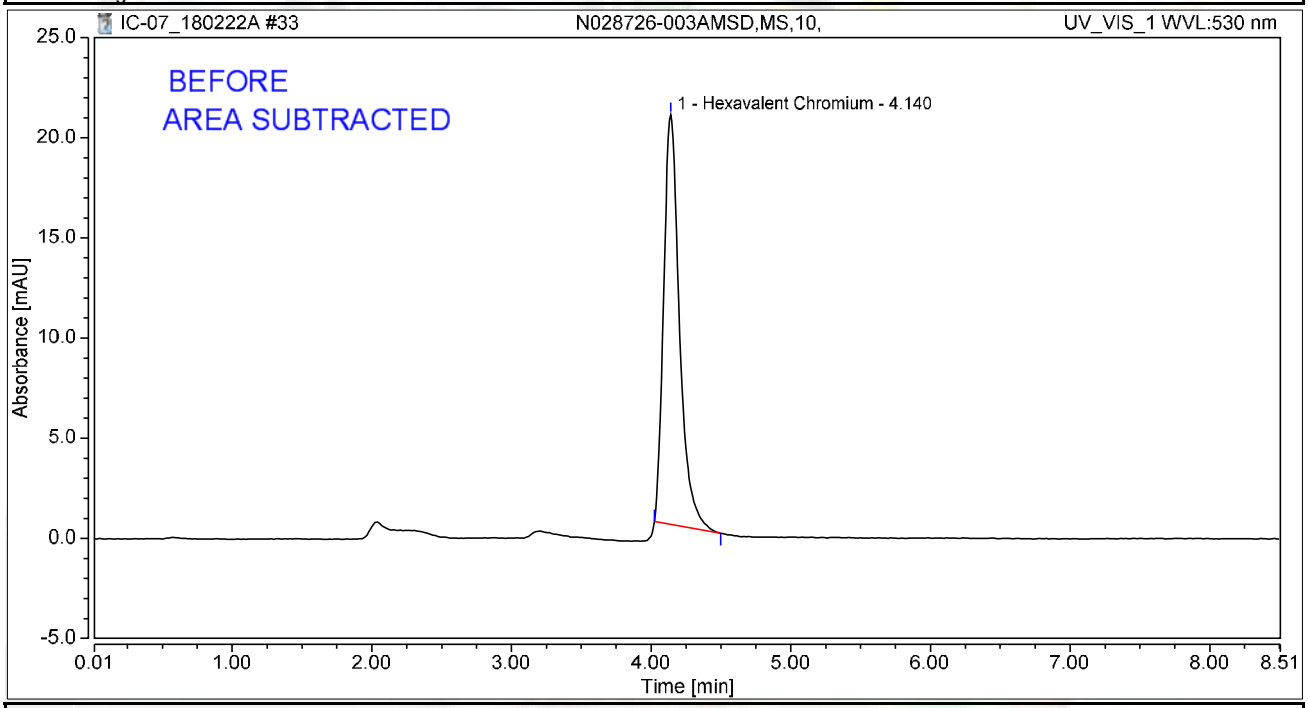
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003AMSD,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.691	20.459	100.00	100.00	10.7797
Total:			**2.691**	**20.459**	**100.00**	**100.00**	

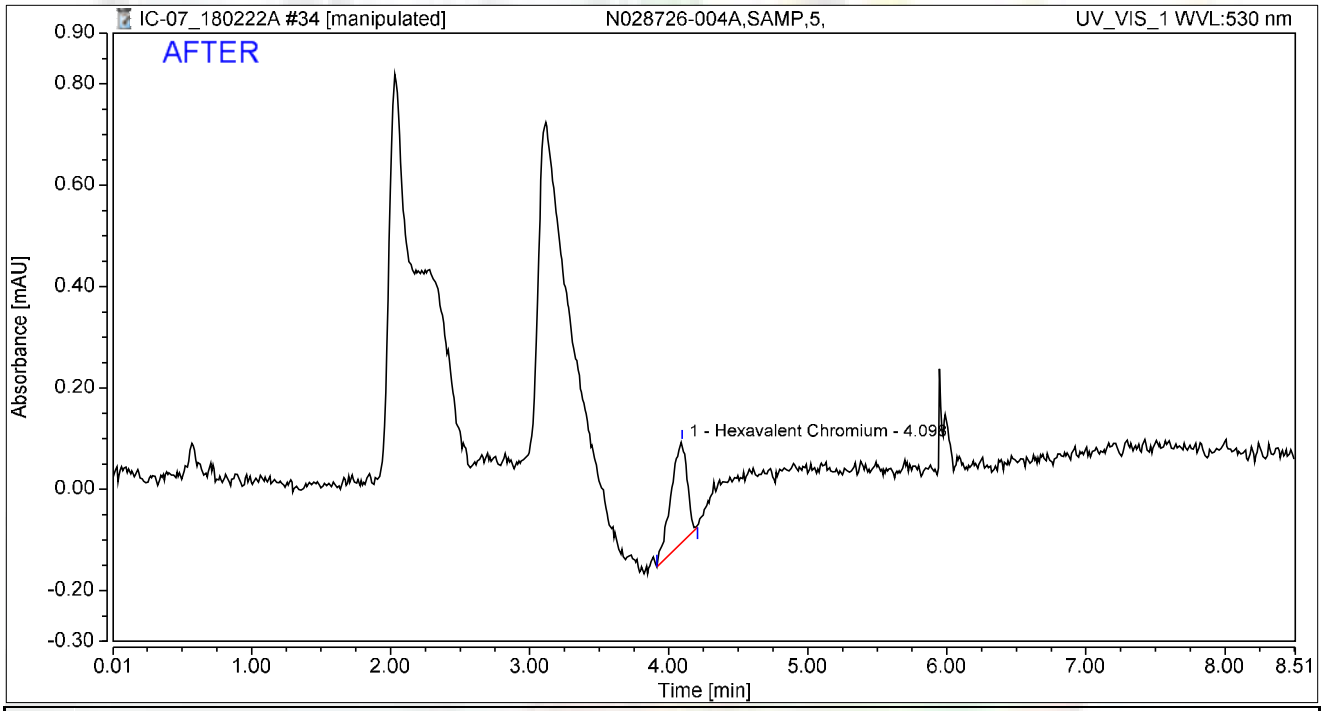
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.027	0.197	100.00	100.00	0.1086
Total:			**0.027**	**0.197**	**100.00**	**100.00**	

rba 3/4/2018

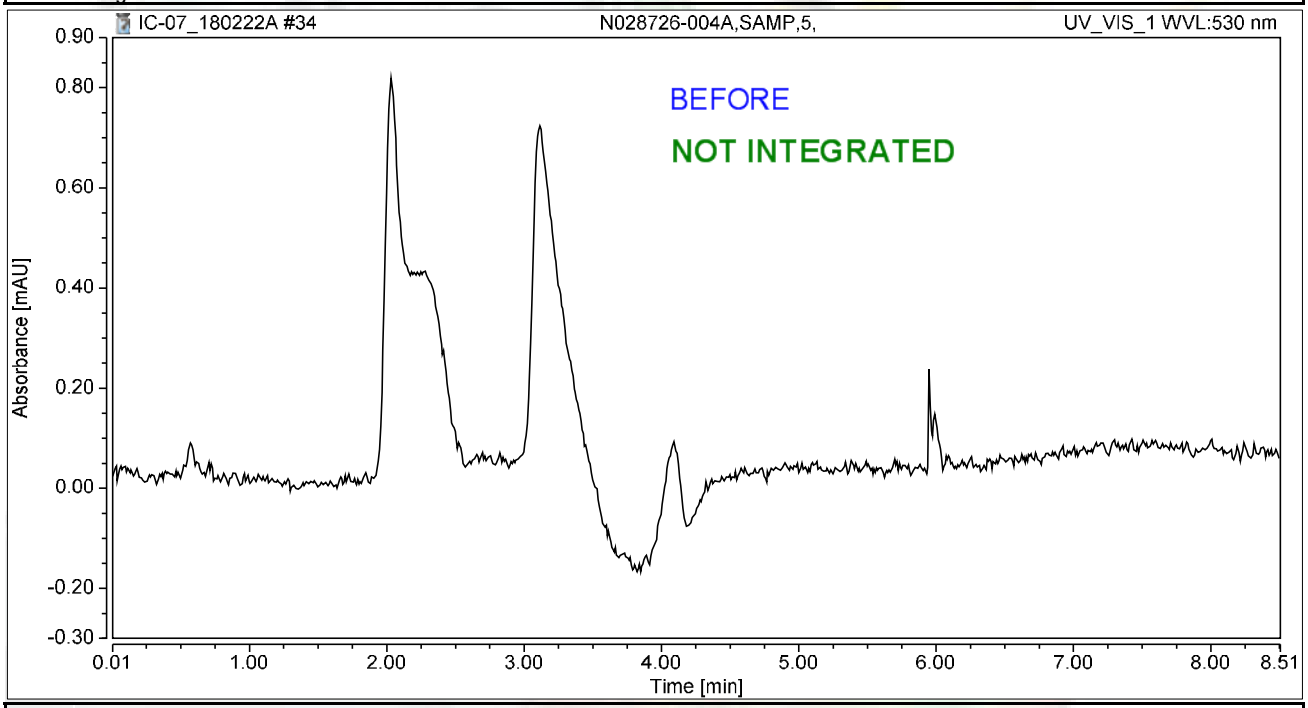
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

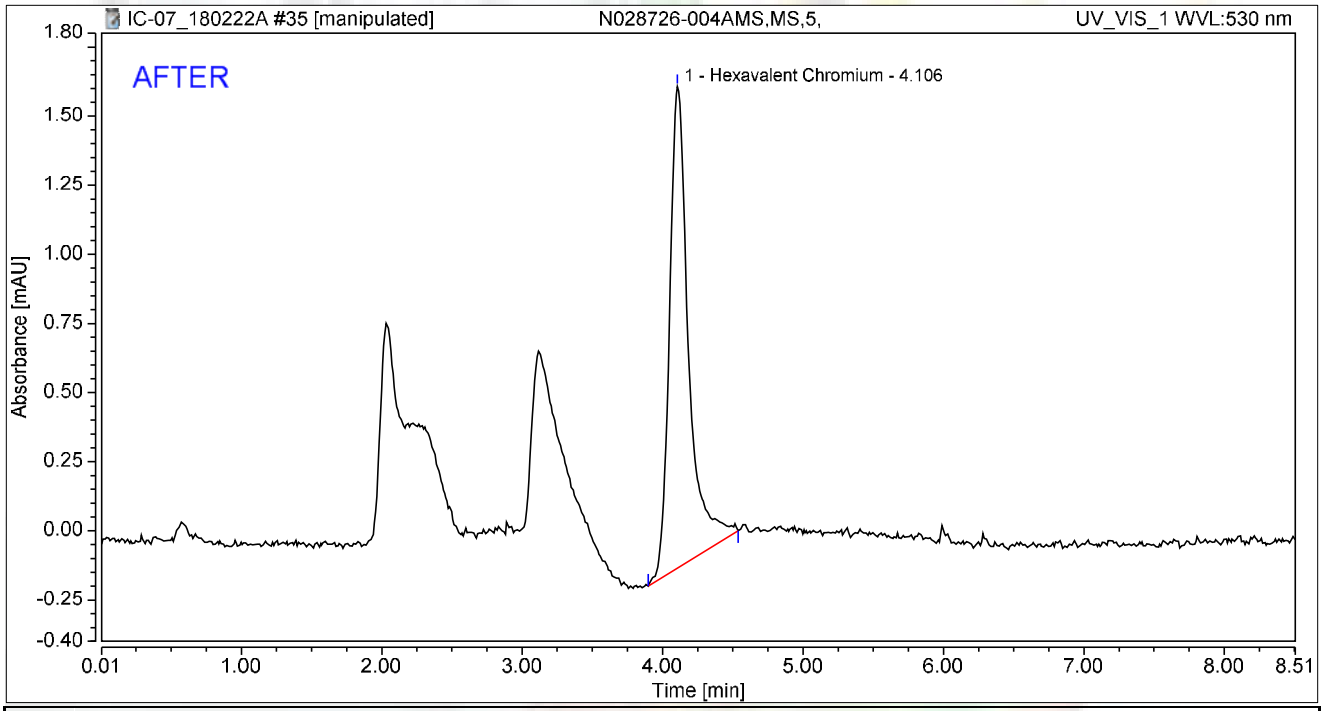
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.276	1.742	100.00	100.00	1.1049
Total:			**0.276**	**1.742**	**100.00**	**100.00**	

rba 3/4/2018

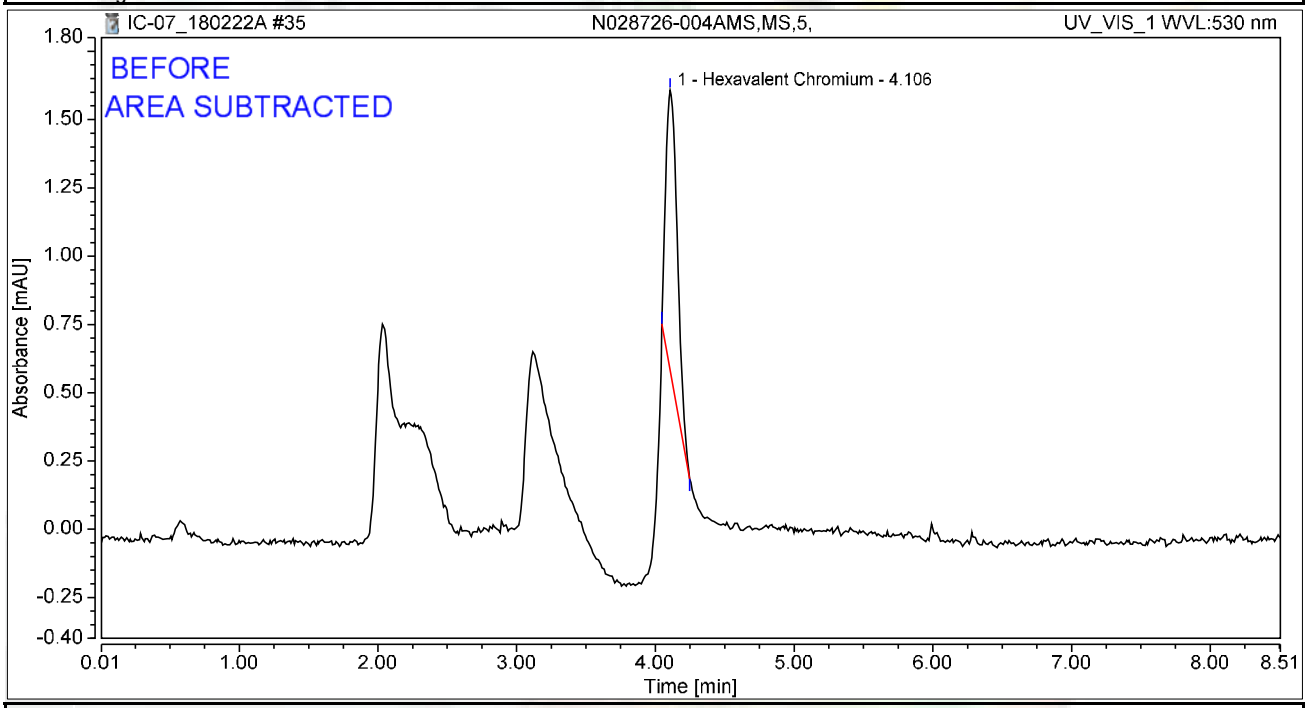
RLB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.099	1.019	100.00	100.00	0.3976
Total:			**0.099**	**1.019**	**100.00**	**100.00**	

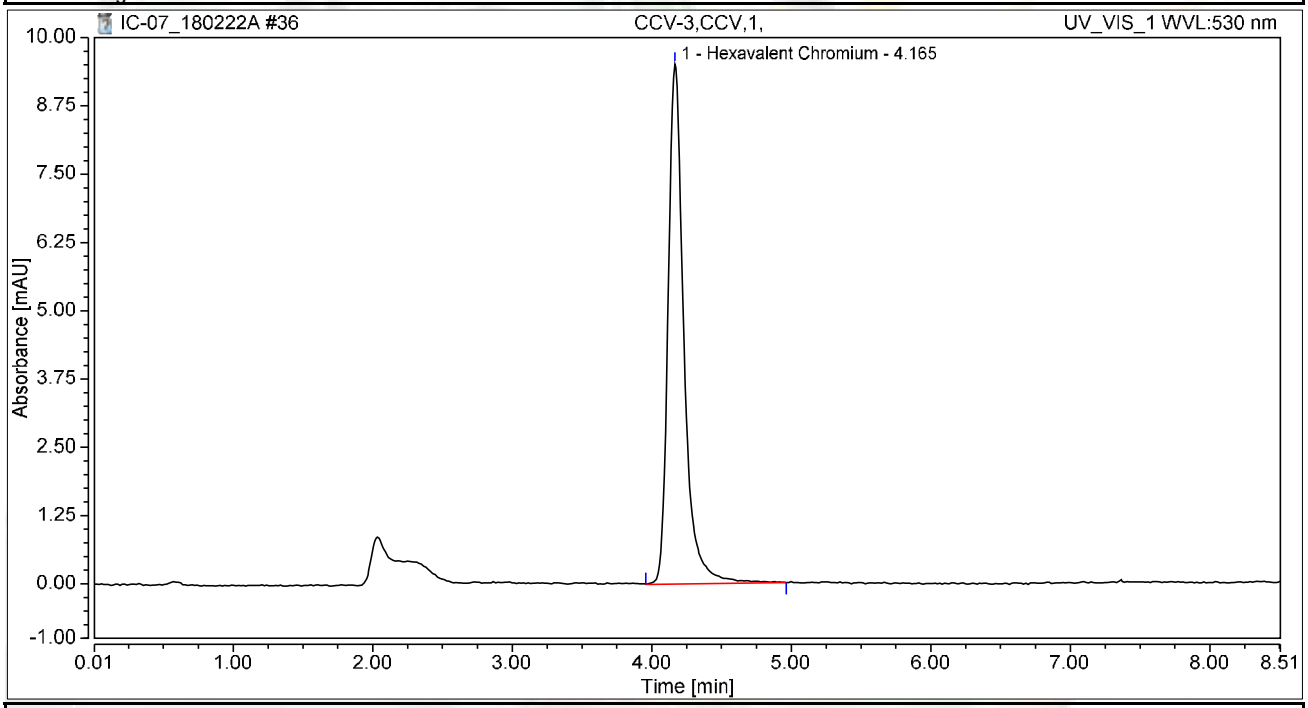
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

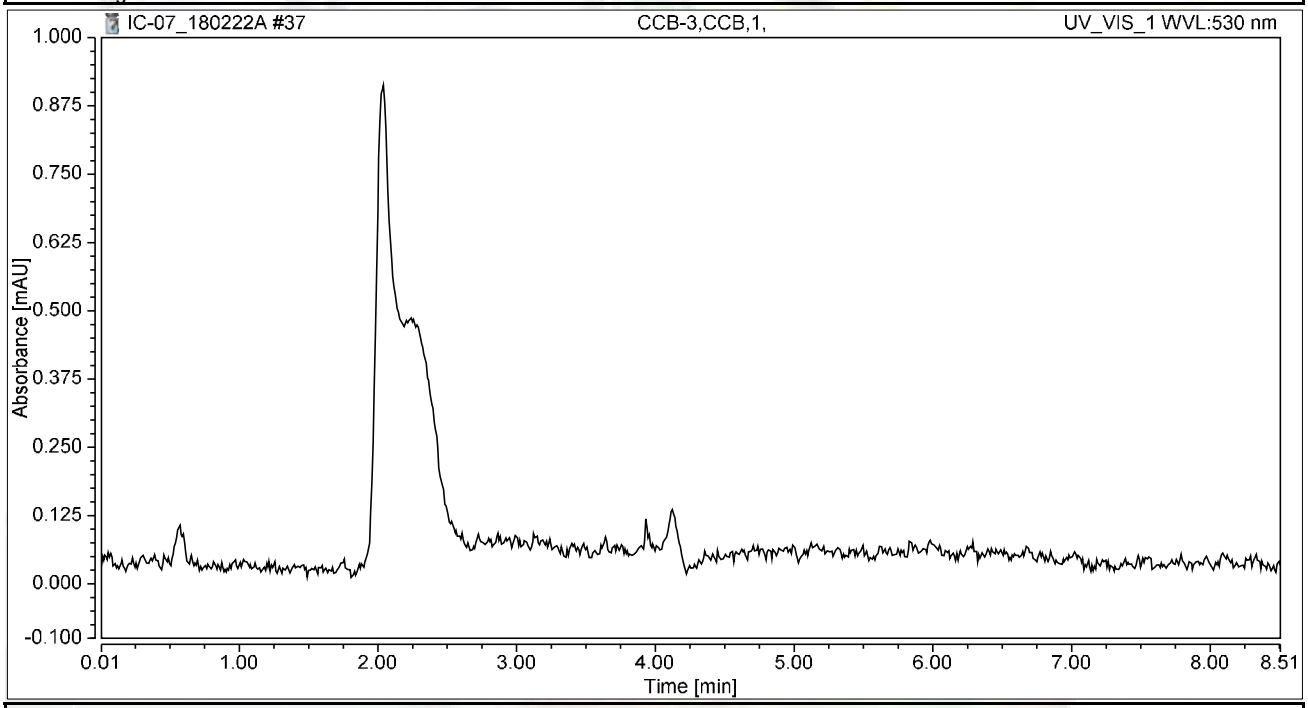
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.251	9.517	100.00	100.00	5.0091
Total:			**1.251**	**9.517**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

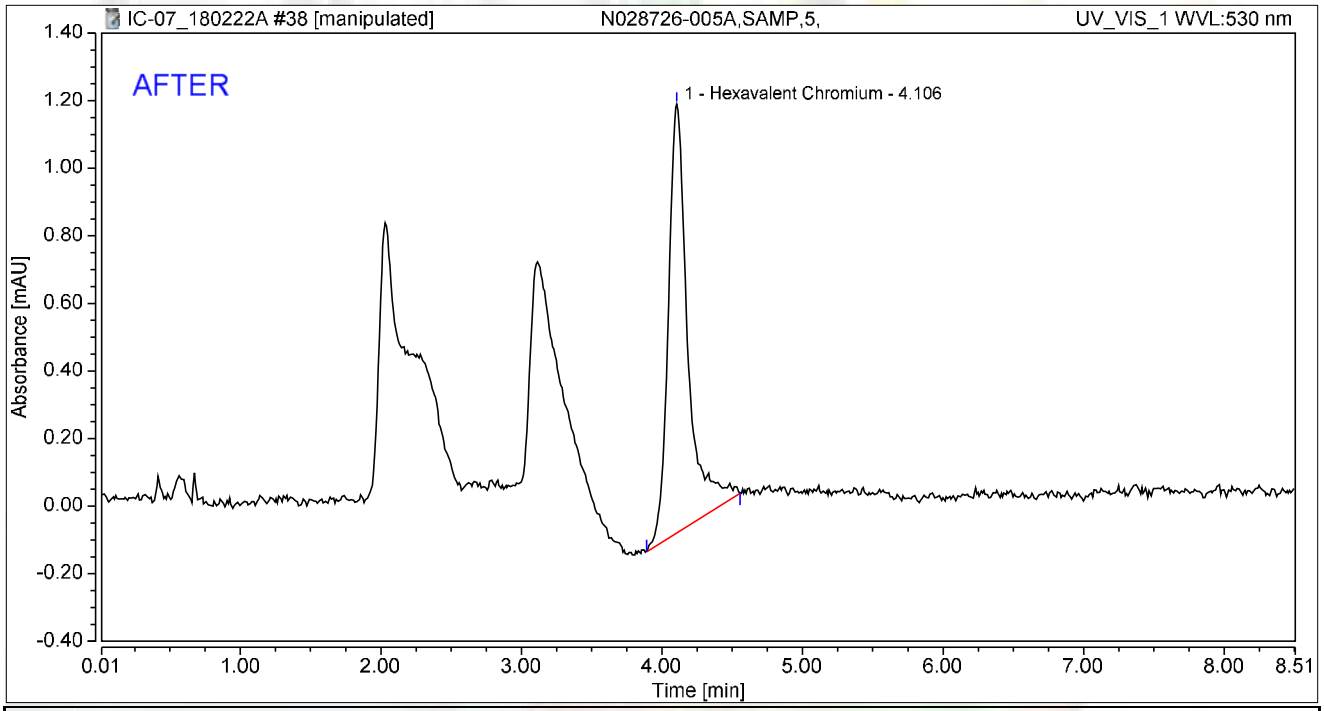
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.205	1.268	100.00	100.00	0.8215
Total:			**0.205**	**1.268**	**100.00**	**100.00**	

rba 3/4/2018

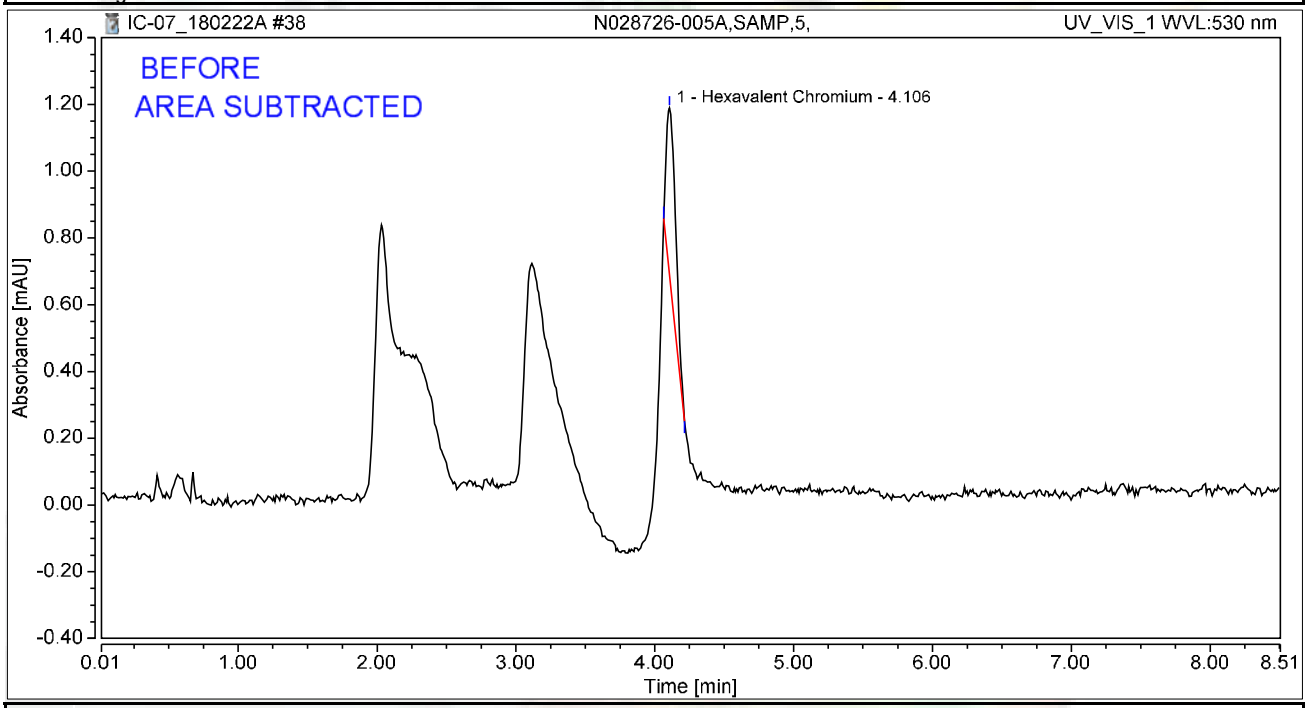
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.040	0.499	100.00	100.00	0.1620
Total:			**0.040**	**0.499**	**100.00**	**100.00**	

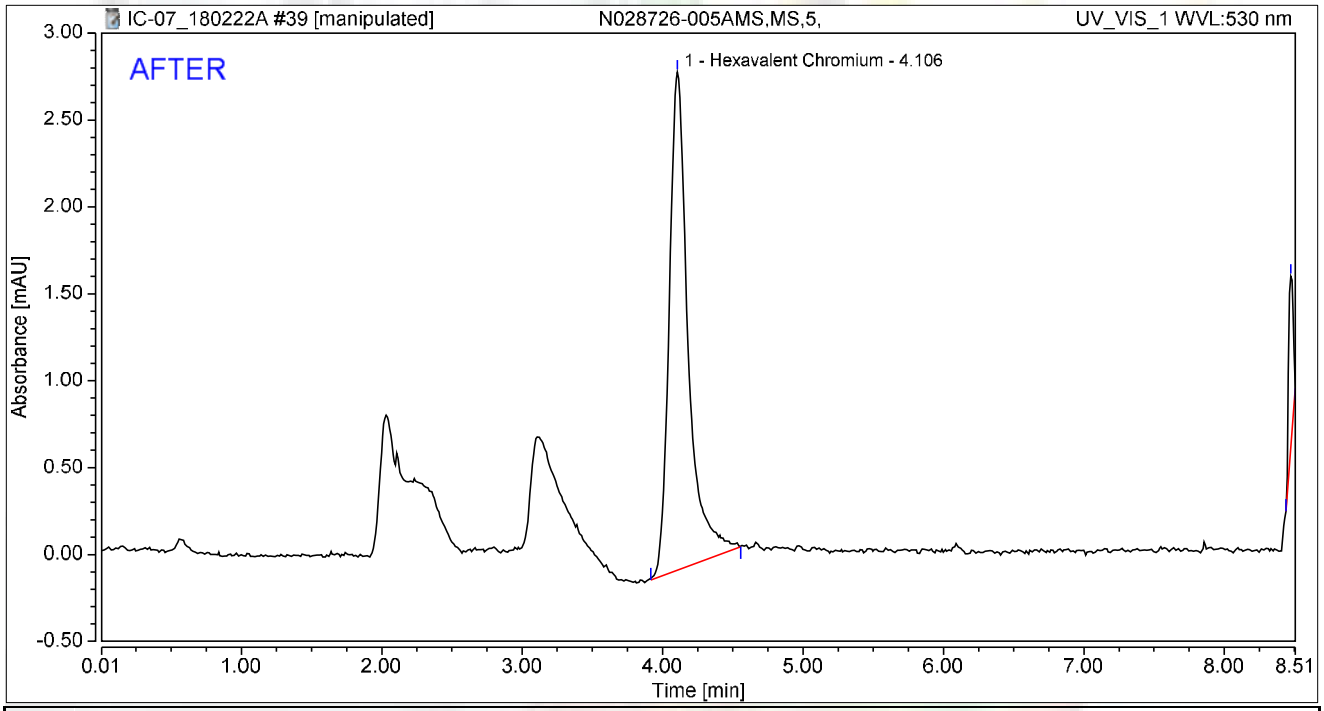
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.449	2.865	92.24	74.16	1.8001
2		8.473	0.038	0.998	7.76	25.84	n.a.
Total:			**0.487**	**3.863**	**100.00**	**100.00**	

rba 3/4/2018

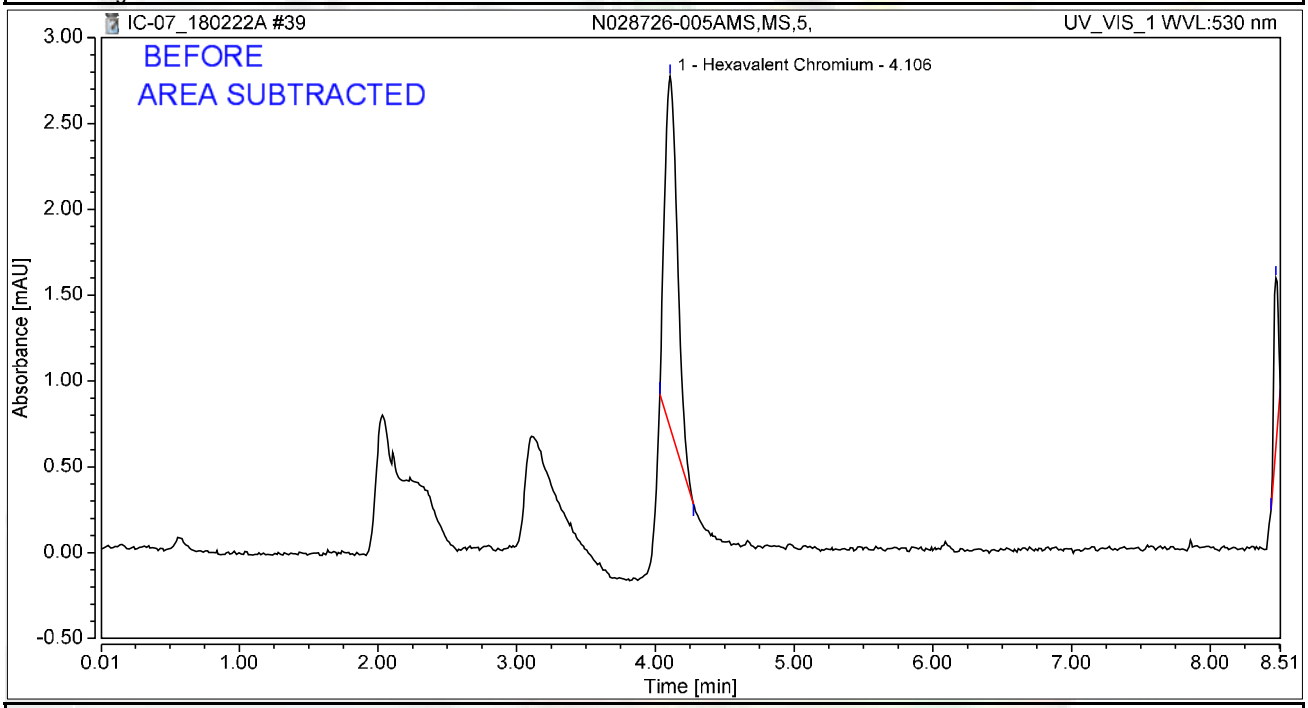
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.222	2.050	85.44	67.25	0.8893
2		8.473	0.038	0.998	14.56	32.75	n.a.
Total:			**0.260**	**3.049**	**100.00**	**100.00**	

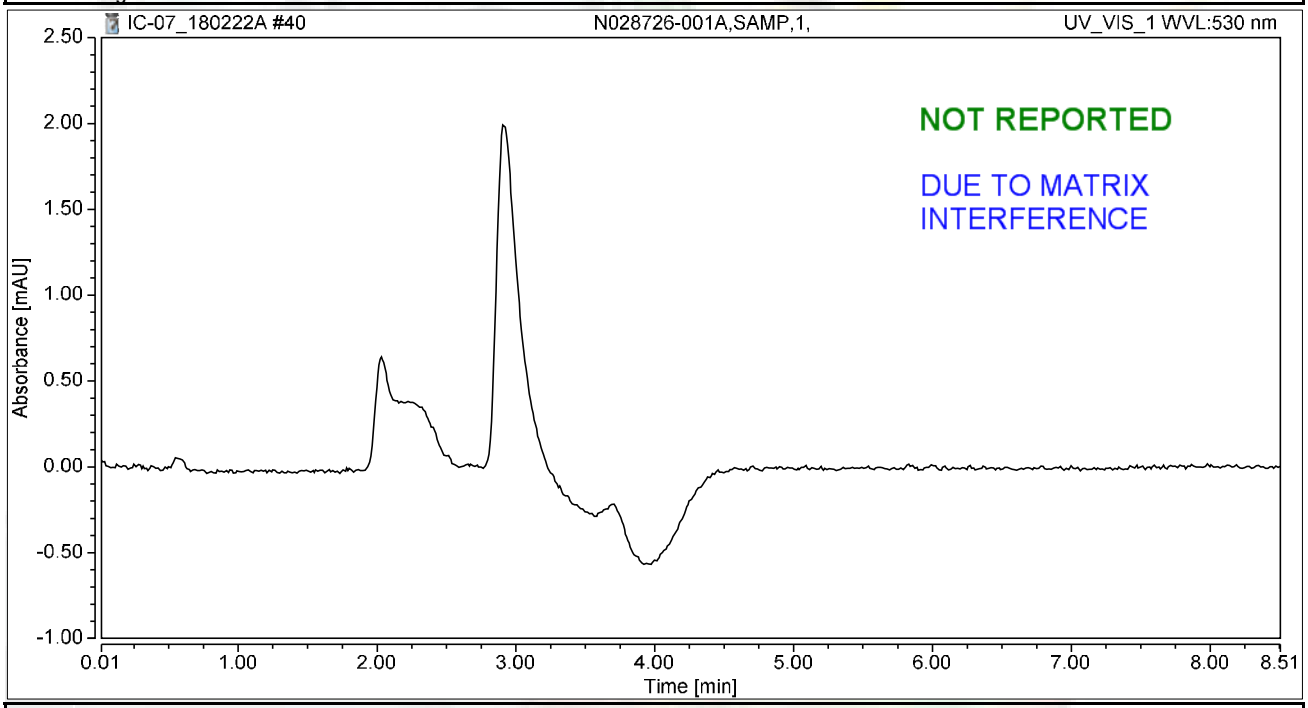
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

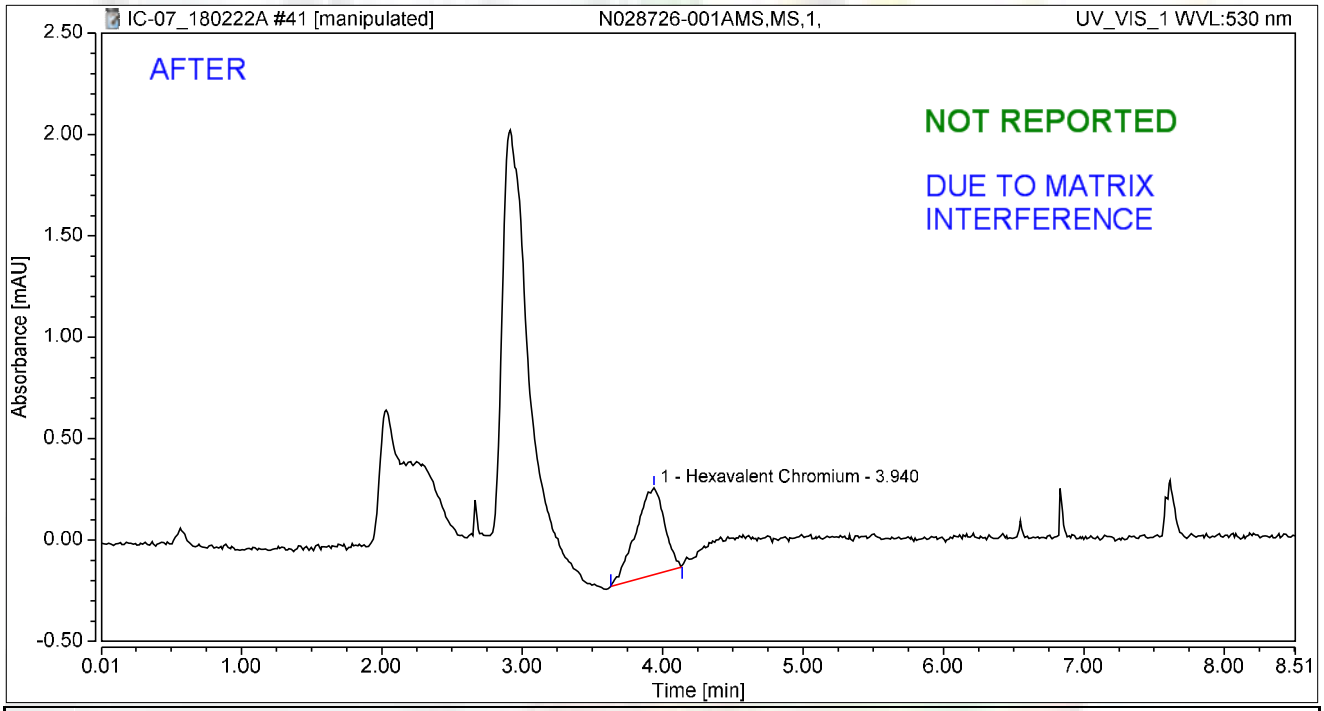
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.101	0.426	100.00	100.00	0.4063
Total:			**0.101**	**0.426**	**100.00**	**100.00**	

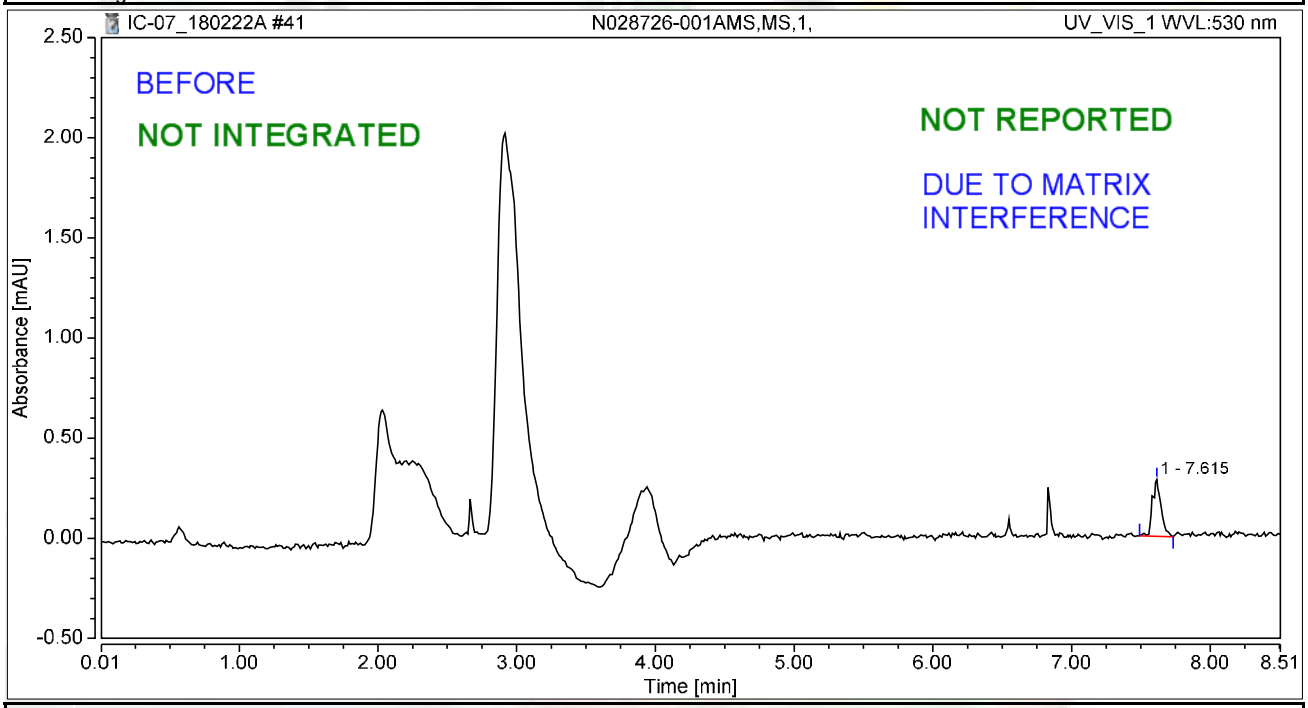
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.615	0.021	0.284	100.00	100.00	n.a.
Total:			**0.021**	**0.284**	**100.00**	**100.00**	

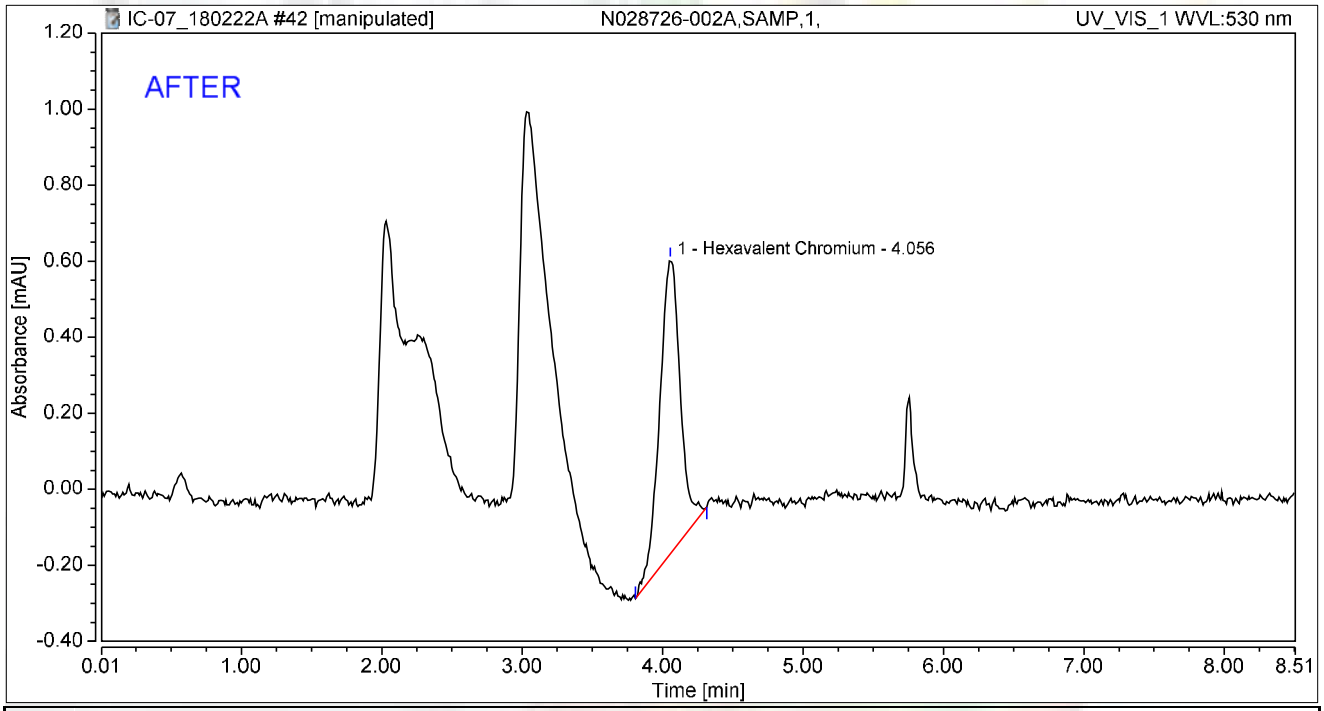
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.132	0.773	100.00	100.00	0.5270
Total:			**0.132**	**0.773**	**100.00**	**100.00**	

rba 3/4/2018

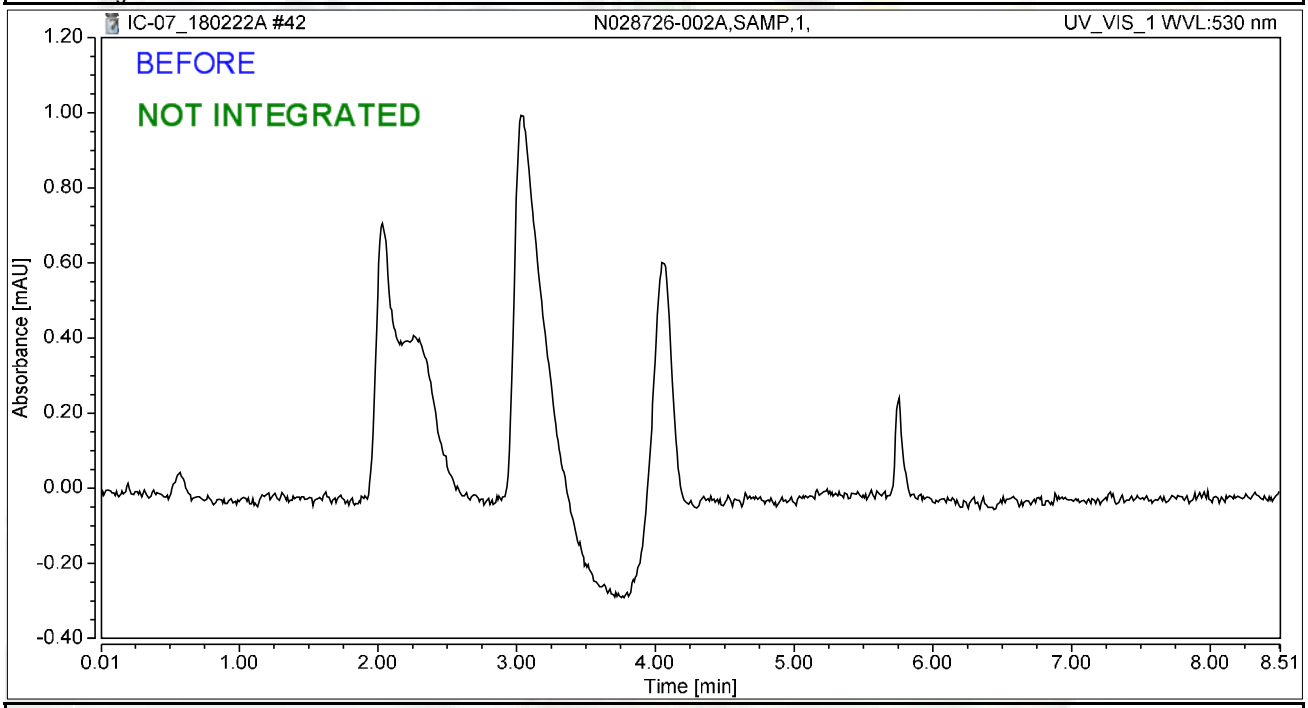
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

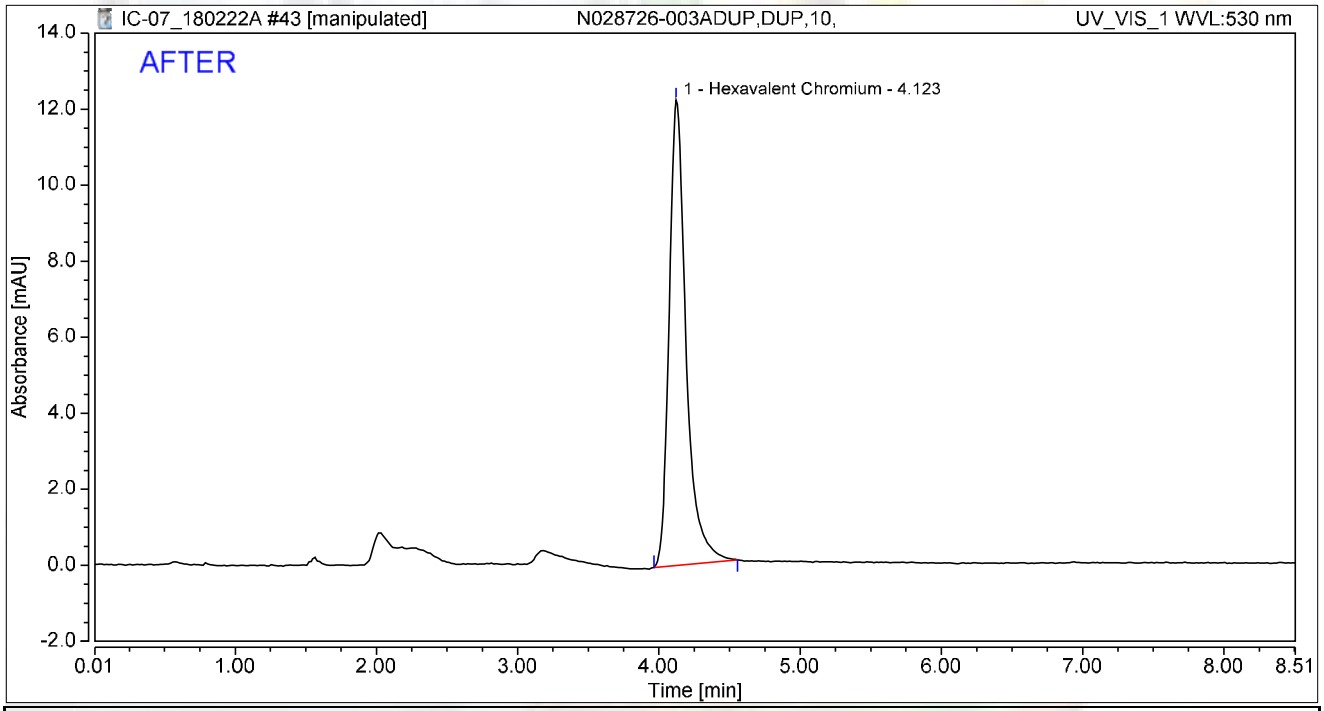
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003ADUP,DUP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.703	12.240	100.00	100.00	6.8221
Total:			**1.703**	**12.240**	**100.00**	**100.00**	

rba 3/4/2018

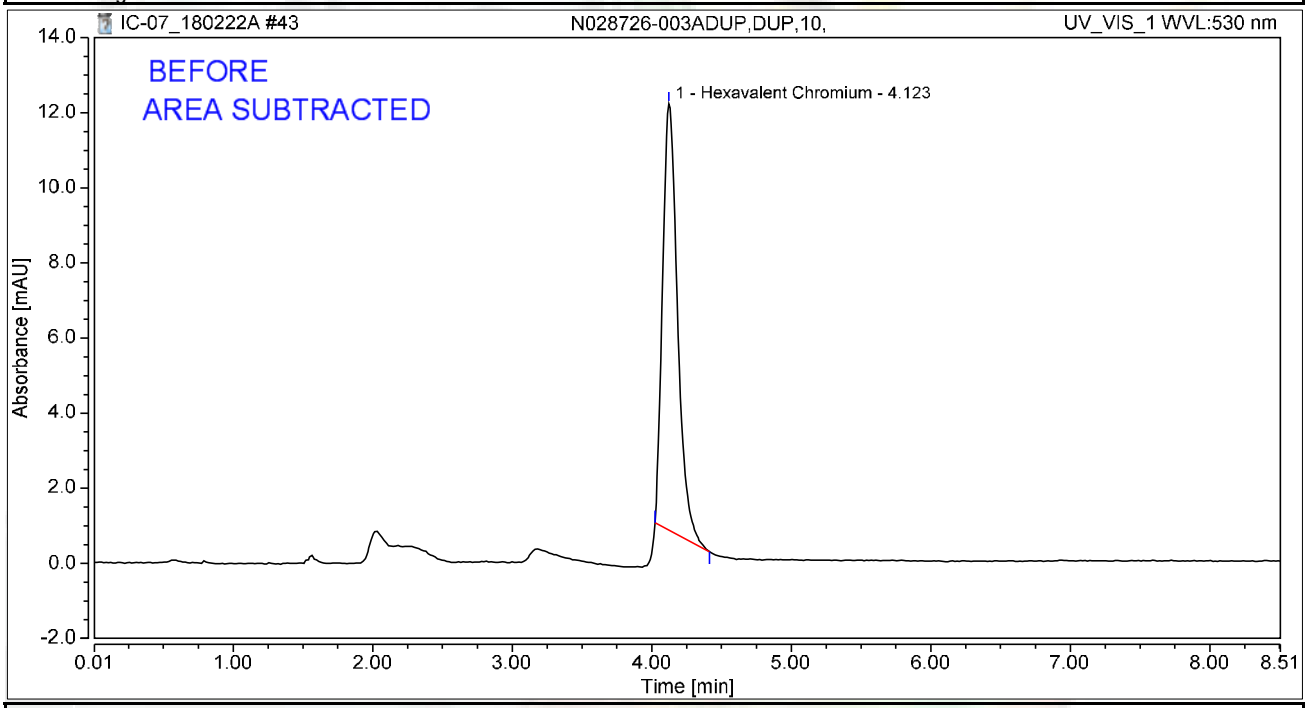
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028726-003ADUP,DUP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.413	11.353	100.00	100.00	5.6593
Total:			**1.413**	**11.353**	**100.00**	**100.00**	

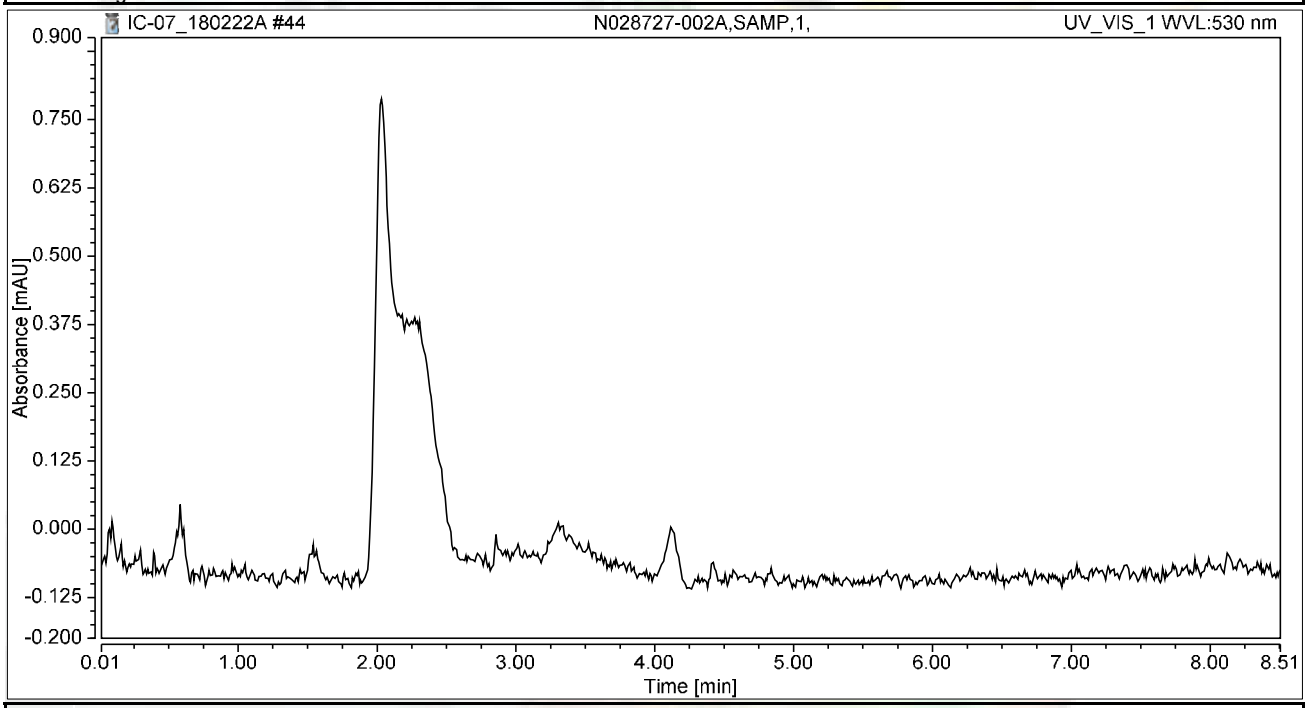
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

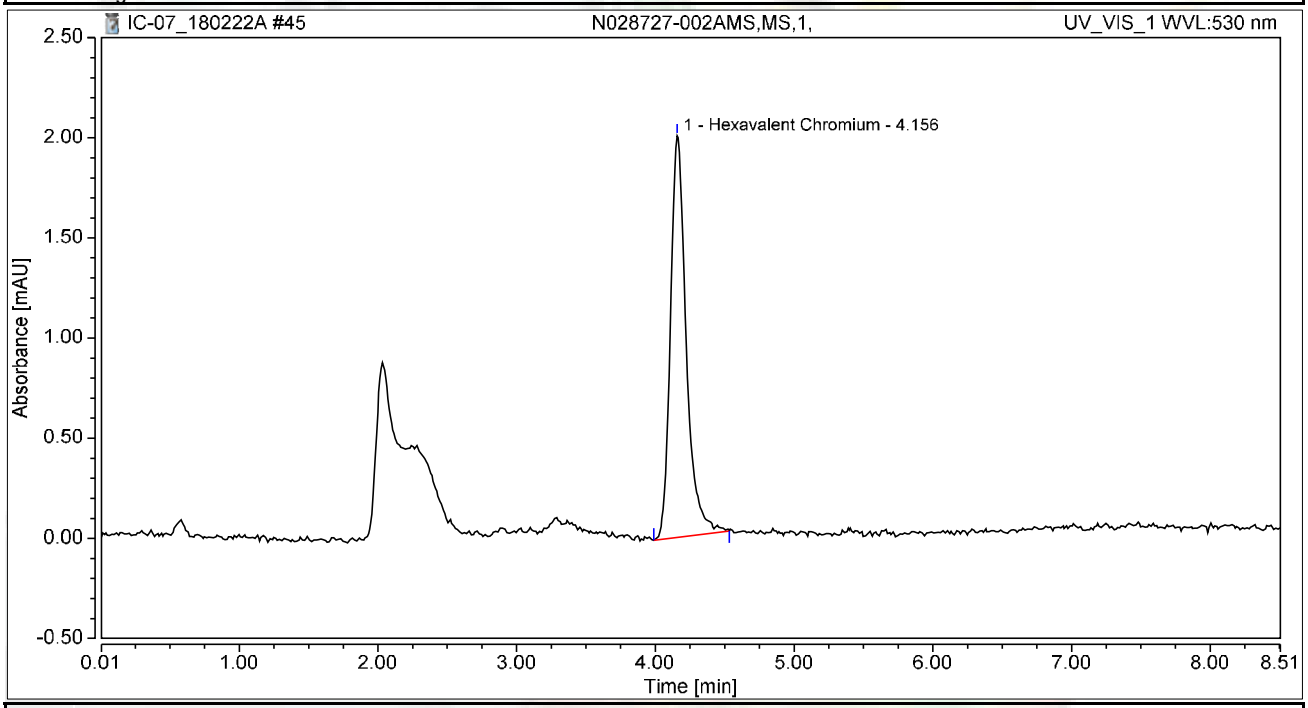
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

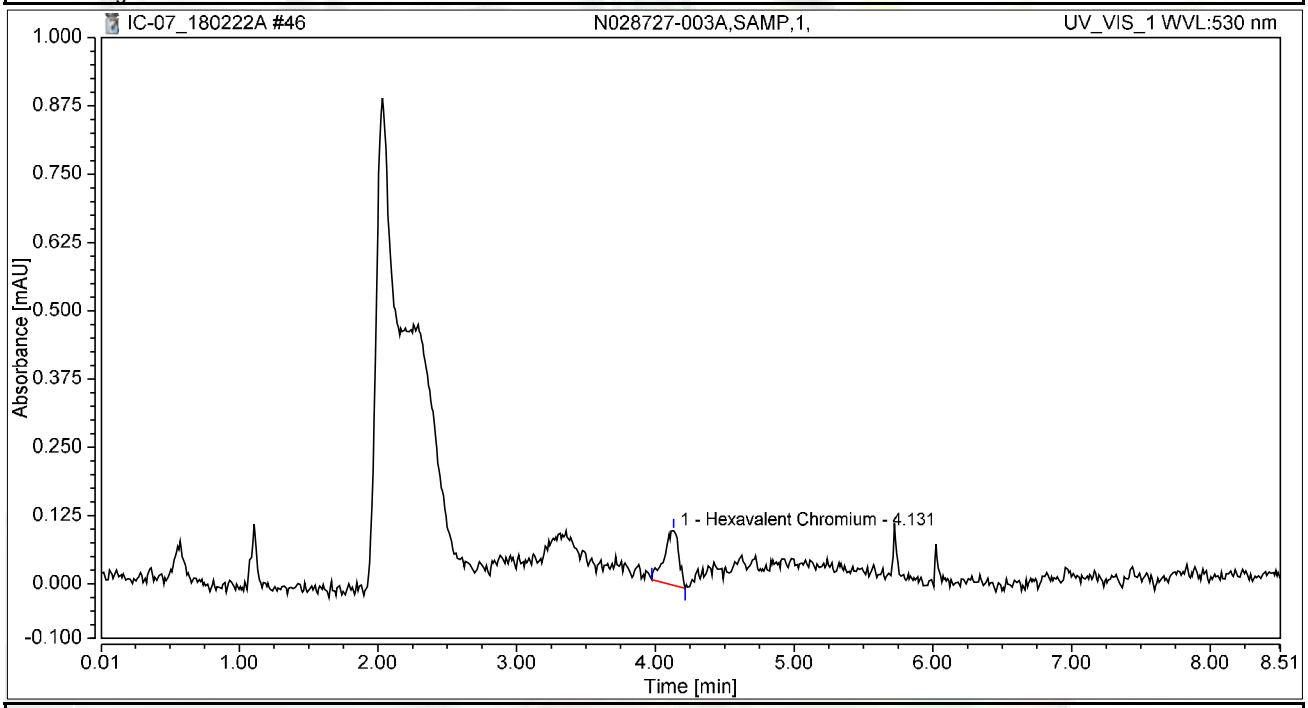
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	2.005	100.00	100.00	1.0590
Total:			**0.264**	**2.005**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

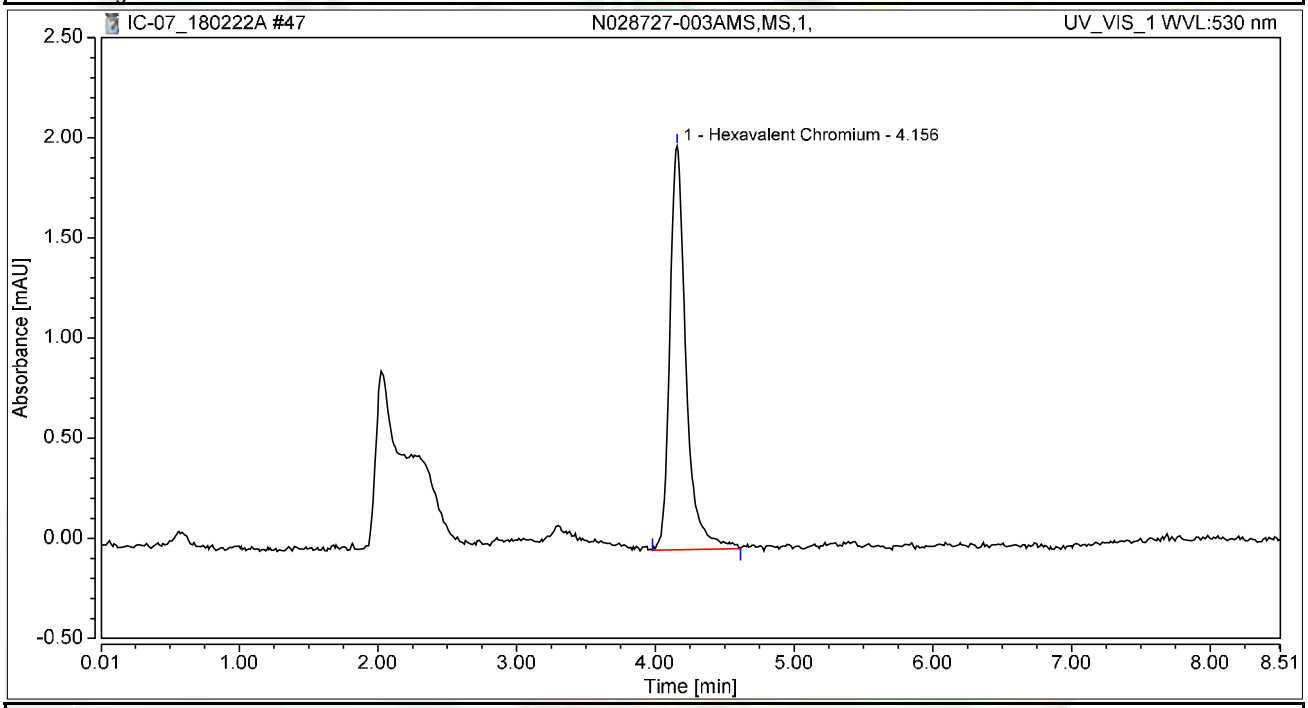
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.012	0.100	100.00	100.00	0.0487
Total:			**0.012**	**0.100**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

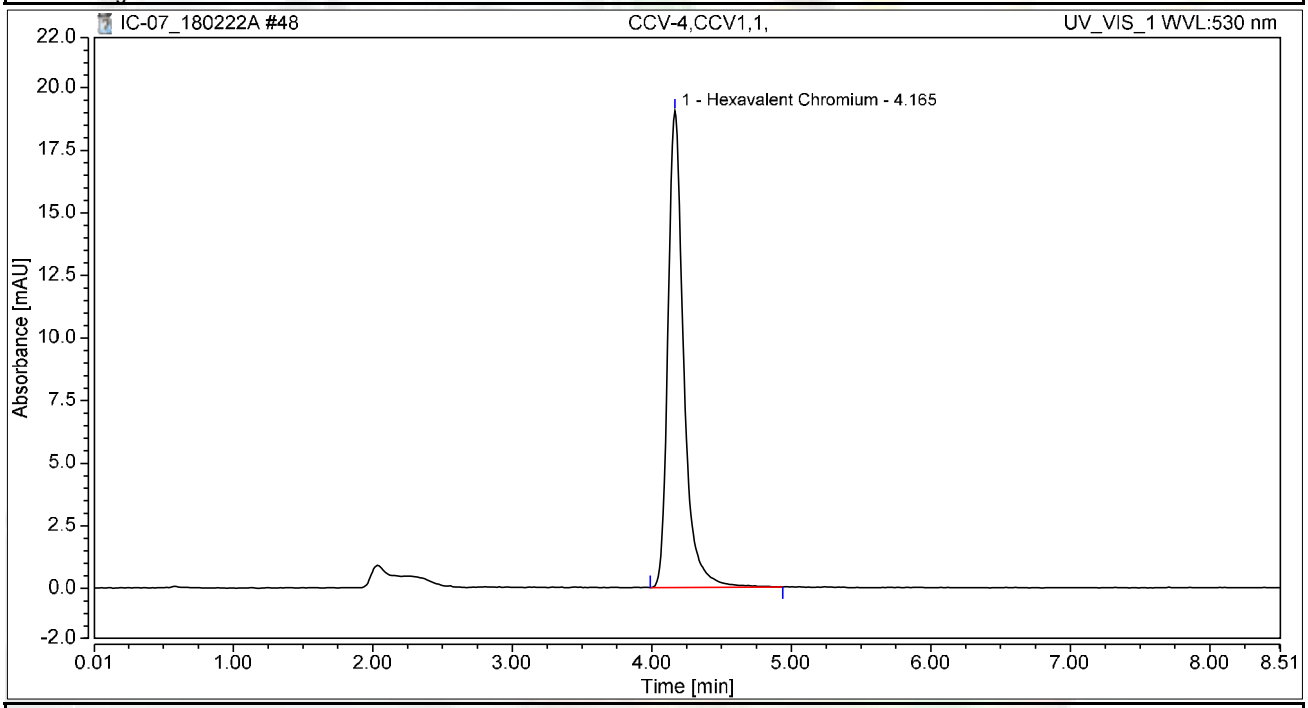
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.272	2.017	100.00	100.00	1.0880
Total:			**0.272**	**2.017**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

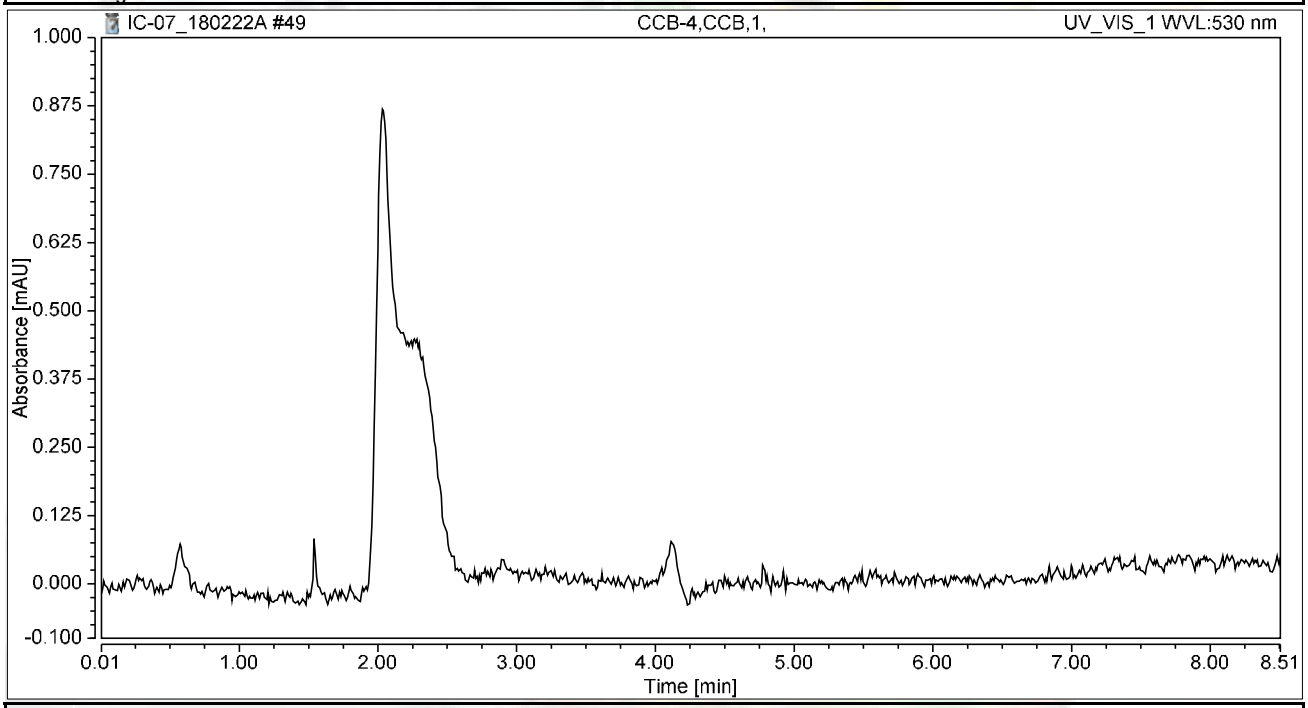
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.481	19.025	100.00	100.00	9.9393
Total:			**2.481**	**19.025**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

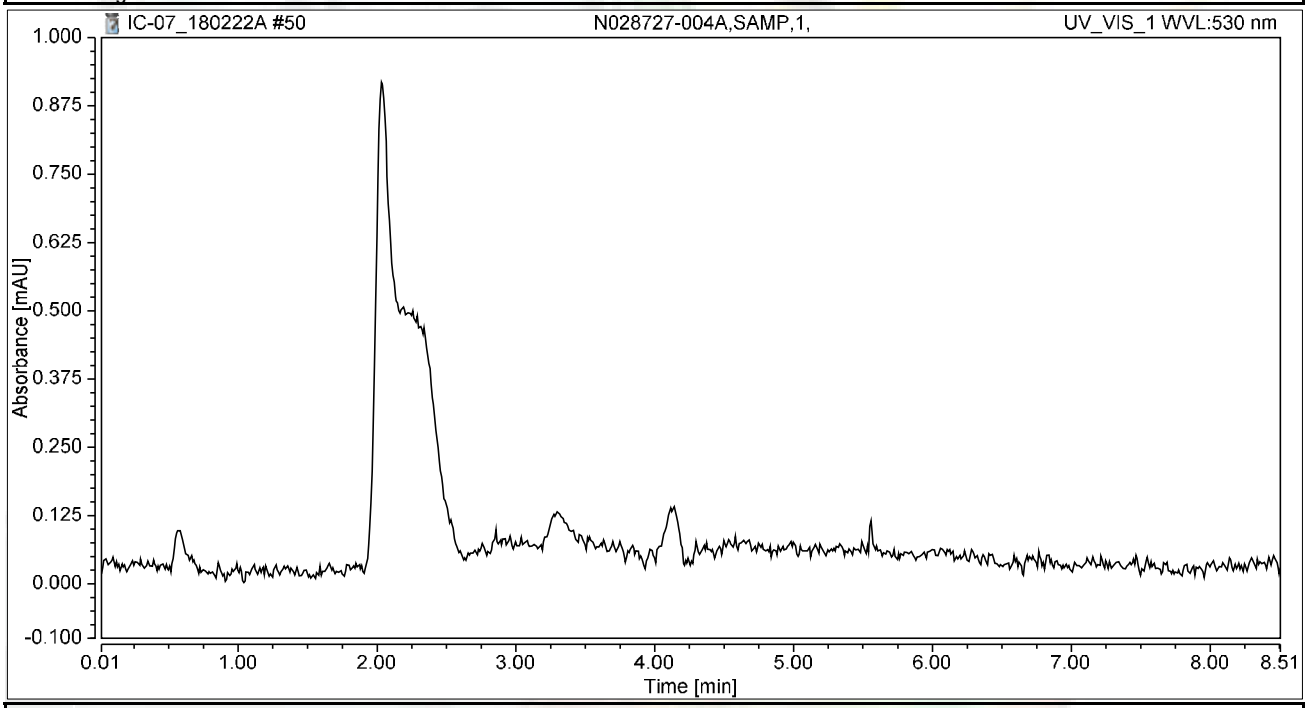
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

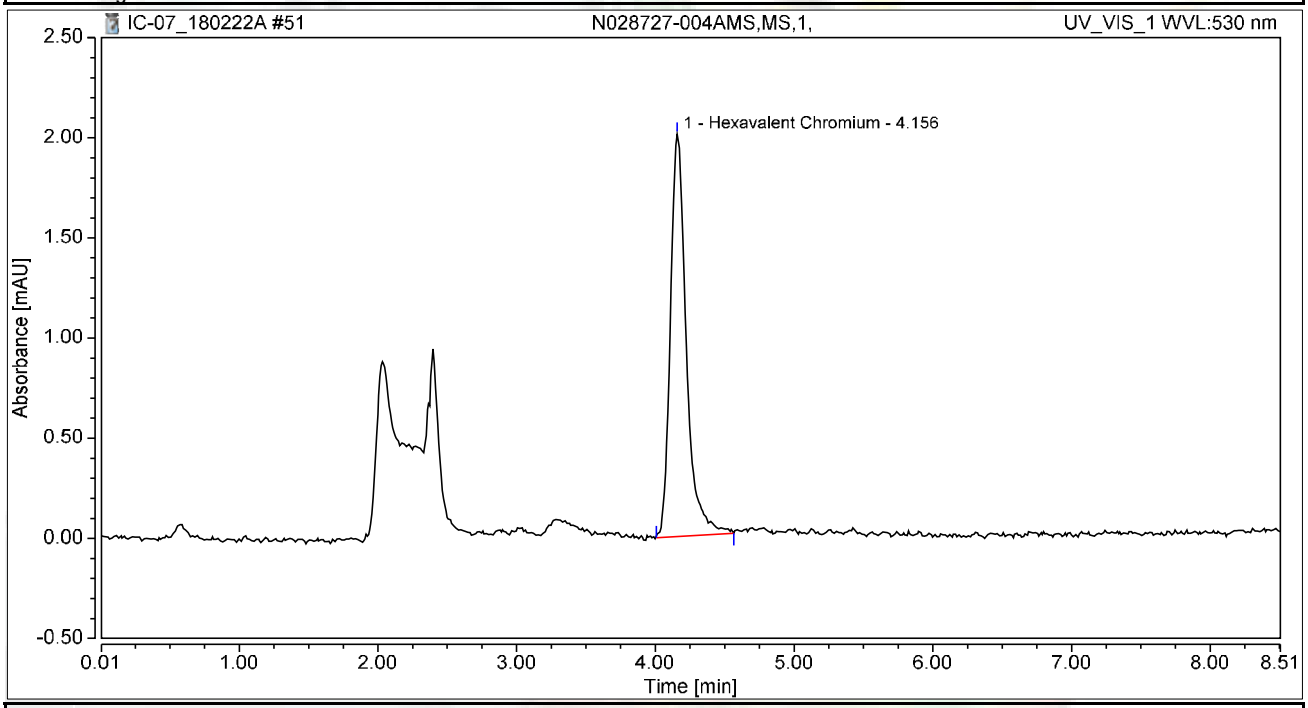
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

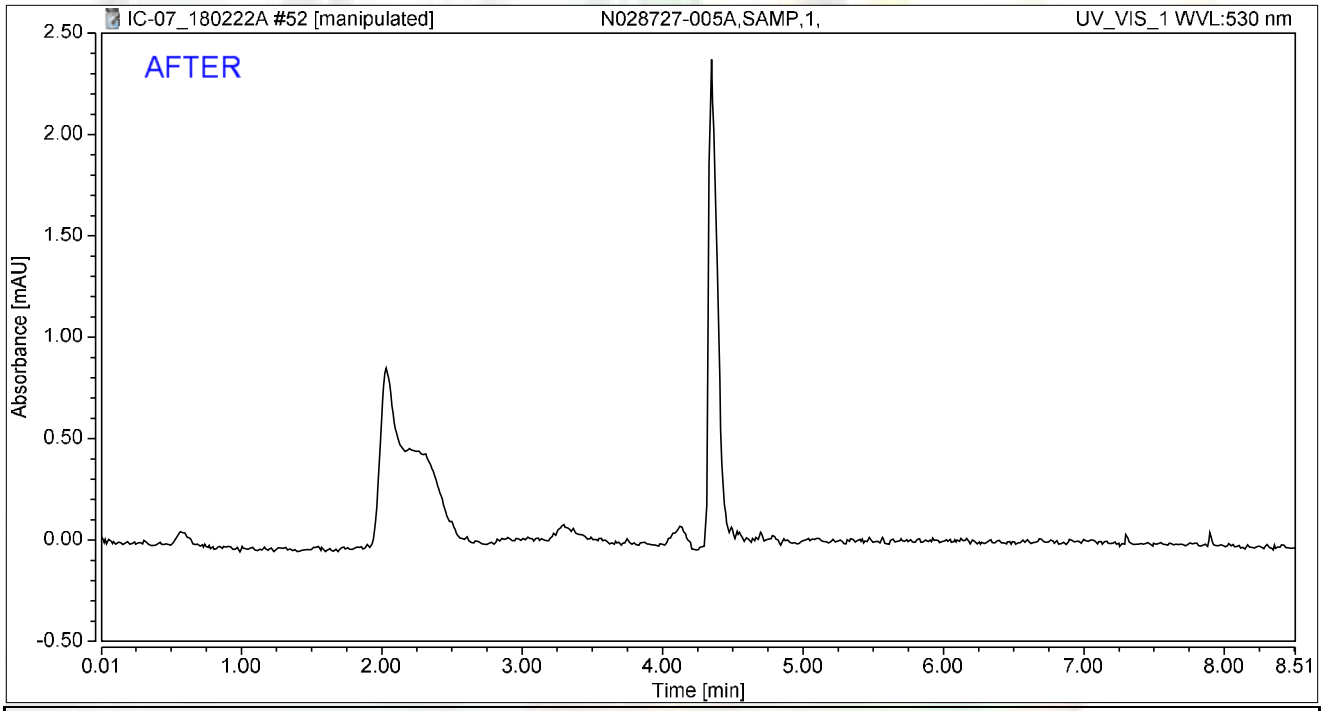
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	2.009	100.00	100.00	1.0706
Total:			**0.267**	**2.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 3/4/2018

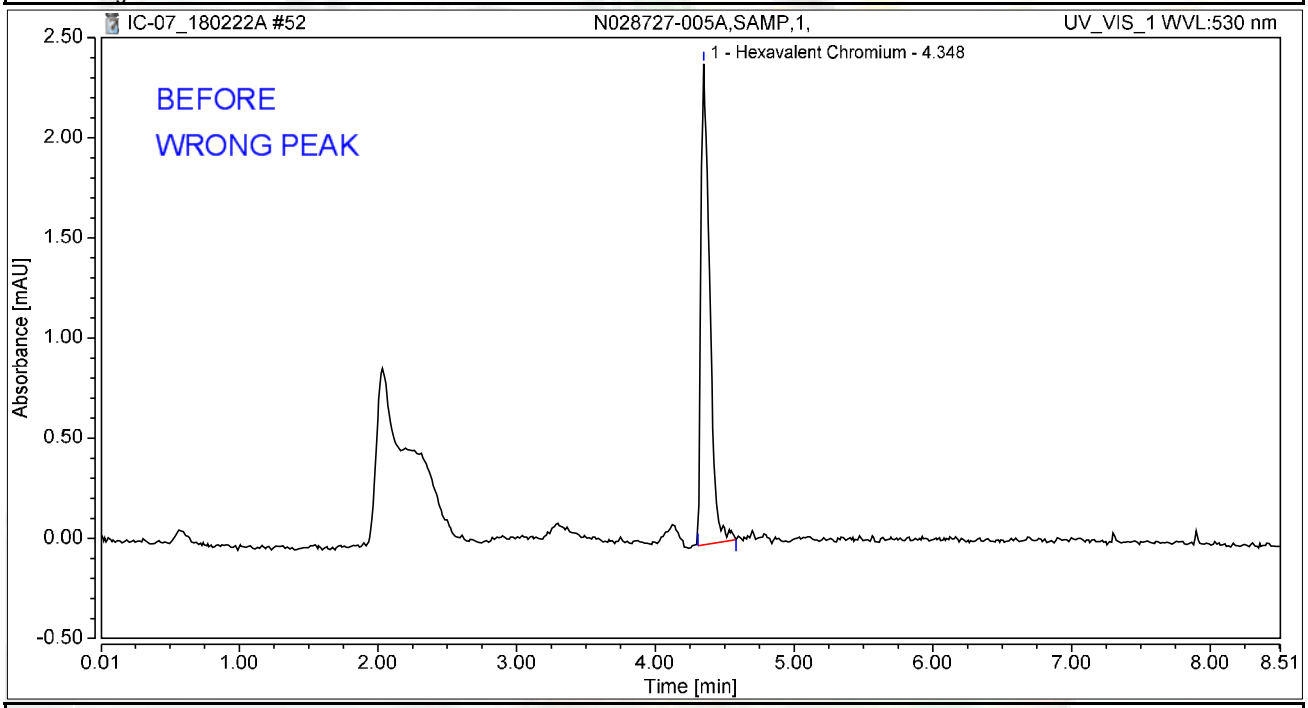
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.348	0.175	2.401	100.00	100.00	0.7024
Total:			**0.175**	**2.401**	**100.00**	**100.00**	

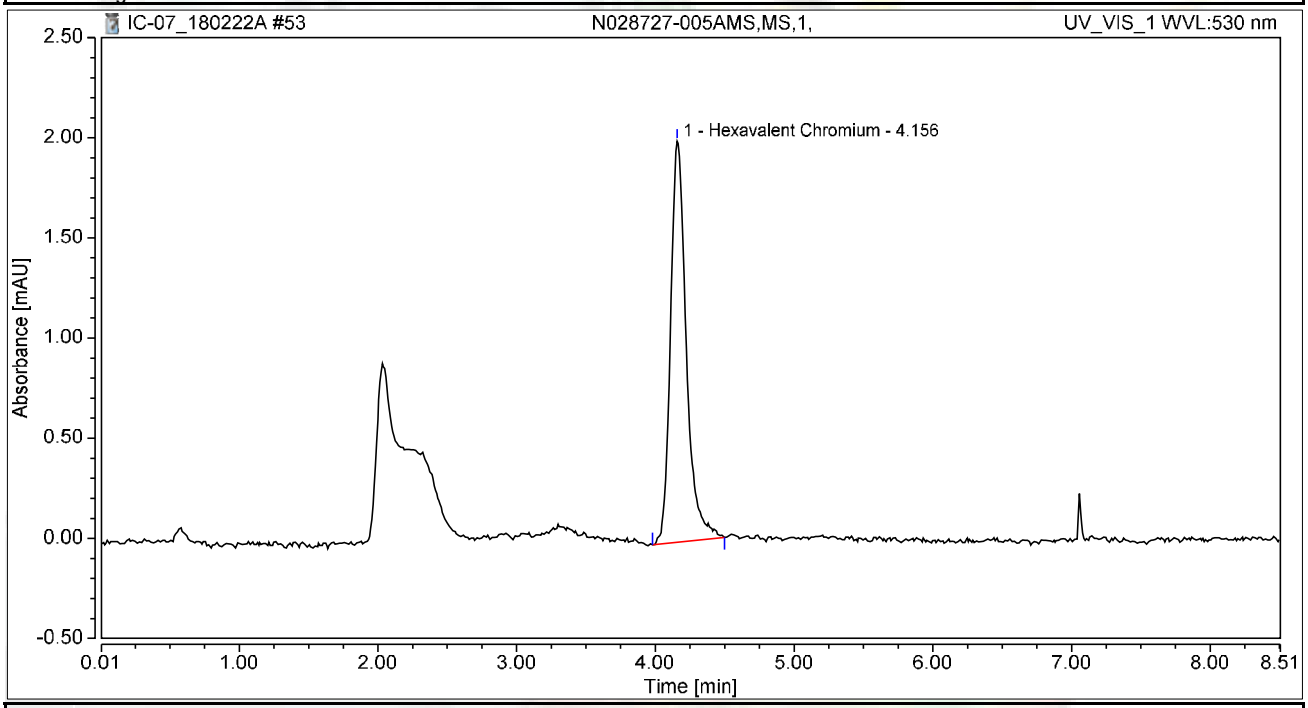
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	2.002	100.00	100.00	1.0557
Total:			**0.264**	**2.002**	**100.00**	**100.00**	

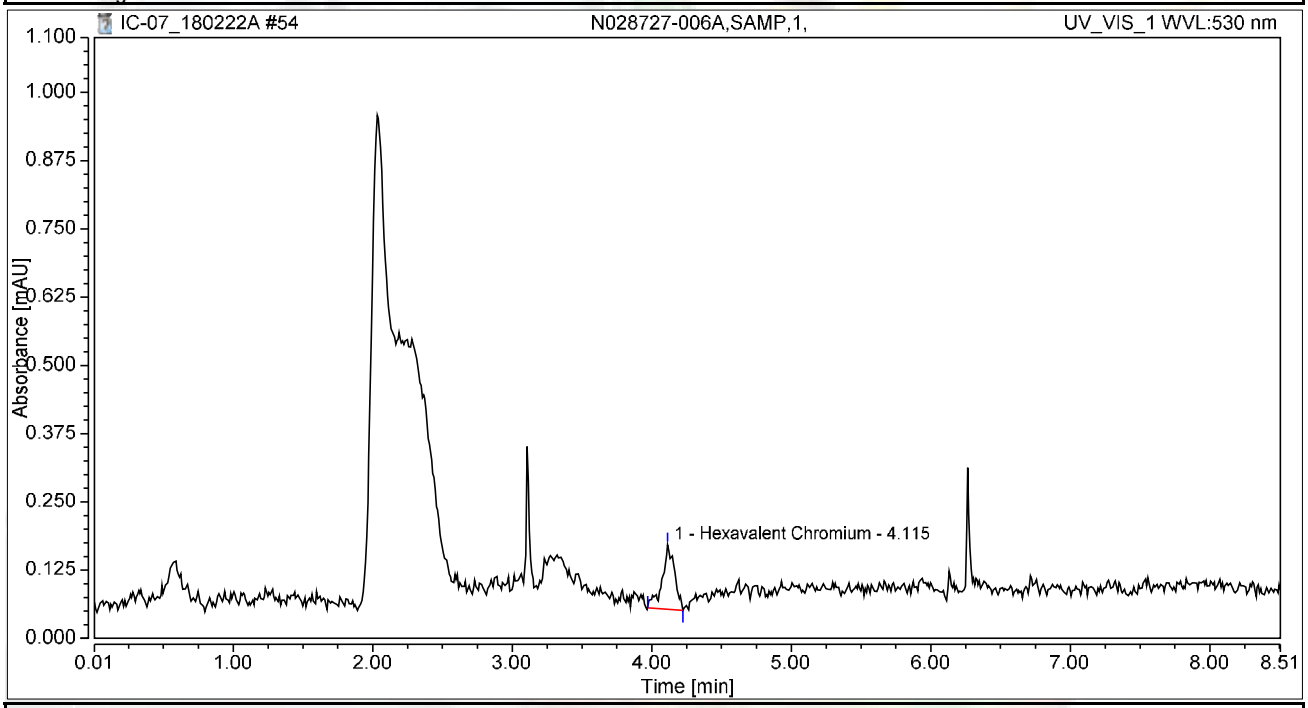
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

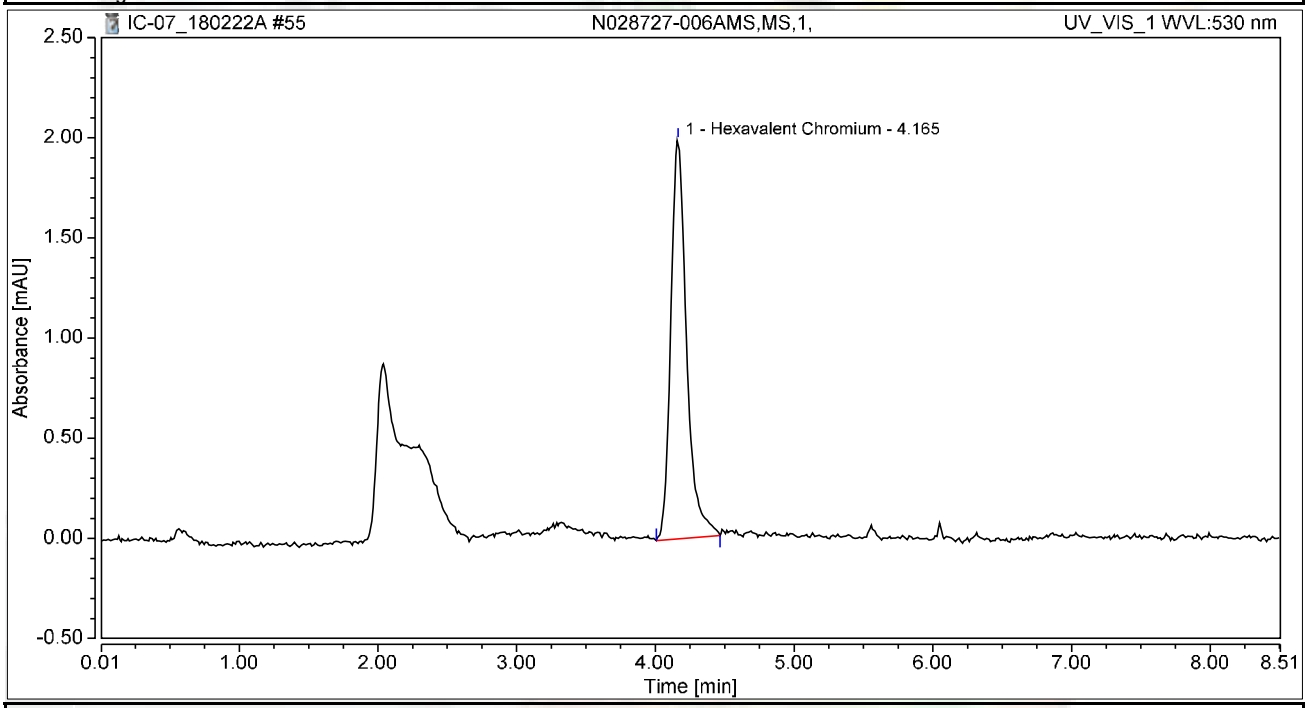
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.012	0.118	100.00	100.00	0.0488
Total:			**0.012**	**0.118**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

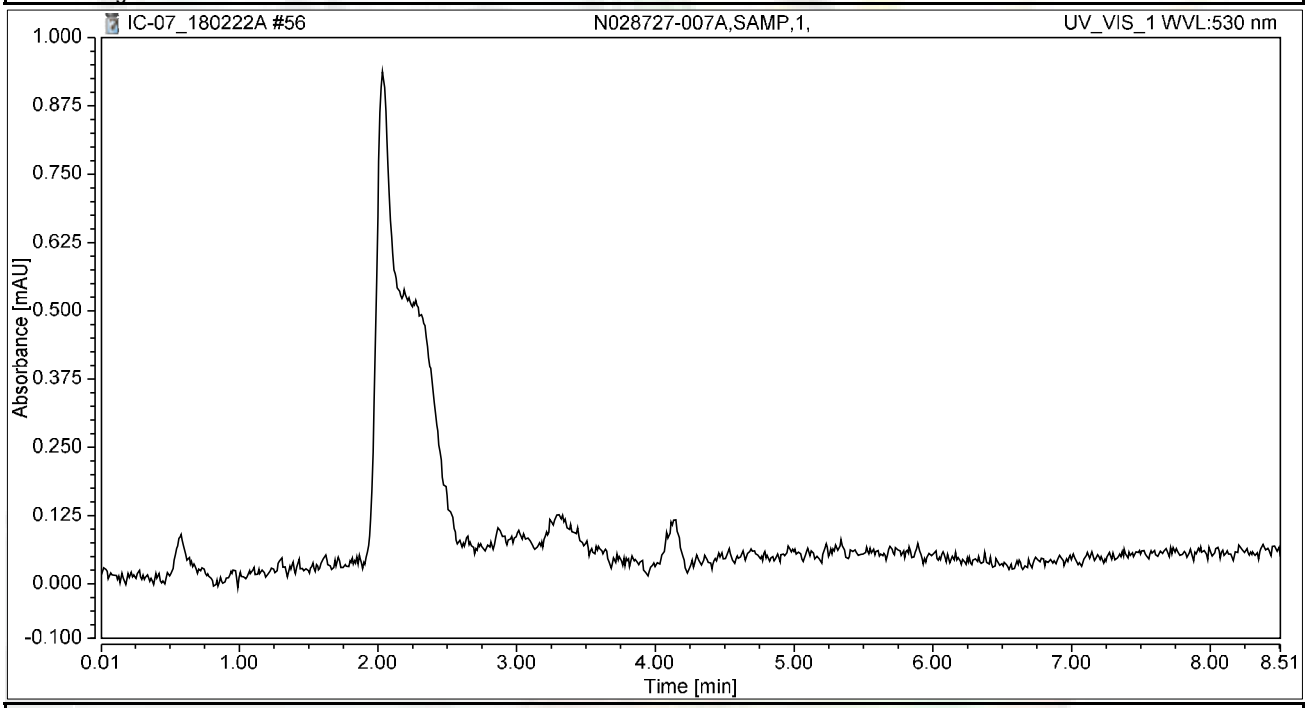
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.263	1.992	100.00	100.00	1.0519
Total:			**0.263**	**1.992**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

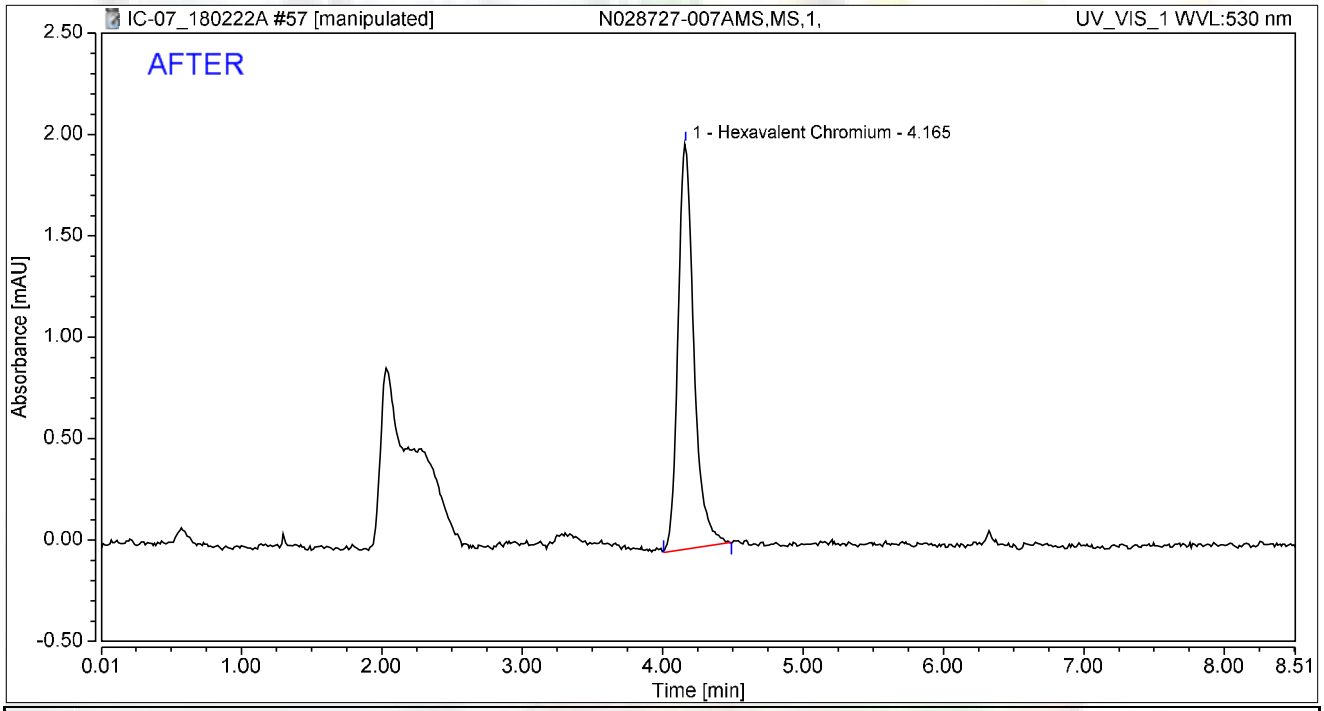
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.261	2.000	100.00	100.00	1.0452
Total:			**0.261**	**2.000**	**100.00**	**100.00**	

rba 3/4/2018

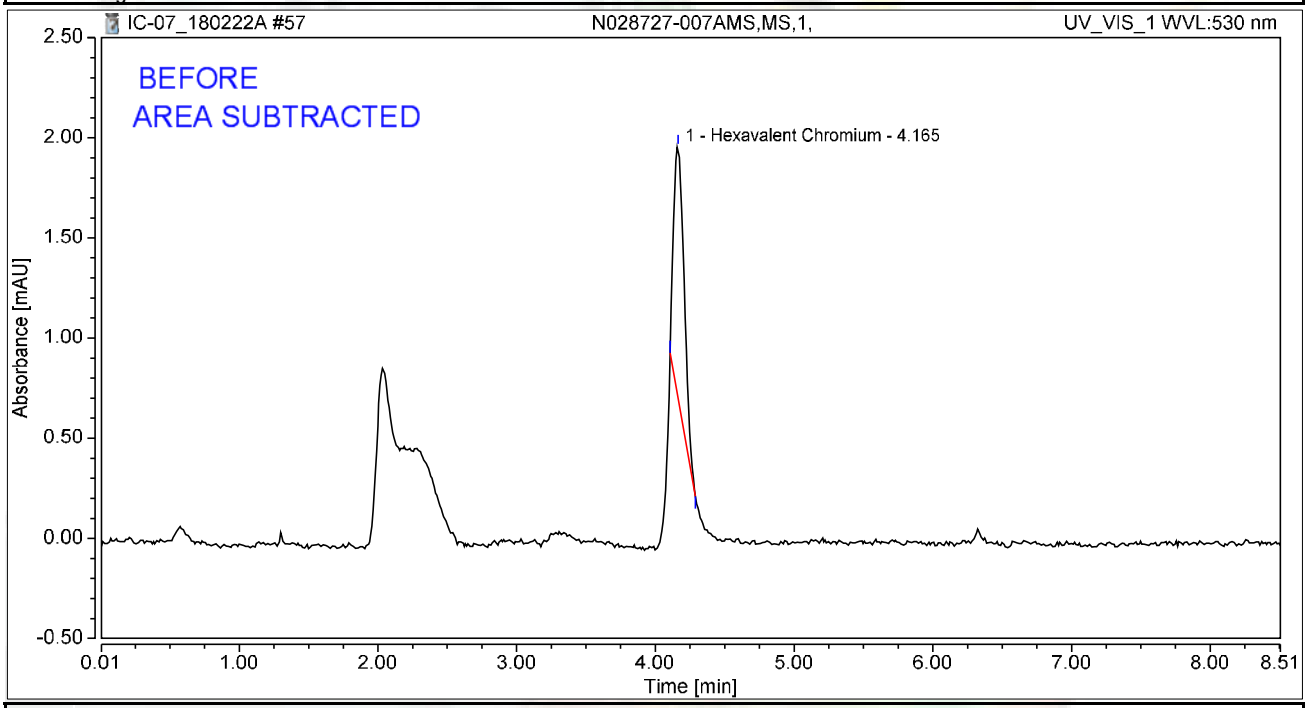
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.110	1.256	100.00	100.00	0.4396
Total:			**0.110**	**1.256**	**100.00**	**100.00**	

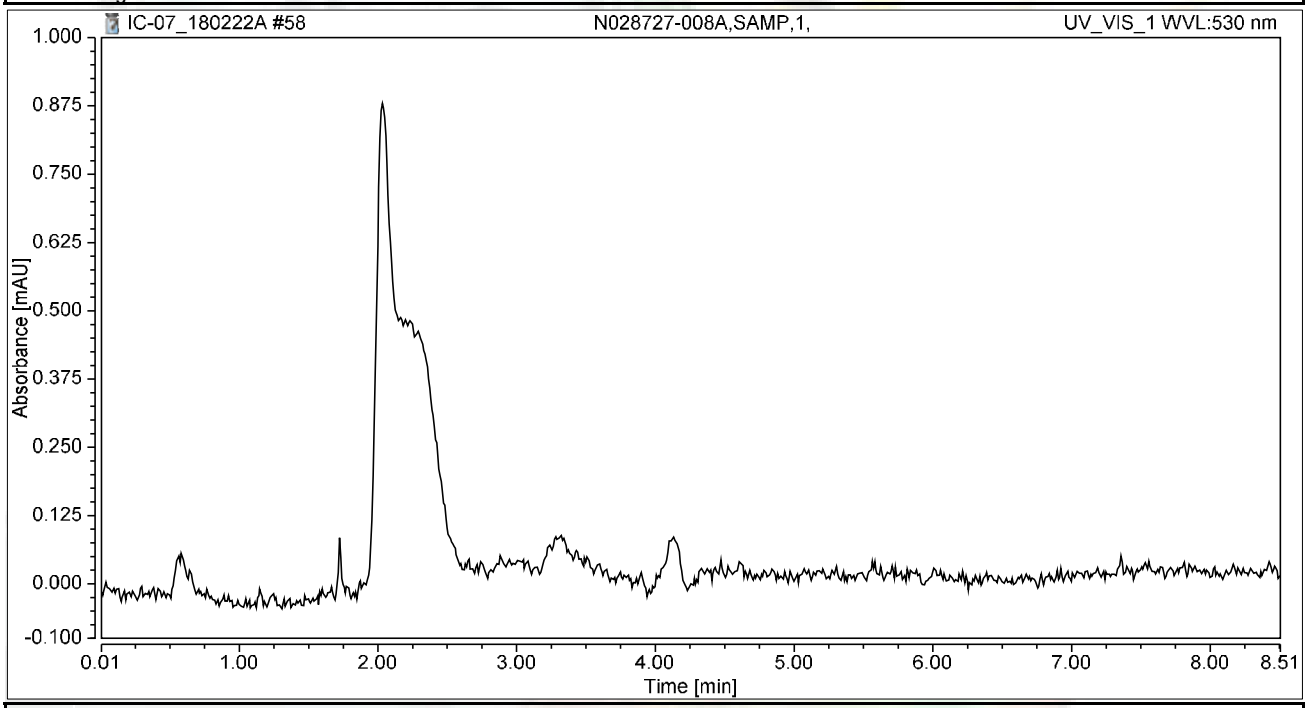
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

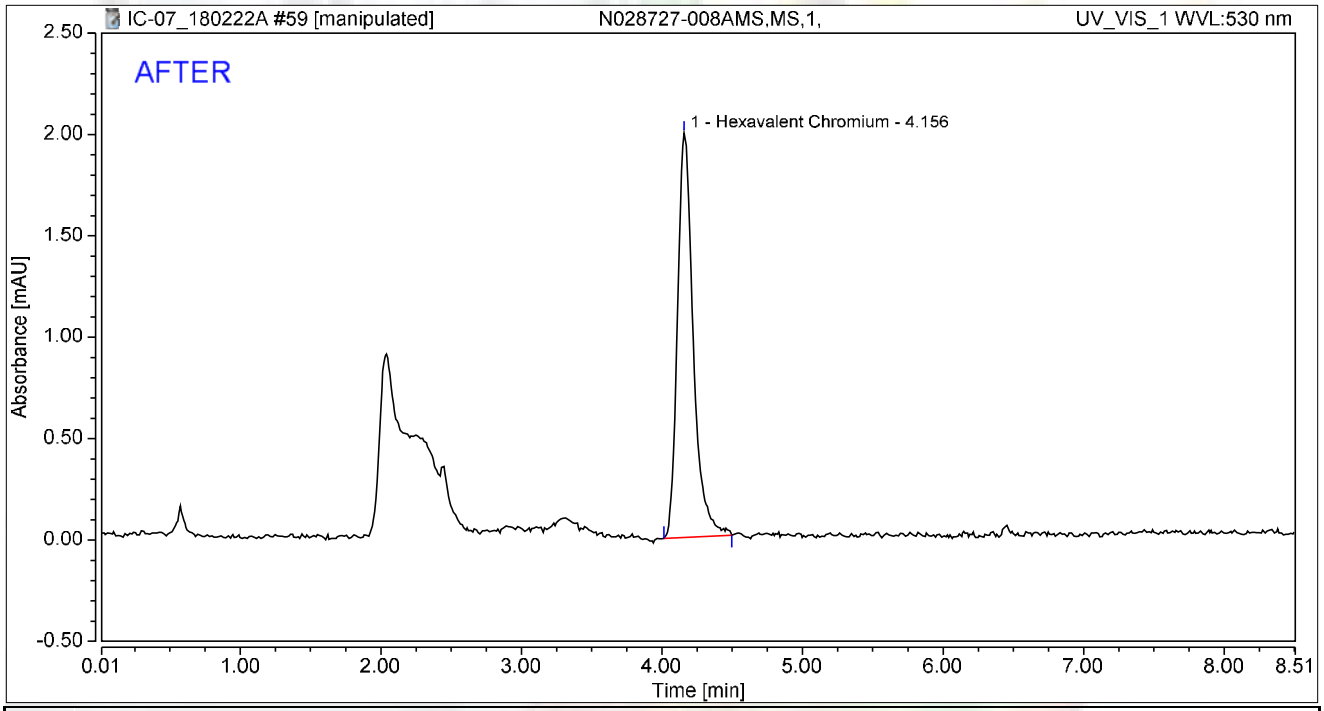
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.260	1.993	100.00	100.00	1.0407
Total:			**0.260**	**1.993**	**100.00**	**100.00**	

rba 3/4/2018

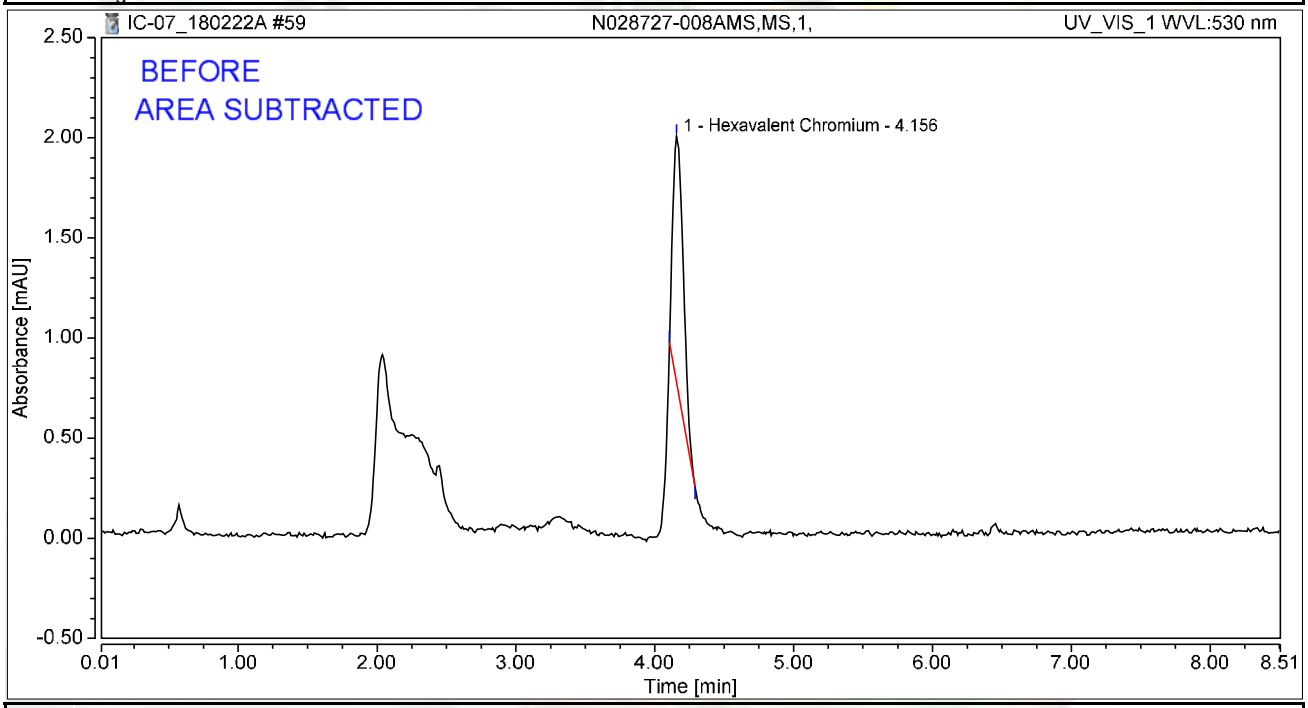
RLB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.109	1.225	100.00	100.00	0.4384
Total:			**0.109**	**1.225**	**100.00**	**100.00**	

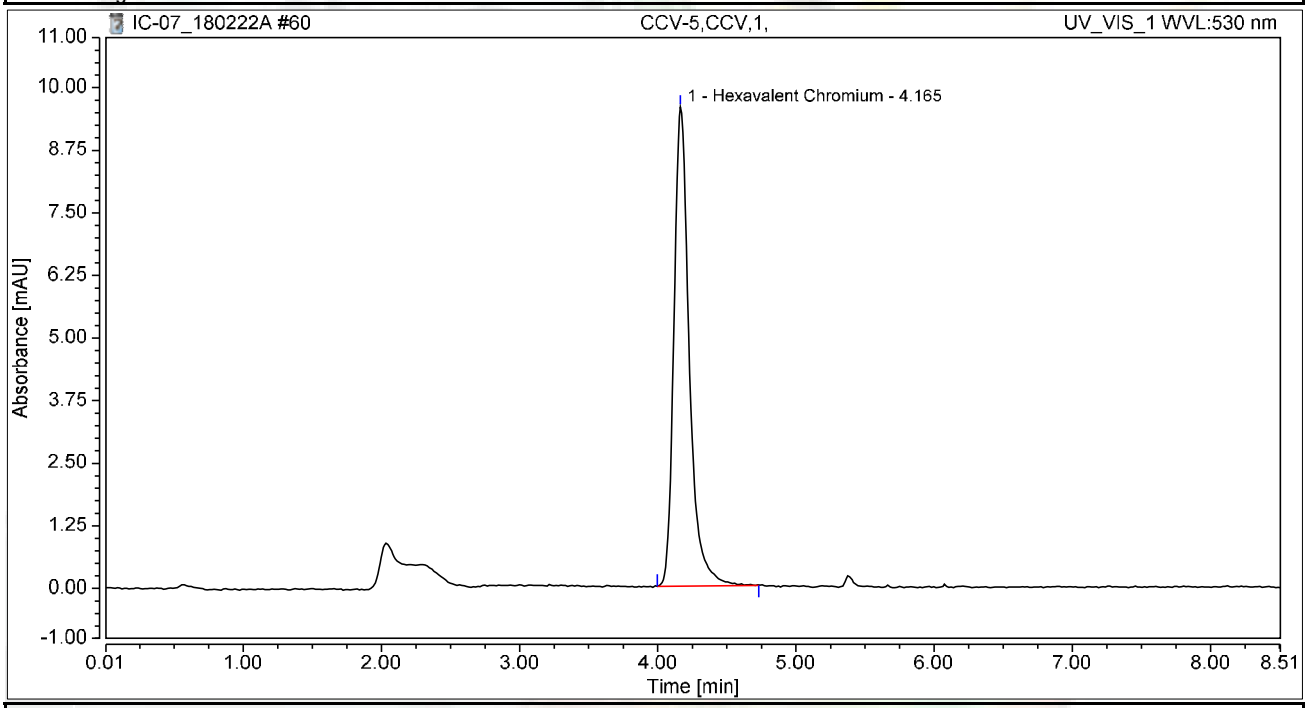
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

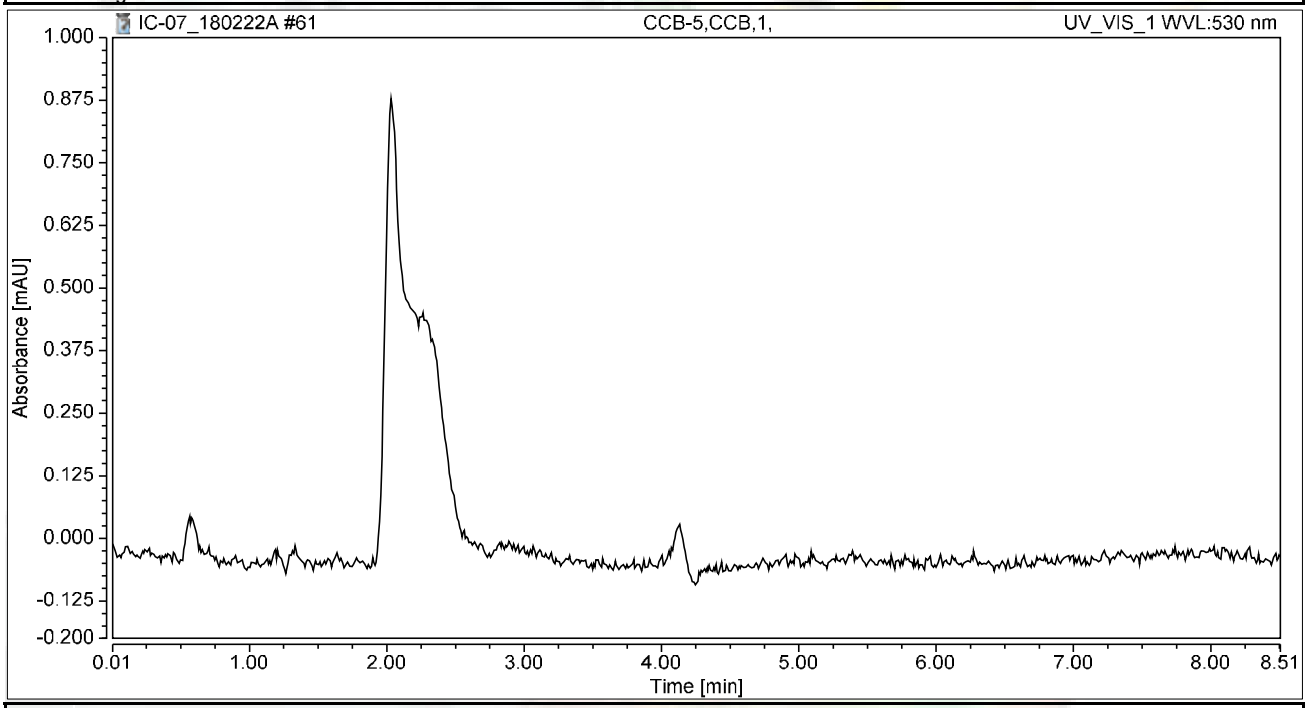
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.233	9.570	100.00	100.00	4.9408
Total:			**1.233**	**9.570**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

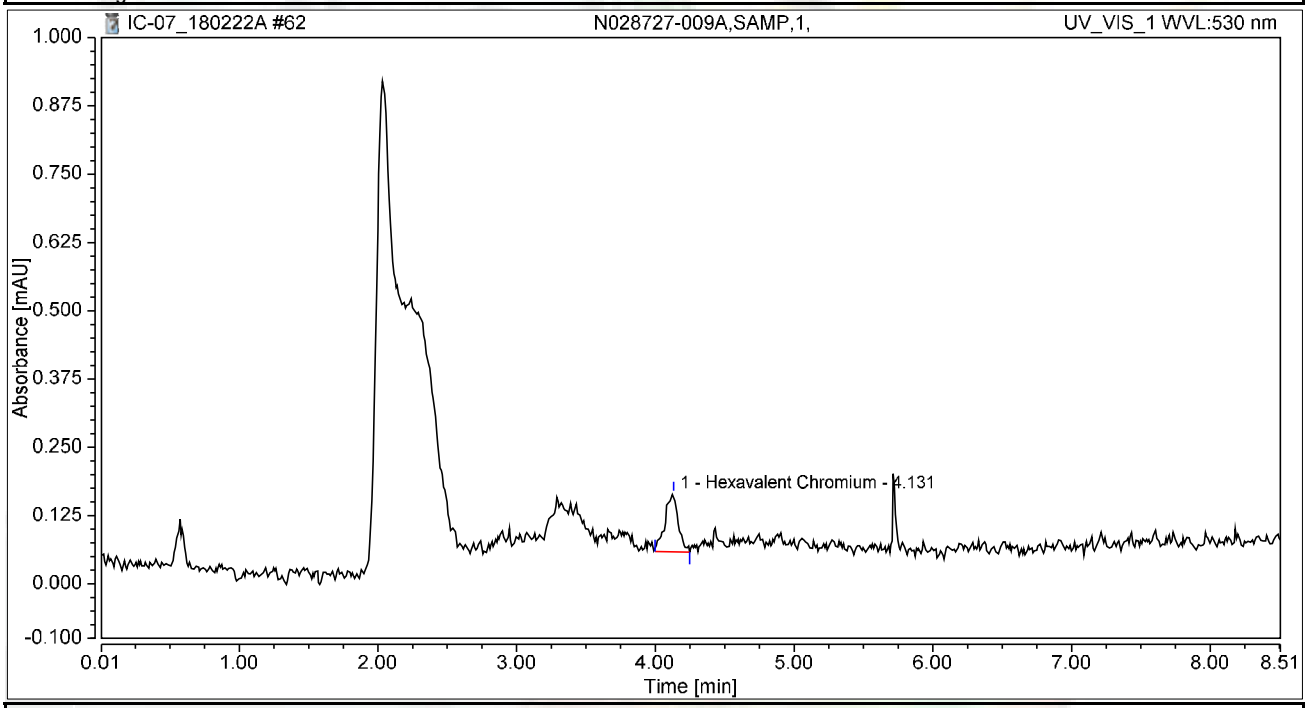
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 17:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

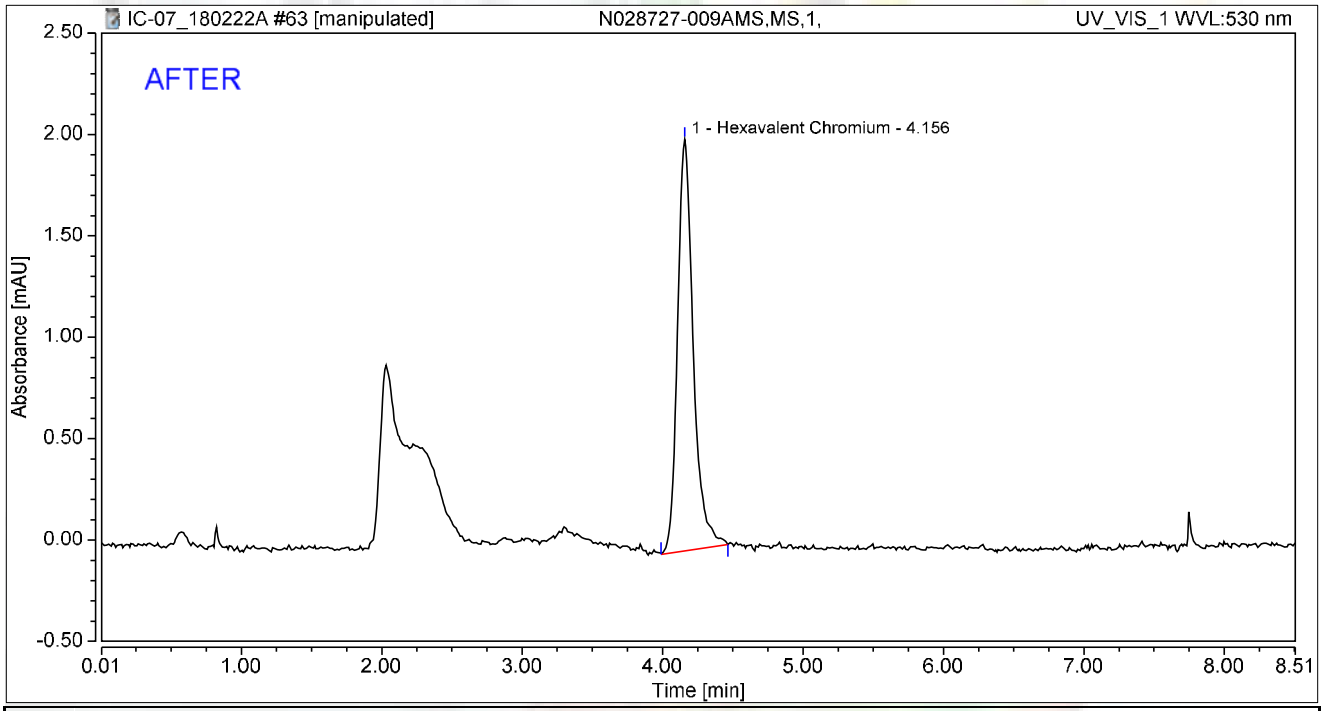
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.012	0.107	100.00	100.00	0.0465
Total:			**0.012**	**0.107**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.263	2.030	100.00	100.00	1.0545
Total:			**0.263**	**2.030**	**100.00**	**100.00**	

rba 3/4/2018

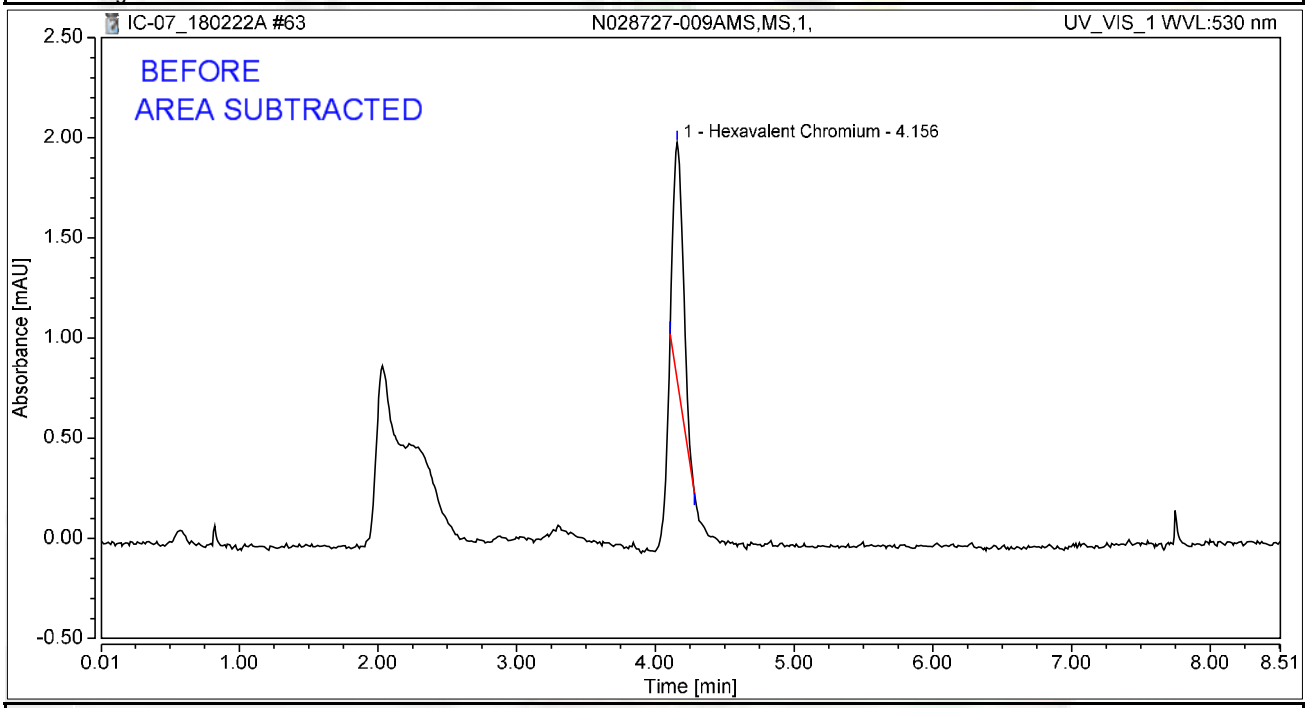
03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.099	1.181	100.00	100.00	0.3978
Total:			**0.099**	**1.181**	**100.00**	**100.00**	

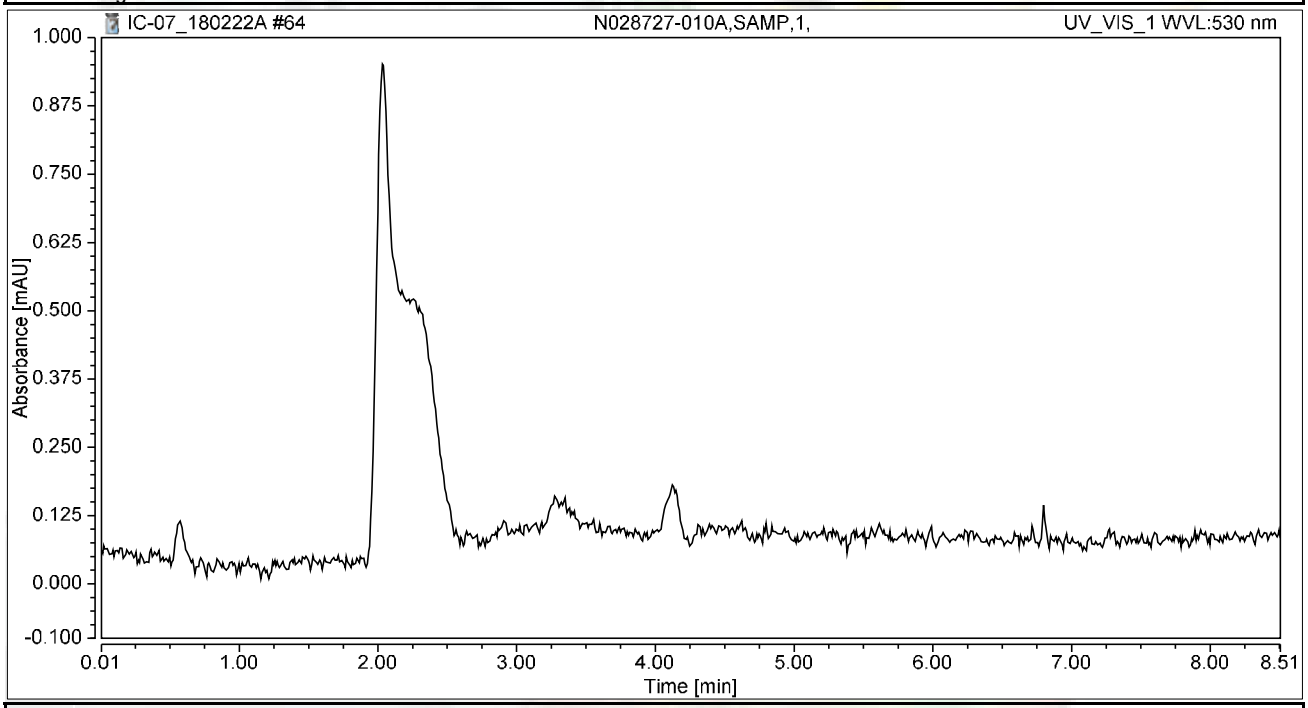
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

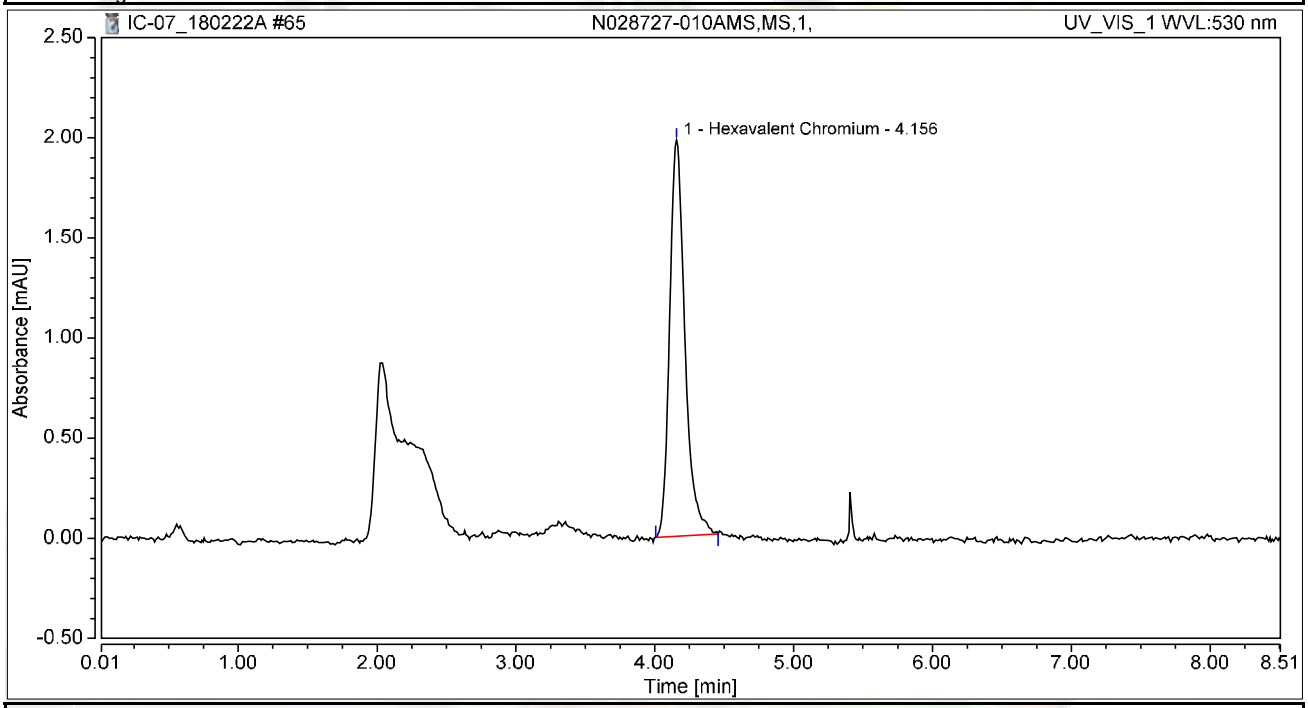
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

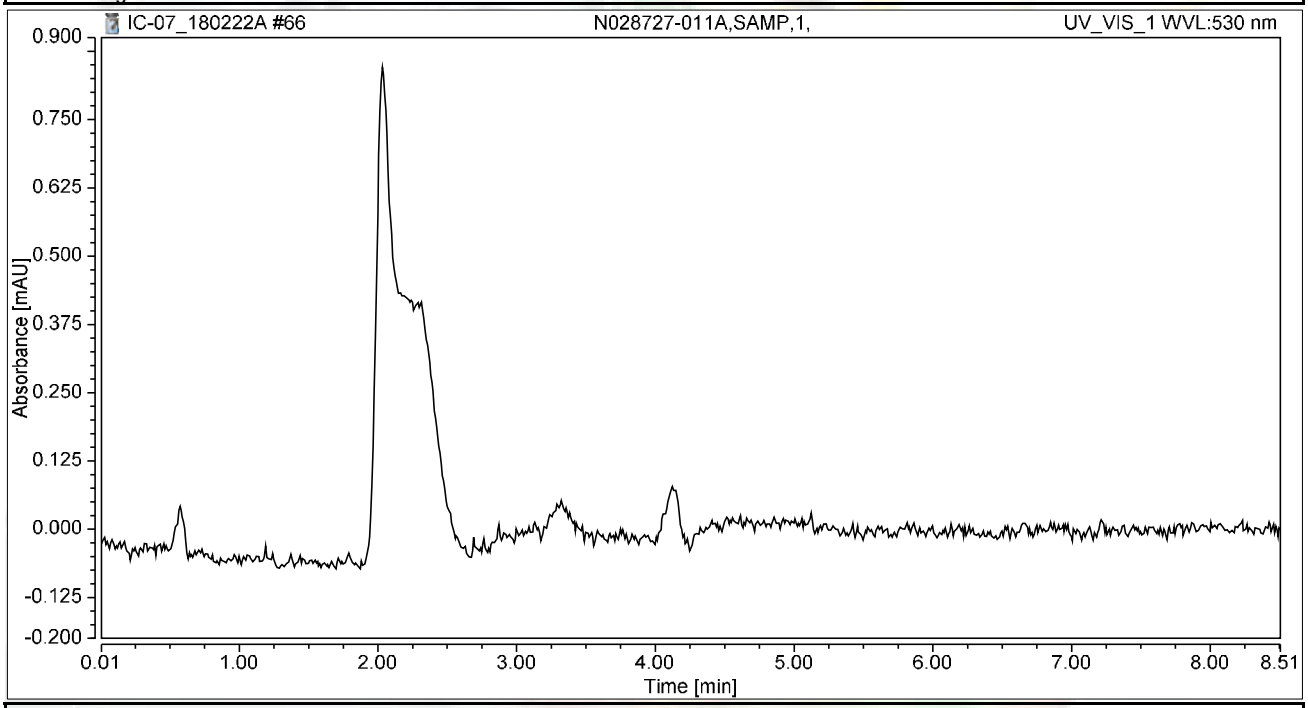
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.253	1.978	100.00	100.00	1.0137
Total:			**0.253**	**1.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

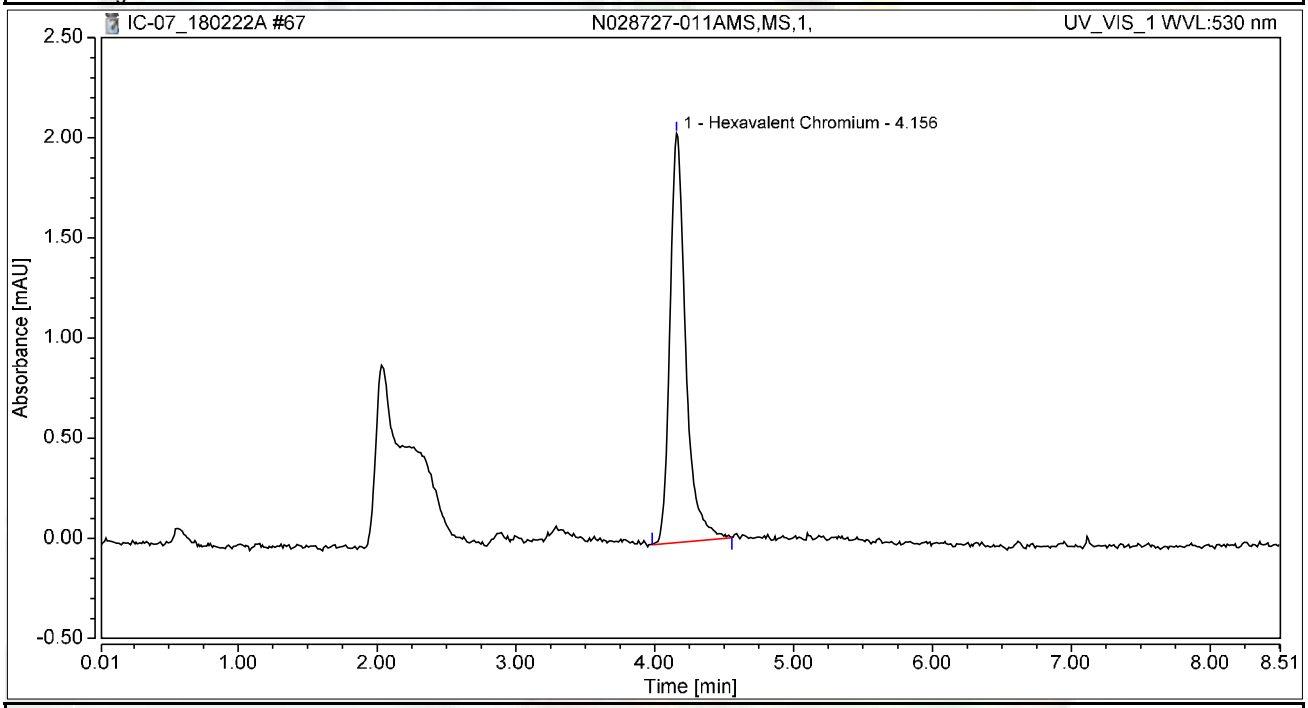
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

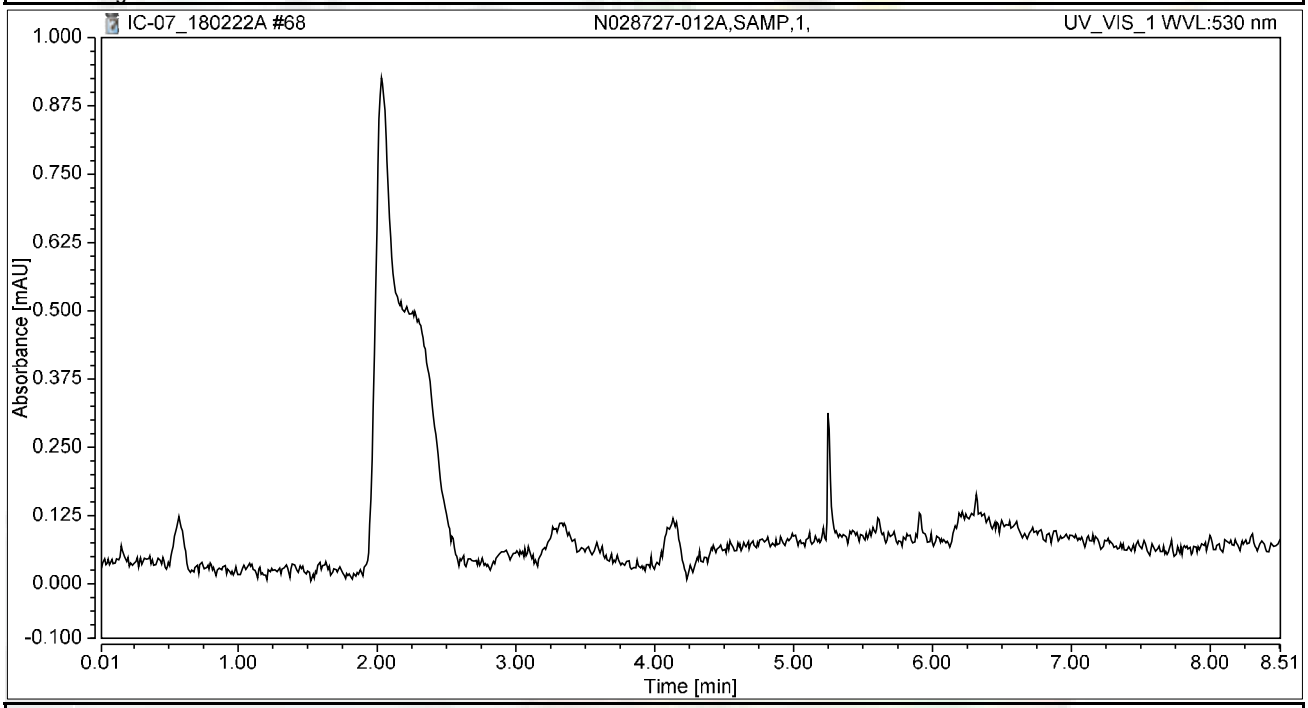
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.269	2.042	100.00	100.00	1.0782
Total:			**0.269**	**2.042**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-012A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

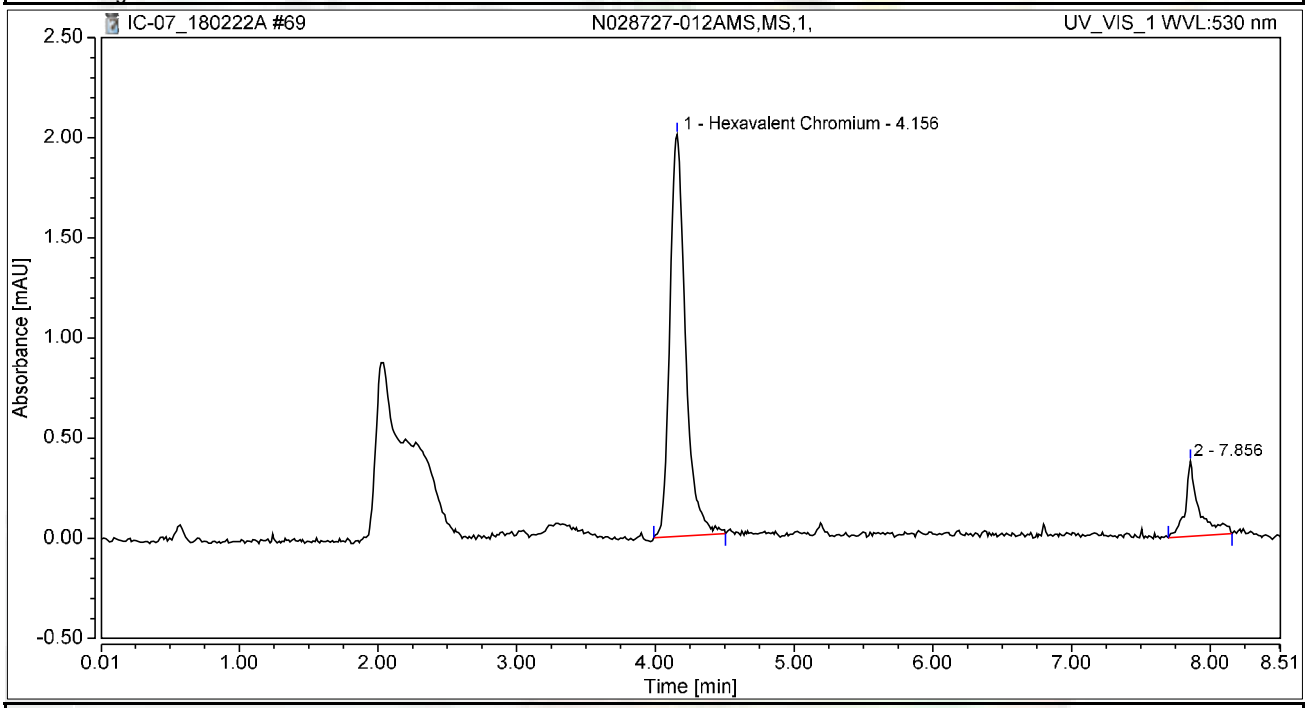
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

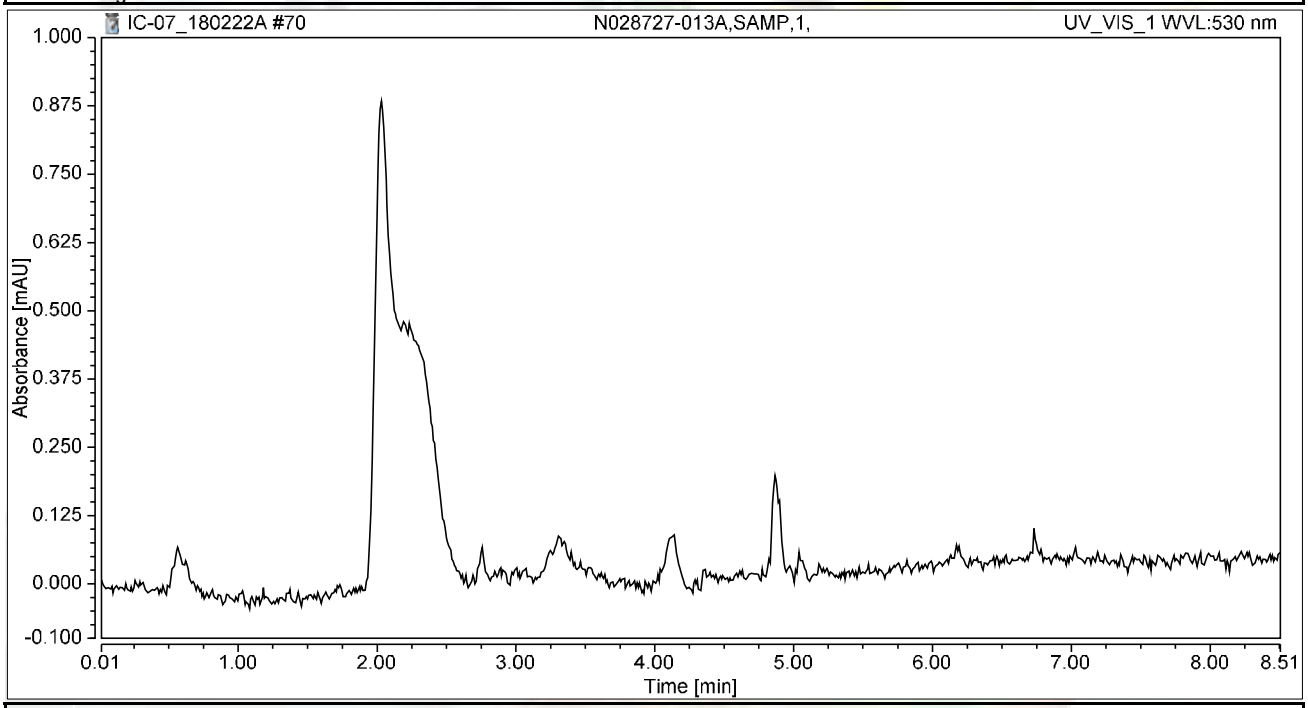
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.262	2.007	85.55	84.23	1.0486
2		7.856	0.044	0.376	14.45	15.77	n.a.
Total:			**0.306**	**2.383**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

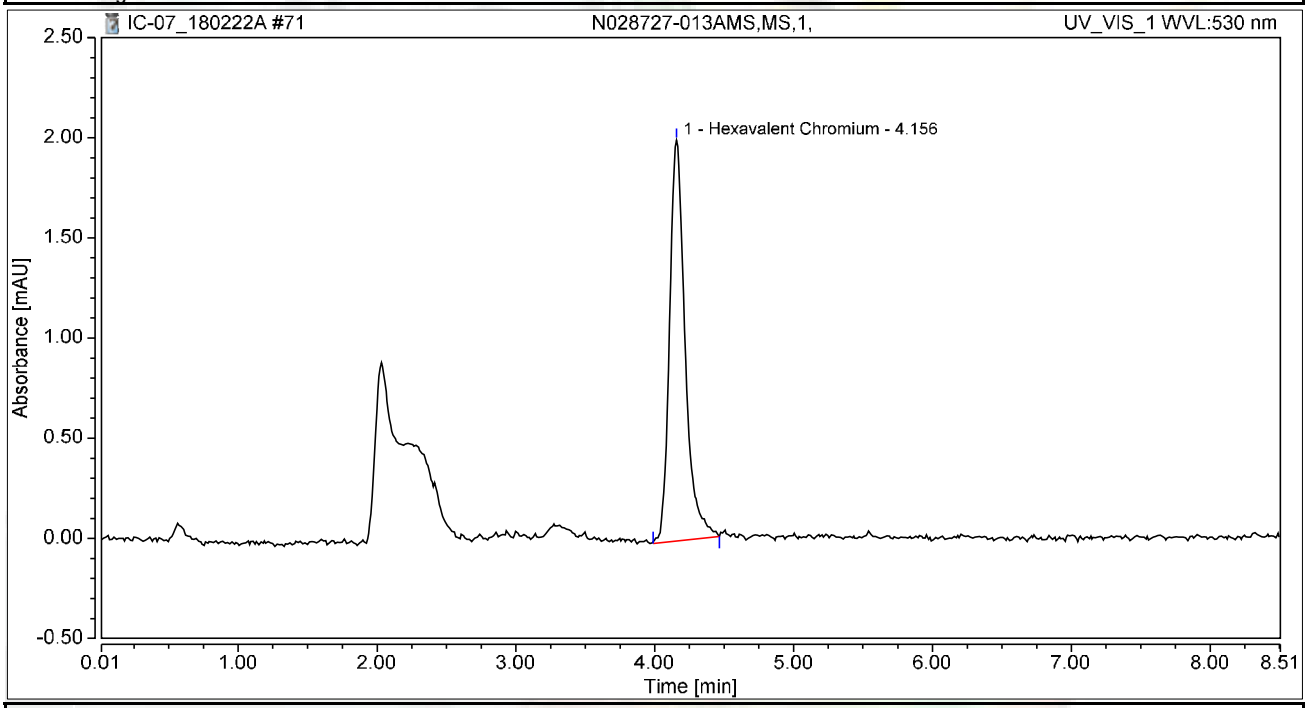
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-013AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

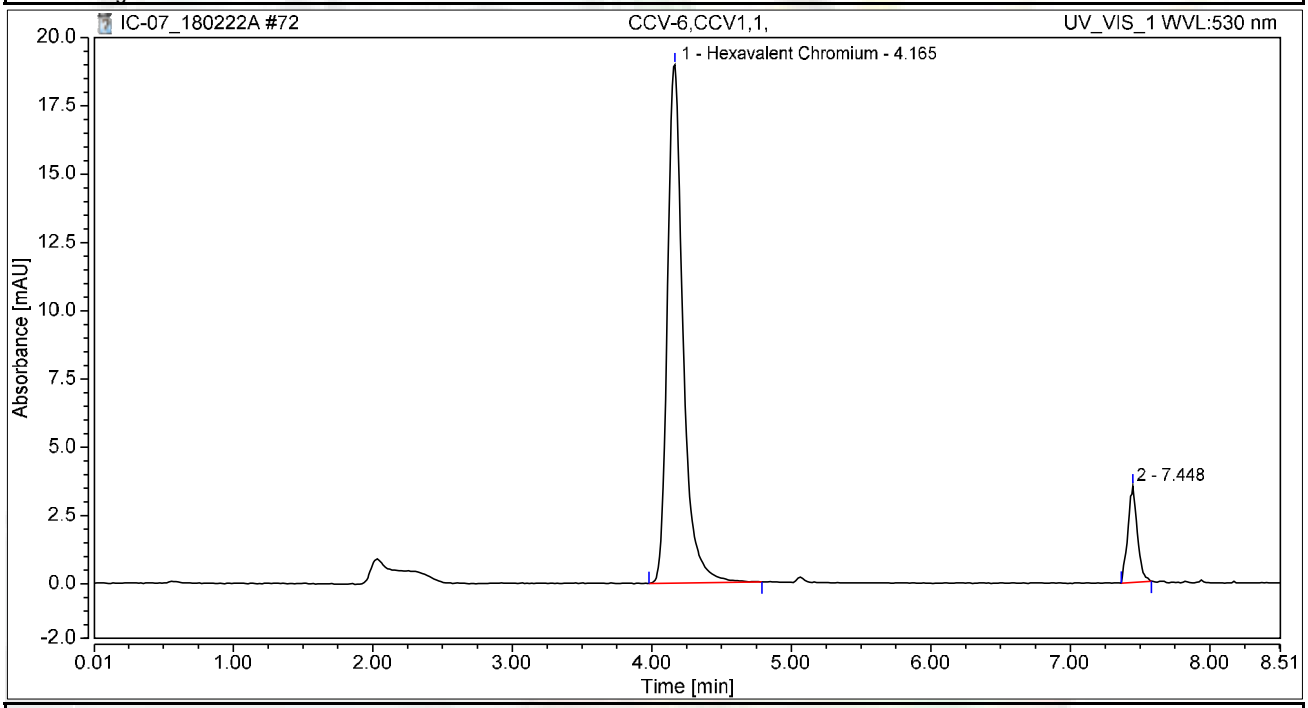
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.261	2.001	100.00	100.00	1.0456
Total:			**0.261**	**2.001**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

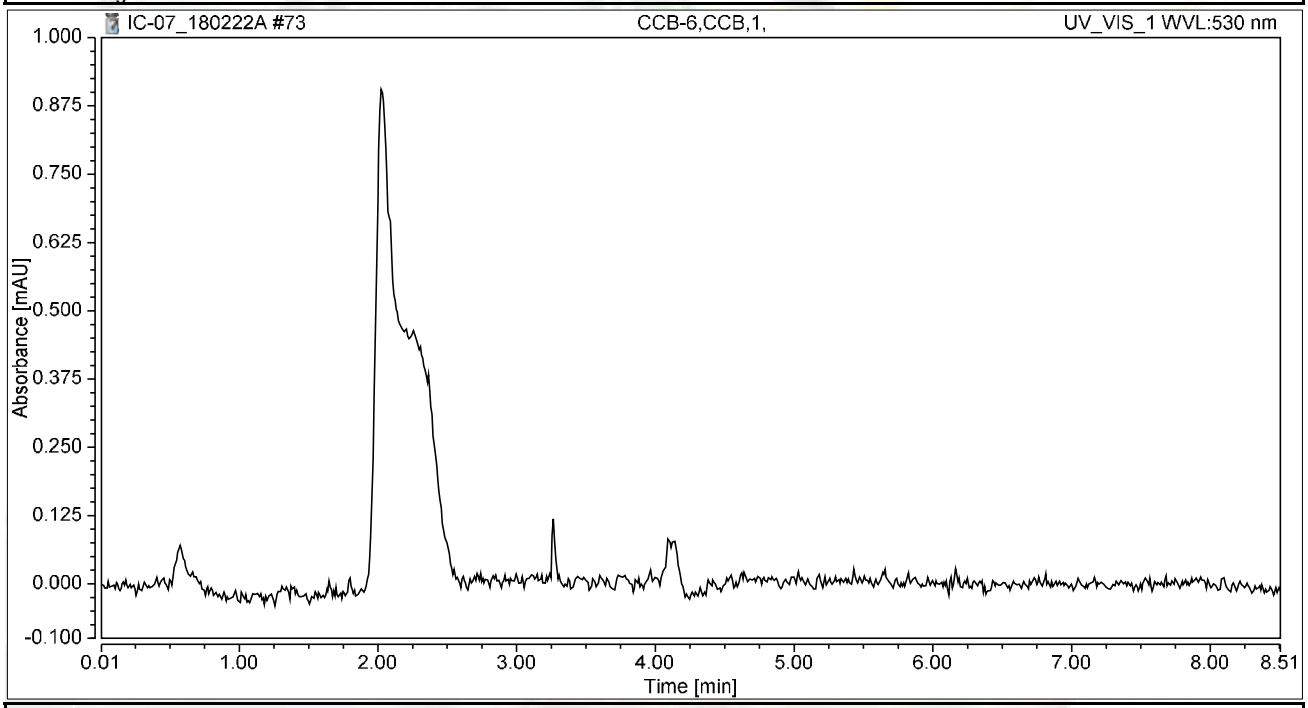
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.468	18.980	89.92	84.33	9.8875
2		7.448	0.277	3.526	10.08	15.67	n.a.
Total:			**2.745**	**22.506**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

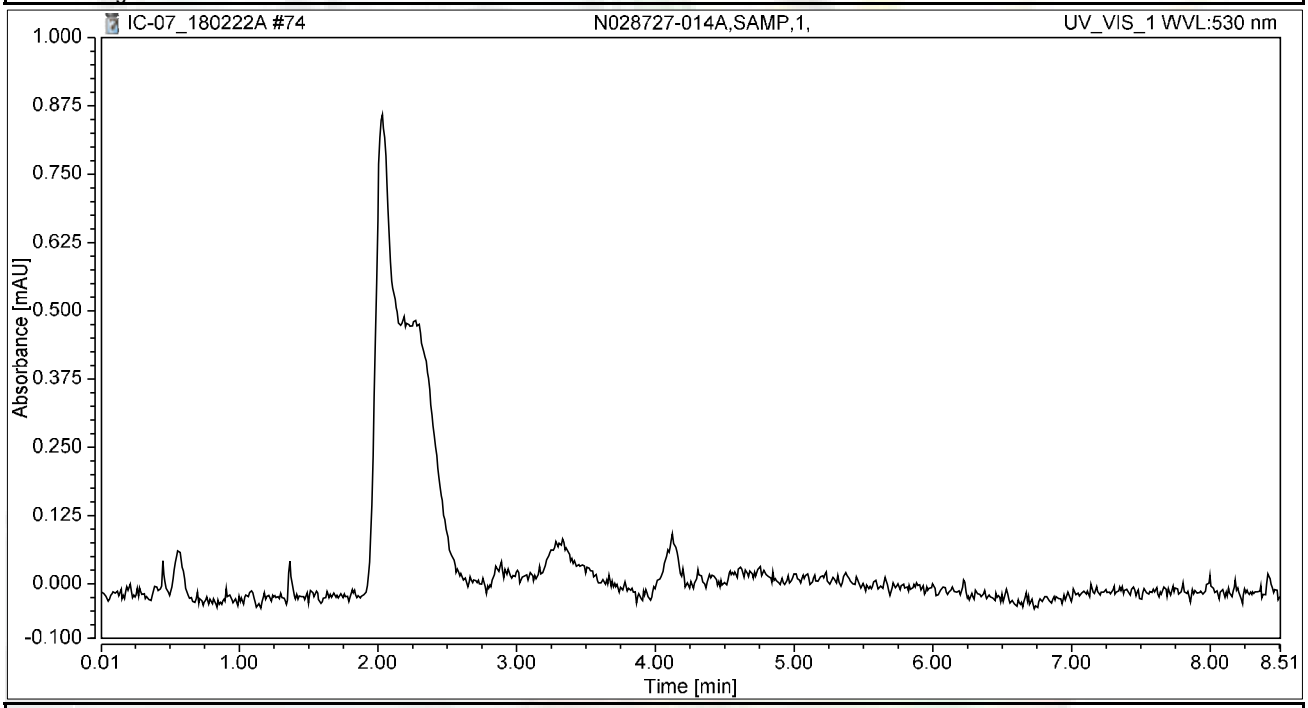
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

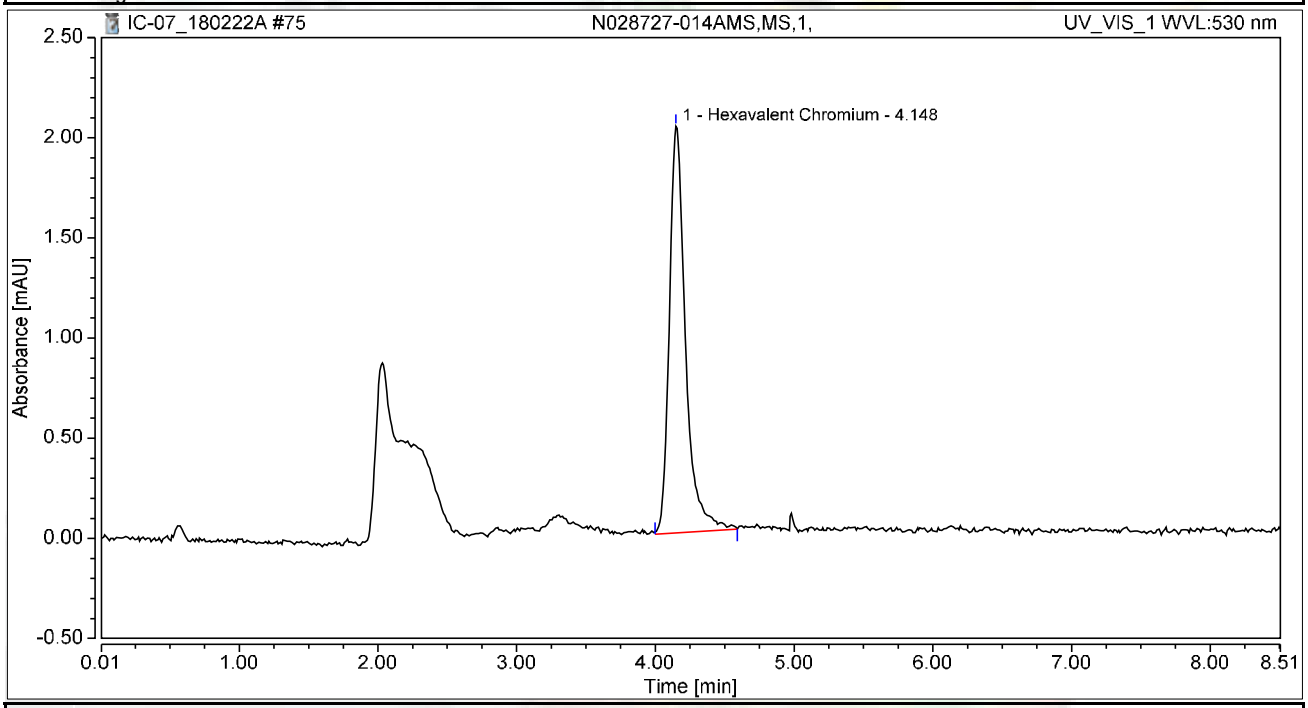
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 19:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

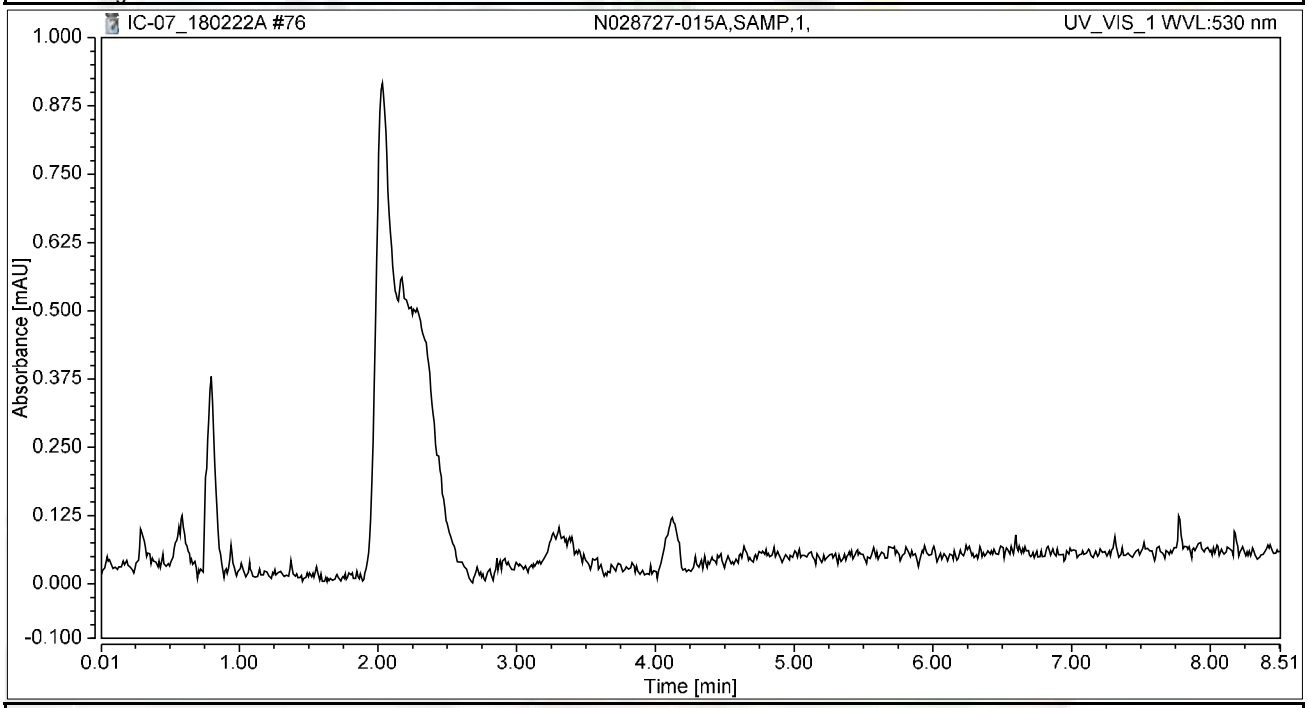
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.274	2.031	100.00	100.00	1.0975
Total:			**0.274**	**2.031**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

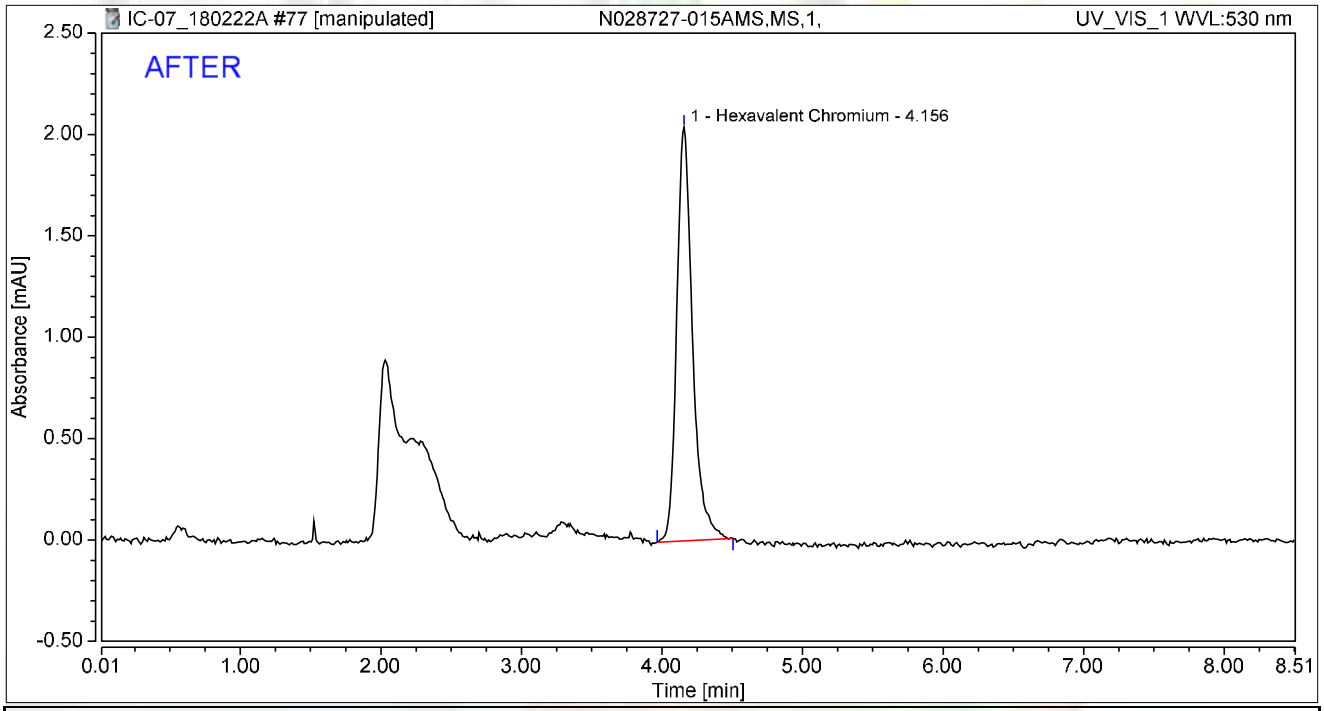
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028727-015AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.265	2.042	100.00	100.00	1.0631
Total:			**0.265**	**2.042**	**100.00**	**100.00**	

rba 3/4/2018

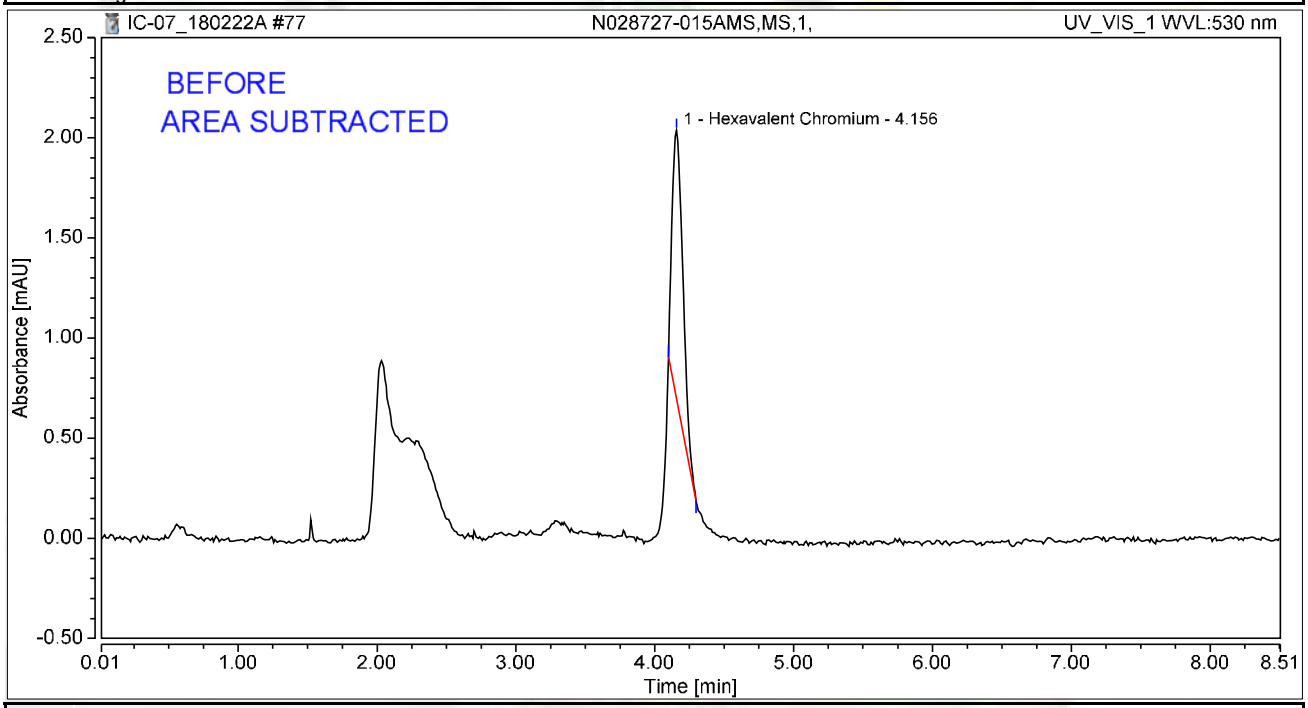
RB 03/06/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028727-015AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.121	1.341	100.00	100.00	0.4845
Total:			**0.121**	**1.341**	**100.00**	**100.00**	

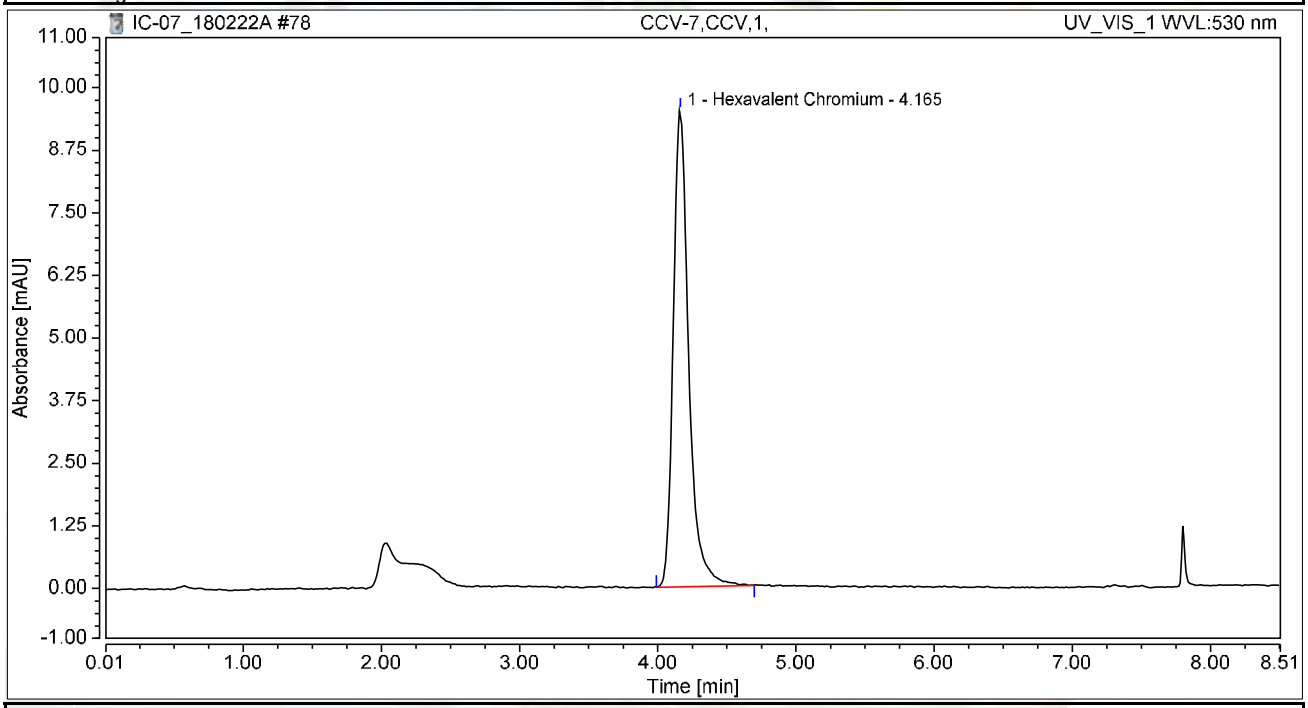
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

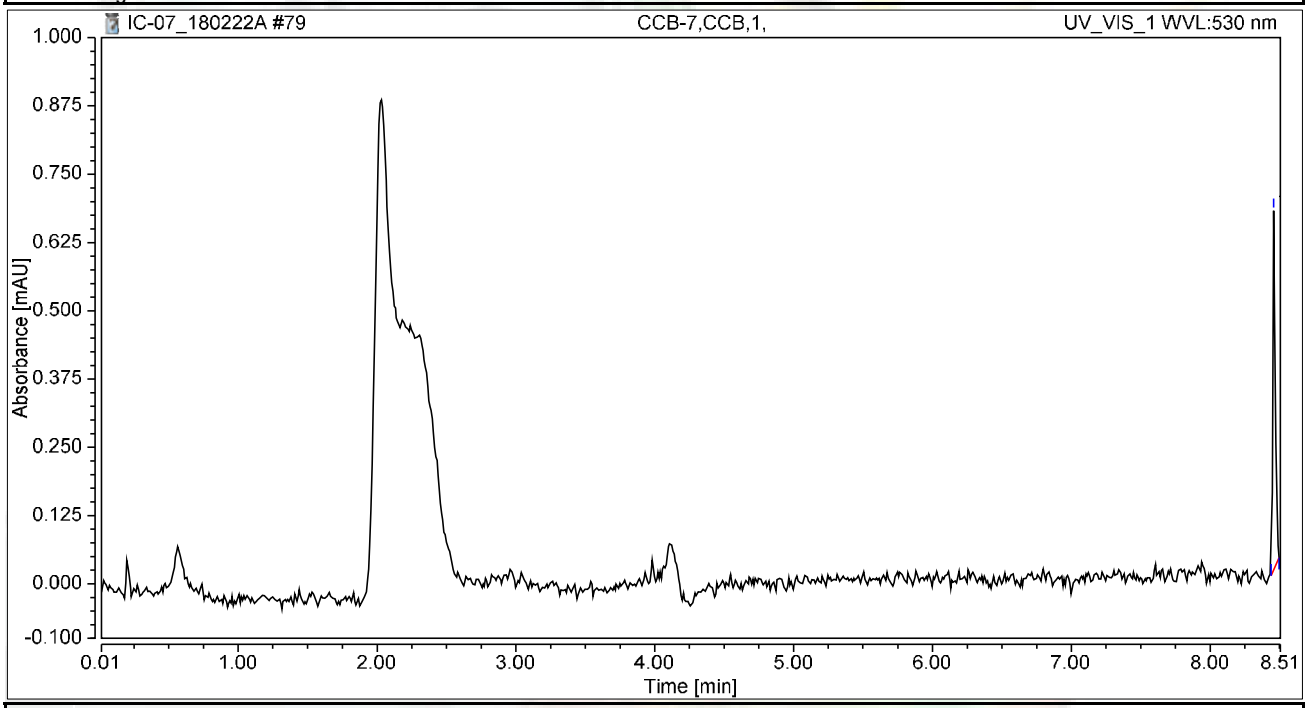
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.234	9.516	100.00	100.00	4.9423
Total:			**1.234**	**9.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**22/Feb/18 20:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.456	0.013	0.659	100.00	100.00	n.a.
Total:			**0.013**	**0.659**	**100.00**	**100.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122394 **Analyst:** QBM

ASSET #: N028727, N028775 **Date Analyzed:** 3/1/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X	~~X~~				
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.		X			X	
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-2 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/6/2018

2nd Level Reviewer RLB 03/06/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122395 **Analyst:** QBM

ASSET #: N028727, N028775 **Date Analyzed:** 3/1/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X	X				
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X	X			X	
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

% recovery of MS/MSD failed, high bias. ~~Posibly~~ Possibly due to matrix interference. However, LCS passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/6/2018

2nd Level Reviewer RB 03/06/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028727-002E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4862	*	1
	=	0.4862	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.49 mg/L

RLB 03/06/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

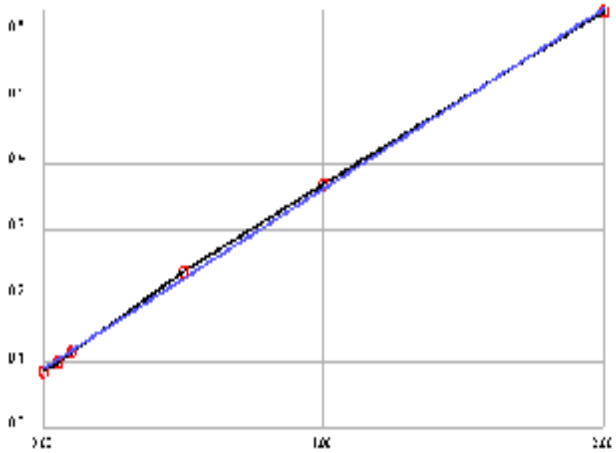
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2728x + 0.0894
Correlation	.999496

Calibrant	Energy	Set	Conc
1	0.0847	0.0000	-0.0171
2	0.0984	0.0500	0.0332
3	0.1146	0.1000	0.0925
4	0.2369	0.5000	0.5408
5	0.3676	1.0000	1.0199
6	0.6297	2.0000	1.9806

Notes:

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

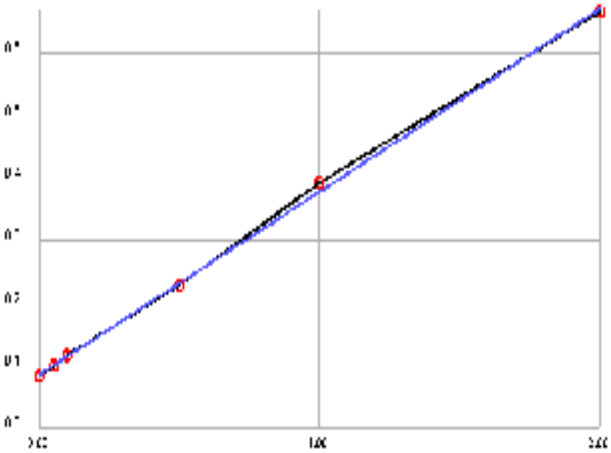
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2931x + 0.0855
Correlation	.999558

Calibrant	Energy	Set	Conc
1	0.0815	0.0000	-0.0135
2	0.0985	0.0500	0.0445
3	0.1155	0.1000	0.1025
4	0.2297	0.5000	0.4922
5	0.3916	1.0000	1.0447
6	0.6656	2.0000	1.9796

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ICV**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **CCV**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ICV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	99.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.455	0.050	0.5000	0	91.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.469	0.050	0.5000	0	93.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ICB**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **CCB**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ICB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.024	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
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Time start: 03-01-2018 14:05
Time end: 03-01-2018 16:53

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	16:14:06	-0.0156		0.0851
2	<BLANK> NOT REPORTED	16:15:05	-0.0167		0.0848
3	<CAL1>	16:16:00	-0.0171	[0]	0.0847
4	<CAL2>	16:16:56	0.0332	[0.05]	0.0984
5	<CAL3>	16:17:57	0.0925	[0.1]	0.1146
6	<CAL4>	16:18:51	0.5408	[0.5]	0.2369
7	<CAL5>	16:19:53	1.0199	[1]	0.3676
8	<CAL6>	16:20:48	1.9806	[2]	0.6297
9	,BLANK,BLANK,1, NOT REPORTED	16:21:42	0.0453		0.1017
10	,ICV,ICV,1,	16:22:44	0.4994		0.2256
11	,ICB,ICB,1,	16:23:40	-0.0090		0.0869
12	,MB-H2O,MBLK,1,	16:24:35	-0.0273		0.0819
13	,LCS-H2O,LCS,1,	16:25:35	0.4884		0.2226
14	,N028727-002E,SAMP,1,	16:26:31	0.4862		0.2220
15	,N028727-003E,SAMP,1,	16:27:26	0.5027		0.2265
16	,N028727-004E,SAMP,1,	16:28:27	0.4675		0.2169
17	,N028727-004EDUP,DUP,1,	16:29:22	0.5056		0.2273
18	,N028775-003C,SAMP,10,	16:30:18	0.5309		0.2342
19	,N028775-003CMS,MS,10,	16:31:14	0.9986		0.3618
20	,N028775-003CMSD,MSD,10,	16:32:14	1.0195		0.3675
21	,BLANK, NOT REPORTED	16:33:09	0.0134		0.0930
22	,CCV-1,CCV,1, NOT REPORTED	16:34:05	0.4752		0.2190
23	,CCB-1,CCB,1, NOT REPORTED	16:35:05	-0.0119		0.0861
24	,N028727-005E,SAMP,1, NOT REPORTED	16:36:00	0.4331		0.2075
25	,N028727-006E,SAMP,1, NOT REPORTED	16:37:02	0.4767		0.2194
26	,N028727-007E,SAMP,1, NOT REPORTED	16:37:44	0.5089		0.2282

RB 03/06/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028727-008E,SAMP,1, NOT REPORTED	16:38:34	0.4404		0.2095
28	,N028727-009E,SAMP,1, NOT REPORTED	16:39:17	0.4389		0.2091
29	,N028727-010E,SAMP,1, NOT REPORTED	16:40:05	0.4202		0.2040
30	,N028727-011E,SAMP,1, NOT REPORTED	16:40:49	0.4323		0.2073
31	,N028727-012E,SAMP,1, NOT REPORTED	16:41:31	0.4653		0.2163
32	,N028727-013E,SAMP,1, NOT REPORTED	16:42:20	0.4250		0.2053
33	,BLANK, NOT REPORTED	16:43:02	-0.0284		0.0816
34	,CCV-2,CCV,1, NOT REPORTED	16:43:46	0.4400		0.2094
35	,CCB-2,CCB,1, NOT REPORTED	16:44:35	-0.0383		0.0789
36	,N028847-003A,SAMP,1, NOT REPORTED	16:45:17	0.6721		0.2727
37	,N028775-001C,SAMP,10, NOT REPORTED	16:46:00	1.1676		0.4079
38	,N028775-002C,SAMP,10, NOT REPORTED	16:46:48	1.1258		0.3965
39	,N028775-004C,SAMP,5, NOT REPORTED	16:47:32	0.6867		0.2767
40	,N028775-005C,SAMP,5, NOT REPORTED	16:48:14	0.6724		0.2728
41	,BLANK, NOT REPORTED	16:49:03	-0.0332		0.0803
42	,CCV-3,CCV,1, NOT REPORTED	16:49:47	0.4540		0.2132
43	,CCV-3,CCV,1, NOT REPORTED	16:50:29	0.5056		0.2273
44	,CCB-3,CCB,1, NOT REPORTED	16:51:18	-0.0383		0.0789

RLB 03/06/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/1/2018
Time Analyzed: 2:02 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028727-002E		7.91							
N028727-003E		6.73							
N028727-004E		7.88							
N028727-005E		7.94							
N028727-006E		8.31							
N028727-007E		7.87							
N028727-008E		7.57							
N028727-009E		7.03							
N028727-010E		7.92							
N028727-011E		8.44							
N028727-012E		7.31							
N028727-013E		8.09							
N028775-001C		8.26							
N028772-002C		8.07							
N028775-003C		7.72							
N028775-004C		7.51							
N028775-005C		8.05							
N028847-003A		8.69							

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Time start: 03-01-2018 17:30
Time end: 03-01-2018 20:08

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	19:31:53	0.1029		0.1156
2	<BLANK> NOT REPORTED	19:32:47	0.0169		0.0904
3	<CAL1>	19:33:48	-0.0135	[0]	0.0815
4	<CAL2>	19:34:43	0.0445	[0.05]	0.0985
5	<CAL3>	19:35:39	0.1025	[0.1]	0.1155
6	<CAL4>	19:36:39	0.4922	[0.5]	0.2297
7	<CAL5>	19:37:34	1.0447	[1]	0.3916
8	<CAL6>	19:38:30	1.9796	[2]	0.6656
9	,BLANK,BLANK,1, NOT REPORTED	19:39:32	0.0496		0.1000
10	,ICV,ICV,1,	19:40:26	0.5110		0.2352
11	,ICB,ICB,1,	19:41:21	0.0148		0.0898
12	,MB-H2O,MBLK,1,	19:42:23	0.0141		0.0896
13	,LCS-H2O,LCS,1,	19:43:17	0.4751		0.2247
14	,N028727-005E,SAMP,1,	19:44:12	0.5065		0.2339
15	,N028727-006E,SAMP,1,	19:45:14	0.4857		0.2278
16	,N028727-007E,SAMP,1,	19:46:10	0.4871		0.2282
17	,N028727-007EDUP,DUP,1,	19:47:04	0.4584		0.2198
18	,N028775-004C,SAMP,5,	19:48:05	0.7375		0.3016
19	,N028775-004CMS,MS,5,	19:49:01	1.4504		0.5105
20	,N028775-004CMSD,MSD,5,	19:49:55	1.3681		0.4864
21	,BLANK, NOT REPORTED	19:50:57	0.0404		0.0973
22	,CCV-1,CCV,1,	19:51:52	0.4953		0.2306
23	,CCB-1,CCB,1,	19:52:40	0.0244		0.0926
24	,N028727-008E,SAMP,1,	19:53:24	0.4625		0.2210
25	,N028727-009E,SAMP,1,	19:54:07	0.5321		0.2414
26	,N028727-010E,SAMP,1,	19:54:55	0.5123		0.2356

RLB 03/06/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028727-011E,SAMP,1,	19:55:38	0.4768		0.2252
28	,N028727-012E,SAMP,1,	19:56:26	0.4850		0.2276
29	,N028727-013E,SAMP,1,	19:57:10	0.4803		0.2262
30	,N028847-003A,SAMP,1,	19:57:52	0.7601		0.3082
31	,N028775-001C,SAMP,10,	19:58:41	1.1979		0.4365
32	,N028775-002C,SAMP,10,	19:59:25	1.1027		0.4086
33	,BLANK, NOT REPORTED	20:00:07	0.0384		0.0967
34	,CCV-2,CCV,1, NOT REPORTED	20:00:56	0.4925		0.2298
35	,CCV-2,CCV,1,	20:01:38	0.4550		0.2188
36	,CCB-2,CCB,1,	20:02:22	0.0012		0.0858
37	,N028775-005C,SAMP,5,	20:03:10	0.6642		0.2801
38	,BLANK, NOT REPORTED	20:03:53	-0.0094		0.0827
39	,CCV-3,CCV,1, NOT REPORTED	20:04:42	0.4611		0.2206
40	,CCV-3,CCV,1,	20:05:24	0.4690		0.2229
41	,CCB-3,CCB,1,	20:06:08	-0.0128		0.0817

RLB 03/06/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/1/2018
Time Analyzed: 5:27 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028727-005E		7.94							
N028727-006E		8.31							
N028727-007E		7.87							
N028727-008E		7.57							
N028727-009E		7.03							
N028727-010E		7.92							
N028727-011E		8.44							
N028727-012E		7.31							
N028727-013E		8.09							
N028775-001C		8.26							
N028775-002C		8.07							
N028775-004C		7.51							
N028775-005C		8.05							
N028847-003A		8.69							

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RB 03/06/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66900
ASSET #: N028727

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[X] EPA 6010B / 200.7 DISS
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/6/18

2nd Level Reviewer 3/6/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028727-005B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.03033 * 1 * (25/25) * 1000

Iron , ug/L = 30.33

Reporting results in two significant figures,

Iron , ug/L = 30

% RSD SUMMARY

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	40.14	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.37	15	PASS
Standard2	ICAL	1	Fe	0.05	0.73	15	PASS
Standard3	ICAL	1	Fe	2	0.74	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	0.063	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	9.97	0.13	15	PASS
ICB	ICB	1	Fe	-0.0007	38.13	15	<PQL
LLICV	CCV1	1	Fe	0.019	1.31	20	PASS
ICSA1	ICSA	1	Fe	162.75	0.094	15	PASS
ICSAB1	ICSAB	1	Fe	179.01	0.49	15	PASS
MB-66900	MBLK	1	Fe	0.00019	281.18	15	<PQL
LCS-66900	LCS	1	Fe	0.11	0.72	15	PASS
N028727-002B	SAMP	1	Fe	0.017	1.23	15	PASS
N028727-002B	SAMP	5	Fe	0.0023	11.99	15	PASS
N028727-002B-PS	PS	1	Fe	0.12	0.19	15	PASS
N028727-002B-MS	MS	1	Fe	0.12	0.89	15	PASS
N028727-002B-MSD	MSD	1	Fe	0.12	0.47	15	PASS
N028727-003B	SAMP	1	Fe	0.013	1.68	15	PASS
N028727-004B	SAMP	1	Fe	0.035	2.12	15	PASS
N028727-005B	SAMP	1	Fe	0.03	0.48	15	PASS
CCV1	CCV	1	Fe	9.94	0.064	15	PASS
CCB1	CCB	1	Fe	-0.00045	67.51	15	<PQL
N028727-006B	SAMP	1	Fe	0.1	0.82	15	PASS
N028727-007B	SAMP	1	Fe	0.034	4.041	15	PASS
N028727-008B	SAMP	1	Fe	0.0077	12.024	15	PASS
N028727-009B	SAMP	1	Fe	0.018	0.92	15	PASS
N028727-010B	SAMP	1	Fe	0.014	6.028	15	PASS
N028727-011B	SAMP	1	Fe	0.02	1.15	15	PASS
N028727-012B	SAMP	1	Fe	0.019	1.57	15	PASS
N028727-013B	SAMP	1	Fe	0.013	0.87	15	PASS
CCV2	CCV	1	Fe	9.93	0.1	15	PASS
CCB2	CCB	1	Fe	-0.00068	6.13	15	PASS
CCV3	CCV	1	Fe	9.94	0.044	15	PASS
CCB3	CCB	1	Fe	-0.00048	181.19	15	<PQL
MB-66927	MBLK	1	Fe	-0.0022	3.3	15	PASS
LCS-66927	LCS	1	Fe	0.1	0.35	15	PASS
N028745-001B	SAMP	1	Fe	0.028	0.84	15	PASS
N028745-001B	SAMP	5	Fe	0.005	2.55	15	PASS
CCV4	CCV	1	Fe	9.92	0.059	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB4	CCB	1	Fe	-0.00054	38.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.78	20	PASS
ICSA2	ICSA	1	Fe	162.75	0.38	15	PASS
ICSAB2	ICSAB	1	Fe	179.03	0.11	15	PASS
N028745-001B-PS	PS	1	Fe	0.13	0.42	15	PASS
N028745-001B-MS	MS	1	Fe	0.12	0.23	15	PASS
N028745-001B-MSD	MSD	1	Fe	0.12	0.53	15	PASS
N028745-002B	SAMP	1	Fe	0.049	1.055	15	PASS
N028745-003B	SAMP	1	Fe	0.028	1.7	15	PASS
N028745-004B	SAMP	1	Fe	0.0051	12.22	15	PASS
N028745-005B	SAMP	1	Fe	0.021	2.2	15	PASS
N028745-006B	SAMP	1	Fe	0.0026	7.89	15	PASS
N028745-007B	SAMP	1	Fe	0.0026	3.74	15	PASS
N028745-008B	SAMP	1	Fe	0.0053	23.074	15	<PQL
CCV5	CCV	1	Fe	10.014	0.083	15	PASS
CCB5	CCB	1	Fe	-0.00096	22.91	15	<PQL
N028745-009B	SAMP	1	Fe	0.0023	11.6	15	PASS
N028745-010B	SAMP	1	Fe	0.016	3.67	15	PASS
N028745-011B	SAMP	1	Fe	0.0038	7.83	15	PASS
N028745-012B	SAMP	1	Fe	0.022	2.15	15	PASS
N028745-014B	SAMP	1	Fe	0.011	6.75	15	PASS
N028745-015B	SAMP	1	Fe	0.0034	8.25	15	PASS
CCV6	CCV	1	Fe	9.96	0.088	15	PASS
CCB6	CCB	1	Fe	-0.0006	41.015	15	<PQL
CCV7	CCV	1	Fe	9.9	0.049	15	PASS
CCB7	CCB	1	Fe	-0.00051	30.17	15	<PQL
N028727-006B	SAMP	1	Fe	-0.0026	35.014	15	<PQL
N028745-002B	SAMP	1	Fe	0.0088	8.17	15	PASS
N028745-012B	SAMP	1	Fe	-0.00065	63.54	15	<PQL
CCV8	CCV	1	Fe	9.87	0.088	15	PASS
CCB8	CCB	1	Fe	-0.00016	387.45	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.26	20	PASS
ICSA3	ICSA	1	Fe	171.47	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	176.97	0.36	15	PASS
CCV9	CCV	1	Fe	9.83	0.16	15	PASS
CCB9	CCB	1	Fe	-0.001	64.011	15	<PQL
CCV10	CCV	1	Fe	9.92	0.078	15	PASS
CCB10	CCB	1	Fe	-0.0013	16.69	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.58	20	PASS
ICSA4	ICSA	1	Fe	172.57	0.3	15	PASS
ICSAB4	ICSAB	1	Fe	177.77	0.14	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/27/2018	08:57:36 AM
2	Standard1	ICAL	1	02/27/2018	09:02:24 AM
3	Standard2	ICAL	1	02/27/2018	09:06:43 AM
11	Standard3	ICAL	1	02/27/2018	09:11:33 AM
12	Standard4	ICAL	1	02/27/2018	09:16:25 AM
6	Standard5	ICAL	1	02/27/2018	09:21:18 AM
7	Standard6	ICAL	1	02/27/2018	09:26:07 AM
8	Standard7	ICAL	1	02/27/2018	09:30:30 AM
9	ICV	ICV	1	02/27/2018	09:34:02 AM
1	ICB	ICB	1	02/27/2018	09:38:27 AM
2	LLICV	CCV1	1	02/27/2018	09:42:46 AM
4	ICSA1	ICSA	1	02/27/2018	09:47:35 AM
5	ICSAB1	ICSAB	1	02/27/2018	09:53:39 AM
38	MB-66900	MBLK	1	02/27/2018	09:59:14 AM
39	LCS-66900	LCS	1	02/27/2018	10:04:04 AM
40	N028727-002B	SAMP	1	02/27/2018	10:08:55 AM
41	N028727-002B	SAMP	5	02/27/2018	10:13:45 AM
42	N028727-002B-PS	PS	1	02/27/2018	10:18:35 AM
43	N028727-002B-MS	MS	1	02/27/2018	10:23:26 AM
44	N028727-002B-MSD	MSD	1	02/27/2018	10:28:17 AM
45	N028727-003B	SAMP	1	02/27/2018	10:33:06 AM
46	N028727-004B	SAMP	1	02/27/2018	10:37:57 AM
47	N028727-005B	SAMP	1	02/27/2018	10:42:48 AM
7	CCV1	CCV	1	02/27/2018	10:47:39 AM
1	CCB1	CCB	1	02/27/2018	10:52:02 AM
48	N028727-006B	SAMP	1	02/27/2018	10:56:50 AM
49	N028727-007B	SAMP	1	02/27/2018	11:01:42 AM
50	N028727-008B	SAMP	1	02/27/2018	11:06:34 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N028727-009B	SAMP	1	02/27/2018	11:11:26 AM
52	N028727-010B	SAMP	1	02/27/2018	11:16:16 AM
53	N028727-011B	SAMP	1	02/27/2018	11:21:08 AM
54	N028727-012B	SAMP	1	02/27/2018	11:26:00 AM
55	N028727-013B	SAMP	1	02/27/2018	11:30:51 AM
56	MB-66899	MBLK	1	02/27/2018	11:35:41 AM
57	LCS-66899	LCS	1	02/27/2018	11:40:32 AM
7	CCV2	CCV	1	02/27/2018	11:45:23 AM
1	CCB2	CCB	1	02/27/2018	11:49:46 AM
58	N028727-002C	SAMP	1	02/27/2018	11:54:35 AM
59	N028727-002C	SAMP	5	02/27/2018	11:59:26 AM
60	N028727-002C-PS	PS	1	02/27/2018	12:04:17 PM
61	N028727-002C-MS	MS	1	02/27/2018	12:09:09 PM
62	N028727-002C-MSD	MSD	1	02/27/2018	12:14:02 PM
63	N028727-003C	SAMP	1	02/27/2018	12:18:54 PM
64	N028727-004C	SAMP	1	02/27/2018	12:23:46 PM
65	N028727-005C	SAMP	1	02/27/2018	12:28:38 PM
66	N028727-006C	SAMP	1	02/27/2018	12:33:30 PM
67	N028727-007C	SAMP	1	02/27/2018	12:38:22 PM
7	CCV3	CCV	1	02/27/2018	12:43:13 PM
1	CCB3	CCB	1	02/27/2018	12:47:36 PM
68	N028727-008C	SAMP	1	02/27/2018	12:52:25 PM
69	N028727-009C	SAMP	1	02/27/2018	12:57:17 PM
70	N028727-010C	SAMP	1	02/27/2018	01:02:07 PM
71	N028727-011C	SAMP	1	02/27/2018	01:06:58 PM
72	N028727-012C	SAMP	1	02/27/2018	01:11:48 PM
73	N028727-013C	SAMP	1	02/27/2018	01:16:40 PM
74	MB-66927	MBLK	1	02/27/2018	01:21:33 PM
75	LCS-66927	LCS	1	02/27/2018	01:26:24 PM
76	N028745-001B	SAMP	1	02/27/2018	01:31:15 PM
77	N028745-001B	SAMP	5	02/27/2018	01:36:06 PM
7	CCV4	CCV	1	02/27/2018	01:40:58 PM
1	CCB4	CCB	1	02/27/2018	01:45:21 PM
2	LLCCV1	CCV2	1	02/27/2018	01:50:10 PM
4	ICSA2	ICSA	1	02/27/2018	01:54:59 PM
5	ICSAB2	ICSAB	1	02/27/2018	02:01:03 PM
78	N028745-001B-PS	PS	1	02/27/2018	02:06:39 PM
79	N028745-001B-MS	MS	1	02/27/2018	02:11:30 PM
80	N028745-001B-MSD	MSD	1	02/27/2018	02:16:22 PM
81	N028745-002B	SAMP	1	02/27/2018	02:21:14 PM
82	N028745-003B	SAMP	1	02/27/2018	02:26:06 PM
83	N028745-004B	SAMP	1	02/27/2018	02:30:59 PM
84	N028745-005B	SAMP	1	02/27/2018	02:35:51 PM
85	N028745-006B	SAMP	1	02/27/2018	02:40:43 PM
86	N028745-007B	SAMP	1	02/27/2018	02:45:35 PM
87	N028745-008B	SAMP	1	02/27/2018	02:50:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/27/2018	02:55:19 PM
1	CCB5	CCB	1	02/27/2018	03:00:43 PM
88	N028745-009B	SAMP	1	02/27/2018	03:05:32 PM
89	N028745-010B	SAMP	1	02/27/2018	03:10:24 PM
90	N028745-011B	SAMP	1	02/27/2018	03:15:16 PM
91	N028745-012B	SAMP	1	02/27/2018	03:20:09 PM
92	N028745-014B	SAMP	1	02/27/2018	03:25:01 PM
93	N028745-015B	SAMP	1	02/27/2018	03:29:53 PM
94	MB-66926	MBLK	1	02/27/2018	03:34:45 PM
95	LCS-66926	LCS	1	02/27/2018	03:39:37 PM
96	N028745-001C	SAMP	1	02/27/2018	03:44:29 PM
97	N028745-001C	SAMP	5	02/27/2018	03:49:22 PM
7	CCV6	CCV	1	02/27/2018	03:54:13 PM
1	CCB6	CCB	1	02/27/2018	03:58:36 PM
98	N028745-001C-PS	PS	1	02/27/2018	04:03:24 PM
99	N028745-001C-MS	MS	1	02/27/2018	04:08:17 PM
100	N028745-001C-MSD	MSD	1	02/27/2018	04:13:11 PM
101	N028745-002C	SAMP	1	02/27/2018	04:18:04 PM
102	N028745-003C	SAMP	1	02/27/2018	04:22:57 PM
103	N028745-004C	SAMP	1	02/27/2018	04:27:48 PM
104	N028745-005C	SAMP	1	02/27/2018	04:32:41 PM
105	N028745-006C	SAMP	1	02/27/2018	04:37:34 PM
106	N028745-007C	SAMP	1	02/27/2018	04:42:25 PM
107	N028745-008C	SAMP	1	02/27/2018	04:47:17 PM
7	CCV7	CCV	1	02/27/2018	04:52:11 PM
1	CCB7	CCB	1	02/27/2018	04:56:34 PM
108	N028745-009C	SAMP	1	02/27/2018	05:01:23 PM
109	N028745-010C	SAMP	1	02/27/2018	05:06:15 PM
110	N028745-011C	SAMP	1	02/27/2018	05:11:09 PM
111	N028745-012C	SAMP	1	02/27/2018	05:16:02 PM
112	N028745-014C	SAMP	1	02/27/2018	05:20:54 PM
113	N028745-015C	SAMP	1	02/27/2018	05:25:48 PM
114	N028727-006B	SAMP	1	02/27/2018	05:30:40 PM
115	N028745-002B	SAMP	1	02/27/2018	05:35:34 PM
116	N028745-012B	SAMP	1	02/27/2018	05:41:13 PM
117	MB-66928	MBLK	1	02/27/2018	05:46:04 PM
7	CCV8	CCV	1	02/27/2018	05:50:56 PM
1	CCB8	CCB	1	02/27/2018	05:55:19 PM
2	LLCCV2	CCV2	1	02/27/2018	06:00:08 PM
4	ICSA3	ICSA	1	02/27/2018	06:04:58 PM
5	ICSAB3	ICSAB	1	02/27/2018	06:11:01 PM
118	LCS1-66928	LCS	1	02/27/2018	06:16:36 PM
119	N028744-003B	SAMP	1	02/27/2018	06:21:29 PM
120	N028744-003B	SAMP	5	02/27/2018	06:26:53 PM
121	N028744-003B-PS	PS	1	02/27/2018	06:32:47 PM
122	N028744-003B-MS1	MS	1	02/27/2018	06:38:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
123	N028744-003B-MSD1	MSD	1	02/27/2018	06:43:41 PM
124	N028744-004B	SAMP	1	02/27/2018	06:49:07 PM
125	N028744-005B	SAMP	1	02/27/2018	06:57:52 PM
126	N028775-001B	SAMP	1	02/27/2018	07:03:48 PM
127	N028775-002B	SAMP	1	02/27/2018	07:09:41 PM
7	CCV9	CCV	1	02/27/2018	07:15:35 PM
1	CCB9	CCB	1	02/27/2018	07:19:59 PM
128	N028775-003B	SAMP	1	02/27/2018	07:24:48 PM
129	N028744-005B	SAMP	5	02/27/2018	07:30:41 PM
7	CCV10	CCV	1	02/27/2018	07:36:34 PM
1	CCB10	CCB	1	02/27/2018	07:40:57 PM
2	LLCCV3	CCV2	1	02/27/2018	07:45:48 PM
4	ICSA4	ICSA	1	02/27/2018	07:50:36 PM
5	ICSAB4	ICSAB	1	02/27/2018	07:56:39 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 7:40:07**
Prep End Date: **2/23/2018 1:00:00**

Reviewed/ Date: 3/6/2018

Initials/ Date: for

Prep Batch **66900** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66900	Aqueous		25	☐	0	0	25	1.000		
MB-66900	Aqueous		25	☐	0	0	25	1.000		
N028727-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9615	HYDROCHLORIC ACID
9652	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 7:40:07**
Prep End Date: **2/23/2018 1:00:00**

Reviewed/ Date: 3/6/2018

Initials/ Date: for

Prep Batch **66900** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028727-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9615	HYDROCHLORIC ACID
9652	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/27/2018	08:57:36 AM	Fe	273.953	-80	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Fe	273.953	597	0.0200	mg/L	
Standard2	02/27/2018	09:06:43 AM	Fe	273.953	2118	0.050	mg/L	
Standard3	02/27/2018	09:11:33 AM	Fe	273.953	65679	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Fe	273.953	173274	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Fe	273.953	259204	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Fe	273.953	329436	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Fe	273.953	654360	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9971.133	20	10000	0	99.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.964	20	20.00	0	94.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9936.606	20	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9928.011	20	10000	0	99.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9940.119	20	10000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9918.304	20	10000	0	99.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.135	20	20.00	0	95.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10013.653	20	10000	0	100	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9954.995	20	10000	0	99.5	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9900.900	20	10000	0	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9867.311	20	10000	0	98.7	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.571	20	20.00	0	92.9	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.696386	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.447249	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.680748	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.479551	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.538583	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.964491	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.596397	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.505015	20									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.163844	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSA** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457594.887	50	500000	0	91.5	80	120				
Calcium	462616.028	500	500000	0	92.5	80	120				
Iron	162752.851	20	200000	0	81.4	80	120				
Magnesium	441828.543	100	500000	0	88.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSAB** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519567.949	50	500000	0	104	80	120				
Calcium	523203.344	500	500000	0	105	80	120				
Iron	179011.510	20	200000	0	89.5	80	120				
Magnesium	505392.169	100	500000	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSA** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	458954.094	50	500000	0	91.8	80	120				
Calcium	464043.458	500	500000	0	92.8	80	120				
Iron	162754.153	20	200000	0	81.4	80	120				
Magnesium	441622.966	100	500000	0	88.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSAB** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521810.062	50	500000	0	104	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICSAB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	524936.053	500	500000	0	105	80	120				
Iron	179026.484	20	200000	0	89.5	80	120				
Magnesium	503783.430	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICSA**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	480725.792	50	500000	0	96.1	80	120				
Calcium	493793.882	500	500000	0	98.8	80	120				
Iron	171468.486	20	200000	0	85.7	80	120				
Magnesium	466463.577	100	500000	0	93.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICSAB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516193.347	50	500000	0	103	80	120				
Calcium	524006.828	500	500000	0	105	80	120				
Iron	176968.700	20	200000	0	88.5	80	120				
Magnesium	494006.955	100	500000	0	98.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1.046	104.64	65-125	PASS
Standard3	ICAL	1	1.012	101.25	65-125	PASS
Standard4	ICAL	1	1.0039	100.39	65-125	PASS
Standard5	ICAL	1	1.054	105.45	65-125	PASS
Standard6	ICAL	1	0.98	97.97	65-125	PASS
Standard7	ICAL	1	0.96	95.72	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	1	99.66	65-125	PASS
LLICV	CCV1	1	1	99.72	65-125	PASS
ICSA1	ICSA	1	1.14	113.65	65-125	PASS
ICSAB1	ICSAB	1	0.91	90.94	65-125	PASS
MB-66900	MBLK	1	1	99.52	65-125	PASS
LCS-66900	LCS	1	0.92	92.14	65-125	PASS
N028727-002B	SAMP	1	1.0076	100.76	65-125	PASS
N028727-002B	SAMP	5	1	99.51	65-125	PASS
N028727-002B-PS	PS	1	1.0043	100.43	65-125	PASS
N028727-002B-MS	MS	1	0.99	98.95	65-125	PASS
N028727-002B-MSD	MSD	1	0.99	98.82	65-125	PASS
N028727-003B	SAMP	1	0.99	98.62	65-125	PASS
N028727-004B	SAMP	1	1.0067	100.67	65-125	PASS
N028727-005B	SAMP	1	1.026	102.58	65-125	PASS
CCV1	CCV	1	0.99	99.22	65-125	PASS
CCB1	CCB	1	1.0052	100.52	65-125	PASS
N028727-006B	SAMP	1	1.028	102.84	65-125	PASS
N028727-007B	SAMP	1	1.026	102.65	65-125	PASS
N028727-008B	SAMP	1	1	99.85	65-125	PASS
N028727-009B	SAMP	1	1.005	100.5	65-125	PASS
N028727-010B	SAMP	1	0.98	98.44	65-125	PASS
N028727-011B	SAMP	1	1.02	102.01	65-125	PASS
N028727-012B	SAMP	1	1	99.97	65-125	PASS
N028727-013B	SAMP	1	0.99	98.97	65-125	PASS
CCV2	CCV	1	0.99	99.42	65-125	PASS
CCB2	CCB	1	1.0041	100.41	65-125	PASS
CCV3	CCV	1	1.0011	100.11	65-125	PASS
CCB3	CCB	1	1.013	101.34	65-125	PASS
MB-66927	MBLK	1	1.015	101.51	65-125	PASS
LCS-66927	LCS	1	0.93	93.22	65-125	PASS
N028745-001B	SAMP	1	1.11	111.11	65-125	PASS
N028745-001B	SAMP	5	1.024	102.41	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV4	CCV	1	1	99.86	65-125	PASS
CCB4	CCB	1	1.016	101.63	65-125	PASS
LLCCV1	CCV2	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.16	115.86	65-125	PASS
ICSAB2	ICSAB	1	0.92	92.44	65-125	PASS
N028745-001B-PS	PS	1	1.029	102.89	65-125	PASS
N028745-001B-MS	MS	1	1.11	111.36	65-125	PASS
N028745-001B-MSD	MSD	1	1.11	111.1	65-125	PASS
N028745-002B	SAMP	1	1.015	101.46	65-125	PASS
N028745-003B	SAMP	1	1.043	104.33	65-125	PASS
N028745-004B	SAMP	1	1.019	101.91	65-125	PASS
N028745-005B	SAMP	1	1.02	101.99	65-125	PASS
N028745-006B	SAMP	1	1.041	104.09	65-125	PASS
N028745-007B	SAMP	1	1	99.74	65-125	PASS
N028745-008B	SAMP	1	1	99.86	65-125	PASS
CCV5	CCV	1	1.0057	100.57	65-125	PASS
CCB5	CCB	1	1.018	101.79	65-125	PASS
N028745-009B	SAMP	1	0.99	98.73	65-125	PASS
N028745-010B	SAMP	1	1.016	101.65	65-125	PASS
N028745-011B	SAMP	1	1.015	101.52	65-125	PASS
N028745-012B	SAMP	1	1.0047	100.47	65-125	PASS
N028745-014B	SAMP	1	1	99.96	65-125	PASS
N028745-015B	SAMP	1	1.027	102.74	65-125	PASS
CCV6	CCV	1	1.0016	100.16	65-125	PASS
CCB6	CCB	1	1.021	102.06	65-125	PASS
CCV7	CCV	1	1.012	101.23	65-125	PASS
CCB7	CCB	1	1.028	102.75	65-125	PASS
N028727-006B	SAMP	1	0.99	98.99	65-125	PASS
N028745-002B	SAMP	1	0.96	96	65-125	PASS
N028745-012B	SAMP	1	1.0051	100.51	65-125	PASS
CCV8	CCV	1	1.002	100.2	65-125	PASS
CCB8	CCB	1	1.02	101.96	65-125	PASS
LLCCV2	CCV2	1	1.015	101.5	65-125	PASS
ICSA3	ICSA	1	0.95	95.32	65-125	PASS
ICSAB3	ICSAB	1	0.89	88.66	65-125	PASS
CCV9	CCV	1	1	99.78	65-125	PASS
CCB9	CCB	1	1.0016	100.16	65-125	PASS
CCV10	CCV	1	1	99.95	65-125	PASS
CCB10	CCB	1	1.0006	100.06	65-125	PASS
LLCCV3	CCV2	1	1.016	101.59	65-125	PASS
ICSA4	ICSA	1	0.95	95.044	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB4	ICSAB	1	0.89	88.55	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028727
Test Method: EPA 6010B
Analysis Date: 2/27/2018

Matrix: Groundwater
Batch No.: 66900

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028727-002B DT 5X	Iron	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N028727-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID:	**ZZZZZZ**	Batch ID: **66900**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.432	20	100.0	0	120	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66899
ASSET #: N028727

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/6/18

2nd Level Reviewer 3/6/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028727-002C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.03771 * 1 * (25/25) * 1000

Iron , ug/L = 37.71

Reporting results in two significant figures,

Iron , ug/L = 38

% RSD SUMMARY

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	40.14	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.37	15	PASS
Standard2	ICAL	1	Fe	0.05	0.73	15	PASS
Standard3	ICAL	1	Fe	2	0.74	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	0.063	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	9.97	0.13	15	PASS
ICB	ICB	1	Fe	-0.0007	38.13	15	<PQL
LLICV	CCV1	1	Fe	0.019	1.31	20	PASS
ICSA1	ICSA	1	Fe	162.75	0.094	15	PASS
ICSAB1	ICSAB	1	Fe	179.01	0.49	15	PASS
CCV1	CCV	1	Fe	9.94	0.064	15	PASS
CCB1	CCB	1	Fe	-0.00045	67.51	15	<PQL
MB-66899	MBLK	1	Fe	-0.002	19.88	15	<PQL
LCS-66899	LCS	1	Fe	0.1	0.26	15	PASS
CCV2	CCV	1	Fe	9.93	0.1	15	PASS
CCB2	CCB	1	Fe	-0.00068	6.13	15	PASS
N028727-002C	SAMP	1	Fe	0.038	1.069	15	PASS
N028727-002C	SAMP	5	Fe	0.0065	3.54	15	PASS
N028727-002C-PS	PS	1	Fe	0.18	0.4	15	PASS
N028727-002C-MS	MS	1	Fe	0.13	0.56	15	PASS
N028727-002C-MSD	MSD	1	Fe	0.13	0.37	15	PASS
N028727-003C	SAMP	1	Fe	0.029	0.82	15	PASS
N028727-004C	SAMP	1	Fe	0.037	0.88	15	PASS
N028727-005C	SAMP	1	Fe	0.055	0.7	15	PASS
N028727-006C	SAMP	1	Fe	0.051	0.35	15	PASS
N028727-007C	SAMP	1	Fe	0.043	2.1	15	PASS
CCV3	CCV	1	Fe	9.94	0.044	15	PASS
CCB3	CCB	1	Fe	-0.00048	181.19	15	<PQL
N028727-008C	SAMP	1	Fe	0.05	1.25	15	PASS
N028727-009C	SAMP	1	Fe	0.083	0.37	15	PASS
N028727-010C	SAMP	1	Fe	0.043	0.52	15	PASS
N028727-011C	SAMP	1	Fe	0.058	0.77	15	PASS
N028727-012C	SAMP	1	Fe	0.036	1.6	15	PASS
N028727-013C	SAMP	1	Fe	0.064	0.72	15	PASS
CCV4	CCV	1	Fe	9.92	0.059	15	PASS
CCB4	CCB	1	Fe	-0.00054	38.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.78	20	PASS
ICSA2	ICSA	1	Fe	162.75	0.38	15	PASS
ICSAB2	ICSAB	1	Fe	179.03	0.11	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.014	0.083	15	PASS
CCB5	CCB	1	Fe	-0.00096	22.91	15	<PQL
MB-66926	MBLK	1	Fe	-0.0018	10.75	15	PASS
LCS-66926	LCS	1	Fe	0.1	0.48	15	PASS
N028745-001C	SAMP	1	Fe	0.033	1.08	15	PASS
N028745-001C	SAMP	5	Fe	0.0046	10.78	15	PASS
CCV6	CCV	1	Fe	9.96	0.088	15	PASS
CCB6	CCB	1	Fe	-0.0006	41.015	15	<PQL
N028745-001C-PS	PS	1	Fe	0.13	0.71	15	PASS
N028745-001C-MS	MS	1	Fe	0.14	0.07	15	PASS
N028745-001C-MSD	MSD	1	Fe	0.14	0.49	15	PASS
N028745-002C	SAMP	1	Fe	0.041	1.41	15	PASS
N028745-003C	SAMP	1	Fe	0.045	1.43	15	PASS
N028745-004C	SAMP	1	Fe	0.023	0.63	15	PASS
N028745-005C	SAMP	1	Fe	0.041	1.52	15	PASS
N028745-006C	SAMP	1	Fe	0.024	0.95	15	PASS
N028745-007C	SAMP	1	Fe	0.02	0.73	15	PASS
N028745-008C	SAMP	1	Fe	0.026	2.1	15	PASS
CCV7	CCV	1	Fe	9.9	0.049	15	PASS
CCB7	CCB	1	Fe	-0.00051	30.17	15	<PQL
N028745-009C	SAMP	1	Fe	0.023	1.59	15	PASS
N028745-010C	SAMP	1	Fe	0.024	3.21	15	PASS
N028745-011C	SAMP	1	Fe	0.048	1.77	15	PASS
N028745-012C	SAMP	1	Fe	0.02	2.24	15	PASS
N028745-014C	SAMP	1	Fe	0.019	2.93	15	PASS
N028745-015C	SAMP	1	Fe	0.027	1.23	15	PASS
N028727-006B	SAMP	1	Fe	-0.0026	35.014	15	<PQL
N028745-002B	SAMP	1	Fe	0.0088	8.17	15	PASS
N028745-012B	SAMP	1	Fe	-0.00065	63.54	15	<PQL
CCV8	CCV	1	Fe	9.87	0.088	15	PASS
CCB8	CCB	1	Fe	-0.00016	387.45	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.26	20	PASS
ICSA3	ICSA	1	Fe	171.47	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	176.97	0.36	15	PASS
CCV9	CCV	1	Fe	9.83	0.16	15	PASS
CCB9	CCB	1	Fe	-0.001	64.011	15	<PQL
CCV10	CCV	1	Fe	9.92	0.078	15	PASS
CCB10	CCB	1	Fe	-0.0013	16.69	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.58	20	PASS
ICSA4	ICSA	1	Fe	172.57	0.3	15	PASS
ICSAB4	ICSAB	1	Fe	177.77	0.14	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/27/2018	08:57:36 AM
2	Standard1	ICAL	1	02/27/2018	09:02:24 AM
3	Standard2	ICAL	1	02/27/2018	09:06:43 AM
11	Standard3	ICAL	1	02/27/2018	09:11:33 AM
12	Standard4	ICAL	1	02/27/2018	09:16:25 AM
6	Standard5	ICAL	1	02/27/2018	09:21:18 AM
7	Standard6	ICAL	1	02/27/2018	09:26:07 AM
8	Standard7	ICAL	1	02/27/2018	09:30:30 AM
9	ICV	ICV	1	02/27/2018	09:34:02 AM
1	ICB	ICB	1	02/27/2018	09:38:27 AM
2	LLICV	CCV1	1	02/27/2018	09:42:46 AM
4	ICSA1	ICSA	1	02/27/2018	09:47:35 AM
5	ICSAB1	ICSAB	1	02/27/2018	09:53:39 AM
38	MB-66900	MBLK	1	02/27/2018	09:59:14 AM
39	LCS-66900	LCS	1	02/27/2018	10:04:04 AM
40	N028727-002B	SAMP	1	02/27/2018	10:08:55 AM
41	N028727-002B	SAMP	5	02/27/2018	10:13:45 AM
42	N028727-002B-PS	PS	1	02/27/2018	10:18:35 AM
43	N028727-002B-MS	MS	1	02/27/2018	10:23:26 AM
44	N028727-002B-MSD	MSD	1	02/27/2018	10:28:17 AM
45	N028727-003B	SAMP	1	02/27/2018	10:33:06 AM
46	N028727-004B	SAMP	1	02/27/2018	10:37:57 AM
47	N028727-005B	SAMP	1	02/27/2018	10:42:48 AM
7	CCV1	CCV	1	02/27/2018	10:47:39 AM
1	CCB1	CCB	1	02/27/2018	10:52:02 AM
48	N028727-006B	SAMP	1	02/27/2018	10:56:50 AM
49	N028727-007B	SAMP	1	02/27/2018	11:01:42 AM
50	N028727-008B	SAMP	1	02/27/2018	11:06:34 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N028727-009B	SAMP	1	02/27/2018	11:11:26 AM
52	N028727-010B	SAMP	1	02/27/2018	11:16:16 AM
53	N028727-011B	SAMP	1	02/27/2018	11:21:08 AM
54	N028727-012B	SAMP	1	02/27/2018	11:26:00 AM
55	N028727-013B	SAMP	1	02/27/2018	11:30:51 AM
56	MB-66899	MBLK	1	02/27/2018	11:35:41 AM
57	LCS-66899	LCS	1	02/27/2018	11:40:32 AM
7	CCV2	CCV	1	02/27/2018	11:45:23 AM
1	CCB2	CCB	1	02/27/2018	11:49:46 AM
58	N028727-002C	SAMP	1	02/27/2018	11:54:35 AM
59	N028727-002C	SAMP	5	02/27/2018	11:59:26 AM
60	N028727-002C-PS	PS	1	02/27/2018	12:04:17 PM
61	N028727-002C-MS	MS	1	02/27/2018	12:09:09 PM
62	N028727-002C-MSD	MSD	1	02/27/2018	12:14:02 PM
63	N028727-003C	SAMP	1	02/27/2018	12:18:54 PM
64	N028727-004C	SAMP	1	02/27/2018	12:23:46 PM
65	N028727-005C	SAMP	1	02/27/2018	12:28:38 PM
66	N028727-006C	SAMP	1	02/27/2018	12:33:30 PM
67	N028727-007C	SAMP	1	02/27/2018	12:38:22 PM
7	CCV3	CCV	1	02/27/2018	12:43:13 PM
1	CCB3	CCB	1	02/27/2018	12:47:36 PM
68	N028727-008C	SAMP	1	02/27/2018	12:52:25 PM
69	N028727-009C	SAMP	1	02/27/2018	12:57:17 PM
70	N028727-010C	SAMP	1	02/27/2018	01:02:07 PM
71	N028727-011C	SAMP	1	02/27/2018	01:06:58 PM
72	N028727-012C	SAMP	1	02/27/2018	01:11:48 PM
73	N028727-013C	SAMP	1	02/27/2018	01:16:40 PM
74	MB-66927	MBLK	1	02/27/2018	01:21:33 PM
75	LCS-66927	LCS	1	02/27/2018	01:26:24 PM
76	N028745-001B	SAMP	1	02/27/2018	01:31:15 PM
77	N028745-001B	SAMP	5	02/27/2018	01:36:06 PM
7	CCV4	CCV	1	02/27/2018	01:40:58 PM
1	CCB4	CCB	1	02/27/2018	01:45:21 PM
2	LLCCV1	CCV2	1	02/27/2018	01:50:10 PM
4	ICSA2	ICSA	1	02/27/2018	01:54:59 PM
5	ICSAB2	ICSAB	1	02/27/2018	02:01:03 PM
78	N028745-001B-PS	PS	1	02/27/2018	02:06:39 PM
79	N028745-001B-MS	MS	1	02/27/2018	02:11:30 PM
80	N028745-001B-MSD	MSD	1	02/27/2018	02:16:22 PM
81	N028745-002B	SAMP	1	02/27/2018	02:21:14 PM
82	N028745-003B	SAMP	1	02/27/2018	02:26:06 PM
83	N028745-004B	SAMP	1	02/27/2018	02:30:59 PM
84	N028745-005B	SAMP	1	02/27/2018	02:35:51 PM
85	N028745-006B	SAMP	1	02/27/2018	02:40:43 PM
86	N028745-007B	SAMP	1	02/27/2018	02:45:35 PM
87	N028745-008B	SAMP	1	02/27/2018	02:50:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/27/2018	02:55:19 PM
1	CCB5	CCB	1	02/27/2018	03:00:43 PM
88	N028745-009B	SAMP	1	02/27/2018	03:05:32 PM
89	N028745-010B	SAMP	1	02/27/2018	03:10:24 PM
90	N028745-011B	SAMP	1	02/27/2018	03:15:16 PM
91	N028745-012B	SAMP	1	02/27/2018	03:20:09 PM
92	N028745-014B	SAMP	1	02/27/2018	03:25:01 PM
93	N028745-015B	SAMP	1	02/27/2018	03:29:53 PM
94	MB-66926	MBLK	1	02/27/2018	03:34:45 PM
95	LCS-66926	LCS	1	02/27/2018	03:39:37 PM
96	N028745-001C	SAMP	1	02/27/2018	03:44:29 PM
97	N028745-001C	SAMP	5	02/27/2018	03:49:22 PM
7	CCV6	CCV	1	02/27/2018	03:54:13 PM
1	CCB6	CCB	1	02/27/2018	03:58:36 PM
98	N028745-001C-PS	PS	1	02/27/2018	04:03:24 PM
99	N028745-001C-MS	MS	1	02/27/2018	04:08:17 PM
100	N028745-001C-MSD	MSD	1	02/27/2018	04:13:11 PM
101	N028745-002C	SAMP	1	02/27/2018	04:18:04 PM
102	N028745-003C	SAMP	1	02/27/2018	04:22:57 PM
103	N028745-004C	SAMP	1	02/27/2018	04:27:48 PM
104	N028745-005C	SAMP	1	02/27/2018	04:32:41 PM
105	N028745-006C	SAMP	1	02/27/2018	04:37:34 PM
106	N028745-007C	SAMP	1	02/27/2018	04:42:25 PM
107	N028745-008C	SAMP	1	02/27/2018	04:47:17 PM
7	CCV7	CCV	1	02/27/2018	04:52:11 PM
1	CCB7	CCB	1	02/27/2018	04:56:34 PM
108	N028745-009C	SAMP	1	02/27/2018	05:01:23 PM
109	N028745-010C	SAMP	1	02/27/2018	05:06:15 PM
110	N028745-011C	SAMP	1	02/27/2018	05:11:09 PM
111	N028745-012C	SAMP	1	02/27/2018	05:16:02 PM
112	N028745-014C	SAMP	1	02/27/2018	05:20:54 PM
113	N028745-015C	SAMP	1	02/27/2018	05:25:48 PM
114	N028727-006B	SAMP	1	02/27/2018	05:30:40 PM
115	N028745-002B	SAMP	1	02/27/2018	05:35:34 PM
116	N028745-012B	SAMP	1	02/27/2018	05:41:13 PM
117	MB-66928	MBLK	1	02/27/2018	05:46:04 PM
7	CCV8	CCV	1	02/27/2018	05:50:56 PM
1	CCB8	CCB	1	02/27/2018	05:55:19 PM
2	LLCCV2	CCV2	1	02/27/2018	06:00:08 PM
4	ICSA3	ICSA	1	02/27/2018	06:04:58 PM
5	ICSAB3	ICSAB	1	02/27/2018	06:11:01 PM
118	LCS1-66928	LCS	1	02/27/2018	06:16:36 PM
119	N028744-003B	SAMP	1	02/27/2018	06:21:29 PM
120	N028744-003B	SAMP	5	02/27/2018	06:26:53 PM
121	N028744-003B-PS	PS	1	02/27/2018	06:32:47 PM
122	N028744-003B-MS1	MS	1	02/27/2018	06:38:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
123	N028744-003B-MSD1	MSD	1	02/27/2018	06:43:41 PM
124	N028744-004B	SAMP	1	02/27/2018	06:49:07 PM
125	N028744-005B	SAMP	1	02/27/2018	06:57:52 PM
126	N028775-001B	SAMP	1	02/27/2018	07:03:48 PM
127	N028775-002B	SAMP	1	02/27/2018	07:09:41 PM
7	CCV9	CCV	1	02/27/2018	07:15:35 PM
1	CCB9	CCB	1	02/27/2018	07:19:59 PM
128	N028775-003B	SAMP	1	02/27/2018	07:24:48 PM
129	N028744-005B	SAMP	5	02/27/2018	07:30:41 PM
7	CCV10	CCV	1	02/27/2018	07:36:34 PM
1	CCB10	CCB	1	02/27/2018	07:40:57 PM
2	LLCCV3	CCV2	1	02/27/2018	07:45:48 PM
4	ICSA4	ICSA	1	02/27/2018	07:50:36 PM
5	ICSAB4	ICSAB	1	02/27/2018	07:56:39 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 7:39:26 A**
Prep End Date: **2/23/2018 1:00:00 P**
Prep Batch **66899** Prep Code: **3010_W**

Reviewed/ Date: 3/6/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66899	Aqueous		25	☐	0	0	25	1.000		
MB-66899	Aqueous		25	☐	0	0	25	1.000		
N028727-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9615	HYDROCHLORIC ACID
9652	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 7:39:26 A**
Prep End Date: **2/23/2018 1:00:00 P**
Prep Batch **66899** Prep Code: **3010_W**

Reviewed/ Date: 3/6/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028727-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9615	HYDROCHLORIC ACID
9652	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/27/2018	08:57:36 AM	Fe	273.953	-80	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Fe	273.953	597	0.0200	mg/L	
Standard2	02/27/2018	09:06:43 AM	Fe	273.953	2118	0.050	mg/L	
Standard3	02/27/2018	09:11:33 AM	Fe	273.953	65679	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Fe	273.953	173274	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Fe	273.953	259204	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Fe	273.953	329436	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Fe	273.953	654360	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9971.133	20	10000	0	99.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ZZZZZZ**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.964	20	20.00	0	94.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9936.606	20	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9928.011	20	10000	0	99.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9940.119	20	10000	0	99.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9918.304	20	10000	0	99.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ZZZZZZ**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.135	20	20.00	0	95.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10013.653	20	10000	0	100	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9954.995	20	10000	0	99.5	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9900.900	20	10000	0	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9867.311	20	10000	0	98.7	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ZZZZZZ**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.571	20	20.00	0	92.9	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.696386	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.447249	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.680748	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.479551	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.538583	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.964491	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.596397	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.505015	20									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.163844	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSA** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457594.887	50	500000	0	91.5	80	120				
Calcium	462616.028	500	500000	0	92.5	80	120				
Iron	162752.851	20	200000	0	81.4	80	120				
Magnesium	441828.543	100	500000	0	88.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSAB** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519567.949	50	500000	0	104	80	120				
Calcium	523203.344	500	500000	0	105	80	120				
Iron	179011.510	20	200000	0	89.5	80	120				
Magnesium	505392.169	100	500000	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSA** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	458954.094	50	500000	0	91.8	80	120				
Calcium	464043.458	500	500000	0	92.8	80	120				
Iron	162754.153	20	200000	0	81.4	80	120				
Magnesium	441622.966	100	500000	0	88.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSAB** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521810.062	50	500000	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICSAB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	524936.053	500	500000	0	105	80	120				
Iron	179026.484	20	200000	0	89.5	80	120				
Magnesium	503783.430	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICSA**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	480725.792	50	500000	0	96.1	80	120				
Calcium	493793.882	500	500000	0	98.8	80	120				
Iron	171468.486	20	200000	0	85.7	80	120				
Magnesium	466463.577	100	500000	0	93.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICSAB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516193.347	50	500000	0	103	80	120				
Calcium	524006.828	500	500000	0	105	80	120				
Iron	176968.700	20	200000	0	88.5	80	120				
Magnesium	494006.955	100	500000	0	98.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1.046	104.64	65-125	PASS
Standard3	ICAL	1	1.012	101.25	65-125	PASS
Standard4	ICAL	1	1.0039	100.39	65-125	PASS
Standard5	ICAL	1	1.054	105.45	65-125	PASS
Standard6	ICAL	1	0.98	97.97	65-125	PASS
Standard7	ICAL	1	0.96	95.72	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	1	99.66	65-125	PASS
LLICV	CCV1	1	1	99.72	65-125	PASS
ICSA1	ICSA	1	1.14	113.65	65-125	PASS
ICSAB1	ICSAB	1	0.91	90.94	65-125	PASS
CCV1	CCV	1	0.99	99.22	65-125	PASS
CCB1	CCB	1	1.0052	100.52	65-125	PASS
MB-66899	MBLK	1	1.0083	100.83	65-125	PASS
LCS-66899	LCS	1	0.93	93	65-125	PASS
CCV2	CCV	1	0.99	99.42	65-125	PASS
CCB2	CCB	1	1.0041	100.41	65-125	PASS
N028727-002C	SAMP	1	1.018	101.78	65-125	PASS
N028727-002C	SAMP	5	1.001	100.1	65-125	PASS
N028727-002C-PS	PS	1	0.99	98.82	65-125	PASS
N028727-002C-MS	MS	1	1.0055	100.55	65-125	PASS
N028727-002C-MSD	MSD	1	1.0024	100.24	65-125	PASS
N028727-003C	SAMP	1	1.0064	100.64	65-125	PASS
N028727-004C	SAMP	1	1.012	101.18	65-125	PASS
N028727-005C	SAMP	1	1	99.83	65-125	PASS
N028727-006C	SAMP	1	0.97	97.14	65-125	PASS
N028727-007C	SAMP	1	0.99	98.85	65-125	PASS
CCV3	CCV	1	1.0011	100.11	65-125	PASS
CCB3	CCB	1	1.013	101.34	65-125	PASS
N028727-008C	SAMP	1	1.022	102.15	65-125	PASS
N028727-009C	SAMP	1	1	99.73	65-125	PASS
N028727-010C	SAMP	1	1.0067	100.67	65-125	PASS
N028727-011C	SAMP	1	1.01	101.05	65-125	PASS
N028727-012C	SAMP	1	1.014	101.39	65-125	PASS
N028727-013C	SAMP	1	1.0083	100.83	65-125	PASS
CCV4	CCV	1	1	99.86	65-125	PASS
CCB4	CCB	1	1.016	101.63	65-125	PASS
LLCCV1	CCV2	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.16	115.86	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB2	ICSAB	1	0.92	92.44	65-125	PASS
CCV5	CCV	1	1.0057	100.57	65-125	PASS
CCB5	CCB	1	1.018	101.79	65-125	PASS
MB-66926	MBLK	1	1.025	102.46	65-125	PASS
LCS-66926	LCS	1	0.94	94.091	65-125	PASS
N028745-001C	SAMP	1	1.0057	100.57	65-125	PASS
N028745-001C	SAMP	5	1.011	101.06	65-125	PASS
CCV6	CCV	1	1.0016	100.16	65-125	PASS
CCB6	CCB	1	1.021	102.06	65-125	PASS
N028745-001C-PS	PS	1	1.0042	100.42	65-125	PASS
N028745-001C-MS	MS	1	1.0069	100.69	65-125	PASS
N028745-001C-MSD	MSD	1	1.0042	100.42	65-125	PASS
N028745-002C	SAMP	1	1.011	101.1	65-125	PASS
N028745-003C	SAMP	1	1.043	104.27	65-125	PASS
N028745-004C	SAMP	1	1.029	102.92	65-125	PASS
N028745-005C	SAMP	1	1.042	104.19	65-125	PASS
N028745-006C	SAMP	1	1.017	101.72	65-125	PASS
N028745-007C	SAMP	1	1.028	102.82	65-125	PASS
N028745-008C	SAMP	1	0.96	95.99	65-125	PASS
CCV7	CCV	1	1.012	101.23	65-125	PASS
CCB7	CCB	1	1.028	102.75	65-125	PASS
N028745-009C	SAMP	1	0.97	97.29	65-125	PASS
N028745-010C	SAMP	1	0.97	96.67	65-125	PASS
N028745-011C	SAMP	1	0.97	96.76	65-125	PASS
N028745-012C	SAMP	1	0.95	94.55	65-125	PASS
N028745-014C	SAMP	1	0.98	97.86	65-125	PASS
N028745-015C	SAMP	1	0.96	95.58	65-125	PASS
N028727-006B	SAMP	1	0.99	98.99	65-125	PASS
N028745-002B	SAMP	1	0.96	96	65-125	PASS
N028745-012B	SAMP	1	1.0051	100.51	65-125	PASS
CCV8	CCV	1	1.002	100.2	65-125	PASS
CCB8	CCB	1	1.02	101.96	65-125	PASS
LLCCV2	CCV2	1	1.015	101.5	65-125	PASS
ICSA3	ICSA	1	0.95	95.32	65-125	PASS
ICSAB3	ICSAB	1	0.89	88.66	65-125	PASS
CCV9	CCV	1	1	99.78	65-125	PASS
CCB9	CCB	1	1.0016	100.16	65-125	PASS
CCV10	CCV	1	1	99.95	65-125	PASS
CCB10	CCB	1	1.0006	100.06	65-125	PASS
LLCCV3	CCV2	1	1.016	101.59	65-125	PASS
ICSA4	ICSA	1	0.95	95.044	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB4	ICSAB	1	0.89	88.55	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028727
Test Method: EPA 6010B
Analysis Date: 2/27/2018

Matrix: Groundwater
Batch No.: 66899

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028727-002C DT 5X	Iron	ug/L	0	NA	37.71364	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N028727-002C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID:	**ZZZZZZ**	Batch ID: **66899**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	178.363	20	100.0	37.71	141	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66882
ASSET #: N028727
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/26/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X			X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X			X	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in N028726-001B MSD failed >15%. For rerun,
%Rec of Mo in N028726-001B MS/MSD failed. However, LCS and DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: _____

2nd Level Reviewer 3/6/2018 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66882
ASSET #: N028727
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).			X			X
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X			X	
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/6/18

2nd Level Reviewer [signature] 3/6/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028727-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 0.0912 * 1 * (25/25)

Chromium , ug/L = 0.0912

Reporting results in two significant figures,

Chromium , ug/L = 0.1

Since PQL of Chromium , in ug/L = 1.0

Chromium , ug/L = ND

% RSD SUMMARY

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.17	1.036	15	PASS	0.12	20.13	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.61	1.7	15	PASS	0.51	5.37	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	1.71	15	PASS	4.88	1.7	15	PASS
Std4-10/100 ppb	ICAL	1	10.15	1.18	15	PASS	9.91	1.35	15	PASS
Std5-20/200 ppb	ICAL	1	19.96	0.29	15	PASS	19.89	1.088	15	PASS
Std6-40/400 ppb	ICAL	1	39.69	0.95	15	PASS	39.26	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	97.62	0.54	15	PASS	98.023	0.49	15	PASS
Std8-200/2000 ppb	ICAL	1	201.25	1.4	15	PASS	201.15	0.55	15	PASS
ICV	ICV	1	10.034	0.12	15	PASS	10.064	0.39	15	PASS
ICB	ICB	1	0.0059	64.42	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.078	0.96	20	PASS	1.032	1.0046	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.071	25.026	15	<PQL
ICSAB1	ICSAB	1	16.84	1.16	15	PASS	19.093	0.14	15	PASS
CCV1	CCV	1	21.08	0.32	15	PASS	19.38	0.28	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	21.098	0.63	15	PASS	19.73	0.98	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.018	66.42	15	<PQL
CCV3	CCV	1	21.25	1.23	15	PASS	19.72	0.57	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	21	0.93	15	PASS	20.049	0.82	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.12	3.94	20	PASS	1.03	2.53	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.062	10.9	15	PASS
ICSAB2	ICSAB	1	17.72	0.71	15	PASS	19.2	1.74	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	10.38	1.035	15	PASS	10.33	1.52	15	PASS
N028726-001B	SAMP	1	39.055	0.11	15	PASS	0.68	3.25	15	PASS
N028726-001B	SAMP	5	8.073	1.38	15	PASS	0.13	7.15	15	PASS
N028726-001B	SAMP	25	<0.000	N/A	15	<PQL	0.013	39.31	15	<PQL
N028726-001B-PS	PS	1	47.9	0.27	15	PASS	10.032	0.56	15	PASS
N028726-001B-PS	PS	5	10.22	0.85	15	PASS	2.18	1.29	15	PASS
N028726-001B-MS	MS	1	49.047	0.57	15	PASS	9.9	2.44	15	PASS
N028726-001B-MS	MS	5	10.6	0.88	15	PASS	2.22	1.69	15	PASS
N028726-001B-MSD	MSD	1	48.85	0.23	15	PASS	9.83	1.17	15	PASS
CCV5	CCV	1	20.96	0.12	15	PASS	19.66	1.21	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	10.5	0.68	15	PASS	2.26	4.4	15	PASS
N028726-002B	SAMP	1	30.98	0.71	15	PASS	1.62	2.42	15	PASS
N028726-002B	SAMP	5	6.47	0.83	15	PASS	0.34	2.39	15	PASS
N028726-003B	SAMP	1	39.53	0.48	15	PASS	59.41	0.33	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-003B	SAMP	5	8.27	0.33	15	PASS	13.3	1.1	15	PASS
N028726-004B	SAMP	1	43.18	0.59	15	PASS	7.72	0.66	15	PASS
N028726-004B	SAMP	5	9.15	0.87	15	PASS	1.74	1.67	15	PASS
N028726-005B	SAMP	1	42.14	0.67	15	PASS	38.64	1.78	15	PASS
N028726-005B	SAMP	5	8.84	1.24	15	PASS	8.55	0.66	15	PASS
N028727-002B	SAMP	1	114.89	0.34	15	PASS	0.091	5.89	15	PASS
CCV6	CCV	1	20.97	0.91	15	PASS	19.74	0.96	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-002B	SAMP	5	23.63	0.52	15	PASS	0.013	50.24	15	<PQL
N028727-003B	SAMP	1	117.34	0.58	15	PASS	<0.000	N/A	15	<PQL
N028727-003B	SAMP	5	24.3	0.53	15	PASS	<0.000	N/A	15	<PQL
N028727-004B	SAMP	1	118.6	0.41	15	PASS	0.012	96.35	15	<PQL
N028727-004B	SAMP	5	24.81	0.33	15	PASS	<0.000	N/A	15	<PQL
N028727-005B	SAMP	1	116.13	0.48	15	PASS	<0.000	N/A	15	<PQL
N028727-005B	SAMP	5	23.54	0.37	15	PASS	0.00014	5401.72	15	<PQL
N028727-006B	SAMP	1	115.68	0.35	15	PASS	<0.000	N/A	15	<PQL
N028727-006B	SAMP	5	24.016	0.077	15	PASS	<0.000	N/A	15	<PQL
N028727-007B	SAMP	1	114.75	0.79	15	PASS	0.003	81.58	15	<PQL
CCV7	CCV	1	20.92	0.53	15	PASS	19.87	0.87	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-007B	SAMP	5	23.57	1.69	15	PASS	<0.000	N/A	15	<PQL
N028727-008B	SAMP	1	113.91	0.18	15	PASS	0.0093	160.85	15	<PQL
N028727-008B	SAMP	5	24.19	0.97	15	PASS	<0.000	N/A	15	<PQL
N028727-009B	SAMP	1	115.45	0.55	15	PASS	0.0073	27.26	15	<PQL
N028727-009B	SAMP	5	24.9	0.46	15	PASS	<0.000	N/A	15	<PQL
N028727-010B	SAMP	1	113.14	0.35	15	PASS	<0.000	N/A	15	<PQL
N028727-010B	SAMP	5	23.87	0.64	15	PASS	<0.000	N/A	15	<PQL
N028727-011B	SAMP	1	116.34	0.092	15	PASS	<0.000	N/A	15	<PQL
N028727-011B	SAMP	5	25.19	0.39	15	PASS	<0.000	N/A	15	<PQL
N028727-012B	SAMP	1	118.29	0.4	15	PASS	<0.000	N/A	15	<PQL
CCV8	CCV	1	20.87	0.61	15	PASS	19.75	1.18	15	PASS
CCB8	CCB	1	0.0018	221.42	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	25.042	0.47	15	PASS	<0.000	N/A	15	<PQL
N028727-013B	SAMP	1	115.14	0.58	15	PASS	0.027	32.76	15	<PQL
N028727-013B	SAMP	5	24.21	0.3	15	PASS	<0.000	N/A	15	<PQL
N028727-014C	SAMP	1	92.88	0.42	15	PASS	0.019	2.76	15	PASS
N028727-014C	SAMP	5	19.1	0.88	15	PASS	0.0088	14.77	15	PASS
N028727-015C	SAMP	1	106.65	0.68	15	PASS	0.0023	392.55	15	<PQL
N028727-015C	SAMP	5	22.16	1.058	15	PASS	<0.000	N/A	15	<PQL
CCV9	CCV	1	20.66	0.64	15	PASS	19.63	1.81	15	PASS
CCB9	CCB	1	0.0014	376.28	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	1.11	2.61	20	PASS	1.032	0.58	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.072	8.52	15	PASS
ICSAB3	ICSAB	1	15.42	1.48	15	PASS	19.18	0.54	15	PASS
ICSAB3	ICSAB	1	18.015	0.45	15	PASS	19.87	1.52	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	14.066	15	PASS	0.11	19.28	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.54	5.81	15	PASS	0.51	5.75	15	PASS
Std3-5/50 ppb	ICAL	1	5.017	0.68	15	PASS	5.0073	2.24	15	PASS
Std4-10/100 ppb	ICAL	1	10.093	0.49	15	PASS	10.18	2.61	15	PASS
Std5-20/200 ppb	ICAL	1	20.3	0.75	15	PASS	19.91	1.4	15	PASS
Std6-40/400 ppb	ICAL	1	40.46	1.36	15	PASS	40.24	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	100.83	0.59	15	PASS	100.55	1.75	15	PASS
Std8-200/2000 ppb	ICAL	1	199.46	0.29	15	PASS	199.68	0.6	15	PASS
ICV	ICV	1	104.43	1.42	15	PASS	10.33	1.47	15	PASS
ICB	ICB	1	0.0013	952.1	15	<PQL	0.0076	46.65	15	<PQL
LLICV	CCV1	1	0.52	0.57	20	PASS	0.12	12.17	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.54	0.88	15	PASS	20.73	0.88	15	PASS
CCV1	CCV	1	19.91	0.33	15	PASS	20.12	1.098	15	PASS
CCB1	CCB	1	0.00095	902.59	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.79	1.57	15	PASS	20.23	1.14	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.35	0.56	15	PASS	20.24	0.71	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.15	0.74	15	PASS	19.76	0.72	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.54	6.93	20	PASS	0.11	5.28	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.58	1.15	15	PASS	20.2	1.41	15	PASS
MB-66882	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66882	LCS	1	103.83	1.83	15	PASS	10.27	3.047	15	PASS
N028726-001B	SAMP	1	118.79	1.84	15	PASS	6.74	1.67	15	PASS
N028726-001B	SAMP	5	24.94	0.37	15	PASS	1.43	3.57	15	PASS
N028726-001B	SAMP	25	5.21	2.34	15	PASS	0.28	8.39	15	PASS
N028726-001B-PS	PS	1	203.96	0.56	15	PASS	16.95	1.71	15	PASS
N028726-001B-PS	PS	5	45.087	1.16	15	PASS	3.58	2.36	15	PASS
N028726-001B-MS	MS	1	207.55	1.00086	15	PASS	17.084	0.82	15	PASS
N028726-001B-MS	MS	5	46.72	0.39	15	PASS	3.78	3.21	15	PASS
N028726-001B-MSD	MSD	1	205.82	0.36	15	PASS	17.35	1.27	15	PASS
CCV5	CCV	1	20.14	0.32	15	PASS	19.98	0.73	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028726-001B-MSD	MSD	5	46.55	0.82	15	PASS	3.62	2.99	15	PASS
N028726-002B	SAMP	1	34.62	1.19	15	PASS	1.46	4.27	15	PASS
N028726-002B	SAMP	5	7.5	0.82	15	PASS	0.3	9.42	15	PASS
N028726-003B	SAMP	1	10.67	1.77	15	PASS	7.61	1.83	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-003B	SAMP	5	2.28	1.75	15	PASS	1.6	1.8	15	PASS
N028726-004B	SAMP	1	20.9	0.58	15	PASS	3.97	5.67	15	PASS
N028726-004B	SAMP	5	4.64	0.69	15	PASS	0.79	2.68	15	PASS
N028726-005B	SAMP	1	21.82	2.047	15	PASS	4.56	3.086	15	PASS
N028726-005B	SAMP	5	4.82	0.8	15	PASS	0.94	9.42	15	PASS
N028727-002B	SAMP	1	<0.000	N/A	15	<PQL	2.14	2.019	15	PASS
CCV6	CCV	1	20.072	1.064	15	PASS	19.83	0.7	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-002B	SAMP	5	<0.000	N/A	15	<PQL	0.42	6.65	15	PASS
N028727-003B	SAMP	1	0.65	4.062	15	PASS	2.25	3.86	15	PASS
N028727-003B	SAMP	5	0.17	13.14	15	PASS	0.45	5.54	15	PASS
N028727-004B	SAMP	1	<0.000	N/A	15	<PQL	2.27	0.47	15	PASS
N028727-004B	SAMP	5	<0.000	N/A	15	<PQL	0.46	3.34	15	PASS
N028727-005B	SAMP	1	<0.000	N/A	15	<PQL	2.22	4.74	15	PASS
N028727-005B	SAMP	5	<0.000	N/A	15	<PQL	0.43	6.87	15	PASS
N028727-006B	SAMP	1	<0.000	N/A	15	<PQL	2.17	3.9	15	PASS
N028727-006B	SAMP	5	<0.000	N/A	15	<PQL	0.43	8.78	15	PASS
N028727-007B	SAMP	1	<0.000	N/A	15	<PQL	2.1	5.097	15	PASS
CCV7	CCV	1	20.43	0.23	15	PASS	20.3	0.77	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.0079	19.42	15	<PQL
N028727-007B	SAMP	5	<0.000	N/A	15	<PQL	0.4	2.076	15	PASS
N028727-008B	SAMP	1	<0.000	N/A	15	<PQL	2.11	4.31	15	PASS
N028727-008B	SAMP	5	<0.000	N/A	15	<PQL	0.43	6.28	15	PASS
N028727-009B	SAMP	1	<0.000	N/A	15	<PQL	2.19	6.02	15	PASS
N028727-009B	SAMP	5	<0.000	N/A	15	<PQL	0.48	8.0061	15	PASS
N028727-010B	SAMP	1	<0.000	N/A	15	<PQL	2.16	1.052	15	PASS
N028727-010B	SAMP	5	<0.000	N/A	15	<PQL	0.44	2.97	15	PASS
N028727-011B	SAMP	1	<0.000	N/A	15	<PQL	2.21	4.91	15	PASS
N028727-011B	SAMP	5	<0.000	N/A	15	<PQL	0.46	7.17	15	PASS
N028727-012B	SAMP	1	<0.000	N/A	15	<PQL	2.2	5.3	15	PASS
CCV8	CCV	1	20.37	1.079	15	PASS	19.95	2.38	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028727-012B	SAMP	5	<0.000	N/A	15	<PQL	0.47	2.93	15	PASS
N028727-013B	SAMP	1	0.054	91.58	15	<PQL	2.21	4.47	15	PASS
N028727-013B	SAMP	5	<0.000	N/A	15	<PQL	0.41	16.64	15	NR!
N028727-014C	SAMP	1	17.29	1.95	15	PASS	1.52	3.33	15	PASS
N028727-014C	SAMP	5	3.67	0.93	15	PASS	0.29	4.83	15	PASS
N028727-015C	SAMP	1	1.93	1.18	15	PASS	1.82	1.58	15	PASS
N028727-015C	SAMP	5	0.4	5.78	15	PASS	0.36	5.14	15	PASS
CCV9	CCV	1	20.43	1.63	15	PASS	19.95	0.44	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.0095	57.5	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.52	10.23	20	PASS	0.11	5.62	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.5	0.29	15	PASS	20.21	0.89	15	PASS
ICSAB3	ICSAB	1	21.2	1.92	15	PASS	20.085	3.65	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	19.19	15	<PQL	0.084	16.48	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	24.52	15	NR!	0.47	1.87	15	PASS
Std3-5/50 ppb	ICAL	1	4.76	2.15	15	PASS	4.88	1.84	15	PASS
Std4-10/100 ppb	ICAL	1	10.08	5.43	15	PASS	9.79	0.44	15	PASS
Std5-20/200 ppb	ICAL	1	20.046	0.84	15	PASS	19.84	1.51	15	PASS
Std6-40/400 ppb	ICAL	1	39.97	2.13	15	PASS	39.77	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	100.7	0.4	15	PASS	100.49	1.52	15	PASS
Std8-200/2000 ppb	ICAL	1	199.65	2.32	15	PASS	199.83	0.91	15	PASS
ICV	ICV	1	10.034	2.45	15	PASS	10.68	0.4	15	PASS
ICB	ICB	1	0.034	88.12	15	<PQL	0.18	4.16	15	PASS
LLICV	CCV1	1	0.55	18.035	20	PASS	0.56	2.84	20	PASS
ICSA1	ICSA	1	0.011	134.88	15	<PQL	0.062	14.73	15	PASS
ICSAB1	ICSAB	1	18.88	4.26	15	PASS	21.76	1.7	15	PASS
CCV1	CCV	1	19.47	2.11	15	PASS	20.1	0.73	15	PASS
CCB1	CCB	1	0.0079	150.54	15	<PQL	0.069	14.47	15	PASS
CCV2	CCV	1	20.27	0.67	15	PASS	20.051	0.66	15	PASS
CCB2	CCB	1	0.0035	370.87	15	<PQL	0.054	15.25	15	<PQL
CCV3	CCV	1	20.27	2.45	15	PASS	20.11	1.9	15	PASS
CCB3	CCB	1	0.034	64.69	15	<PQL	0.11	17.14	15	<PQL
CCV4	CCV	1	20.84	2.65	15	PASS	19.76	1.34	15	PASS
CCB4	CCB	1	0.0047	320.52	15	<PQL	0.076	15.11	15	<PQL
LLCCV1	CCV2	1	0.54	12.19	20	PASS	0.52	5.76	20	PASS
ICSA2	ICSA	1	0.015	145.12	15	<PQL	0.04	21.79	15	<PQL
ICSAB2	ICSAB	1	20.68	2.068	15	PASS	21.93	0.66	15	PASS
MB-66882	MBLK	1	0.021	119.32	15	<PQL	0.054	14.31	15	PASS
LCS-66882	LCS	1	11.055	0.77	15	PASS	10.046	1.93	15	PASS
N028726-001B	SAMP	1	0.53	20.92	15	NR!	67.21	0.75	15	PASS
N028726-001B	SAMP	5	0.11	46.54	15	<PQL	13.11	1.67	15	PASS
N028726-001B	SAMP	25	0.0096	141.25	15	<PQL	2.64	3.016	15	PASS
N028726-001B-PS	PS	1	10.87	2.66	15	PASS	75.56	0.86	15	PASS
N028726-001B-PS	PS	5	2.18	12.33	15	PASS	15.32	0.74	15	PASS
N028726-001B-MS	MS	1	10.59	3.015	15	PASS	78.32	1.7	15	PASS
N028726-001B-MS	MS	5	2.35	5.4	15	PASS	16.13	0.45	15	PASS
N028726-001B-MSD	MSD	1	10.67	4.53	15	PASS	78.79	1.13	15	PASS
CCV5	CCV	1	20.98	0.68	15	PASS	20.015	0.2	15	PASS
CCB5	CCB	1	0.022	58.54	15	<PQL	0.12	12.7	15	PASS
N028726-001B-MSD	MSD	5	2.3	17.38	15	NR!	15.94	1.18	15	PASS
N028726-002B	SAMP	1	0.69	13.35	15	PASS	20.035	1.9	15	PASS
N028726-002B	SAMP	5	0.17	47.77	15	<PQL	3.98	0.9	15	PASS
N028726-003B	SAMP	1	2.72	11.86	15	PASS	59.2	0.89	15	PASS

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028726-003B	SAMP	5	0.52	30.97	15	NR!	11.49	0.96	15	PASS
N028726-004B	SAMP	1	2.9	13.86	15	PASS	59.72	0.36	15	PASS
N028726-004B	SAMP	5	0.52	10.62	15	PASS	11.64	0.6	15	PASS
N028726-005B	SAMP	1	3.019	8.58	15	PASS	58.47	0.31	15	PASS
N028726-005B	SAMP	5	0.53	10.95	15	PASS	11.25	2.2	15	PASS
N028727-002B	SAMP	1	1.62	1.96	15	PASS	4.84	2.028	15	PASS
CCV6	CCV	1	20.29	2.61	15	PASS	19.98	0.29	15	PASS
CCB6	CCB	1	0.023	101.55	15	<PQL	0.075	14.32	15	PASS
N028727-002B	SAMP	5	0.39	13.46	15	PASS	0.99	2.093	15	PASS
N028727-003B	SAMP	1	1.6	9.63	15	PASS	4.93	1.65	15	PASS
N028727-003B	SAMP	5	0.32	18.64	15	<PQL	0.97	2.86	15	PASS
N028727-004B	SAMP	1	1.81	10.67	15	PASS	5.017	1.29	15	PASS
N028727-004B	SAMP	5	0.41	3.94	15	PASS	0.96	2.75	15	PASS
N028727-005B	SAMP	1	1.71	2.96	15	PASS	4.81	3.53	15	PASS
N028727-005B	SAMP	5	0.35	6.32	15	PASS	0.95	4.077	15	PASS
N028727-006B	SAMP	1	1.6	17.8	15	NR!	4.81	1.24	15	PASS
N028727-006B	SAMP	5	0.36	16.36	15	<PQL	0.91	4.92	15	PASS
N028727-007B	SAMP	1	1.47	8.16	15	PASS	4.75	1.72	15	PASS
CCV7	CCV	1	20.5	2.97	15	PASS	19.95	0.91	15	PASS
CCB7	CCB	1	0.015	54.22	15	<PQL	0.053	18.047	15	<PQL
N028727-007B	SAMP	5	0.32	6.66	15	PASS	0.97	3.5	15	PASS
N028727-008B	SAMP	1	1.65	1.47	15	PASS	4.77	1.26	15	PASS
N028727-008B	SAMP	5	0.28	10.79	15	PASS	1	2.76	15	PASS
N028727-009B	SAMP	1	1.66	2.81	15	PASS	4.84	0.8	15	PASS
N028727-009B	SAMP	5	0.31	37.55	15	<PQL	1	2.62	15	PASS
N028727-010B	SAMP	1	1.81	3.97	15	PASS	4.74	0.65	15	PASS
N028727-010B	SAMP	5	0.33	13.57	15	PASS	0.95	2.0091	15	PASS
N028727-011B	SAMP	1	1.56	5.79	15	PASS	4.85	2.52	15	PASS
N028727-011B	SAMP	5	0.45	14.37	15	PASS	0.98	3.88	15	PASS
N028727-012B	SAMP	1	1.87	2.18	15	PASS	4.96	1.32	15	PASS
CCV8	CCV	1	20.21	1.32	15	PASS	19.66	1.0022	15	PASS
CCB8	CCB	1	0.00083	1011.41	15	<PQL	0.054	8.73	15	PASS
N028727-012B	SAMP	5	0.3	32.83	15	<PQL	0.98	2.17	15	PASS
N028727-013B	SAMP	1	1.48	11.69	15	PASS	4.95	1.96	15	PASS
N028727-013B	SAMP	5	0.31	28.011	15	<PQL	0.97	3.41	15	PASS
N028727-014C	SAMP	1	0.96	12.46	15	PASS	5.86	0.59	15	PASS
N028727-014C	SAMP	5	0.2	28.6	15	<PQL	1.13	0.73	15	PASS
N028727-015C	SAMP	1	1.53	5.00092	15	PASS	5.19	1.56	15	PASS
N028727-015C	SAMP	5	0.29	27.76	15	<PQL	1.017	3.98	15	PASS
CCV9	CCV	1	20.29	3.12	15	PASS	19.58	1.17	15	PASS
CCB9	CCB	1	0.0012	767	15	<PQL	0.063	15.76	15	<PQL

PERCENT RSD SUMMARY: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.59	13.24	20	PASS	0.5	11.41	20	PASS
ICSA3	ICSA	1	0.023	40.43	15	<PQL	0.019	52.069	15	<PQL
ICSAB3	ICSAB	1	19.16	3.51	15	PASS	21.65	1.027	15	PASS
ICSAB3	ICSAB	1	18.84	4.12	15	PASS	21.33	0.97	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.086	57.34	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	19.27	15	NR!
Std3-5/50 ppb	ICAL	1	5.015	8.17	15	PASS
Std4-10/100 ppb	ICAL	1	9.86	5.61	15	PASS
Std5-20/200 ppb	ICAL	1	19.72	2.077	15	PASS
Std6-40/400 ppb	ICAL	1	40.13	4.25	15	PASS
Std7-100/1000 ppb	ICAL	1	100.19	1.56	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	1.53	15	PASS
ICV	ICV	1	10.17	3.49	15	PASS
ICB	ICB	1	0.029	59.41	15	<PQL
LLICV	CCV1	1	0.47	20.13	20	<PQL
ICSA1	ICSA	1	0.012	151.17	15	<PQL
ICSAB1	ICSAB	1	17.36	4.053	15	PASS
LLICV	CCV1	1	0.5	18.72	20	PASS
CCV1	CCV	1	19.41	2.69	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.26	3.42	15	PASS
CCB2	CCB	1	0.0047	196.16	15	<PQL
CCV3	CCV	1	19.43	1.72	15	PASS
CCB3	CCB	1	0.036	89.66	15	<PQL
CCV4	CCV	1	19.64	3.32	15	PASS
CCB4	CCB	1	0.011	155.22	15	<PQL
CCV5	CCV	1	19.47	1.2	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	21.97	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.66	4.018	15	PASS
N028726-001B-MSD	MSD	5	2.21	6.48	15	PASS
N028726-003B	SAMP	5	0.56	13.76	15	PASS
N028727-006B	SAMP	1	1.8	10.85	15	PASS
CCV6	CCV	1	18.77	1.14	15	PASS
CCB6	CCB	1	0.021	45.37	15	<PQL
CCV7	CCV	1	19.38	0.73	15	PASS
CCB7	CCB	1	0.01	158.58	15	<PQL
CCV8	CCV	1	19.96	2.88	15	PASS
CCB8	CCB	1	0.046	38.65	15	<PQL
CCV9	CCV	1	17.82	4.35	15	PASS
CCB9	CCB	1	0.025	113.29	15	<PQL
CCV10	CCV	1	19.12	1.8	15	PASS
CCB10	CCB	1	0.013	2.041	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.45	14.31	20	PASS
ICSA3	ICSA	1	0.027	151.89	15	<PQL
ICSAB3	ICSAB	1	17.81	1.82	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226001.D	RINSE	RINSE	1	02/26/18 5:11 PM
A0226002.D	Cal Blank	IBLK	1	02/26/18 5:16 PM
A0226003.D	Std1-0.1/1 ppb	ICAL	1	02/26/18 5:22 PM
A0226004.D	Std2-0.5/5 ppb	ICAL	1	02/26/18 5:27 PM
A0226005.D	Std3-5/50 ppb	ICAL	1	02/26/18 5:33 PM
A0226006.D	Std4-10/100 ppb	ICAL	1	02/26/18 5:39 PM
A0226007.D	Std5-20/200 ppb	ICAL	1	02/26/18 5:44 PM
A0226008.D	Std6-40/400 ppb	ICAL	1	02/26/18 5:50 PM
A0226009.D	Std7-100/1000 ppb	ICAL	1	02/26/18 5:55 PM
A0226010.D	Std8-200/2000 ppb	ICAL	1	02/26/18 6:01 PM
A0226011.D	ICV	ICV	1	02/26/18 6:07 PM
A0226012.D	ICB	ICB	1	02/26/18 6:12 PM
A0226013.D	LLICV	CCV1	1	02/26/18 6:18 PM
A0226014.D	ICSA1	ICSA	1	02/26/18 6:23 PM
A0226015.D	ICSAB1	ICSAB	1	02/26/18 6:29 PM
A0226016.D	MB-66863	MBLK	1	02/26/18 6:35 PM
A0226017.D	LCS-66863	LCS	1	02/26/18 6:40 PM
A0226018.D	N028679-001B	SAMP	1	02/26/18 6:46 PM
A0226019.D	N028679-001B	SAMP	5	02/26/18 6:51 PM
A0226020.D	N028679-001B	SAMP	25	02/26/18 6:57 PM
A0226021.D	N028679-001B-PS	PS	1	02/26/18 7:03 PM
A0226022.D	N028679-001B-PS	PS	5	02/26/18 7:08 PM
A0226023.D	N028679-001B-MS	MS	1	02/26/18 7:14 PM
A0226024.D	N028679-001B-MS	MS	5	02/26/18 7:20 PM
A0226025.D	N028679-001B-MSD	MSD	1	02/26/18 7:25 PM
A0226026.D	CCV1	CCV	1	02/26/18 7:31 PM
A0226027.D	CCB1	CCB	1	02/26/18 7:36 PM
A0226028.D	N028679-001B-MSD	MSD	5	02/26/18 7:42 PM
A0226029.D	N028679-002B	SAMP	1	02/26/18 7:48 PM
A0226030.D	N028679-002B	SAMP	5	02/26/18 7:53 PM
A0226031.D	N028679-002B	SAMP	10	02/26/18 7:59 PM
A0226032.D	N028679-003B	SAMP	1	02/26/18 8:04 PM
A0226033.D	N028679-003B	SAMP	5	02/26/18 8:10 PM
A0226034.D	N028679-003B	SAMP	10	02/26/18 8:16 PM
A0226035.D	N028679-004B	SAMP	1	02/26/18 8:21 PM
A0226036.D	N028679-004B	SAMP	5	02/26/18 8:27 PM
A0226037.D	N028679-005B	SAMP	1	02/26/18 8:32 PM
A0226038.D	CCV2	CCV	1	02/26/18 8:38 PM
A0226039.D	CCB2	CCB	1	02/26/18 8:44 PM
A0226040.D	N028679-005B	SAMP	5	02/26/18 8:49 PM
A0226041.D	N028696-001B	SAMP	1	02/26/18 8:55 PM
A0226042.D	N028696-001B	SAMP	5	02/26/18 9:00 PM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226043.D	N028696-002B	SAMP	1	02/26/18 9:06 PM
A0226044.D	N028696-002B	SAMP	5	02/26/18 9:12 PM
A0226045.D	N028696-003B	SAMP	1	02/26/18 9:17 PM
A0226046.D	N028696-003B	SAMP	5	02/26/18 9:23 PM
A0226047.D	N028696-004B	SAMP	1	02/26/18 9:29 PM
A0226048.D	N028696-004B	SAMP	5	02/26/18 9:34 PM
A0226049.D	N028696-005B	SAMP	1	02/26/18 9:41 PM
A0226050.D	CCV3	CCV	1	02/26/18 9:47 PM
A0226051.D	CCB3	CCB	1	02/26/18 9:53 PM
A0226052.D	N028696-005B	SAMP	5	02/26/18 9:58 PM
A0226053.D	N028696-006B	SAMP	1	02/26/18 10:04 PM
A0226054.D	N028696-006B	SAMP	5	02/26/18 10:09 PM
A0226055.D	N028696-007B	SAMP	1	02/26/18 10:15 PM
A0226056.D	N028696-007B	SAMP	5	02/26/18 10:21 PM
A0226057.D	N028696-008B	SAMP	1	02/26/18 10:26 PM
A0226058.D	N028696-008B	SAMP	5	02/26/18 10:32 PM
A0226059.D	N028696-009B	SAMP	1	02/26/18 10:38 PM
A0226060.D	N028696-009B	SAMP	5	02/26/18 10:43 PM
A0226061.D	CCV4	CCV	1	02/26/18 10:49 PM
A0226062.D	CCB4	CCB	1	02/26/18 10:54 PM
A0226063.D	LLCCV1	CCV2	1	02/26/18 11:00 PM
A0226064.D	ICSA2	ICSA	1	02/26/18 11:06 PM
A0226065.D	ICSAB2	ICSAB	1	02/26/18 11:11 PM
A0226066.D	MB-66882	MBLK	1	02/26/18 11:17 PM
A0226067.D	LCS-66882	LCS	1	02/26/18 11:22 PM
A0226068.D	N028726-001B	SAMP	1	02/26/18 11:28 PM
A0226069.D	N028726-001B	SAMP	5	02/26/18 11:34 PM
A0226070.D	N028726-001B	SAMP	25	02/26/18 11:39 PM
A0226071.D	N028726-001B-PS	PS	1	02/26/18 11:45 PM
A0226072.D	N028726-001B-PS	PS	5	02/26/18 11:50 PM
A0226073.D	N028726-001B-MS	MS	1	02/26/18 11:56 PM
A0226074.D	N028726-001B-MS	MS	5	02/27/18 12:02 AM
A0226075.D	N028726-001B-MSD	MSD	1	02/27/18 12:07 AM
A0226076.D	CCV5	CCV	1	02/27/18 12:13 AM
A0226077.D	CCB5	CCB	1	02/27/18 12:18 AM
A0226078.D	N028726-001B-MSD	MSD	5	02/27/18 12:24 AM
A0226079.D	N028726-002B	SAMP	1	02/27/18 12:30 AM
A0226080.D	N028726-002B	SAMP	5	02/27/18 12:35 AM
A0226081.D	N028726-003B	SAMP	1	02/27/18 12:41 AM
A0226082.D	N028726-003B	SAMP	5	02/27/18 12:47 AM
A0226083.D	N028726-004B	SAMP	1	02/27/18 12:52 AM
A0226084.D	N028726-004B	SAMP	5	02/27/18 12:58 AM

INJECTION LOG: 180226A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0226085.D	N028726-005B	SAMP	1	02/27/18 1:03 AM
A0226086.D	N028726-005B	SAMP	5	02/27/18 1:09 AM
A0226087.D	N028727-002B	SAMP	1	02/27/18 1:15 AM
A0226088.D	CCV6	CCV	1	02/27/18 1:20 AM
A0226089.D	CCB6	CCB	1	02/27/18 1:26 AM
A0226090.D	N028727-002B	SAMP	5	02/27/18 1:31 AM
A0226091.D	N028727-003B	SAMP	1	02/27/18 1:37 AM
A0226092.D	N028727-003B	SAMP	5	02/27/18 1:43 AM
A0226093.D	N028727-004B	SAMP	1	02/27/18 1:48 AM
A0226094.D	N028727-004B	SAMP	5	02/27/18 1:54 AM
A0226095.D	N028727-005B	SAMP	1	02/27/18 2:00 AM
A0226096.D	N028727-005B	SAMP	5	02/27/18 2:05 AM
A0226097.D	N028727-006B	SAMP	1	02/27/18 2:11 AM
A0226098.D	N028727-006B	SAMP	5	02/27/18 2:16 AM
A0226099.D	N028727-007B	SAMP	1	02/27/18 2:22 AM
A0226100.D	CCV7	CCV	1	02/27/18 2:28 AM
A0226101.D	CCB7	CCB	1	02/27/18 2:33 AM
A0226102.D	N028727-007B	SAMP	5	02/27/18 2:39 AM
A0226103.D	N028727-008B	SAMP	1	02/27/18 2:44 AM
A0226104.D	N028727-008B	SAMP	5	02/27/18 2:50 AM
A0226105.D	N028727-009B	SAMP	1	02/27/18 2:56 AM
A0226106.D	N028727-009B	SAMP	5	02/27/18 3:01 AM
A0226107.D	N028727-010B	SAMP	1	02/27/18 3:07 AM
A0226108.D	N028727-010B	SAMP	5	02/27/18 3:13 AM
A0226109.D	N028727-011B	SAMP	1	02/27/18 3:18 AM
A0226110.D	N028727-011B	SAMP	5	02/27/18 3:24 AM
A0226111.D	N028727-012B	SAMP	1	02/27/18 3:29 AM
A0226112.D	CCV8	CCV	1	02/27/18 3:35 AM
A0226113.D	CCB8	CCB	1	02/27/18 3:41 AM
A0226114.D	N028727-012B	SAMP	5	02/27/18 3:46 AM
A0226115.D	N028727-013B	SAMP	1	02/27/18 3:52 AM
A0226116.D	N028727-013B	SAMP	5	02/27/18 3:58 AM
A0226117.D	N028727-014C	SAMP	1	02/27/18 4:03 AM
A0226118.D	N028727-014C	SAMP	5	02/27/18 4:09 AM
A0226119.D	N028727-015C	SAMP	1	02/27/18 4:14 AM
A0226120.D	N028727-015C	SAMP	5	02/27/18 4:20 AM
A0226121.D	CCV9	CCV	1	02/27/18 4:26 AM
A0226122.D	CCB9	CCB	1	02/27/18 4:31 AM
A0226123.D	LLCCV2	CCV2	1	02/27/18 4:37 AM
A0226124.D	ICSA3	ICSA	1	02/27/18 4:43 AM
A0226125.D	ICSAB3	ICSAB	1	02/27/18 4:48 AM
A0226126.D	ICSAB3	ICSAB	1	02/27/18 4:57 AM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227001.D	RINSE	RINSE	1	02/27/18 9:32 AM
A0227002.D	Cal Blank	IBLK	1	02/27/18 9:38 AM
A0227003.D	Std1-0.1/1 ppb	ICAL	1	02/27/18 9:44 AM
A0227004.D	Std2-0.5/5 ppb	ICAL	1	02/27/18 9:49 AM
A0227005.D	Std3-5/50 ppb	ICAL	1	02/27/18 9:55 AM
A0227006.D	Std4-10/100 ppb	ICAL	1	02/27/18 10:00 AM
A0227007.D	Std5-20/200 ppb	ICAL	1	02/27/18 10:06 AM
A0227008.D	Std6-40/400 ppb	ICAL	1	02/27/18 10:12 AM
A0227009.D	Std7-100/1000 ppb	ICAL	1	02/27/18 10:17 AM
A0227010.D	Std8-200/2000 ppb	ICAL	1	02/27/18 10:23 AM
A0227011.D	ICV	ICV	1	02/27/18 10:29 AM
A0227012.D	ICB	ICB	1	02/27/18 10:34 AM
A0227013.D	LLICV	CCV1	1	02/27/18 10:40 AM
A0227014.D	ICSA1	ICSA	1	02/27/18 10:45 AM
A0227015.D	ICSAB1	ICSAB	1	02/27/18 10:51 AM
A0227016.D	LLICV	CCV1	1	02/27/18 10:57 AM
A0227017.D	MB-66914	MBLK	1	02/27/18 11:02 AM
A0227018.D	LCS-66914	LCS	1	02/27/18 11:08 AM
A0227019.D	N028744-001B	SAMP	1	02/27/18 11:13 AM
A0227020.D	N028744-001B	SAMP	5	02/27/18 11:19 AM
A0227021.D	N028744-001B	SAMP	25	02/27/18 11:25 AM
A0227022.D	N028744-001B-PS	PS	1	02/27/18 11:30 AM
A0227023.D	N028744-001B-PS	PS	5	02/27/18 11:36 AM
A0227024.D	N028744-001B-MS	MS	1	02/27/18 11:41 AM
A0227025.D	N028744-001B-MS	MS	5	02/27/18 11:47 AM
A0227026.D	N028744-001B-MSD	MSD	1	02/27/18 11:53 AM
A0227027.D	CCV1	CCV	1	02/27/18 11:58 AM
A0227028.D	CCB1	CCB	1	02/27/18 12:04 PM
A0227029.D	N028744-001B-MSD	MSD	5	02/27/18 12:10 PM
A0227030.D	N028744-002B	SAMP	1	02/27/18 12:15 PM
A0227031.D	N028744-002B	SAMP	5	02/27/18 12:21 PM
A0227032.D	N028744-003B	SAMP	1	02/27/18 12:26 PM
A0227033.D	N028744-003B	SAMP	5	02/27/18 12:32 PM
A0227034.D	N028744-003B	SAMP	25	02/27/18 12:38 PM
A0227035.D	N028744-004B	SAMP	1	02/27/18 12:43 PM
A0227036.D	N028744-004B	SAMP	5	02/27/18 12:49 PM
A0227037.D	N028744-005B	SAMP	1	02/27/18 12:55 PM
A0227038.D	N028744-005B	SAMP	5	02/27/18 1:00 PM
A0227039.D	CCV2	CCV	1	02/27/18 1:06 PM
A0227040.D	CCB2	CCB	1	02/27/18 1:12 PM
A0227041.D	N028744-006B	SAMP	1	02/27/18 1:17 PM
A0227042.D	N028744-006B	SAMP	5	02/27/18 1:23 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227043.D	N028745-001B	SAMP	1	02/27/18 1:28 PM
A0227044.D	N028745-001B	SAMP	5	02/27/18 1:34 PM
A0227045.D	N028745-002B	SAMP	1	02/27/18 1:40 PM
A0227046.D	N028745-002B	SAMP	5	02/27/18 1:45 PM
A0227047.D	N028745-003B	SAMP	1	02/27/18 1:51 PM
A0227048.D	N028745-003B	SAMP	5	02/27/18 1:57 PM
A0227049.D	N028745-004B	SAMP	1	02/27/18 2:02 PM
A0227050.D	N028745-004B	SAMP	5	02/27/18 2:08 PM
A0227051.D	CCV3	CCV	1	02/27/18 2:14 PM
A0227052.D	CCB3	CCB	1	02/27/18 2:19 PM
A0227053.D	N028745-005B	SAMP	1	02/27/18 2:25 PM
A0227054.D	N028745-005B	SAMP	5	02/27/18 2:30 PM
A0227055.D	N028745-006B	SAMP	1	02/27/18 2:36 PM
A0227056.D	N028745-006B	SAMP	5	02/27/18 2:42 PM
A0227057.D	N028745-007B	SAMP	1	02/27/18 2:47 PM
A0227058.D	N028745-007B	SAMP	5	02/27/18 2:53 PM
A0227059.D	N028745-008B	SAMP	1	02/27/18 2:59 PM
A0227060.D	N028745-008B	SAMP	5	02/27/18 3:05 PM
A0227061.D	N028745-009B	SAMP	1	02/27/18 3:10 PM
A0227062.D	N028745-009B	SAMP	5	02/27/18 3:16 PM
A0227063.D	CCV4	CCV	1	02/27/18 3:21 PM
A0227064.D	CCB4	CCB	1	02/27/18 3:27 PM
A0227065.D	N028745-010B	SAMP	1	02/27/18 3:33 PM
A0227066.D	N028745-010B	SAMP	5	02/27/18 3:40 PM
A0227067.D	N028745-011B	SAMP	1	02/27/18 3:45 PM
A0227068.D	N028745-011B	SAMP	5	02/27/18 3:51 PM
A0227069.D	N028745-012B	SAMP	1	02/27/18 3:57 PM
A0227070.D	N028745-012B	SAMP	5	02/27/18 4:03 PM
A0227071.D	N028745-014B	SAMP	1	02/27/18 4:08 PM
A0227072.D	N028745-014B	SAMP	5	02/27/18 4:14 PM
A0227073.D	N028745-015B	SAMP	1	02/27/18 4:20 PM
A0227074.D	N028745-015B	SAMP	5	02/27/18 4:25 PM
A0227075.D	CCV5	CCV	1	02/27/18 4:31 PM
A0227076.D	CCB5	CCB	1	02/27/18 4:37 PM
A0227077.D	LLCCV1	CCV2	1	02/27/18 4:42 PM
A0227078.D	ICSA2	ICSA	1	02/27/18 4:48 PM
A0227079.D	ICSAB2	ICSAB	1	02/27/18 4:54 PM
A0227080.D	N028745-005B	SAMP	1	02/27/18 4:59 PM
A0227081.D	N028745-009B	SAMP	1	02/27/18 5:06 PM
A0227082.D	N028745-012B	SAMP	1	02/27/18 5:12 PM
A0227083.D	N028745-015B	SAMP	1	02/27/18 5:17 PM
A0227084.D	N028744-003B	SAMP	250	02/27/18 5:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227085.D	N028744-005B	SAMP	25	02/27/18 5:28 PM
A0227086.D	N028726-001B-MSD	MSD	5	02/27/18 5:35 PM
A0227087.D	N028726-003B	SAMP	5	02/27/18 5:39 PM
A0227088.D	N028727-006B	SAMP	1	02/27/18 5:45 PM
A0227089.D	N028745-015B	SAMP	1	02/27/18 5:51 PM
A0227090.D	CCV6	CCV	1	02/27/18 5:56 PM
A0227091.D	CCB6	CCB	1	02/27/18 6:02 PM
A0227092.D	N028717-001C	SAMP	25	02/27/18 6:08 PM
A0227093.D	N028696-001B	SAMP	1	02/27/18 6:14 PM
A0227094.D	N028696-001A	SAMP	1	02/27/18 6:20 PM
A0227095.D	N028696-005B	SAMP	1	02/27/18 6:25 PM
A0227096.D	N028696-005A	SAMP	1	02/27/18 6:31 PM
A0227097.D	MB-66941	MBLK	1	02/27/18 6:37 PM
A0227098.D	LCS-66941	LCS	1	02/27/18 6:43 PM
A0227099.D	N028790-001A	SAMP	1	02/27/18 6:48 PM
A0227100.D	N028790-001A	SAMP	5	02/27/18 6:53 PM
A0227101.D	N028790-001A-PS	PS	1	02/27/18 6:59 PM
A0227102.D	CCV7	CCV	1	02/27/18 7:05 PM
A0227103.D	CCB7	CCB	1	02/27/18 7:11 PM
A0227104.D	N028790-001A-MS	MS	1	02/27/18 7:16 PM
A0227105.D	N028790-001A-MSD	MSD	1	02/27/18 7:22 PM
A0227106.D	N028790-002A	SAMP	1	02/27/18 7:28 PM
A0227107.D	N028790-003A	SAMP	1	02/27/18 7:34 PM
A0227108.D	N028790-004A	SAMP	1	02/27/18 7:39 PM
A0227109.D	N028792-005A	SAMP	1	02/27/18 7:45 PM
A0227110.D	N028792-010A	SAMP	1	02/27/18 7:51 PM
A0227111.D	N028792-015A	SAMP	1	02/27/18 7:56 PM
A0227112.D	N028792-020A	SAMP	1	02/27/18 8:02 PM
A0227113.D	N028792-025A	SAMP	1	02/27/18 8:08 PM
A0227114.D	CCV8	CCV	1	02/27/18 8:13 PM
A0227115.D	CCB8	CCB	1	02/27/18 8:19 PM
A0227116.D	N028738-005A	SAMP	1	02/27/18 8:26 PM
A0227117.D	MB-66959	MBLK	1	02/27/18 8:31 PM
A0227118.D	LCS-66959	LCS	1	02/27/18 8:37 PM
A0227119.D	N028808-001A	SAMP	1	02/27/18 8:42 PM
A0227120.D	N028808-001A	SAMP	5	02/27/18 8:48 PM
A0227121.D	N028808-001A-PS	PS	1	02/27/18 8:54 PM
A0227122.D	N028808-001A-MS	MS	1	02/27/18 8:59 PM
A0227123.D	N028808-001A-MSD	MSD	1	02/27/18 9:05 PM
A0227124.D	N028809-001A	SAMP	1	02/27/18 9:11 PM
A0227125.D	N028810-001A	SAMP	1	02/27/18 9:16 PM
A0227126.D	CCV9	CCV	1	02/27/18 9:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227127.D	CCB9	CCB	1	02/27/18 9:27 PM
A0227128.D	N028811-001A	SAMP	1	02/27/18 9:32 PM
A0227129.D	CCV10	CCV	1	02/27/18 9:39 PM
A0227130.D	CCB10	CCB	1	02/27/18 9:44 PM
A0227131.D	LLCCV2	CCV2	1	02/27/18 9:50 PM
A0227132.D	ICSA3	ICSA	1	02/27/18 9:55 PM
A0227133.D	ICSAB3	ICSAB	1	02/27/18 10:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2018 2:00:00**
Prep End Date: **2/22/2018 7:00:00**
Reviewed/ Date: 3/6/2018
Initials/ Date: 3/6/2018

Prep Batch **66882** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66882	Aqueous		25	☐	0	0	25	1.000		
MB-66882	Aqueous		25	☐	0	0	25	1.000		
N028726-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028726-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/22/2018 2:00:00**
Prep End Date: **2/22/2018 7:00:00**
Reviewed/ Date: 3/6/2018
Initials/ Date: 3/6/2018

Prep Batch **66882** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028727-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-014C	Groundwater	<2	25	☐	0	0	25	1.000		
N028727-015C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 26 Feb 2018 02:40:46 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	166688.00	0.00	
24 Mg	675728.00	0.00	
25 Mg	87808.20	0.00	
26 Mg	101444.00	0.00	
59 Co	617412.00	0.00	
115 In	1016020.00	0.00	
206 Pb	323115.00	0.00	
207 Pb	282293.00	0.00	
208 Pb	693360.00	0.00	

RSD (%)

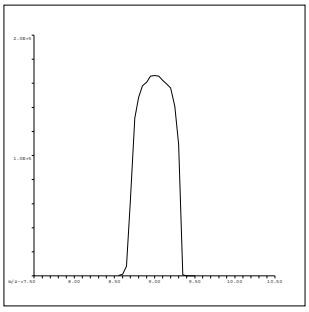
Element	Actual	Required	Flag
9 Be	0.55	5.00	
24 Mg	0.89	5.00	
25 Mg	1.10	5.00	
26 Mg	0.39	5.00	
59 Co	0.82	5.00	
115 In	0.34	5.00	
206 Pb	0.62	5.00	
207 Pb	0.42	5.00	
208 Pb	0.30	5.00	

Ion Ratio

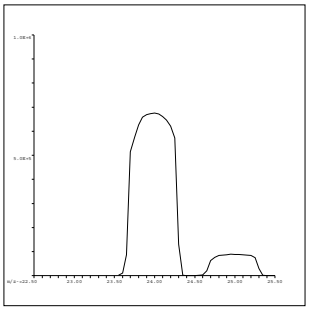
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

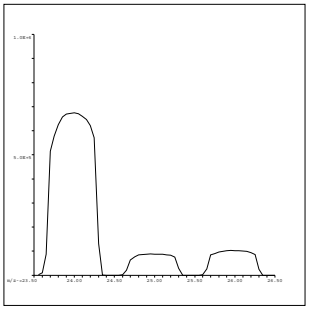
Element	Actual	Required	Flag



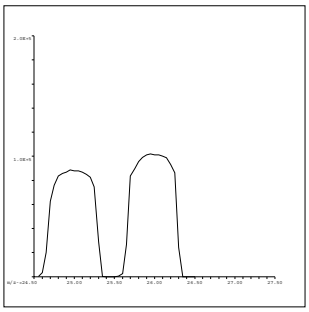
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



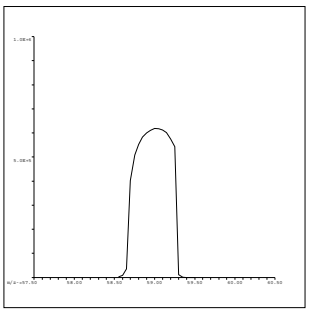
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



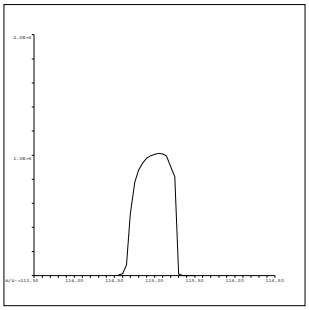
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



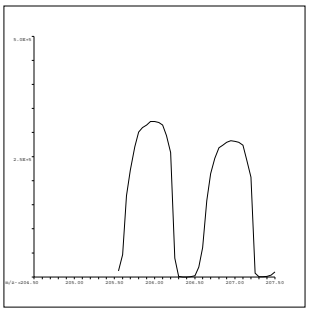
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



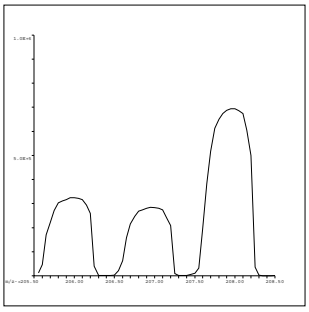
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



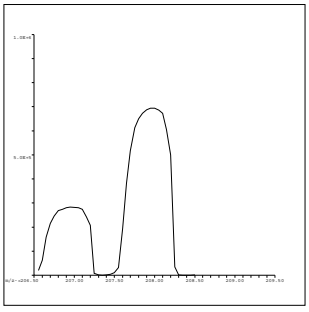
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 27 Feb 2018 07:52:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	89591.20	0.00	
24 Mg	338443.00	0.00	
25 Mg	44194.50	0.00	
26 Mg	52079.10	0.00	
59 Co	444006.00	0.00	
115 In	830117.00	0.00	
206 Pb	245728.00	0.00	
207 Pb	214689.00	0.00	
208 Pb	524452.00	0.00	

RSD (%)

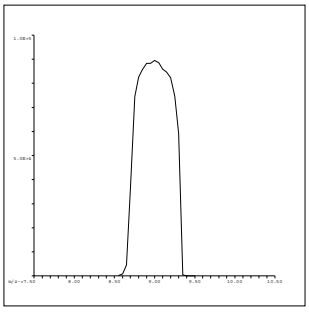
Element	Actual	Required	Flag
9 Be	1.09	5.00	
24 Mg	2.76	5.00	
25 Mg	1.42	5.00	
26 Mg	0.82	5.00	
59 Co	0.39	5.00	
115 In	0.53	5.00	
206 Pb	0.44	5.00	
207 Pb	0.39	5.00	
208 Pb	0.73	5.00	

Ion Ratio

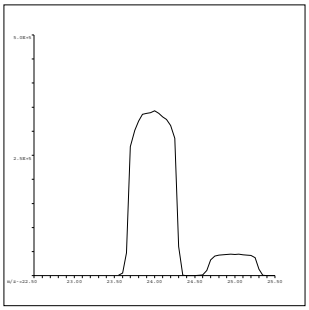
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

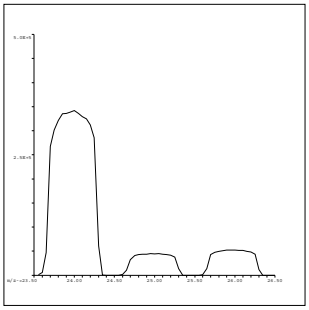
Element	Actual	Required	Flag



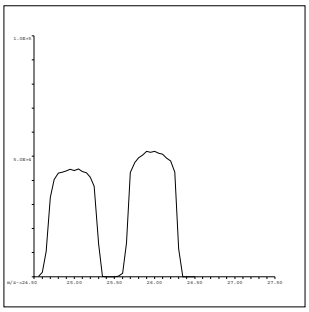
9 Be
Mass Calib.
   Actual: 9.00
   Required: 8.90-9.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



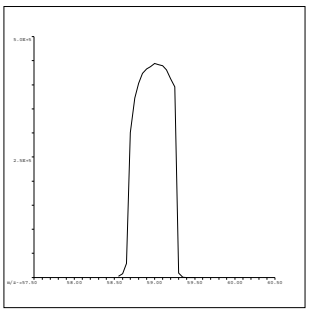
24 Mg
Mass Calib.
   Actual: 23.95
   Required: 23.90-24.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



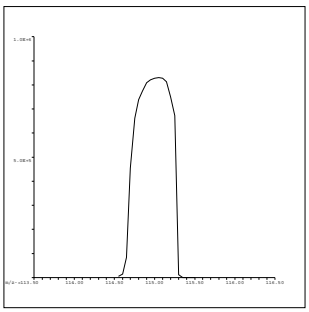
25 Mg
Mass Calib.
   Actual: 25.00
   Required: 24.90-25.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



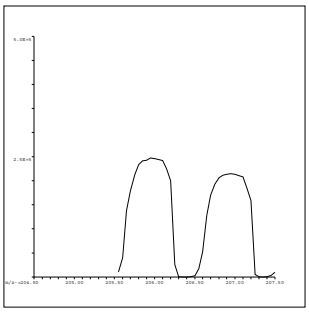
26 Mg
Mass Calib.
   Actual: 26.00
   Required: 25.90-26.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



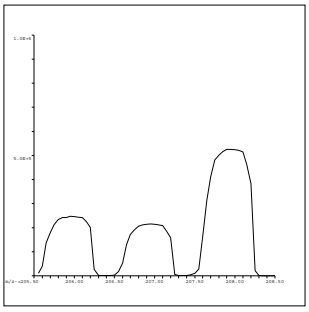
59 Co
Mass Calib.
   Actual: 59.00
   Required: 58.90-59.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



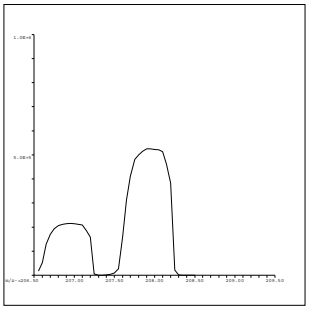
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180226A

Instrument ID: ICPMS-02

Analyte	Data File	A0226002.D	A0226003.D	A0226004.D	A0226005.D	A0226006.D	A0226007.D	A0226008.D	A0226009.D	A0226010.D	
	Acq. Date-Time	02/26/2018 05:16 PM	02/26/2018 05:22 PM	02/26/2018 05:27 PM	02/26/2018 05:33 PM	02/26/2018 05:39 PM	02/26/2018 05:44 PM	02/26/2018 05:50 PM	02/26/2018 05:55 PM	02/26/2018 06:01 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	97491.9		97945.1	97691.6	94822.4	88561.2	91066.6	85636.2	85948.9	
56 Fe [2]	CPS	2632.6		13029	41678.3	70553	127081.6	254683.2	578914.2	1140535	1.0000
55 Mn [2]	CPS	269.9		2378.4	19781.2	38358.4	71806.6	146920.4	343945.9	682609.3	1.0000
52 Cr [2]	CPS	411.9		4521.6	39593	77543.1	145044.6	293996.6	689672.6	1420039.1	0.9999
72 Ge (ISTD) [1]	CPS	78725.2		80838.6	79724.2	77940.1	73997.6	75191.7	70909.3	71589.1	
78 Se [1]	CPS	1.1		151.1	1324.6	2741.4	5176.6	10488.2	24915.4	49860.4	1.0000
72 Ge (ISTD) [2]	CPS	66539.2	68691.3	67509.8	66547.1	65096.8	61880.1	63082.1	59057.1	59377.4	
75 As [2]	CPS	25.8	117.8	430.2	3941.8	7812.1	14504.3	29856.1	69819.3	139372.4	1.0000
103 Rh (ISTD) [2]	CPS	2010768.1		2077477	2060452.4	2039726.9	1928892.8	1979255.7	1857828.9	1871094.3	
95 Mo [2]	CPS	155.6		2488.1	24050.9	47649.2	91115.4	187293.5	443969	889014.6	1.0000
159 Tb (ISTD) [3]	CPS	5729624.3		5937860.3	5973070.7	5993532.6	5784712.1	6047619.1	5817437.6	5855236.7	
137 Ba [3]	CPS	115.8		5844.7	49168.6	96703.5	183434.1	381224.1	901764.1	1870877.4	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

Fe is not reported

3/6/2018

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICPMS-02

Analyte	Data File	A0227002.D	A0227004.D	A0227005.D	A0227006.D	A0227007.D	A0227008.D	A0227009.D	A0227010.D	
	Acq. Date-Time	02/27/2018 09:38 AM	02/27/2018 09:49 AM	02/27/2018 09:55 AM	02/27/2018 10:00 AM	02/27/2018 10:06 AM	02/27/2018 10:12 AM	02/27/2018 10:17 AM	02/27/2018 10:23 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	53663.1	54328.8	54076.8	54085.8	54306.5	53351.1	54387.8	52916.4	
78 Se [1]	CPS	1.1	103.3	967.8	1901.3	3817.3	7629.8	19411.1	37683.4	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.329	0.10	10.00	0	103	90	110				
Barium	10.034	1.0	10.00	0	100	90	110				
Manganese	104.434	0.50	100.0	0	104	90	110				
Molybdenum	10.677	0.50	10.00	0	107	90	110				
Selenium	10.034	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.116	0.10	0.1000	0	116	80	120				
Barium	1.078	1.0	1.000	0	108	80	120				
Manganese	0.524	0.50	0.5000	0	105	80	120				
Molybdenum	0.564	0.50	0.5000	0	113	80	120				
Selenium	0.545	0.50	0.5000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.116	0.10	20.00	0	101	90	110				
Barium	21.080	1.0	20.00	0	105	90	110				
Manganese	19.912	0.50	20.00	0	99.6	90	110				
Molybdenum	20.101	0.50	20.00	0	101	90	110				
Selenium	19.466	0.50	20.00	0	97.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.231	0.10	20.00	0	101	90	110				
Barium	21.098	1.0	20.00	0	105	90	110				
Manganese	19.795	0.50	20.00	0	99.0	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	20.269	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.239	0.10	20.00	0	101	90	110				
Barium	21.250	1.0	20.00	0	106	90	110				
Manganese	20.353	0.50	20.00	0	102	90	110				
Molybdenum	20.110	0.50	20.00	0	101	90	110				
Selenium	20.272	0.50	20.00	0	101	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.758	0.10	20.00	0	98.8	90	110				
Barium	20.997	1.0	20.00	0	105	90	110				
Manganese	20.149	0.50	20.00	0	101	90	110				
Molybdenum	19.756	0.50	20.00	0	98.8	90	110				
Selenium	20.839	0.50	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ZZZZZZ**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Barium	1.118	1.0	1.000	0	112	70	130				
Manganese	0.542	0.50	0.5000	0	108	70	130				
Molybdenum	0.523	0.50	0.5000	0	105	70	130				
Selenium	0.544	0.50	0.5000	0	109	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.977	0.10	20.00	0	99.9	90	110				
Barium	20.964	1.0	20.00	0	105	90	110				
Manganese	20.136	0.50	20.00	0	101	90	110				
Molybdenum	20.015	0.50	20.00	0	100	90	110				
Selenium	20.980	0.50	20.00	0	105	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.834	0.10	20.00	0	99.2	90	110				
Barium	20.968	1.0	20.00	0	105	90	110				
Manganese	20.072	0.50	20.00	0	100	90	110				
Molybdenum	19.983	0.50	20.00	0	99.9	90	110				
Selenium	20.293	0.50	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.305	0.10	20.00	0	102	90	110				
Barium	20.919	1.0	20.00	0	105	90	110				
Manganese	20.434	0.50	20.00	0	102	90	110				
Molybdenum	19.950	0.50	20.00	0	99.7	90	110				
Selenium	20.505	0.50	20.00	0	103	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.952	0.10	20.00	0	99.8	90	110				
Barium	20.866	1.0	20.00	0	104	90	110				
Manganese	20.373	0.50	20.00	0	102	90	110				
Molybdenum	19.657	0.50	20.00	0	98.3	90	110				
Selenium	20.206	0.50	20.00	0	101	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCV**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.953	0.10	20.00	0	99.8	90	110				
Barium	20.665	1.0	20.00	0	103	90	110				
Manganese	20.426	0.50	20.00	0	102	90	110				
Molybdenum	19.576	0.50	20.00	0	97.9	90	110				
Selenium	20.287	0.50	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6020_DIS**	Units:	**µg/L**	Prep Date:		RunNo:	**122325**
Client ID:	**ZZZZZZ**	Batch ID:	**R122325**	TestNo:	**EPA 6020**			Analysis Date:	**2/27/2018**	SeqNo:	**2941932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.114	0.10	0.1000	0	114	70	130				
Barium	1.106	1.0	1.000	0	111	70	130				
Manganese	0.523	0.50	0.5000	0	105	70	130				
Molybdenum	0.497	0.50	0.5000	0	99.3	70	130				
Selenium	0.585	0.50	0.5000	0	117	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.170	0.10	10.00	0	102	90	110				
Barium	10.163	1.0	10.00	0	102	90	110				
Chromium	10.519	1.0	10.00	0	105	90	110				
Manganese	104.573	0.50	100.0	0	105	90	110				
Molybdenum	10.864	0.50	10.00	0	109	90	110				
Selenium	10.172	0.50	10.00	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.113	0.10	0.1000	0	113	80	120				
Barium	1.080	1.0	1.000	0	108	80	120				
Chromium	1.065	1.0	1.000	0	106	80	120				
Manganese	0.599	0.50	0.5000	0	120	80	120				
Molybdenum	0.596	0.50	0.5000	0	119	80	120				
Selenium	0.469	0.50	0.5000	0	93.9	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.289	0.10	20.00	0	101	90	110				
Barium	20.639	1.0	20.00	0	103	90	110				
Chromium	21.298	1.0	20.00	0	106	90	110				
Manganese	20.639	0.50	20.00	0	103	90	110				
Molybdenum	19.795	0.50	20.00	0	99.0	90	110				
Selenium	19.408	0.50	20.00	0	97.0	90	110				

This run is for Se only.

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.624	0.10	20.00	0	103	90	110				
Barium	21.194	1.0	20.00	0	106	90	110				
Chromium	20.991	1.0	20.00	0	105	90	110				
Manganese	20.167	0.50	20.00	0	101	90	110				
Molybdenum	20.248	0.50	20.00	0	101	90	110				
Selenium	19.257	0.50	20.00	0	96.3	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.419	0.10	20.00	0	102	90	110				
Barium	21.255	1.0	20.00	0	106	90	110				
Chromium	20.717	1.0	20.00	0	104	90	110				
Manganese	20.633	0.50	20.00	0	103	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	19.434	0.50	20.00	0	97.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.244	0.10	20.00	0	101	90	110				
Barium	20.887	1.0	20.00	0	104	90	110				
Chromium	20.864	1.0	20.00	0	104	90	110				
Manganese	20.714	0.50	20.00	0	104	90	110				
Molybdenum	19.910	0.50	20.00	0	99.6	90	110				
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.330	0.10	20.00	0	102	90	110				
Barium	20.823	1.0	20.00	0	104	90	110				
Chromium	20.806	1.0	20.00	0	104	90	110				
Manganese	20.858	0.50	20.00	0	104	90	110				
Molybdenum	19.971	0.50	20.00	0	99.9	90	110				
Selenium	19.472	0.50	20.00	0	97.4	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ZZZZZZ** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	94.1	70	130				
Barium	1.092	1.0	1.000	0	109	70	130				
Chromium	1.117	1.0	1.000	0	112	70	130				
Manganese	0.557	0.50	0.5000	0	111	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.511	0.50	0.5000	0	102	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.178	0.10	20.00	0	101	90	110				
Barium	21.251	1.0	20.00	0	106	90	110				
Chromium	20.745	1.0	20.00	0	104	90	110				
Manganese	20.559	0.50	20.00	0	103	90	110				
Molybdenum	20.111	0.50	20.00	0	101	90	110				
Selenium	18.767	0.50	20.00	0	93.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.655	0.10	20.00	0	103	90	110				
Barium	21.348	1.0	20.00	0	107	90	110				
Chromium	20.155	1.0	20.00	0	101	90	110				
Manganese	20.193	0.50	20.00	0	101	90	110				
Molybdenum	20.173	0.50	20.00	0	101	90	110				
Selenium	19.376	0.50	20.00	0	96.9	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.807	0.10	20.00	0	104	90	110				
Barium	21.014	1.0	20.00	0	105	90	110				
Chromium	20.123	1.0	20.00	0	101	90	110				
Manganese	20.017	0.50	20.00	0	100	90	110				
Molybdenum	19.696	0.50	20.00	0	98.5	90	110				
Selenium	19.964	0.50	20.00	0	99.8	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.039	0.10	20.00	0	100	90	110				
Barium	20.832	1.0	20.00	0	104	90	110				
Chromium	20.975	1.0	20.00	0	105	90	110				
Manganese	20.982	0.50	20.00	0	105	90	110				
Molybdenum	20.193	0.50	20.00	0	101	90	110				
Selenium	17.816	0.50	20.00	0	89.1	90	110				S

No sample was affected by the low biased Se on CCV9.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.338	0.10	20.00	0	102	90	110				
Barium	20.815	1.0	20.00	0	104	90	110				
Chromium	20.572	1.0	20.00	0	103	90	110				
Manganese	20.931	0.50	20.00	0	105	90	110				
Molybdenum	20.004	0.50	20.00	0	100	90	110				
Selenium	19.124	0.50	20.00	0	95.6	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				
Barium	1.128	1.0	1.000	0	113	70	130				
Chromium	1.135	1.0	1.000	0	113	70	130				
Manganese	0.588	0.50	0.5000	0	118	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.447	0.50	0.5000	0	89.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.064	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.032	1.0	1.000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.377	1.0	20.00	0	96.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.731	1.0	20.00	0	98.7	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.721	1.0	20.00	0	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.049	1.0	20.00	0	100	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ZZZZZZ**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.656	1.0	20.00	0	98.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.741	1.0	20.00	0	98.7	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCV**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.867	1.0	20.00	0	99.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**CCV8**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**122324**		
Client ID:	**CCV**	Batch ID:	**R122324**	TestNo:	**EPA 6020**			Analysis Date:	**2/27/2018**	SeqNo:	**2941805**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Chromium	19.755	1.0	20.00	0	98.8	90	110						

Sample ID	**CCV9**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**122324**		
Client ID:	**CCV**	Batch ID:	**R122324**	TestNo:	**EPA 6020**			Analysis Date:	**2/27/2018**	SeqNo:	**2941814**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Chromium	19.627	1.0	20.00	0	98.1	90	110						

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**122324**		
Client ID:	**ZZZZZZ**	Batch ID:	**R122324**	TestNo:	**EPA 6020**			Analysis Date:	**2/27/2018**	SeqNo:	**2941816**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Chromium	1.032	1.0	1.000	0	103	70	130						

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **CCB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.240	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	0.398	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

This run is for Se only.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **CCB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSA**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.726	0.10	20.00	0	104	80	120				
Barium	16.840	1.0	20.00	0	84.2	80	120				
Manganese	20.545	0.50	20.00	0	103	80	120				
Molybdenum	21.758	0.50	20.00	0	109	80	120				
Selenium	18.881	0.50	20.00	0	94.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSA**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSAB	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/26/2018	SeqNo:	2941874

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.200	0.10	20.00	0	101	80	120				
Barium	17.724	1.0	20.00	0	88.6	80	120				
Manganese	20.579	0.50	20.00	0	103	80	120				
Molybdenum	21.928	0.50	20.00	0	110	80	120				
Selenium	20.681	0.50	20.00	0	103	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSA	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2941933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

not reported

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ICSAB	Batch ID:	R122325	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2941934

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.211	0.10	20.00	0	101	80	120				
Barium	15.422	1.0	20.00	0	77.1	80	120				S
Manganese	21.505	0.50	20.00	0	108	80	120				
Molybdenum	21.649	0.50	20.00	0	108	80	120				
Selenium	19.163	0.50	20.00	0	95.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122325**
Client ID: **ICSAB**	Batch ID: **R122325**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.085	0.10	20.00	0	100	80	120				
Barium	18.015	1.0	20.00	0	90.1	80	120				
Manganese	21.203	0.50	20.00	0	106	80	120				
Molybdenum	21.332	0.50	20.00	0	107	80	120				
Selenium	18.838	0.50	20.00	0	94.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ICSA** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ICSAB** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.173	0.10	20.00	0	95.9	80	120				
Barium	19.649	1.0	20.00	0	98.2	80	120				
Chromium	19.434	1.0	20.00	0	97.2	80	120				
Manganese	22.748	0.50	20.00	0	114	80	120				
Molybdenum	20.428	0.50	20.00	0	102	80	120				
Selenium	17.363	0.50	20.00	0	86.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ICSA** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	0.143	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

This run is for Se only.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/6/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.288	0.10	20.00	0	96.4	80	120				
Barium	19.725	1.0	20.00	0	98.6	80	120				
Chromium	19.609	1.0	20.00	0	98.0	80	120				
Manganese	22.886	0.50	20.00	0	114	80	120				
Molybdenum	20.479	0.50	20.00	0	102	80	120				
Selenium	17.660	0.50	20.00	0	88.3	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	0.131	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.518	0.10	20.00	0	97.6	80	120				
Barium	20.356	1.0	20.00	0	102	80	120				
Chromium	18.767	1.0	20.00	0	93.8	80	120				
Manganese	23.612	0.50	20.00	0	118	80	120				
Molybdenum	20.691	0.50	20.00	0	103	80	120				
Selenium	17.809	0.50	20.00	0	89.0	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSA**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.093	1.0	20.00	0	95.5	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSA**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/26/2018**	SeqNo: **2941758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.196	1.0	20.00	0	96.0	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSA**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122324**
Client ID: **ICSAB**	Batch ID: **R122324**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2941819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.874	1.0	20.00	0	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5729624.3	5729624.3	100	PASS	70-125	97491.9	97491.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5949790.2	5729624.3	103.84	PASS	70-125	100434.5	97491.9	103.02	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5937860.3	5729624.3	103.63	PASS	70-125	97945.1	97491.9	100.46	PASS	70-125
Std3-5/50 ppb	ICAL	1	5973070.7	5729624.3	104.25	PASS	70-125	97691.6	97491.9	100.2	PASS	70-125
Std4-10/100 ppb	ICAL	1	5993532.6	5729624.3	104.61	PASS	70-125	94822.4	97491.9	97.26	PASS	70-125
Std5-20/200 ppb	ICAL	1	5784712.1	5729624.3	100.96	PASS	70-125	88561.2	97491.9	90.84	PASS	70-125
Std6-40/400 ppb	ICAL	1	6047619.1	5729624.3	105.55	PASS	70-125	91066.6	97491.9	93.41	PASS	70-125
Std7-100/1000 ppb	ICAL	1	5817437.6	5729624.3	101.53	PASS	70-125	85636.2	97491.9	87.84	PASS	70-125
Std8-200/2000 ppb	ICAL	1	5855236.7	5729624.3	102.19	PASS	70-125	85948.9	97491.9	88.16	PASS	70-125
ICV	ICV	1	5444260.4	5729624.3	95.02	PASS	70-125	76934	97491.9	78.91	PASS	70-125
ICB	ICB	1	5497481	5729624.3	95.95	PASS	70-125	78632.4	97491.9	80.66	PASS	70-125
LLICV	CCV1	1	4935809.7	5729624.3	86.15	PASS	70-125	70762.9	97491.9	72.58	PASS	70-125
ICSA1	ICSA	1	4872186.1	5729624.3	85.035	PASS	70-125	80525.3	97491.9	82.6	PASS	70-125
ICSAB1	ICSAB	1	5962027.8	5729624.3	104.06	PASS	70-125	103061.5	97491.9	105.71	PASS	70-125
CCV1	CCV	1	6128092.4	5729624.3	106.95	PASS	70-125	107973.1	97491.9	110.75	PASS	70-125
CCB1	CCB	1	5859270.4	5729624.3	102.26	PASS	70-125	99382.8	97491.9	101.94	PASS	70-125
CCV2	CCV	1	6710152.9	5729624.3	117.11	PASS	70-125	120410.7	97491.9	123.51	PASS	70-125
CCB2	CCB	1	6363665.9	5729624.3	111.07	PASS	70-125	109554.6	97491.9	112.37	PASS	70-125
CCV3	CCV	1	6560641.3	5729624.3	114.5	PASS	70-125	112320.7	97491.9	115.21	PASS	70-125
CCB3	CCB	1	5725121.2	5729624.3	99.92	PASS	70-125	96025.7	97491.9	98.5	PASS	70-125
CCV4	CCV	1	6705398.5	5729624.3	117.03	PASS	70-125	109876.2	97491.9	112.7	PASS	70-125
CCB4	CCB	1	5887453	5729624.3	102.75	PASS	70-125	94427.5	97491.9	96.86	PASS	70-125
LLCCV1	CCV2	1	5737983.5	5729624.3	100.15	PASS	70-125	90255.9	97491.9	92.58	PASS	70-125
ICSA2	ICSA	1	5295032.6	5729624.3	92.42	PASS	70-125	88048.9	97491.9	90.31	PASS	70-125
ICSAB2	ICSAB	1	6508218.2	5729624.3	113.59	PASS	70-125	110466.8	97491.9	113.31	PASS	70-125
MB-66882	MBLK	1	6001938.1	5729624.3	104.75	PASS	70-125	98448.5	97491.9	100.98	PASS	70-125
LCS-66882	LCS	1	6241214.8	5729624.3	108.93	PASS	70-125	95321.8	97491.9	97.77	PASS	70-125
N028726-001B	SAMP	1	4134627.6	5729624.3	72.16	PASS	70-125	78220.3	97491.9	80.23	PASS	70-125
N028726-001B	SAMP	5	5100749.7	5729624.3	89.024	PASS	70-125	87873.9	97491.9	90.13	PASS	70-125
N028726-001B	SAMP	25	5520483.9	5729624.3	96.35	PASS	70-125	91735.9	97491.9	94.096	PASS	70-125
N028726-001B-PS	PS	1	4291868	5729624.3	74.91	PASS	70-125	84189.7	97491.9	86.36	PASS	70-125
N028726-001B-PS	PS	5	5116934.8	5729624.3	89.31	PASS	70-125	91115.1	97491.9	93.46	PASS	70-125
N028726-001B-MS	MS	1	4264718.5	5729624.3	74.43	PASS	70-125	86611.7	97491.9	88.84	PASS	70-125
N028726-001B-MS	MS	5	5266257	5729624.3	91.91	PASS	70-125	90829.2	97491.9	93.17	PASS	70-125
N028726-001B-MSD	MSD	1	4287631.7	5729624.3	74.83	PASS	70-125	88147.9	97491.9	90.42	PASS	70-125
CCV5	CCV	1	6659693	5729624.3	116.23	PASS	70-125	111627.4	97491.9	114.5	PASS	70-125
CCB5	CCB	1	5860670.5	5729624.3	102.29	PASS	70-125	94469	97491.9	96.9	PASS	70-125
N028726-001B-MSD	MSD	5	4870213.2	5729624.3	85.001	PASS	70-125	82691.4	97491.9	84.82	PASS	70-125
N028726-002B	SAMP	1	4644837.1	5729624.3	81.067	PASS	70-125	84436.7	97491.9	86.61	PASS	70-125
N028726-002B	SAMP	5	5308939.5	5729624.3	92.66	PASS	70-125	90747.2	97491.9	93.082	PASS	70-125
N028726-003B	SAMP	1	3461445.6	5729624.3	60.41	NR!	70-125	78086.2	97491.9	80.095	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-003B	SAMP	5	4896369	5729624.3	85.46	PASS	70-125	86845.9	97491.9	89.08	PASS	70-125
N028726-004B	SAMP	1	3563500.8	5729624.3	62.19	NR!	70-125	78356.4	97491.9	80.37	PASS	70-125
N028726-004B	SAMP	5	4968782.4	5729624.3	86.72	PASS	70-125	85699.8	97491.9	87.9	PASS	70-125
N028726-005B	SAMP	1	3487803	5729624.3	60.87	NR!	70-125	74442	97491.9	76.36	PASS	70-125
N028726-005B	SAMP	5	4945116.3	5729624.3	86.31	PASS	70-125	83256.7	97491.9	85.4	PASS	70-125
N028727-002B	SAMP	1	5490620.8	5729624.3	95.83	PASS	70-125	90604.4	97491.9	92.94	PASS	70-125
CCV6	CCV	1	6419302.8	5729624.3	112.04	PASS	70-125	104208	97491.9	106.89	PASS	70-125
CCB6	CCB	1	5685205.8	5729624.3	99.22	PASS	70-125	88402.7	97491.9	90.68	PASS	70-125
N028727-002B	SAMP	5	5348752.9	5729624.3	93.35	PASS	70-125	81951.4	97491.9	84.06	PASS	70-125
N028727-003B	SAMP	1	5333516.3	5729624.3	93.087	PASS	70-125	82292.8	97491.9	84.41	PASS	70-125
N028727-003B	SAMP	5	5344457.3	5729624.3	93.28	PASS	70-125	82509.6	97491.9	84.63	PASS	70-125
N028727-004B	SAMP	1	5391255.4	5729624.3	94.094	PASS	70-125	82936.2	97491.9	85.07	PASS	70-125
N028727-004B	SAMP	5	5268869.4	5729624.3	91.96	PASS	70-125	79856.5	97491.9	81.91	PASS	70-125
N028727-005B	SAMP	1	5262523.7	5729624.3	91.85	PASS	70-125	80298.7	97491.9	82.36	PASS	70-125
N028727-005B	SAMP	5	5252623.5	5729624.3	91.67	PASS	70-125	79619	97491.9	81.67	PASS	70-125
N028727-006B	SAMP	1	5302626.7	5729624.3	92.55	PASS	70-125	80417.8	97491.9	82.49	PASS	70-125
N028727-006B	SAMP	5	5284698.3	5729624.3	92.23	PASS	70-125	79645.5	97491.9	81.69	PASS	70-125
N028727-007B	SAMP	1	5281808.6	5729624.3	92.18	PASS	70-125	79449.4	97491.9	81.49	PASS	70-125
CCV7	CCV	1	6239376.7	5729624.3	108.9	PASS	70-125	95063.1	97491.9	97.51	PASS	70-125
CCB7	CCB	1	5553368.5	5729624.3	96.92	PASS	70-125	82329.9	97491.9	84.45	PASS	70-125
N028727-007B	SAMP	5	5250568	5729624.3	91.64	PASS	70-125	76286.1	97491.9	78.25	PASS	70-125
N028727-008B	SAMP	1	5501214.5	5729624.3	96.014	PASS	70-125	81578.3	97491.9	83.68	PASS	70-125
N028727-008B	SAMP	5	5377218.7	5729624.3	93.85	PASS	70-125	78540.6	97491.9	80.56	PASS	70-125
N028727-009B	SAMP	1	5622614.6	5729624.3	98.13	PASS	70-125	82728.3	97491.9	84.86	PASS	70-125
N028727-009B	SAMP	5	5318241.1	5729624.3	92.82	PASS	70-125	78082.8	97491.9	80.092	PASS	70-125
N028727-010B	SAMP	1	5467283.2	5729624.3	95.42	PASS	70-125	79295.1	97491.9	81.34	PASS	70-125
N028727-010B	SAMP	5	5278731.2	5729624.3	92.13	PASS	70-125	76995.8	97491.9	78.98	PASS	70-125
N028727-011B	SAMP	1	5501131.4	5729624.3	96.012	PASS	70-125	80059.8	97491.9	82.12	PASS	70-125
N028727-011B	SAMP	5	5198401.2	5729624.3	90.73	PASS	70-125	76820.3	97491.9	78.8	PASS	70-125
N028727-012B	SAMP	1	5350804.4	5729624.3	93.39	PASS	70-125	77720	97491.9	79.72	PASS	70-125
CCV8	CCV	1	6119692.3	5729624.3	106.81	PASS	70-125	90708.2	97491.9	93.042	PASS	70-125
CCB8	CCB	1	5403214.8	5729624.3	94.3	PASS	70-125	77030.1	97491.9	79.012	PASS	70-125
N028727-012B	SAMP	5	5216442.1	5729624.3	91.043	PASS	70-125	73495.7	97491.9	75.39	PASS	70-125
N028727-013B	SAMP	1	5246136.1	5729624.3	91.56	PASS	70-125	74036.7	97491.9	75.94	PASS	70-125
N028727-013B	SAMP	5	5158762.7	5729624.3	90.037	PASS	70-125	73750.1	97491.9	75.65	PASS	70-125
N028727-014C	SAMP	1	5115322.3	5729624.3	89.28	PASS	70-125	73097.1	97491.9	74.98	PASS	70-125
N028727-014C	SAMP	5	5058070.4	5729624.3	88.28	PASS	70-125	72005.8	97491.9	73.86	PASS	70-125
N028727-015C	SAMP	1	5127012.9	5729624.3	89.48	PASS	70-125	71828.4	97491.9	73.68	PASS	70-125
N028727-015C	SAMP	5	5109515	5729624.3	89.18	PASS	70-125	72605.2	97491.9	74.47	PASS	70-125
CCV9	CCV	1	5953435.7	5729624.3	103.91	PASS	70-125	85218.4	97491.9	87.41	PASS	70-125
CCB9	CCB	1	5254686.8	5729624.3	91.71	PASS	70-125	72795.9	97491.9	74.67	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	5116098.5	5729624.3	89.29	PASS	70-125	71367.5	97491.9	73.2	PASS	70-125
ICSA3	ICSA	1	4878337.2	5729624.3	85.14	PASS	70-125	71649.7	97491.9	73.49	PASS	70-125
ICSAB3	ICSAB	1	5973149.1	5729624.3	104.25	PASS	70-125	91206.4	97491.9	93.55	PASS	70-125
ICSAB3	ICSAB	1	6446761.5	5729624.3	112.52	PASS	70-125	87311.7	97491.9	89.56	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66539.2	66539.2	100	PASS	70-125	78725.2	78725.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	68691.3	66539.2	103.23	PASS	70-125	81825.8	78725.2	103.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	67509.8	66539.2	101.46	PASS	70-125	80838.6	78725.2	102.68	PASS	70-125
Std3-5/50 ppb	ICAL	1	66547.1	66539.2	100.01	PASS	70-125	79724.2	78725.2	101.27	PASS	70-125
Std4-10/100 ppb	ICAL	1	65096.8	66539.2	97.83	PASS	70-125	77940.1	78725.2	99.003	PASS	70-125
Std5-20/200 ppb	ICAL	1	61880.1	66539.2	93	PASS	70-125	73997.6	78725.2	93.99	PASS	70-125
Std6-40/400 ppb	ICAL	1	63082.1	66539.2	94.8	PASS	70-125	75191.7	78725.2	95.51	PASS	70-125
Std7-100/1000 ppb	ICAL	1	59057.1	66539.2	88.76	PASS	70-125	70909.3	78725.2	90.072	PASS	70-125
Std8-200/2000 ppb	ICAL	1	59377.4	66539.2	89.24	PASS	70-125	71589.1	78725.2	90.94	PASS	70-125
ICV	ICV	1	55525.9	66539.2	83.45	PASS	70-125	65486.3	78725.2	83.18	PASS	70-125
ICB	ICB	1	56003.2	66539.2	84.17	PASS	70-125	66411.9	78725.2	84.36	PASS	70-125
LLICV	CCV1	1	50175.6	66539.2	75.41	PASS	70-125	60924.1	78725.2	77.39	PASS	70-125
ICSA1	ICSA	1	54391	66539.2	81.74	PASS	70-125	63380.1	78725.2	80.51	PASS	70-125
ICSAB1	ICSAB	1	67290.2	66539.2	101.13	PASS	70-125	80235.7	78725.2	101.92	PASS	70-125
CCV1	CCV	1	72732.2	66539.2	109.31	PASS	70-125	85150.4	78725.2	108.16	PASS	70-125
CCB1	CCB	1	68019.8	66539.2	102.23	PASS	70-125	80183.2	78725.2	101.85	PASS	70-125
CCV2	CCV	1	81919.5	66539.2	123.11	PASS	70-125	91998.2	78725.2	116.86	PASS	70-125
CCB2	CCB	1	75693.1	66539.2	113.76	PASS	70-125	84426.7	78725.2	107.24	PASS	70-125
CCV3	CCV	1	77979.2	66539.2	117.19	PASS	70-125	84635.6	78725.2	107.51	PASS	70-125
CCB3	CCB	1	67294.8	66539.2	101.14	PASS	70-125	74778	78725.2	94.99	PASS	70-125
CCV4	CCV	1	78099	66539.2	117.37	PASS	70-125	84537.2	78725.2	107.38	PASS	70-125
CCB4	CCB	1	67575.7	66539.2	101.56	PASS	70-125	73882.5	78725.2	93.85	PASS	70-125
LLCCV1	CCV2	1	64546.7	66539.2	97.006	PASS	70-125	70334.9	78725.2	89.34	PASS	70-125
ICSA2	ICSA	1	60795.8	66539.2	91.37	PASS	70-125	66152.2	78725.2	84.029	PASS	70-125
ICSAB2	ICSAB	1	75196.2	66539.2	113.01	PASS	70-125	80486.9	78725.2	102.24	PASS	70-125
MB-66882	MBLK	1	69518	66539.2	104.48	PASS	70-125	77464.7	78725.2	98.4	PASS	70-125
LCS-66882	LCS	1	68217.2	66539.2	102.52	PASS	70-125	76239	78725.2	96.84	PASS	70-125
N028726-001B	SAMP	1	51216.5	66539.2	76.97	PASS	70-125	52182.9	78725.2	66.28	NR!	70-125
N028726-001B	SAMP	5	59916	66539.2	90.046	PASS	70-125	63572.8	78725.2	80.75	PASS	70-125
N028726-001B	SAMP	25	64237.8	66539.2	96.54	PASS	70-125	69985.6	78725.2	88.9	PASS	70-125
N028726-001B-PS	PS	1	53997.6	66539.2	81.15	PASS	70-125	54977.6	78725.2	69.83	NR!	70-125
N028726-001B-PS	PS	5	62346.1	66539.2	93.7	PASS	70-125	65132.5	78725.2	82.73	PASS	70-125
N028726-001B-MS	MS	1	56394.6	66539.2	84.75	PASS	70-125	56551.9	78725.2	71.83	PASS	70-125
N028726-001B-MS	MS	5	61847.5	66539.2	92.95	PASS	70-125	66059.5	78725.2	83.91	PASS	70-125
N028726-001B-MSD	MSD	1	55896.3	66539.2	84.005	PASS	70-125	57439.3	78725.2	72.96	PASS	70-125
CCV5	CCV	1	77339.6	66539.2	116.23	PASS	70-125	85523.4	78725.2	108.64	PASS	70-125
CCB5	CCB	1	67228.5	66539.2	101.04	PASS	70-125	74002.2	78725.2	94.001	PASS	70-125
N028726-001B-MSD	MSD	5	57180.6	66539.2	85.94	PASS	70-125	62466.5	78725.2	79.35	PASS	70-125
N028726-002B	SAMP	1	56347.7	66539.2	84.68	PASS	70-125	58178.8	78725.2	73.9	PASS	70-125
N028726-002B	SAMP	5	62786.9	66539.2	94.36	PASS	70-125	68574.1	78725.2	87.11	PASS	70-125
N028726-003B	SAMP	1	49554.8	66539.2	74.47	PASS	70-125	50524.3	78725.2	64.18	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028726-003B	SAMP	5	58810.9	66539.2	88.39	PASS	70-125	62463.3	78725.2	79.34	PASS	70-125
N028726-004B	SAMP	1	49144.6	66539.2	73.86	PASS	70-125	49910.4	78725.2	63.4	NR!	70-125
N028726-004B	SAMP	5	58475.1	66539.2	87.88	PASS	70-125	62199	78725.2	79.008	PASS	70-125
N028726-005B	SAMP	1	47575.5	66539.2	71.5	PASS	70-125	48555.1	78725.2	61.68	NR!	70-125
N028726-005B	SAMP	5	56755.7	66539.2	85.3	PASS	70-125	59753	78725.2	75.9	PASS	70-125
N028727-002B	SAMP	1	63403.4	66539.2	95.29	PASS	70-125	67861.3	78725.2	86.2	PASS	70-125
CCV6	CCV	1	74045.7	66539.2	111.28	PASS	70-125	81056.2	78725.2	102.96	PASS	70-125
CCB6	CCB	1	63500.7	66539.2	95.43	PASS	70-125	70436.5	78725.2	89.47	PASS	70-125
N028727-002B	SAMP	5	58473	66539.2	87.88	PASS	70-125	64715.3	78725.2	82.2	PASS	70-125
N028727-003B	SAMP	1	59241.4	66539.2	89.032	PASS	70-125	64204.3	78725.2	81.55	PASS	70-125
N028727-003B	SAMP	5	58787.4	66539.2	88.35	PASS	70-125	65947.7	78725.2	83.77	PASS	70-125
N028727-004B	SAMP	1	59038.4	66539.2	88.73	PASS	70-125	65080.3	78725.2	82.67	PASS	70-125
N028727-004B	SAMP	5	58110.8	66539.2	87.33	PASS	70-125	64689.8	78725.2	82.17	PASS	70-125
N028727-005B	SAMP	1	57043.7	66539.2	85.73	PASS	70-125	62260.2	78725.2	79.085	PASS	70-125
N028727-005B	SAMP	5	57668	66539.2	86.67	PASS	70-125	64784.3	78725.2	82.29	PASS	70-125
N028727-006B	SAMP	1	57422.5	66539.2	86.3	PASS	70-125	63198.2	78725.2	80.28	PASS	70-125
N028727-006B	SAMP	5	56970.9	66539.2	85.62	PASS	70-125	65734.8	78725.2	83.5	PASS	70-125
N028727-007B	SAMP	1	57825.1	66539.2	86.9	PASS	70-125	64289.2	78725.2	81.66	PASS	70-125
CCV7	CCV	1	67562.1	66539.2	101.54	PASS	70-125	76973.8	78725.2	97.78	PASS	70-125
CCB7	CCB	1	59354.8	66539.2	89.2	PASS	70-125	67260	78725.2	85.44	PASS	70-125
N028727-007B	SAMP	5	56641.9	66539.2	85.13	PASS	70-125	62977.4	78725.2	80	PASS	70-125
N028727-008B	SAMP	1	59268	66539.2	89.072	PASS	70-125	66566.1	78725.2	84.56	PASS	70-125
N028727-008B	SAMP	5	57564	66539.2	86.51	PASS	70-125	65842.1	78725.2	83.64	PASS	70-125
N028727-009B	SAMP	1	59604.9	66539.2	89.58	PASS	70-125	66254.7	78725.2	84.16	PASS	70-125
N028727-009B	SAMP	5	57126.2	66539.2	85.85	PASS	70-125	65633.3	78725.2	83.37	PASS	70-125
N028727-010B	SAMP	1	57319.9	66539.2	86.14	PASS	70-125	64794.5	78725.2	82.3	PASS	70-125
N028727-010B	SAMP	5	56624.3	66539.2	85.099	PASS	70-125	65111.4	78725.2	82.71	PASS	70-125
N028727-011B	SAMP	1	58332.3	66539.2	87.67	PASS	70-125	65501.6	78725.2	83.2	PASS	70-125
N028727-011B	SAMP	5	55610.8	66539.2	83.58	PASS	70-125	63782.7	78725.2	81.019	PASS	70-125
N028727-012B	SAMP	1	56414.7	66539.2	84.78	PASS	70-125	64100.7	78725.2	81.42	PASS	70-125
CCV8	CCV	1	65314.1	66539.2	98.16	PASS	70-125	75036.6	78725.2	95.31	PASS	70-125
CCB8	CCB	1	57220.8	66539.2	86	PASS	70-125	65504.1	78725.2	83.21	PASS	70-125
N028727-012B	SAMP	5	54331.1	66539.2	81.65	PASS	70-125	62257.9	78725.2	79.083	PASS	70-125
N028727-013B	SAMP	1	52944.1	66539.2	79.57	PASS	70-125	60369.9	78725.2	76.68	PASS	70-125
N028727-013B	SAMP	5	54305.4	66539.2	81.61	PASS	70-125	61666.9	78725.2	78.33	PASS	70-125
N028727-014C	SAMP	1	52751.2	66539.2	79.28	PASS	70-125	59861.3	78725.2	76.038	PASS	70-125
N028727-014C	SAMP	5	53230.6	66539.2	80	PASS	70-125	60155.7	78725.2	76.41	PASS	70-125
N028727-015C	SAMP	1	52176.1	66539.2	78.41	PASS	70-125	59654	78725.2	75.77	PASS	70-125
N028727-015C	SAMP	5	53829.3	66539.2	80.9	PASS	70-125	62055	78725.2	78.82	PASS	70-125
CCV9	CCV	1	61184.9	66539.2	91.95	PASS	70-125	71776.8	78725.2	91.17	PASS	70-125
CCB9	CCB	1	53460.1	66539.2	80.34	PASS	70-125	61974.6	78725.2	78.72	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	52703.6	66539.2	79.21	PASS	70-125	60502.6	78725.2	76.85	PASS	70-125
ICSA3	ICSA	1	51542	66539.2	77.46	PASS	70-125	57865.4	78725.2	73.5	PASS	70-125
ICSAB3	ICSAB	1	64014.6	66539.2	96.21	PASS	70-125	72605.8	78725.2	92.23	PASS	70-125
ICSAB3	ICSAB	1	60678.8	66539.2	91.19	PASS	70-125	63869.6	78725.2	81.13	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	2010768.1	2010768.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	2095079.1	2010768.1	104.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	2077477	2010768.1	103.32	PASS	70-125
Std3-5/50 ppb	ICAL	1	2060452.4	2010768.1	102.47	PASS	70-125
Std4-10/100 ppb	ICAL	1	2039726.9	2010768.1	101.44	PASS	70-125
Std5-20/200 ppb	ICAL	1	1928892.8	2010768.1	95.93	PASS	70-125
Std6-40/400 ppb	ICAL	1	1979255.7	2010768.1	98.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1857828.9	2010768.1	92.39	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1871094.3	2010768.1	93.054	PASS	70-125
ICV	ICV	1	1740741.6	2010768.1	86.57	PASS	70-125
ICB	ICB	1	1776890.2	2010768.1	88.37	PASS	70-125
LLICV	CCV1	1	1605452.4	2010768.1	79.84	PASS	70-125
ICSA1	ICSA	1	1549752.1	2010768.1	77.073	PASS	70-125
ICSAB1	ICSAB	1	1938163.7	2010768.1	96.39	PASS	70-125
CCV1	CCV	1	2168755	2010768.1	107.86	PASS	70-125
CCB1	CCB	1	2029044.6	2010768.1	100.91	PASS	70-125
CCV2	CCV	1	2393210.2	2010768.1	119.02	PASS	70-125
CCB2	CCB	1	2250124.4	2010768.1	111.9	PASS	70-125
CCV3	CCV	1	2295255.8	2010768.1	114.15	PASS	70-125
CCB3	CCB	1	2003532.9	2010768.1	99.64	PASS	70-125
CCV4	CCV	1	2320454.1	2010768.1	115.4	PASS	70-125
CCB4	CCB	1	2004189.3	2010768.1	99.67	PASS	70-125
LLCCV1	CCV2	1	1953812	2010768.1	97.17	PASS	70-125
ICSA2	ICSA	1	1707672.8	2010768.1	84.93	PASS	70-125
ICSAB2	ICSAB	1	2092410.1	2010768.1	104.06	PASS	70-125
MB-66882	MBLK	1	2076113	2010768.1	103.25	PASS	70-125
LCS-66882	LCS	1	2086702.8	2010768.1	103.78	PASS	70-125
N028726-001B	SAMP	1	1330086.5	2010768.1	66.15	NR!	70-125
N028726-001B	SAMP	5	1648017.7	2010768.1	81.96	PASS	70-125
N028726-001B	SAMP	25	1825172.8	2010768.1	90.77	PASS	70-125
N028726-001B-PS	PS	1	1400653.6	2010768.1	69.66	NR!	70-125
N028726-001B-PS	PS	5	1707259.8	2010768.1	84.91	PASS	70-125
N028726-001B-MS	MS	1	1429659.6	2010768.1	71.1	PASS	70-125
N028726-001B-MS	MS	5	1699479.6	2010768.1	84.52	PASS	70-125
N028726-001B-MSD	MSD	1	1431244.9	2010768.1	71.18	PASS	70-125
CCV5	CCV	1	2305999.9	2010768.1	114.68	PASS	70-125
CCB5	CCB	1	1998294.8	2010768.1	99.38	PASS	70-125
N028726-001B-MSD	MSD	5	1561012.5	2010768.1	77.63	PASS	70-125
N028726-002B	SAMP	1	1471449.5	2010768.1	73.18	PASS	70-125
N028726-002B	SAMP	5	1722795.2	2010768.1	85.68	PASS	70-125
N028726-003B	SAMP	1	1190218.4	2010768.1	59.19	NR!	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028726-003B	SAMP	5	1592652.8	2010768.1	79.21	PASS	70-125
N028726-004B	SAMP	1	1188477.1	2010768.1	59.11	NR!	70-125
N028726-004B	SAMP	5	1591614.5	2010768.1	79.15	PASS	70-125
N028726-005B	SAMP	1	1155126.8	2010768.1	57.45	NR!	70-125
N028726-005B	SAMP	5	1547529.4	2010768.1	76.96	PASS	70-125
N028727-002B	SAMP	1	1739322.7	2010768.1	86.5	PASS	70-125
CCV6	CCV	1	2174228.2	2010768.1	108.13	PASS	70-125
CCB6	CCB	1	1916207.5	2010768.1	95.3	PASS	70-125
N028727-002B	SAMP	5	1722986.2	2010768.1	85.69	PASS	70-125
N028727-003B	SAMP	1	1652928.3	2010768.1	82.2	PASS	70-125
N028727-003B	SAMP	5	1708473.3	2010768.1	84.97	PASS	70-125
N028727-004B	SAMP	1	1655160.3	2010768.1	82.31	PASS	70-125
N028727-004B	SAMP	5	1672703.8	2010768.1	83.19	PASS	70-125
N028727-005B	SAMP	1	1607880.3	2010768.1	79.96	PASS	70-125
N028727-005B	SAMP	5	1663533.4	2010768.1	82.73	PASS	70-125
N028727-006B	SAMP	1	1621225.6	2010768.1	80.63	PASS	70-125
N028727-006B	SAMP	5	1683116.1	2010768.1	83.71	PASS	70-125
N028727-007B	SAMP	1	1605423.2	2010768.1	79.84	PASS	70-125
CCV7	CCV	1	2037877.1	2010768.1	101.35	PASS	70-125
CCB7	CCB	1	1808461.6	2010768.1	89.94	PASS	70-125
N028727-007B	SAMP	5	1629968.8	2010768.1	81.062	PASS	70-125
N028727-008B	SAMP	1	1681174.1	2010768.1	83.61	PASS	70-125
N028727-008B	SAMP	5	1681144.4	2010768.1	83.61	PASS	70-125
N028727-009B	SAMP	1	1677140.7	2010768.1	83.41	PASS	70-125
N028727-009B	SAMP	5	1653064.8	2010768.1	82.21	PASS	70-125
N028727-010B	SAMP	1	1631165.8	2010768.1	81.12	PASS	70-125
N028727-010B	SAMP	5	1638981.2	2010768.1	81.51	PASS	70-125
N028727-011B	SAMP	1	1631839.2	2010768.1	81.16	PASS	70-125
N028727-011B	SAMP	5	1620506.3	2010768.1	80.59	PASS	70-125
N028727-012B	SAMP	1	1574991.3	2010768.1	78.33	PASS	70-125
CCV8	CCV	1	1964871.2	2010768.1	97.72	PASS	70-125
CCB8	CCB	1	1716413.8	2010768.1	85.36	PASS	70-125
N028727-012B	SAMP	5	1578017.7	2010768.1	78.48	PASS	70-125
N028727-013B	SAMP	1	1511555.5	2010768.1	75.17	PASS	70-125
N028727-013B	SAMP	5	1583952.2	2010768.1	78.77	PASS	70-125
N028727-014C	SAMP	1	1505818.4	2010768.1	74.89	PASS	70-125
N028727-014C	SAMP	5	1531041.6	2010768.1	76.14	PASS	70-125
N028727-015C	SAMP	1	1482370.5	2010768.1	73.72	PASS	70-125
N028727-015C	SAMP	5	1559278.5	2010768.1	77.55	PASS	70-125
CCV9	CCV	1	1881325.6	2010768.1	93.56	PASS	70-125
CCB9	CCB	1	1641016.7	2010768.1	81.61	PASS	70-125

INTERNAL STANDARD: 180226A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	1600866.2	2010768.1	79.61	PASS	70-125
ICSA3	ICSA	1	1449844.5	2010768.1	72.1	PASS	70-125
ICSAB3	ICSAB	1	1780996.2	2010768.1	88.57	PASS	70-125
ICSAB3	ICSAB	1	1756751	2010768.1	87.37	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	53663.1	53663.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	54213.8	53663.1	101.03	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	54328.8	53663.1	101.24	PASS	70-125
Std3-5/50 ppb	ICAL	1	54076.8	53663.1	100.77	PASS	70-125
Std4-10/100 ppb	ICAL	1	54085.8	53663.1	100.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	54306.5	53663.1	101.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	53351.1	53663.1	99.42	PASS	70-125
Std7-100/1000 ppb	ICAL	1	54387.8	53663.1	101.35	PASS	70-125
Std8-200/2000 ppb	ICAL	1	52916.4	53663.1	98.61	PASS	70-125
ICV	ICV	1	59218	53663.1	110.35	PASS	70-125
ICB	ICB	1	52728	53663.1	98.26	PASS	70-125
LLICV	CCV1	1	55108	53663.1	102.69	PASS	70-125
ICSA1	ICSA	1	53017.8	53663.1	98.8	PASS	70-125
ICSAB1	ICSAB	1	46264	53663.1	86.21	PASS	70-125
LLICV	CCV1	1	63565	53663.1	118.45	PASS	70-125
CCV1	CCV	1	47776.3	53663.1	89.03	PASS	70-125
CCB1	CCB	1	62887.2	53663.1	117.19	PASS	70-125
CCV2	CCV	1	59691.9	53663.1	111.23	PASS	70-125
CCB2	CCB	1	59054.1	53663.1	110.05	PASS	70-125
CCV3	CCV	1	59191.1	53663.1	110.3	PASS	70-125
CCB3	CCB	1	58905.8	53663.1	109.77	PASS	70-125
CCV4	CCV	1	56869.6	53663.1	105.98	PASS	70-125
CCB4	CCB	1	56007.8	53663.1	104.37	PASS	70-125
CCV5	CCV	1	55567.4	53663.1	103.55	PASS	70-125
CCB5	CCB	1	54966.6	53663.1	102.43	PASS	70-125
LLCCV1	CCV2	1	55528.3	53663.1	103.48	PASS	70-125
ICSA2	ICSA	1	52542.9	53663.1	97.91	PASS	70-125
ICSAB2	ICSAB	1	45504.1	53663.1	84.8	PASS	70-125
N028726-001B-MSD	MSD	5	40918.7	53663.1	76.25	PASS	70-125
N028726-003B	SAMP	5	50949	53663.1	94.94	PASS	70-125
N028727-006B	SAMP	1	60230.4	53663.1	112.24	PASS	70-125
CCV6	CCV	1	59888.1	53663.1	111.6	PASS	70-125
CCB6	CCB	1	58142.9	53663.1	108.35	PASS	70-125
CCV7	CCV	1	58521.1	53663.1	109.05	PASS	70-125
CCB7	CCB	1	57833	53663.1	107.77	PASS	70-125
CCV8	CCV	1	54923.9	53663.1	102.35	PASS	70-125
CCB8	CCB	1	54207.3	53663.1	101.01	PASS	70-125
CCV9	CCV	1	51503	53663.1	95.97	PASS	70-125
CCB9	CCB	1	50053	53663.1	93.27	PASS	70-125
CCV10	CCV	1	50397.2	53663.1	93.91	PASS	70-125
CCB10	CCB	1	49587.2	53663.1	92.4	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	50928.7	53663.1	94.9	PASS	70-125
ICSA3	ICSA	1	47515.4	53663.1	88.54	PASS	70-125
ICSAB3	ICSAB	1	48206.3	53663.1	89.83	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028727
Test Method: EPA 6020
Analysis Date: 2/26/2018

Matrix: Froundwater
Batch No.: 66882

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028726-001B DT 5X	Arsenic	ug/L	7.132255	PASS	6.736628	5.87%	10
N028726-001B DT 5X	Barium	ug/L	40.36557	PASS	39.05499	3.36%	10
N028726-001B DT 5X	Chromium	ug/L	0	NA	0.681402	100.00%	10
N028726-001B DT 25X	Manganese	ug/L	130.2321	PASS	124.7163	4.42%	10
N028726-001B DT 25X	Molybdenum	ug/L	65.99337	PASS	65.53138	0.70%	10
N028726-001B DT 25X	Selenium	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028726-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941880

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.952	0.10	10.00	6.737	102	80	120				
Barium	47.899	1.0	10.00	39.05	88.4	80	120				

Sample ID	N028726-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122325
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941881

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	225.437	2.5	100.0	124.7	101	80	120				
Molybdenum	76.614	2.5	10.00	65.53	111	80	120				
Selenium	10.892	2.5	10.00	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028727
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028726-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122324
Client ID:	ZZZZZZ	Batch ID:	66882	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/26/2018	SeqNo:	2941764

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.032	1.0	10.00	0.6814	93.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 07, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028744

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 22, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N028744-003B-MS1 and N028744-003B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028744-004B-MS2 and N028744-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N028744-001B-MS and N028744-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for sample N028744-004 due to associated internal standard

not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028744
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028744-001A	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-001B	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-001C	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-001D	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-002A	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-002B	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-002C	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-002D	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-003A	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-003B	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-003C	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-003D	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-004A	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-004B	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-004C	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-004D	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-005A	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-005B	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-005C	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-005D	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-006A	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-006B	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-006C	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-006D	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-007A	MW-714-Q118	Groundwater	2/22/2018 4:00:00 PM	2/22/2018	3/7/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 3:33:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	3200	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028744-004DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122269
Client ID:	ZZZZZZ	Batch ID:	R122269	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	20000.000	0.10						20100	0.499	2	

Sample ID	N028745-015DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122269
Client ID:	ZZZZZZ	Batch ID:	R122269	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	983.000	0.10						985.0	0.203	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	10	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028744-003DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122268**
Client ID: **ZZZZZZ** Batch ID: **R122268** TestNo: **SM4500-H+B** Analysis Date: **2/23/2018** SeqNo: **2940035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.370	0.10						7.330	0.544	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N028745-008DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122268**
Client ID: **ZZZZZZ** Batch ID: **R122268** TestNo: **SM4500-H+B** Analysis Date: **2/23/2018** SeqNo: **2940046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.220	0.485	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2900	33	33		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	13000	200	200		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9900	100	100		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66936**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **LCSW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	982.000	10	1000	0	98.2	80	120				

Sample ID **MB-66936**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **PBW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N028744-004DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **ZZZZZZ**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12780.000	200						13100	2.47	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	340000	85	500		µg/L	1	2/27/2018 06:21 PM
Iron	89	18	20		µg/L	1	2/27/2018 06:21 PM
Magnesium	34000	48	100		µg/L	1	2/27/2018 06:21 PM
Sodium	600000	660	12000		µg/L	25	2/28/2018 02:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**			PrepDate	**2/26/2018**	Analyst: **CEI**	
Calcium	380000	85	500		µg/L	1	2/27/2018 06:49 PM
Iron	320	18	20		µg/L	1	2/27/2018 06:49 PM
Magnesium	740	48	100		µg/L	1	2/27/2018 06:49 PM
Sodium	5200000	6600	120000		µg/L	250	2/28/2018 03:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**			PrepDate	**2/26/2018**	Analyst: **CEI**	
Calcium	510000	420	2500		µg/L	5	2/27/2018 07:30 PM
Iron	ND	18	20		µg/L	1	2/27/2018 06:57 PM
Magnesium	18000	48	100		µg/L	1	2/27/2018 06:57 PM
Sodium	3500000	2600	50000		µg/L	100	2/28/2018 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **PBW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66928**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **LCSW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9493.819	500	10000	0	94.9	85	115				
Iron	107.627	20	100.0	0	108	85	115				
Magnesium	9777.591	100	10000	0	97.8	85	115				

Sample ID **N028744-003B-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365303.653	500	10000	343700	216	75	125				S
Iron	181.066	20	100.0	89.08	92.0	75	125				
Magnesium	44195.279	100	10000	34080	101	75	125				

Sample ID **N028744-003B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365559.301	500	10000	343700	218	75	125	365300	0.0700	20	S
Iron	178.733	20	100.0	89.08	89.7	75	125	181.1	1.30	20	
Magnesium	44272.258	100	10000	34080	102	75	125	44200	0.174	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-66928	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/26/2018	RunNo:	122371		
Client ID:	PBW	Batch ID:	66928	TestNo:	EPA 200.7			Analysis Date:	2/28/2018	SeqNo:	2944590		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		ND	500										

Sample ID	LCS2-66928	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/26/2018	RunNo:	122371		
Client ID:	LCSW	Batch ID:	66928	TestNo:	EPA 200.7			Analysis Date:	2/28/2018	SeqNo:	2944591		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		22052.658	500	20000	0	110	85	115					

Sample ID	N028744-004B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/26/2018	RunNo:	122371		
Client ID:	ZZZZZZ	Batch ID:	66928	TestNo:	EPA 200.7			Analysis Date:	2/28/2018	SeqNo:	2944611		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		5224198.785	120000	20000	5171000	266	75	125				S	

Sample ID	N028744-004B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	2/26/2018	RunNo:	122371		
Client ID:	ZZZZZZ	Batch ID:	66928	TestNo:	EPA 200.7			Analysis Date:	2/28/2018	SeqNo:	2944612		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		5163013.283	120000	20000	5171000	-40.2	75	125	5224000	1.18	20	S	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	510	1.7	10		µg/L	50	2/26/2018 10:33 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	520	0.65	5.0		µg/L	5	2/27/2018 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	190	0.66	4.0		µg/L	20	2/26/2018 10:52 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	170	0.13	1.0		µg/L	1	2/27/2018 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	24000	66	400		µg/L	2000	2/26/2018 01:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	24000	32	250		µg/L	250	2/27/2018 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/26/2018 11:15 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 12:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2100	6.6	40		µg/L	200	2/26/2018 11:51 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	2000	3.2	25		µg/L	25	2/27/2018 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 3:33:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	120	1.7	10		µg/L	50	2/26/2018 12:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	110	0.13	1.0		µg/L	1	2/27/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-714-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/26/2018 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122291**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **PBW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122291**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **LCSW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.021	0.20	5.000	0	100	90	110				

Sample ID **N028744-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	765.890	10	250.0	513.9	101	90	110				

Sample ID **N028744-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	291.056	4.0	100.0	190.5	101	90	110				

Sample ID **N028744-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.583	1.0	5.000	0	91.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3072.060	40	1000	2050	102	90	110				

Sample ID **N028744-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	370.000	10	250.0	119.8	100	90	110				

Sample ID **N028744-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N028744-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	767.120	10	250.0	513.9	101	90	110	765.9	0.160	20	

Sample ID **N028744-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	188.886	4.0						190.5	0.874	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	33755.800	400	10000	23950	98.1	90	110				

Sample ID **N028775-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	249.822	4.0	100.0	146.3	103	90	110				

Sample ID **N028775-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	255.758	4.0	100.0	155.7	100	90	110				

Sample ID **N028775-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.849	2.0	50.00	56.76	102	90	110				

Sample ID **N028775-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.952	0.20	5.000	2.811	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028775-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.044	0.20	5.000	2.773	105	90	110				

Sample ID **N028775-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	238.960	4.0	100.0	136.6	102	90	110				

Sample ID **N028775-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	247.136	4.0	100.0	147.4	99.7	90	110				

Sample ID **N028775-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.04890	101	90	110				

Sample ID **N028775-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66914	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	PBW	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66914	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	LCSW	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.585	1.0	10.00	0	106	85	115				

Sample ID	N028744-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	515.150	5.0	10.00	523.9	-87.5	75	125				S

Sample ID	N028744-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943737

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	520.905	5.0	10.00	523.9	-29.9	75	125	515.2	1.11	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180223I**	QC Batch: **R122273**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	88	1.2	5.0		mg/L	1	2/23/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180223I**	QC Batch: **R122273**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	19	1.2	5.0		mg/L	1	2/23/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180223I**	QC Batch: **R122273**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	61	1.2	5.0		mg/L	1	2/23/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R122273**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **LCSW**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.326	5.0	100.0	0	98.3	85	115				

Sample ID **MB-R122273**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **PBW**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028744-003DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **ZZZZZZ**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	194.561	5.0	100.0	87.87	107	75	125				

Sample ID **N028744-003DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **ZZZZZZ**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	190.377	5.0	100.0	87.87	103	75	125	194.6	2.17	20	

Sample ID **N028744-004DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **ZZZZZZ**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	20.921	5.0						18.83	10.5	30	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/23/2018 11:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Chloride	840	1.8	100		mg/L	200	2/23/2018 12:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Sulfate	880	4.6	100		mg/L	200	2/23/2018 12:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-004

Client Sample ID: MW-68BR-280-Q118
Collection Date: 2/22/2018 11:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/23/2018 11:21 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	2/23/2018 02:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Sulfate	680	2.3	50		mg/L	100	2/23/2018 03:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-005

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	2/23/2018 11:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Chloride	5700	9.1	500		mg/L	1000	2/23/2018 03:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Sulfate	890	2.3	50		mg/L	100	2/23/2018 03:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R122266_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	PBW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R122266_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	LCSW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.227	0.50	1.250	0	98.2	90	110				

Sample ID	N028744-003DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940001

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.330	2.5						1.253	0	20	

Sample ID	N028744-003DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940002

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.634	2.5	6.250	1.253	102	80	120				

Sample ID	N028744-003DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940003

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.698	2.5	6.250	1.253	103	80	120	7.634	0.828	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R122266_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	PBW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939980

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.131	0.50									

Sample ID	LCS-R122266_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	LCSW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939981

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.134	0.50	2.000	0	107	90	110				

Sample ID	N028744-003DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	838.000	100						838.1	0.00955	20	

Sample ID	N028744-003DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939986

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1253.240	100	400.0	838.1	104	80	120				

Sample ID	N028744-003DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939987

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1252.540	100	400.0	838.1	104	80	120	1253	0.0559	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R122266_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	PBW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R122266_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	LCSW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.856	0.50	4.000	0	96.4	90	110				

Sample ID	N028744-003DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	894.040	100						881.2	1.45	20	

Sample ID	N028744-003DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940018

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1672.960	100	800.0	881.2	99.0	80	120				

Sample ID	N028744-003DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1687.560	100	800.0	881.2	101	80	120	1673	0.869	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	9.2	0.32	0.50		mg/L	10	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.63	1.0		mg/L	20	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	20	0.63	1.0		mg/L	20	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.052	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.0	0.16	0.25		mg/L	5	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 3:33:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	14	0.63	1.0		mg/L	20	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122450	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	PBW	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122450	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	LCSW	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947105

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.7	85	115				

Sample ID	N028744-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.614	0.50						9.198	6.56	20	

Sample ID	N028744-005CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947111

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.336	0.25	2.500	4.015	92.8	75	125				

Sample ID	N028744-005CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.433	0.25	2.500	4.015	96.7	75	125	6.336	1.53	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 11:13 AM
Manganese	6.3	0.26	0.50		µg/L	1	2/27/2018 11:13 AM
Molybdenum	29	0.21	0.50		µg/L	1	2/27/2018 11:13 AM
Selenium	7.7	0.36	0.50		µg/L	1	2/27/2018 11:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	0.80	0.081	0.10		µg/L	1	2/27/2018 12:15 PM
Manganese	48	0.26	0.50		µg/L	1	2/27/2018 12:15 PM
Molybdenum	62	0.21	0.50		µg/L	1	2/27/2018 12:15 PM
Selenium	8.5	0.36	0.50		µg/L	1	2/27/2018 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180227D** QC Batch: **66914** PrepDate **2/23/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.7	0.081	0.10		µg/L	1	2/27/2018 12:26 PM
Manganese	1.0	0.26	0.50		µg/L	1	2/27/2018 12:26 PM
Molybdenum	42	0.21	0.50		µg/L	1	2/27/2018 12:26 PM
Selenium	13	0.36	0.50		µg/L	1	2/27/2018 12:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	0.89	0.081	0.10		µg/L	1	2/27/2018 12:43 PM
Manganese	22	0.26	0.50		µg/L	1	2/27/2018 12:43 PM
Molybdenum	41	1.1	2.5		µg/L	5	2/27/2018 12:49 PM
Selenium	ND	0.36	0.50		µg/L	1	2/27/2018 12:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	2/27/2018 12:55 PM
Manganese	24	0.26	0.50		µg/L	1	2/27/2018 12:55 PM
Molybdenum	23	0.21	0.50		µg/L	1	2/27/2018 12:55 PM
Selenium	4.0	0.36	0.50		µg/L	1	2/27/2018 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-006

Client Sample ID: MW-69-195-Q118
Collection Date: 2/22/2018 3:33:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 01:17 PM
Manganese	3.3	0.26	0.50		µg/L	1	2/27/2018 01:17 PM
Molybdenum	67	0.21	0.50		µg/L	1	2/27/2018 01:17 PM
Selenium	11	0.36	0.50		µg/L	1	2/27/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66914**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **PBW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66914**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **LCSW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.373	0.10	10.00	0	104	85	115				
Manganese	103.945	0.50	100.0	0	104	85	115				
Molybdenum	10.063	0.50	10.00	0	101	85	115				
Selenium	9.911	0.50	10.00	0	99.1	85	115				

Sample ID **N028744-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.917	0.10	10.00	2.071	108	75	125				
Manganese	98.191	0.50	100.0	6.303	91.9	75	125				
Molybdenum	39.644	0.50	10.00	28.54	111	75	125				
Selenium	17.088	0.50	10.00	7.658	94.3	75	125				

Sample ID **N028744-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.849	0.10	10.00	2.071	108	75	125	12.92	0.529	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028744-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.374	0.50	100.0	6.303	92.1	75	125	98.19	0.186	20	
Molybdenum	39.467	0.50	10.00	28.54	109	75	125	39.64	0.448	20	
Selenium	17.130	0.50	10.00	7.658	94.7	75	125	17.09	0.247	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		1. Chilled	✓	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker		RWQCB	✓	2. Headspace		
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec		CalTrans		3. Container Intact		
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Others	✓	LEVEL III		4. Seal Present		
SR. Technician	Phone: 916-786-3302 Fax:		Specify: RWQCB		LEVEL IV		5. IR number	2	
Signature: Date: 2-22-18	Sampled By: Gary Clift		Global ID:		Regulatory		6. Method of Cooling: Ice		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.				Specify State:		Sample Temp: 2.5°C		
Project Name: PG&E Topock - GMP	Signature: Date: 2-22-18						Courier:		
Project Number: RC000753.0801							Tracking No.:		

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7); HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028744-01	MW-65-225-Q118	2/22/2018	901		X		X		X	X		X					X	E	4	P	BN	
2	-02	MW-65-160-Q118	2/22/2018	959		X		X		X	X		X					X	E	4	P	BN	
3	-03	MW-68-180-Q118	2/22/2018	1151		X		X	X	X	X	X	X	X	X	X	X	X	E	4	P	BN	
4	-04	MW-68BR-280-Q118	2/22/2018	1103		X		X	X	X	X	X	X	X	X	X	X	X	E	4	P	BN	
5	-05	MW-68-240-Q118	2/22/2018	1255		X		X	X	X	X	X	X	X	X	X	X	X	E	4	P	BN	
6	-06	MW-69-195-Q118	2/22/2018	1533		X		X		X	X		X					X	E	4	P	BN	
7	-07	MW-714-Q118	2/22/2018	1600		X													E	1	P	BN	
8																							
9																							
10																							

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
GARY CLIFT 2-22-18	1610	2/22/18	1610
2/22/18	1847	2/22/18	1847

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/22/2018	Workorder:	N028744
Rep sample Temp (Deg C):	2.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 2/28/2018

Reviewed By: 03/05/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-001A	MW-65-225-Q118	2/22/2018 9:01:00 AM	3/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-001B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-001C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-001D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028744-002A	MW-65-160-Q118	2/22/2018 9:59:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-002B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-002C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-002D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028744-003A	MW-68-180-Q118	2/22/2018 11:51:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-003B			3/8/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☑	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-003C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-003D	MW-68-180-Q118	2/22/2018 11:51:00 AM	3/8/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/8/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028744-004A	MW-68BR-280-Q118	2/22/2018 11:03:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-004B			3/8/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☑	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-004C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-004D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-004D	MW-68BR-280-Q118	2/22/2018 11:03:00 AM	3/8/2018	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028744-005A	MW-68-240-Q118	2/22/2018 12:55:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-005B			3/8/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☑	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-005C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-005D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/8/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-005D	MW-68-240-Q118	2/22/2018 12:55:00 PM	3/8/2018	Groundwater	SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028744-006A	MW-69-195-Q118	2/22/2018 3:33:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-006B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-006C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-006D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028744-007A	MW-714-Q118	2/22/2018 4:00:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-008A	FOLDER	3/8/2018	3/8/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028744

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028744

Item	Page
Cover Page	1-6
Analytical Result/QC Summary Reports	7-63
Sample Receiving Items	64-71
List of Analysts	72
Raw Data	
EPA 120.1	73-76
SM 4500-H+B	77-80
SM 2540C	81-91
EPA 200.7_Dissolved	92-142
EPA 218.6	143-248
SM 2320 B	249-258
EPA 300.0	259-288
SM 4500-NO3F	289-304
EPA 6020_Dissolved	305-377

March 07, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028744

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 22, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucas for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028744

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N028744-003B-MS1 and N028744-003B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028744-004B-MS2 and N028744-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of samples upon the addition of eluent.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N028744-001B-MS and N028744-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on some analytes for sample N028744-004 due to associated internal standard

not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *07-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028744
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028744-001A	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-001B	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-001C	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-001D	MW-65-225-Q118	Groundwater	2/22/2018 9:01:00 AM	2/22/2018	3/7/2018
N028744-002A	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-002B	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-002C	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-002D	MW-65-160-Q118	Groundwater	2/22/2018 9:59:00 AM	2/22/2018	3/7/2018
N028744-003A	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-003B	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-003C	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-003D	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	2/22/2018	3/7/2018
N028744-004A	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-004B	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-004C	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-004D	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	2/22/2018	3/7/2018
N028744-005A	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-005B	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-005C	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-005D	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	2/22/2018	3/7/2018
N028744-006A	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-006B	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-006C	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-006D	MW-69-195-Q118	Groundwater	2/22/2018 3:33:00 PM	2/22/2018	3/7/2018
N028744-007A	MW-714-Q118	Groundwater	2/22/2018 4:00:00 PM	2/22/2018	3/7/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	3600	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-005

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 3:33:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	3200	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N028744-004DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **122269**
Client ID:	**ZZZZZZ**	Batch ID: **R122269**	TestNo: **EPA 120.1**		Analysis Date: **2/23/2018**	SeqNo: **2940062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	20000.000	0.10						20100	0.499	2	

Sample ID	**N028745-015DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **122269**
Client ID:	**ZZZZZZ**	Batch ID: **R122269**	TestNo: **EPA 120.1**		Analysis Date: **2/23/2018**	SeqNo: **2940079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	983.000	0.10						985.0	0.203	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**		PrepDate				Analyst: **LR**
pH	10	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-005

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028744-003DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122268**
Client ID: **ZZZZZZ** Batch ID: **R122268** TestNo: **SM4500-H+B** Analysis Date: **2/23/2018** SeqNo: **2940035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.370	0.10						7.330	0.544	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N028745-008DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122268**
Client ID: **ZZZZZZ** Batch ID: **R122268** TestNo: **SM4500-H+B** Analysis Date: **2/23/2018** SeqNo: **2940046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.220	0.485	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2900	33	33		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	13000	200	200		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	9900	100	100		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66936**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **LCSW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	982.000	10	1000	0	98.2	80	120				

Sample ID **MB-66936**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **PBW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N028744-004DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **ZZZZZZ**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12780.000	200						13100	2.47	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-003

Client Sample ID: MW-68-180-Q118
Collection Date: 2/22/2018 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	340000	85	500		µg/L	1	2/27/2018 06:21 PM
Iron	89	18	20		µg/L	1	2/27/2018 06:21 PM
Magnesium	34000	48	100		µg/L	1	2/27/2018 06:21 PM
Sodium	600000	660	12000		µg/L	25	2/28/2018 02:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**			PrepDate	**2/26/2018**	Analyst: **CEI**	
Calcium	380000	85	500		µg/L	1	2/27/2018 06:49 PM
Iron	320	18	20		µg/L	1	2/27/2018 06:49 PM
Magnesium	740	48	100		µg/L	1	2/27/2018 06:49 PM
Sodium	5200000	6600	120000		µg/L	250	2/28/2018 03:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-005

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	510000	420	2500		µg/L	5	2/27/2018 07:30 PM
Iron	ND	18	20		µg/L	1	2/27/2018 06:57 PM
Magnesium	18000	48	100		µg/L	1	2/27/2018 06:57 PM
Sodium	3500000	2600	50000		µg/L	100	2/28/2018 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **PBW** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66928** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **LCSW** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9493.819	500	10000	0	94.9	85	115				
Iron	107.627	20	100.0	0	108	85	115				
Magnesium	9777.591	100	10000	0	97.8	85	115				

Sample ID **N028744-003B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365303.653	500	10000	343700	216	75	125				S
Iron	181.066	20	100.0	89.08	92.0	75	125				
Magnesium	44195.279	100	10000	34080	101	75	125				

Sample ID **N028744-003B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365559.301	500	10000	343700	218	75	125	365300	0.0700	20	S
Iron	178.733	20	100.0	89.08	89.7	75	125	181.1	1.30	20	
Magnesium	44272.258	100	10000	34080	102	75	125	44200	0.174	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **PBW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-66928**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **LCSW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	22052.658	500	20000	0	110	85	115				

Sample ID **N028744-004B-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5224198.785	120000	20000	5171000	266	75	125				S

Sample ID **N028744-004B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5163013.283	120000	20000	5171000	-40.2	75	125	5224000	1.18	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	510	1.7	10		µg/L	50	2/26/2018 10:33 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	520	0.65	5.0		µg/L	5	2/27/2018 11:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	190	0.66	4.0		µg/L	20	2/26/2018 10:52 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	170	0.13	1.0		µg/L	1	2/27/2018 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	24000	66	400		µg/L	2000	2/26/2018 01:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	24000	32	250		µg/L	250	2/27/2018 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	2/26/2018 11:15 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 12:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2100	6.6	40		µg/L	200	2/26/2018 11:51 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	2000	3.2	25		µg/L	25	2/27/2018 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 3:33:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	120	1.7	10		µg/L	50	2/26/2018 12:29 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	110	0.13	1.0		µg/L	1	2/27/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-714-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/26/2018 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122291**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **PBW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122291**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **LCSW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.021	0.20	5.000	0	100	90	110				

Sample ID **N028744-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	765.890	10	250.0	513.9	101	90	110				

Sample ID **N028744-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	291.056	4.0	100.0	190.5	101	90	110				

Sample ID **N028744-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.583	1.0	5.000	0	91.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3072.060	40	1000	2050	102	90	110				

Sample ID **N028744-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	370.000	10	250.0	119.8	100	90	110				

Sample ID **N028744-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N028744-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	767.120	10	250.0	513.9	101	90	110	765.9	0.160	20	

Sample ID **N028744-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	188.886	4.0						190.5	0.874	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028744-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122291
Client ID:	ZZZZZZ	Batch ID:	R122291	TestNo:	EPA 218.6			Analysis Date:	2/26/2018	SeqNo:	2940717

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	33755.800	400	10000	23950	98.1	90	110				

Sample ID	N028775-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122291
Client ID:	ZZZZZZ	Batch ID:	R122291	TestNo:	EPA 218.6			Analysis Date:	2/26/2018	SeqNo:	2940723

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	249.822	4.0	100.0	146.3	103	90	110				

Sample ID	N028775-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122291
Client ID:	ZZZZZZ	Batch ID:	R122291	TestNo:	EPA 218.6			Analysis Date:	2/26/2018	SeqNo:	2940725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	255.758	4.0	100.0	155.7	100	90	110				

Sample ID	N028775-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122291
Client ID:	ZZZZZZ	Batch ID:	R122291	TestNo:	EPA 218.6			Analysis Date:	2/26/2018	SeqNo:	2940727

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.849	2.0	50.00	56.76	102	90	110				

Sample ID	N028775-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122291
Client ID:	ZZZZZZ	Batch ID:	R122291	TestNo:	EPA 218.6			Analysis Date:	2/26/2018	SeqNo:	2940729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.952	0.20	5.000	2.811	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028775-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.044	0.20	5.000	2.773	105	90	110				

Sample ID **N028775-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	238.960	4.0	100.0	136.6	102	90	110				

Sample ID **N028775-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	247.136	4.0	100.0	147.4	99.7	90	110				

Sample ID **N028775-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.04890	101	90	110				

Sample ID **N028775-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66914**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **PBW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66914**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **LCSW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.585	1.0	10.00	0	106	85	115				

Sample ID **N028744-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	515.150	5.0	10.00	523.9	-87.5	75	125				S

Sample ID **N028744-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	520.905	5.0	10.00	523.9	-29.9	75	125	515.2	1.11	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180223I**	QC Batch: **R122273**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	88	1.2	5.0		mg/L	1	2/23/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180223I**	QC Batch: **R122273**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	19	1.2	5.0		mg/L	1	2/23/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180223I**	QC Batch: **R122273**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	61	1.2	5.0		mg/L	1	2/23/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R122273**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **LCSW**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.326	5.0	100.0	0	98.3	85	115				

Sample ID **MB-R122273**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **PBW**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028744-003DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **ZZZZZZ**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	194.561	5.0	100.0	87.87	107	75	125				

Sample ID **N028744-003DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **ZZZZZZ**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	190.377	5.0	100.0	87.87	103	75	125	194.6	2.17	20	

Sample ID **N028744-004DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122273**
Client ID: **ZZZZZZ**	Batch ID: **R122273**	TestNo: **SM 2320 B**		Analysis Date: **2/23/2018**	SeqNo: **2940116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	20.921	5.0						18.83	10.5	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-003

Client Sample ID: MW-68-180-Q118
Collection Date: 2/22/2018 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/23/2018 11:05 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Chloride	840	1.8	100		mg/L	200	2/23/2018 12:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Sulfate	880	4.6	100		mg/L	200	2/23/2018 12:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-004

Client Sample ID: MW-68BR-280-Q118
Collection Date: 2/22/2018 11:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/23/2018 11:21 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Chloride	7500	18	1000		mg/L	2000	2/23/2018 02:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**				PrepDate			Analyst: **RAB**
Sulfate	680	2.3	50		mg/L	100	2/23/2018 03:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-005

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**			PrepDate				Analyst: **RAB**
Bromide	ND	0.20	5.0		mg/L	10	2/23/2018 11:36 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**			PrepDate				Analyst: **RAB**
Chloride	5700	9.1	500		mg/L	1000	2/23/2018 03:17 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180223A** QC Batch: **R122266**			PrepDate				Analyst: **RAB**
Sulfate	890	2.3	50		mg/L	100	2/23/2018 03:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R122266_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	PBW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R122266_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	LCSW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.227	0.50	1.250	0	98.2	90	110				

Sample ID	N028744-003DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940001

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.330	2.5						1.253	0	20	

Sample ID	N028744-003DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940002

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.634	2.5	6.250	1.253	102	80	120				

Sample ID	N028744-003DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940003

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.698	2.5	6.250	1.253	103	80	120	7.634	0.828	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R122266_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	PBW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939980

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.131	0.50									

Sample ID	LCS-R122266_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	LCSW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939981

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.134	0.50	2.000	0	107	90	110				

Sample ID	N028744-003DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939983

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	838.000	100						838.1	0.00955	20	

Sample ID	N028744-003DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939986

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1253.240	100	400.0	838.1	104	80	120				

Sample ID	N028744-003DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2939987

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1252.540	100	400.0	838.1	104	80	120	1253	0.0559	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R122266_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	PBW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940012

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R122266_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	LCSW	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.856	0.50	4.000	0	96.4	90	110				

Sample ID	N028744-003DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	894.040	100						881.2	1.45	20	

Sample ID	N028744-003DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940018

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1672.960	100	800.0	881.2	99.0	80	120				

Sample ID	N028744-003DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122266
Client ID:	ZZZZZZ	Batch ID:	R122266	TestNo:	EPA 300.0			Analysis Date:	2/23/2018	SeqNo:	2940019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1687.560	100	800.0	881.2	101	80	120	1673	0.869	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	9.2	0.32	0.50		mg/L	10	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:59:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.63	1.0		mg/L	20	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	20	0.63	1.0		mg/L	20	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.052	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	4.0	0.16	0.25		mg/L	5	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 3:33:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	14	0.63	1.0		mg/L	20	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122450**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122450**			
Client ID: **PBW**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**			SeqNo: **2947104**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122450**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122450**			
Client ID: **LCSW**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**			SeqNo: **2947105**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.7	85	115				

Sample ID **N028744-001CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122450**			
Client ID: **ZZZZZZ**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**			SeqNo: **2947107**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.614	0.50						9.198	6.56	20	

Sample ID **N028744-005CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122450**			
Client ID: **ZZZZZZ**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**			SeqNo: **2947111**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.336	0.25	2.500	4.015	92.8	75	125				

Sample ID **N028744-005CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122450**			
Client ID: **ZZZZZZ**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**			SeqNo: **2947112**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.433	0.25	2.500	4.015	96.7	75	125	6.336	1.53	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 9:01:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 11:13 AM
Manganese	6.3	0.26	0.50		µg/L	1	2/27/2018 11:13 AM
Molybdenum	29	0.21	0.50		µg/L	1	2/27/2018 11:13 AM
Selenium	7.7	0.36	0.50		µg/L	1	2/27/2018 11:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-002

Client Sample ID: MW-65-160-Q118
Collection Date: 2/22/2018 9:59:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	0.80	0.081	0.10		µg/L	1	2/27/2018 12:15 PM
Manganese	48	0.26	0.50		µg/L	1	2/27/2018 12:15 PM
Molybdenum	62	0.21	0.50		µg/L	1	2/27/2018 12:15 PM
Selenium	8.5	0.36	0.50		µg/L	1	2/27/2018 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-003

Client Sample ID: MW-68-180-Q118
Collection Date: 2/22/2018 11:51:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.7	0.081	0.10		µg/L	1	2/27/2018 12:26 PM
Manganese	1.0	0.26	0.50		µg/L	1	2/27/2018 12:26 PM
Molybdenum	42	0.21	0.50		µg/L	1	2/27/2018 12:26 PM
Selenium	13	0.36	0.50		µg/L	1	2/27/2018 12:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q118
Lab Order:	N028744	**Collection Date:**	2/22/2018 11:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028744-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	0.89	0.081	0.10		µg/L	1	2/27/2018 12:43 PM
Manganese	22	0.26	0.50		µg/L	1	2/27/2018 12:43 PM
Molybdenum	41	1.1	2.5		µg/L	5	2/27/2018 12:49 PM
Selenium	ND	0.36	0.50		µg/L	1	2/27/2018 12:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-005

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	1.7	0.081	0.10		µg/L	1	2/27/2018 12:55 PM
Manganese	24	0.26	0.50		µg/L	1	2/27/2018 12:55 PM
Molybdenum	23	0.21	0.50		µg/L	1	2/27/2018 12:55 PM
Selenium	4.0	0.36	0.50		µg/L	1	2/27/2018 12:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028744
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028744-006

Client Sample ID: MW-69-195-Q118
Collection Date: 2/22/2018 3:33:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 01:17 PM
Manganese	3.3	0.26	0.50		µg/L	1	2/27/2018 01:17 PM
Molybdenum	67	0.21	0.50		µg/L	1	2/27/2018 01:17 PM
Selenium	11	0.36	0.50		µg/L	1	2/27/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66914**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **PBW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66914**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **LCSW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.373	0.10	10.00	0	104	85	115				
Manganese	103.945	0.50	100.0	0	104	85	115				
Molybdenum	10.063	0.50	10.00	0	101	85	115				
Selenium	9.911	0.50	10.00	0	99.1	85	115				

Sample ID **N028744-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.917	0.10	10.00	2.071	108	75	125				
Manganese	98.191	0.50	100.0	6.303	91.9	75	125				
Molybdenum	39.644	0.50	10.00	28.54	111	75	125				
Selenium	17.088	0.50	10.00	7.658	94.3	75	125				

Sample ID **N028744-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.849	0.10	10.00	2.071	108	75	125	12.92	0.529	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028744-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.374	0.50	100.0	6.303	92.1	75	125	98.19	0.186	20	
Molybdenum	39.467	0.50	10.00	28.54	109	75	125	39.64	0.448	20	
Selenium	17.130	0.50	10.00	7.658	94.7	75	125	17.09	0.247	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
SR. Technician	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present
Signature: Date: 2-22-18	Sampled By: Gary Clift		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.			Specify State:	6. Method of Cooling: Ice
Project Name: PG&E Topock - GMP	Signature: Date: 2-22-18	Matrix: Ground x, Potable, NPDES, Surface; Sediment x, Soil, Other Solid			Sample Temp: 2.5°C
Project Number: RC000753.0801					Courier: Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7); HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028744-01	MW-65-225-Q118	2/22/2018	901		X		X		X	X		X					X	E	4	P	BN	
2	-02	MW-65-160-Q118	2/22/2018	959		X		X		X	X		X					X	E	4	P	BN	
3	-03	MW-68-180-Q118	2/22/2018	1151		X		X	X	X	X	X	X	X	X	X	X	X	E	4	P	BN	
4	-04	MW-68BR-280-Q118	2/22/2018	1103		X		X	X	X	X	X	X	X	X	X	X	X	E	4	P	BN	
5	-05	MW-68-240-Q118	2/22/2018	1255		X		X	X	X	X	X	X	X	X	X	X	X	E	4	P	BN	
6	-06	MW-69-195-Q118	2/22/2018	1533		X		X		X	X		X					X	E	4	P	BN	
7	-07	MW-714-Q118	2/22/2018	1600		X													E	1	P	BN	
8																							
9																							
10																							

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
GARY CLIFT 2-22-18	1610	2/22/18	1610
2/22/18	1847	2/22/18	1847

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/22/2018	Workorder:	N028744
Rep sample Temp (Deg C):	2.5	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 2/28/2018 Reviewed By: 03/05/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 2/23/2018 2:02 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "dylan@assetlaboratories.com" <dylan@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,

Mo/Se should be 6020. I think the Mo/Se was selected twice on accident. It should only be analyzed once by 6020.

Thanks!
Laura

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Friday, February 23, 2018 3:57 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; dylan@assetlaboratories.com; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - GMP, RC000753.0801

Hi Laura,

Please we need to clarify the request in the attached SDGs from GMP project "ICP metals (SW6010B/SW6020A) (Mo, Se)". What test should we follow for these analytes, 6010 or 6020?

Also please take note that in N028744 (samples 3-5), Mo and Se are requested twice by both 6010/6020 and 6020 only.

Please kindly check the attached COCs and advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-001A	MW-65-225-Q118	2/22/2018 9:01:00 AM	3/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-001B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-001C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-001D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028744-002A	MW-65-160-Q118	2/22/2018 9:59:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-002B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-002C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-002D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028744-003A	MW-68-180-Q118	2/22/2018 11:51:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-003B			3/8/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☑	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-003C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-003D	MW-68-180-Q118	2/22/2018 11:51:00 AM	3/8/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/8/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028744-004A	MW-68BR-280-Q118	2/22/2018 11:03:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-004B			3/8/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☑	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-004C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-004D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-004D	MW-68BR-280-Q118	2/22/2018 11:03:00 AM	3/8/2018	Groundwater	SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028744-005A	MW-68-240-Q118	2/22/2018 12:55:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-005B			3/8/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☑	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-005C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-005D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/8/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/8/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

WORK ORDER Summary

23-Feb-18

WorkOrder: N028744

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028744-005D	MW-68-240-Q118	2/22/2018 12:55:00 PM	3/8/2018	Groundwater	SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028744-006A	MW-69-195-Q118	2/22/2018 3:33:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-006B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028744-006C			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028744-006D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028744-007A	MW-714-Q118	2/22/2018 4:00:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028744-008A	FOLDER	3/8/2018	3/8/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028744

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122269 **Analyst:** LSR

ASSET #: N028744 **Date Analyzed:** 2/23/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/28/2018

2nd Level Reviewer: RLB 03/07/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/23/18 1515
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 mS/cm	CIW - 180108A	9.83 @19.3°C	% Rec: (90-110%)
1412	171121A	1417 @19.4°C	
9987	180108B	9970 @19.2°C	
99843	171121B	99800 @19.2°C	

	Sample ID	Matrix	Reading	Comments
1	N028744-001D	H2O	7750 @19.3°C	
2	2D		3610 @19.4°C	
3	3D		4080 @19.3°C	
4	4D		20100 @19.2°C	
5	4D DUP		20000 @19.1°C	
6	5D		15970 @19.2°C	
7	6D		3170 @19.2°C	
8	N028745-001D		972 @19.2°C	
9	2D		960 @19.3°C	
10	3D		957 @19.1°C	
Dup	4D		958 @19.0°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:
Analyst: CONFD

Silvia Ramit 2/28/2018
RB 03/07/2018

Standard	Std ID	Reading	Comments
1413 mS/cm	CIW - 171121C	1473 @19.1°C	% Rec: (90-110%)
10000	170828F	10110 @19.0°C	
99672	171215A	100300 @19.0°C	

	Sample ID	Matrix	Reading	Comments
1	N028745-005D	H2O	960 @19.3°C	
2	6D		965 @19.0°C	
3	7D		972 @19.1°C	14B CIW - 171121C
4	8D		974 @19.1°C	= 1466 @ 19.1°C
5	9D		985 @19.0°C	10000 CIW 170828F
6	10D		982 @19.2°C	= 10120 @ 19.0°C
7	11D		971 @19.3°C	99672 CIW 171215A
8	12D		980 @19.4°C	= 100600 @ 19.0°C
9	14D		981 @19.4°C	
10	15D		985 @19.4°C	
Dup	15D DUP		983 @19.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

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SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122268 **Instrument ID:** pH meter

ASSET #: N028744 **Analyst:** LSR

Date Analyzed: 23-Feb

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X			X		
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X			X	
QC Items						
5. Was a duplicate sample analyzed?	X			X		
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			X
7. Runlog complete and included in package.	X			X		
Preliminary Report						
8. Does the raw data match the preliminary report?	X			X		
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 2/28/2018

2nd Level Reviewer RLB 03/07/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/23/18 1000

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIN-171215D	6.98 @ 25.0°C	SLOPE: 96.9%
Buffer 4	171208A	4.01 @ 25.0°C	
Buffer 10	170822B	10.02 @ 25.0°C	

	Sample ID	Matrix	pH	Comments
1	NO28744-003D	H2O	7.33 @ 25.0°C	
2	3DDUP		7.37 @ 25.0°C	
3	4D		10.09 @ 25.0°C	
4	5D		7.42 @ 25.0°C	
5	NO28745-001D		8.42 @ 25.0°C	
6	2D		8.38 @ 25.0°C	
7	3D		8.36 @ 25.0°C	
8	4D		8.35 @ 25.0°C	
9	5D		8.31 @ 25.0°C	
10	6D		8.27 @ 25.0°C	
~~Dup~~	7D		8.25 @ 25.0°C	Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	CIN-171023A	7.03 @ 25.0°C	Accept: +/-0.1 pH units from expected value

Date:

Analyst: CONTD

Standard	Std ID	pH	Comments
Buffer 7			
Buffer 4			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	NO28745-008D	H2O	8.22 @ 25.0°C	
2	8D DUP		8.26 @ 25.0°C	
3	9D		8.25 @ 25.0°C	
4	10D		8.23 @ 25.0°C	
5	11D		8.24 @ 25.0°C	
6	12D		8.22 @ 25.0°C	
7	14D		8.22 @ 25.0°C	
8	15D		8.20 @ 25.0°C	Julia Ramit 2/28/2018
9	NO28742-004F		7.90 @ 25.0°C	RB 03/07/2018
10	16F		7.82 @ 25.0°C	
Dup	19F		7.68 @ 25.0°C	Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	CIN-171023A	7.04 @ 25.0°C	Accept: +/-0.1 pH units from expected value

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SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66936 **Analyst:** LSR

ASSET #: N028744 **Date Analyzed:** 2/26/2018

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 3/1/2018

2nd Level Reviewer: 03/07/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N028744-003D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(46.1362 - 46.0483)*1000000}{30}$$

= 2930 mg/L

Reporting result in two significant figures,

TDS = 2900 mg/L

Lilia Ramit 3/1/2018

RLB 03/07/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 1:16:53 P**
Prep End Date:

Reviewed/ Date: 03/07/2018
Initials/ Date: Lilia Ramit 3/1/2018

Prep Batch **66936** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66936	Water	IMP150208A	100	☐	0	0	100	1.000		
MB-66936	Water		100	☐	0	0	100	1.000		
N028744-003D	Groundwater	4080	100/30	☐	0	0	100	1.000		
N028744-004D	Groundwater	20100	100/5	☐	0	0	100	1.000		
N028744-004D-DU	Groundwater	1	100/5	☐	0	0	100	1.000		
N028744-005D	Groundwater	15970	100/10	☐	0	0	100	1.000		
N028775-001D	Groundwater	3150	100/40	☐	0	0	100	1.000		
N028775-002D	Groundwater	2920	100/50	☐	0	0	100	1.000		
N028775-003D	Groundwater	2370	100/60	☐	0	0	100	1.000		
N028775-006C	Groundwater	5220	100/20	☐	0	0	100	1.000		
N028775-007C	Groundwater	5390	100/20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9699

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 1:16:53 P**
Prep End Date: **2/27/2018 10:30:00**

Reviewed/ Date: 03/07/2018
Initials/ Date: Lilia Ramit 3/1/2018

Prep Batch **66936** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66936	Water		100	☐	0	0	100	1.000		
MB-66936	Water		100	☐	0	0	100	1.000		
N028744-003D	Groundwater		30	☐	0	0	100	3.333		
N028744-004D	Groundwater		5	☐	0	0	100	20.000		
N028744-004D-DU	Groundwater		5	☐	0	0	100	20.000		
N028744-005D	Groundwater		10	☐	0	0	100	10.000		
N028775-001D	Groundwater		40	☐	0	0	100	2.500		
N028775-002D	Groundwater		50	☐	0	0	100	2.000		
N028775-003D	Groundwater		60	☐	0	0	100	1.667		
N028775-006C	Groundwater		20	☐	0	0	100	5.000		
N028775-007C	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/26/18 13:16 AA	MB 66936	100	68.3806 68.3803	68.3807 68.3806	
KK	LCS 66936	100	70.7535 70.7534	70.8520 70.8516	
T	N028744-003D	30	46.0485 46.0483	46.1365 46.1362	
IS	4D	5	48.8847 48.8844	48.9502 48.9499	
XY	4D DUP	5	49.5288 → 49.5282 49.5282	49.5924 49.5925	
V	5D	10	48.8860 48.8859	48.9849 48.9846	
E	N028775-001D	40	49.3819 49.3816	49.4534 49.4535	
IJ	2D	50	61.5310 61.5308	61.6158 61.6157	
IA	3D	60	60.9771 60.9768	61.0572 61.0571	
IF	6C	20	60.6245 60.6242	60.6887 60.6884	

Julia Ramit 3/1/2018

RB 03/07/2018

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SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/26/18 A	1028775-007C	20	62.4004 62.4003	62.4665 62.4663	
	Julia Ramit	3/1/2018			
	RLB	03/07/2018			
	Closing WT: 49.9997 2/27/18 @ 1030 LSR				

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TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
2/27/2018									
MB-66936	100	68.3803	68.3806	3	1	3			MBLK
LCS-66936	100	70.7534	70.8516	982	1	982			LCS
N028744-003D	30	46.0483	46.1362	879	3.33333333	2930	4080	0.718	SAMP
N028744-004D	5	48.8844	48.9499	655	20	13100	20100	0.652	SAMP
N028744-004DDUP	5	49.5286	49.5925	639	20	12780	20100	0.636	DUP
N028744-005D	10	48.8859	48.9846	987	10	9870	15970	0.618	SAMP
N028775-001D	40	49.3816	49.4535	719	2.5	1797.5	3150	0.571	SAMP
N028775-002D	50	61.5308	61.6157	849	2	1698	2920	0.582	SAMP
N028775-003D	60	60.9768	61.0571	803	1.66666667	1338.33333	2370	0.565	SAMP
N028775-006C	20	60.6242	60.6884	642	5	3210	5220	0.615	SAMP
N028775-007C	20	62.4003	62.4663	660	5	3300	5390	0.612	SAMP

Julia Ramit 3/1/2018

RLB 03/07/2018

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66928
ASSET #: N028744

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in N028744-003B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18

2nd Level Reviewer 3/7/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66928
ASSET #: N028744

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/28/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Na in N028744-004B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18

2nd Level Reviewer 3/7/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028744-003B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.08908 * 1 * (25/25) * 1000

Iron , ug/L = 89.08

Reporting results in two significant figures,

Iron , ug/L = 89

% RSD SUMMARY

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	9.0052	15	PASS
Standard1	ICAL	1	Ca	0.2	15.23	15	<PQL
Standard2	ICAL	1	Ca	1	1.67	15	PASS
Standard3	ICAL	1	Ca	2	2.43	15	PASS
Standard4	ICAL	1	Ca	5	0.31	15	PASS
Standard5	ICAL	1	Ca	7.5	0.69	15	PASS
Standard6	ICAL	1	Ca	10	0.24	15	PASS
Standard7	ICAL	1	Ca	20	0.48	15	PASS
ICV	ICV	1	Ca	9.85	0.56	15	PASS
ICB	ICB	1	Ca	-0.0074	508.54	15	<PQL
LLICV	CCV1	1	Ca	0.19	9.2	20	PASS
ICSA1	ICSA	1	Ca	462.62	0.044	15	PASS
ICSAB1	ICSAB	1	Ca	523.2	0.025	15	PASS
CCV1	CCV	1	Ca	9.9	0.098	15	PASS
CCB1	CCB	1	Ca	0.00013	1792.65	15	<PQL
CCV2	CCV	1	Ca	9.87	0.083	15	PASS
CCB2	CCB	1	Ca	0.016	176.9	15	<PQL
CCV3	CCV	1	Ca	9.87	0.26	15	PASS
CCB3	CCB	1	Ca	0.015	85.86	15	<PQL
CCV4	CCV	1	Ca	9.87	0.16	15	PASS
CCB4	CCB	1	Ca	0.0056	355.72	15	<PQL
LLCCV1	CCV2	1	Ca	0.21	11.73	20	PASS
ICSA2	ICSA	1	Ca	464.04	0.18	15	PASS
ICSAB2	ICSAB	1	Ca	524.94	0.049	15	PASS
CCV5	CCV	1	Ca	9.99	0.45	15	PASS
CCB5	CCB	1	Ca	0.0061	70.53	15	<PQL
CCV6	CCV	1	Ca	9.94	0.2	15	PASS
CCB6	CCB	1	Ca	0.032	66.78	15	<PQL
CCV7	CCV	1	Ca	9.94	0.49	15	PASS
CCB7	CCB	1	Ca	0.029	45.96	15	<PQL
MB-66928	MBLK	1	Ca	0.0069	349.48	15	<PQL
CCV8	CCV	1	Ca	9.92	0.36	15	PASS
CCB8	CCB	1	Ca	0.0086	165.54	15	<PQL
LLCCV2	CCV2	1	Ca	0.22	0.67	20	PASS
ICSA3	ICSA	1	Ca	493.79	0.065	15	PASS
ICSAB3	ICSAB	1	Ca	524.01	0.091	15	PASS
LCS1-66928	LCS	1	Ca	9.49	0.43	15	PASS
N028744-003B	SAMP	1	Ca	343.72	0.1	15	PASS
N028744-003B	SAMP	5	Ca	68.39	0.29	15	PASS
N028744-003B-PS	PS	1	Ca	365.73	0.1	15	PASS
N028744-003B-MS1	MS	1	Ca	365.3	0.091	15	PASS
N028744-003B-MSD1	MSD	1	Ca	365.56	0.094	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N028744-004B	SAMP	1	Ca	383.79	0.62	15	PASS
N028744-005B	SAMP	1	Ca	535.12	0.34	15	PASS
N028775-001B	SAMP	1	Ca	110.87	0.43	15	PASS
N028775-002B	SAMP	1	Ca	106.6	0.27	15	PASS
CCV9	CCV	1	Ca	9.91	0.6	15	PASS
CCB9	CCB	1	Ca	0.019	34.6	15	<PQL
N028775-003B	SAMP	1	Ca	122.61	0.48	15	PASS
N028744-005B	SAMP	5	Ca	101.91	0.29	15	PASS
CCV10	CCV	1	Ca	9.98	0.48	15	PASS
CCB10	CCB	1	Ca	0.011	48.94	15	<PQL
LLCCV3	CCV2	1	Ca	0.21	19.7	20	PASS
ICSA4	ICSA	1	Ca	497.12	0.097	15	PASS
ICSAB4	ICSAB	1	Ca	527.52	0.16	15	PASS
CalBlk	IBLK	1	Fe	0	40.14	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.37	15	PASS
Standard2	ICAL	1	Fe	0.05	0.73	15	PASS
Standard3	ICAL	1	Fe	2	0.74	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	0.063	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	9.97	0.13	15	PASS
ICB	ICB	1	Fe	-0.0007	38.13	15	<PQL
LLICV	CCV1	1	Fe	0.019	1.31	20	PASS
ICSA1	ICSA	1	Fe	162.75	0.094	15	PASS
ICSAB1	ICSAB	1	Fe	179.01	0.49	15	PASS
CCV1	CCV	1	Fe	9.94	0.064	15	PASS
CCB1	CCB	1	Fe	-0.00045	67.51	15	<PQL
CCV2	CCV	1	Fe	9.93	0.1	15	PASS
CCB2	CCB	1	Fe	-0.00068	6.13	15	PASS
CCV3	CCV	1	Fe	9.94	0.044	15	PASS
CCB3	CCB	1	Fe	-0.00048	181.19	15	<PQL
CCV4	CCV	1	Fe	9.92	0.059	15	PASS
CCB4	CCB	1	Fe	-0.00054	38.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.78	20	PASS
ICSA2	ICSA	1	Fe	162.75	0.38	15	PASS
ICSAB2	ICSAB	1	Fe	179.03	0.11	15	PASS
CCV5	CCV	1	Fe	10.014	0.083	15	PASS
CCB5	CCB	1	Fe	-0.00096	22.91	15	<PQL
CCV6	CCV	1	Fe	9.96	0.088	15	PASS
CCB6	CCB	1	Fe	-0.0006	41.015	15	<PQL
CCV7	CCV	1	Fe	9.9	0.049	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB7	CCB	1	Fe	-0.00051	30.17	15	<PQL
MB-66928	MBLK	1	Fe	-0.0021	25.047	15	<PQL
CCV8	CCV	1	Fe	9.87	0.088	15	PASS
CCB8	CCB	1	Fe	-0.00016	387.45	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.26	20	PASS
ICSA3	ICSA	1	Fe	171.47	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	176.97	0.36	15	PASS
LCS1-66928	LCS	1	Fe	0.11	1.56	15	PASS
N028744-003B	SAMP	1	Fe	0.089	1.17	15	PASS
N028744-003B	SAMP	5	Fe	0.019	7.14	15	PASS
N028744-003B-PS	PS	1	Fe	0.19	0.95	15	PASS
N028744-003B-MS1	MS	1	Fe	0.18	1.72	15	PASS
N028744-003B-MSD1	MSD	1	Fe	0.18	0.79	15	PASS
N028744-004B	SAMP	1	Fe	0.32	0.43	15	PASS
N028744-005B	SAMP	1	Fe	0.01	8.59	15	PASS
N028775-001B	SAMP	1	Fe	0.031	2.3	15	PASS
N028775-002B	SAMP	1	Fe	0.25	0.47	15	PASS
CCV9	CCV	1	Fe	9.83	0.16	15	PASS
CCB9	CCB	1	Fe	-0.001	64.011	15	<PQL
N028775-003B	SAMP	1	Fe	0.0036	6.71	15	PASS
N028744-005B	SAMP	5	Fe	0.00038	107.8	15	<PQL
CCV10	CCV	1	Fe	9.92	0.078	15	PASS
CCB10	CCB	1	Fe	-0.0013	16.69	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.58	20	PASS
ICSA4	ICSA	1	Fe	172.57	0.3	15	PASS
ICSAB4	ICSAB	1	Fe	177.77	0.14	15	PASS
CalBlk	IBLK	1	Mg	0	8.52	15	PASS
Standard1	ICAL	1	Mg	0.1	0.16	15	PASS
Standard2	ICAL	1	Mg	1	0.22	15	PASS
Standard3	ICAL	1	Mg	2	0.92	15	PASS
Standard4	ICAL	1	Mg	5	0.14	15	PASS
Standard5	ICAL	1	Mg	7.5	0.31	15	PASS
Standard6	ICAL	1	Mg	10	0.089	15	PASS
Standard7	ICAL	1	Mg	20	0.16	15	PASS
ICV	ICV	1	Mg	9.94	0.14	15	PASS
ICB	ICB	1	Mg	0.00001	2777.71	15	<PQL
LLICV	CCV1	1	Mg	0.096	1.0018	20	PASS
ICSA1	ICSA	1	Mg	441.83	0.21	15	PASS
ICSAB1	ICSAB	1	Mg	505.39	0.45	15	PASS
CCV1	CCV	1	Mg	9.88	0.19	15	PASS
CCB1	CCB	1	Mg	-0.0012	26.79	15	<PQL
CCV2	CCV	1	Mg	9.86	0.12	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB2	CCB	1	Mg	-0.00058	79.72	15	<PQL
CCV3	CCV	1	Mg	9.88	0.13	15	PASS
CCB3	CCB	1	Mg	-0.00045	72.064	15	<PQL
CCV4	CCV	1	Mg	9.86	0.11	15	PASS
CCB4	CCB	1	Mg	-0.0019	20.41	15	<PQL
LLCCV1	CCV2	1	Mg	0.094	0.21	20	PASS
ICSA2	ICSA	1	Mg	441.62	0.41	15	PASS
ICSAB2	ICSAB	1	Mg	503.78	0.04	15	PASS
CCV5	CCV	1	Mg	9.93	0.087	15	PASS
CCB5	CCB	1	Mg	-0.0016	42.91	15	<PQL
CCV6	CCV	1	Mg	9.87	0.18	15	PASS
CCB6	CCB	1	Mg	-0.0011	51.38	15	<PQL
CCV7	CCV	1	Mg	9.81	0.015	15	PASS
CCB7	CCB	1	Mg	-0.00057	58.69	15	<PQL
MB-66928	MBLK	1	Mg	-0.0018	56.26	15	<PQL
CCV8	CCV	1	Mg	9.76	0.13	15	PASS
CCB8	CCB	1	Mg	-0.00078	11.64	15	PASS
LLCCV2	CCV2	1	Mg	0.092	1.069	20	PASS
ICSA3	ICSA	1	Mg	466.46	0.16	15	PASS
ICSAB3	ICSAB	1	Mg	494.01	0.41	15	PASS
LCS1-66928	LCS	1	Mg	9.78	0.24	15	PASS
N028744-003B	SAMP	1	Mg	34.077	0.2	15	PASS
N028744-003B	SAMP	5	Mg	7.43	0.49	15	PASS
N028744-003B-PS	PS	1	Mg	44.34	0.073	15	PASS
N028744-003B-MS1	MS	1	Mg	44.2	0.11	15	PASS
N028744-003B-MSD1	MSD	1	Mg	44.27	0.48	15	PASS
N028744-004B	SAMP	1	Mg	0.74	0.67	15	PASS
N028744-005B	SAMP	1	Mg	18.45	0.26	15	PASS
N028775-001B	SAMP	1	Mg	27.84	0.42	15	PASS
N028775-002B	SAMP	1	Mg	16.56	0.28	15	PASS
CCV9	CCV	1	Mg	9.76	0.26	15	PASS
CCB9	CCB	1	Mg	-0.00035	554.59	15	<PQL
N028775-003B	SAMP	1	Mg	20.53	0.37	15	PASS
N028744-005B	SAMP	5	Mg	4.35	0.14	15	PASS
CCV10	CCV	1	Mg	9.86	0.057	15	PASS
CCB10	CCB	1	Mg	-0.002	22.73	15	<PQL
LLCCV3	CCV2	1	Mg	0.092	0.72	20	PASS
ICSA4	ICSA	1	Mg	471.86	0.27	15	PASS
ICSAB4	ICSAB	1	Mg	498.93	0.25	15	PASS

RSD SUMMARY: 180228D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	23.51	20	<PQL
Standard1	ICAL	1	Na	0.1	4.11	20	PASS
Standard2	ICAL	1	Na	1	0.64	20	PASS
Standard3	ICAL	1	Na	5	0.3	20	PASS
Standard4	ICAL	1	Na	10	0.044	20	PASS
Standard5	ICAL	1	Na	20	0.13	20	PASS
Standard6	ICAL	1	Na	40	0.07	20	PASS
ICV	ICV	1	Na	10.24	0.37	20	PASS
ICB	ICB	1	Na	-0.0048	105.49	20	<PQL
ICSA1	ICSA	1	Na	-0.00096	90.8	20	<PQL
ICSAB1	ICSAB	1	Na	10.26	0.18	20	PASS
CCV1	CCV	1	Na	10.26	0.2	20	PASS
CCB1	CCB	1	Na	0.015	15.37	20	PASS
MB-66928	MBLK	1	Na	-0.0014	422.67	20	<PQL
LCS2-66928	LCS	1	Na	22.053	0.063	20	PASS
N028744-003B	SAMP	1	Na	532.69	0.54	20	PASS
CCV2	CCV	1	Na	10.47	0.43	20	PASS
CCB2	CCB	1	Na	0.084	3.51	20	PASS
N028744-005B	SAMP	1	Na	2840.2	0.2	20	PASS
N028775-001B	SAMP	1	Na	488.03	0.29	20	PASS
N028775-002B	SAMP	1	Na	445.04	0.38	20	PASS
N028775-003B	SAMP	1	Na	304.3	0.43	20	PASS
N028744-003B	SAMP	25	Na	23.92	0.01	20	PASS
N028744-004B	SAMP	5	Na	1003.1	0.31	20	PASS
N028744-005B	SAMP	100	Na	34.59	0.2	20	PASS
N028775-001B	SAMP	25	Na	20.91	0.19	20	PASS
N028775-002B	SAMP	25	Na	18.63	0.076	20	PASS
N028775-003B	SAMP	25	Na	12.79	0.14	20	PASS
CCV3	CCV	1	Na	10.88	0.035	20	PASS
CCB3	CCB	1	Na	0.097	5.37	20	PASS
N028744-004B	SAMP	250	Na	205.28	14.079	20	PASS
N028744-004B	SAMP	250	Na	20.68	0.14	20	PASS
N028744-004B	SAMP	1250	Na	4.1	0.38	20	PASS
N028744-004B-PS	PS	250	Na	20.62	0.14	20	PASS
N028744-004B-MS2	MS	250	Na	20.9	0.13	20	PASS
N028744-004B-MSD2	MSD	250	Na	20.65	0.14	20	PASS
CCV4	CCV	1	Na	10.88	0.25	20	PASS
CCB4	CCB	1	Na	0.048	16.89	20	PASS
ICSA2	ICSA	1	Na	0.041	20.33	20	<PQL
ICSAB2	ICSAB	1	Na	10.85	0.27	20	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/27/2018	08:57:36 AM
2	Standard1	ICAL	1	02/27/2018	09:02:24 AM
3	Standard2	ICAL	1	02/27/2018	09:06:43 AM
11	Standard3	ICAL	1	02/27/2018	09:11:33 AM
12	Standard4	ICAL	1	02/27/2018	09:16:25 AM
6	Standard5	ICAL	1	02/27/2018	09:21:18 AM
7	Standard6	ICAL	1	02/27/2018	09:26:07 AM
8	Standard7	ICAL	1	02/27/2018	09:30:30 AM
9	ICV	ICV	1	02/27/2018	09:34:02 AM
1	ICB	ICB	1	02/27/2018	09:38:27 AM
2	LLICV	CCV1	1	02/27/2018	09:42:46 AM
4	ICSA1	ICSA	1	02/27/2018	09:47:35 AM
5	ICSAB1	ICSAB	1	02/27/2018	09:53:39 AM
38	MB-66900	MBLK	1	02/27/2018	09:59:14 AM
39	LCS-66900	LCS	1	02/27/2018	10:04:04 AM
40	N028727-002B	SAMP	1	02/27/2018	10:08:55 AM
41	N028727-002B	SAMP	5	02/27/2018	10:13:45 AM
42	N028727-002B-PS	PS	1	02/27/2018	10:18:35 AM
43	N028727-002B-MS	MS	1	02/27/2018	10:23:26 AM
44	N028727-002B-MSD	MSD	1	02/27/2018	10:28:17 AM
45	N028727-003B	SAMP	1	02/27/2018	10:33:06 AM
46	N028727-004B	SAMP	1	02/27/2018	10:37:57 AM
47	N028727-005B	SAMP	1	02/27/2018	10:42:48 AM
7	CCV1	CCV	1	02/27/2018	10:47:39 AM
1	CCB1	CCB	1	02/27/2018	10:52:02 AM
48	N028727-006B	SAMP	1	02/27/2018	10:56:50 AM
49	N028727-007B	SAMP	1	02/27/2018	11:01:42 AM
50	N028727-008B	SAMP	1	02/27/2018	11:06:34 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N028727-009B	SAMP	1	02/27/2018	11:11:26 AM
52	N028727-010B	SAMP	1	02/27/2018	11:16:16 AM
53	N028727-011B	SAMP	1	02/27/2018	11:21:08 AM
54	N028727-012B	SAMP	1	02/27/2018	11:26:00 AM
55	N028727-013B	SAMP	1	02/27/2018	11:30:51 AM
56	MB-66899	MBLK	1	02/27/2018	11:35:41 AM
57	LCS-66899	LCS	1	02/27/2018	11:40:32 AM
7	CCV2	CCV	1	02/27/2018	11:45:23 AM
1	CCB2	CCB	1	02/27/2018	11:49:46 AM
58	N028727-002C	SAMP	1	02/27/2018	11:54:35 AM
59	N028727-002C	SAMP	5	02/27/2018	11:59:26 AM
60	N028727-002C-PS	PS	1	02/27/2018	12:04:17 PM
61	N028727-002C-MS	MS	1	02/27/2018	12:09:09 PM
62	N028727-002C-MSD	MSD	1	02/27/2018	12:14:02 PM
63	N028727-003C	SAMP	1	02/27/2018	12:18:54 PM
64	N028727-004C	SAMP	1	02/27/2018	12:23:46 PM
65	N028727-005C	SAMP	1	02/27/2018	12:28:38 PM
66	N028727-006C	SAMP	1	02/27/2018	12:33:30 PM
67	N028727-007C	SAMP	1	02/27/2018	12:38:22 PM
7	CCV3	CCV	1	02/27/2018	12:43:13 PM
1	CCB3	CCB	1	02/27/2018	12:47:36 PM
68	N028727-008C	SAMP	1	02/27/2018	12:52:25 PM
69	N028727-009C	SAMP	1	02/27/2018	12:57:17 PM
70	N028727-010C	SAMP	1	02/27/2018	01:02:07 PM
71	N028727-011C	SAMP	1	02/27/2018	01:06:58 PM
72	N028727-012C	SAMP	1	02/27/2018	01:11:48 PM
73	N028727-013C	SAMP	1	02/27/2018	01:16:40 PM
74	MB-66927	MBLK	1	02/27/2018	01:21:33 PM
75	LCS-66927	LCS	1	02/27/2018	01:26:24 PM
76	N028745-001B	SAMP	1	02/27/2018	01:31:15 PM
77	N028745-001B	SAMP	5	02/27/2018	01:36:06 PM
7	CCV4	CCV	1	02/27/2018	01:40:58 PM
1	CCB4	CCB	1	02/27/2018	01:45:21 PM
2	LLCCV1	CCV2	1	02/27/2018	01:50:10 PM
4	ICSA2	ICSA	1	02/27/2018	01:54:59 PM
5	ICSAB2	ICSAB	1	02/27/2018	02:01:03 PM
78	N028745-001B-PS	PS	1	02/27/2018	02:06:39 PM
79	N028745-001B-MS	MS	1	02/27/2018	02:11:30 PM
80	N028745-001B-MSD	MSD	1	02/27/2018	02:16:22 PM
81	N028745-002B	SAMP	1	02/27/2018	02:21:14 PM
82	N028745-003B	SAMP	1	02/27/2018	02:26:06 PM
83	N028745-004B	SAMP	1	02/27/2018	02:30:59 PM
84	N028745-005B	SAMP	1	02/27/2018	02:35:51 PM
85	N028745-006B	SAMP	1	02/27/2018	02:40:43 PM
86	N028745-007B	SAMP	1	02/27/2018	02:45:35 PM
87	N028745-008B	SAMP	1	02/27/2018	02:50:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/27/2018	02:55:19 PM
1	CCB5	CCB	1	02/27/2018	03:00:43 PM
88	N028745-009B	SAMP	1	02/27/2018	03:05:32 PM
89	N028745-010B	SAMP	1	02/27/2018	03:10:24 PM
90	N028745-011B	SAMP	1	02/27/2018	03:15:16 PM
91	N028745-012B	SAMP	1	02/27/2018	03:20:09 PM
92	N028745-014B	SAMP	1	02/27/2018	03:25:01 PM
93	N028745-015B	SAMP	1	02/27/2018	03:29:53 PM
94	MB-66926	MBLK	1	02/27/2018	03:34:45 PM
95	LCS-66926	LCS	1	02/27/2018	03:39:37 PM
96	N028745-001C	SAMP	1	02/27/2018	03:44:29 PM
97	N028745-001C	SAMP	5	02/27/2018	03:49:22 PM
7	CCV6	CCV	1	02/27/2018	03:54:13 PM
1	CCB6	CCB	1	02/27/2018	03:58:36 PM
98	N028745-001C-PS	PS	1	02/27/2018	04:03:24 PM
99	N028745-001C-MS	MS	1	02/27/2018	04:08:17 PM
100	N028745-001C-MSD	MSD	1	02/27/2018	04:13:11 PM
101	N028745-002C	SAMP	1	02/27/2018	04:18:04 PM
102	N028745-003C	SAMP	1	02/27/2018	04:22:57 PM
103	N028745-004C	SAMP	1	02/27/2018	04:27:48 PM
104	N028745-005C	SAMP	1	02/27/2018	04:32:41 PM
105	N028745-006C	SAMP	1	02/27/2018	04:37:34 PM
106	N028745-007C	SAMP	1	02/27/2018	04:42:25 PM
107	N028745-008C	SAMP	1	02/27/2018	04:47:17 PM
7	CCV7	CCV	1	02/27/2018	04:52:11 PM
1	CCB7	CCB	1	02/27/2018	04:56:34 PM
108	N028745-009C	SAMP	1	02/27/2018	05:01:23 PM
109	N028745-010C	SAMP	1	02/27/2018	05:06:15 PM
110	N028745-011C	SAMP	1	02/27/2018	05:11:09 PM
111	N028745-012C	SAMP	1	02/27/2018	05:16:02 PM
112	N028745-014C	SAMP	1	02/27/2018	05:20:54 PM
113	N028745-015C	SAMP	1	02/27/2018	05:25:48 PM
114	N028727-006B	SAMP	1	02/27/2018	05:30:40 PM
115	N028745-002B	SAMP	1	02/27/2018	05:35:34 PM
116	N028745-012B	SAMP	1	02/27/2018	05:41:13 PM
117	MB-66928	MBLK	1	02/27/2018	05:46:04 PM
7	CCV8	CCV	1	02/27/2018	05:50:56 PM
1	CCB8	CCB	1	02/27/2018	05:55:19 PM
2	LLCCV2	CCV2	1	02/27/2018	06:00:08 PM
4	ICSA3	ICSA	1	02/27/2018	06:04:58 PM
5	ICSAB3	ICSAB	1	02/27/2018	06:11:01 PM
118	LCS1-66928	LCS	1	02/27/2018	06:16:36 PM
119	N028744-003B	SAMP	1	02/27/2018	06:21:29 PM
120	N028744-003B	SAMP	5	02/27/2018	06:26:53 PM
121	N028744-003B-PS	PS	1	02/27/2018	06:32:47 PM
122	N028744-003B-MS1	MS	1	02/27/2018	06:38:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
123	N028744-003B-MSD1	MSD	1	02/27/2018	06:43:41 PM
124	N028744-004B	SAMP	1	02/27/2018	06:49:07 PM
125	N028744-005B	SAMP	1	02/27/2018	06:57:52 PM
126	N028775-001B	SAMP	1	02/27/2018	07:03:48 PM
127	N028775-002B	SAMP	1	02/27/2018	07:09:41 PM
7	CCV9	CCV	1	02/27/2018	07:15:35 PM
1	CCB9	CCB	1	02/27/2018	07:19:59 PM
128	N028775-003B	SAMP	1	02/27/2018	07:24:48 PM
129	N028744-005B	SAMP	5	02/27/2018	07:30:41 PM
7	CCV10	CCV	1	02/27/2018	07:36:34 PM
1	CCB10	CCB	1	02/27/2018	07:40:57 PM
2	LLCCV3	CCV2	1	02/27/2018	07:45:48 PM
4	ICSA4	ICSA	1	02/27/2018	07:50:36 PM
5	ICSAB4	ICSAB	1	02/27/2018	07:56:39 PM

INJECTION LOG: 180228D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171201R,0.025<50mL
Standard2	MWST-171201R,0.25<50mL
Standard3	MWST-171201R,1.25<50mL
Standard4	MWST-171201R,2.5<50mL
Standard5	MWST-171201R,5<50mL
Standard6	MWST-171201R,10<50mL
ICV	MWST-171030L
CCV	MWST-171201R,2.5<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/28/2018	12:07:32 PM
26	Standard1	ICAL	1	02/28/2018	12:10:50 PM
27	Standard2	ICAL	1	02/28/2018	12:14:08 PM
28	Standard3	ICAL	1	02/28/2018	12:17:57 PM
29	Standard4	ICAL	1	02/28/2018	12:21:45 PM
30	Standard5	ICAL	1	02/28/2018	12:25:37 PM
31	Standard6	ICAL	1	02/28/2018	12:29:30 PM
32	ICV	ICV	1	02/28/2018	12:33:25 PM
1	ICB	ICB	1	02/28/2018	12:37:17 PM
33	ICSA1	ICSA	1	02/28/2018	12:40:35 PM
34	ICSAB1	ICSAB	1	02/28/2018	12:46:09 PM
110	MB-66957	MBLK	1	02/28/2018	12:49:43 PM
131	LCS2-66957	LCS	1	02/28/2018	12:53:04 PM
112	N028808-001A	SAMP	1	02/28/2018	12:57:55 PM
117	N028809-001A	SAMP	1	02/28/2018	01:02:17 PM
118	N028810-001A	SAMP	1	02/28/2018	01:05:38 PM
119	N028811-001A	SAMP	1	02/28/2018	01:08:58 PM
132	N028809-001A	SAMP	5	02/28/2018	01:13:10 PM
133	N028809-001A-PS	PS	1	02/28/2018	01:16:32 PM
134	N028809-001A-MS2	MS	1	02/28/2018	01:20:30 PM
135	N028809-001A-MSD2	MSD	1	02/28/2018	01:24:27 PM
29	CCV1	CCV	1	02/28/2018	01:28:25 PM
1	CCB1	CCB	1	02/28/2018	01:32:15 PM
131	LCS2-66957	LCS	1	02/28/2018	01:35:32 PM
113	N028808-001A	SAMP	5	02/28/2018	01:39:30 PM
136	N028809-001A	SAMP	25	02/28/2018	01:42:51 PM
137	N028809-001A-PS	PS	5	02/28/2018	01:46:14 PM
138	N028809-001A-MS2	MS	5	02/28/2018	01:50:07 PM
139	N028809-001A-MSD2	MSD	5	02/28/2018	01:54:00 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
38	MB-66928	MBLK	1	02/28/2018	01:57:53 PM
39	LCS2-66928	LCS	1	02/28/2018	02:01:12 PM
40	N028744-003B	SAMP	1	02/28/2018	02:05:07 PM
29	CCV2	CCV	1	02/28/2018	02:24:56 PM
1	CCB2	CCB	1	02/28/2018	02:28:46 PM
42	N028744-005B	SAMP	1	02/28/2018	02:32:03 PM
43	N028775-001B	SAMP	1	02/28/2018	02:37:02 PM
44	N028775-002B	SAMP	1	02/28/2018	02:41:53 PM
45	N028775-003B	SAMP	1	02/28/2018	02:46:43 PM
46	N028744-003B	SAMP	25	02/28/2018	02:51:33 PM
47	N028744-004B	SAMP	5	02/28/2018	02:54:52 PM
48	N028744-005B	SAMP	100	02/28/2018	02:59:44 PM
49	N028775-001B	SAMP	25	02/28/2018	03:03:05 PM
50	N028775-002B	SAMP	25	02/28/2018	03:06:27 PM
51	N028775-003B	SAMP	25	02/28/2018	03:09:45 PM
29	CCV3	CCV	1	02/28/2018	03:13:05 PM
1	CCB3	CCB	1	02/28/2018	03:16:55 PM
52	N028744-004B	SAMP	250	02/28/2018	03:20:12 PM
52	N028744-004B	SAMP	250	02/28/2018	03:27:38 PM
53	N028744-004B	SAMP	1250	02/28/2018	03:30:57 PM
54	N028744-004B-PS	PS	250	02/28/2018	03:34:16 PM
55	N028744-004B-MS2	MS	250	02/28/2018	03:37:35 PM
56	N028744-004B-MSD2	MSD	250	02/28/2018	03:40:54 PM
29	CCV4	CCV	1	02/28/2018	03:44:14 PM
1	CCB4	CCB	1	02/28/2018	03:48:04 PM
33	ICSA2	ICSA	1	02/28/2018	03:51:21 PM
34	ICSAB2	ICSAB	1	02/28/2018	03:54:40 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 8:25:53**
Prep End Date: **2/26/2018 12:00:00**
Prep Batch **66928** Prep Code: **200.7_PR**

Reviewed/ Date: 3/7/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-42**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66928	Aqueous		25	☐	0	0	25	1.000		
LCS2-66928	Aqueous		25	☐	0	0	25	1.000		
MB-66928	Aqueous		25	☐	0	0	25	1.000		
N028744-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9616	HYDROCHLORIC ACID
9767	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	02/27/2018	08:57:36 AM	Mg	279.079	347	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Mg	279.079	2070	0.1000	mg/L	
Standard2	02/27/2018	09:06:43 AM	Mg	279.079	19689	1.000	mg/L	
Standard3	02/27/2018	09:11:33 AM	Mg	279.079	40251	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Mg	279.079	106097	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Mg	279.079	159271	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Mg	279.079	201702	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Mg	279.079	403058	20.000	mg/L	0.9998
Calcium								
CalBlk	02/27/2018	08:57:36 AM	Ca	227.546	-169	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Ca	227.546	90	0.2000	mg/L	
Standard2	02/27/2018	09:06:43 AM	Ca	227.546	427	1.000	mg/L	
Standard3	02/27/2018	09:11:33 AM	Ca	227.546	857	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Ca	227.546	2231	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Ca	227.546	3330	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Ca	227.546	4288	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Ca	227.546	8679	20.000	mg/L	0.9999
Iron								
CalBlk	02/27/2018	08:57:36 AM	Fe	273.953	-80	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Fe	273.953	597	0.0200	mg/L	
Standard2	02/27/2018	09:06:43 AM	Fe	273.953	2118	0.050	mg/L	
Standard3	02/27/2018	09:11:33 AM	Fe	273.953	65679	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Fe	273.953	173274	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Fe	273.953	259204	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Fe	273.953	329436	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Fe	273.953	654360	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 180228D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	02/28/2018	12:07:32 PM	Na	589.594	-47	0.00	mg/L	
Standard1	02/28/2018	12:10:50 PM	Na	589.594	268	0.1000	mg/L	
Standard2	02/28/2018	12:14:08 PM	Na	589.594	2360	1.000	mg/L	
Standard3	02/28/2018	12:17:57 PM	Na	589.594	11870	5.000	mg/L	
Standard4	02/28/2018	12:21:45 PM	Na	589.594	23155	10.000	mg/L	
Standard5	02/28/2018	12:25:37 PM	Na	589.594	46238	20.000	mg/L	
Standard6	02/28/2018	12:29:30 PM	Na	589.594	90512	40.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9847.234	500	10000	0	98.5	90	110				
Iron	9971.133	20	10000	0	99.7	90	110				
Magnesium	9936.474	100	10000	0	99.4	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	191.937	500	200.0	0	96.0	80	120				
Iron	18.964	20	20.00	0	94.8	80	120				
Magnesium	95.825	100	100.0	0	95.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9902.289	500	10000	0	99.0	90	110				
Iron	9936.606	20	10000	0	99.4	90	110				
Magnesium	9881.004	100	10000	0	98.8	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9873.443	500	10000	0	98.7	90	110				
Iron	9928.011	20	10000	0	99.3	90	110				
Magnesium	9862.143	100	10000	0	98.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9865.971	500	10000	0	98.7	90	110				
Iron	9940.119	20	10000	0	99.4	90	110				
Magnesium	9877.853	100	10000	0	98.8	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9867.065	500	10000	0	98.7	90	110				
Iron	9918.304	20	10000	0	99.2	90	110				
Magnesium	9863.878	100	10000	0	98.6	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205.785	500	200.0	0	103	70	130				
Iron	19.135	20	20.00	0	95.7	70	130				
Magnesium	94.237	100	100.0	0	94.2	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9989.312	500	10000	0	99.9	90	110				
Iron	10013.653	20	10000	0	100	90	110				
Magnesium	9925.719	100	10000	0	99.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV6** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9938.585	500	10000	0	99.4	90	110				
Iron	9954.995	20	10000	0	99.5	90	110				
Magnesium	9868.812	100	10000	0	98.7	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9937.706	500	10000	0	99.4	90	110				
Iron	9900.900	20	10000	0	99.0	90	110				
Magnesium	9807.914	100	10000	0	98.1	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9921.528	500	10000	0	99.2	90	110				
Iron	9867.311	20	10000	0	98.7	90	110				
Magnesium	9759.138	100	10000	0	97.6	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	220.804	500	200.0	0	110	70	130				
Iron	18.571	20	20.00	0	92.9	70	130				
Magnesium	92.121	100	100.0	0	92.1	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV9** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9914.397	500	10000	0	99.1	90	110				
Iron	9827.758	20	10000	0	98.3	90	110				
Magnesium	9755.639	100	10000	0	97.6	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9980.941	500	10000	0	99.8	90	110				
Iron	9918.259	20	10000	0	99.2	90	110				
Magnesium	9859.723	100	10000	0	98.6	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	211.390	500	200.0	0	106	70	130				
Iron	18.834	20	20.00	0	94.2	70	130				
Magnesium	91.971	100	100.0	0	92.0	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10239.524	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10254.833	500	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10472.628	500	10000	0	105	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10881.218	500	10000	0	109	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10878.961	500	10000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-7.402967	500									
Iron	-0.696386	20									
Magnesium	0.009	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.129	500									
Iron	-0.447249	20									
Magnesium	-1.158627	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	15.889	500									
Iron	-0.680748	20									
Magnesium	-0.581797	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	14.648	500									
Iron	-0.479551	20									
Magnesium	-0.451134	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB4** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.547	500									
Iron	-0.538583	20									
Magnesium	-1.884182	100									

Sample ID **CCB5** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	6.131	500									
Iron	-0.964491	20									
Magnesium	-1.604119	100									

Sample ID **CCB6** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	31.505	500									
Iron	-0.596397	20									
Magnesium	-1.080566	100									

Sample ID **CCB7** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.341	500									
Iron	-0.505015	20									
Magnesium	-0.569754	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB8**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	8.632	500									
Iron	-0.163844	20									
Magnesium	-0.779367	100									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	18.729	500									
Iron	-1.030656	20									
Magnesium	-0.353972	100									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.940	500									
Iron	-1.315819	20									
Magnesium	-2.041458	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.832063	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	14.845	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	84.208	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	96.662	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	48.004	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSA**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457594.887	50	500000	0	91.5	80	120				
Calcium	462616.028	500	500000	0	92.5	80	120				
Iron	162752.851	20	200000	0	81.4	80	120				
Magnesium	441828.543	100	500000	0	88.4	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSAB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519567.949	50	500000	0	104	80	120				
Calcium	523203.344	500	500000	0	105	80	120				
Iron	179011.510	20	200000	0	89.5	80	120				
Magnesium	505392.169	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSA**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	458954.094	50	500000	0	91.8	80	120				
Calcium	464043.458	500	500000	0	92.8	80	120				
Iron	162754.153	20	200000	0	81.4	80	120				
Magnesium	441622.966	100	500000	0	88.3	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSAB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521810.062	50	500000	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSAB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	524936.053	500	500000	0	105	80	120				
Iron	179026.484	20	200000	0	89.5	80	120				
Magnesium	503783.430	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSA** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	480725.792	50	500000	0	96.1	80	120				
Calcium	493793.882	500	500000	0	98.8	80	120				
Iron	171468.486	20	200000	0	85.7	80	120				
Magnesium	466463.577	100	500000	0	93.3	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSAB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516193.347	50	500000	0	103	80	120				
Calcium	524006.828	500	500000	0	105	80	120				
Iron	176968.700	20	200000	0	88.5	80	120				
Magnesium	494006.955	100	500000	0	98.8	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSA** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486430.979	50	500000	0	97.3	80	120				
Calcium	497118.455	500	500000	0	99.4	80	120				
Iron	172570.528	20	200000	0	86.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSA**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	471858.518	100	500000	0	94.4	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSAB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521106.682	50	500000	0	104	80	120				
Calcium	527518.713	500	500000	0	106	80	120				
Iron	177773.615	20	200000	0	88.9	80	120				
Magnesium	498933.658	100	500000	0	99.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSA**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.962147	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSAB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10255.564	500	10000	0	103	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSA**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	40.571	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSAB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10848.365	500	10000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1.046	104.64	65-125	PASS
Standard3	ICAL	1	1.012	101.25	65-125	PASS
Standard4	ICAL	1	1.0039	100.39	65-125	PASS
Standard5	ICAL	1	1.054	105.45	65-125	PASS
Standard6	ICAL	1	0.98	97.97	65-125	PASS
Standard7	ICAL	1	0.96	95.72	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	1	99.66	65-125	PASS
LLICV	CCV1	1	1	99.72	65-125	PASS
ICSA1	ICSA	1	1.14	113.65	65-125	PASS
ICSAB1	ICSAB	1	0.91	90.94	65-125	PASS
CCV1	CCV	1	0.99	99.22	65-125	PASS
CCB1	CCB	1	1.0052	100.52	65-125	PASS
CCV2	CCV	1	0.99	99.42	65-125	PASS
CCB2	CCB	1	1.0041	100.41	65-125	PASS
CCV3	CCV	1	1.0011	100.11	65-125	PASS
CCB3	CCB	1	1.013	101.34	65-125	PASS
CCV4	CCV	1	1	99.86	65-125	PASS
CCB4	CCB	1	1.016	101.63	65-125	PASS
LLCCV1	CCV2	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.16	115.86	65-125	PASS
ICSAB2	ICSAB	1	0.92	92.44	65-125	PASS
CCV5	CCV	1	1.0057	100.57	65-125	PASS
CCB5	CCB	1	1.018	101.79	65-125	PASS
CCV6	CCV	1	1.0016	100.16	65-125	PASS
CCB6	CCB	1	1.021	102.06	65-125	PASS
CCV7	CCV	1	1.012	101.23	65-125	PASS
CCB7	CCB	1	1.028	102.75	65-125	PASS
MB-66928	MBLK	1	1	99.67	65-125	PASS
CCV8	CCV	1	1.002	100.2	65-125	PASS
CCB8	CCB	1	1.02	101.96	65-125	PASS
LLCCV2	CCV2	1	1.015	101.5	65-125	PASS
ICSA3	ICSA	1	0.95	95.32	65-125	PASS
ICSAB3	ICSAB	1	0.89	88.66	65-125	PASS
LCS1-66928	LCS	1	0.94	94.12	65-125	PASS
N028744-003B	SAMP	1	0.91	91.007	65-125	PASS
N028744-003B	SAMP	5	0.95	94.77	65-125	PASS
N028744-003B-PS	PS	1	0.92	92.3	65-125	PASS
N028744-003B-MS1	MS	1	0.92	91.79	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N028744-003B-MSD1	MSD	1	0.92	92.38	65-125	PASS
N028744-004B	SAMP	1	0.75	74.65	65-125	PASS
N028744-005B	SAMP	1	0.76	75.95	65-125	PASS
N028775-001B	SAMP	1	0.93	93.33	65-125	PASS
N028775-002B	SAMP	1	0.92	92.25	65-125	PASS
CCV9	CCV	1	1	99.78	65-125	PASS
CCB9	CCB	1	1.0016	100.16	65-125	PASS
N028775-003B	SAMP	1	0.94	93.54	65-125	PASS
N028744-005B	SAMP	5	0.86	86.26	65-125	PASS
CCV10	CCV	1	1	99.95	65-125	PASS
CCB10	CCB	1	1.0006	100.06	65-125	PASS
LLCCV3	CCV2	1	1.016	101.59	65-125	PASS
ICSA4	ICSA	1	0.95	95.044	65-125	PASS
ICSAB4	ICSAB	1	0.89	88.55	65-125	PASS

INTERNAL STANDARD: 180228D

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.12	65-125	PASS
Standard2	ICAL	1	0.99	98.54	65-125	PASS
Standard3	ICAL	1	1.036	103.65	65-125	PASS
Standard4	ICAL	1	0.99	98.61	65-125	PASS
Standard5	ICAL	1	1.023	102.26	65-125	PASS
Standard6	ICAL	1	1.019	101.94	65-125	PASS
ICV	ICV	1	0.99	98.97	65-125	PASS
ICB	ICB	1	0.98	97.69	65-125	PASS
ICSA1	ICSA	1	0.97	97.18	65-125	PASS
ICSAB1	ICSAB	1	0.99	99.41	65-125	PASS
CCV1	CCV	1	0.99	99.23	65-125	PASS
CCB1	CCB	1	0.98	98.14	65-125	PASS
MB-66928	MBLK	1	1.0073	100.73	65-125	PASS
LCS2-66928	LCS	1	1.027	102.67	65-125	PASS
N028744-003B	SAMP	1	1.016	101.63	65-125	PASS
CCV2	CCV	1	0.88	87.52	65-125	PASS
CCB2	CCB	1	0.87	86.7	65-125	PASS
N028744-005B	SAMP	1	0.82	82.32	65-125	PASS
N028775-001B	SAMP	1	0.91	90.51	65-125	PASS
N028775-002B	SAMP	1	0.89	88.78	65-125	PASS
N028775-003B	SAMP	1	0.9	89.51	65-125	PASS
N028744-003B	SAMP	25	0.88	87.64	65-125	PASS
N028744-004B	SAMP	5	0.83	82.8	65-125	PASS
N028744-005B	SAMP	100	0.85	85.1	65-125	PASS
N028775-001B	SAMP	25	0.86	85.79	65-125	PASS
N028775-002B	SAMP	25	0.86	85.55	65-125	PASS
N028775-003B	SAMP	25	0.85	85.39	65-125	PASS
CCV3	CCV	1	0.85	85.4	65-125	PASS
CCB3	CCB	1	0.85	85.35	65-125	PASS
N028744-004B	SAMP	250	0.00029	0.029	65-125	NR!
N028744-004B	SAMP	250	0.86	85.75	65-125	PASS
N028744-004B	SAMP	1250	0.85	85.43	65-125	PASS
N028744-004B-PS	PS	250	0.85	85.11	65-125	PASS
N028744-004B-MS2	MS	250	0.85	85.27	65-125	PASS
N028744-004B-MSD2	MSD	250	0.85	84.96	65-125	PASS
CCV4	CCV	1	0.85	85.16	65-125	PASS
CCB4	CCB	1	0.86	85.64	65-125	PASS
ICSA2	ICSA	1	0.85	84.98	65-125	PASS
ICSAB2	ICSAB	1	0.86	85.71	65-125	PASS

3/7/2018

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028744
Test Method: EPA 200.7
Analysis Date: 27/2018 & 2/28/2018

Matrix: Groundwater
Batch No.: 66928

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028744-003B DT 5X	Calcium	ug/L	341951.3	PASS	343722.5	0.52%	10
N028744-003B DT 5X	Iron	ug/L	92.62328	NA	89.08093	3.98%	10
N028744-003B DT 5X	Magnesium	ug/L	37130.61	PASS	34076.97	8.96%	10
N028744-004B DT 1250X	Sodium	ug/L	5126309	PASS	5171055	0.87%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N028744-003B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365727.242	500	10000	343700	220	80	120				S
Iron	185.463	20	100.0	89.08	96.4	80	120				
Magnesium	44336.185	100	10000	34080	103	80	120				

Sample ID **N028744-004B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5155663.295	120000	20000	5171000	-77.0	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R122291
ASSET #: N028744

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/26/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: Dilution was necessary for N028744-004A due to matrix interference. MS not recovered at 1X.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/4/2018

2nd Level Reviewer RB 03/07/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028744-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 10.2777 * 50$$

$$Cr^{+6}, \mu g/L = 513.8850$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 510}$$

rba 3/4/2018

03/07/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:25 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:36 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/26/18 9:46 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/26/18 9:55 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/26/18 10:04 AM	Reported
14	MB-R122291	MBLK	1	Hexavalent Chromium	02/26/18 10:14 AM	Reported
15	LCS-R122291	LCS	1	Hexavalent Chromium	02/26/18 10:23 AM	Reported
16	N028744-001A	SAMP	50	Hexavalent Chromium	02/26/18 10:33 AM	Reported
17	N028744-001AMS	MS	50	Hexavalent Chromium	02/26/18 10:42 AM	Reported
18	N028744-002A	SAMP	20	Hexavalent Chromium	02/26/18 10:52 AM	Reported
19	N028744-002AMS	MS	20	Hexavalent Chromium	02/26/18 11:01 AM	Reported
20	N028744-004A	SAMP	5	Hexavalent Chromium	02/26/18 11:15 AM	Reported
21	N028744-004AMS	MS	5	Hexavalent Chromium	02/26/18 11:40 AM	Reported
22	N028744-005A	SAMP	200	Hexavalent Chromium	02/26/18 11:51 AM	Reported
23	N028744-005AMS	MS	200	Hexavalent Chromium	02/26/18 12:01 PM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/26/18 12:10 PM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/26/18 12:20 PM	Reported
26	N028744-006A	SAMP	50	Hexavalent Chromium	02/26/18 12:29 PM	Reported
27	N028744-006AMS	MS	50	Hexavalent Chromium	02/26/18 12:38 PM	Reported
28	N028744-007A	SAMP	1	Hexavalent Chromium	02/26/18 12:48 PM	Reported
29	N028744-007AMS	MS	1	Hexavalent Chromium	02/26/18 12:57 PM	Reported
30	N028744-001AMSD	MSD	50	Hexavalent Chromium	02/26/18 1:07 PM	Reported
31	N028744-002ADUP	DUP	20	Hexavalent Chromium	02/26/18 1:16 PM	Reported
32	N028744-003A	SAMP	2000	Hexavalent Chromium	02/26/18 1:26 PM	Reported
33	N028744-003AMS	MS	2000	Hexavalent Chromium	02/26/18 1:35 PM	Reported
34	N028744-004A	SAMP	1	Hexavalent Chromium	02/26/18 1:45 PM	Not Reported
35	N028744-004AMS	MS	1	Hexavalent Chromium	02/26/18 1:54 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/26/18 2:04 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/26/18 2:13 PM	Reported
38	N028775-001A	SAMP	20	Hexavalent Chromium	02/26/18 2:40 PM	Reported
39	N028775-001AMS	MS	20	Hexavalent Chromium	02/26/18 2:51 PM	Reported
40	N028775-002A	SAMP	20	Hexavalent Chromium	02/26/18 3:00 PM	Reported
41	N028775-002AMS	MS	20	Hexavalent Chromium	02/26/18 3:10 PM	Reported
42	N028775-003A	SAMP	10	Hexavalent Chromium	02/26/18 3:19 PM	Reported

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028775-003AMS	MS	10	Hexavalent Chromium	02/26/18 3:29 PM	Reported
44	N028775-004A	SAMP	1	Hexavalent Chromium	02/26/18 3:40 PM	Reported
45	N028775-004AMS	MS	1	Hexavalent Chromium	02/26/18 3:51 PM	Reported
46	N028775-005A	SAMP	1	Hexavalent Chromium	02/26/18 4:01 PM	Reported
47	N028775-005AMS	MS	1	Hexavalent Chromium	02/26/18 4:10 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/26/18 4:20 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/26/18 4:29 PM	Reported
50	N028775-006A	SAMP	20	Hexavalent Chromium	02/26/18 4:39 PM	Reported
51	N028775-006AMS	MS	20	Hexavalent Chromium	02/26/18 4:48 PM	Reported
52	N028775-007A	SAMP	20	Hexavalent Chromium	02/26/18 4:58 PM	Reported
53	N028775-007AMS	MS	20	Hexavalent Chromium	02/26/18 5:07 PM	Reported
54	N028775-008A	SAMP	1	Hexavalent Chromium	02/26/18 5:17 PM	Reported
55	N028775-008AMS	MS	1	Hexavalent Chromium	02/26/18 5:26 PM	Reported
56	N028775-009A	SAMP	1	Hexavalent Chromium	02/26/18 5:35 PM	Reported
57	N028775-009AMS	MS	1	Hexavalent Chromium	02/26/18 5:45 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	02/26/18 5:54 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	02/26/18 6:04 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180226A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**26/Feb/18 18:34:41**
No. of Injections:	**62**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/26/2018 09:25	Finished	BLANK
10	BLANK	2	1000	Unknown		02/26/2018 09:36	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/26/2018 09:46	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/26/2018 09:55	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/26/2018 10:04	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/26/2018 10:14	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/26/2018 10:23	Finished	LCS, IWST-180129B
16	N028744-001A,SAMF	8	1000	Unknown		02/26/2018 10:33	Finished	SAMP,0.2>10mL
17	N028744-001AMS,MS	9	1000	Unknown		02/26/2018 10:42	Finished	MS (5ppb), IWST-180129B,0.2
18	N028744-002A,SAMF	10	1000	Unknown		02/26/2018 10:52	Finished	SAMP,0.5>10mL
19	N028744-002AMS,MS	11	1000	Unknown		02/26/2018 11:01	Finished	MS (5ppb), IWST-180129B,0.5
20	N028744-004A,SAMF	1	1000	Unknown		02/26/2018 11:15	Finished	SAMP,2>10mL
21	N028744-004AMS,MS	2	1000	Unknown		02/26/2018 11:40	Finished	MS (5ppb), IWST-180129B,2>1
22	N028744-005A,SAMF	3	1000	Unknown		02/26/2018 11:51	Finished	SAMP,0.05>10mL
23	N028744-005AMS,MS	4	1000	Unknown		02/26/2018 12:01	Finished	MS (5ppb), IWST-180129B,0.0
24	CCV-2,CCV1,1,	5	1000	Unknown		02/26/2018 12:10	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	6	1000	Unknown		02/26/2018 12:20	Finished	CCB R180214B
26	N028744-006A,SAMF	7	1000	Unknown		02/26/2018 12:29	Finished	SAMP,0.2>10mL
27	N028744-006AMS,MS	8	1000	Unknown		02/26/2018 12:38	Finished	MS (5ppb), IWST-180129B,0.2
28	N028744-007A,SAMF	9	1000	Unknown		02/26/2018 12:48	Finished	SAMP,10mL
29	N028744-007AMS,MS	10	1000	Unknown		02/26/2018 12:57	Finished	MS (1ppb), IWST-180129B,10
30	N028744-001AMSD,M	11	1000	Unknown		02/26/2018 13:07	Finished	MSD (5ppb), IWST-180129B,0.
31	N028744-002ADUP,D	12	1000	Unknown		02/26/2018 13:16	Finished	DUP,0.5>10mL
32	N028744-003A,SAMF	13	1000	Unknown		02/26/2018 13:26	Finished	SAMP,0.005>10mL
33	N028744-003AMS,MS	14	1000	Unknown		02/26/2018 13:35	Finished	MS (5ppb), IWST-180129B,0.0
34	N028744-004A,SAMF	15	1000	Unknown		02/26/2018 13:45	Finished	SAMP,10mL
35	N028744-004AMS,MS	16	1000	Unknown		02/26/2018 13:54	Finished	MS (1ppb), IWST-180129B,10
36	CCV-3,CCV,1,	17	1000	Unknown		02/26/2018 14:04	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	18	1000	Unknown		02/26/2018 14:13	Finished	CCB R180214B
38	N028775-001A,SAMF	1	1000	Unknown		02/26/2018 14:40	Finished	SAMP,0.5>10mL
39	N028775-001AMS,MS	2	1000	Unknown		02/26/2018 14:51	Finished	MS (5ppb), IWST-180129B,0.5
40	N028775-002A,SAMF	3	1000	Unknown		02/26/2018 15:00	Finished	SAMP,0.5>10mL
41	N028775-002AMS,MS	4	1000	Unknown		02/26/2018 15:10	Finished	MS (5ppb), IWST-180129B,0.5
42	N028775-003A,SAMF	5	1000	Unknown		02/26/2018 15:19	Finished	SAMP,1>10mL
43	N028775-003AMS,MS	6	1000	Unknown		02/26/2018 15:29	Finished	MS (5ppb), IWST-180129B,1>1
44	N028775-004A,SAMF	8	1000	Unknown		02/26/2018 15:40	Finished	SAMP,10mL
45	N028775-004AMS,MS	9	1000	Unknown		02/26/2018 15:51	Finished	MS (5ppb), IWST-180129B,10
46	N028775-005A,SAMF	10	1000	Unknown		02/26/2018 16:01	Finished	SAMP,10mL
47	N028775-005AMS,MS	11	1000	Unknown		02/26/2018 16:10	Finished	MS (5ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	12	1000	Unknown		02/26/2018 16:20	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	13	1000	Unknown		02/26/2018 16:29	Finished	CCB R180214B
50	N028775-006A,SAMF	14	1000	Unknown		02/26/2018 16:39	Finished	SAMP,0.5>10mL
51	N028775-006AMS,MS	15	1000	Unknown		02/26/2018 16:48	Finished	MS (5ppb), IWST-180129B,0.5
52	N028775-007A,SAMF	16	1000	Unknown		02/26/2018 16:58	Finished	SAMP,0.5>10mL
53	N028775-007AMS,MS	17	1000	Unknown		02/26/2018 17:07	Finished	MS (5ppb), IWST-180129B,0.5
54	N028775-008A,SAMF	18	1000	Unknown		02/26/2018 17:17	Finished	SAMP,10mL
55	N028775-008AMS,MS	19	1000	Unknown		02/26/2018 17:26	Finished	MS (1ppb), IWST-180129B,10
56	N028775-009A,SAMF	20	1000	Unknown		02/26/2018 17:35	Finished	SAMP,10mL
57	N028775-009AMS,MS	21	1000	Unknown		02/26/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
58	CCV-5,CCV,1,	22	1000	Unknown		02/26/2018 17:54	Finished	CCV @5ppb, IWST-180129A
59	CCB-5,CCB,1,	23	1000	Unknown		02/26/2018 18:04	Finished	CCB R180214B
60	SHUTDOWN	24	1000	Unknown		02/26/2018 18:13	Finished	

61	Eluent: R180226A	25	1000	Unknown		n.a.	Finished	Eluent
62	PCR: R180226B	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/23/18
Time Prepared: 1125
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: MS0223A / MS0226A
NH4OH + NH4SO4 buffer: MS0214A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	MO28745-11A	9.48	-	~25mL	~25mL		3|3
2)	12A	9.41	-				1|3
3)	12A	9.43	-				2|3
4)	12A	9.40	-				3|3
5)	13A	9.46	-				1|3
6)	13A	9.49	-				2|3
7)	13A	9.50	-				3|3
8)	14A	9.43	-				1|3
9)	14A	9.42	-				2|3
10)	14A	9.41	-				3|3
11)	15A	9.44	-				1|3
12)	15A	9.45	-				2|3
13)	15A	9.45	-				3|3
14)	MO28744-1A	9.32	-				
15)	2A	9.33	-				
	3A	9.38	-				

Sample Preparation

Date Prepared: 2/23/18
Time Prepared: 1125A
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: MS0223A / MS0226A
NH4OH + NH4SO4 buffer: MS0214A

	Sample ID.44	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	MO28744-4A	9.57	-	~25mL	~25mL		
2)	5A	9.39	-				
3)	6A	9.32	-				
4)	7A	9.62	-				
5)	MO28742-4B	7.66		~25mL	~25mL		
6)	19B	7.70					
7)	16B	7.69					
8)	MO28746-1B	7.33					
9)	2B	7.74					
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert
ORELAP/NELAP Cert 4046

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9998

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/07/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ICV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2940692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2940693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.927	0.20	5.000	0	98.5	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.197	0.20	0.2000	0	98.5	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.937	0.20	10.00	0	99.4	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.876	0.20	5.000	0	97.5	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.846	0.20	10.00	0	98.5	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.870	0.20	5.000	0	97.4	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ICB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2940694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122291**
Client ID: **CCB** Batch ID: **R122291** TestNo: **EPA 218.6** Analysis Date: **2/26/2018** SeqNo: **2940743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.156	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
Average	4.163	
Actual RT Window	4.083 - 4.243	
Applied RT Window	3.963 - 4.363	
MB-R122291	N.A.	N.A.
LCS-R122291	4.156	PASS
N028744-001A	4.156	PASS
N028744-001AMS	4.156	PASS
N028744-002A	4.156	PASS
N028744-002AMS	4.156	PASS
N028744-004A	N.A.	N.A.
N028744-004AMS	4.090	PASS
N028744-005A	4.156	PASS
N028744-005AMS	4.156	PASS
N028744-006A	4.156	PASS
N028744-006AMS	4.156	PASS
N028744-007A	N.A.	N.A.
N028744-007AMS	4.156	PASS
N028744-001AMSD	4.156	PASS
N028744-002ADUP	4.156	PASS
N028744-003A	4.156	PASS
N028744-003AMS	4.165	PASS
N028744-004A	N.A.	N.A.
N028744-004AMS	N.A.	N.A.
N028775-001A	4.156	PASS
N028775-001AMS	4.156	PASS
N028775-002A	4.165	PASS

RLB 03/07/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.156	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
Average	4.163	
Actual RT Window	4.083 - 4.243	
Applied RT Window	3.963 - 4.363	
N028775-002AMS	4.156	PASS
N028775-003A	4.156	PASS
N028775-003AMS	4.156	PASS
N028775-004A	4.148	PASS
N028775-004AMS	4.148	PASS
N028775-005A	4.148	PASS
N028775-005AMS	4.148	PASS
N028775-006A	4.156	PASS
N028775-006AMS	4.156	PASS
N028775-007A	4.156	PASS
N028775-007AMS	4.165	PASS
N028775-008A	4.148	PASS
N028775-008AMS	4.165	PASS
N028775-009A	N.A.	N.A.
N028775-009AMS	4.165	PASS

RLB 03/07/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

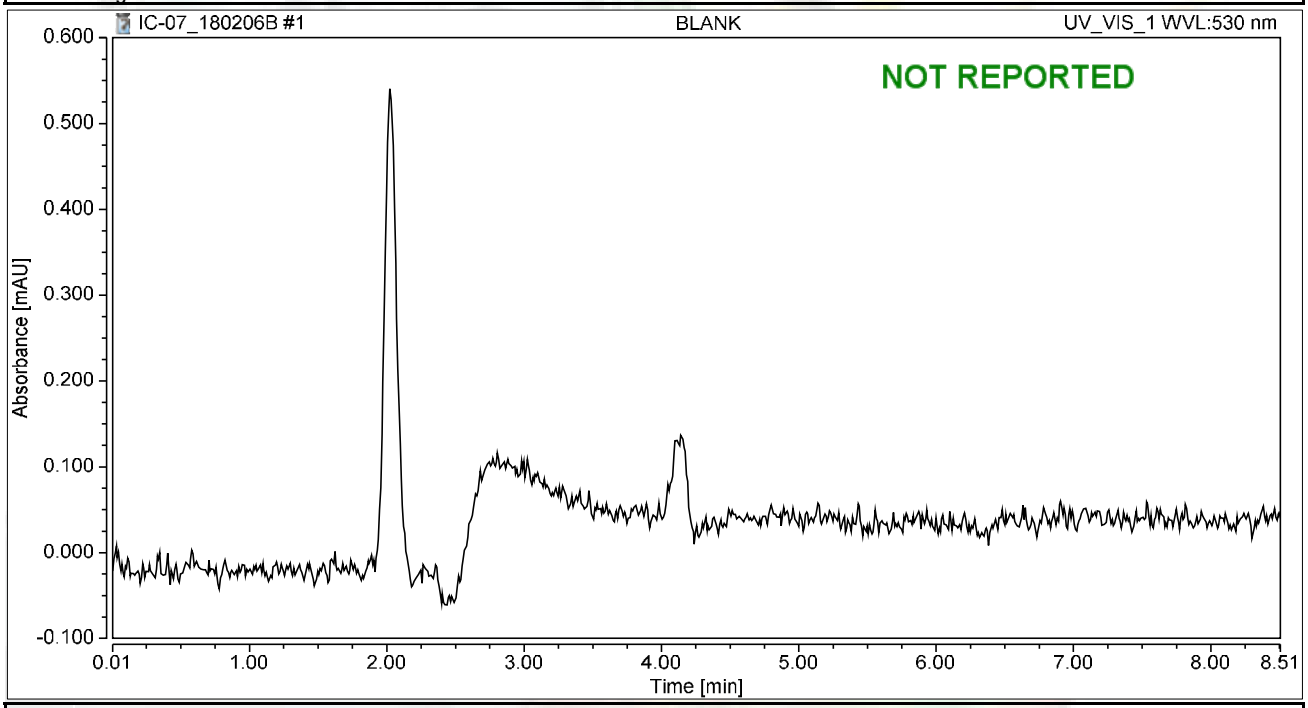
61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

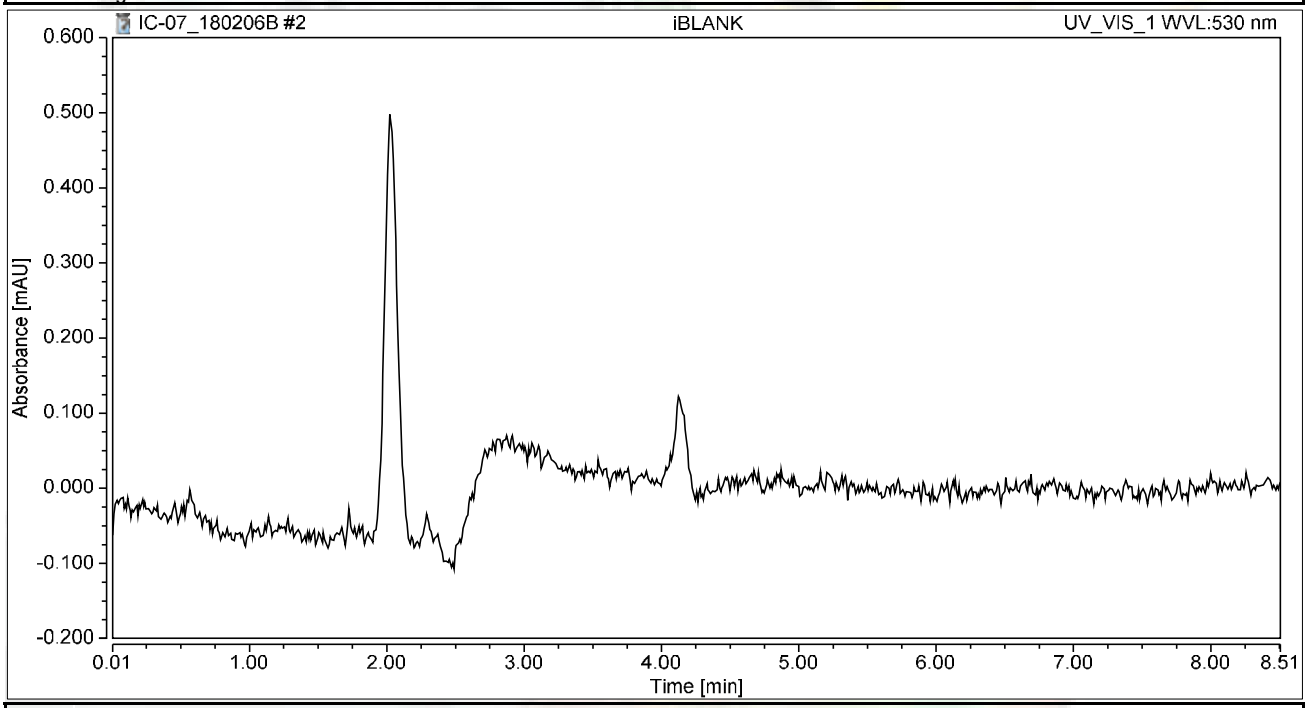
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

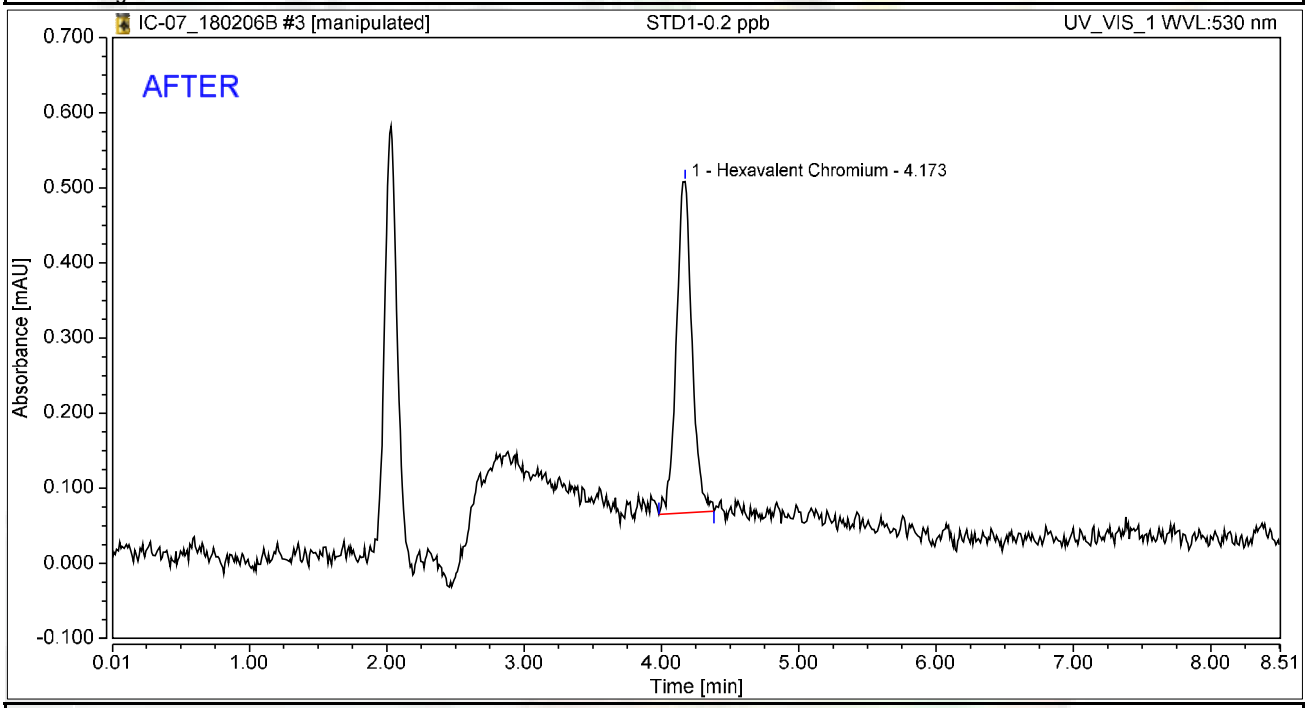
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

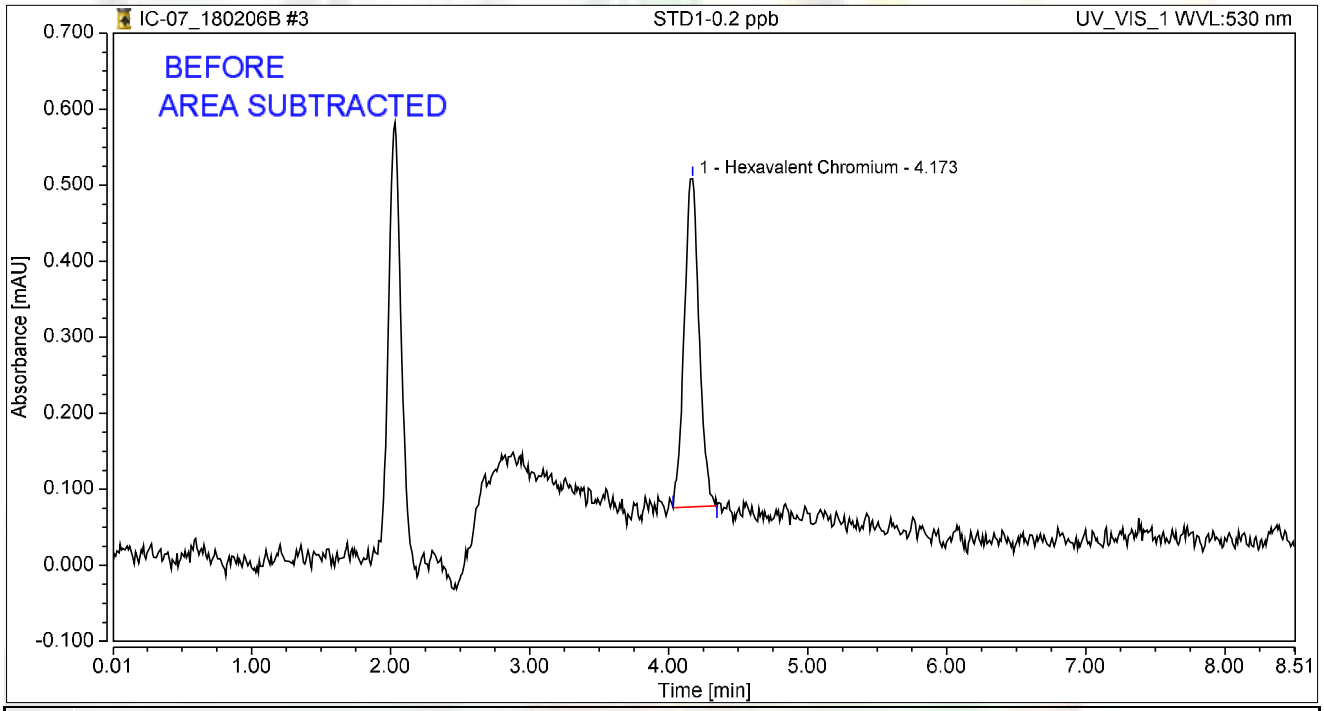
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

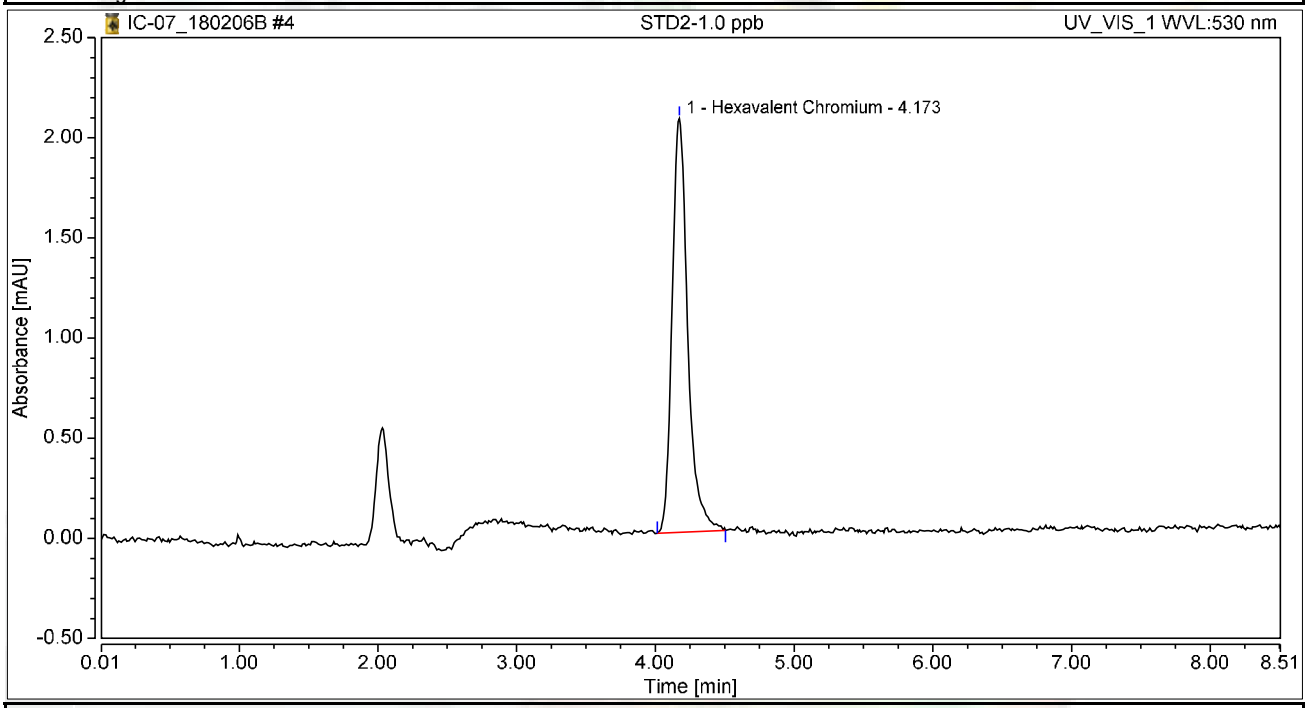
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

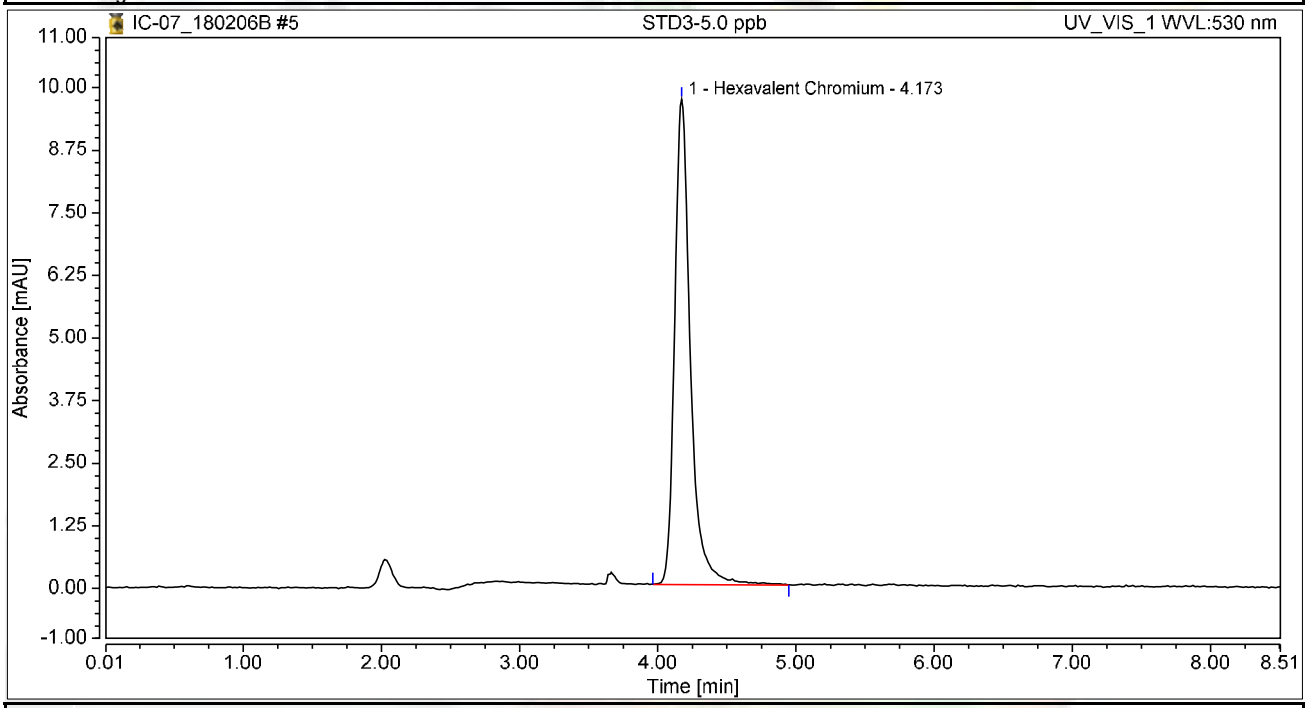
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

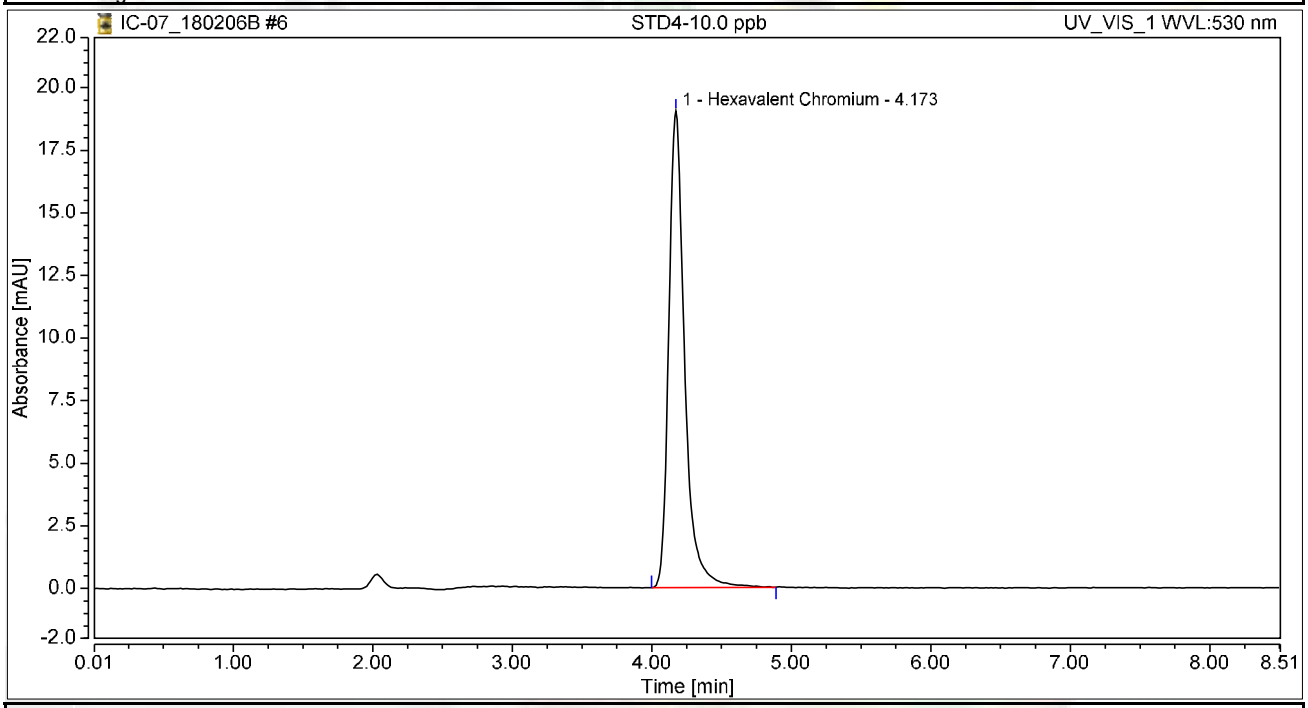
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

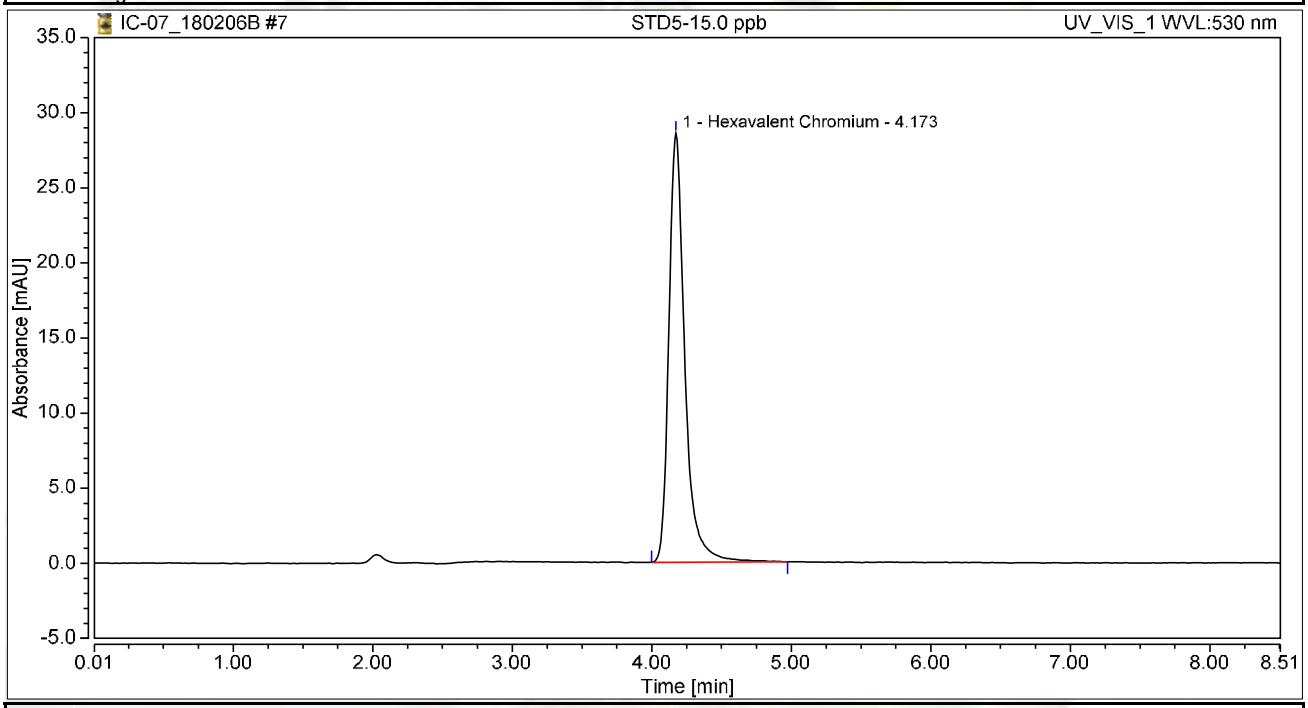
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

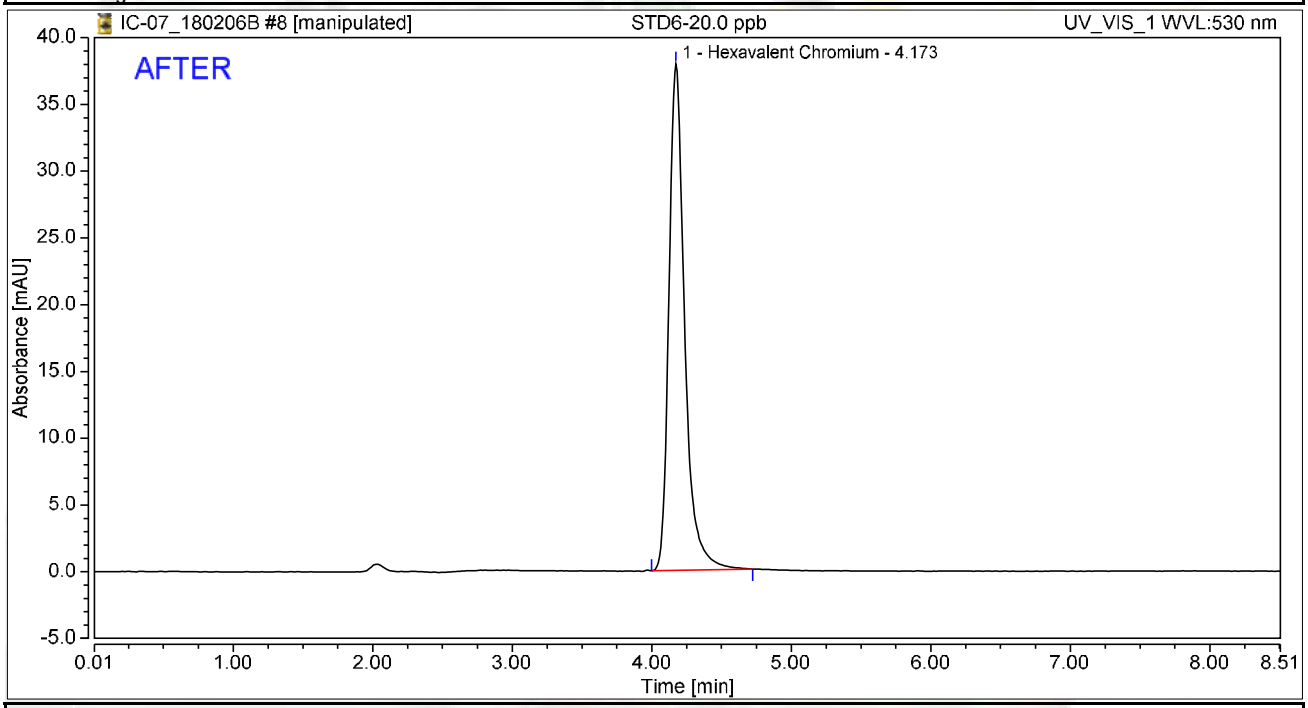
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

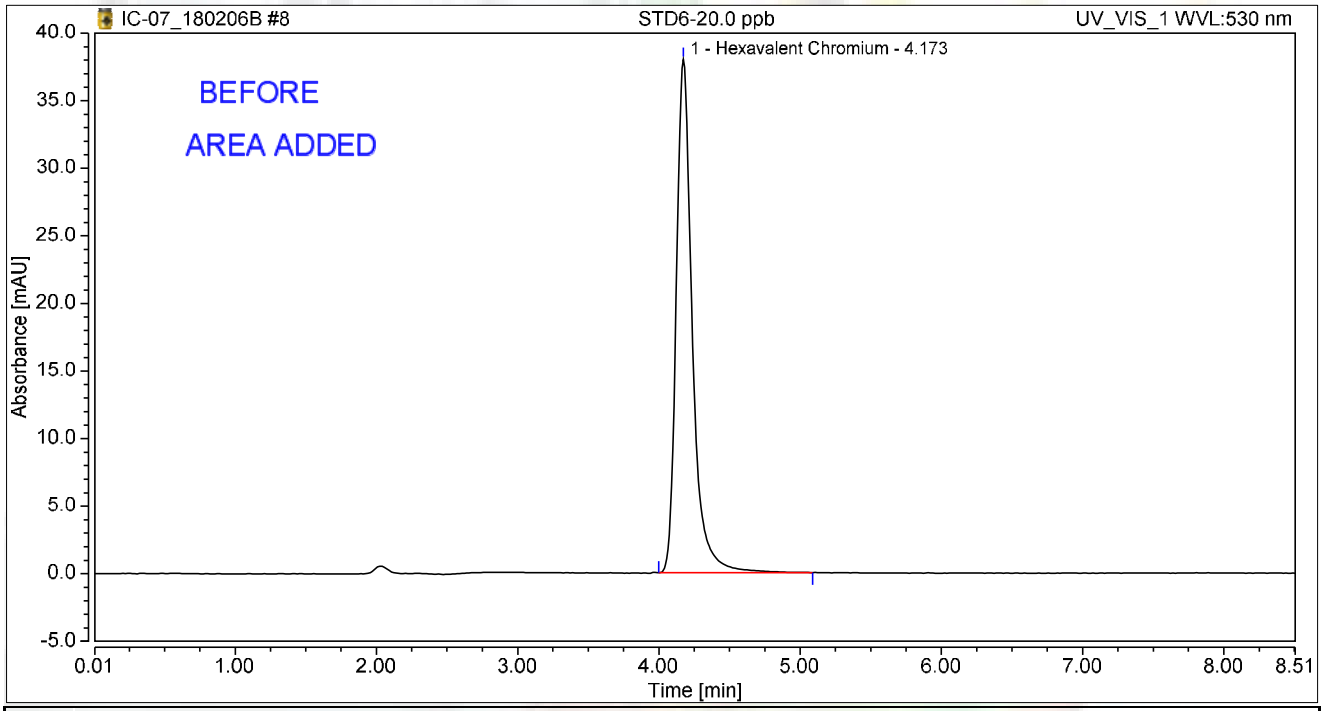
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

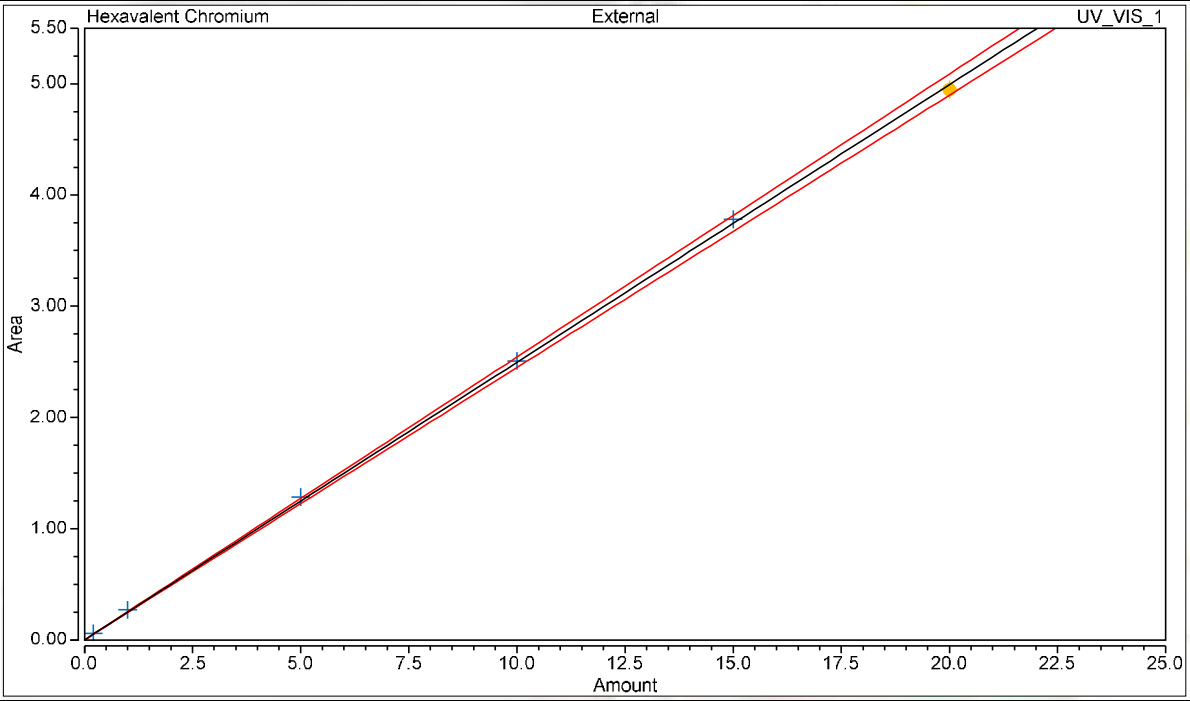
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

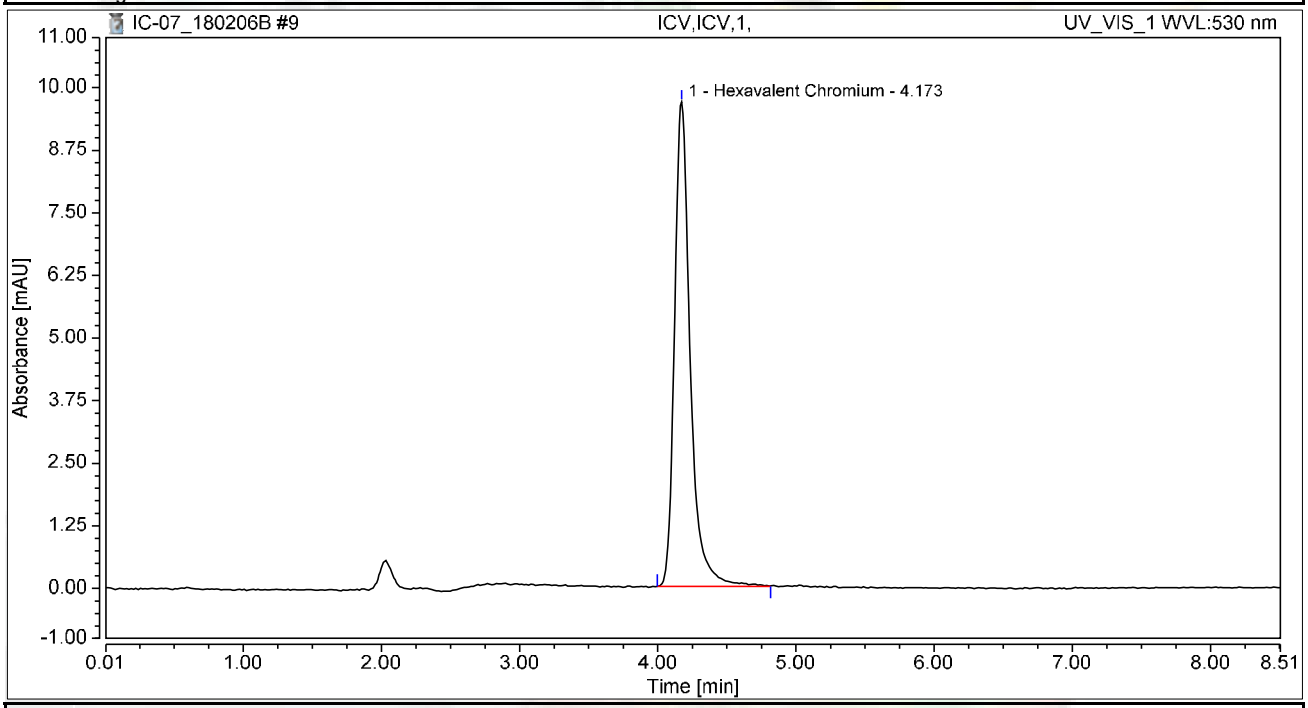
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

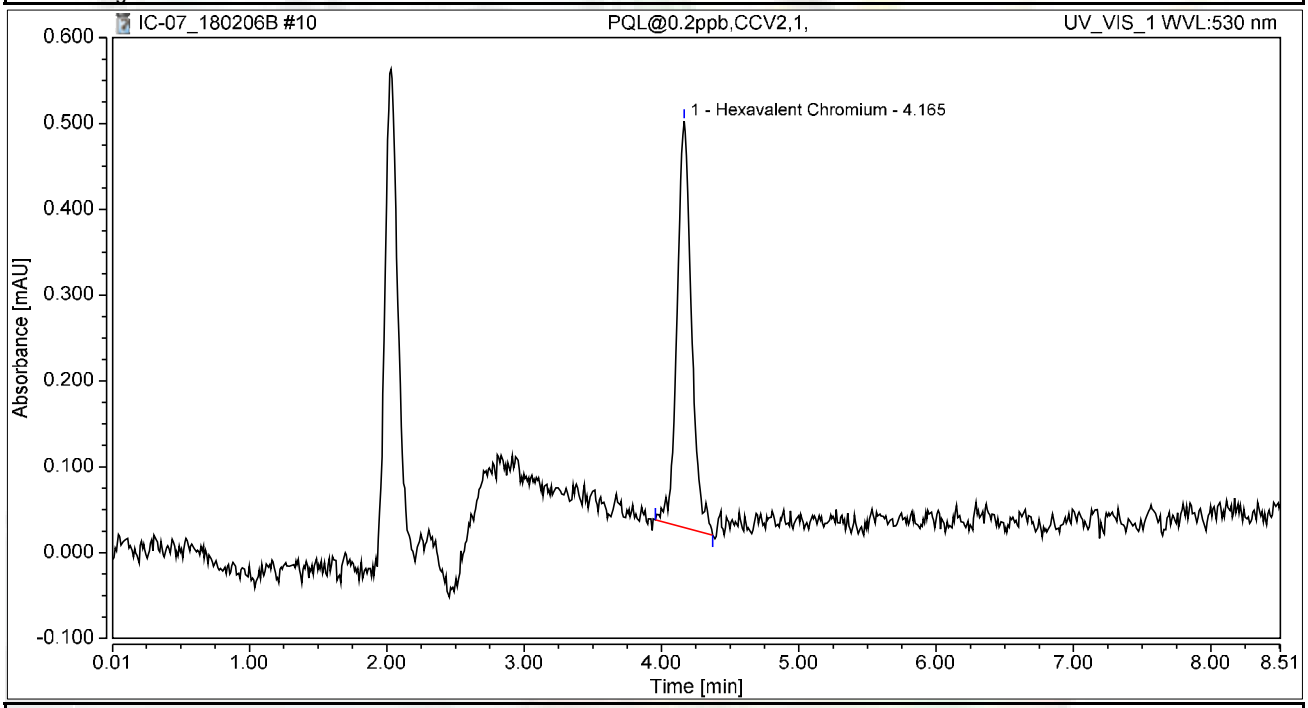
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

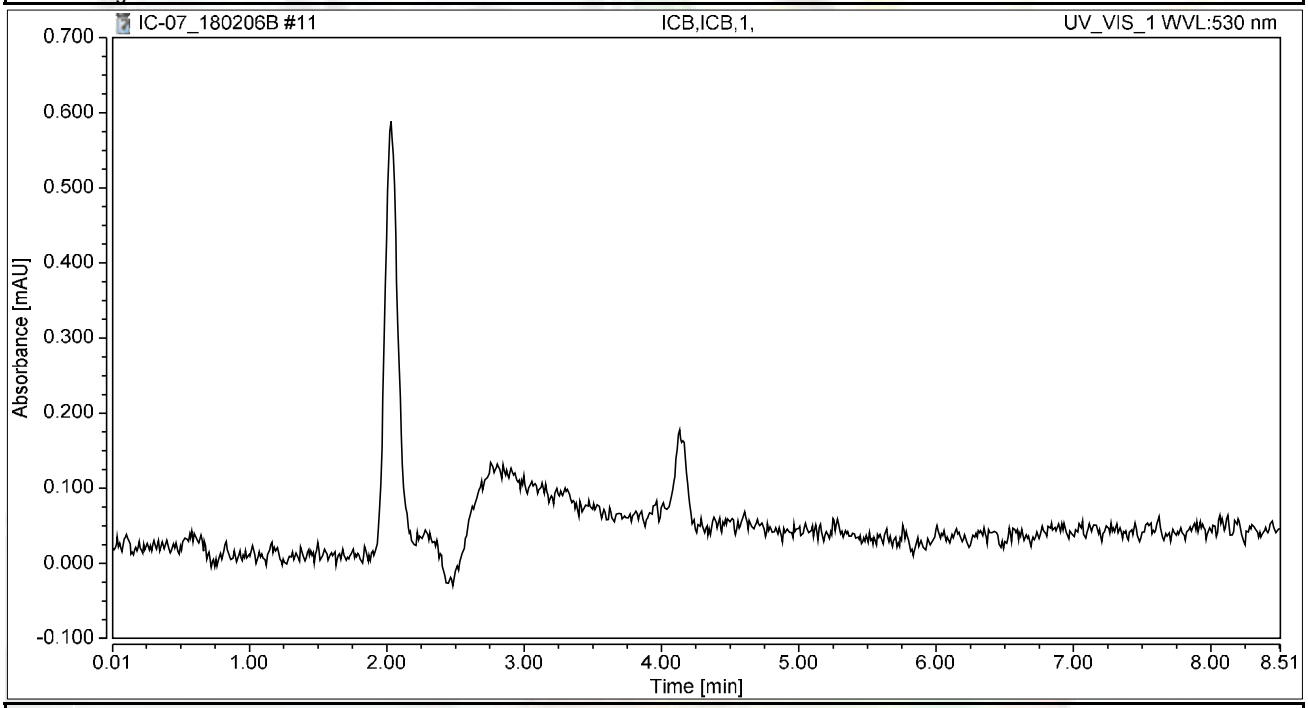
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:25 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:36 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/26/18 9:46 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/26/18 9:55 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/26/18 10:04 AM	Reported
14	MB-R122291	MBLK	1	Hexavalent Chromium	02/26/18 10:14 AM	Reported
15	LCS-R122291	LCS	1	Hexavalent Chromium	02/26/18 10:23 AM	Reported
16	N028744-001A	SAMP	50	Hexavalent Chromium	02/26/18 10:33 AM	Reported
17	N028744-001AMS	MS	50	Hexavalent Chromium	02/26/18 10:42 AM	Reported
18	N028744-002A	SAMP	20	Hexavalent Chromium	02/26/18 10:52 AM	Reported
19	N028744-002AMS	MS	20	Hexavalent Chromium	02/26/18 11:01 AM	Reported
20	N028744-004A	SAMP	5	Hexavalent Chromium	02/26/18 11:15 AM	Reported
21	N028744-004AMS	MS	5	Hexavalent Chromium	02/26/18 11:40 AM	Reported
22	N028744-005A	SAMP	200	Hexavalent Chromium	02/26/18 11:51 AM	Reported
23	N028744-005AMS	MS	200	Hexavalent Chromium	02/26/18 12:01 PM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/26/18 12:10 PM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/26/18 12:20 PM	Reported
26	N028744-006A	SAMP	50	Hexavalent Chromium	02/26/18 12:29 PM	Reported
27	N028744-006AMS	MS	50	Hexavalent Chromium	02/26/18 12:38 PM	Reported
28	N028744-007A	SAMP	1	Hexavalent Chromium	02/26/18 12:48 PM	Reported
29	N028744-007AMS	MS	1	Hexavalent Chromium	02/26/18 12:57 PM	Reported
30	N028744-001AMSD	MSD	50	Hexavalent Chromium	02/26/18 1:07 PM	Reported
31	N028744-002ADUP	DUP	20	Hexavalent Chromium	02/26/18 1:16 PM	Reported
32	N028744-003A	SAMP	2000	Hexavalent Chromium	02/26/18 1:26 PM	Reported
33	N028744-003AMS	MS	2000	Hexavalent Chromium	02/26/18 1:35 PM	Reported
34	N028744-004A	SAMP	1	Hexavalent Chromium	02/26/18 1:45 PM	Not Reported
35	N028744-004AMS	MS	1	Hexavalent Chromium	02/26/18 1:54 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/26/18 2:04 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/26/18 2:13 PM	Reported
38	N028775-001A	SAMP	20	Hexavalent Chromium	02/26/18 2:40 PM	Reported
39	N028775-001AMS	MS	20	Hexavalent Chromium	02/26/18 2:51 PM	Reported
40	N028775-002A	SAMP	20	Hexavalent Chromium	02/26/18 3:00 PM	Reported
41	N028775-002AMS	MS	20	Hexavalent Chromium	02/26/18 3:10 PM	Reported
42	N028775-003A	SAMP	10	Hexavalent Chromium	02/26/18 3:19 PM	Reported

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028775-003AMS	MS	10	Hexavalent Chromium	02/26/18 3:29 PM	Reported
44	N028775-004A	SAMP	1	Hexavalent Chromium	02/26/18 3:40 PM	Reported
45	N028775-004AMS	MS	1	Hexavalent Chromium	02/26/18 3:51 PM	Reported
46	N028775-005A	SAMP	1	Hexavalent Chromium	02/26/18 4:01 PM	Reported
47	N028775-005AMS	MS	1	Hexavalent Chromium	02/26/18 4:10 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/26/18 4:20 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/26/18 4:29 PM	Reported
50	N028775-006A	SAMP	20	Hexavalent Chromium	02/26/18 4:39 PM	Reported
51	N028775-006AMS	MS	20	Hexavalent Chromium	02/26/18 4:48 PM	Reported
52	N028775-007A	SAMP	20	Hexavalent Chromium	02/26/18 4:58 PM	Reported
53	N028775-007AMS	MS	20	Hexavalent Chromium	02/26/18 5:07 PM	Reported
54	N028775-008A	SAMP	1	Hexavalent Chromium	02/26/18 5:17 PM	Reported
55	N028775-008AMS	MS	1	Hexavalent Chromium	02/26/18 5:26 PM	Reported
56	N028775-009A	SAMP	1	Hexavalent Chromium	02/26/18 5:35 PM	Reported
57	N028775-009AMS	MS	1	Hexavalent Chromium	02/26/18 5:45 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	02/26/18 5:54 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	02/26/18 6:04 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180226A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**26/Feb/18 18:34:41**
No. of Injections:	**62**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/26/2018 09:25	Finished	BLANK
10	BLANK	2	1000	Unknown		02/26/2018 09:36	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/26/2018 09:46	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/26/2018 09:55	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/26/2018 10:04	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/26/2018 10:14	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/26/2018 10:23	Finished	LCS, IWST-180129B
16	N028744-001A,SAMF	8	1000	Unknown		02/26/2018 10:33	Finished	SAMP,0.2>10mL
17	N028744-001AMS,MS	9	1000	Unknown		02/26/2018 10:42	Finished	MS (5ppb), IWST-180129B,0.2
18	N028744-002A,SAMF	10	1000	Unknown		02/26/2018 10:52	Finished	SAMP,0.5>10mL
19	N028744-002AMS,MS	11	1000	Unknown		02/26/2018 11:01	Finished	MS (5ppb), IWST-180129B,0.5
20	N028744-004A,SAMF	1	1000	Unknown		02/26/2018 11:15	Finished	SAMP,2>10mL
21	N028744-004AMS,MS	2	1000	Unknown		02/26/2018 11:40	Finished	MS (5ppb), IWST-180129B,2>1
22	N028744-005A,SAMF	3	1000	Unknown		02/26/2018 11:51	Finished	SAMP,0.05>10mL
23	N028744-005AMS,MS	4	1000	Unknown		02/26/2018 12:01	Finished	MS (5ppb), IWST-180129B,0.0
24	CCV-2,CCV1,1,	5	1000	Unknown		02/26/2018 12:10	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	6	1000	Unknown		02/26/2018 12:20	Finished	CCB R180214B
26	N028744-006A,SAMF	7	1000	Unknown		02/26/2018 12:29	Finished	SAMP,0.2>10mL
27	N028744-006AMS,MS	8	1000	Unknown		02/26/2018 12:38	Finished	MS (5ppb), IWST-180129B,0.2
28	N028744-007A,SAMF	9	1000	Unknown		02/26/2018 12:48	Finished	SAMP,10mL
29	N028744-007AMS,MS	10	1000	Unknown		02/26/2018 12:57	Finished	MS (1ppb), IWST-180129B,10
30	N028744-001AMSD,M	11	1000	Unknown		02/26/2018 13:07	Finished	MSD (5ppb), IWST-180129B,0.
31	N028744-002ADUP,D	12	1000	Unknown		02/26/2018 13:16	Finished	DUP,0.5>10mL
32	N028744-003A,SAMF	13	1000	Unknown		02/26/2018 13:26	Finished	SAMP,0.005>10mL
33	N028744-003AMS,MS	14	1000	Unknown		02/26/2018 13:35	Finished	MS (5ppb), IWST-180129B,0.0
34	N028744-004A,SAMF	15	1000	Unknown		02/26/2018 13:45	Finished	SAMP,10mL
35	N028744-004AMS,MS	16	1000	Unknown		02/26/2018 13:54	Finished	MS (1ppb), IWST-180129B,10
36	CCV-3,CCV,1,	17	1000	Unknown		02/26/2018 14:04	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	18	1000	Unknown		02/26/2018 14:13	Finished	CCB R180214B
38	N028775-001A,SAMF	1	1000	Unknown		02/26/2018 14:40	Finished	SAMP,0.5>10mL
39	N028775-001AMS,MS	2	1000	Unknown		02/26/2018 14:51	Finished	MS (5ppb), IWST-180129B,0.5
40	N028775-002A,SAMF	3	1000	Unknown		02/26/2018 15:00	Finished	SAMP,0.5>10mL
41	N028775-002AMS,MS	4	1000	Unknown		02/26/2018 15:10	Finished	MS (5ppb), IWST-180129B,0.5
42	N028775-003A,SAMF	5	1000	Unknown		02/26/2018 15:19	Finished	SAMP,1>10mL
43	N028775-003AMS,MS	6	1000	Unknown		02/26/2018 15:29	Finished	MS (5ppb), IWST-180129B,1>1
44	N028775-004A,SAMF	8	1000	Unknown		02/26/2018 15:40	Finished	SAMP,10mL
45	N028775-004AMS,MS	9	1000	Unknown		02/26/2018 15:51	Finished	MS (5ppb), IWST-180129B,10
46	N028775-005A,SAMF	10	1000	Unknown		02/26/2018 16:01	Finished	SAMP,10mL
47	N028775-005AMS,MS	11	1000	Unknown		02/26/2018 16:10	Finished	MS (5ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	12	1000	Unknown		02/26/2018 16:20	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	13	1000	Unknown		02/26/2018 16:29	Finished	CCB R180214B
50	N028775-006A,SAMF	14	1000	Unknown		02/26/2018 16:39	Finished	SAMP,0.5>10mL
51	N028775-006AMS,MS	15	1000	Unknown		02/26/2018 16:48	Finished	MS (5ppb), IWST-180129B,0.5
52	N028775-007A,SAMF	16	1000	Unknown		02/26/2018 16:58	Finished	SAMP,0.5>10mL
53	N028775-007AMS,MS	17	1000	Unknown		02/26/2018 17:07	Finished	MS (5ppb), IWST-180129B,0.5
54	N028775-008A,SAMF	18	1000	Unknown		02/26/2018 17:17	Finished	SAMP,10mL
55	N028775-008AMS,MS	19	1000	Unknown		02/26/2018 17:26	Finished	MS (1ppb), IWST-180129B,10
56	N028775-009A,SAMF	20	1000	Unknown		02/26/2018 17:35	Finished	SAMP,10mL
57	N028775-009AMS,MS	21	1000	Unknown		02/26/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
58	CCV-5,CCV,1,	22	1000	Unknown		02/26/2018 17:54	Finished	CCV @5ppb, IWST-180129A
59	CCB-5,CCB,1,	23	1000	Unknown		02/26/2018 18:04	Finished	CCB R180214B
60	SHUTDOWN	24	1000	Unknown		02/26/2018 18:13	Finished	

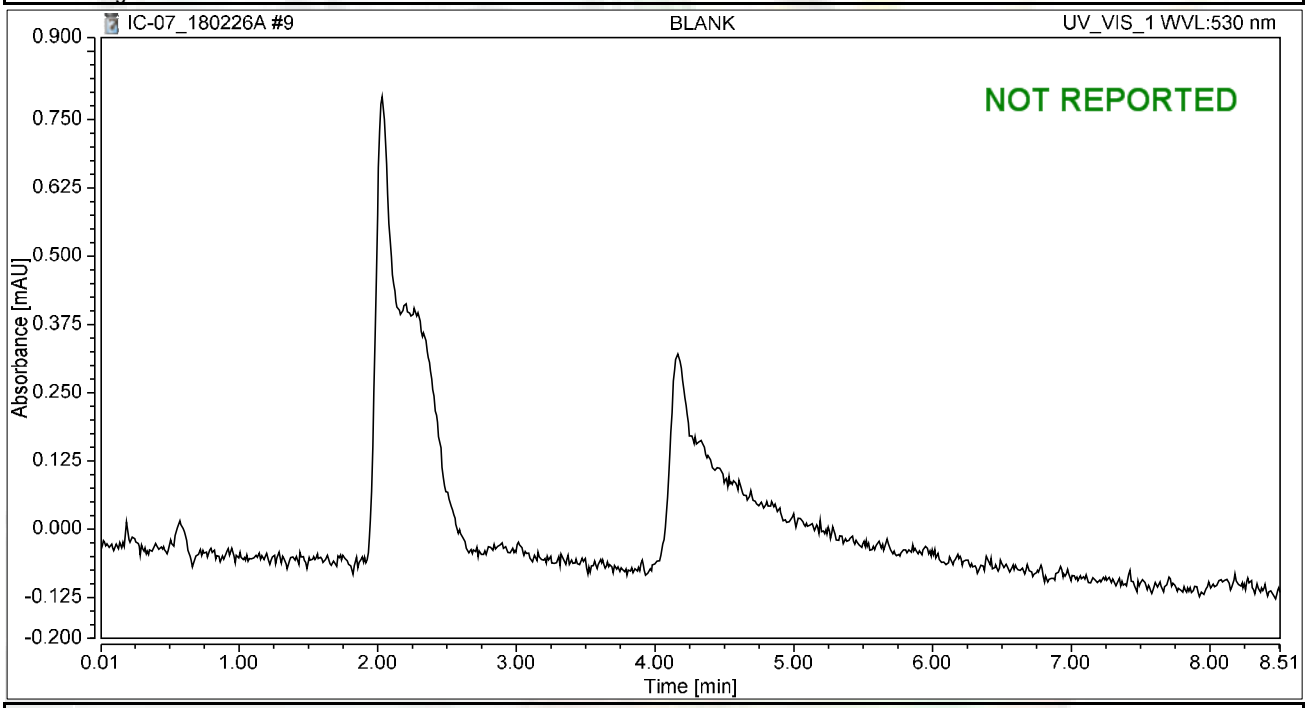
61	Eluent: R180226A	25	1000	Unknown		n.a.	Finished	Eluent
62	PCR: R180226B	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

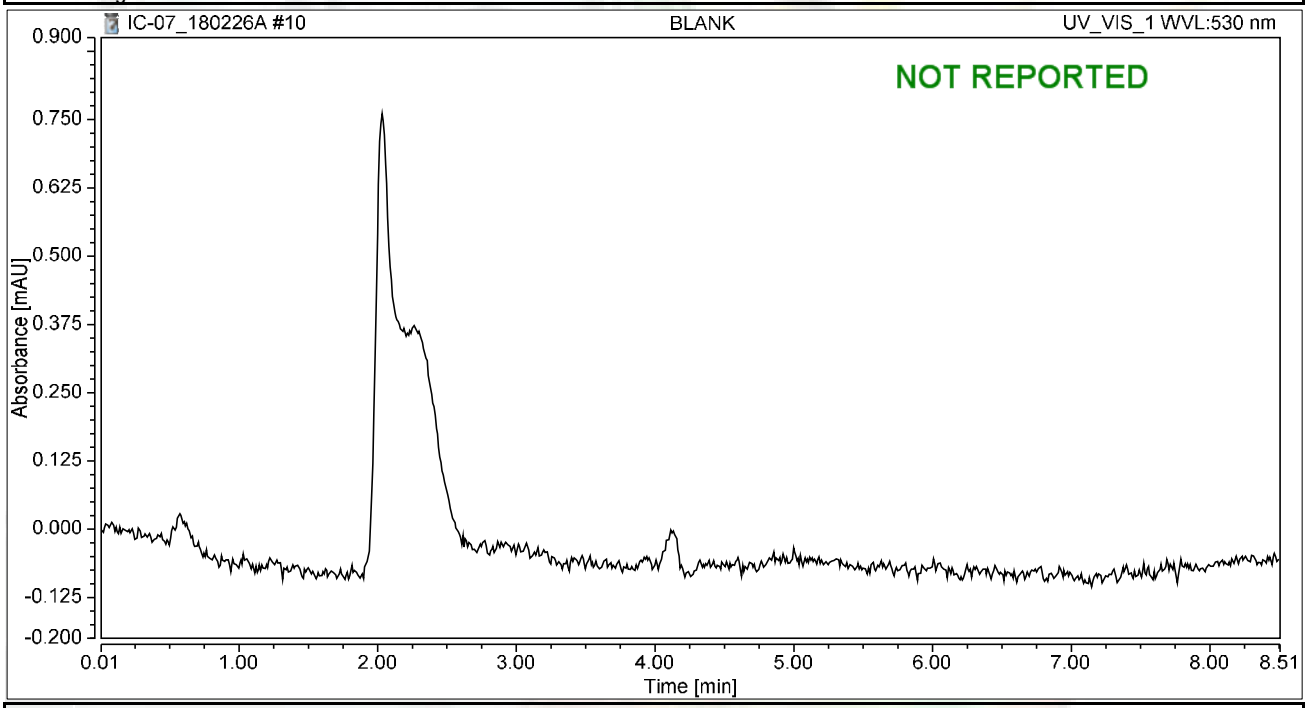
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

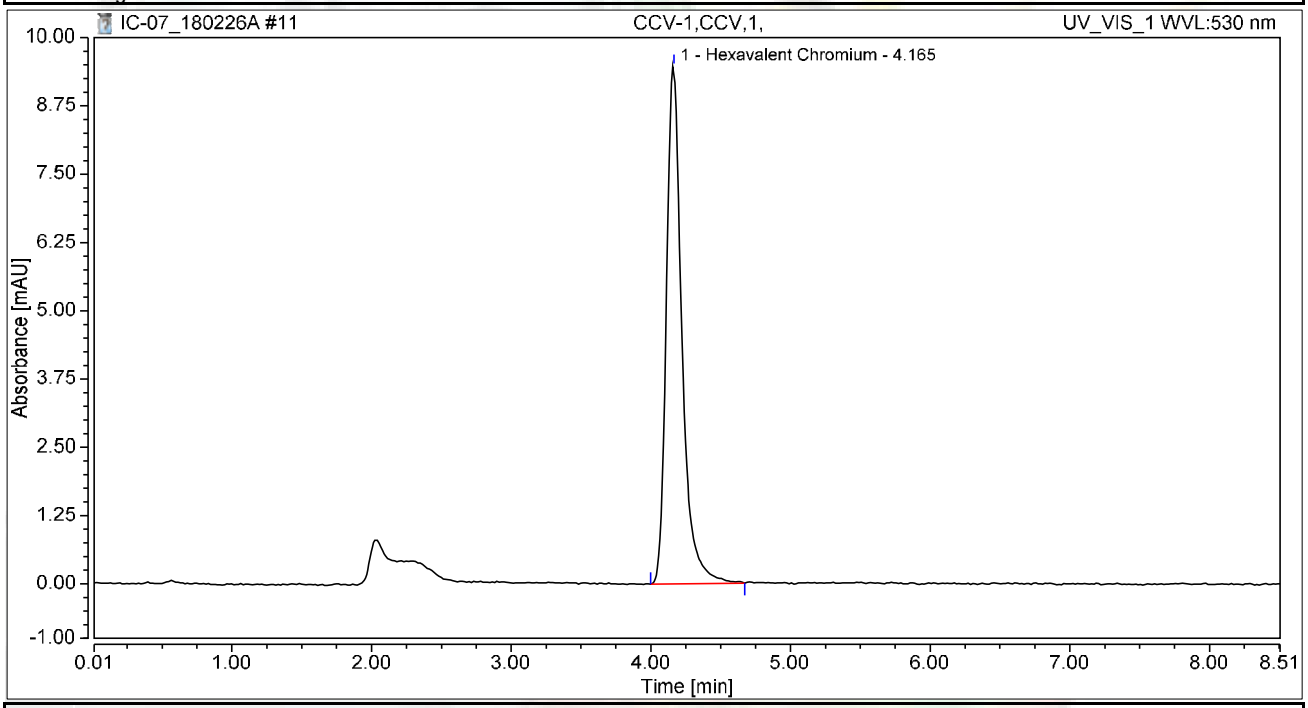
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

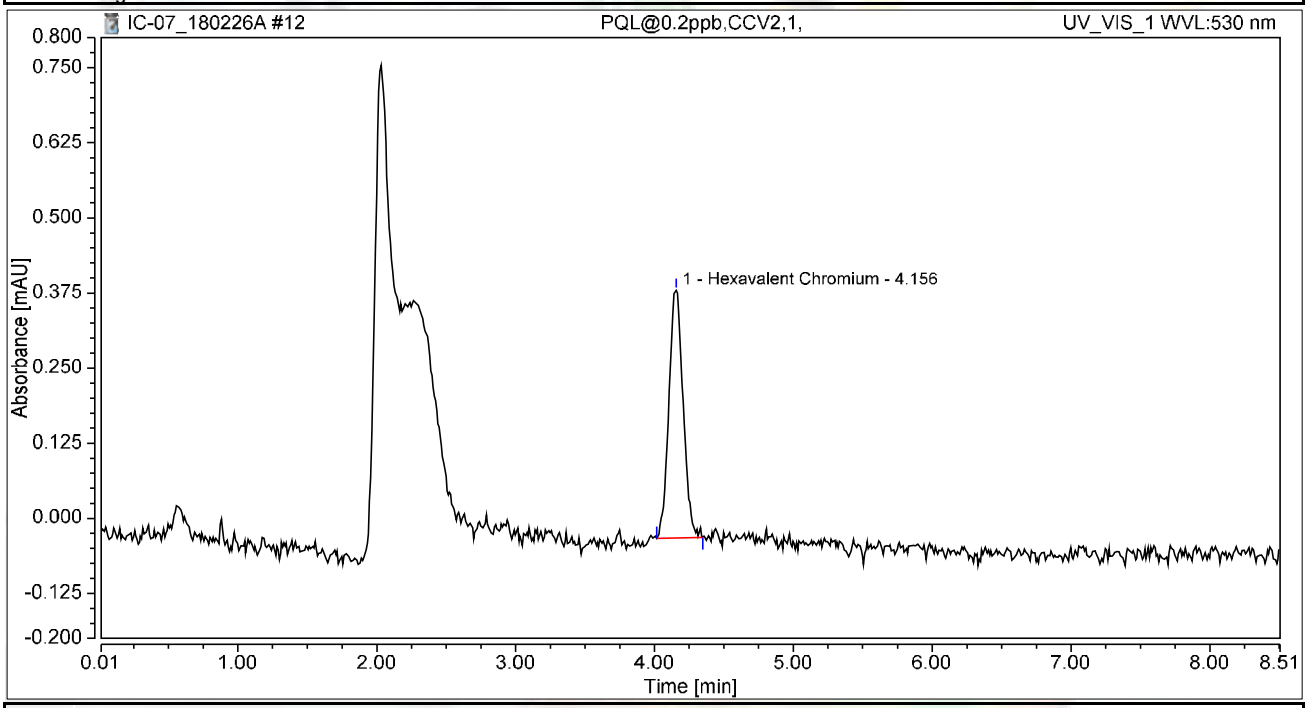
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.230	9.477	100.00	100.00	4.9274
Total:			**1.230**	**9.477**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

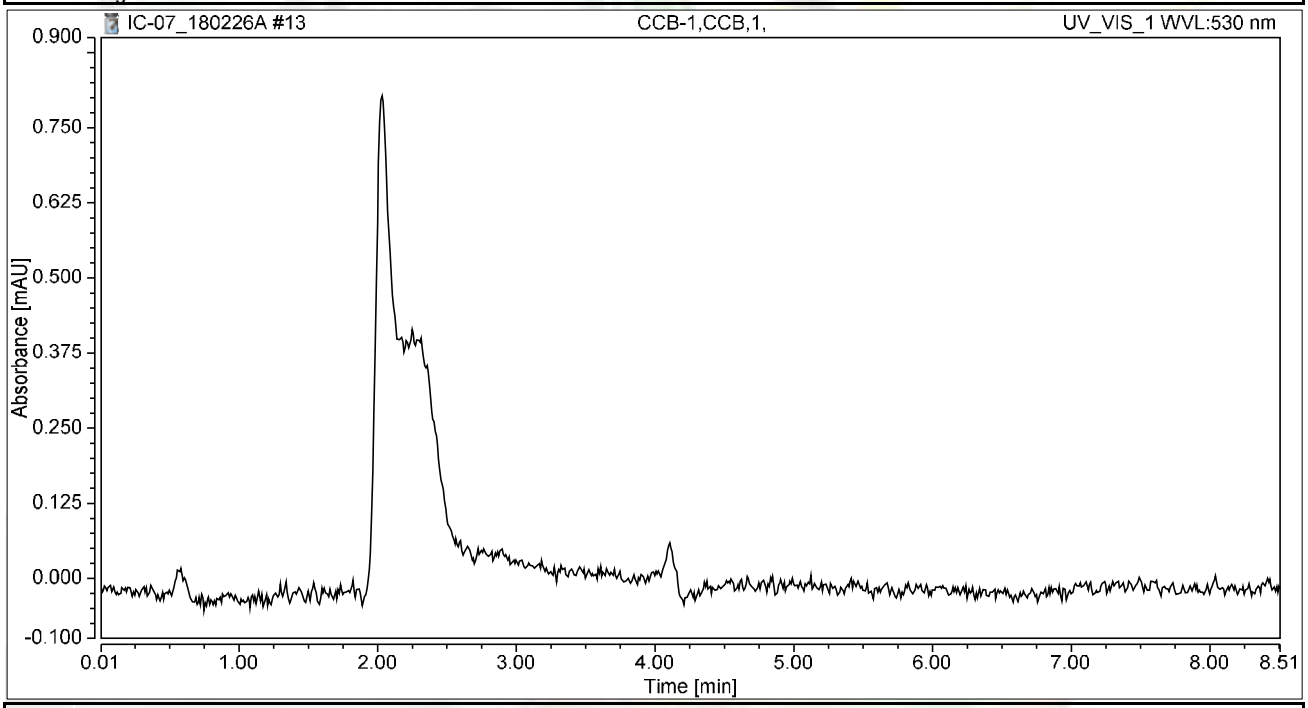
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.049	0.412	100.00	100.00	0.1970
Total:			**0.049**	**0.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

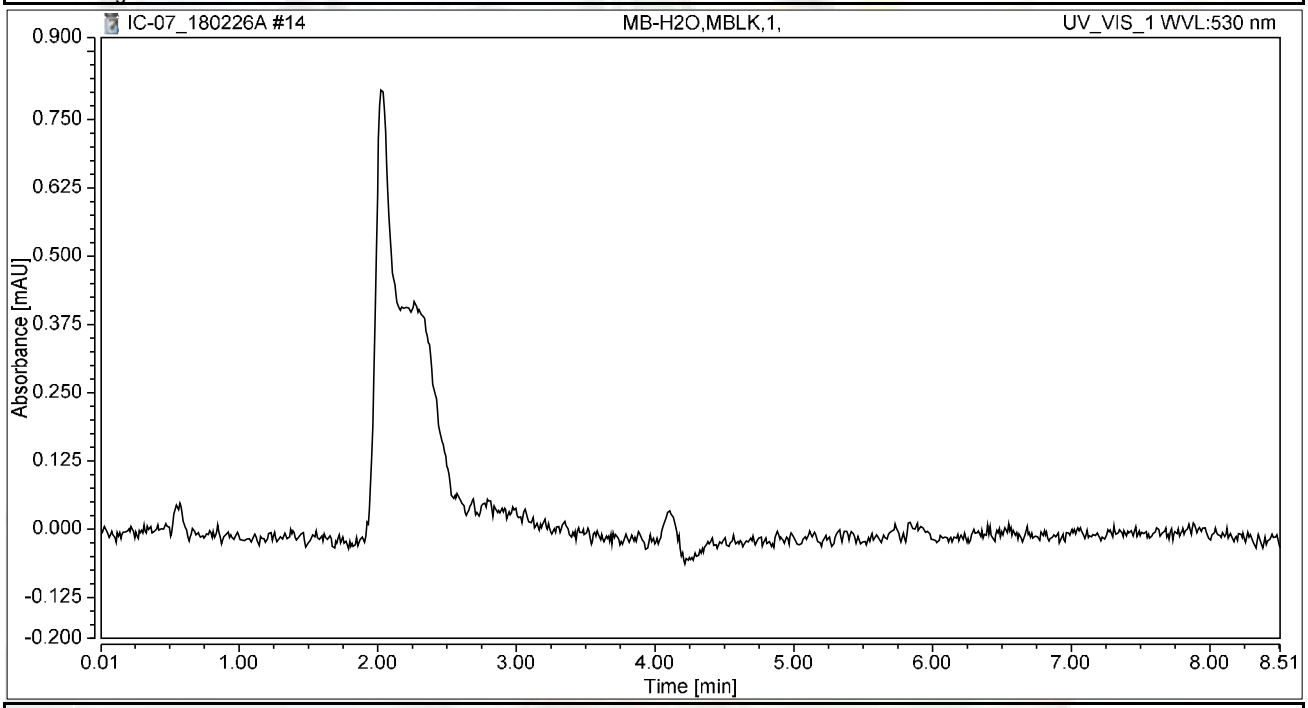
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

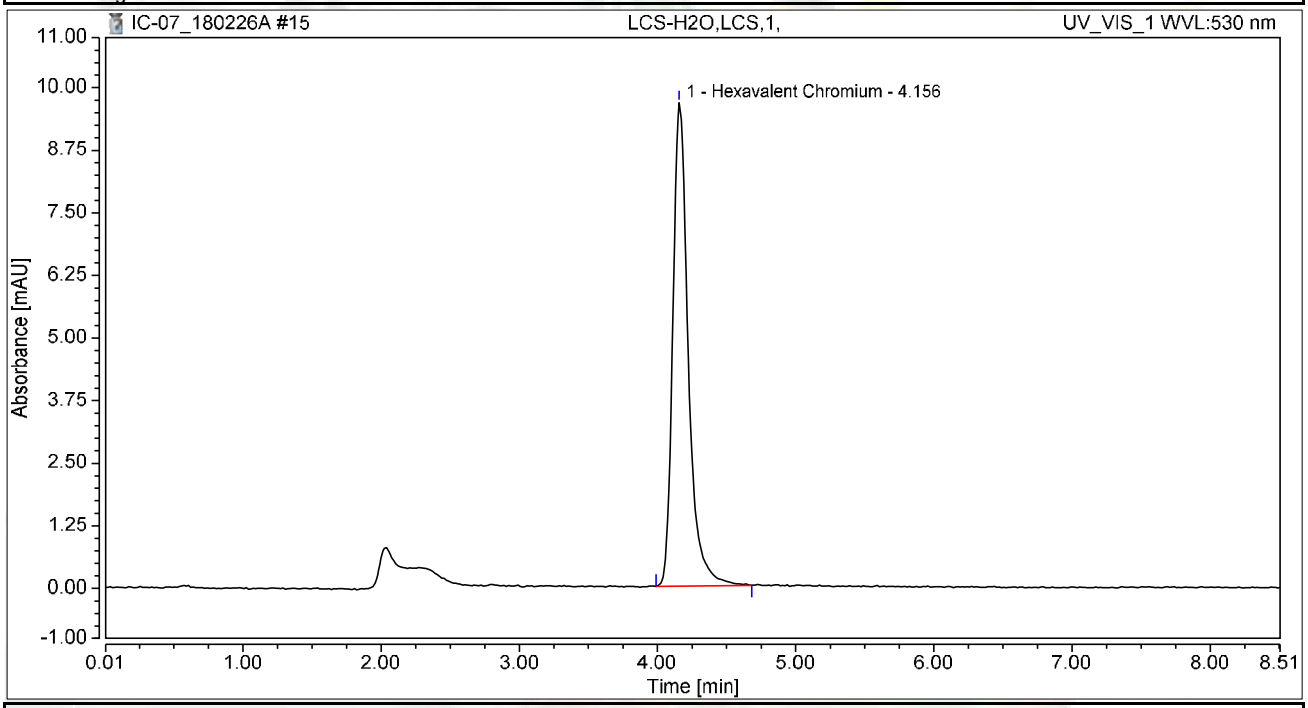
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

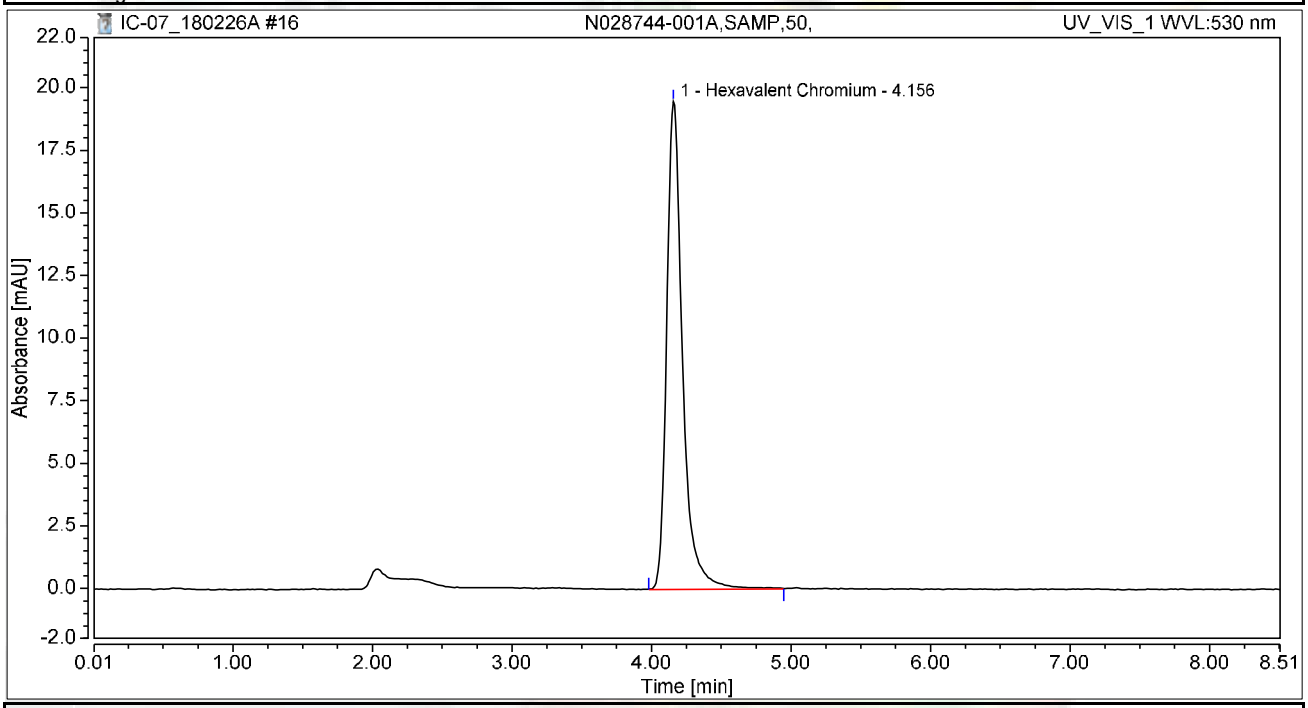
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.253	9.657	100.00	100.00	5.0208
Total:			**1.253**	**9.657**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-001A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

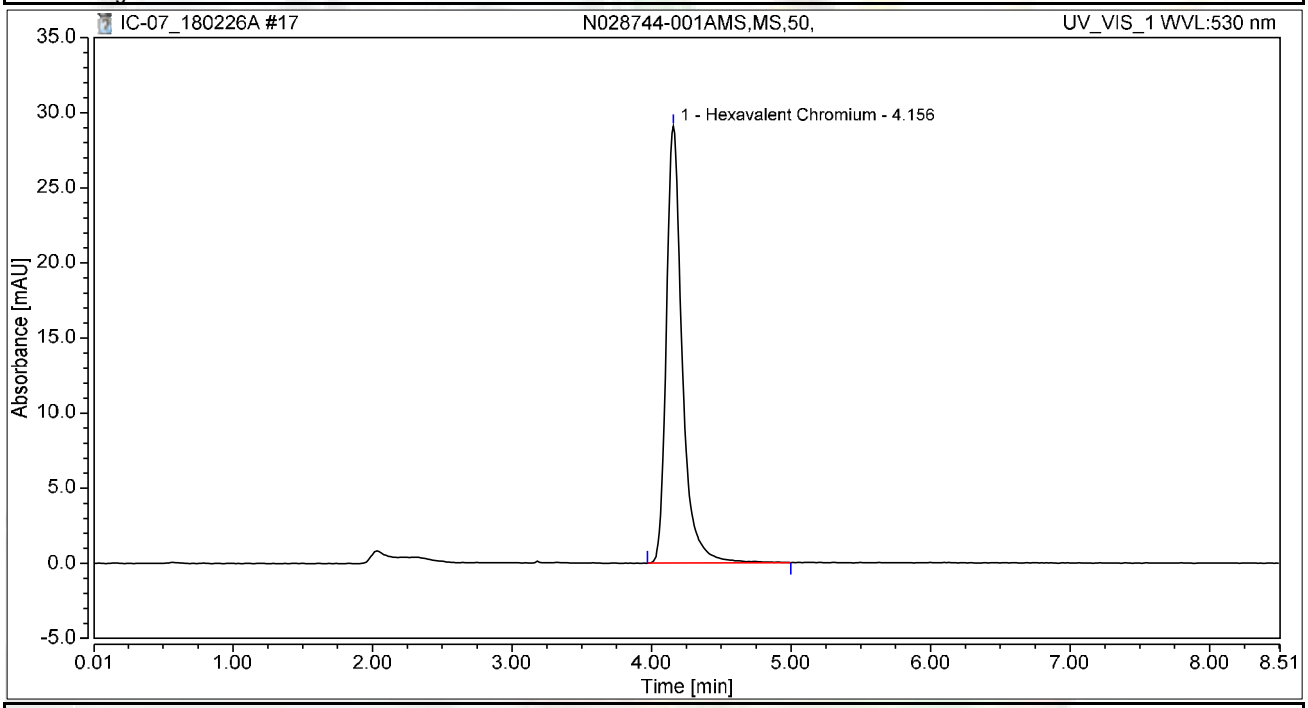
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.566	19.478	100.00	100.00	10.2777
Total:			**2.566**	**19.478**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-001AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

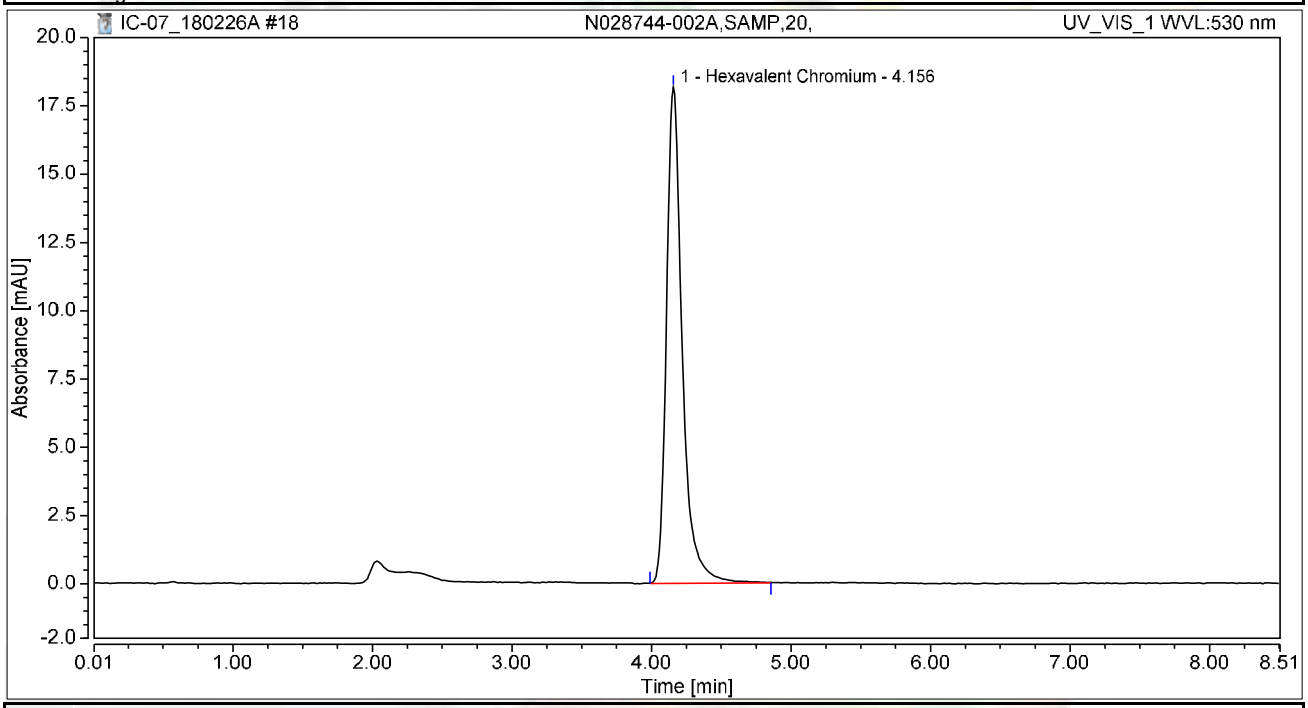
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.824	29.073	100.00	100.00	15.3178
Total:			**3.824**	**29.073**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-002A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

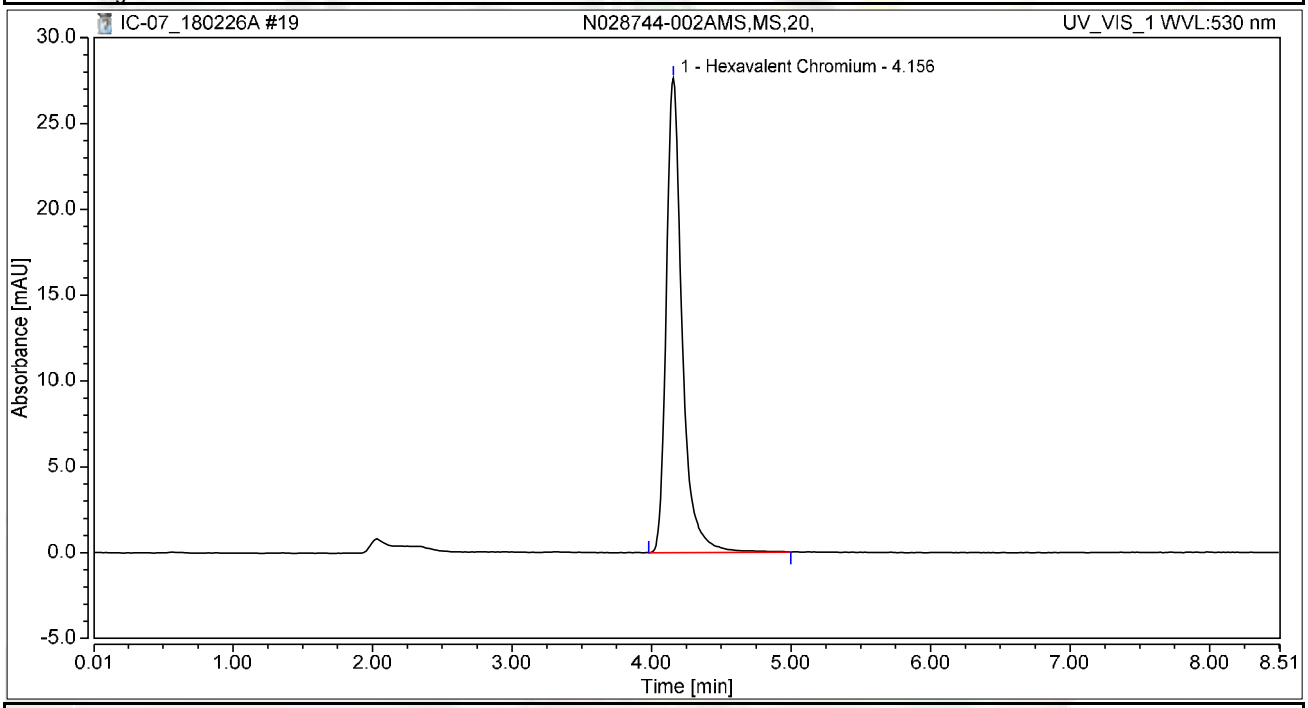
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.378	18.158	100.00	100.00	9.5272
Total:			**2.378**	**18.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-002AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

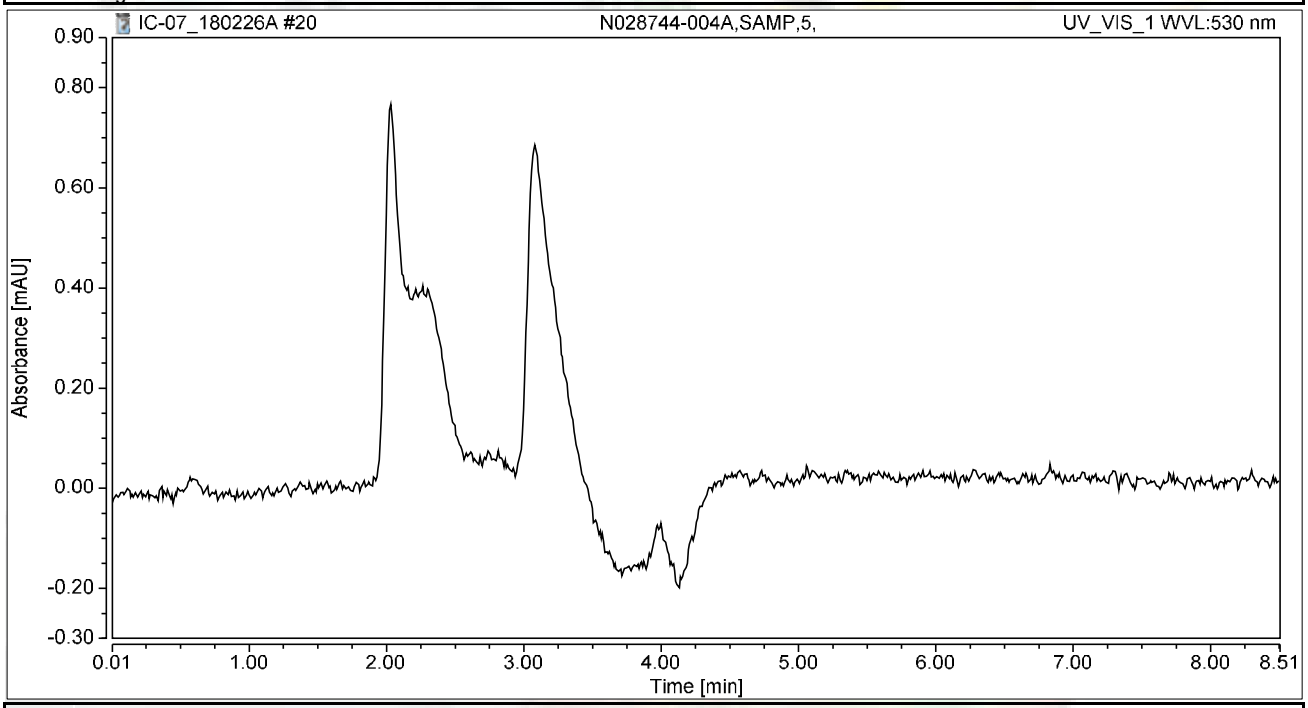
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.633	27.640	100.00	100.00	14.5528
Total:			**3.633**	**27.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

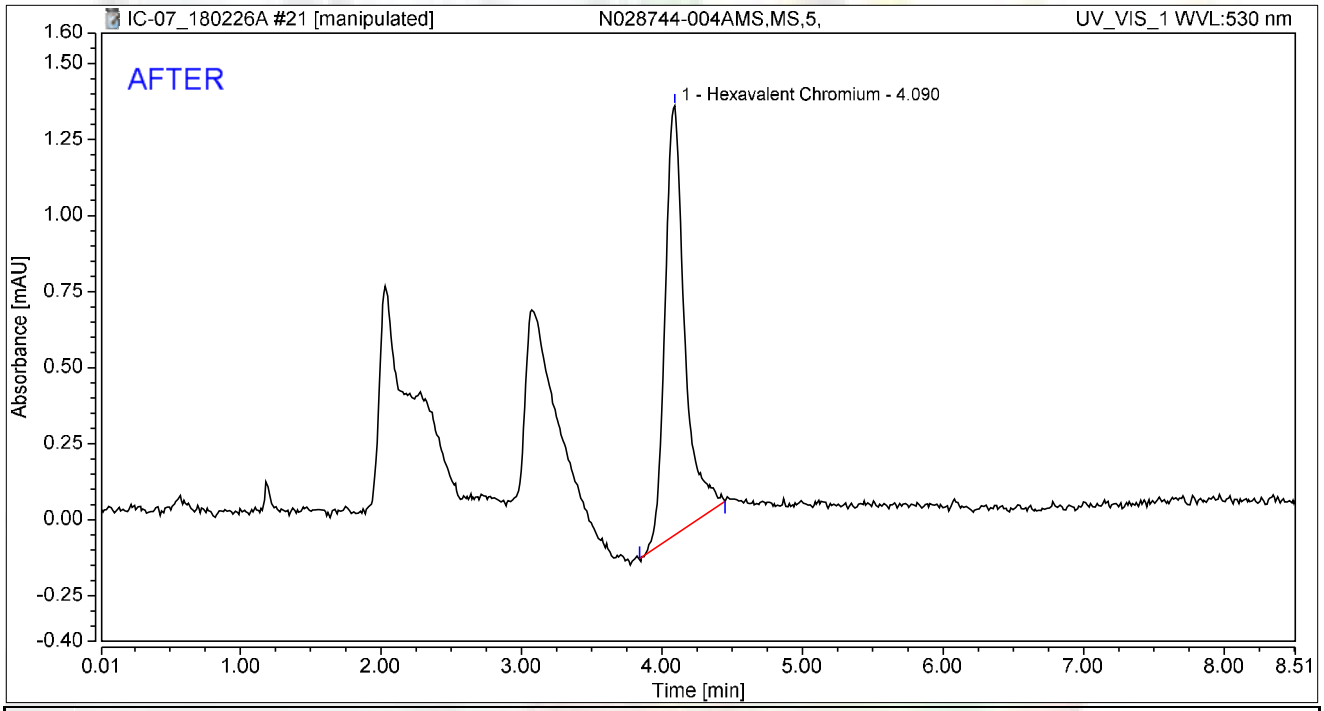
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.229	1.411	100.00	100.00	0.9165
Total:			**0.229**	**1.411**	**100.00**	**100.00**	

rba 3/4/2018

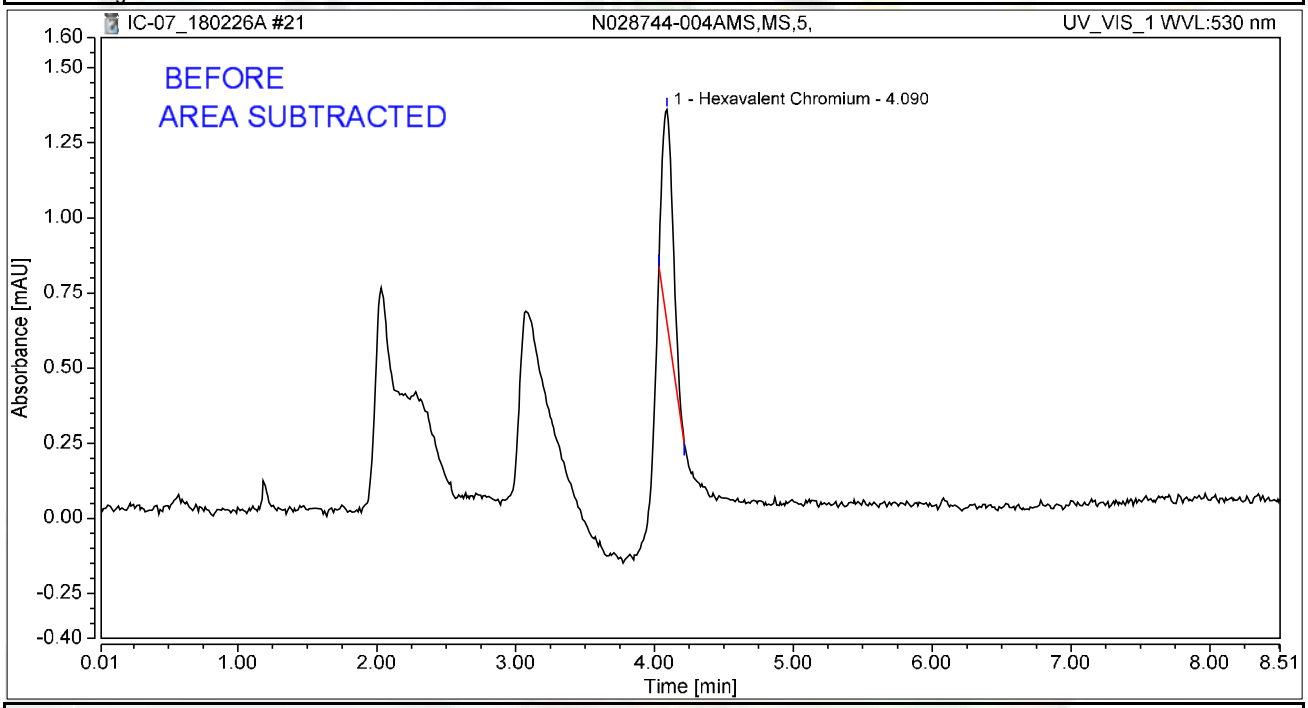
RB 03/07/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.064	0.709	100.00	100.00	0.2575
Total:			**0.064**	**0.709**	**100.00**	**100.00**	

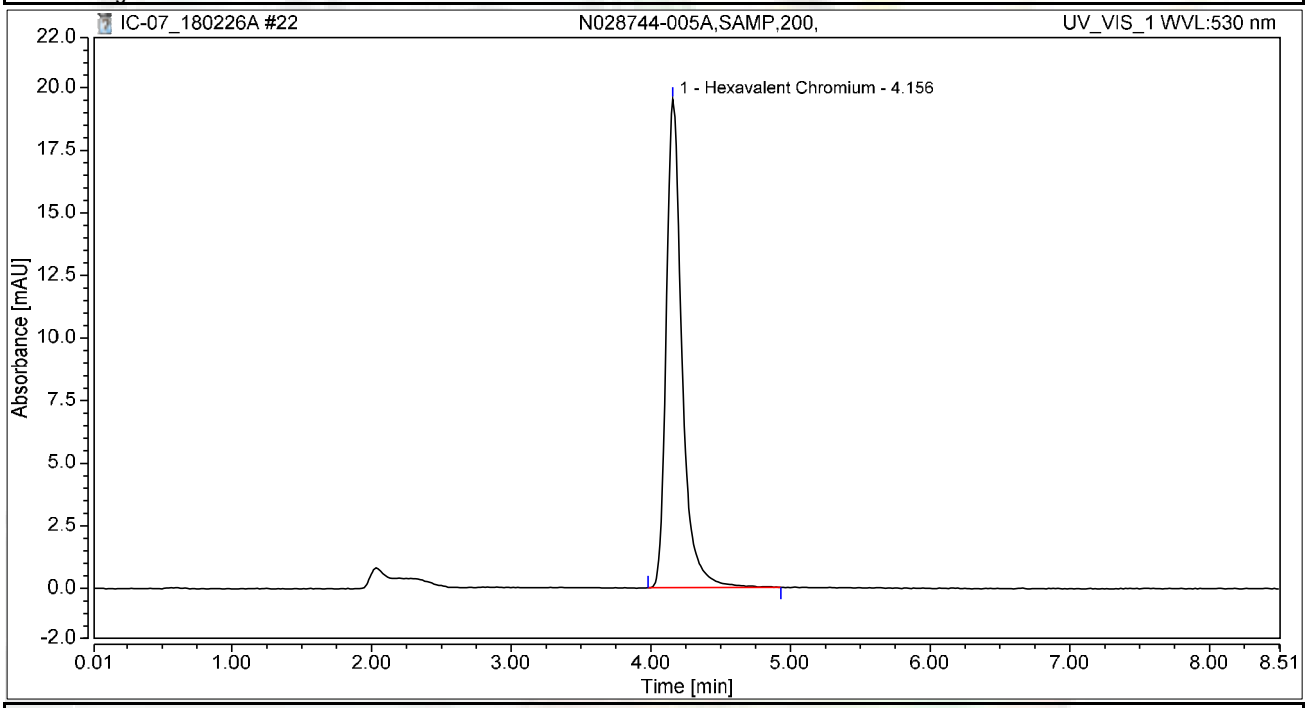
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028744-005A,SAMP,200,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

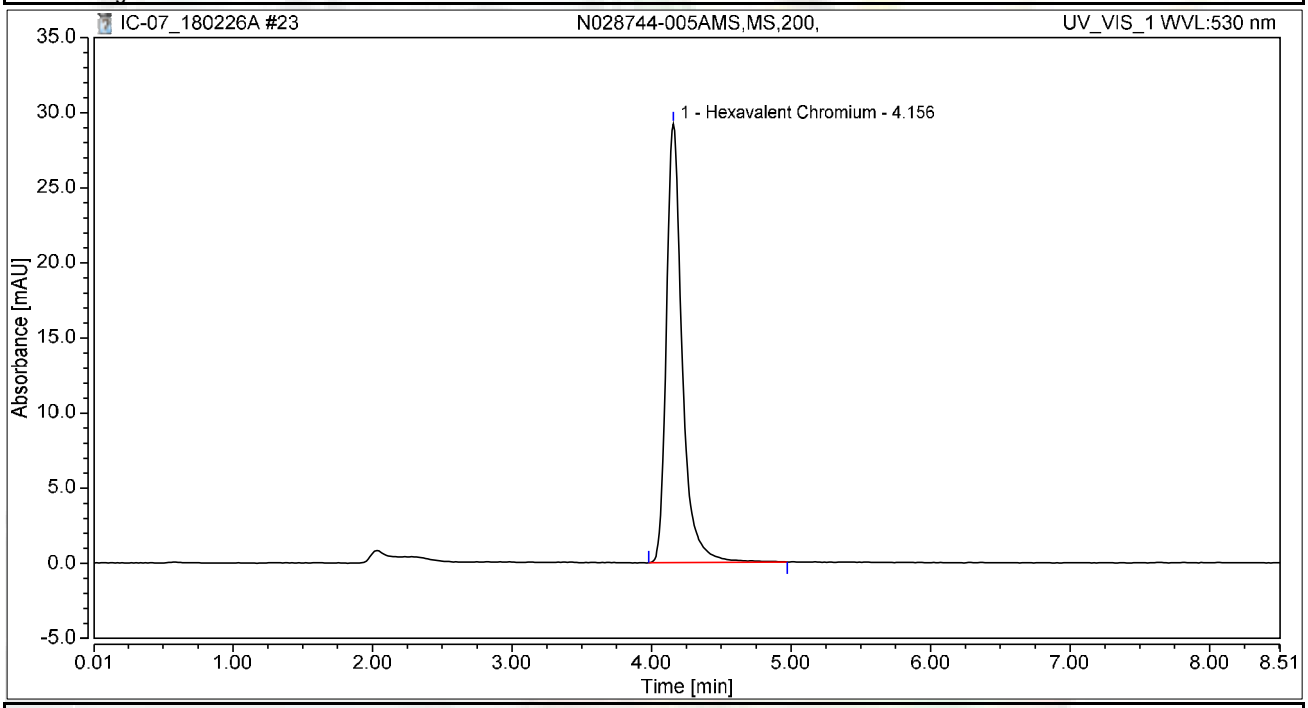
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.559	19.514	100.00	100.00	10.2508
Total:			**2.559**	**19.514**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-005AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

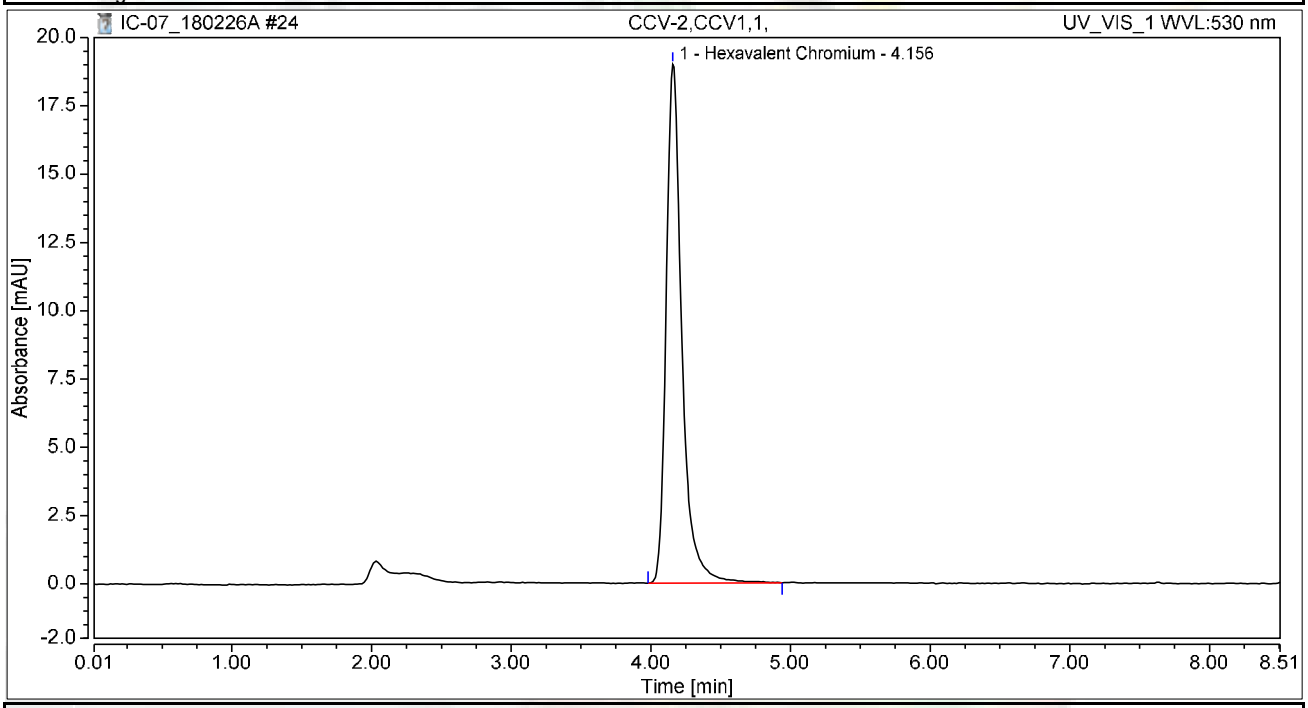
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.835	29.217	100.00	100.00	15.3603
Total:			**3.835**	**29.217**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

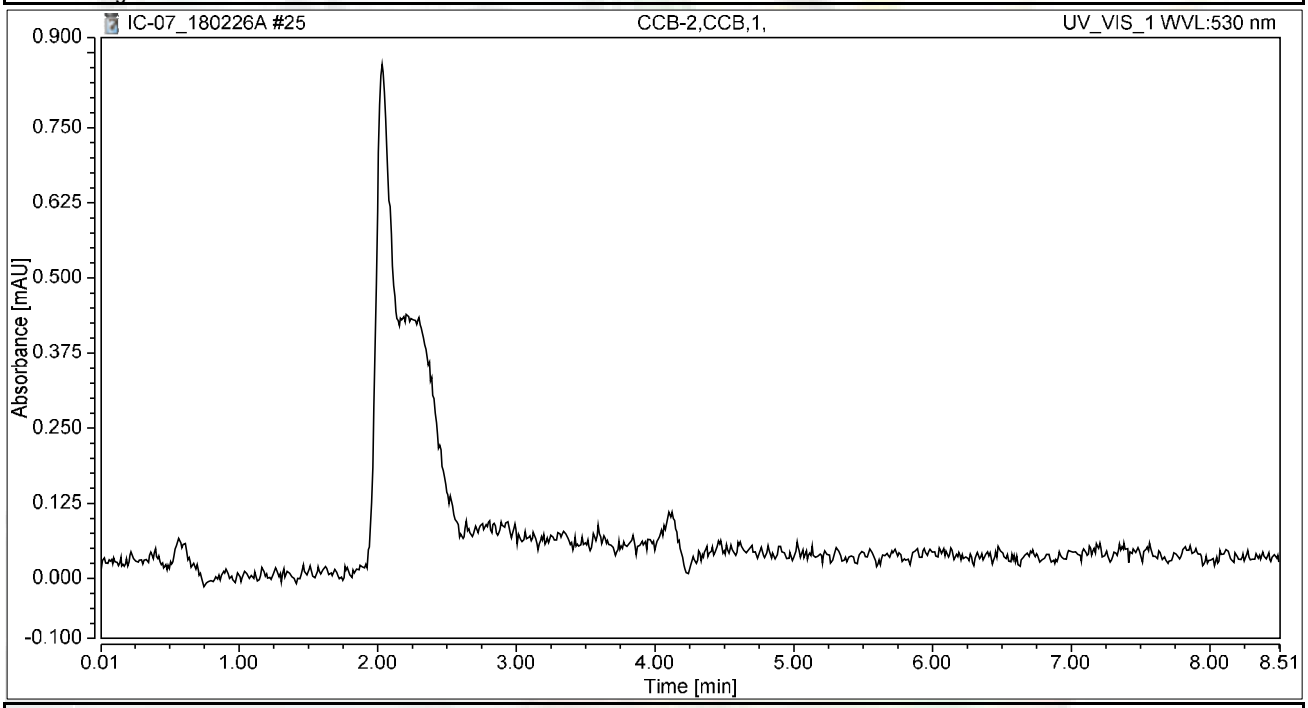
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.481	18.996	100.00	100.00	9.9365
Total:			**2.481**	**18.996**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

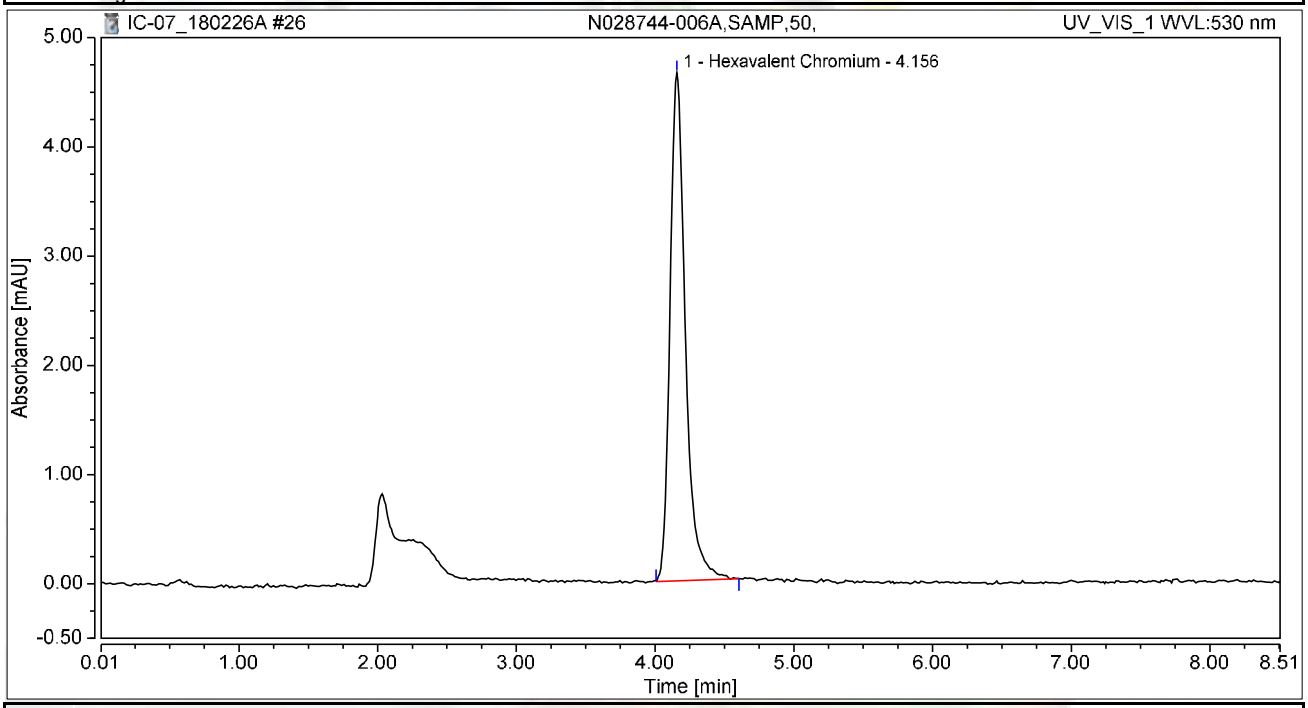
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-006A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

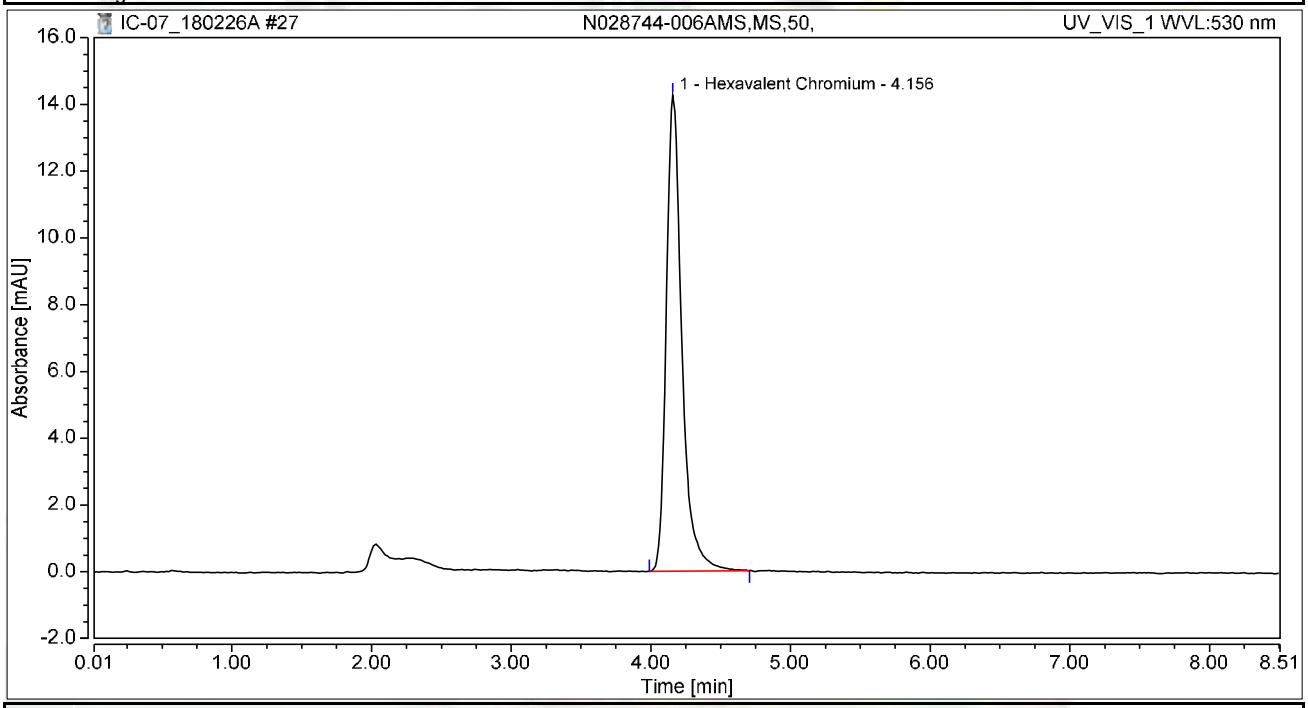
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.598	4.653	100.00	100.00	2.3964
Total:			**0.598**	**4.653**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-006AMS,MS,50,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

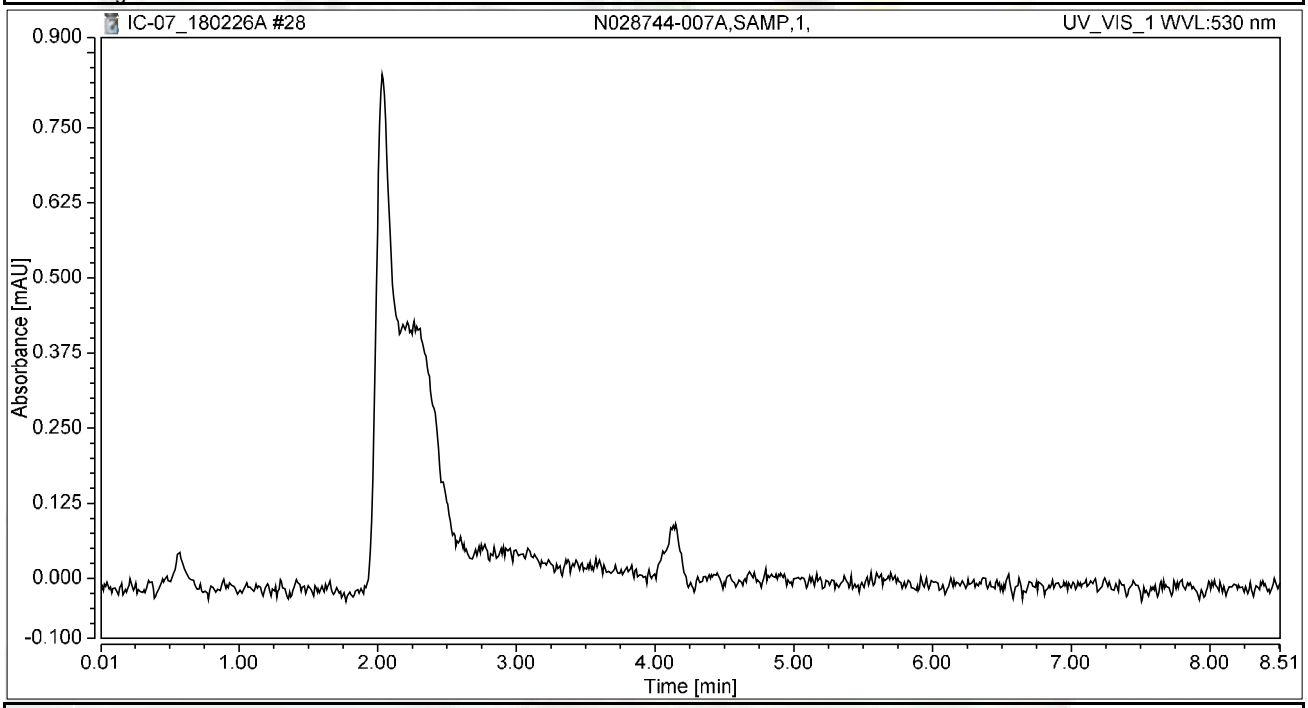
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.847	14.261	100.00	100.00	7.4000
Total:			**1.847**	**14.261**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

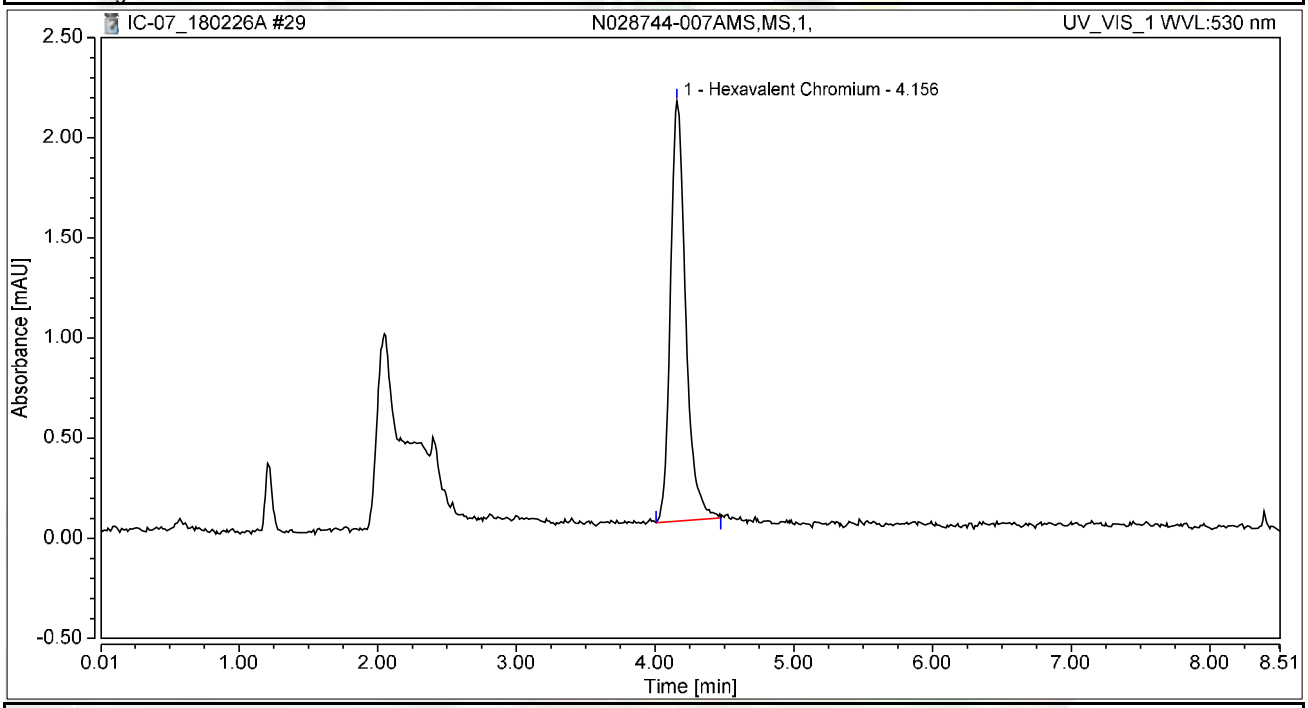
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

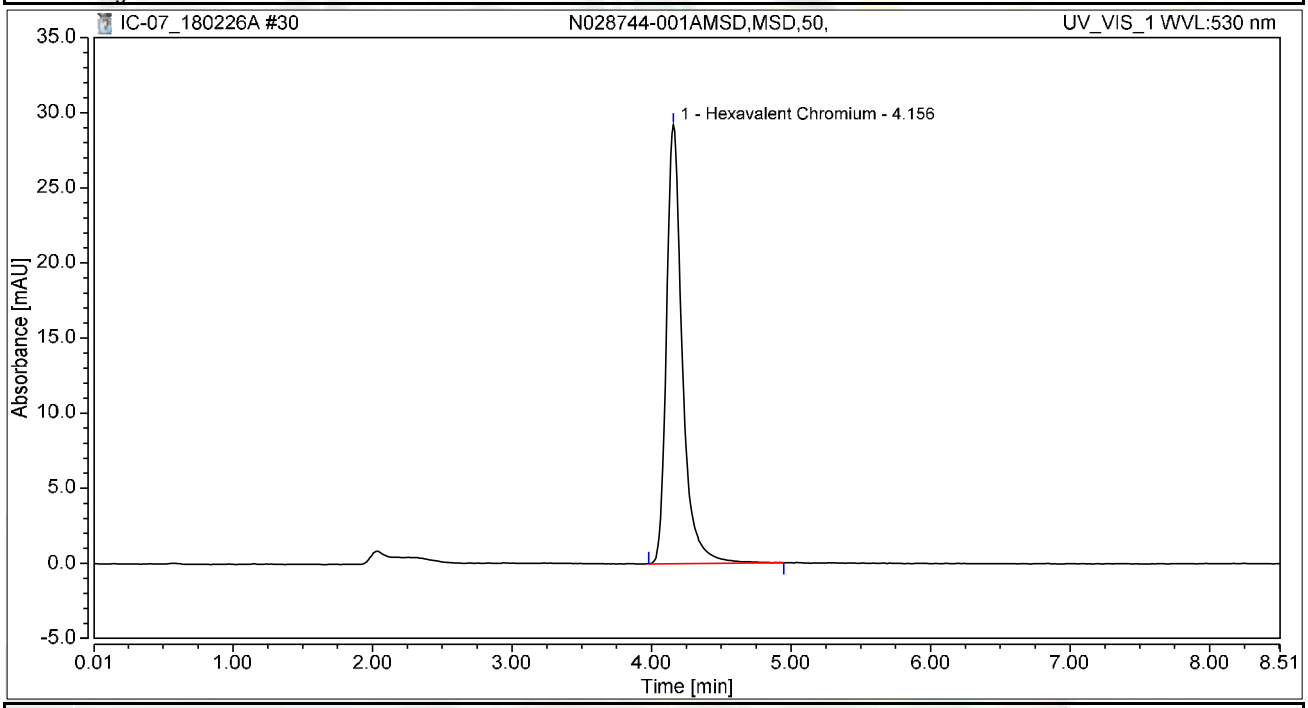
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	2.099	100.00	100.00	1.0684
Total:			**0.267**	**2.099**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-001AMSD,MSD,50,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

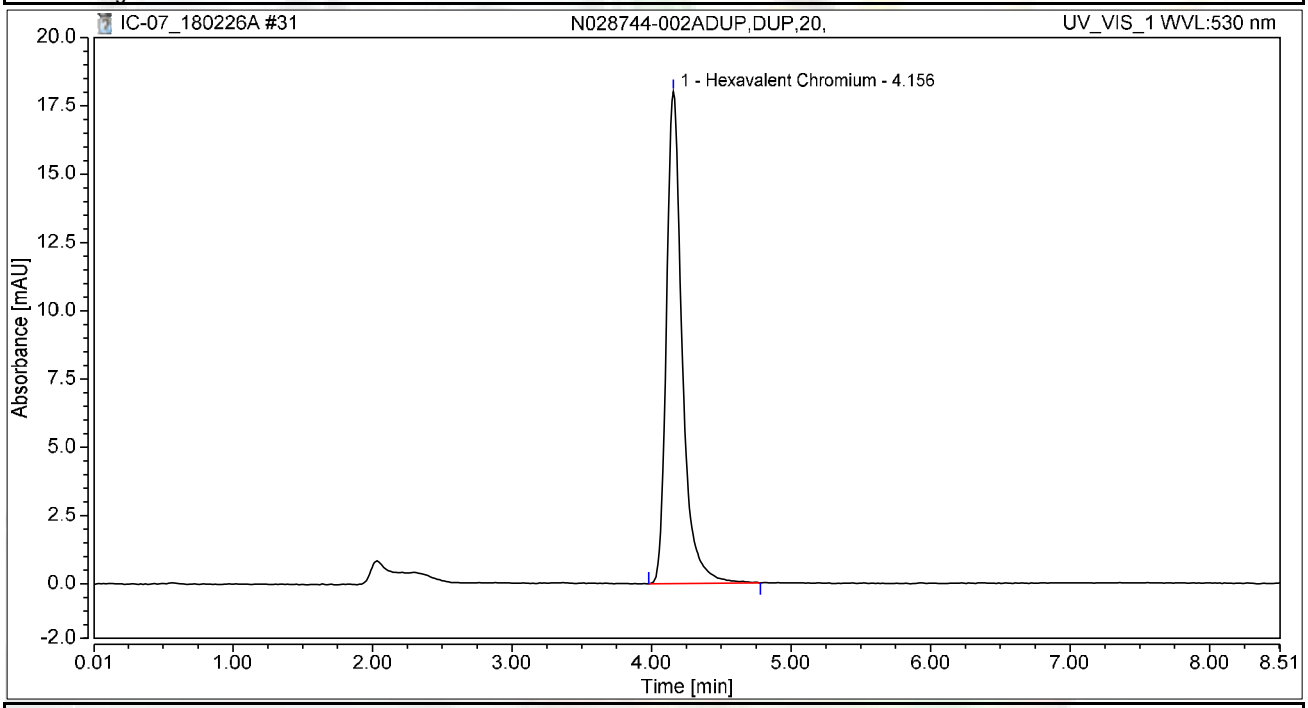
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.830	29.187	100.00	100.00	15.3424
Total:			**3.830**	**29.187**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-002ADUP,DUP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

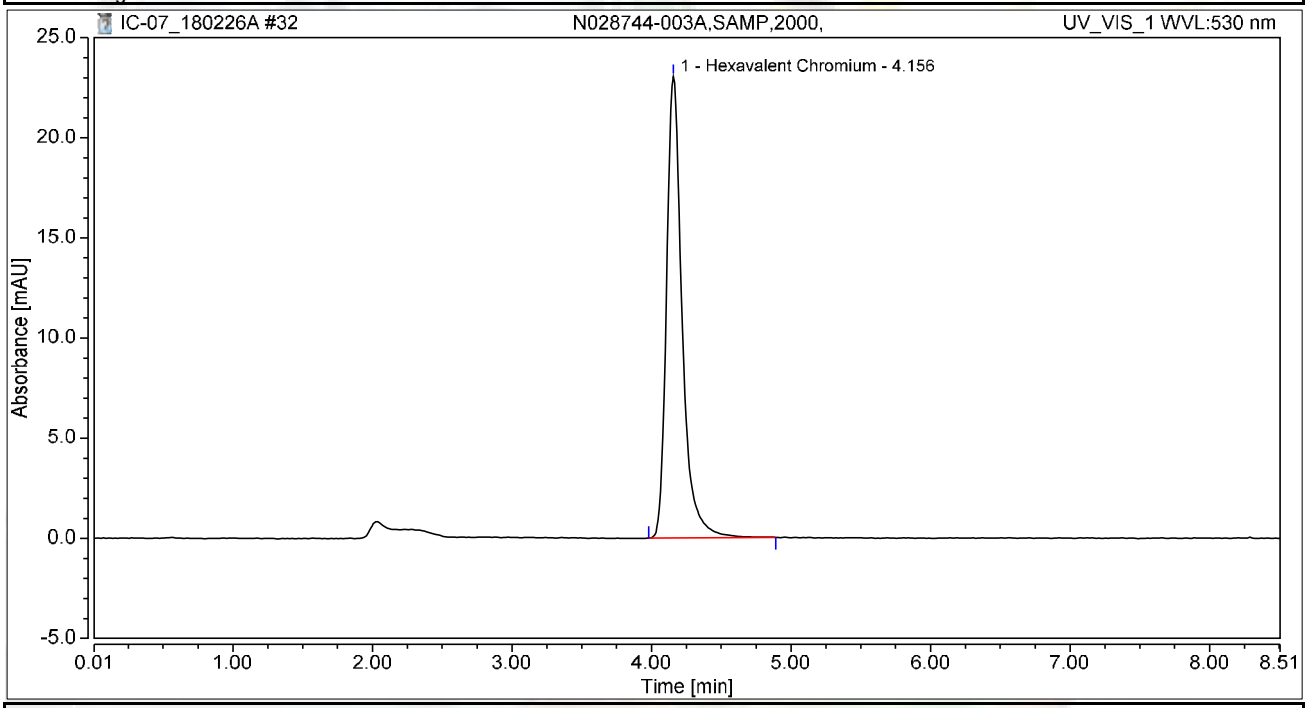
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.358	18.016	100.00	100.00	9.4443
Total:			**2.358**	**18.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-003A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

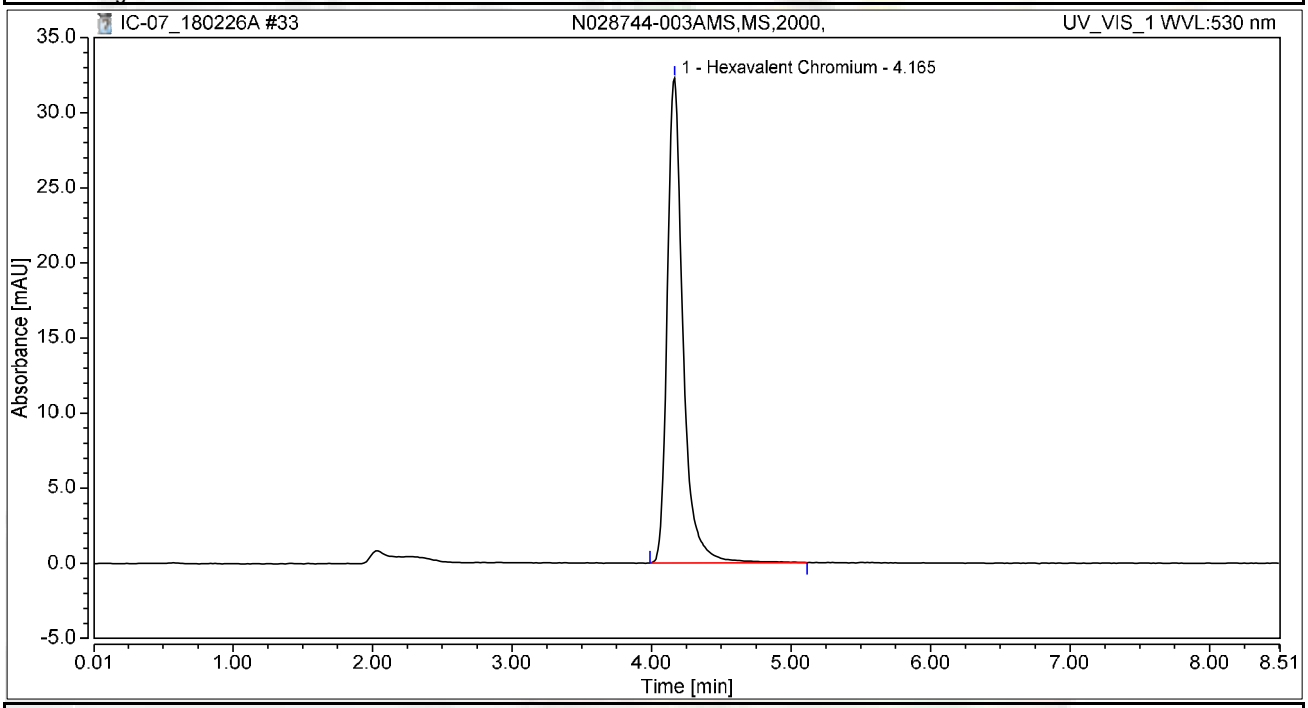
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.989	23.035	100.00	100.00	11.9747
Total:			**2.989**	**23.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-003AMS,MS,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

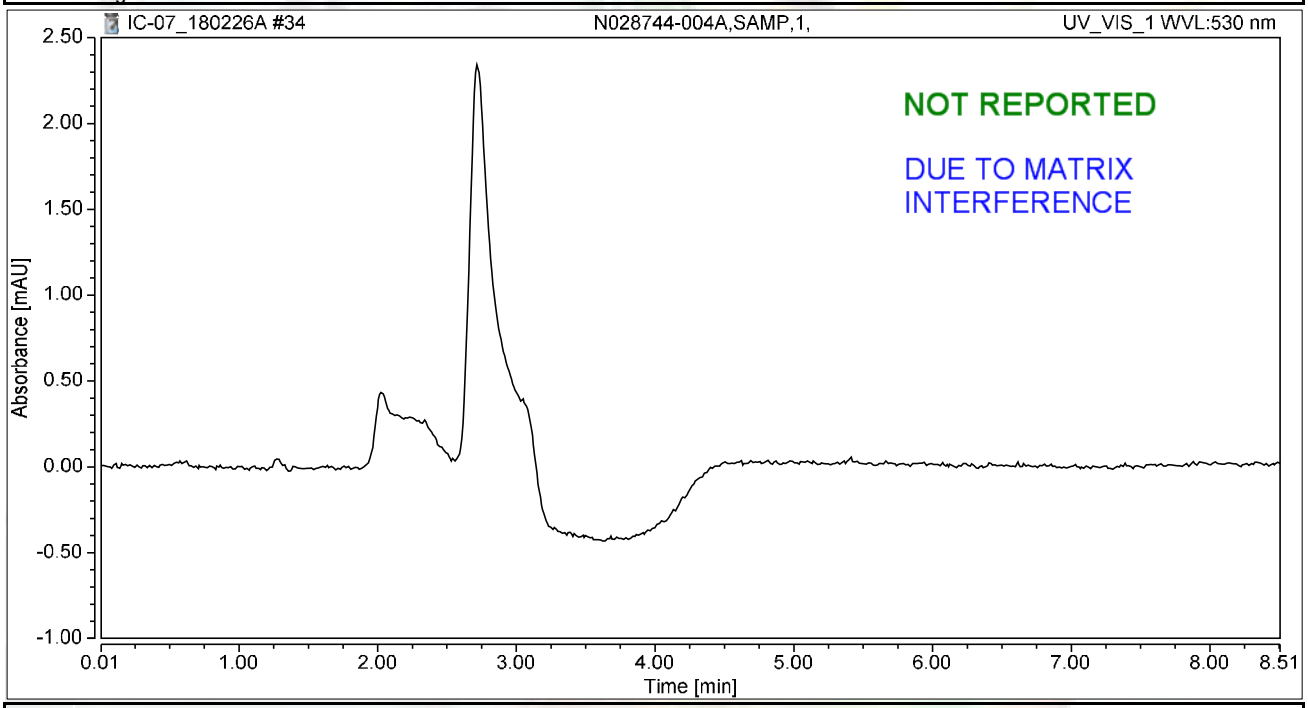
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	4.214	32.267	100.00	100.00	16.8779
Total:			**4.214**	**32.267**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

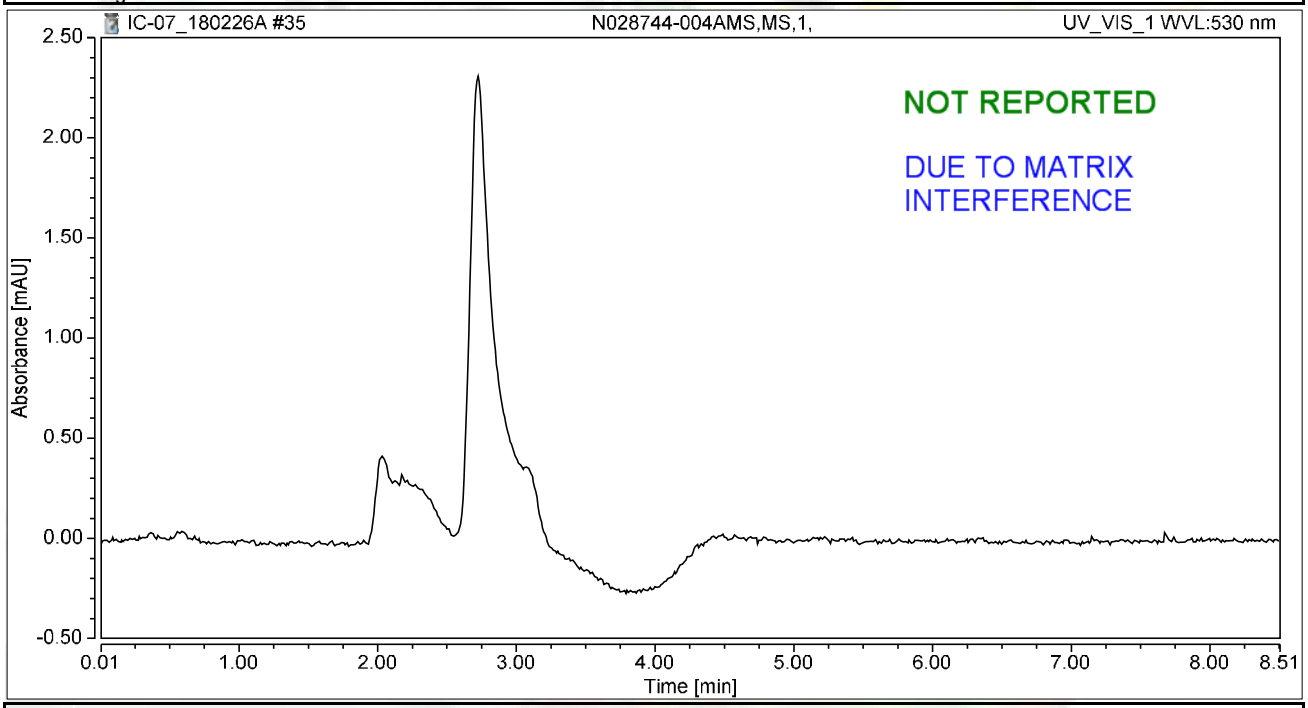
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

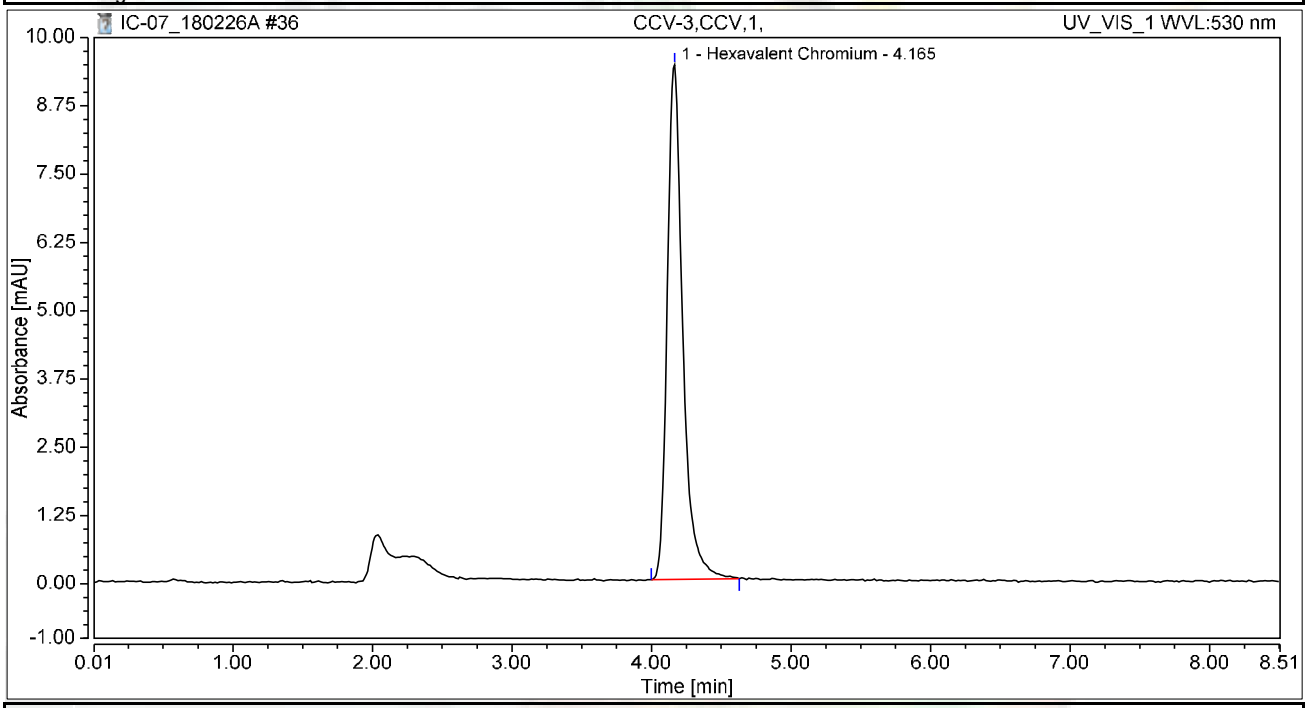
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

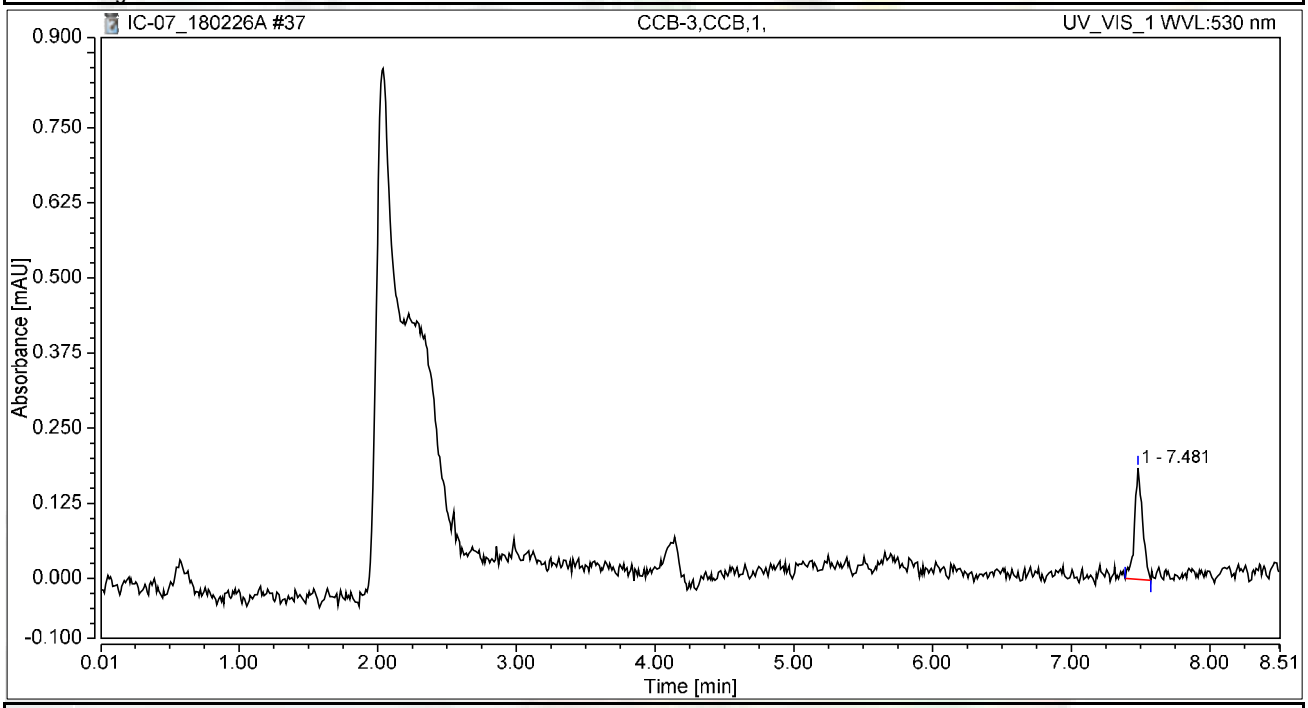
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.217	9.422	100.00	100.00	4.8756
Total:			**1.217**	**9.422**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

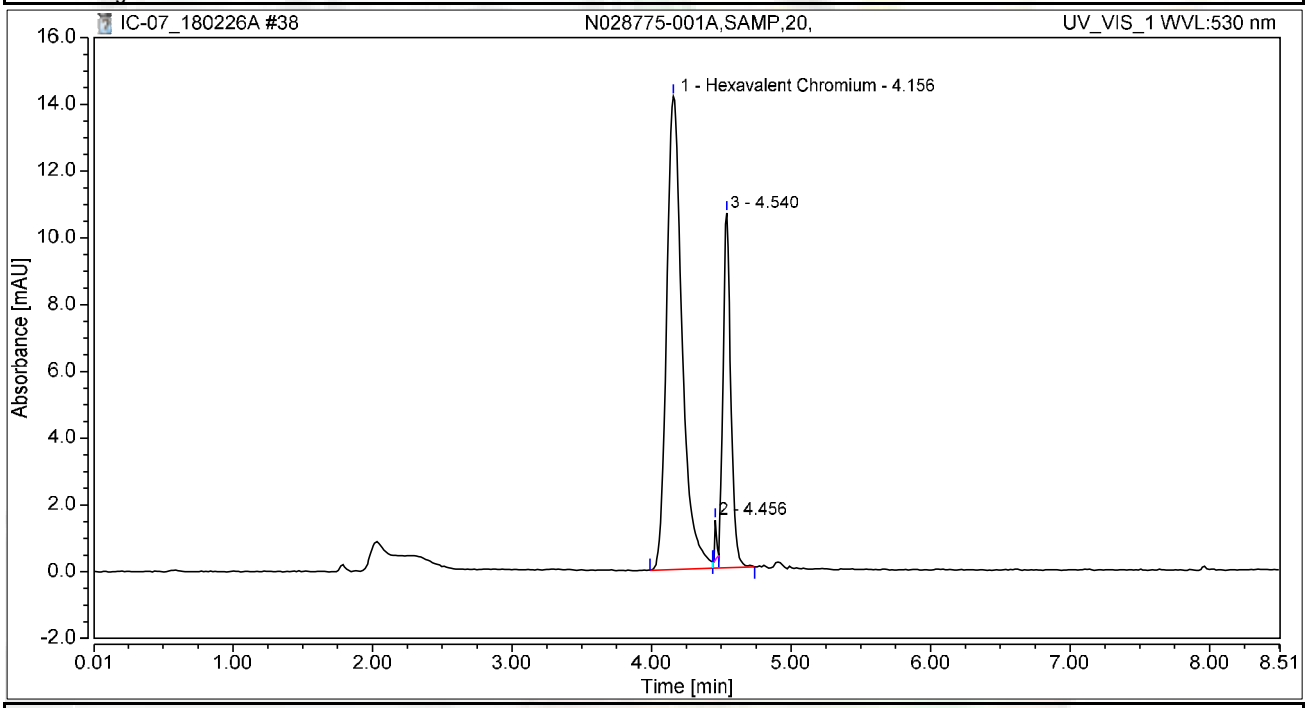
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.481	0.012	0.186	100.00	100.00	n.a.
Total:			**0.012**	**0.186**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

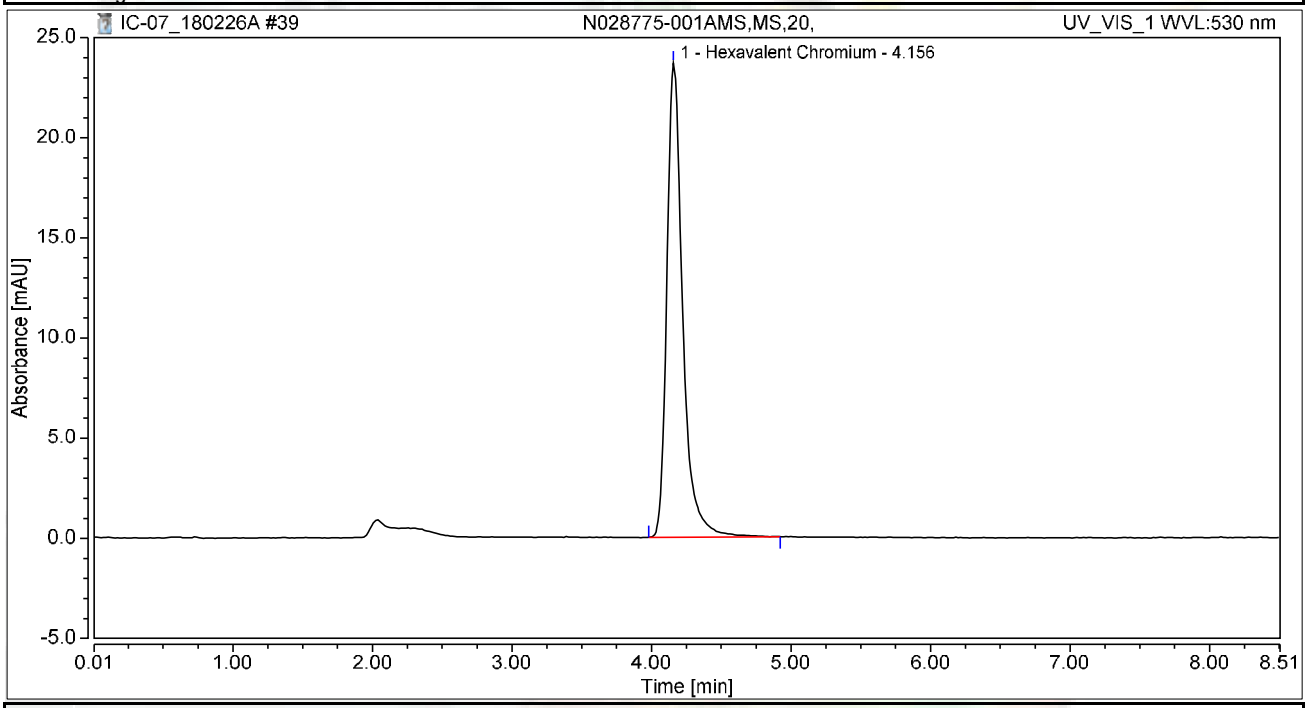
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.827	14.182	71.86	54.54	7.3168
2		4.456	0.018	1.196	0.72	4.60	n.a.
3		4.540	0.697	10.626	27.42	40.86	n.a.
Total:			**2.542**	**26.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-001AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

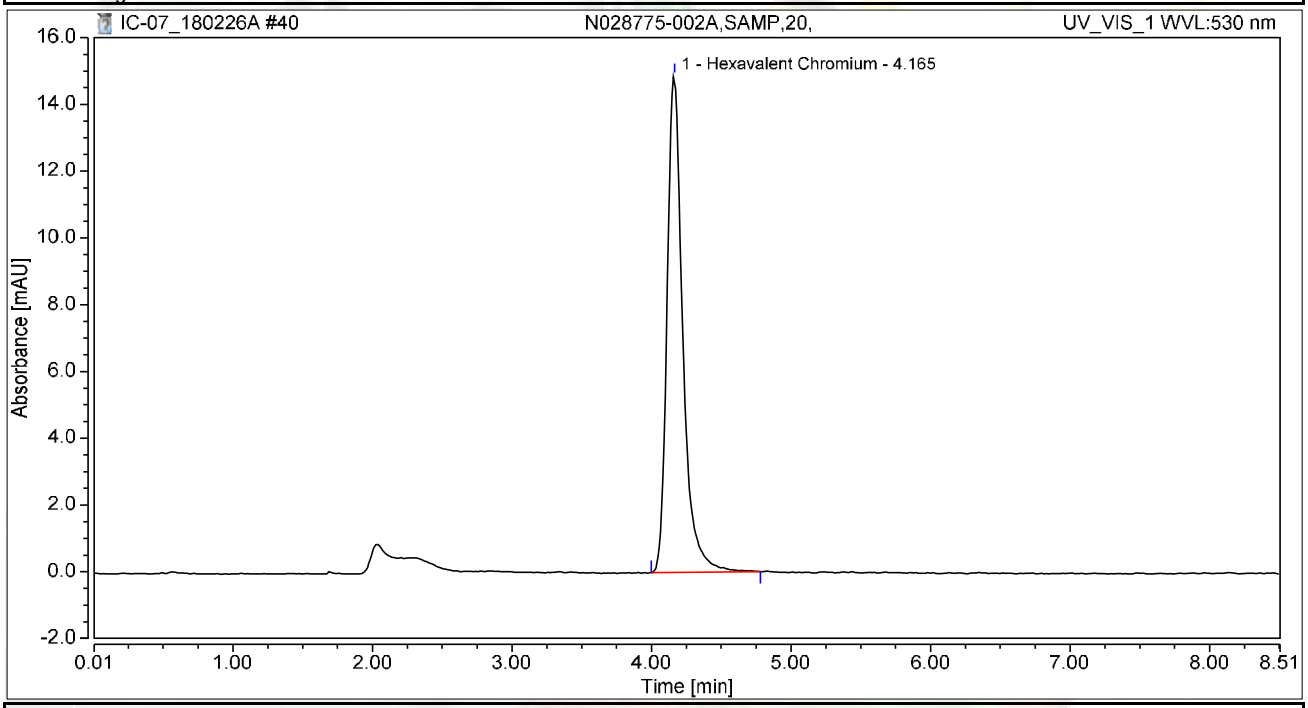
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.118	23.677	100.00	100.00	12.4911
Total:			**3.118**	**23.677**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-002A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

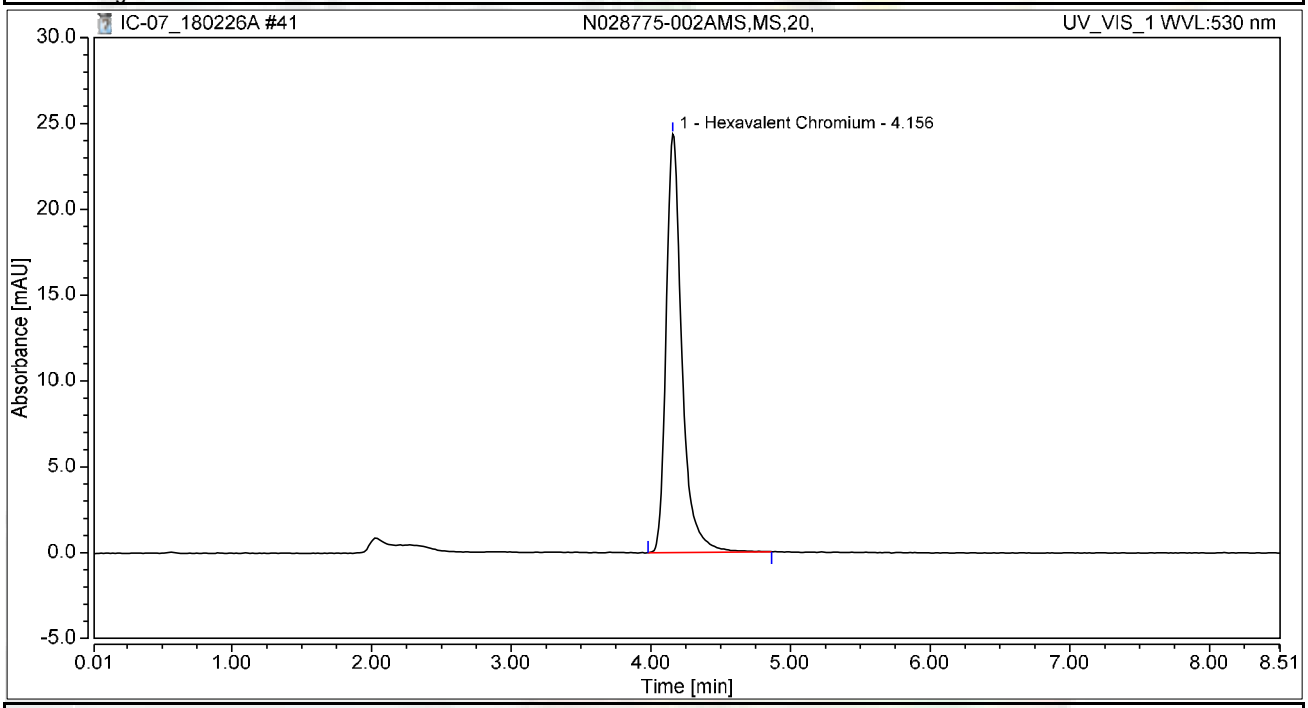
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.943	14.892	100.00	100.00	7.7838
Total:			**1.943**	**14.892**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-002AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

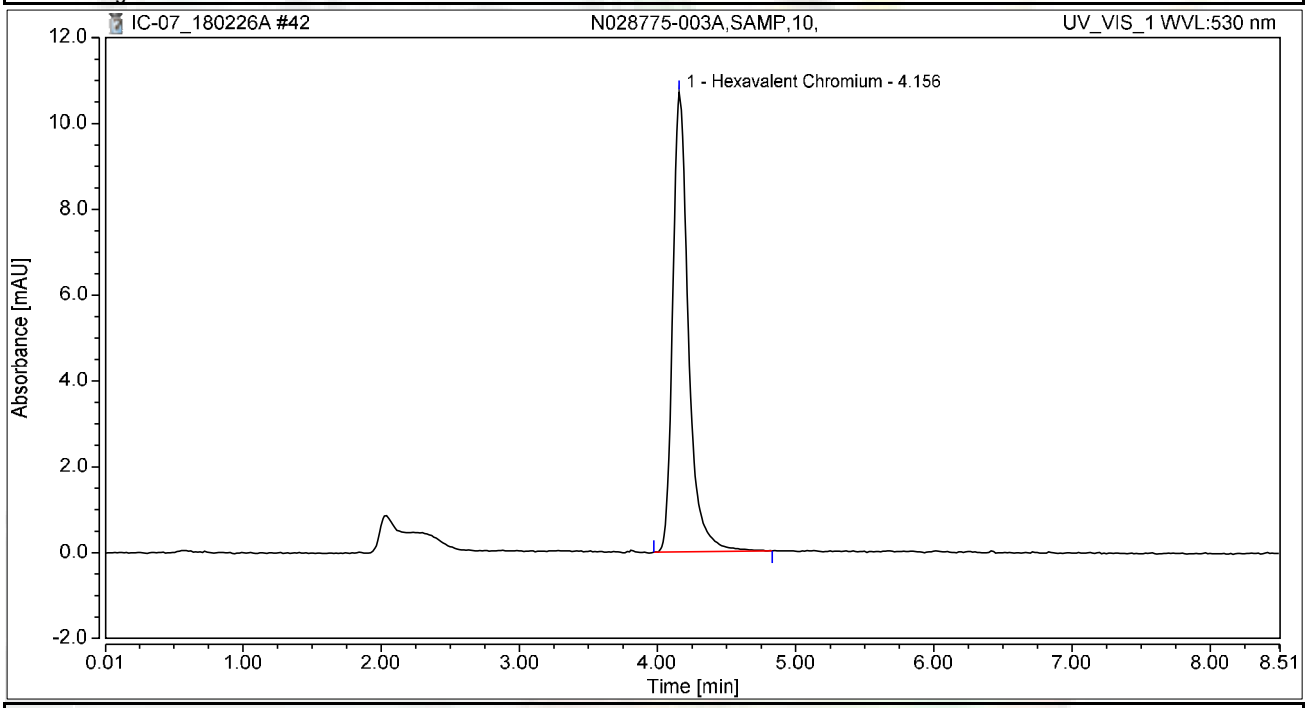
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.193	24.368	100.00	100.00	12.7879
Total:			**3.193**	**24.368**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

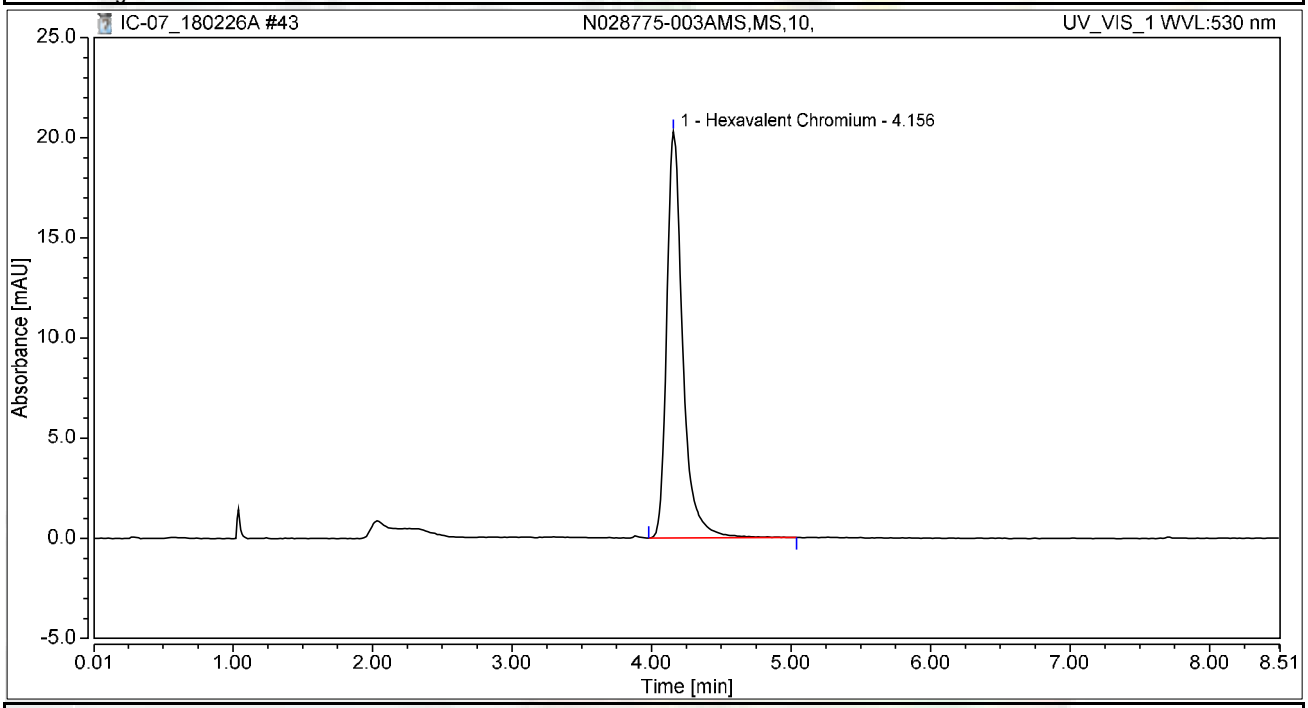
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.417	10.708	100.00	100.00	5.6760
Total:			**1.417**	**10.708**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-003AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

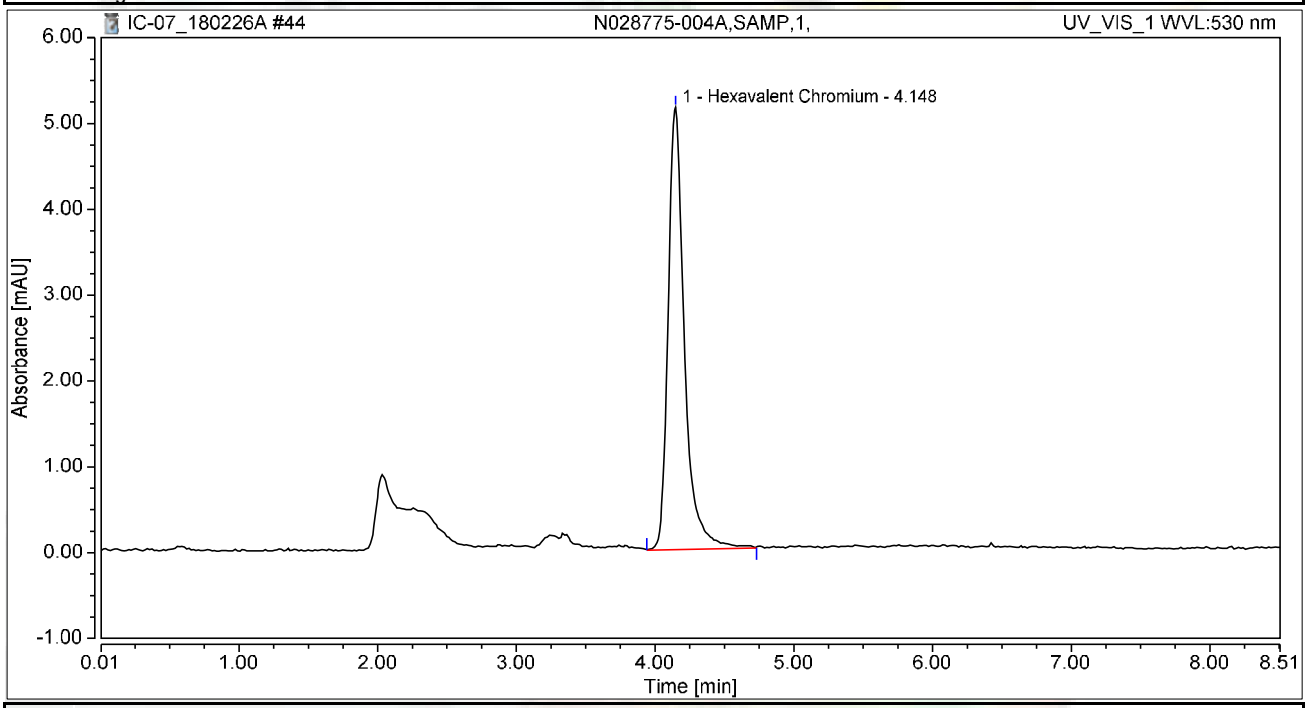
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.692	20.291	100.00	100.00	10.7849
Total:			**2.692**	**20.291**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

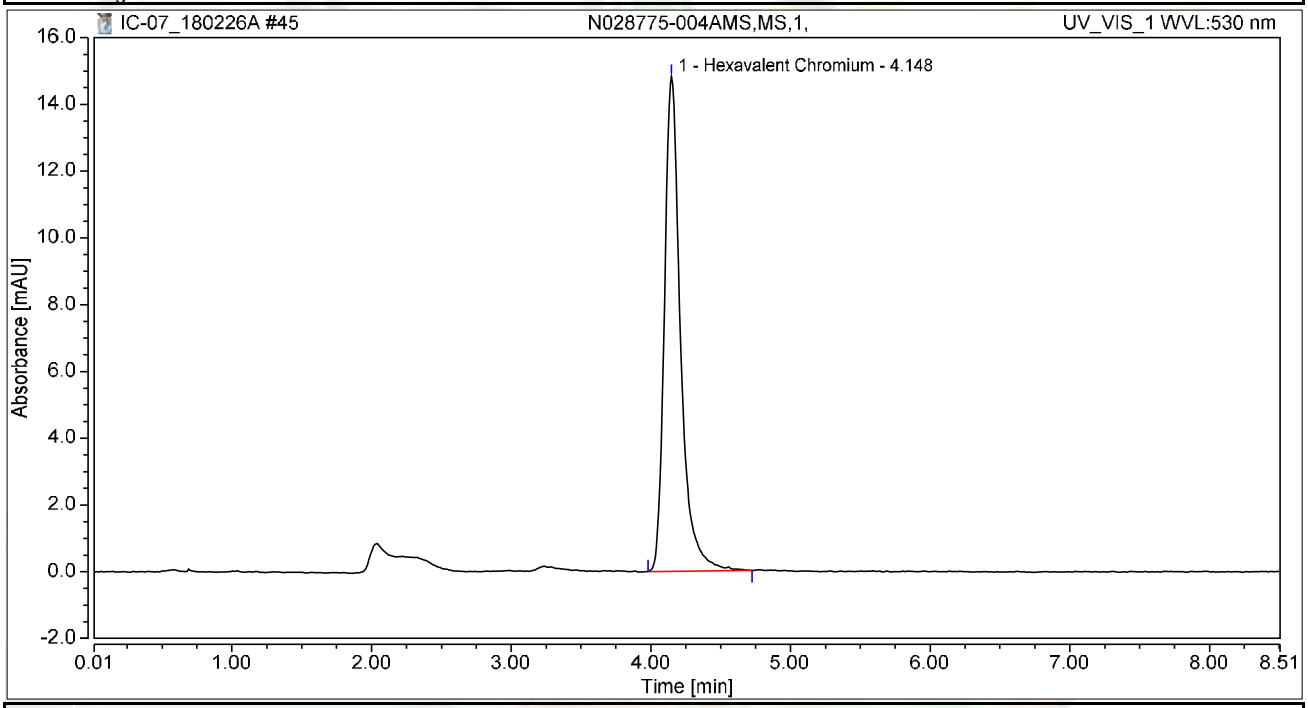
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.702	5.150	100.00	100.00	2.8109
Total:			**0.702**	**5.150**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

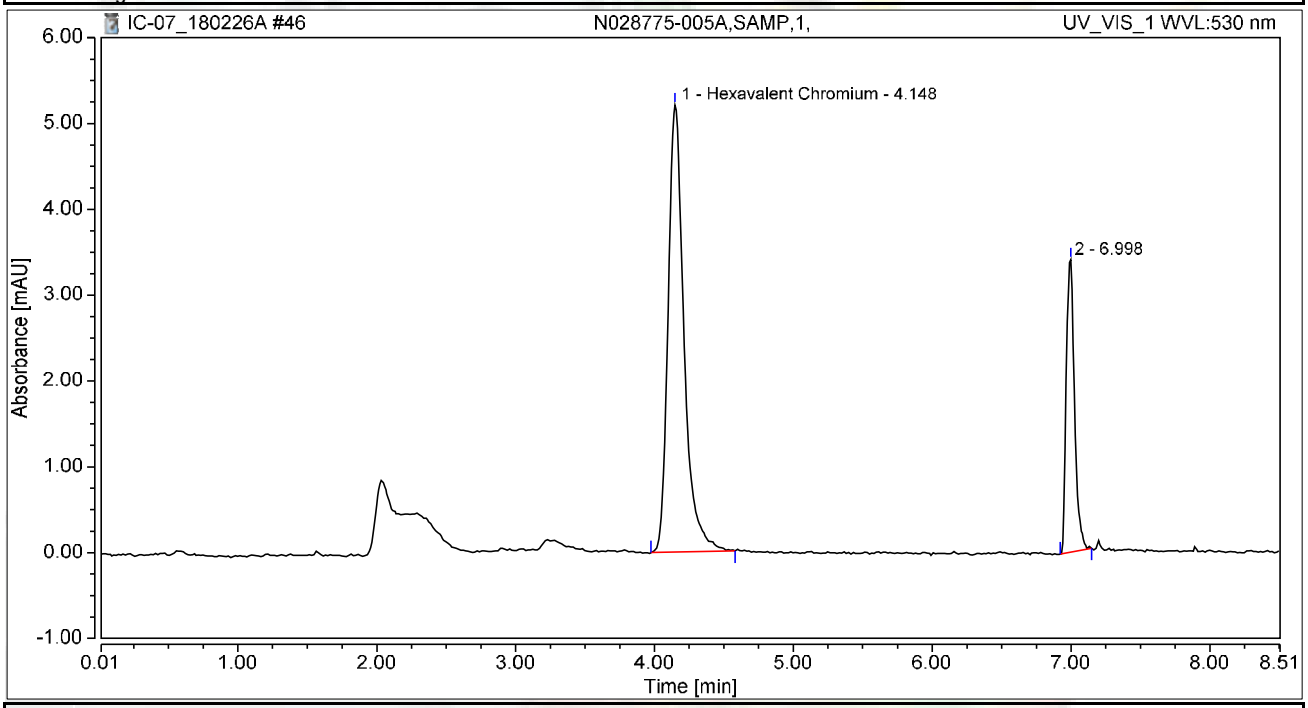
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.985	14.824	100.00	100.00	7.9520
Total:			**1.985**	**14.824**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

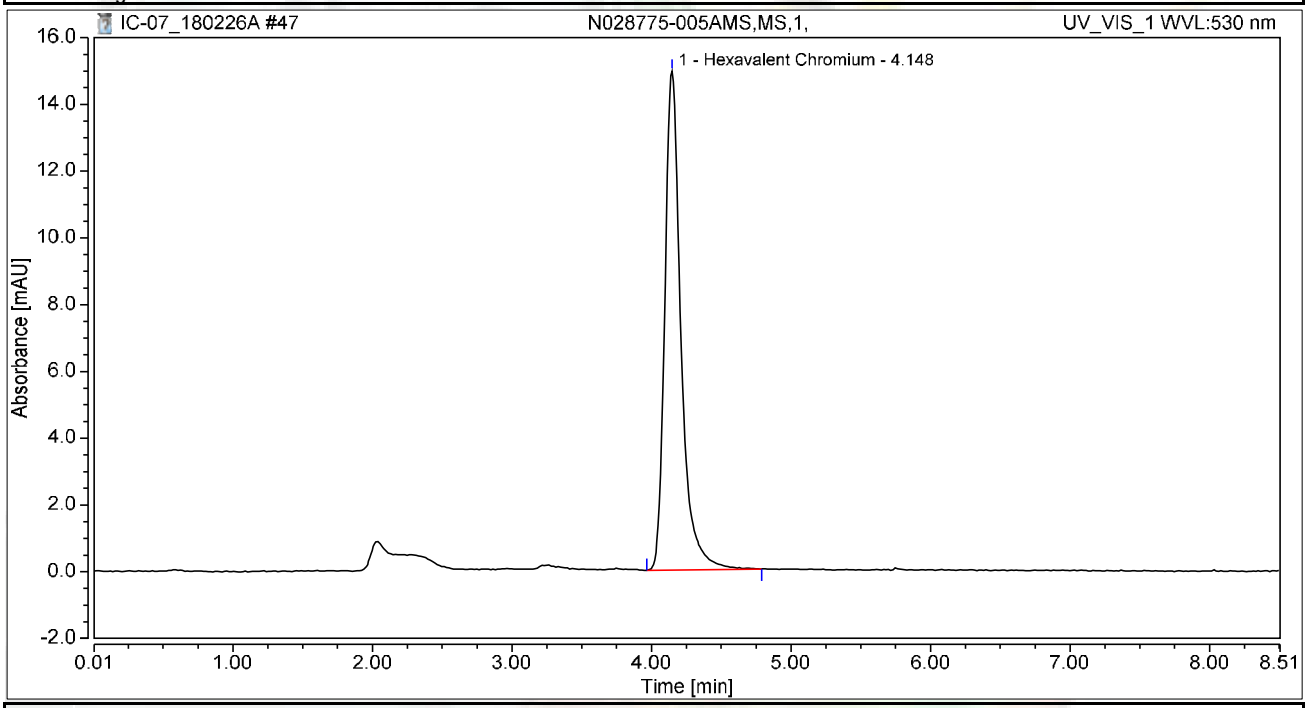
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.692	5.210	74.69	60.47	2.7731
2		6.998	0.235	3.406	25.31	39.53	n.a.
Total:			**0.927**	**8.616**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

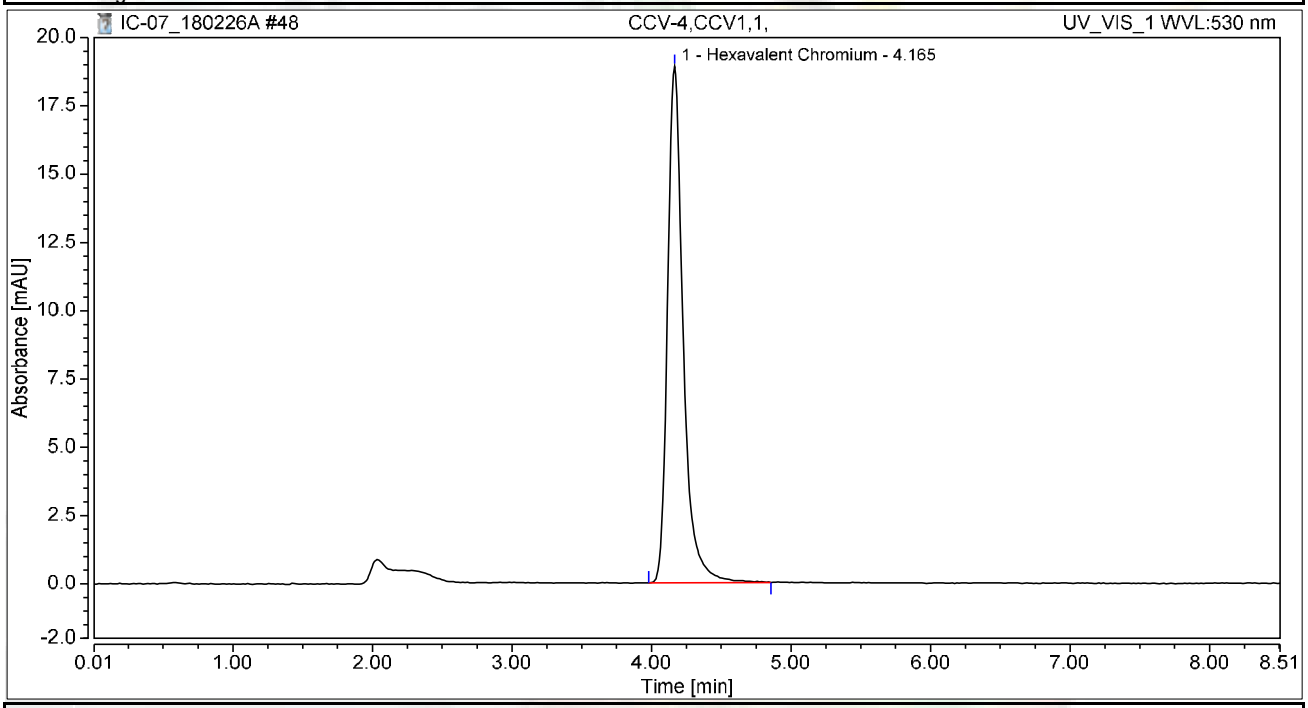
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.008	14.950	100.00	100.00	8.0438
Total:			**2.008**	**14.950**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

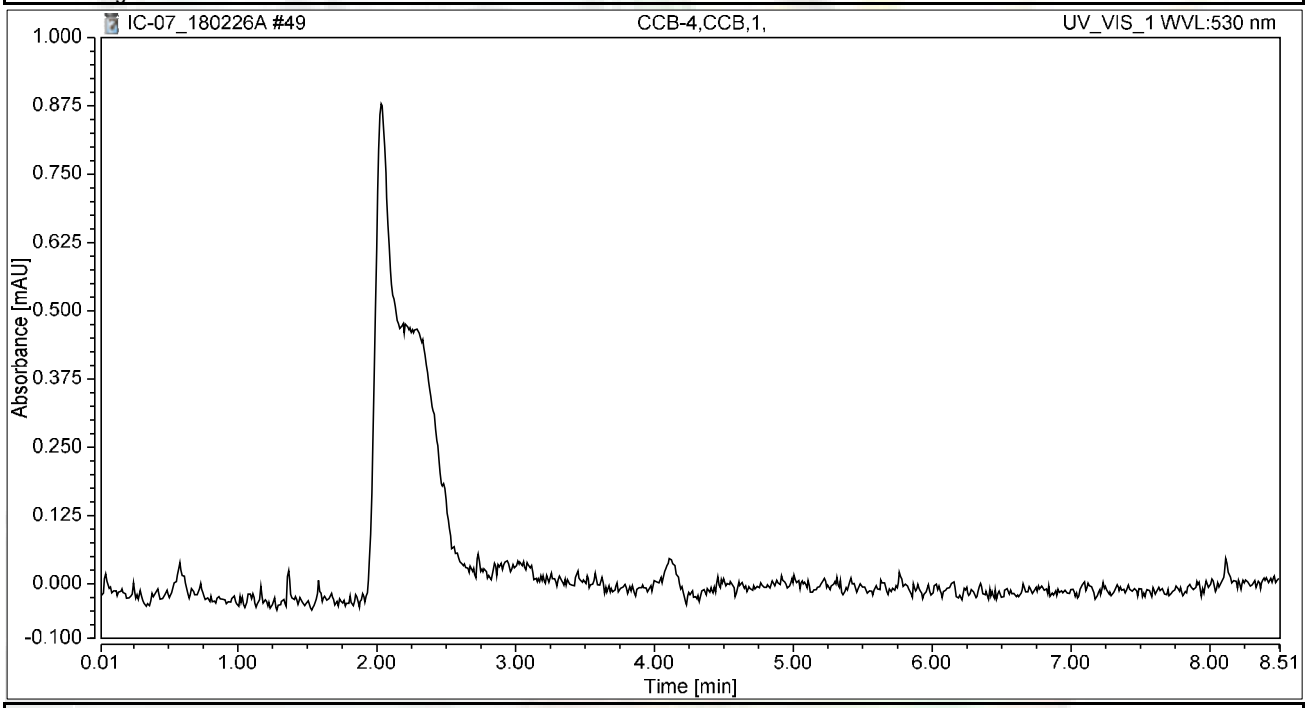
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.458	18.912	100.00	100.00	9.8455
Total:			**2.458**	**18.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

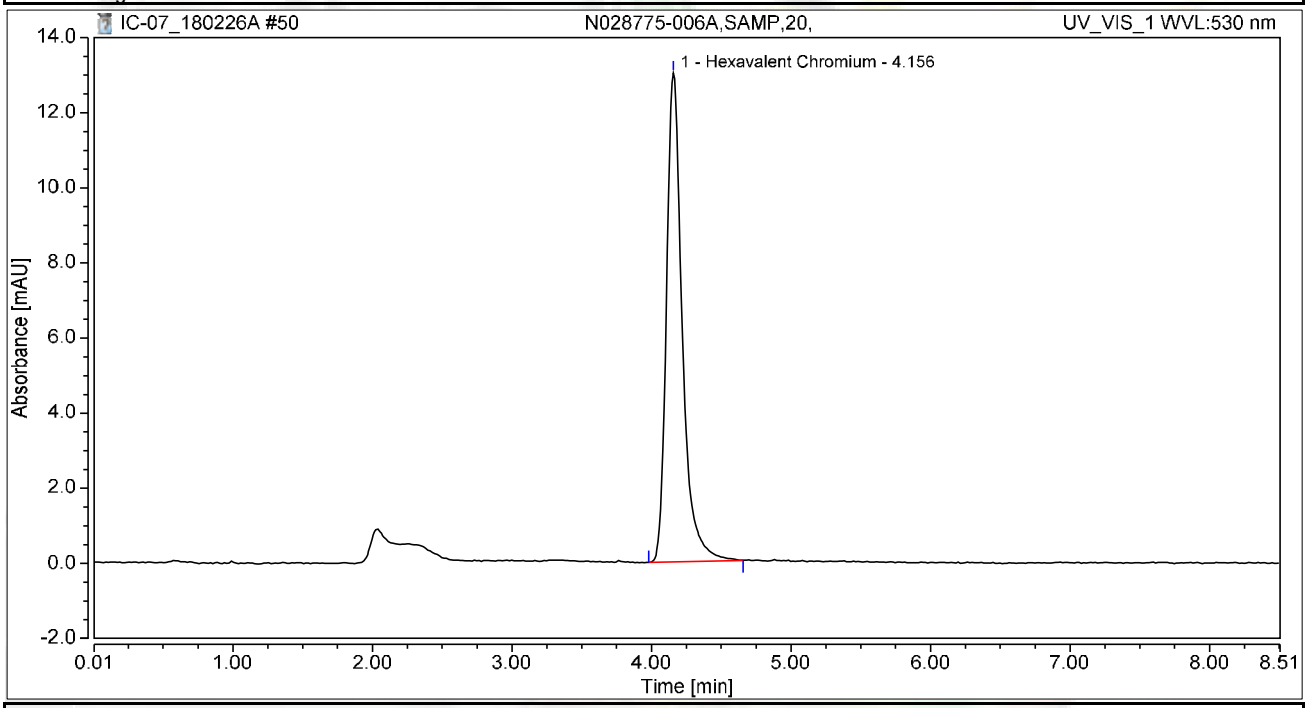
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-006A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

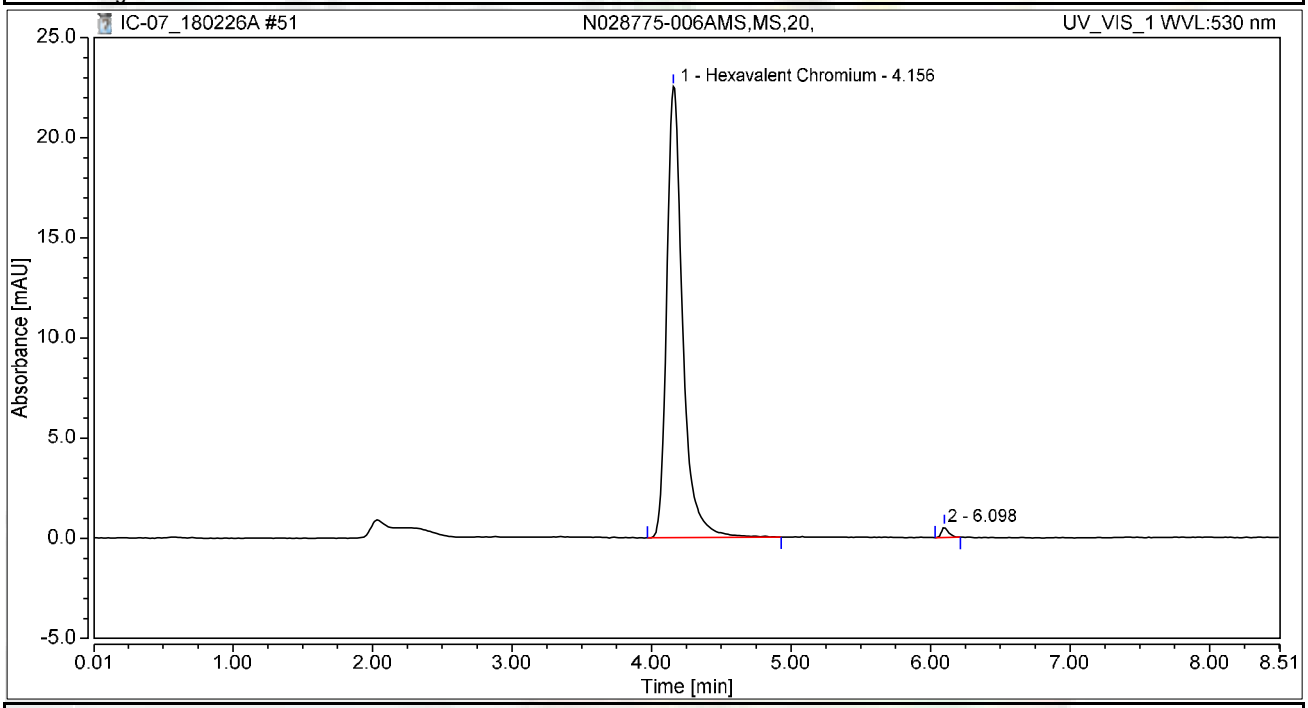
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.706	13.016	100.00	100.00	6.8320
Total:			**1.706**	**13.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-006AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

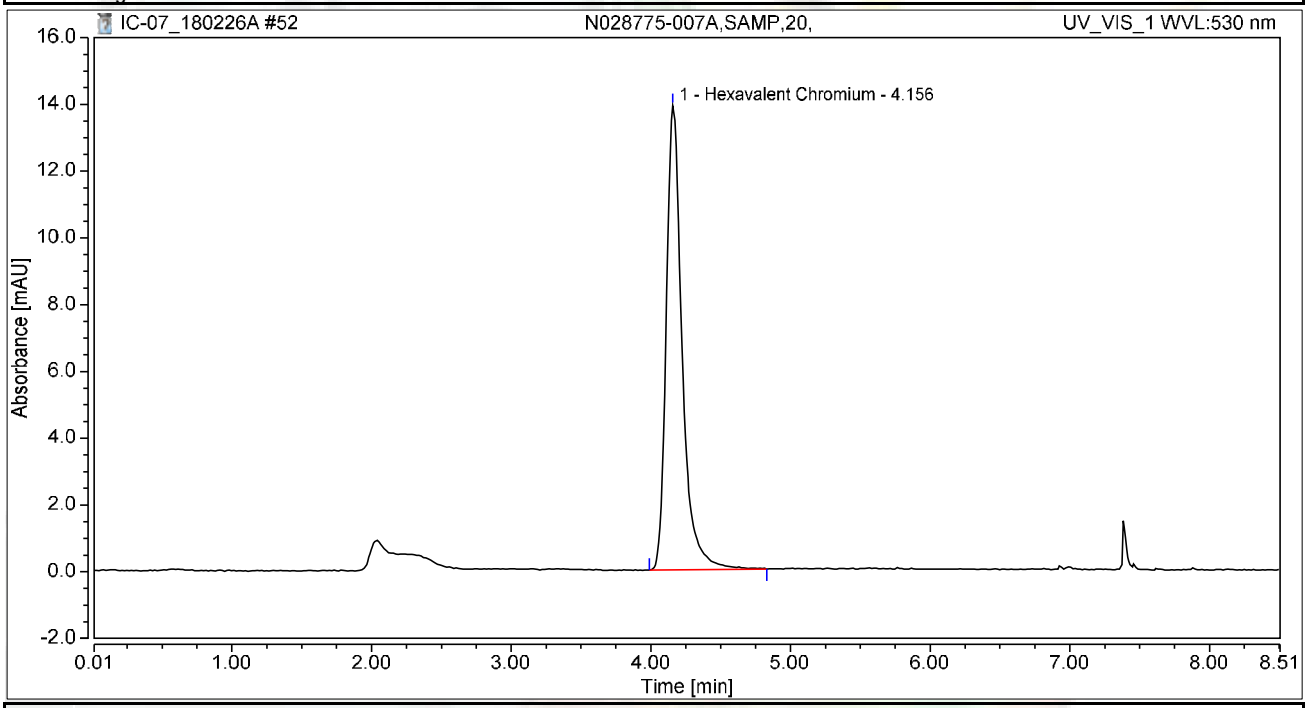
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.983	22.531	98.99	97.66	11.9480
2		6.098	0.030	0.540	1.01	2.34	n.a.
Total:			**3.013**	**23.071**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-007A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

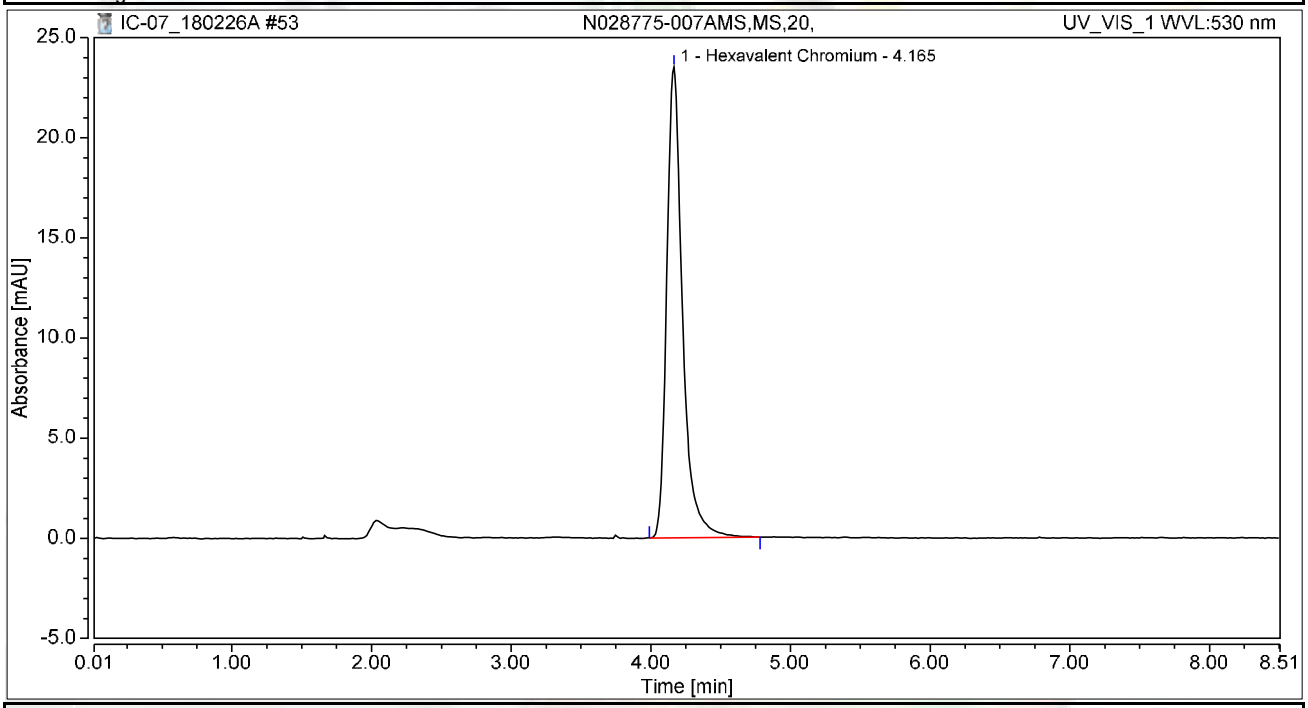
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.840	13.907	100.00	100.00	7.3699
Total:			**1.840**	**13.907**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-007AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

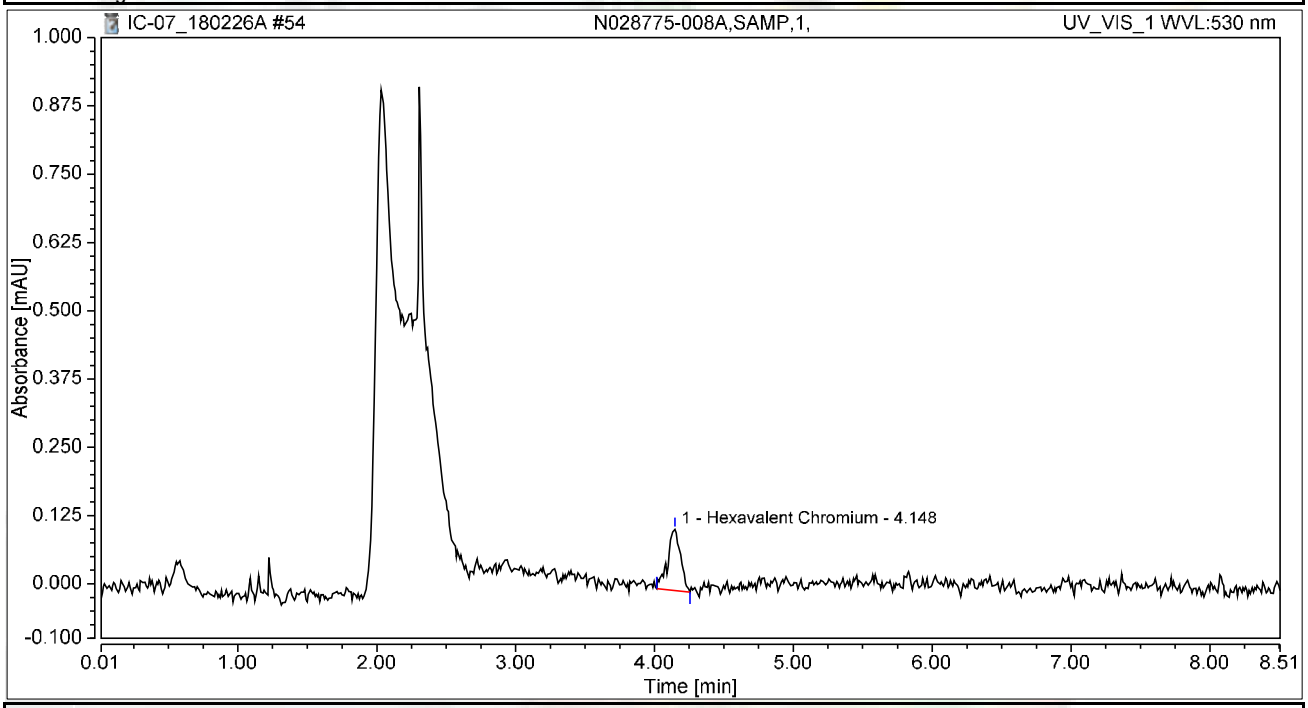
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.085	23.513	100.00	100.00	12.3568
Total:			**3.085**	**23.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

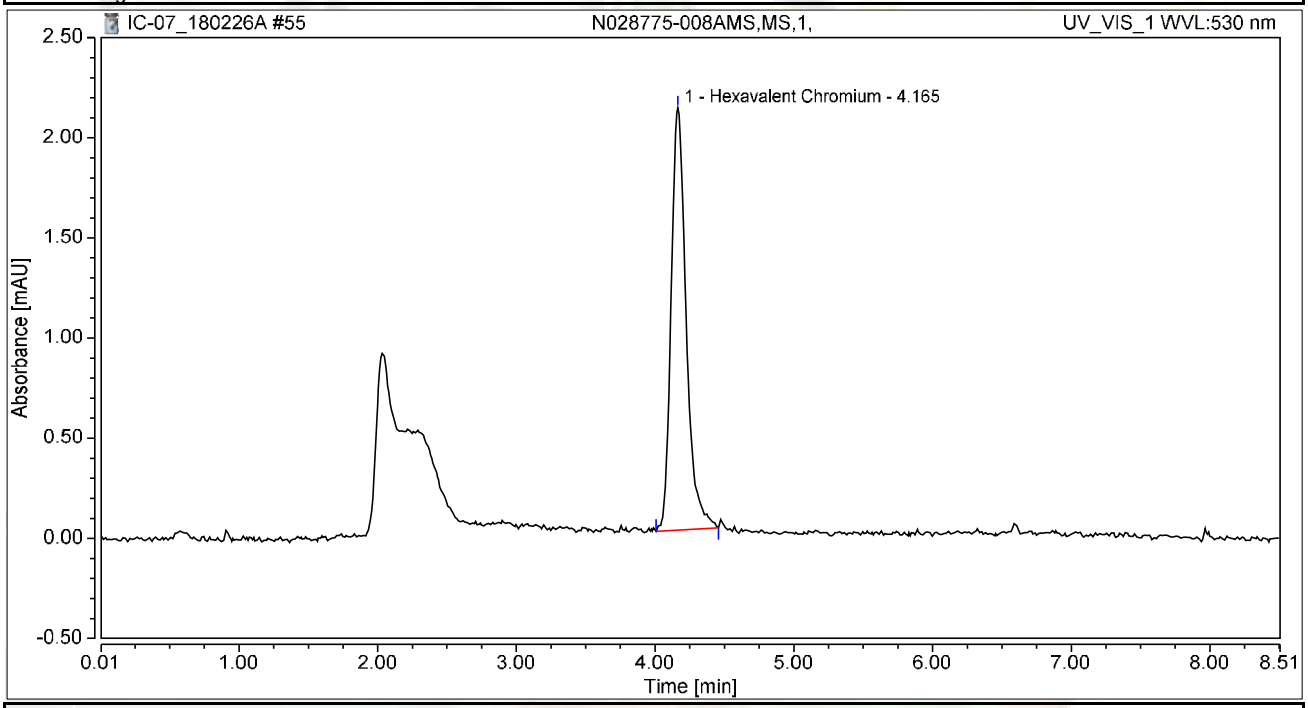
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.012	0.112	100.00	100.00	0.0489
Total:			**0.012**	**0.112**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

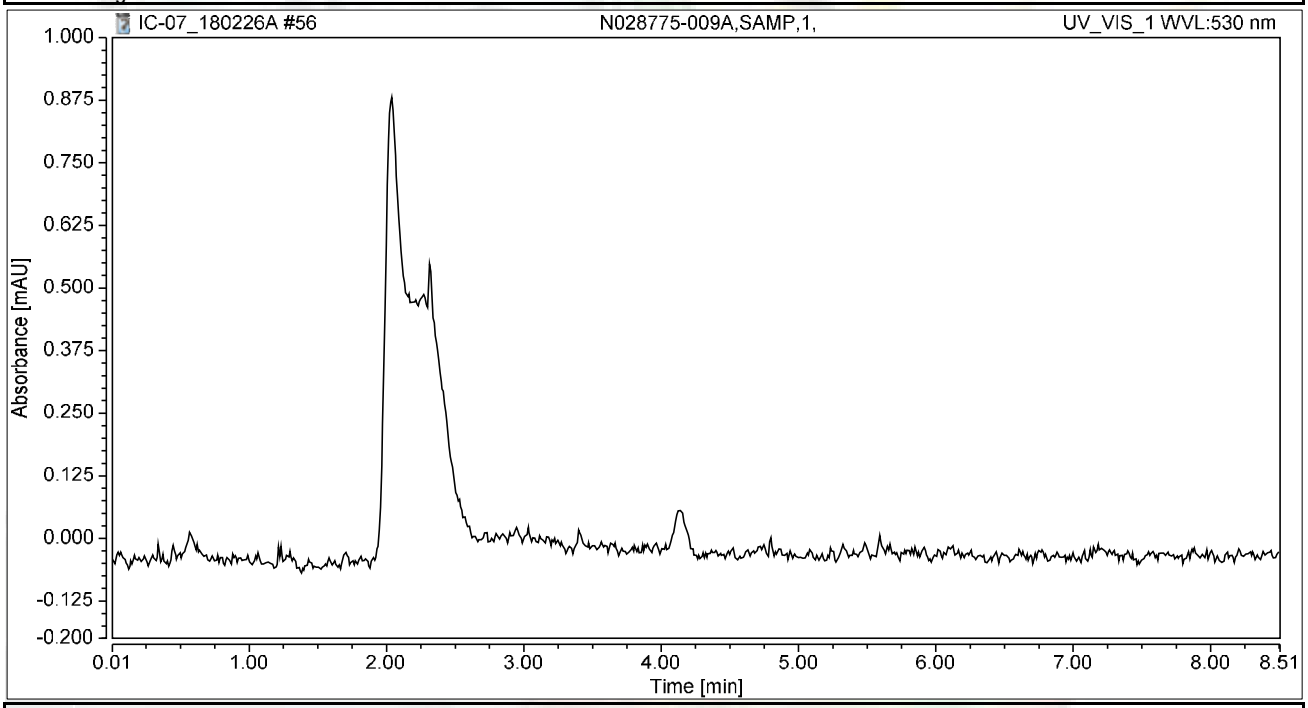
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	2.108	100.00	100.00	1.0604
Total:			**0.265**	**2.108**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

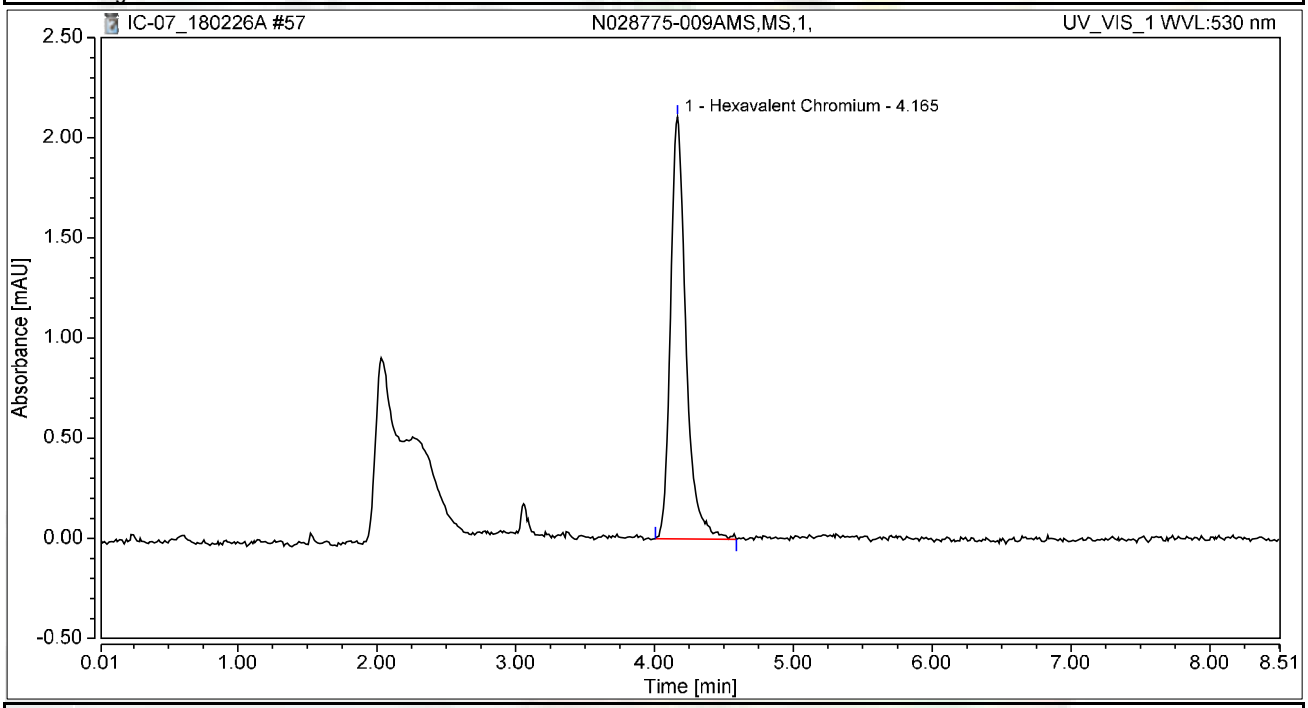
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

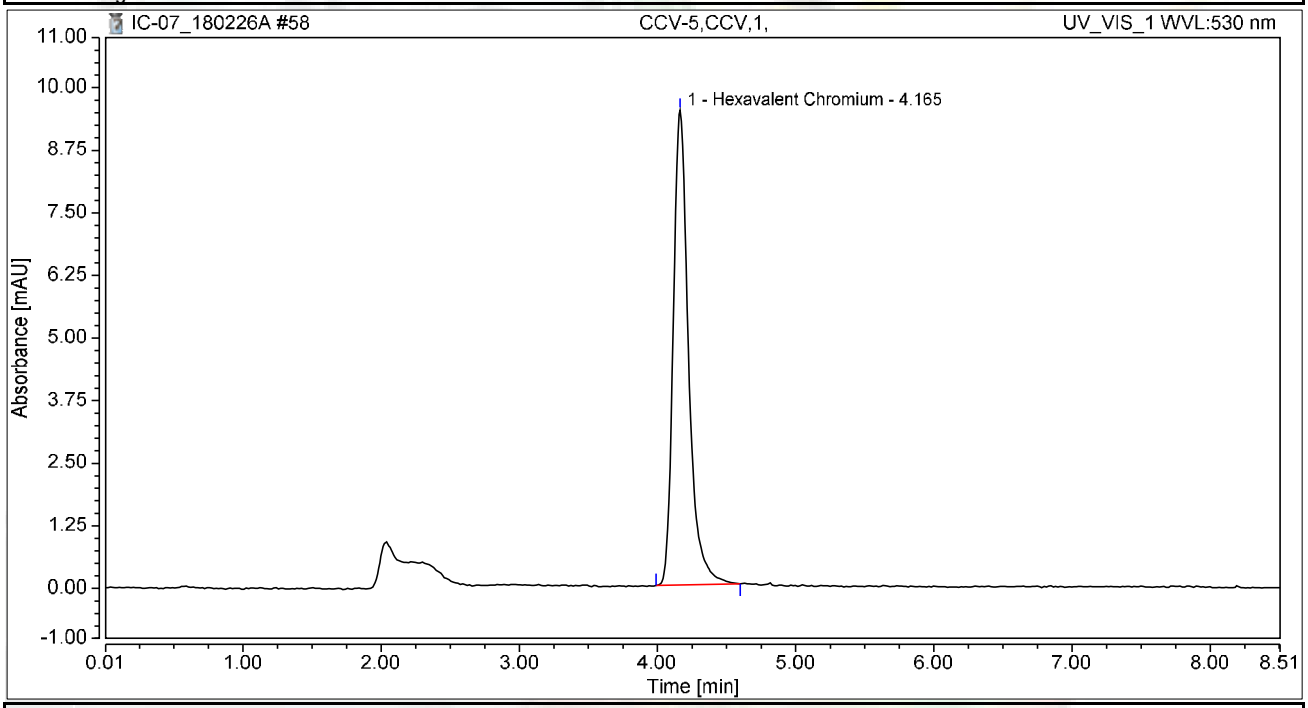
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.272	2.107	100.00	100.00	1.0885
Total:			**0.272**	**2.107**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

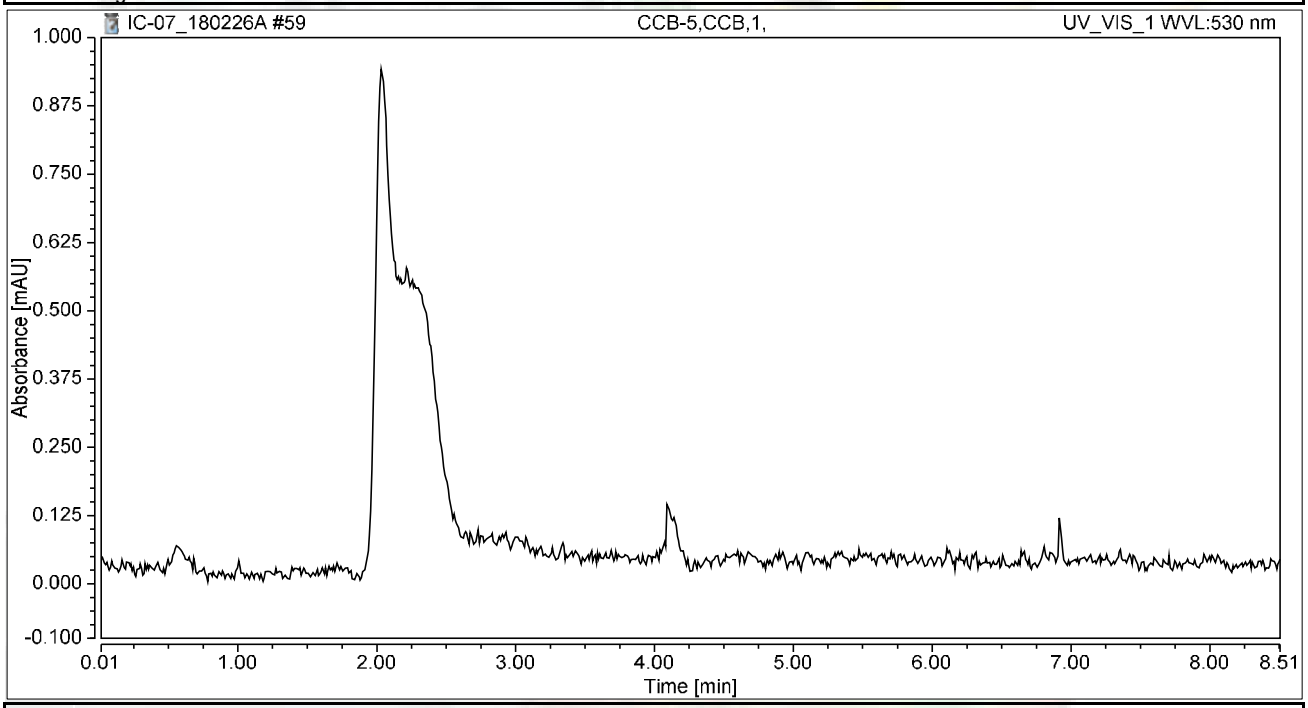
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.216	9.476	100.00	100.00	4.8700
Total:			**1.216**	**9.476**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122273 **Analyst:** LSR

ASSET #: N028744 **Date Analyzed:** 2/23/2018

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 3/1/2018

2nd Level Reviewer: 03/07/2018 Date:

SAMPLE CALCULATION

Sample ID: **N028744-003D @ pH 7.49**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.95 mL)

= **0.02092 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.20) (0.02092 N) (1) * 1000

= 87.8640 mg**/L**

Reporting results in two significant figures,

= **88 mg/L** as CaCO3

Julia Ramit 3/1/2018

RLB 03/07/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02092 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.20 mL) (0.02092) (1) * 1000

= 87.8640 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 87.8640 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **88 mg/L**

Silvia Ramit 3/1/2018

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.17	50	0.00	0.050	MBLK
LCS-1	8.23	50	0.00	4.70	LCS
N028093-006A	9.04	50	2.30	3.80	SAMP
N028744-003D	7.49	50	0.00	4.20	SAMP
N028744-004D	9.94	50	0.60	0.90	SAMP
N028744-005D	7.46	50	0.00	2.90	SAMP
N028744-004DDUP	9.97	50	0.60	1.00	DUP
N028744-003DMS	7.97	50	0.00	9.30	MS
N028744-003DMSD	7.93	50	0.00	9.10	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.950**	ml
N H2SO4	**0.02092**	Normal
Date Analyzed:	**2/23/18**	
Time:	**2:00 PM**	
Analyzed By:	**LSR**	

Sodium Carbonate:	**CINV-161205A**
Sodium Bicarbonate:	**CINV-150601A**
Sulfuric Acid:	**R180108A**

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Date Analyzed:	2/23/18		Reagents:					Standardization:					P = 0
Time Started:	2:00 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.95	mL		P = 1/2 T
				Sulfuric Acid:		R180108A							P > 1/2 T
									N H2SO4	0.02092	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.17				0.02092	0.00	0.05	0.05	1	0.00	1.05	
LCS-1	50	8.23				0.02092	0.00	4.70	4.70	1	0.00	98.33	
N028093-006A	50	9.04				0.02092	2.30	1.50	3.80	1	48.12	79.50	
N028744-003D	50	7.49				0.02092	0.00	4.20	4.20	1	0.00	87.87	
N028744-004D	50	9.94				0.02092	0.60	0.30	0.90	1	12.55	18.83	
N028744-005D	50	7.46				0.02092	0.00	2.90	2.90	1	0.00	60.67	
N028744-004DDU	50	9.97				0.02092	0.60	0.40	1.00	1	12.55	20.92	
N028744-003DMS	50	7.97				0.02092	0.00	9.30	9.30	1	0.00	194.56	
N028744-003DMS	50	7.93				0.02092	0.00	9.10	9.10	1	0.00	190.38	

Julia Ramit 2/26/2018

RB 03/07/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	2/23/18
Time:	2:00 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.05	1.05	1.05		P = 0
LCS-1	0.00	0.00	98.33	98.33	98.33		P = 0
N028093-006A	16.74	62.76	0.00	79.50	79.50		P > 1/2 T
N028744-003D	0.00	0.00	87.87	87.87	87.87		P = 0
N028744-004D	6.28	12.55	0.00	18.83	18.83		P > 1/2 T
N028744-005D	0.00	0.00	60.67	60.67	60.67		P = 0
N028744-004DDUP	4.18	16.74	0.00	20.92	20.92		P > 1/2 T
N028744-003DMS	0.00	0.00	194.56	194.56	194.56		P = 0
N028744-003DMSD	0.00	0.00	190.38	190.38	190.38		P = 0

Silvia Ramit 2/26/2018

RLB 03/07/2018

Matrix: H_2O

Date Extracted: 2/23/18
Time Extracted: 1400
Extracted By: LSB

Date Analyzed: 2/23/18
Time Analyzed: 1400
Analyzed By: LSB

Reagent Lot # / Reagent ID
Sodium Carbonate: CNV – 160205A
Hydrochloric Acid: —
Sulfuric Acid: R180108A
Sodium Bicarbonate: CNV – 150601A

pH meter Calibration:
SLOPE: 96.9%
pH 7 - 6.98 – CNV 171215D
4 - 4.01 – 171205A
10 - 10.02 – 170822B

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.83	IWST180223A	5 mL	0.05N	-	-	12.0	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)} = 0.020833333$	
	#2	↓	10.77	↓	↓	↓	-	-	11.90	↓		0.021008403
1)	MBLK	50 mL	5.17	-	-	-	0.02092	0	6.05	50/50		Ave: 0.020920868
2)	LCS	↓	8.23	IWST180223B	1 mL	0.05N	↓	0	4.70	↓		
3)	NO28093 00GA	↓	9.04	—	-	-	↓	2.30	3.80	↓		
4)	NO28744.0003D	↓	7.49	—	-	-	↓	0	4.20	↓		
5)	4D	↓	9.94	—	-	-	↓	0.60	0.90	↓		
6)	5D	↓	7.46	—	-	-	↓	0	2.90	↓		
7)	4D DUP	↓	9.97	-	-	-	↓	0.60	1.00	↓		
8)	3D MS	↓	7.97	IWST180223B	1 mL	0.05N	↓	0	9.30	↓		
9)	3D MSD	↓	7.93	↓	↓	↓	↓	0	9.10	↓		
10)												
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V\ pH\ 8.3)(N_{H_2SO_4})(50{,}000)}{Wsx}$								
17)												
18)												
19)				$T = \frac{(V\ pH\ 4.5)(N_{H_2SO_4})(50{,}000)}{Wsx}$								
20)												
	MS											
	MSD											
	LCS											

Julia Ramit 2/26/2018

RB 03/07/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R122266
ASSET #: N028744

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 2/23/2018

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Samples for Bromide were diluted due to formation of preciptate at lower dilution..

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 3/4/2018

2nd Level Reviewer: RB 03/07/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N028744-003D** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.1904 * 200

= 838.08

Reporting result in two significant values,

Chloride, mg/L = 840

rba 3/7/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	ICB,ICB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028482-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028482-002C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028482-010C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028482-011C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028482-014C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028482-001CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028482-001CMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028482-014CDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028482-017C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028482-003C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028482-004C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028482-005C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028482-006C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028482-007C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028482-008C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028482-009C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028482-017CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028482-012C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	N028482-013C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	N028483-003D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	N028483-004D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
39	N028483-005D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
40	N028482-010C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
41	N028482-011C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	ICV,ICV,1	2/8/2018 10:31:41 AM	ICV
10	ICV,ICV,1	2/8/2018 11:00:04 AM	ICV
11	ICB,ICB,1	2/8/2018 11:15:22 AM	ICB
12	MB-H2O,MBLK,1	2/8/2018 11:30:40 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/8/2018 11:45:58 AM	LCS
14	N028482-001C,SAMP,1	2/8/2018 12:01:16 PM	SAMP,10mL
15	N028482-002C,SAMP,1	2/8/2018 12:16:34 PM	SAMP,10mL
16	N028482-010C,SAMP,1	2/8/2018 12:31:51 PM	SAMP,10mL
17	N028482-011C,SAMP,1	2/8/2018 12:47:09 PM	SAMP,10mL
18	N028482-014C,SAMP,1	2/8/2018 1:02:27 PM	SAMP,10mL
19	N028482-001CMS,MS,1	2/8/2018 1:17:45 PM	MS,10mL
20	N028482-001CMSD,MSD,1	2/8/2018 1:33:03 PM	MSD,10mL
21	N028482-014CDUP,DUP,1	2/8/2018 1:48:21 PM	DUP,10mL
22	CCV-1,CCV,1	2/8/2018 2:03:39 PM	CCV
23	CCB-1,CCB,1	2/8/2018 2:18:57 PM	CCB
24	N028482-017C,SAMP,1	2/8/2018 2:36:38 PM	SAMP,10mL
25	N028482-003C,SAMP,1	2/8/2018 2:51:56 PM	SAMP,10mL
26	N028482-004C,SAMP,5	2/8/2018 3:07:14 PM	SAMP,2>10mL
27	N028482-005C,SAMP,10	2/8/2018 3:22:32 PM	SAMP,1>10mL
28	N028482-006C,SAMP,10	2/8/2018 3:37:50 PM	SAMP,1>10mL
29	N028482-007C,SAMP,5	2/8/2018 3:53:08 PM	SAMP,2>10mL
30	N028482-008C,SAMP,5	2/8/2018 4:08:26 PM	SAMP,2>10mL
31	N028482-009C,SAMP,5	2/8/2018 4:23:43 PM	SAMP,2>10mL
32	N028482-017CMS,MS,1	2/8/2018 4:39:01 PM	MS,10mL
33	N028482-012C,SAMP,5	2/8/2018 4:54:19 PM	SAMP,2>10mL
34	CCV-2,CCV,1	2/8/2018 5:09:37 PM	CCV
35	CCB-2,CCB,1	2/8/2018 5:24:55 PM	CCB
36	N028482-013C,SAMP,1	2/8/2018 5:40:13 PM	SAMP,10mL
37	N028483-003D,SAMP,1	2/8/2018 5:55:31 PM	SAMP,10mL
38	N028483-004D,SAMP,1	2/8/2018 6:10:49 PM	SAMP,10mL
39	N028483-005D,SAMP,1	2/8/2018 6:26:08 PM	SAMP,10mL
40	N028482-010C,SAMP,2	2/8/2018 6:41:26 PM	SAMP,5>10mL
41	N028482-011C,SAMP,2	2/8/2018 6:56:44 PM	SAMP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N028482-004C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
43	N028469-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
44	N028469-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
45	N028469-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
46	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
47	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
48	N028469-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
49	N028469-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
50	N028469-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
51	N028482-010C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
52	N028482-011C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
53	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
54	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N028482-004C,SAMP,1	2/8/2018 7:12:02 PM	SAMP,10mL
43	N028469-001B,SAMP,50	2/8/2018 7:27:20 PM	SAMP,0.2>10mL
44	N028469-001BMS,MS,50	2/8/2018 7:42:39 PM	MS,0.2>10mL
45	N028469-001BMSD,MSD,50	2/8/2018 7:57:57 PM	MSD,0.2>10mL
46	CCV-3,CCV,1	2/8/2018 8:13:15 PM	CCV
47	CCB-3,CCB,1	2/8/2018 8:28:32 PM	CCB
48	N028469-001BDUP,DUP,50	2/8/2018 8:43:50 PM	DUP,0.2>10mL
49	N028469-002B,SAMP,500	2/8/2018 8:59:08 PM	SAMP,0.02>10mL
50	N028469-002B,SAMP,50	2/8/2018 9:14:26 PM	SAMP,0.2>10mL
51	N028482-010C,SAMP,10	2/8/2018 9:29:44 PM	SAMP,1>10mL
52	N028482-011C,SAMP,10	2/8/2018 9:45:02 PM	SAMP,1>10mL
53	CCV-4,CCV,1	2/8/2018 10:00:20 PM	CCV
54	CCB-4,CCB,1	2/8/2018 10:15:38 PM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 31
Created: 2/23/2018 9:15:07 AM by IC-05
Last Update: 2/23/2018 4:39:02 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028744-003D,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028744-004D,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028744-005D,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028744-003DDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028744-003DMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028744-003DMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028744-003D,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028744-003DDUP,DUP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028744-003DMS,MS,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028744-003DMSD,MSD,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028744-004D,SAMP,2000	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028744-004D,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028744-005D,SAMP,1000	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028744-005D,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 3/4/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 31
Created: 2/23/2018 9:15:07 AM by IC-05
Last Update: 2/23/2018 4:39:02 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	BLANK,BLANK,1	2/23/2018 9:15:38 AM	BLANK
10	CCV-1,CCV,1	2/23/2018 9:30:56 AM	CCV
11	CCB-1,CCB,1	2/23/2018 9:46:14 AM	CCB
12	MB-H2O,MBLK,1	2/23/2018 10:01:32 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/23/2018 10:16:50 AM	LCS
14	N028744-003D,SAMP,5	2/23/2018 11:05:43 AM	SAMP,2>10mL
15	N028744-004D,SAMP,5	2/23/2018 11:21:00 AM	SAMP,2>10mL
16	N028744-005D,SAMP,10	2/23/2018 11:36:19 AM	SAMP,1>10mL
17	N028744-003DDUP,DUP,5	2/23/2018 11:59:09 AM	DUP,2>10mL
18	N028744-003DMS,MS,5	2/23/2018 12:14:27 PM	MS,2>10mL
19	N028744-003DMSD,MSD,5	2/23/2018 12:29:45 PM	MSD,2>10mL
20	N028744-003D,SAMP,200	2/23/2018 12:53:25 PM	SAMP,0.05>10mL
21	N028744-003DDUP,DUP,200	2/23/2018 1:09:48 PM	DUP,0.05>10mL
22	CCV-2,CCV,1	2/23/2018 1:25:06 PM	CCV
23	CCB-2,CCB,1	2/23/2018 1:40:25 PM	CCB
24	N028744-003DMS,MS,200	2/23/2018 1:55:43 PM	MS,0.05>10mL
25	N028744-003DMSD,MSD,200	2/23/2018 2:11:00 PM	MSD,0.05>10mL
26	N028744-004D,SAMP,2000	2/23/2018 2:47:02 PM	SAMP,0.005>10mL
27	N028744-004D,SAMP,100	2/23/2018 3:02:19 PM	SAMP,0.1>10mL
28	N028744-005D,SAMP,1000	2/23/2018 3:17:37 PM	SAMP,0.1>10mL
29	N028744-005D,SAMP,100	2/23/2018 3:32:56 PM	SAMP,0.1>10mL
30	CCV-3,CCV,1	2/23/2018 4:03:02 PM	CCV
31	CCB-3,CCB,1	2/23/2018 4:18:20 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0042	0.0158	0.0293	0.0759	0.1534	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/07/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0718	0.1461	0.2992	0.7607	1.5900	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 03/07/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0484	0.2152	0.4528	1.1684	2.4370	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/07/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **ICV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2939992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.236	0.50	1.250	0	98.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.246	0.50	1.250	0	99.7	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.243	0.50	1.250	0	99.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.236	0.50	1.250	0	98.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **ICV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2939976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.978	0.50	2.000	0	98.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.923	0.50	2.000	0	96.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.948	0.50	2.000	0	97.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.956	0.50	2.000	0	97.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **ICV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2940008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.841	0.50	4.000	0	96.0	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.171	0.50	4.000	0	104	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.246	0.50	4.000	0	106	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCV**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940022**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.220	0.50	4.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122266**
Client ID:	**ICB**	Batch ID:	**R122266**	TestNo:	**EPA 300.0**			Analysis Date:	**2/8/2018**	SeqNo:	**2939993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122266**
Client ID:	**CCB**	Batch ID:	**R122266**	TestNo:	**EPA 300.0**			Analysis Date:	**2/23/2018**	SeqNo:	**2939995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122266**
Client ID:	**CCB**	Batch ID:	**R122266**	TestNo:	**EPA 300.0**			Analysis Date:	**2/23/2018**	SeqNo:	**2940005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122266**
Client ID:	**CCB**	Batch ID:	**R122266**	TestNo:	**EPA 300.0**			Analysis Date:	**2/23/2018**	SeqNo:	**2940007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **ICB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2939977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2939991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **ICB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2940009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122266**
Client ID: **CCB**	Batch ID: **R122266**	TestNo: **EPA 300.0**		Analysis Date: **2/23/2018**	SeqNo: **2940023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/23/2018

Sample Name		Retention Time	Evaluation
ICV	Bromide	5.740	
CCV-1	Bromide	5.677	
CCV-2	Bromide	5.650	
CCV-3	Bromide	5.620	

Average 5.649

Applied RT Window 5.449 - 5.849

MB-R122266_BR	Bromide	N.A.	N.A.
LCS-R122266_BR	Bromide	5.644	PASS
N028744-003D	Bromide	5.647	PASS
N028744-004D	Bromide	N.A.	N.A.
N028744-005D	Bromide	N.A.	N.A.
N028744-003DDUP	Bromide	5.630	PASS
N028744-003DMS	Bromide	5.623	PASS
N028744-003DMSD	Bromide	5.627	PASS

rba 3/7/2018

RLB 03/07/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/23/2018

Sample Name		Retention Time	Evaluation
ICV	Chloride	4.207	
CCV-1	Chloride	4.180	
CCV-2	Chloride	4.157	
CCV-3	Chloride	4.137	
	Average	4.158	
	Applied RT Window	3.958 - 4.358	
MB-R122266_CL	Chloride	4.157	PASS
LCS-R122266_CL	Chloride	4.154	PASS
N028744-003D	Chloride	4.157	PASS
N028744-003DDUP	Chloride	4.157	PASS
N028744-003DMS	Chloride	4.157	PASS
N028744-003DMSD	Chloride	4.157	PASS
N028744-004D	Chloride	4.140	PASS
N028744-005D	Chloride	4.140	PASS

rba 3/7/2018

RB 03/07/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/23/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	9.754	
CCV-1	Sulfate	9.590	
CCV-2	Sulfate	9.547	
CCV-3	Sulfate	9.500	
	Average	9.546	
	Applied RT Window	9.346 - 9.746	
MB-R122266_SO4	Sulfate	N.A.	N.A.
LCS-R122266_SO4	Sulfate	9.474	PASS
N028744-003D	Sulfate	9.487	PASS
N028744-003DDUP	Sulfate	9.483	PASS
N028744-003DMS	Sulfate	9.480	PASS
N028744-003DMSD	Sulfate	9.477	PASS
N028744-004D	Sulfate	9.444	PASS
N028744-005D	Sulfate	9.447	PASS

rba 3/7/2018

RLB 03/07/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122450 **Analyst:** QBM

ASSET #: N028744, N028745 **Date Analyzed:** 3/5/2018

Method: 4500_NO3

Initial Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/7/2018

2nd Level Reviewer RJB 03/07/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028744-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N = 0.9198 * 10
= 9.198 mg/L

Reporting result in two significant figures,

Nitrate/Nitrite-N = 9.2 mg/L

RLB 03/07/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

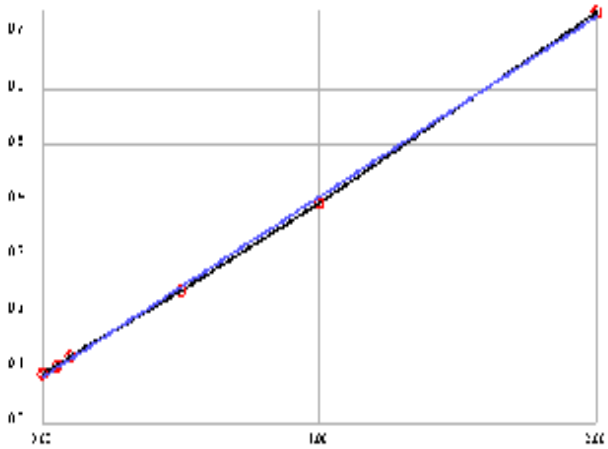
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3236x + 0.0836
Correlation	.999477

Calibrant	Energy	Set	Conc
1	0.0882	0.0000	0.0143
2	0.1036	0.0500	0.0619
3	0.1198	0.1000	0.1120
4	0.2377	0.5000	0.4763
5	0.3945	1.0000	0.9609
6	0.7387	2.0000	2.0246

Notes:

03/07/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **ICV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.517	0.050	0.5000	0	103	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.539	0.050	0.5000	0	108	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.485	0.050	0.5000	0	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **ICB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.030	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.038	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-05-2018 16:40
Time end: 03-05-2018 19:39

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:57:33	0.0103		0.0869
2	<BLANK>	18:58:32	0.0205		0.0902
3	<CAL1>	18:59:27	0.0143	[0]	0.0882
4	<CAL2>	19:00:23	0.0619	[0.05]	0.1036
5	<CAL3>	19:01:23	0.1120	[0.1]	0.1198
6	<CAL4>	19:02:19	0.4763	[0.5]	0.2377
7	<CAL5>	19:03:14	0.9609	[1]	0.3945
8	<CAL6>	19:04:16	2.0246	[2]	0.7387
9	,BLANK,BLANK,1, NOT REPORTED	19:05:10	0.0616		0.1035
10	,ICV,ICV,1,	19:06:06	0.5174		0.2510
11	,ICB,ICB,1,	19:07:08	0.0301		0.0933
12	,MB-H2O,MBLK,1,	19:08:02	0.0230		0.0910
13	,LCS-H2O,LCS,1,	19:08:57	0.4933		0.2432
14	,N028744-001C,SAMP,10,	19:09:59	0.9198		0.3812
15	,N028744-001CDUP,DUP,10,	19:10:55	0.8614		0.3623
16	,N028744-002C,SAMP,20,	19:11:49	0.6052		0.2794
17	,N028744-003C,SAMP,20,	19:12:51	0.9878		0.4032
18	,N028744-005C,SAMP,5,	19:13:46	0.8030		0.3434
19	,N028744-005CMS,MS,5,	19:14:40	1.2671		0.4936
20	,N028744-005CMSD,MSD,5,	19:15:42	1.2866		0.4999
21	,BLANK, NOT REPORTED	19:16:38	0.1386		0.1284
22	,CCV-1,CCV,1,	19:17:34	0.5387		0.2579
23	,CCB-1,CCB,1,	19:18:34	0.0384		0.0960
24	,N028744-004C,SAMP,1,	19:19:29	0.0520		0.1004
25	,N028744-006C,SAMP,20,	19:20:31	0.6951		0.3085
26	,N028745-001E,SAMP,1,	19:21:27	0.4525		0.2300

RB 03/07/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028745-002E,SAMP,1,	19:22:21	0.4714		0.2361
28	,N028745-003E,SAMP,1,	19:23:23	0.4235		0.2206
29	,N028745-004E,SAMP,1,	19:24:06	0.4748		0.2372
30	,N028745-005E,SAMP,1,	19:24:54	0.4479		0.2285
31	,N028745-006E,SAMP,1,	19:25:38	0.4436		0.2271
32	,N028745-007E,SAMP,1,	19:26:26	0.4408		0.2262
33	,BLANK, NOT REPORTED	19:27:09	0.0208		0.0903
34	,CCV-2,CCV,1, NOT REPORTED	19:27:51	0.4680		0.2350
35	,CCV-2,CCV,1,	19:28:35	0.4649		0.2340
36	,CCB-2,CCB,1,	19:29:24	0.0180		0.0894
37	,N028745-008E,SAMP,1,	19:30:06	0.4565		0.2313
38	,N028745-009E,SAMP,1,	19:30:50	0.4912		0.2425
39	,N028745-010E,SAMP,1,	19:31:38	0.4068		0.2152
40	,N028745-011E,SAMP,1,	19:32:21	0.4510		0.2295
41	,N028745-012E,SAMP,1,	19:33:09	0.4479		0.2285
42	,N028745-014E,SAMP,1,	19:33:53	0.4476		0.2284
43	,N028745-015E,SAMP,1,	19:34:35	0.4362		0.2247
44	,BLANK, NOT REPORTED	19:35:24	0.0214		0.0905
45	,CCV-3,CCV,1, NOT REPORTED	19:36:08	0.4621		0.2331
46	,CCV-3,CCV,1,	19:36:50	0.4853		0.2406
47	,CCB-3,CCB,1,	19:37:39	0.0162		0.0888

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/5/2018
Time Analyzed: 4:37 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180302B
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028744-001C		8.30							
N028744-002C		6.08							
N028744-003C		6.46							
N028744-004C		7.37							
N028744-005C		6.79							
N028744-006C		7.39							
N028745-001E		6.84							
N028745-002E		7.71							
N028745-003E		7.30							
N028745-004E		7.6							
N028745-005E		7.48							
N028745-006E		7.51							
N028745-007E		8.01							
N028745-008E		7.75							
N028745-009E		8.50							
N028745-010E		7.38							
N028745-011E		7.23							
N028745-012E		8.05							
N028745-014E		7.41							
N028745-015E		7.18							

Advanced Technology Laboratories, Inc.
Book # 1

RB 03/07/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66914
ASSET #: N028744

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?		X			X	
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Se CCV9 failed, bias low. However, samples affected are closed by CCV-6.
%Rec of Cr in N028744-001B PS/MS/MSD failed. However, LCS and DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18

2nd Level Reviewer 3/7/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028744-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 104.779 * 5 * (25/25)

Chromium , ug/L = 523.895

Reporting results in two significant figures,

Chromium , ug/L = 520

% RSD SUMMARY

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	5.12	15	PASS	0.12	11.53	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	2.22	15	PASS	0.54	8.53	15	PASS
Std3-5/50 ppb	ICAL	1	5.097	0.38	15	PASS	5.23	1.053	15	PASS
Std4-10/100 ppb	ICAL	1	10.082	1.015	15	PASS	10.49	1.96	15	PASS
Std5-20/200 ppb	ICAL	1	19.99	0.9	15	PASS	20.53	1.81	15	PASS
Std6-40/400 ppb	ICAL	1	40	0.47	15	PASS	40.95	2.47	15	PASS
Std7-100/1000 ppb	ICAL	1	98.27	0.021	15	PASS	100.58	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	200.86	0.6	15	PASS	199.44	1.29	15	PASS
ICV	ICV	1	10.16	0.41	15	PASS	104.57	0.95	15	PASS
ICB	ICB	1	0.002	10.77	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.08	0.85	20	PASS	0.6	4.38	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.65	0.5	15	PASS	22.75	1.42	15	PASS
LLICV	CCV1	1	1.094	3.52	20	PASS	0.57	7.89	20	PASS
MB-66914	MBLK	1	0.0033	124.93	15	<PQL	<0.000	N/A	15	<PQL
LCS-66914	LCS	1	10.24	0.87	15	PASS	103.94	1.36	15	PASS
N028744-001B	SAMP	1	31.18	0.59	15	PASS	6.3	1.94	15	PASS
N028744-001B	SAMP	5	6.64	0.43	15	PASS	1.4	4.13	15	PASS
N028744-001B	SAMP	25	<0.000	N/A	15	<PQL	0.29	9.98	15	PASS
N028744-001B-PS	PS	1	40.13	0.91	15	PASS	100.17	0.78	15	PASS
N028744-001B-PS	PS	5	8.71	0.7	15	PASS	22.051	0.3	15	PASS
N028744-001B-MS	MS	1	40.83	0.58	15	PASS	98.19	1.58	15	PASS
N028744-001B-MS	MS	5	8.77	0.92	15	PASS	21.69	2.13	15	PASS
N028744-001B-MSD	MSD	1	41.2	0.63	15	PASS	98.37	0.94	15	PASS
CCV1	CCV	1	20.64	0.29	15	PASS	20.64	0.66	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.00011	2757.76	15	<PQL
N028744-001B-MSD	MSD	5	8.82	1.8	15	PASS	21.92	1.41	15	PASS
N028744-002B	SAMP	1	39.96	0.18	15	PASS	47.93	0.91	15	PASS
N028744-002B	SAMP	5	5.44	2	15	PASS	10.61	2.099	15	PASS
N028744-003B	SAMP	1	27.76	0.42	15	PASS	1.013	8.23	15	PASS
N028744-003B	SAMP	5	2.87	1.15	15	PASS	0.27	23.51	15	<PQL
N028744-003B	SAMP	25	0.58	3.17	15	PASS	0.044	55.87	15	<PQL
N028744-004B	SAMP	1	65.2	0.77	15	PASS	21.53	0.46	15	PASS
N028744-004B	SAMP	5	13.57	0.42	15	PASS	4.47	1.44	15	PASS
N028744-005B	SAMP	1	41.95	0.093	15	PASS	23.58	0.18	15	PASS
N028744-005B	SAMP	5	8.88	0.26	15	PASS	5.17	2.48	15	PASS
CCV2	CCV	1	21.19	0.23	15	PASS	20.17	0.42	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0023	100.12	15	<PQL
N028744-006B	SAMP	1	28.059	0.23	15	PASS	3.27	2.19	15	PASS
N028744-006B	SAMP	5	2.79	3.1	15	PASS	0.74	6.31	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	119.48	1.12	15	PASS	0.33	26.08	15	<PQL
N028745-001B	SAMP	5	24.95	0.6	15	PASS	0.13	18.96	15	<PQL
N028745-002B	SAMP	1	115.31	0.75	15	PASS	0.76	11.82	15	PASS
N028745-002B	SAMP	5	24.27	0.83	15	PASS	0.16	7.54	15	PASS
N028745-003B	SAMP	1	118.82	0.46	15	PASS	<0.000	N/A	15	<PQL
N028745-003B	SAMP	5	25.019	0.2	15	PASS	<0.000	N/A	15	<PQL
N028745-004B	SAMP	1	115.62	0.33	15	PASS	3.32	1.84	15	PASS
N028745-004B	SAMP	5	24.42	0.46	15	PASS	0.7	4.17	15	PASS
CCV3	CCV	1	21.25	0.69	15	PASS	20.63	1.85	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0041	74.06	15	<PQL
N028745-005B	SAMP	1	117.44	0.17	15	PASS	0.31	22.65	15	<PQL
N028745-005B	SAMP	5	24.45	0.25	15	PASS	0.058	6.43	15	PASS
N028745-006B	SAMP	1	119.88	0.4	15	PASS	<0.000	N/A	15	<PQL
N028745-006B	SAMP	5	24.82	0.32	15	PASS	<0.000	N/A	15	<PQL
N028745-007B	SAMP	1	114.054	0.45	15	PASS	<0.000	N/A	15	<PQL
N028745-007B	SAMP	5	23.62	0.39	15	PASS	<0.000	N/A	15	<PQL
N028745-008B	SAMP	1	115	0.46	15	PASS	0.17	55.12	15	<PQL
N028745-008B	SAMP	5	23.54	0.4	15	PASS	0.031	33.11	15	<PQL
N028745-009B	SAMP	1	116.58	0.37	15	PASS	0.28	15.019	15	<PQL
N028745-009B	SAMP	5	24.28	0.9	15	PASS	0.095	15.19	15	<PQL
CCV4	CCV	1	20.89	0.15	15	PASS	20.71	0.75	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028745-010B	SAMP	1	116.31	0.21	15	PASS	<0.000	N/A	15	<PQL
N028745-010B	SAMP	5	24.35	0.37	15	PASS	<0.000	N/A	15	<PQL
N028745-011B	SAMP	1	116.71	0.51	15	PASS	<0.000	N/A	15	<PQL
N028745-011B	SAMP	5	24.085	0.48	15	PASS	<0.000	N/A	15	<PQL
N028745-012B	SAMP	1	113.84	0.4	15	PASS	3.75	5.3	15	PASS
N028745-012B	SAMP	5	23.32	0.93	15	PASS	0.61	6.95	15	PASS
N028745-014B	SAMP	1	114.48	0.48	15	PASS	5.72	1.32	15	PASS
N028745-014B	SAMP	5	23.49	0.67	15	PASS	1.23	4.3	15	PASS
N028745-015B	SAMP	1	118.89	0.4	15	PASS	4.17	2.7	15	PASS
N028745-015B	SAMP	5	23.93	0.3	15	PASS	1.1	32.63	15	NR!
CCV5	CCV	1	20.82	0.56	15	PASS	20.86	1.3	15	PASS
CCB5	CCB	1	0.00068	364.98	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.092	0.11	20	PASS	0.56	3.33	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.72	0.27	15	PASS	22.89	1.074	15	PASS
N028745-005B	SAMP	1	117.73	0.32	15	PASS	0.33	36.81	15	<PQL
N028745-009B	SAMP	1	115.49	0.92	15	PASS	0.23	29.25	15	<PQL
N028745-012B	SAMP	1	113.84	0.77	15	PASS	3.83	3.25	15	PASS
N028745-015B	SAMP	1	118.44	0.34	15	PASS	16.22	55.066	15	NR!

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	0.9	1.66	15	PASS	0.23	5.9	15	PASS
N028744-005B	SAMP	25	<0.000	N/A	15	<PQL	1.14	2.011	15	PASS
N028726-001B-MSD	MSD	5	10.47	0.99	15	PASS	46.56	0.73	15	PASS
N028726-003B	SAMP	5	8.28	1.92	15	PASS	2.2	0.91	15	PASS
N028727-006B	SAMP	1	116.82	0.38	15	PASS	<0.000	N/A	15	<PQL
N028745-015B	SAMP	1	120.74	0.42	15	PASS	4.21	2.52	15	PASS
CCV6	CCV	1	21.25	0.66	15	PASS	20.56	2.65	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028717-001C	SAMP	25	1.99	1.75	15	PASS	2.017	7.22	15	PASS
N028696-001B	SAMP	1	17.25	0.86	15	PASS	120.098	1.39	15	PASS
N028696-001A	SAMP	1	7.32	0.37	15	PASS	5.49	0.54	15	PASS
N028696-005B	SAMP	1	44.88	0.29	15	PASS	58.85	1.67	15	PASS
N028696-005A	SAMP	1	47.17	0.93	15	PASS	61.34	0.9	15	PASS
CCV7	CCV	1	21.35	1.097	15	PASS	20.19	2.44	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	21.014	0.73	15	PASS	20.017	0.57	15	PASS
CCB8	CCB	1	0.0033	110.87	15	<PQL	0.006	134.007	15	<PQL
CCV9	CCV	1	20.83	0.31	15	PASS	20.98	1.36	15	PASS
CCB9	CCB	1	0.01	13.17	15	PASS	0.038	29.42	15	<PQL
CCV10	CCV	1	20.81	1.29	15	PASS	20.93	2.17	15	PASS
CCB10	CCB	1	0.014	16.16	15	<PQL	0.027	51.11	15	<PQL
LLCCV2	CCV2	1	1.13	0.81	20	PASS	0.59	1.29	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.36	0.49	15	PASS	23.61	0.69	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	14.15	15	PASS	0.086	57.34	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.55	2.084	15	PASS	0.53	19.27	15	NR!
Std3-5/50 ppb	ICAL	1	5.31	3.62	15	PASS	5.015	8.17	15	PASS
Std4-10/100 ppb	ICAL	1	10.0062	2.63	15	PASS	9.86	5.61	15	PASS
Std5-20/200 ppb	ICAL	1	19.88	2.3	15	PASS	19.72	2.077	15	PASS
Std6-40/400 ppb	ICAL	1	40.96	0.82	15	PASS	40.13	4.25	15	PASS
Std7-100/1000 ppb	ICAL	1	99.5	0.91	15	PASS	100.19	1.56	15	PASS
Std8-200/2000 ppb	ICAL	1	200.063	0.79	15	PASS	199.91	1.53	15	PASS
ICV	ICV	1	10.17	1.51	15	PASS	10.17	3.49	15	PASS
ICB	ICB	1	0.022	42.45	15	<PQL	0.029	59.41	15	<PQL
LLICV	CCV1	1	0.11	14.76	20	PASS	0.47	20.13	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.012	151.17	15	<PQL
ICSAB1	ICSAB	1	19.17	2.38	15	PASS	17.36	4.053	15	PASS
LLICV	CCV1	1	0.13	7.93	20	PASS	0.5	18.72	20	PASS
MB-66914	MBLK	1	0.0018	326.15	15	<PQL	0.015	159.33	15	<PQL
LCS-66914	LCS	1	10.37	1.57	15	PASS	9.91	2.32	15	PASS
N028744-001B	SAMP	1	2.071	3.13	15	PASS	7.66	4.3	15	PASS
N028744-001B	SAMP	5	0.41	10.61	15	PASS	1.32	1.31	15	PASS
N028744-001B	SAMP	25	0.087	25.27	15	<PQL	0.3	14.97	15	PASS
N028744-001B-PS	PS	1	12.79	0.3	15	PASS	16.99	7.74	15	PASS
N028744-001B-PS	PS	5	2.73	2.84	15	PASS	3.55	3.077	15	PASS
N028744-001B-MS	MS	1	12.92	2.0079	15	PASS	17.088	3.5	15	PASS
N028744-001B-MS	MS	5	2.66	1.7	15	PASS	3.6	3.79	15	PASS
N028744-001B-MSD	MSD	1	12.85	0.81	15	PASS	17.13	3.41	15	PASS
CCV1	CCV	1	20.29	2.048	15	PASS	19.41	2.69	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028744-001B-MSD	MSD	5	2.67	2.19	15	PASS	3.6	9.41	15	PASS
N028744-002B	SAMP	1	0.8	10.48	15	PASS	8.5	6.55	15	PASS
N028744-002B	SAMP	5	0.18	11.44	15	PASS	1.9	20.82	15	NR!
N028744-003B	SAMP	1	2.69	4.5	15	PASS	12.74	3.05	15	PASS
N028744-003B	SAMP	5	0.57	6.61	15	PASS	2.47	25.6	15	NR!
N028744-003B	SAMP	25	0.1	15.088	15	NR!	0.61	16.1	15	NR!
N028744-004B	SAMP	1	0.89	0.16	15	PASS	0.066	34.63	15	<PQL
N028744-004B	SAMP	5	0.19	11.71	15	PASS	0.028	105.61	15	<PQL
N028744-005B	SAMP	1	1.65	3.24	15	PASS	4	6.36	15	PASS
N028744-005B	SAMP	5	0.35	11.066	15	PASS	0.8	7.31	15	PASS
CCV2	CCV	1	20.62	1.63	15	PASS	19.26	3.42	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0047	196.16	15	<PQL
N028744-006B	SAMP	1	2.11	2.88	15	PASS	10.63	4.85	15	PASS
N028744-006B	SAMP	5	0.4	3.79	15	PASS	2.079	15.8	15	NR!

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	2.27	0.54	15	PASS	1.66	15.013	15	NR!
N028745-001B	SAMP	5	0.44	11.64	15	PASS	0.41	21.2	15	<PQL
N028745-002B	SAMP	1	2.3	1.63	15	PASS	1.45	11.32	15	PASS
N028745-002B	SAMP	5	0.45	1.95	15	PASS	0.34	8.57	15	PASS
N028745-003B	SAMP	1	2.41	2.52	15	PASS	1.63	9.51	15	PASS
N028745-003B	SAMP	5	0.52	10.071	15	PASS	0.38	20.54	15	<PQL
N028745-004B	SAMP	1	2.19	4.11	15	PASS	1.61	9.14	15	PASS
N028745-004B	SAMP	5	0.46	9.85	15	PASS	0.31	46.24	15	<PQL
CCV3	CCV	1	20.42	1.056	15	PASS	19.43	1.72	15	PASS
CCB3	CCB	1	0.0018	420.41	15	<PQL	0.036	89.66	15	<PQL
N028745-005B	SAMP	1	2.27	4.4	15	PASS	1.54	19.99	15	NR!
N028745-005B	SAMP	5	0.46	7	15	PASS	0.32	13.26	15	PASS
N028745-006B	SAMP	1	2.36	7.46	15	PASS	1.72	4.45	15	PASS
N028745-006B	SAMP	5	0.47	5.26	15	PASS	0.3	17.48	15	<PQL
N028745-007B	SAMP	1	2.14	3	15	PASS	1.72	5.16	15	PASS
N028745-007B	SAMP	5	0.47	3.7	15	PASS	0.28	29.5	15	<PQL
N028745-008B	SAMP	1	2.22	0.79	15	PASS	1.48	11.12	15	PASS
N028745-008B	SAMP	5	0.48	3.31	15	PASS	0.27	36.38	15	<PQL
N028745-009B	SAMP	1	2.23	2.92	15	PASS	1.43	16.67	15	NR!
N028745-009B	SAMP	5	0.43	9.16	15	PASS	0.3	20.16	15	<PQL
CCV4	CCV	1	20.24	4.11	15	PASS	19.64	3.32	15	PASS
CCB4	CCB	1	0.00058	1699.67	15	<PQL	0.011	155.22	15	<PQL
N028745-010B	SAMP	1	2.15	3.43	15	PASS	1.76	4.12	15	PASS
N028745-010B	SAMP	5	0.42	2.079	15	PASS	0.31	23.17	15	<PQL
N028745-011B	SAMP	1	2.28	2.98	15	PASS	1.54	10.12	15	PASS
N028745-011B	SAMP	5	0.47	8.92	15	PASS	0.32	39.52	15	<PQL
N028745-012B	SAMP	1	2.051	4.95	15	PASS	1.52	19.5	15	NR!
N028745-012B	SAMP	5	0.47	5.42	15	PASS	0.24	42.28	15	<PQL
N028745-014B	SAMP	1	2.17	4.94	15	PASS	1.55	13.25	15	PASS
N028745-014B	SAMP	5	0.42	6.41	15	PASS	0.38	40.44	15	<PQL
N028745-015B	SAMP	1	2.24	3.68	15	PASS	1.62	18.37	15	NR!
N028745-015B	SAMP	5	0.42	8.011	15	PASS	0.3	25.53	15	<PQL
CCV5	CCV	1	20.33	2.084	15	PASS	19.47	1.2	15	PASS
CCB5	CCB	1	0.0096	69.42	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.094	6.052	20	PASS	0.51	21.97	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.29	0.91	15	PASS	17.66	4.018	15	PASS
N028745-005B	SAMP	1	2.29	4.95	15	PASS	1.65	10.94	15	PASS
N028745-009B	SAMP	1	2.15	4.83	15	PASS	1.86	7.91	15	PASS
N028745-012B	SAMP	1	2.13	0.3	15	PASS	1.33	12.55	15	PASS
N028745-015B	SAMP	1	28.62	91.77	15	NR!	87.28	32.8	15	NR!

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	0.0091	131.87	15	<PQL	0.04	88.87	15	<PQL
N028744-005B	SAMP	25	0.071	1.9	15	PASS	0.11	25.55	15	<PQL
N028726-001B-MSD	MSD	5	3.79	0.81	15	PASS	2.21	6.48	15	PASS
N028726-003B	SAMP	5	1.64	6.17	15	PASS	0.56	13.76	15	PASS
N028727-006B	SAMP	1	2.21	1.41	15	PASS	1.8	10.85	15	PASS
N028745-015B	SAMP	1	2.22	1.74	15	PASS	1.65	13.13	15	PASS
CCV6	CCV	1	20.18	0.78	15	PASS	18.77	1.14	15	PASS
CCB6	CCB	1	0.0069	203	15	<PQL	0.021	45.37	15	<PQL
N028717-001C	SAMP	25	0.051	11.88	15	PASS	0.053	46.61	15	<PQL
N028696-001B	SAMP	1	1.32	6.99	15	PASS	0.061	73.044	15	<PQL
N028696-001A	SAMP	1	1.26	9.52	15	PASS	0.029	81.56	15	<PQL
N028696-005B	SAMP	1	12.98	2.36	15	PASS	0.18	26.16	15	<PQL
N028696-005A	SAMP	1	13.76	2.78	15	PASS	0.11	40.26	15	<PQL
CCV7	CCV	1	20.66	1.56	15	PASS	19.38	0.73	15	PASS
CCB7	CCB	1	0.000093	6115.25	15	<PQL	0.01	158.58	15	<PQL
CCV8	CCV	1	20.81	1.23	15	PASS	19.96	2.88	15	PASS
CCB8	CCB	1	0.0011	353.57	15	<PQL	0.046	38.65	15	<PQL
CCV9	CCV	1	20.039	0.3	15	PASS	17.82	4.35	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.025	113.29	15	<PQL
CCV10	CCV	1	20.34	0.89	15	PASS	19.12	1.8	15	PASS
CCB10	CCB	1	0.0031	241.38	15	<PQL	0.013	2.041	15	PASS
LLCCV2	CCV2	1	0.11	24.16	20	NR!	0.45	14.31	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.027	151.89	15	<PQL
ICSAB3	ICSAB	1	19.52	1.034	15	PASS	17.81	1.82	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.082	7.055	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	2.43	15	PASS
Std3-5/50 ppb	ICAL	1	4.93	1.78	15	PASS
Std4-10/100 ppb	ICAL	1	9.93	0.36	15	PASS
Std5-20/200 ppb	ICAL	1	19.6	1.06	15	PASS
Std6-40/400 ppb	ICAL	1	39.74	0.97	15	PASS
Std7-100/1000 ppb	ICAL	1	99.1	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	200.55	0.64	15	PASS
ICV	ICV	1	10.86	1.17	15	PASS
ICB	ICB	1	0.24	10.011	15	PASS
LLICV	CCV1	1	0.6	4.24	20	PASS
ICSA1	ICSA	1	0.078	10.095	15	PASS
ICSAB1	ICSAB	1	20.43	0.63	15	PASS
LLICV	CCV1	1	0.58	2.76	20	PASS
MB-66914	MBLK	1	0.03	26.59	15	<PQL
LCS-66914	LCS	1	10.063	0.43	15	PASS
N028744-001B	SAMP	1	28.54	0.66	15	PASS
N028744-001B	SAMP	5	5.8	0.48	15	PASS
N028744-001B	SAMP	25	1.092	3.007	15	PASS
N028744-001B-PS	PS	1	39.34	0.4	15	PASS
N028744-001B-PS	PS	5	7.98	0.77	15	PASS
N028744-001B-MS	MS	1	39.64	1.3	15	PASS
N028744-001B-MS	MS	5	8.13	1.41	15	PASS
N028744-001B-MSD	MSD	1	39.47	1.44	15	PASS
CCV1	CCV	1	19.8	0.37	15	PASS
CCB1	CCB	1	0.13	6.12	15	PASS
N028744-001B-MSD	MSD	5	7.87	1.95	15	PASS
N028744-002B	SAMP	1	61.68	0.61	15	PASS
N028744-002B	SAMP	5	12.096	1.085	15	PASS
N028744-003B	SAMP	1	42.066	1.12	15	PASS
N028744-003B	SAMP	5	8.37	1.59	15	PASS
N028744-003B	SAMP	25	1.72	2.53	15	PASS
N028744-004B	SAMP	1	41.19	1.62	15	PASS
N028744-004B	SAMP	5	8.16	2.88	15	PASS
N028744-005B	SAMP	1	23.26	0.31	15	PASS
N028744-005B	SAMP	5	4.68	1.034	15	PASS
CCV2	CCV	1	20.25	0.069	15	PASS
CCB2	CCB	1	0.1	17.75	15	<PQL
N028744-006B	SAMP	1	67.096	1.25	15	PASS
N028744-006B	SAMP	5	13.14	0.92	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	5.066	1.42	15	PASS
N028745-001B	SAMP	5	1.053	3.06	15	PASS
N028745-002B	SAMP	1	5	0.52	15	PASS
N028745-002B	SAMP	5	1.0086	2.034	15	PASS
N028745-003B	SAMP	1	4.98	2.75	15	PASS
N028745-003B	SAMP	5	1.024	4.27	15	PASS
N028745-004B	SAMP	1	4.96	2.38	15	PASS
N028745-004B	SAMP	5	0.98	2.27	15	PASS
CCV3	CCV	1	20.051	0.43	15	PASS
CCB3	CCB	1	0.11	9.52	15	PASS
N028745-005B	SAMP	1	5.041	0.29	15	PASS
N028745-005B	SAMP	5	0.98	2.74	15	PASS
N028745-006B	SAMP	1	5.15	2.89	15	PASS
N028745-006B	SAMP	5	0.98	3.14	15	PASS
N028745-007B	SAMP	1	4.97	1.93	15	PASS
N028745-007B	SAMP	5	0.95	2.075	15	PASS
N028745-008B	SAMP	1	4.97	1.35	15	PASS
N028745-008B	SAMP	5	0.93	1.44	15	PASS
N028745-009B	SAMP	1	4.94	1.19	15	PASS
N028745-009B	SAMP	5	0.96	3.61	15	PASS
CCV4	CCV	1	19.91	0.43	15	PASS
CCB4	CCB	1	0.082	14.22	15	PASS
N028745-010B	SAMP	1	4.98	2.46	15	PASS
N028745-010B	SAMP	5	0.95	1.75	15	PASS
N028745-011B	SAMP	1	4.91	1.82	15	PASS
N028745-011B	SAMP	5	0.95	4.53	15	PASS
N028745-012B	SAMP	1	4.84	1.34	15	PASS
N028745-012B	SAMP	5	0.94	1.69	15	PASS
N028745-014B	SAMP	1	4.83	3.68	15	PASS
N028745-014B	SAMP	5	0.94	2.15	15	PASS
N028745-015B	SAMP	1	5.13	2.33	15	PASS
N028745-015B	SAMP	5	0.95	5.059	15	PASS
CCV5	CCV	1	19.97	0.41	15	PASS
CCB5	CCB	1	0.082	12.3	15	PASS
LLCCV1	CCV2	1	0.49	1.95	20	PASS
ICSA2	ICSA	1	0.042	17.6	15	<PQL
ICSAB2	ICSAB	1	20.48	0.29	15	PASS
N028745-005B	SAMP	1	5.23	1.13	15	PASS
N028745-009B	SAMP	1	4.98	0.8	15	PASS
N028745-012B	SAMP	1	4.91	1.43	15	PASS
N028745-015B	SAMP	1	851.45	2.57	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	0.2	15.49	15	<PQL
N028744-005B	SAMP	25	0.89	3.48	15	PASS
N028726-001B-MSD	MSD	5	16.0039	0.78	15	PASS
N028726-003B	SAMP	5	11.92	1.14	15	PASS
N028727-006B	SAMP	1	5.074	0.39	15	PASS
N028745-015B	SAMP	1	5.16	2.44	15	PASS
CCV6	CCV	1	20.11	0.41	15	PASS
CCB6	CCB	1	0.11	8.48	15	PASS
N028717-001C	SAMP	25	0.21	6.21	15	PASS
N028696-001B	SAMP	1	49.21	0.98	15	PASS
N028696-001A	SAMP	1	51.42	0.52	15	PASS
N028696-005B	SAMP	1	75.19	0.73	15	PASS
N028696-005A	SAMP	1	80.35	0.93	15	PASS
CCV7	CCV	1	20.17	0.39	15	PASS
CCB7	CCB	1	0.1	0.46	15	PASS
CCV8	CCV	1	19.7	2.26	15	PASS
CCB8	CCB	1	0.073	19.32	15	<PQL
CCV9	CCV	1	20.19	0.86	15	PASS
CCB9	CCB	1	0.18	12.35	15	PASS
CCV10	CCV	1	20.0042	0.36	15	PASS
CCB10	CCB	1	0.093	21.15	15	<PQL
LLCCV2	CCV2	1	0.54	4.86	20	PASS
ICSA3	ICSA	1	0.054	16.76	15	<PQL
ICSAB3	ICSAB	1	20.69	0.81	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0.00	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.10	9.08	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	1.39	15	PASS
Std3-5/50 ppb	ICAL	1	5.27	0.35	15	PASS
Std4-10/100 ppb	ICAL	1	10.63	2.71	15	PASS
Std5-20/200 ppb	ICAL	1	20.77	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	41.09	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	100.83	0.89	15	PASS
Std8-200/2000 ppb	ICAL	1	199.25	1.29	15	PASS
ICV	ICV	1	10.52	1.76	15	PASS
ICB	ICB	1	0.00	2951.86	15	<PQL
LLICV	CCV1	1	1.07	2.90	20	PASS
ICSA1	ICSA	1	0.11	19.29	15	<PQL
ICSAB1	ICSAB	1	19.43	2.19	15	PASS
LLICV	CCV1	1	1.07	2.10	20	PASS
MB-66914	MBLK	1	<0.000	N/A	15	<PQL
LCS-66914	LCS	1	10.58	1.63	15	PASS
N028744-001B	SAMP	1	494.90	1.88	15	PASS
N028744-001B	SAMP	5	104.78	1.78	15	PASS
N028744-001B	SAMP	25	22.01	1.89	15	PASS
N028744-001B-PS	PS	1	478.07	0.66	15	PASS
N028744-001B-PS	PS	5	103.62	0.99	15	PASS
N028744-001B-MS	MS	1	473.34	1.86	15	PASS
N028744-001B-MS	MS	5	103.03	1.74	15	PASS
N028744-001B-MSD	MSD	1	476.74	1.26	15	PASS
CCV1	CCV	1	21.30	1.74	15	PASS
CCB1	CCB	1	0.04	4.43	15	PASS
N028744-001B-MSD	MSD	5	104.18	1.18	15	PASS
N028744-002B	SAMP	1	171.96	0.68	15	PASS
N028744-002B	SAMP	5	37.65	0.62	15	PASS
N028744-003B	SAMP	1	21916.20	1.22	15	PASS
N028744-003B	SAMP	5	4775.02	1.73	15	PASS
N028744-003B	SAMP	25	979.44	0.21	15	PASS
N028744-004B	SAMP	1	0.89	9.50	15	PASS
N028744-004B	SAMP	5	0.56	13.40	15	PASS
N028744-005B	SAMP	1	1749.56	0.71	15	PASS
N028744-005B	SAMP	5	390.68	0.34	15	PASS
CCV2	CCV	1	20.99	1.06	15	PASS
CCB2	CCB	1	0.40	4.23	15	PASS
N028744-006B	SAMP	1	113.49	0.83	15	PASS
N028744-006B	SAMP	5	24.27	1.69	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	0.32	10.21	15	PASS
N028745-001B	SAMP	5	0.23	7.59	15	PASS
N028745-002B	SAMP	1	0.24	3.59	15	PASS
N028745-002B	SAMP	5	0.16	9.72	15	PASS
N028745-003B	SAMP	1	0.54	1.69	15	PASS
N028745-003B	SAMP	5	0.22	3.06	15	PASS
N028745-004B	SAMP	1	0.23	11.97	15	PASS
N028745-004B	SAMP	5	0.14	3.92	15	PASS
CCV3	CCV	1	20.72	2.31	15	PASS
CCB3	CCB	1	0.12	6.40	15	PASS
N028745-005B	SAMP	1	0.20	2.63	15	PASS
N028745-005B	SAMP	5	0.13	12.71	15	PASS
N028745-006B	SAMP	1	0.16	2.55	15	PASS
N028745-006B	SAMP	5	0.08	9.55	15	PASS
N028745-007B	SAMP	1	0.54	2.97	15	PASS
N028745-007B	SAMP	5	0.19	9.99	15	PASS
N028745-008B	SAMP	1	0.12	8.65	15	PASS
N028745-008B	SAMP	5	0.08	1.96	15	PASS
N028745-009B	SAMP	1	0.27	4.41	15	PASS
N028745-009B	SAMP	5	0.12	9.61	15	PASS
CCV4	CCV	1	20.86	0.21	15	PASS
CCB4	CCB	1	0.07	0.77	15	PASS
N028745-010B	SAMP	1	0.20	5.75	15	PASS
N028745-010B	SAMP	5	0.09	4.82	15	PASS
N028745-011B	SAMP	1	0.11	20.73	15	<PQL
N028745-011B	SAMP	5	0.07	25.13	15	<PQL
N028745-012B	SAMP	1	0.24	3.93	15	PASS
N028745-012B	SAMP	5	0.09	6.11	15	PASS
N028745-014B	SAMP	1	0.14	9.32	15	PASS
N028745-014B	SAMP	5	0.06	23.95	15	<PQL
N028745-015B	SAMP	1	0.07	32.69	15	<PQL
N028745-015B	SAMP	5	0.05	15.03	15	<PQL
CCV5	CCV	1	20.81	1.44	15	PASS
CCB5	CCB	1	0.04	26.32	15	<PQL
LLCCV1	CCV2	1	1.12	2.59	20	PASS
ICSA2	ICSA	1	0.14	13.90	15	PASS
ICSAB2	ICSAB	1	19.61	1.29	15	PASS
N028745-005B	SAMP	1	0.16	7.42	15	PASS
N028745-009B	SAMP	1	0.29	3.35	15	PASS
N028745-012B	SAMP	1	0.21	1.93	15	PASS
N028745-015B	SAMP	1	16.47	13.69	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	96.71	2.52	15	PASS
N028744-005B	SAMP	25	81.75	1.71	15	PASS
N028745-015B	SAMP	1	0.06	15.96	15	<PQL
CCV6	CCV	1	20.75	2.77	15	PASS
CCB6	CCB	1	0.03	18.38	15	<PQL
CCV7	CCV	1	20.16	0.27	15	PASS
CCB7	CCB	1	0.03	27.41	15	<PQL
CCV8	CCV	1	20.12	0.71	15	PASS
CCB8	CCB	1	0.02	37.09	15	<PQL
CCV9	CCV	1	20.98	0.57	15	PASS
CCB9	CCB	1	0.04	21.43	15	<PQL
CCV10	CCV	1	20.57	1.55	15	PASS
CCB10	CCB	1	0.03	13.60	15	PASS
LLCCV2	CCV2	1	1.13	2.27	20	PASS
ICSA3	ICSA	1	0.13	13.02	15	PASS
ICSAB3	ICSAB	1	18.77	1.43	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227001.D	RINSE	RINSE	1	02/27/18 9:32 AM
A0227002.D	Cal Blank	IBLK	1	02/27/18 9:38 AM
A0227003.D	Std1-0.1/1 ppb	ICAL	1	02/27/18 9:44 AM
A0227004.D	Std2-0.5/5 ppb	ICAL	1	02/27/18 9:49 AM
A0227005.D	Std3-5/50 ppb	ICAL	1	02/27/18 9:55 AM
A0227006.D	Std4-10/100 ppb	ICAL	1	02/27/18 10:00 AM
A0227007.D	Std5-20/200 ppb	ICAL	1	02/27/18 10:06 AM
A0227008.D	Std6-40/400 ppb	ICAL	1	02/27/18 10:12 AM
A0227009.D	Std7-100/1000 ppb	ICAL	1	02/27/18 10:17 AM
A0227010.D	Std8-200/2000 ppb	ICAL	1	02/27/18 10:23 AM
A0227011.D	ICV	ICV	1	02/27/18 10:29 AM
A0227012.D	ICB	ICB	1	02/27/18 10:34 AM
A0227013.D	LLICV	CCV1	1	02/27/18 10:40 AM
A0227014.D	ICSA1	ICSA	1	02/27/18 10:45 AM
A0227015.D	ICSAB1	ICSAB	1	02/27/18 10:51 AM
A0227016.D	LLICV	CCV1	1	02/27/18 10:57 AM
A0227017.D	MB-66914	MBLK	1	02/27/18 11:02 AM
A0227018.D	LCS-66914	LCS	1	02/27/18 11:08 AM
A0227019.D	N028744-001B	SAMP	1	02/27/18 11:13 AM
A0227020.D	N028744-001B	SAMP	5	02/27/18 11:19 AM
A0227021.D	N028744-001B	SAMP	25	02/27/18 11:25 AM
A0227022.D	N028744-001B-PS	PS	1	02/27/18 11:30 AM
A0227023.D	N028744-001B-PS	PS	5	02/27/18 11:36 AM
A0227024.D	N028744-001B-MS	MS	1	02/27/18 11:41 AM
A0227025.D	N028744-001B-MS	MS	5	02/27/18 11:47 AM
A0227026.D	N028744-001B-MSD	MSD	1	02/27/18 11:53 AM
A0227027.D	CCV1	CCV	1	02/27/18 11:58 AM
A0227028.D	CCB1	CCB	1	02/27/18 12:04 PM
A0227029.D	N028744-001B-MSD	MSD	5	02/27/18 12:10 PM
A0227030.D	N028744-002B	SAMP	1	02/27/18 12:15 PM
A0227031.D	N028744-002B	SAMP	5	02/27/18 12:21 PM
A0227032.D	N028744-003B	SAMP	1	02/27/18 12:26 PM
A0227033.D	N028744-003B	SAMP	5	02/27/18 12:32 PM
A0227034.D	N028744-003B	SAMP	25	02/27/18 12:38 PM
A0227035.D	N028744-004B	SAMP	1	02/27/18 12:43 PM
A0227036.D	N028744-004B	SAMP	5	02/27/18 12:49 PM
A0227037.D	N028744-005B	SAMP	1	02/27/18 12:55 PM
A0227038.D	N028744-005B	SAMP	5	02/27/18 1:00 PM
A0227039.D	CCV2	CCV	1	02/27/18 1:06 PM
A0227040.D	CCB2	CCB	1	02/27/18 1:12 PM
A0227041.D	N028744-006B	SAMP	1	02/27/18 1:17 PM
A0227042.D	N028744-006B	SAMP	5	02/27/18 1:23 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227001.D	RINSE	RINSE	1	02/27/18 9:32 AM
A0227002.D	Cal Blank	IBLK	1	02/27/18 9:38 AM
A0227003.D	Std1-0.1/1 ppb	ICAL	1	02/27/18 9:44 AM
A0227004.D	Std2-0.5/5 ppb	ICAL	1	02/27/18 9:49 AM
A0227005.D	Std3-5/50 ppb	ICAL	1	02/27/18 9:55 AM
A0227006.D	Std4-10/100 ppb	ICAL	1	02/27/18 10:00 AM
A0227007.D	Std5-20/200 ppb	ICAL	1	02/27/18 10:06 AM
A0227008.D	Std6-40/400 ppb	ICAL	1	02/27/18 10:12 AM
A0227009.D	Std7-100/1000 ppb	ICAL	1	02/27/18 10:17 AM
A0227010.D	Std8-200/2000 ppb	ICAL	1	02/27/18 10:23 AM
A0227011.D	ICV	ICV	1	02/27/18 10:29 AM
A0227012.D	ICB	ICB	1	02/27/18 10:34 AM
A0227013.D	LLICV	CCV1	1	02/27/18 10:40 AM
A0227014.D	ICSA1	ICSA	1	02/27/18 10:45 AM
A0227015.D	ICSAB1	ICSAB	1	02/27/18 10:51 AM
A0227016.D	LLICV	CCV1	1	02/27/18 10:57 AM
A0227017.D	MB-66914	MBLK	1	02/27/18 11:02 AM
A0227018.D	LCS-66914	LCS	1	02/27/18 11:08 AM
A0227019.D	N028744-001B	SAMP	1	02/27/18 11:13 AM
A0227020.D	N028744-001B	SAMP	5	02/27/18 11:19 AM
A0227021.D	N028744-001B	SAMP	25	02/27/18 11:25 AM
A0227022.D	N028744-001B-PS	PS	1	02/27/18 11:30 AM
A0227023.D	N028744-001B-PS	PS	5	02/27/18 11:36 AM
A0227024.D	N028744-001B-MS	MS	1	02/27/18 11:41 AM
A0227025.D	N028744-001B-MS	MS	5	02/27/18 11:47 AM
A0227026.D	N028744-001B-MSD	MSD	1	02/27/18 11:53 AM
A0227027.D	CCV1	CCV	1	02/27/18 11:58 AM
A0227028.D	CCB1	CCB	1	02/27/18 12:04 PM
A0227029.D	N028744-001B-MSD	MSD	5	02/27/18 12:10 PM
A0227030.D	N028744-002B	SAMP	1	02/27/18 12:15 PM
A0227031.D	N028744-002B	SAMP	5	02/27/18 12:21 PM
A0227032.D	N028744-003B	SAMP	1	02/27/18 12:26 PM
A0227033.D	N028744-003B	SAMP	5	02/27/18 12:32 PM
A0227034.D	N028744-003B	SAMP	25	02/27/18 12:38 PM
A0227035.D	N028744-004B	SAMP	1	02/27/18 12:43 PM
A0227036.D	N028744-004B	SAMP	5	02/27/18 12:49 PM
A0227037.D	N028744-005B	SAMP	1	02/27/18 12:55 PM
A0227038.D	N028744-005B	SAMP	5	02/27/18 1:00 PM
A0227039.D	CCV2	CCV	1	02/27/18 1:06 PM
A0227040.D	CCB2	CCB	1	02/27/18 1:12 PM
A0227041.D	N028744-006B	SAMP	1	02/27/18 1:17 PM
A0227042.D	N028744-006B	SAMP	5	02/27/18 1:23 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227043.D	N028745-001B	SAMP	1	02/27/18 1:28 PM
A0227044.D	N028745-001B	SAMP	5	02/27/18 1:34 PM
A0227045.D	N028745-002B	SAMP	1	02/27/18 1:40 PM
A0227046.D	N028745-002B	SAMP	5	02/27/18 1:45 PM
A0227047.D	N028745-003B	SAMP	1	02/27/18 1:51 PM
A0227048.D	N028745-003B	SAMP	5	02/27/18 1:57 PM
A0227049.D	N028745-004B	SAMP	1	02/27/18 2:02 PM
A0227050.D	N028745-004B	SAMP	5	02/27/18 2:08 PM
A0227051.D	CCV3	CCV	1	02/27/18 2:14 PM
A0227052.D	CCB3	CCB	1	02/27/18 2:19 PM
A0227053.D	N028745-005B	SAMP	1	02/27/18 2:25 PM
A0227054.D	N028745-005B	SAMP	5	02/27/18 2:30 PM
A0227055.D	N028745-006B	SAMP	1	02/27/18 2:36 PM
A0227056.D	N028745-006B	SAMP	5	02/27/18 2:42 PM
A0227057.D	N028745-007B	SAMP	1	02/27/18 2:47 PM
A0227058.D	N028745-007B	SAMP	5	02/27/18 2:53 PM
A0227059.D	N028745-008B	SAMP	1	02/27/18 2:59 PM
A0227060.D	N028745-008B	SAMP	5	02/27/18 3:05 PM
A0227061.D	N028745-009B	SAMP	1	02/27/18 3:10 PM
A0227062.D	N028745-009B	SAMP	5	02/27/18 3:16 PM
A0227063.D	CCV4	CCV	1	02/27/18 3:21 PM
A0227064.D	CCB4	CCB	1	02/27/18 3:27 PM
A0227065.D	N028745-010B	SAMP	1	02/27/18 3:33 PM
A0227066.D	N028745-010B	SAMP	5	02/27/18 3:40 PM
A0227067.D	N028745-011B	SAMP	1	02/27/18 3:45 PM
A0227068.D	N028745-011B	SAMP	5	02/27/18 3:51 PM
A0227069.D	N028745-012B	SAMP	1	02/27/18 3:57 PM
A0227070.D	N028745-012B	SAMP	5	02/27/18 4:03 PM
A0227071.D	N028745-014B	SAMP	1	02/27/18 4:08 PM
A0227072.D	N028745-014B	SAMP	5	02/27/18 4:14 PM
A0227073.D	N028745-015B	SAMP	1	02/27/18 4:20 PM
A0227074.D	N028745-015B	SAMP	5	02/27/18 4:25 PM
A0227075.D	CCV5	CCV	1	02/27/18 4:31 PM
A0227076.D	CCB5	CCB	1	02/27/18 4:37 PM
A0227077.D	LLCCV1	CCV2	1	02/27/18 4:42 PM
A0227078.D	ICSA2	ICSA	1	02/27/18 4:48 PM
A0227079.D	ICSAB2	ICSAB	1	02/27/18 4:54 PM
A0227080.D	N028745-005B	SAMP	1	02/27/18 4:59 PM
A0227081.D	N028745-009B	SAMP	1	02/27/18 5:06 PM
A0227082.D	N028745-012B	SAMP	1	02/27/18 5:12 PM
A0227083.D	N028745-015B	SAMP	1	02/27/18 5:17 PM
A0227084.D	N028744-003B	SAMP	250	02/27/18 5:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227043.D	N028745-001B	SAMP	1	02/27/18 1:28 PM
A0227044.D	N028745-001B	SAMP	5	02/27/18 1:34 PM
A0227045.D	N028745-002B	SAMP	1	02/27/18 1:40 PM
A0227046.D	N028745-002B	SAMP	5	02/27/18 1:45 PM
A0227047.D	N028745-003B	SAMP	1	02/27/18 1:51 PM
A0227048.D	N028745-003B	SAMP	5	02/27/18 1:57 PM
A0227049.D	N028745-004B	SAMP	1	02/27/18 2:02 PM
A0227050.D	N028745-004B	SAMP	5	02/27/18 2:08 PM
A0227051.D	CCV3	CCV	1	02/27/18 2:14 PM
A0227052.D	CCB3	CCB	1	02/27/18 2:19 PM
A0227053.D	N028745-005B	SAMP	1	02/27/18 2:25 PM
A0227054.D	N028745-005B	SAMP	5	02/27/18 2:30 PM
A0227055.D	N028745-006B	SAMP	1	02/27/18 2:36 PM
A0227056.D	N028745-006B	SAMP	5	02/27/18 2:42 PM
A0227057.D	N028745-007B	SAMP	1	02/27/18 2:47 PM
A0227058.D	N028745-007B	SAMP	5	02/27/18 2:53 PM
A0227059.D	N028745-008B	SAMP	1	02/27/18 2:59 PM
A0227060.D	N028745-008B	SAMP	5	02/27/18 3:05 PM
A0227061.D	N028745-009B	SAMP	1	02/27/18 3:10 PM
A0227062.D	N028745-009B	SAMP	5	02/27/18 3:16 PM
A0227063.D	CCV4	CCV	1	02/27/18 3:21 PM
A0227064.D	CCB4	CCB	1	02/27/18 3:27 PM
A0227065.D	N028745-010B	SAMP	1	02/27/18 3:33 PM
A0227066.D	N028745-010B	SAMP	5	02/27/18 3:40 PM
A0227067.D	N028745-011B	SAMP	1	02/27/18 3:45 PM
A0227068.D	N028745-011B	SAMP	5	02/27/18 3:51 PM
A0227069.D	N028745-012B	SAMP	1	02/27/18 3:57 PM
A0227070.D	N028745-012B	SAMP	5	02/27/18 4:03 PM
A0227071.D	N028745-014B	SAMP	1	02/27/18 4:08 PM
A0227072.D	N028745-014B	SAMP	5	02/27/18 4:14 PM
A0227073.D	N028745-015B	SAMP	1	02/27/18 4:20 PM
A0227074.D	N028745-015B	SAMP	5	02/27/18 4:25 PM
A0227075.D	CCV5	CCV	1	02/27/18 4:31 PM
A0227076.D	CCB5	CCB	1	02/27/18 4:37 PM
A0227077.D	LLCCV1	CCV2	1	02/27/18 4:42 PM
A0227078.D	ICSA2	ICSA	1	02/27/18 4:48 PM
A0227079.D	ICSAB2	ICSAB	1	02/27/18 4:54 PM
A0227080.D	N028745-005B	SAMP	1	02/27/18 4:59 PM
A0227081.D	N028745-009B	SAMP	1	02/27/18 5:06 PM
A0227082.D	N028745-012B	SAMP	1	02/27/18 5:12 PM
A0227083.D	N028745-015B	SAMP	1	02/27/18 5:17 PM
A0227084.D	N028744-003B	SAMP	250	02/27/18 5:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227085.D	N028744-005B	SAMP	25	02/27/18 5:28 PM
A0227086.D	N028726-001B-MSD	MSD	5	02/27/18 5:35 PM
A0227087.D	N028726-003B	SAMP	5	02/27/18 5:39 PM
A0227088.D	N028727-006B	SAMP	1	02/27/18 5:45 PM
A0227089.D	N028745-015B	SAMP	1	02/27/18 5:51 PM
A0227090.D	CCV6	CCV	1	02/27/18 5:56 PM
A0227091.D	CCB6	CCB	1	02/27/18 6:02 PM
A0227092.D	N028717-001C	SAMP	25	02/27/18 6:08 PM
A0227093.D	N028696-001B	SAMP	1	02/27/18 6:14 PM
A0227094.D	N028696-001A	SAMP	1	02/27/18 6:20 PM
A0227095.D	N028696-005B	SAMP	1	02/27/18 6:25 PM
A0227096.D	N028696-005A	SAMP	1	02/27/18 6:31 PM
A0227097.D	MB-66941	MBLK	1	02/27/18 6:37 PM
A0227098.D	LCS-66941	LCS	1	02/27/18 6:43 PM
A0227099.D	N028790-001A	SAMP	1	02/27/18 6:48 PM
A0227100.D	N028790-001A	SAMP	5	02/27/18 6:53 PM
A0227101.D	N028790-001A-PS	PS	1	02/27/18 6:59 PM
A0227102.D	CCV7	CCV	1	02/27/18 7:05 PM
A0227103.D	CCB7	CCB	1	02/27/18 7:11 PM
A0227104.D	N028790-001A-MS	MS	1	02/27/18 7:16 PM
A0227105.D	N028790-001A-MSD	MSD	1	02/27/18 7:22 PM
A0227106.D	N028790-002A	SAMP	1	02/27/18 7:28 PM
A0227107.D	N028790-003A	SAMP	1	02/27/18 7:34 PM
A0227108.D	N028790-004A	SAMP	1	02/27/18 7:39 PM
A0227109.D	N028792-005A	SAMP	1	02/27/18 7:45 PM
A0227110.D	N028792-010A	SAMP	1	02/27/18 7:51 PM
A0227111.D	N028792-015A	SAMP	1	02/27/18 7:56 PM
A0227112.D	N028792-020A	SAMP	1	02/27/18 8:02 PM
A0227113.D	N028792-025A	SAMP	1	02/27/18 8:08 PM
A0227114.D	CCV8	CCV	1	02/27/18 8:13 PM
A0227115.D	CCB8	CCB	1	02/27/18 8:19 PM
A0227116.D	N028738-005A	SAMP	1	02/27/18 8:26 PM
A0227117.D	MB-66959	MBLK	1	02/27/18 8:31 PM
A0227118.D	LCS-66959	LCS	1	02/27/18 8:37 PM
A0227119.D	N028808-001A	SAMP	1	02/27/18 8:42 PM
A0227120.D	N028808-001A	SAMP	5	02/27/18 8:48 PM
A0227121.D	N028808-001A-PS	PS	1	02/27/18 8:54 PM
A0227122.D	N028808-001A-MS	MS	1	02/27/18 8:59 PM
A0227123.D	N028808-001A-MSD	MSD	1	02/27/18 9:05 PM
A0227124.D	N028809-001A	SAMP	1	02/27/18 9:11 PM
A0227125.D	N028810-001A	SAMP	1	02/27/18 9:16 PM
A0227126.D	CCV9	CCV	1	02/27/18 9:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227127.D	CCB9	CCB	1	02/27/18 9:27 PM
A0227128.D	N028811-001A	SAMP	1	02/27/18 9:32 PM
A0227129.D	CCV10	CCV	1	02/27/18 9:39 PM
A0227130.D	CCB10	CCB	1	02/27/18 9:44 PM
A0227131.D	LLCCV2	CCV2	1	02/27/18 9:50 PM
A0227132.D	ICSA3	ICSA	1	02/27/18 9:55 PM
A0227133.D	ICSAB3	ICSAB	1	02/27/18 10:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 10:05:23**
Prep End Date: **2/23/2018 2:00:00 P**

Reviewed/ Date: 3/7/2018
Initials/ Date: 3/7/2018

Prep Batch **66914** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66914	Aqueous		25	☐	0	0	25	1.000		
MB-66914	Aqueous		25	☐	0	0	25	1.000		
N028744-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 10:05:23**
Prep End Date: **2/23/2018 2:00:00 P**

Reviewed/ Date: 3/7/2018
Initials/ Date: 3/7/2018

Prep Batch **66914** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028745-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 27 Feb 2018 07:52:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	89591.20	0.00	
24 Mg	338443.00	0.00	
25 Mg	44194.50	0.00	
26 Mg	52079.10	0.00	
59 Co	444006.00	0.00	
115 In	830117.00	0.00	
206 Pb	245728.00	0.00	
207 Pb	214689.00	0.00	
208 Pb	524452.00	0.00	

RSD (%)

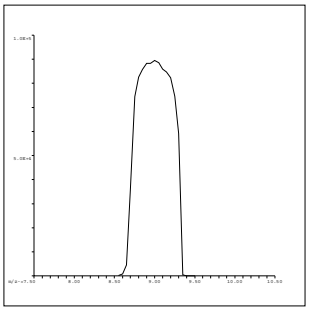
Element	Actual	Required	Flag
9 Be	1.09	5.00	
24 Mg	2.76	5.00	
25 Mg	1.42	5.00	
26 Mg	0.82	5.00	
59 Co	0.39	5.00	
115 In	0.53	5.00	
206 Pb	0.44	5.00	
207 Pb	0.39	5.00	
208 Pb	0.73	5.00	

Ion Ratio

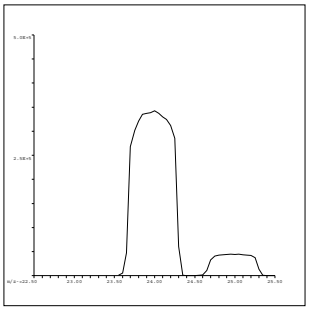
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

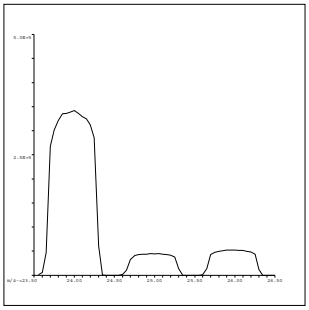
Element	Actual	Required	Flag



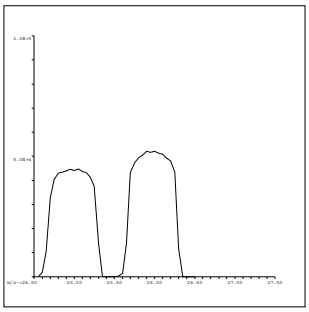
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



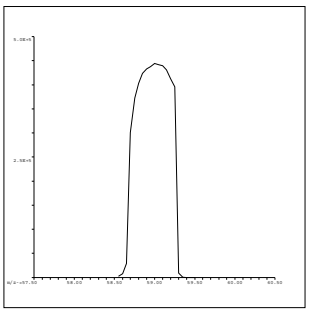
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



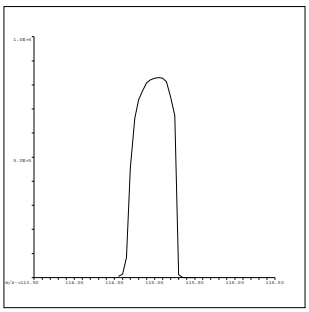
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



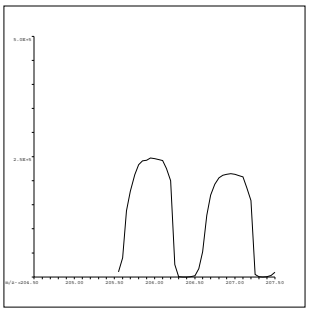
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



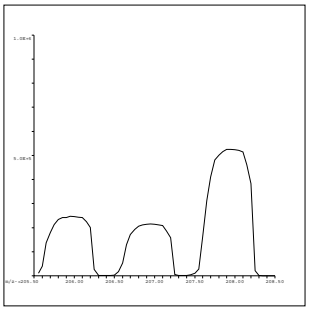
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



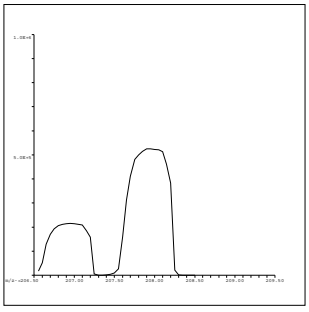
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICPMS-02

Analyte	Data File	A0227002.D	A0227003.D	A0227004.D	A0227005.D	A0227006.D	A0227007.D	A0227008.D	A0227009.D	A0227010.D	
	Acq. Date-Time	02/27/2018 09:38 AM	02/27/2018 09:44 AM	02/27/2018 09:49 AM	02/27/2018 09:55 AM	02/27/2018 10:00 AM	02/27/2018 10:06 AM	02/27/2018 10:12 AM	02/27/2018 10:17 AM	02/27/2018 10:23 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	62542.5		62679.5	63043.2	62912.1	63585.2	63979.9	64346.8	64115.1	
55 Mn [2]	CPS	68.8		1439.9	13350.7	26637.3	52631.7	105506.3	260653.5	514834.7	1.0000
72 Ge (ISTD) [1]	CPS	53663.1		54328.8	54076.8	54085.8	54306.5	53351.1	54387.8	52916.4	
78 Se [1]	CPS	1.1		103.3	967.8	1901.3	3817.3	7629.8	19411.1	37683.4	1.0000
72 Ge (ISTD) [2]	CPS	46628.3	47160	47197.7	47257	46995.1	47762.9	47012.8	47262.4	46491.5	
75 As [2]	CPS	16	77.3	316.5	2937.6	5490.3	11070.1	22431	54755.5	108291.6	1.0000
103 Rh (ISTD) [2]	CPS	1451516.4		1448560.3	1461389.1	1459884.1	1462552	1452955.8	1440505.5	1410396.5	
95 Mo [2]	CPS	71.1		1855.7	17047.4	34259.5	67650.9	136195	336617.5	666955.2	1.0000
159 Tb (ISTD) [3]	CPS	5025220.4		4984431.4	5022113.6	4986702.3	5007356.8	4975519.8	4962953.4	4924105.4	
137 Ba [3]	CPS	21.2		4412.2	41961.3	82387.5	164021.2	326080.2	799102.5	1620493.7	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICPMS-02

Analyte	Data File	A0227002.D	A0227004.D	A0227005.D	A0227006.D	A0227007.D	A0227008.D	A0227009.D	A0227010.D	
	Acq. Date-Time	02/27/2018 09:38 AM	02/27/2018 09:49 AM	02/27/2018 09:55 AM	02/27/2018 10:00 AM	02/27/2018 10:06 AM	02/27/2018 10:12 AM	02/27/2018 10:17 AM	02/27/2018 10:23 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	62542.5	62679.5	63043.2	62912.1	63585.2	63979.9	64346.8	64115.1	
52 Cr [2]	CPS	224.4	2982.5	26839.8	53771.5	105978.4	210675	519766.1	1023033.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-170428A
IS Mix: 2MWST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.170	0.10	10.00	0	102	90	110				
Chromium	10.519	1.0	10.00	0	105	90	110				
Manganese	104.573	0.50	100.0	0	105	90	110				
Molybdenum	10.864	0.50	10.00	0	109	90	110				
Selenium	10.172	0.50	10.00	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.113	0.10	0.1000	0	113	80	120				
Chromium	1.065	1.0	1.000	0	106	80	120				
Manganese	0.599	0.50	0.5000	0	120	80	120				
Molybdenum	0.596	0.50	0.5000	0	119	80	120				
Selenium	0.469	0.50	0.5000	0	93.9	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.289	0.10	20.00	0	101	90	110				
Chromium	21.298	1.0	20.00	0	106	90	110				
Manganese	20.639	0.50	20.00	0	103	90	110				
Molybdenum	19.795	0.50	20.00	0	99.0	90	110				
Selenium	19.408	0.50	20.00	0	97.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.624	0.10	20.00	0	103	90	110				
Chromium	20.991	1.0	20.00	0	105	90	110				
Manganese	20.167	0.50	20.00	0	101	90	110				
Molybdenum	20.248	0.50	20.00	0	101	90	110				
Selenium	19.257	0.50	20.00	0	96.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.419	0.10	20.00	0	102	90	110				
Chromium	20.717	1.0	20.00	0	104	90	110				
Manganese	20.633	0.50	20.00	0	103	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	19.434	0.50	20.00	0	97.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.244	0.10	20.00	0	101	90	110				
Chromium	20.864	1.0	20.00	0	104	90	110				
Manganese	20.714	0.50	20.00	0	104	90	110				
Molybdenum	19.910	0.50	20.00	0	99.6	90	110				
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.330	0.10	20.00	0	102	90	110				
Chromium	20.806	1.0	20.00	0	104	90	110				
Manganese	20.858	0.50	20.00	0	104	90	110				
Molybdenum	19.971	0.50	20.00	0	99.9	90	110				
Selenium	19.472	0.50	20.00	0	97.4	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	94.1	70	130				
Chromium	1.117	1.0	1.000	0	112	70	130				
Manganese	0.557	0.50	0.5000	0	111	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.511	0.50	0.5000	0	102	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.178	0.10	20.00	0	101	90	110				
Chromium	20.745	1.0	20.00	0	104	90	110				
Manganese	20.559	0.50	20.00	0	103	90	110				
Molybdenum	20.111	0.50	20.00	0	101	90	110				
Selenium	18.767	0.50	20.00	0	93.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV7	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122347
Client ID:	CCV	Batch ID:	R122347	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.655	0.10	20.00	0	103	90	110				
Chromium	20.155	1.0	20.00	0	101	90	110				
Manganese	20.193	0.50	20.00	0	101	90	110				
Molybdenum	20.173	0.50	20.00	0	101	90	110				
Selenium	19.376	0.50	20.00	0	96.9	90	110				

Sample ID	CCV8	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122347
Client ID:	CCV	Batch ID:	R122347	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943945

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.807	0.10	20.00	0	104	90	110				
Chromium	20.123	1.0	20.00	0	101	90	110				
Manganese	20.017	0.50	20.00	0	100	90	110				
Molybdenum	19.696	0.50	20.00	0	98.5	90	110				
Selenium	19.964	0.50	20.00	0	99.8	90	110				

Sample ID	CCV9	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122347
Client ID:	CCV	Batch ID:	R122347	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943957

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.039	0.10	20.00	0	100	90	110				
Chromium	20.975	1.0	20.00	0	105	90	110				
Manganese	20.982	0.50	20.00	0	105	90	110				
Molybdenum	20.193	0.50	20.00	0	101	90	110				
Selenium	17.816	0.50	20.00	0	89.1	90	110				S

Samples were not affected by the low biased Se on CCV9.

3/7/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.338	0.10	20.00	0	102	90	110				
Chromium	20.572	1.0	20.00	0	103	90	110				
Manganese	20.931	0.50	20.00	0	105	90	110				
Molybdenum	20.004	0.50	20.00	0	100	90	110				
Selenium	19.124	0.50	20.00	0	95.6	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				
Chromium	1.135	1.0	1.000	0	113	70	130				
Manganese	0.588	0.50	0.5000	0	118	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.447	0.50	0.5000	0	89.4	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ICV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.519	1.0	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.065	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.298	1.0	20.00	0	106	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.991	1.0	20.00	0	105	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.717	1.0	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.864	1.0	20.00	0	104	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.806	1.0	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.117	1.0	1.000	0	112	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.745	1.0	20.00	0	104	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.155	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.123	1.0	20.00	0	101	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.975	1.0	20.00	0	105	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.572	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.135	1.0	1.000	0	113	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.240	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	0.398	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ICB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.398	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.173	0.10	20.00	0	95.9	80	120				
Chromium	19.434	1.0	20.00	0	97.2	80	120				
Manganese	22.748	0.50	20.00	0	114	80	120				
Molybdenum	20.428	0.50	20.00	0	102	80	120				
Selenium	17.363	0.50	20.00	0	86.8	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	0.143	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.288	0.10	20.00	0	96.4	80	120				
Chromium	19.609	1.0	20.00	0	98.0	80	120				
Manganese	22.886	0.50	20.00	0	114	80	120				
Molybdenum	20.479	0.50	20.00	0	102	80	120				
Selenium	17.660	0.50	20.00	0	88.3	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	0.131	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.518	0.10	20.00	0	97.6	80	120				
Chromium	18.767	1.0	20.00	0	93.8	80	120				
Manganese	23.612	0.50	20.00	0	118	80	120				
Molybdenum	20.691	0.50	20.00	0	103	80	120				
Selenium	17.809	0.50	20.00	0	89.0	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSA	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943722

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSAB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943723

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.434	1.0	20.00	0	97.2	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSA	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.143	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSAB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943787

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.609	1.0	20.00	0	98.0	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSA	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.131	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ICSAB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.767	1.0	20.00	0	93.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5025220.4	5025220.4	100	PASS	70-125	62542.5	62542.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	4978836.5	5025220.4	99.077	PASS	70-125	63125.6	62542.5	100.93	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	4984431.4	5025220.4	99.19	PASS	70-125	62679.5	62542.5	100.22	PASS	70-125
Std3-5/50 ppb	ICAL	1	5022113.6	5025220.4	99.94	PASS	70-125	63043.2	62542.5	100.8	PASS	70-125
Std4-10/100 ppb	ICAL	1	4986702.3	5025220.4	99.23	PASS	70-125	62912.1	62542.5	100.59	PASS	70-125
Std5-20/200 ppb	ICAL	1	5007356.8	5025220.4	99.64	PASS	70-125	63585.2	62542.5	101.67	PASS	70-125
Std6-40/400 ppb	ICAL	1	4975519.8	5025220.4	99.011	PASS	70-125	63979.9	62542.5	102.3	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4962953.4	5025220.4	98.76	PASS	70-125	64346.8	62542.5	102.88	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4924105.4	5025220.4	97.99	PASS	70-125	64115.1	62542.5	102.51	PASS	70-125
ICV	ICV	1	5589115	5025220.4	111.22	PASS	70-125	69599	62542.5	111.28	PASS	70-125
ICB	ICB	1	4919110.6	5025220.4	97.89	PASS	70-125	61054.7	62542.5	97.62	PASS	70-125
LLICV	CCV1	1	5148352	5025220.4	102.45	PASS	70-125	63945.4	62542.5	102.24	PASS	70-125
ICSA1	ICSA	1	4818191.1	5025220.4	95.88	PASS	70-125	65427.7	62542.5	104.61	PASS	70-125
ICSAB1	ICSAB	1	4461170.4	5025220.4	88.78	PASS	70-125	60371.1	62542.5	96.53	PASS	70-125
LLICV	CCV1	1	5375186.9	5025220.4	106.96	PASS	70-125	73821.2	62542.5	118.03	PASS	70-125
MB-66914	MBLK	1	5117786.9	5025220.4	101.84	PASS	70-125	69526.4	62542.5	111.17	PASS	70-125
LCS-66914	LCS	1	5606144.2	5025220.4	111.56	PASS	70-125	72975.3	62542.5	116.68	PASS	70-125
N028744-001B	SAMP	1	4117542.5	5025220.4	81.94	PASS	70-125	61634.7	62542.5	98.55	PASS	70-125
N028744-001B	SAMP	5	4652499.9	5025220.4	92.58	PASS	70-125	63648.6	62542.5	101.77	PASS	70-125
N028744-001B	SAMP	25	4973949.8	5025220.4	98.98	PASS	70-125	67162.5	62542.5	107.39	PASS	70-125
N028744-001B-PS	PS	1	4225244.2	5025220.4	84.081	PASS	70-125	64550.9	62542.5	103.21	PASS	70-125
N028744-001B-PS	PS	5	4588524.5	5025220.4	91.31	PASS	70-125	68618	62542.5	109.71	PASS	70-125
N028744-001B-MS	MS	1	4270380.9	5025220.4	84.98	PASS	70-125	71055.2	62542.5	113.61	PASS	70-125
N028744-001B-MS	MS	5	4678839	5025220.4	93.11	PASS	70-125	74081.7	62542.5	118.45	PASS	70-125
N028744-001B-MSD	MSD	1	4162104.4	5025220.4	82.82	PASS	70-125	74178.6	62542.5	118.61	PASS	70-125
CCV1	CCV	1	4567140.9	5025220.4	90.88	PASS	70-125	59147.8	62542.5	94.57	PASS	70-125
CCB1	CCB	1	5092401.3	5025220.4	101.34	PASS	70-125	77984.8	62542.5	124.69	PASS	70-125
N028744-001B-MSD	MSD	5	4648896.5	5025220.4	92.51	PASS	70-125	72072.9	62542.5	115.24	PASS	70-125
N028744-002B	SAMP	1	4601250.6	5025220.4	91.56	PASS	70-125	74355	62542.5	118.89	PASS	70-125
N028744-002B	SAMP	5	4799110.4	5025220.4	95.5	PASS	70-125	72962.3	62542.5	116.66	PASS	70-125
N028744-003B	SAMP	1	4380146.8	5025220.4	87.16	PASS	70-125	69959.3	62542.5	111.86	PASS	70-125
N028744-003B	SAMP	5	4643242.1	5025220.4	92.4	PASS	70-125	69389.4	62542.5	110.95	PASS	70-125
N028744-003B	SAMP	25	4915855	5025220.4	97.82	PASS	70-125	72683.4	62542.5	116.21	PASS	70-125
N028744-004B	SAMP	1	3066730.2	5025220.4	61.027	NR!	70-125	59004.9	62542.5	94.34	PASS	70-125
N028744-004B	SAMP	5	4203842.2	5025220.4	83.65	PASS	70-125	75892.8	62542.5	121.35	PASS	70-125
N028744-005B	SAMP	1	3259366.4	5025220.4	64.86	NR!	70-125	68175.5	62542.5	109.01	PASS	70-125
N028744-005B	SAMP	5	3948136.3	5025220.4	78.57	PASS	70-125	69494.1	62542.5	111.12	PASS	70-125
CCV2	CCV	1	4685600.1	5025220.4	93.24	PASS	70-125	76300.6	62542.5	122	PASS	70-125
CCB2	CCB	1	4656589.9	5025220.4	92.66	PASS	70-125	72724.3	62542.5	116.28	PASS	70-125
N028744-006B	SAMP	1	4127444.3	5025220.4	82.13	PASS	70-125	67692.3	62542.5	108.23	PASS	70-125
N028744-006B	SAMP	5	4480470.4	5025220.4	89.16	PASS	70-125	73362.7	62542.5	117.3	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028745-001B	SAMP	1	4544026	5025220.4	90.42	PASS	70-125	72646.4	62542.5	116.16	PASS	70-125
N028745-001B	SAMP	5	4530440.2	5025220.4	90.15	PASS	70-125	71433.3	62542.5	114.22	PASS	70-125
N028745-002B	SAMP	1	4646825.2	5025220.4	92.47	PASS	70-125	72785.6	62542.5	116.38	PASS	70-125
N028745-002B	SAMP	5	4662102.9	5025220.4	92.77	PASS	70-125	72063.8	62542.5	115.22	PASS	70-125
N028745-003B	SAMP	1	4642778.5	5025220.4	92.39	PASS	70-125	72394.3	62542.5	115.75	PASS	70-125
N028745-003B	SAMP	5	4630009.1	5025220.4	92.14	PASS	70-125	70986.2	62542.5	113.5	PASS	70-125
N028745-004B	SAMP	1	4601060.8	5025220.4	91.56	PASS	70-125	71720.2	62542.5	114.67	PASS	70-125
N028745-004B	SAMP	5	4674675.3	5025220.4	93.024	PASS	70-125	71614.2	62542.5	114.5	PASS	70-125
CCV3	CCV	1	4694133.8	5025220.4	93.41	PASS	70-125	70973.6	62542.5	113.48	PASS	70-125
CCB3	CCB	1	4699283.6	5025220.4	93.51	PASS	70-125	70386.5	62542.5	112.54	PASS	70-125
N028745-005B	SAMP	1	4753923.7	5025220.4	94.6	PASS	70-125	70122.2	62542.5	112.12	PASS	70-125
N028745-005B	SAMP	5	4590583.9	5025220.4	91.35	PASS	70-125	67652.3	62542.5	108.17	PASS	70-125
N028745-006B	SAMP	1	4716164.8	5025220.4	93.85	PASS	70-125	72025.9	62542.5	115.16	PASS	70-125
N028745-006B	SAMP	5	4691844.5	5025220.4	93.37	PASS	70-125	69734	62542.5	111.5	PASS	70-125
N028745-007B	SAMP	1	4716372	5025220.4	93.85	PASS	70-125	70414.7	62542.5	112.59	PASS	70-125
N028745-007B	SAMP	5	4737912.7	5025220.4	94.28	PASS	70-125	70604.3	62542.5	112.89	PASS	70-125
N028745-008B	SAMP	1	4562845.9	5025220.4	90.8	PASS	70-125	68169.9	62542.5	109	PASS	70-125
N028745-008B	SAMP	5	4684970.6	5025220.4	93.23	PASS	70-125	67654.3	62542.5	108.17	PASS	70-125
N028745-009B	SAMP	1	4687257.1	5025220.4	93.27	PASS	70-125	67255.1	62542.5	107.54	PASS	70-125
N028745-009B	SAMP	5	4676320	5025220.4	93.057	PASS	70-125	67101.1	62542.5	107.29	PASS	70-125
CCV4	CCV	1	4685905	5025220.4	93.25	PASS	70-125	67603.1	62542.5	108.09	PASS	70-125
CCB4	CCB	1	4630448.6	5025220.4	92.14	PASS	70-125	64644.6	62542.5	103.36	PASS	70-125
N028745-010B	SAMP	1	4667317	5025220.4	92.88	PASS	70-125	65218	62542.5	104.28	PASS	70-125
N028745-010B	SAMP	5	4667143.2	5025220.4	92.87	PASS	70-125	67275.1	62542.5	107.57	PASS	70-125
N028745-011B	SAMP	1	4635709.5	5025220.4	92.25	PASS	70-125	66008.9	62542.5	105.54	PASS	70-125
N028745-011B	SAMP	5	4618298	5025220.4	91.9	PASS	70-125	65896.4	62542.5	105.36	PASS	70-125
N028745-012B	SAMP	1	4538080.8	5025220.4	90.31	PASS	70-125	64207.4	62542.5	102.66	PASS	70-125
N028745-012B	SAMP	5	4576541.9	5025220.4	91.071	PASS	70-125	65208.1	62542.5	104.26	PASS	70-125
N028745-014B	SAMP	1	4510828.1	5025220.4	89.76	PASS	70-125	64306.9	62542.5	102.82	PASS	70-125
N028745-014B	SAMP	5	4586215.3	5025220.4	91.26	PASS	70-125	64068.1	62542.5	102.44	PASS	70-125
N028745-015B	SAMP	1	4445328.8	5025220.4	88.46	PASS	70-125	62977.2	62542.5	100.7	PASS	70-125
N028745-015B	SAMP	5	4621882.2	5025220.4	91.97	PASS	70-125	63569.4	62542.5	101.64	PASS	70-125
CCV5	CCV	1	4681545.9	5025220.4	93.16	PASS	70-125	65061	62542.5	104.03	PASS	70-125
CCB5	CCB	1	4594732	5025220.4	91.43	PASS	70-125	63557.4	62542.5	101.62	PASS	70-125
LLCCV1	CCV2	1	4784222.9	5025220.4	95.2	PASS	70-125	64312.2	62542.5	102.83	PASS	70-125
ICSA2	ICSA	1	4442744	5025220.4	88.41	PASS	70-125	64326.8	62542.5	102.85	PASS	70-125
ICSAB2	ICSAB	1	4423657	5025220.4	88.029	PASS	70-125	58915.9	62542.5	94.2	PASS	70-125
N028745-005B	SAMP	1	4431851.4	5025220.4	88.19	PASS	70-125	64442.8	62542.5	103.04	PASS	70-125
N028745-009B	SAMP	1	4585406.4	5025220.4	91.25	PASS	70-125	58760.2	62542.5	93.95	PASS	70-125
N028745-012B	SAMP	1	4509079.2	5025220.4	89.73	PASS	70-125	62510.1	62542.5	99.95	PASS	70-125
N028745-015B	SAMP	1	4443829.6	5025220.4	88.43	PASS	70-125	106.7	62542.5	0.17	NR!	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028744-003B	SAMP	250	4778458.7	5025220.4	95.09	PASS	70-125	64391.6	62542.5	102.96	PASS	70-125
N028744-005B	SAMP	25	4361430.5	5025220.4	86.79	PASS	70-125	60984.5	62542.5	97.51	PASS	70-125
N028726-001B-MSD	MSD	5	4335576.9	5025220.4	86.28	PASS	70-125	54671.6	62542.5	87.42	PASS	70-125
N028726-003B	SAMP	5	4198198.9	5025220.4	83.54	PASS	70-125	65588.4	62542.5	104.87	PASS	70-125
N028727-006B	SAMP	1	4860361.7	5025220.4	96.72	PASS	70-125	73866	62542.5	118.11	PASS	70-125
N028745-015B	SAMP	1	4615035	5025220.4	91.84	PASS	70-125	69688.1	62542.5	111.43	PASS	70-125
CCV6	CCV	1	4789081.6	5025220.4	95.3	PASS	70-125	70736	62542.5	113.1	PASS	70-125
CCB6	CCB	1	4706285.7	5025220.4	93.65	PASS	70-125	68889.2	62542.5	110.15	PASS	70-125
N028717-001C	SAMP	25	4656396.5	5025220.4	92.66	PASS	70-125	68052.7	62542.5	108.81	PASS	70-125
N028696-001B	SAMP	1	3287852.4	5025220.4	65.43	NR!	70-125	58700.7	62542.5	93.86	PASS	70-125
N028696-001A	SAMP	1	3414960.9	5025220.4	67.96	NR!	70-125	63487.1	62542.5	101.51	PASS	70-125
N028696-005B	SAMP	1	3207565.2	5025220.4	63.83	NR!	70-125	61902.1	62542.5	98.98	PASS	70-125
N028696-005A	SAMP	1	3117623.7	5025220.4	62.04	NR!	70-125	60499.3	62542.5	96.73	PASS	70-125
CCV7	CCV	1	4672020.4	5025220.4	92.97	PASS	70-125	70315.2	62542.5	112.43	PASS	70-125
CCB7	CCB	1	4669682.4	5025220.4	92.92	PASS	70-125	68816.9	62542.5	110.03	PASS	70-125
CCV8	CCV	1	4776670.8	5025220.4	95.054	PASS	70-125	66737.3	62542.5	106.71	PASS	70-125
CCB8	CCB	1	4674796	5025220.4	93.027	PASS	70-125	64324.8	62542.5	102.85	PASS	70-125
CCV9	CCV	1	4504115.1	5025220.4	89.63	PASS	70-125	57562.4	62542.5	92.037	PASS	70-125
CCB9	CCB	1	4506261.8	5025220.4	89.67	PASS	70-125	55714.8	62542.5	89.083	PASS	70-125
CCV10	CCV	1	4473002.6	5025220.4	89.011	PASS	70-125	57035	62542.5	91.19	PASS	70-125
CCB10	CCB	1	4443101.8	5025220.4	88.42	PASS	70-125	55614.8	62542.5	88.92	PASS	70-125
LLCCV2	CCV2	1	4634296.8	5025220.4	92.22	PASS	70-125	58041.8	62542.5	92.8	PASS	70-125
ICSA3	ICSA	1	4311674.1	5025220.4	85.8	PASS	70-125	55749.6	62542.5	89.14	PASS	70-125
ICSAB3	ICSAB	1	4241951.3	5025220.4	84.41	PASS	70-125	56971.4	62542.5	91.092	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46628.3	46628.3	100	PASS	70-125	53663.1	53663.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	47160	46628.3	101.14	PASS	70-125	54213.8	53663.1	101.03	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	47197.7	46628.3	101.22	PASS	70-125	54328.8	53663.1	101.24	PASS	70-125
Std3-5/50 ppb	ICAL	1	47257	46628.3	101.35	PASS	70-125	54076.8	53663.1	100.77	PASS	70-125
Std4-10/100 ppb	ICAL	1	46995.1	46628.3	100.79	PASS	70-125	54085.8	53663.1	100.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	47762.9	46628.3	102.43	PASS	70-125	54306.5	53663.1	101.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	47012.8	46628.3	100.82	PASS	70-125	53351.1	53663.1	99.42	PASS	70-125
Std7-100/1000 ppb	ICAL	1	47262.4	46628.3	101.36	PASS	70-125	54387.8	53663.1	101.35	PASS	70-125
Std8-200/2000 ppb	ICAL	1	46491.5	46628.3	99.71	PASS	70-125	52916.4	53663.1	98.61	PASS	70-125
ICV	ICV	1	52516.3	46628.3	112.63	PASS	70-125	59218	53663.1	110.35	PASS	70-125
ICB	ICB	1	46082.4	46628.3	98.83	PASS	70-125	52728	53663.1	98.26	PASS	70-125
LLICV	CCV1	1	48271	46628.3	103.52	PASS	70-125	55108	53663.1	102.69	PASS	70-125
ICSA1	ICSA	1	47852	46628.3	102.62	PASS	70-125	53017.8	53663.1	98.8	PASS	70-125
ICSAB1	ICSAB	1	43562.2	46628.3	93.42	PASS	70-125	46264	53663.1	86.21	PASS	70-125
LLICV	CCV1	1	54859.1	46628.3	117.65	PASS	70-125	63565	53663.1	118.45	PASS	70-125
MB-66914	MBLK	1	51338.3	46628.3	110.1	PASS	70-125	59485.6	53663.1	110.85	PASS	70-125
LCS-66914	LCS	1	54694.4	46628.3	117.3	PASS	70-125	63189.5	53663.1	117.75	PASS	70-125
N028744-001B	SAMP	1	42683.2	46628.3	91.54	PASS	70-125	47171	53663.1	87.9	PASS	70-125
N028744-001B	SAMP	5	45568.8	46628.3	97.73	PASS	70-125	52508.4	53663.1	97.85	PASS	70-125
N028744-001B	SAMP	25	50562.3	46628.3	108.44	PASS	70-125	58340.4	53663.1	108.72	PASS	70-125
N028744-001B-PS	PS	1	44330.9	46628.3	95.073	PASS	70-125	49031.1	53663.1	91.37	PASS	70-125
N028744-001B-PS	PS	5	48841.7	46628.3	104.75	PASS	70-125	55604.2	53663.1	103.62	PASS	70-125
N028744-001B-MS	MS	1	47412.9	46628.3	101.68	PASS	70-125	51668	53663.1	96.28	PASS	70-125
N028744-001B-MS	MS	5	51499.7	46628.3	110.45	PASS	70-125	57750.3	53663.1	107.62	PASS	70-125
N028744-001B-MSD	MSD	1	49883.4	46628.3	106.98	PASS	70-125	52809.4	53663.1	98.41	PASS	70-125
CCV1	CCV	1	43812.9	46628.3	93.96	PASS	70-125	47776.3	53663.1	89.03	PASS	70-125
CCB1	CCB	1	56147	46628.3	120.41	PASS	70-125	62887.2	53663.1	117.19	PASS	70-125
N028744-001B-MSD	MSD	5	51017.1	46628.3	109.41	PASS	70-125	57066.9	53663.1	106.34	PASS	70-125
N028744-002B	SAMP	1	50863.1	46628.3	109.08	PASS	70-125	56589.7	53663.1	105.45	PASS	70-125
N028744-002B	SAMP	5	51248.8	46628.3	109.91	PASS	70-125	58923.6	53663.1	109.8	PASS	70-125
N028744-003B	SAMP	1	48841.4	46628.3	104.75	PASS	70-125	52332.3	53663.1	97.52	PASS	70-125
N028744-003B	SAMP	5	50221.1	46628.3	107.71	PASS	70-125	56874	53663.1	105.98	PASS	70-125
N028744-003B	SAMP	25	53418.1	46628.3	114.56	PASS	70-125	59293.7	53663.1	110.49	PASS	70-125
N028744-004B	SAMP	1	37938.3	46628.3	81.36	PASS	70-125	39062.9	53663.1	72.79	PASS	70-125
N028744-004B	SAMP	5	51310.2	46628.3	110.04	PASS	70-125	55177.3	53663.1	102.82	PASS	70-125
N028744-005B	SAMP	1	43967.7	46628.3	94.29	PASS	70-125	43397.4	53663.1	80.87	PASS	70-125
N028744-005B	SAMP	5	47717.2	46628.3	102.34	PASS	70-125	49367.6	53663.1	92	PASS	70-125
CCV2	CCV	1	54022.2	46628.3	115.86	PASS	70-125	59691.9	53663.1	111.23	PASS	70-125
CCB2	CCB	1	52459.4	46628.3	112.51	PASS	70-125	59054.1	53663.1	110.05	PASS	70-125
N028744-006B	SAMP	1	47099.7	46628.3	101.01	PASS	70-125	50843.2	53663.1	94.75	PASS	70-125
N028744-006B	SAMP	5	52067	46628.3	111.66	PASS	70-125	57656.8	53663.1	107.44	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028745-001B	SAMP	1	51646.9	46628.3	110.76	PASS	70-125	57926.5	53663.1	107.94	PASS	70-125
N028745-001B	SAMP	5	51378.1	46628.3	110.19	PASS	70-125	58391.6	53663.1	108.81	PASS	70-125
N028745-002B	SAMP	1	52515	46628.3	112.62	PASS	70-125	58759.6	53663.1	109.5	PASS	70-125
N028745-002B	SAMP	5	51780.6	46628.3	111.05	PASS	70-125	59792.3	53663.1	111.42	PASS	70-125
N028745-003B	SAMP	1	51677	46628.3	110.83	PASS	70-125	58922.2	53663.1	109.8	PASS	70-125
N028745-003B	SAMP	5	51658.1	46628.3	110.79	PASS	70-125	59717.6	53663.1	111.28	PASS	70-125
N028745-004B	SAMP	1	51299.3	46628.3	110.02	PASS	70-125	58852.2	53663.1	109.67	PASS	70-125
N028745-004B	SAMP	5	51843.1	46628.3	111.18	PASS	70-125	59924.9	53663.1	111.67	PASS	70-125
CCV3	CCV	1	52075.8	46628.3	111.68	PASS	70-125	59191.1	53663.1	110.3	PASS	70-125
CCB3	CCB	1	51329.2	46628.3	110.08	PASS	70-125	58905.8	53663.1	109.77	PASS	70-125
N028745-005B	SAMP	1	51068.4	46628.3	109.52	PASS	70-125	56675.5	53663.1	105.61	PASS	70-125
N028745-005B	SAMP	5	50524.3	46628.3	108.36	PASS	70-125	58276.7	53663.1	108.6	PASS	70-125
N028745-006B	SAMP	1	51700.3	46628.3	110.88	PASS	70-125	58976	53663.1	109.9	PASS	70-125
N028745-006B	SAMP	5	51106.1	46628.3	109.6	PASS	70-125	58786.5	53663.1	109.55	PASS	70-125
N028745-007B	SAMP	1	51055	46628.3	109.49	PASS	70-125	57515.1	53663.1	107.18	PASS	70-125
N028745-007B	SAMP	5	51029.4	46628.3	109.44	PASS	70-125	59394	53663.1	110.68	PASS	70-125
N028745-008B	SAMP	1	49830	46628.3	106.87	PASS	70-125	56626.4	53663.1	105.52	PASS	70-125
N028745-008B	SAMP	5	50404.1	46628.3	108.1	PASS	70-125	58121.7	53663.1	108.31	PASS	70-125
N028745-009B	SAMP	1	49157.1	46628.3	105.42	PASS	70-125	55523.9	53663.1	103.47	PASS	70-125
N028745-009B	SAMP	5	49893.6	46628.3	107	PASS	70-125	57286.5	53663.1	106.75	PASS	70-125
CCV4	CCV	1	50421.3	46628.3	108.13	PASS	70-125	56869.6	53663.1	105.98	PASS	70-125
CCB4	CCB	1	48431.4	46628.3	103.87	PASS	70-125	56007.8	53663.1	104.37	PASS	70-125
N028745-010B	SAMP	1	47615.6	46628.3	102.12	PASS	70-125	53966.5	53663.1	100.57	PASS	70-125
N028745-010B	SAMP	5	49716.4	46628.3	106.62	PASS	70-125	57720.3	53663.1	107.56	PASS	70-125
N028745-011B	SAMP	1	48176.1	46628.3	103.32	PASS	70-125	54853.7	53663.1	102.22	PASS	70-125
N028745-011B	SAMP	5	48872.7	46628.3	104.81	PASS	70-125	56716.8	53663.1	105.69	PASS	70-125
N028745-012B	SAMP	1	47172.4	46628.3	101.17	PASS	70-125	52870.5	53663.1	98.52	PASS	70-125
N028745-012B	SAMP	5	48273.3	46628.3	103.53	PASS	70-125	55478.4	53663.1	103.38	PASS	70-125
N028745-014B	SAMP	1	47043	46628.3	100.89	PASS	70-125	53532.8	53663.1	99.76	PASS	70-125
N028745-014B	SAMP	5	47972.2	46628.3	102.88	PASS	70-125	55057.8	53663.1	102.6	PASS	70-125
N028745-015B	SAMP	1	46265.1	46628.3	99.22	PASS	70-125	52720.2	53663.1	98.24	PASS	70-125
N028745-015B	SAMP	5	47380.5	46628.3	101.61	PASS	70-125	55493.7	53663.1	103.41	PASS	70-125
CCV5	CCV	1	48178.3	46628.3	103.32	PASS	70-125	55567.4	53663.1	103.55	PASS	70-125
CCB5	CCB	1	46987.4	46628.3	100.77	PASS	70-125	54966.6	53663.1	102.43	PASS	70-125
LLCCV1	CCV2	1	48209.6	46628.3	103.39	PASS	70-125	55528.3	53663.1	103.48	PASS	70-125
ICSA2	ICSA	1	47119.9	46628.3	101.05	PASS	70-125	52542.9	53663.1	97.91	PASS	70-125
ICSAB2	ICSAB	1	42771.2	46628.3	91.73	PASS	70-125	45504.1	53663.1	84.8	PASS	70-125
N028745-005B	SAMP	1	45606.8	46628.3	97.81	PASS	70-125	53956.5	53663.1	100.55	PASS	70-125
N028745-009B	SAMP	1	42660.9	46628.3	91.49	PASS	70-125	45753.7	53663.1	85.26	PASS	70-125
N028745-012B	SAMP	1	45290.1	46628.3	97.13	PASS	70-125	51770.5	53663.1	96.47	PASS	70-125
N028745-015B	SAMP	1	13.3	46628.3	0.029	NR!	70-125	14.4	53663.1	0.027	NR!	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028744-003B	SAMP	250	46599.7	46628.3	99.94	PASS	70-125	54226.3	53663.1	101.05	PASS	70-125
N028744-005B	SAMP	25	43975.6	46628.3	94.31	PASS	70-125	51073.8	53663.1	95.17	PASS	70-125
N028726-001B-MSD	MSD	5	39224.6	46628.3	84.12	PASS	70-125	40918.7	53663.1	76.25	PASS	70-125
N028726-003B	SAMP	5	45953.1	46628.3	98.55	PASS	70-125	50949	53663.1	94.94	PASS	70-125
N028727-006B	SAMP	1	52790.4	46628.3	113.22	PASS	70-125	60230.4	53663.1	112.24	PASS	70-125
N028745-015B	SAMP	1	50120.9	46628.3	107.49	PASS	70-125	58566.9	53663.1	109.14	PASS	70-125
CCV6	CCV	1	51846.3	46628.3	111.19	PASS	70-125	59888.1	53663.1	111.6	PASS	70-125
CCB6	CCB	1	49427.7	46628.3	106	PASS	70-125	58142.9	53663.1	108.35	PASS	70-125
N028717-001C	SAMP	25	49905.8	46628.3	107.03	PASS	70-125	58067.2	53663.1	108.21	PASS	70-125
N028696-001B	SAMP	1	39156.7	46628.3	83.98	PASS	70-125	41837.7	53663.1	77.96	PASS	70-125
N028696-001A	SAMP	1	41692.9	46628.3	89.42	PASS	70-125	44146.1	53663.1	82.27	PASS	70-125
N028696-005B	SAMP	1	40398.5	46628.3	86.64	PASS	70-125	42432.5	53663.1	79.072	PASS	70-125
N028696-005A	SAMP	1	39927.4	46628.3	85.63	PASS	70-125	41833.1	53663.1	77.96	PASS	70-125
CCV7	CCV	1	50311.7	46628.3	107.9	PASS	70-125	58521.1	53663.1	109.05	PASS	70-125
CCB7	CCB	1	50359.6	46628.3	108	PASS	70-125	57833	53663.1	107.77	PASS	70-125
CCV8	CCV	1	48148.3	46628.3	103.26	PASS	70-125	54923.9	53663.1	102.35	PASS	70-125
CCB8	CCB	1	47543.3	46628.3	101.96	PASS	70-125	54207.3	53663.1	101.01	PASS	70-125
CCV9	CCV	1	44068.1	46628.3	94.51	PASS	70-125	51503	53663.1	95.97	PASS	70-125
CCB9	CCB	1	42754.4	46628.3	91.69	PASS	70-125	50053	53663.1	93.27	PASS	70-125
CCV10	CCV	1	43227	46628.3	92.71	PASS	70-125	50397.2	53663.1	93.91	PASS	70-125
CCB10	CCB	1	42337.8	46628.3	90.8	PASS	70-125	49587.2	53663.1	92.4	PASS	70-125
LLCCV2	CCV2	1	44026.9	46628.3	94.42	PASS	70-125	50928.7	53663.1	94.9	PASS	70-125
ICSA3	ICSA	1	41378.8	46628.3	88.74	PASS	70-125	47515.4	53663.1	88.54	PASS	70-125
ICSAB3	ICSAB	1	42200	46628.3	90.5	PASS	70-125	48206.3	53663.1	89.83	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1451516.4	1451516.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1454682.2	1451516.4	100.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1448560.3	1451516.4	99.8	PASS	70-125
Std3-5/50 ppb	ICAL	1	1461389.1	1451516.4	100.68	PASS	70-125
Std4-10/100 ppb	ICAL	1	1459884.1	1451516.4	100.58	PASS	70-125
Std5-20/200 ppb	ICAL	1	1462552	1451516.4	100.76	PASS	70-125
Std6-40/400 ppb	ICAL	1	1452955.8	1451516.4	100.1	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1440505.5	1451516.4	99.24	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1410396.5	1451516.4	97.17	PASS	70-125
ICV	ICV	1	1622405.3	1451516.4	111.77	PASS	70-125
ICB	ICB	1	1445519.2	1451516.4	99.59	PASS	70-125
LLICV	CCV1	1	1491617.4	1451516.4	102.76	PASS	70-125
ICSA1	ICSA	1	1355889.9	1451516.4	93.41	PASS	70-125
ICSAB1	ICSAB	1	1200987.9	1451516.4	82.74	PASS	70-125
LLICV	CCV1	1	1655303.4	1451516.4	114.04	PASS	70-125
MB-66914	MBLK	1	1555620.7	1451516.4	107.17	PASS	70-125
LCS-66914	LCS	1	1673202.5	1451516.4	115.27	PASS	70-125
N028744-001B	SAMP	1	1146426.7	1451516.4	78.98	PASS	70-125
N028744-001B	SAMP	5	1271199.1	1451516.4	87.58	PASS	70-125
N028744-001B	SAMP	25	1450929.3	1451516.4	99.96	PASS	70-125
N028744-001B-PS	PS	1	1168888.3	1451516.4	80.53	PASS	70-125
N028744-001B-PS	PS	5	1357600.1	1451516.4	93.53	PASS	70-125
N028744-001B-MS	MS	1	1235133.5	1451516.4	85.093	PASS	70-125
N028744-001B-MS	MS	5	1401249.8	1451516.4	96.54	PASS	70-125
N028744-001B-MSD	MSD	1	1272172.3	1451516.4	87.64	PASS	70-125
CCV1	CCV	1	1348269.9	1451516.4	92.89	PASS	70-125
CCB1	CCB	1	1646038.1	1451516.4	113.4	PASS	70-125
N028744-001B-MSD	MSD	5	1415355.3	1451516.4	97.51	PASS	70-125
N028744-002B	SAMP	1	1349957.9	1451516.4	93.003	PASS	70-125
N028744-002B	SAMP	5	1430463.1	1451516.4	98.55	PASS	70-125
N028744-003B	SAMP	1	1311718.2	1451516.4	90.37	PASS	70-125
N028744-003B	SAMP	5	1411269.8	1451516.4	97.23	PASS	70-125
N028744-003B	SAMP	25	1519538.8	1451516.4	104.69	PASS	70-125
N028744-004B	SAMP	1	950232.5	1451516.4	65.46	NR!	70-125
N028744-004B	SAMP	5	1355006.9	1451516.4	93.35	PASS	70-125
N028744-005B	SAMP	1	1063982	1451516.4	73.3	PASS	70-125
N028744-005B	SAMP	5	1228989.1	1451516.4	84.67	PASS	70-125
CCV2	CCV	1	1543395.4	1451516.4	106.33	PASS	70-125
CCB2	CCB	1	1518339.5	1451516.4	104.6	PASS	70-125
N028744-006B	SAMP	1	1233946.1	1451516.4	85.011	PASS	70-125
N028744-006B	SAMP	5	1423550.1	1451516.4	98.073	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028745-001B	SAMP	1	1400403.4	1451516.4	96.48	PASS	70-125
N028745-001B	SAMP	5	1439829.3	1451516.4	99.19	PASS	70-125
N028745-002B	SAMP	1	1401674.2	1451516.4	96.57	PASS	70-125
N028745-002B	SAMP	5	1476312.4	1451516.4	101.71	PASS	70-125
N028745-003B	SAMP	1	1407570.9	1451516.4	96.97	PASS	70-125
N028745-003B	SAMP	5	1445136.2	1451516.4	99.56	PASS	70-125
N028745-004B	SAMP	1	1390916.4	1451516.4	95.83	PASS	70-125
N028745-004B	SAMP	5	1472806.7	1451516.4	101.47	PASS	70-125
CCV3	CCV	1	1515436.6	1451516.4	104.4	PASS	70-125
CCB3	CCB	1	1498587.6	1451516.4	103.24	PASS	70-125
N028745-005B	SAMP	1	1380680.8	1451516.4	95.12	PASS	70-125
N028745-005B	SAMP	5	1414405.9	1451516.4	97.44	PASS	70-125
N028745-006B	SAMP	1	1411699.5	1451516.4	97.26	PASS	70-125
N028745-006B	SAMP	5	1449595	1451516.4	99.87	PASS	70-125
N028745-007B	SAMP	1	1386606.6	1451516.4	95.53	PASS	70-125
N028745-007B	SAMP	5	1441477.3	1451516.4	99.31	PASS	70-125
N028745-008B	SAMP	1	1347812.9	1451516.4	92.86	PASS	70-125
N028745-008B	SAMP	5	1425427.7	1451516.4	98.2	PASS	70-125
N028745-009B	SAMP	1	1347829.9	1451516.4	92.86	PASS	70-125
N028745-009B	SAMP	5	1421088.7	1451516.4	97.9	PASS	70-125
CCV4	CCV	1	1473106.1	1451516.4	101.49	PASS	70-125
CCB4	CCB	1	1459506.9	1451516.4	100.55	PASS	70-125
N028745-010B	SAMP	1	1300702.1	1451516.4	89.61	PASS	70-125
N028745-010B	SAMP	5	1400915.5	1451516.4	96.51	PASS	70-125
N028745-011B	SAMP	1	1329250.4	1451516.4	91.58	PASS	70-125
N028745-011B	SAMP	5	1382298.4	1451516.4	95.23	PASS	70-125
N028745-012B	SAMP	1	1286244.4	1451516.4	88.61	PASS	70-125
N028745-012B	SAMP	5	1364529.7	1451516.4	94.007	PASS	70-125
N028745-014B	SAMP	1	1283407.9	1451516.4	88.42	PASS	70-125
N028745-014B	SAMP	5	1373393.6	1451516.4	94.62	PASS	70-125
N028745-015B	SAMP	1	1248545.1	1451516.4	86.017	PASS	70-125
N028745-015B	SAMP	5	1366039.3	1451516.4	94.11	PASS	70-125
CCV5	CCV	1	1436583.5	1451516.4	98.97	PASS	70-125
CCB5	CCB	1	1421725.6	1451516.4	97.95	PASS	70-125
LLCCV1	CCV2	1	1444896.1	1451516.4	99.54	PASS	70-125
ICSA2	ICSA	1	1281769.1	1451516.4	88.31	PASS	70-125
ICSAB2	ICSAB	1	1186629.9	1451516.4	81.75	PASS	70-125
N028745-005B	SAMP	1	1245404.4	1451516.4	85.8	PASS	70-125
N028745-009B	SAMP	1	1196590.1	1451516.4	82.44	PASS	70-125
N028745-012B	SAMP	1	1233948.6	1451516.4	85.011	PASS	70-125
N028745-015B	SAMP	1	80	1451516.4	0.0055	NR!	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028744-003B	SAMP	250	1417181.8	1451516.4	97.63	PASS	70-125
N028744-005B	SAMP	25	1229980.8	1451516.4	84.74	PASS	70-125
N028726-001B-MSD	MSD	5	1110603.3	1451516.4	76.51	PASS	70-125
N028726-003B	SAMP	5	1192489.1	1451516.4	82.15	PASS	70-125
N028727-006B	SAMP	1	1427384.7	1451516.4	98.34	PASS	70-125
N028745-015B	SAMP	1	1357233.2	1451516.4	93.5	PASS	70-125
CCV6	CCV	1	1501301	1451516.4	103.43	PASS	70-125
CCB6	CCB	1	1477512.6	1451516.4	101.79	PASS	70-125
N028717-001C	SAMP	25	1437256	1451516.4	99.018	PASS	70-125
N028696-001B	SAMP	1	979885.9	1451516.4	67.51	NR!	70-125
N028696-001A	SAMP	1	1033522	1451516.4	71.2	PASS	70-125
N028696-005B	SAMP	1	981861.3	1451516.4	67.64	NR!	70-125
N028696-005A	SAMP	1	958294.1	1451516.4	66.02	NR!	70-125
CCV7	CCV	1	1477327.1	1451516.4	101.78	PASS	70-125
CCB7	CCB	1	1459628.2	1451516.4	100.56	PASS	70-125
CCV8	CCV	1	1469827.7	1451516.4	101.26	PASS	70-125
CCB8	CCB	1	1438063.6	1451516.4	99.073	PASS	70-125
CCV9	CCV	1	1319568.2	1451516.4	90.91	PASS	70-125
CCB9	CCB	1	1298631.4	1451516.4	89.47	PASS	70-125
CCV10	CCV	1	1293312.5	1451516.4	89.1	PASS	70-125
CCB10	CCB	1	1289991.6	1451516.4	88.87	PASS	70-125
LLCCV2	CCV2	1	1338734.5	1451516.4	92.23	PASS	70-125
ICSA3	ICSA	1	1141510.5	1451516.4	78.64	PASS	70-125
ICSAB3	ICSAB	1	1148627.8	1451516.4	79.13	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028744
Test Method: EPA 6020
Analysis Date: 2/27/2018

Matrix: Groundwater
Batch No.: 66914

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Man and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028744-001B DT 5X	Arsenic	ug/L	2.041089	NA	2.071188	1.45%	10
N028744-001B DT 25X	Chromium	ug/L	550.3148	PASS	523.8971	5.04%	10
N028744-001B DT 5X	Manganese	ug/L	6.994867	NA	6.303051	10.98%	10
N028744-001B DT 5X	Molybdenum	ug/L	28.9895	PASS	28.53612	1.59%	10
N028744-001B DT 5X	Selenium	ug/L	6.624075	NA	7.657848	13.50%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N028744-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID:	**ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.795	0.10	10.00	2.071	107	80	120				
Manganese	100.171	0.50	100.0	6.303	93.9	80	120				
Molybdenum	39.336	0.50	10.00	28.54	108	80	120				
Selenium	16.990	0.50	10.00	7.658	93.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028744
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028744-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	518.083	5.0	10.00	523.9	-58.1	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 07, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028745

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 22, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N028744-001B-MS and N028744-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *07-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028745-001A	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001B	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001C	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001D	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001E	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-002A	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002B	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002C	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002D	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002E	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-003A	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003B	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003C	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003D	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003E	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-004A	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004B	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004C	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004D	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004E	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-005A	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005B	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005C	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005D	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005E	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-006A	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-006B	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-006C	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-006D	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028745-006E	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-007A	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007B	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007C	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007D	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007E	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-008A	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008B	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008C	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008D	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008E	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-009A	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009B	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009C	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009D	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009E	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-010A	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010B	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010C	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010D	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010E	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-011A	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011B	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011C	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011D	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011E	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-012A	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-012B	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-012C	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-012D	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028745-012E	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-013A	AB-3-Q118	Groundwater	2/22/2018 2:00:00 PM	2/22/2018	3/7/2018
N028745-014A	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014B	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014C	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014D	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014E	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-015A	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015B	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015C	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015D	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015E	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028744-004DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122269
Client ID:	ZZZZZZ	Batch ID:	R122269	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	20000.000	0.10						20100	0.499	2	

Sample ID	N028745-015DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122269
Client ID:	ZZZZZZ	Batch ID:	R122269	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	983.000	0.10						985.0	0.203	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-002

Client Sample ID: MW-909-Q118
Collection Date: 2/22/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**		PrepDate				Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-006

Client Sample ID: C-CON-D-Q118
Collection Date: 2/22/2018 10:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-007

Client Sample ID: C-CON-S-Q118
Collection Date: 2/22/2018 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-009

Client Sample ID: C-NR1-S-Q118
Collection Date: 2/22/2018 11:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028744-003DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **122268**
Client ID: **ZZZZZZ**	Batch ID: **R122268**	TestNo: **SM4500-H+B**		Analysis Date: **2/23/2018**	SeqNo: **2940035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.370	0.10						7.330	0.544	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N028745-008DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **122268**
Client ID: **ZZZZZZ**	Batch ID: **R122268**	TestNo: **SM4500-H+B**		Analysis Date: **2/23/2018**	SeqNo: **2940046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.220	0.485	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66911	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	LCSW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	944.000	10	1000	0	94.4	80	120				

Sample ID	MB-66911	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	PBW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028745-011DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	ZZZZZZ	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940092

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66912	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122272
Client ID:	LCSW	Batch ID:	66912	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	975.000	10	1000	0	97.5	80	120				

Sample ID	MB-66912	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122272
Client ID:	PBW	Batch ID:	66912	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028745-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122272
Client ID:	ZZZZZZ	Batch ID:	66912	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940099

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 12:14 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 12:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-003

Client Sample ID: C-MAR-S-Q118
Collection Date: 2/22/2018 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 12:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 01:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 01:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 03:19 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 03:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 03:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 04:16 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 04:35 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 05:32 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 05:51 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB-3-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 2:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 06:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-014

Client Sample ID: C-NR4-S-Q118
Collection Date: 2/22/2018 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 06:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-015

Client Sample ID: MW-910-Q118
Collection Date: 2/22/2018 1:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 07:06 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R122254	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254	
Client ID:	PBW	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939458	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	ND	0.20										

Sample ID	LCS-R122254	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254	
Client ID:	LCSW	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939459	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	4.989	0.20	5.000	0	99.8	90	110					

Sample ID	N028745-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254	
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939477	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110					

Sample ID	N028745-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254	
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939479	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110					

Sample ID	N028745-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254	
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939481	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110					

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028745-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939483

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID	N028745-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID	N028745-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID	N028745-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939491

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N028745-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028745-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID	N028745-006AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110	1.040	4.03	20	

Sample ID	N028745-010ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939500

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N028745-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID	N028745-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939505

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028745-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0	110	90	110				

Sample ID	N028745-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N028745-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID	N028745-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-66914	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	PBW	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943725

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-66914	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	LCSW	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943726

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.585	1.0	10.00	0	106	85	115				

Sample ID	N028744-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	515.150	5.0	10.00	523.9	-87.5	75	125				S

Sample ID	N028744-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122346
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943737

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	520.905	5.0	10.00	523.9	-29.9	75	125	515.2	1.11	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122450	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	PBW	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122450	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	LCSW	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947105

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.7	85	115				

Sample ID	N028744-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.614	0.50						9.198	6.56	20	

Sample ID	N028744-005CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947111

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.336	0.25	2.500	4.015	92.8	75	125				

Sample ID	N028744-005CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.433	0.25	2.500	4.015	96.7	75	125	6.336	1.53	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-001

Client Sample ID: C-MAR-D-Q118
Collection Date: 2/22/2018 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	28	18	20		ug/L	1	2/27/2018 01:31 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	33	18	20		ug/L	1	2/27/2018 03:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-002

Client Sample ID: MW-909-Q118
Collection Date: 2/22/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	41	18	20		ug/L	1	2/27/2018 04:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	28	18	20		ug/L	1	2/27/2018 02:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	45	18	20		ug/L	1	2/27/2018 04:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	23	18	20		ug/L	1	2/27/2018 04:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-005

Client Sample ID: RRB-Q118
Collection Date: 2/22/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	21	18	20		ug/L	1	2/27/2018 02:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	41	18	20		ug/L	1	2/27/2018 04:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	24	18	20		ug/L	1	2/27/2018 04:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-007

Client Sample ID: C-CON-S-Q118
Collection Date: 2/22/2018 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:45 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:50 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	26	18	20		ug/L	1	2/27/2018 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:05 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	23	18	20		ug/L	1	2/27/2018 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:10 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	24	18	20		ug/L	1	2/27/2018 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:15 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	48	18	20		ug/L	1	2/27/2018 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-012

Client Sample ID: C-NR4-D-Q118
Collection Date: 2/22/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:41 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	20	18	20		ug/L	1	2/27/2018 05:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-014

Client Sample ID: C-NR4-S-Q118
Collection Date: 2/22/2018 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:25 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-015

Client Sample ID: MW-910-Q118
Collection Date: 2/22/2018 1:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:29 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	27	18	20		ug/L	1	2/27/2018 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66927**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **PBW**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66927**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **LCSW**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.498	20	100.0	0	103	85	115				

Sample ID **N028745-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.459	20	100.0	28.44	92.0	75	125				

Sample ID **N028745-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.378	20	100.0	28.44	91.9	75	125	120.5	0.0671	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66926	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	PBW	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942510

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66926	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	LCSW	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.984	20	100.0	0	103	85	115				

Sample ID	N028745-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	141.096	20	100.0	33.23	108	75	125				

Sample ID	N028745-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942518

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	140.027	20	100.0	33.23	107	75	125	141.1	0.760	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 01:28 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:28 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:28 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	2/27/2018 01:28 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 01:40 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:40 PM
Manganese	0.76	0.26	0.50		µg/L	1	2/27/2018 01:40 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 01:40 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	2/27/2018 01:51 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:51 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:51 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 01:51 PM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:02 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:02 PM
Manganese	3.3	0.26	0.50		µg/L	1	2/27/2018 02:02 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:02 PM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-005

Client Sample ID: RRB-Q118
Collection Date: 2/22/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 02:25 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:25 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:25 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:25 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-006

Client Sample ID: C-CON-D-Q118
Collection Date: 2/22/2018 10:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.4	0.081	0.10		µg/L	1	2/27/2018 02:36 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:36 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:36 PM
Molybdenum	5.2	0.21	0.50		µg/L	1	2/27/2018 02:36 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 02:47 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:47 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:47 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:47 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:59 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:59 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:59 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:59 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:10 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:10 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:10 PM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 03:10 PM
Selenium	1.9	0.36	0.50		µg/L	1	2/27/2018 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 03:33 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:33 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:33 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 03:33 PM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 03:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 03:45 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:45 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:45 PM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 03:45 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 03:57 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 03:57 PM
Manganese	3.7	0.26	0.50		µg/L	1	2/27/2018 03:57 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 03:57 PM
Selenium	1.3	0.36	0.50		µg/L	1	2/27/2018 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 04:08 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 04:08 PM
Manganese	5.7	0.26	0.50		µg/L	1	2/27/2018 04:08 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 04:08 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 04:20 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 04:20 PM
Manganese	4.2	0.26	0.50		µg/L	1	2/27/2018 04:20 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	2/27/2018 04:20 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66914**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **PBW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66914**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **LCSW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.373	0.10	10.00	0	104	85	115				
Barium	10.236	1.0	10.00	0	102	85	115				
Manganese	103.945	0.50	100.0	0	104	85	115				
Molybdenum	10.063	0.50	10.00	0	101	85	115				
Selenium	9.911	0.50	10.00	0	99.1	85	115				

Sample ID **N028744-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.917	0.10	10.00	2.071	108	75	125				
Barium	40.832	1.0	10.00	31.18	96.6	75	125				
Manganese	98.191	0.50	100.0	6.303	91.9	75	125				
Molybdenum	39.644	0.50	10.00	28.54	111	75	125				
Selenium	17.088	0.50	10.00	7.658	94.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N028744-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **2/23/2018** RunNo: **122347**
Client ID: **ZZZZZZ** Batch ID: **66914** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **2/27/2018** SeqNo: **2943857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.849	0.10	10.00	2.071	108	75	125	12.92	0.529	20	
Barium	41.197	1.0	10.00	31.18	100	75	125	40.83	0.889	20	
Manganese	98.374	0.50	100.0	6.303	92.1	75	125	98.19	0.186	20	
Molybdenum	39.467	0.50	10.00	28.54	109	75	125	39.64	0.448	20	
Selenium	17.130	0.50	10.00	7.658	94.7	75	125	17.09	0.247	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 2

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓ Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: Y N; 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number 2; 6. Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 3.2°C / 2.6°C / 3.1°C
Submitted By: Gary Clift	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Courier:
Title: SR. Technician	Sampled By: GARY CLIFT	Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface	Tracking No.:
Signature: Date: 2-22-18	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
I hereby authorize ASSET Labs to perform the tests indicated below.	Signature: Date: 2-22-18		
Project Name: PG&E Topock - RMP			
Project Number: RC000753.0801			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 ml Poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr 1x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B 1x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba 1x500mL poly	Total metals (SW6010B); HNO3 Fe 500 mL poly	Anions (E300.0); Br, Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028745-01	C-MAR-D-Q118	2/22/2018	0820		X		X		X	X		X	X			X	X	E	7	P	BN	
	-02	MW-909-Q118	2/22/2018	0830		X		X		X	X		X	X			X	X	E	7	P	BN	
	-03	C-MAR-S-Q118	2/22/2018	0845		X		X		X	X		X	X			X	X	E	7	P	BN	
	-04	R-19-Q118	2/22/2018	0915		X		X		X	X		X	X			X	X	E	7	P	BN	
	-05	RRB-Q118	2/22/2018	0940		X		X		X	X		X	X			X	X	E	7	P	BN	
	-06	C-CON-D-Q118	2/22/2018	1025		X		X		X	X		X	X			X	X	E	7	P	BN	
	-07	C-CON-S-Q118	2/22/2018	1045		X		X		X	X		X	X			X	X	E	7	P	BN	
	-08	C-NR1-D-Q118	2/22/2018	1125		X		X		X	X		X	X			X	X	E	7	P	BN	
	-09	C-NR1-S-Q118	2/22/2018	1145		X		X		X	X		X	X			X	X	E	7	P	BN	
	-10	C-NR3-D-Q118	2/22/2018	1230		X		X		X	X		X	X			X	X	E	7	P	BN	
	-11	C-NR3-S-Q118	2/22/2018	1250		X		X		X	X		X	X			X	X	E	7	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
GARY CLIFT	2-22-18 1610		2/22/18 1610
	2/22/18 1847		2/22/18 1847

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	$N=HNO_3$	$S=H_2SO_4$	C=4°C	T=Tube	V=VOA	P=Pint
$Z=Zn(AC)_2$	O=NaOH	$T=Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET LABORATORIES
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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition: 1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Global ID: Specify State:
Title: SR. Technician	Phone: 916-786-3302 Fax:		6. Method of Cooling: Ice
Signature: Date: 2-22-18	Sampled By: GARY CLIFT		Sample Temp: 3.2°C / 2.6°C / 3.1°C
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		Courier: Tracking No.:
Project Name: PG&E Topock - RMP	Signature: Date: 2-22-18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028745-12	C-NR4-D-Q118	2/22/2018	1325		X		X		X	X		X	X			X	X	E	7	P	BN	
	-13	AB-3-Q118	2/22/2018	1400		X													E	1	P	BN	
	-14	C-NR4-S-Q118	2/22/2018	1345		X		X		X	X		X	X			X	X	E	7	P	BN	
	-15	MW-910-Q118	2/22/2018	1355		X		X		X	X		X	X			X	X	E	7	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
GARY CLIFT 2-22-18	1610		2/22/18 1610
	2/22/18 1847		2/22/18 1847

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
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	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

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2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
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5. Trip Blanks and Equipment Blanks are billable sample.
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Preservatives:				Container Type:		
H=HCL	$N=HNO_3$	$S=H_2SO_4$	C=4°C	T=Tube	V=VOA	P=Pint
$Z=Zn(AC)_2$	O=NaOH	$T=Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/22/2018	Workorder:	N028745
Rep sample Temp (Deg C):	3.2/2.6/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 2/28/2018

Reviewed By: 03/05/2018

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-001A	C-MAR-D-Q118	2/22/2018 8:20:00 AM	3/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-001B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-001C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-001D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-001E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-002A	MW-909-Q118	2/22/2018 8:30:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-002B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-002C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-002D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-002D	MW-909-Q118	2/22/2018 8:30:00 AM	3/8/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-002E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-003A	C-MAR-S-Q118	2/22/2018 8:45:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-003B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-003C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-003D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-003E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-004A	R-19-Q118	2/22/2018 9:15:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-004B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-004B	R-19-Q118	2/22/2018 9:15:00 AM	3/8/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-004C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-004D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-004E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-005A	RRB-Q118	2/22/2018 9:40:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-005B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-005C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-005D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-005E	RRB-Q118	2/22/2018 9:40:00 AM	3/8/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-006A	C-CON-D-Q118	2/22/2018 10:25:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-006B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-006C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-006D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-006E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-007A	C-CON-S-Q118	2/22/2018 10:45:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-007B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-007C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-007C	C-CON-S-Q118	2/22/2018 10:45:00 AM	3/8/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-007D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-007E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-008A	C-NR1-D-Q118	2/22/2018 11:25:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-008B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-008C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-008D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-008E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-009A	C-NR1-S-Q118	2/22/2018 11:45:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-009B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-009B	C-NR1-S-Q118	2/22/2018 11:45:00 AM	3/8/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-009C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-009D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-009E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-010A	C-NR3-D-Q118	2/22/2018 12:30:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-010B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-010C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-010D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-010D	C-NR3-D-Q118	2/22/2018 12:30:00 PM	3/8/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-010E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-011A	C-NR3-S-Q118	2/22/2018 12:50:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-011B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-011C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-011D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-011E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-012A	C-NR4-D-Q118	2/22/2018 1:25:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-012B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-012C	C-NR4-D-Q118	2/22/2018 1:25:00 PM	3/8/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-012D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-012E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-013A	AB-3-Q118	2/22/2018 2:00:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-014A	C-NR4-S-Q118	2/22/2018 1:45:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-014B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-014C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-014D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-014E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-015A	MW-910-Q118	2/22/2018 1:55:00 PM	3/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-015B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-015C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-015D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-015E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-016A	FOLDER	3/8/2018	3/8/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028745

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028745

Item	Page
Cover Page	1-7
Analytical Result/QC Summary Reports	8-120
Sample Receiving Items	121-133
List of Analysts	134
Raw Data	
EPA 120.1	135-138
SM 4500-H+B	139-142
SM 2540D	143-157
EPA 218.6	158-288
SM 4500-NO3F	289-304
EPA 6010B_Dissolved	305-341
EPA 6010B	342-378
EPA 6020_Dissolved	379-451

March 07, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028745

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 22, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N028744-001B-MS and N028744-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *07-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028745-001A	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001B	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001C	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001D	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-001E	C-MAR-D-Q118	Groundwater	2/22/2018 8:20:00 AM	2/22/2018	3/7/2018
N028745-002A	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002B	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002C	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002D	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-002E	MW-909-Q118	Groundwater	2/22/2018 8:30:00 AM	2/22/2018	3/7/2018
N028745-003A	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003B	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003C	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003D	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-003E	C-MAR-S-Q118	Groundwater	2/22/2018 8:45:00 AM	2/22/2018	3/7/2018
N028745-004A	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004B	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004C	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004D	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-004E	R-19-Q118	Groundwater	2/22/2018 9:15:00 AM	2/22/2018	3/7/2018
N028745-005A	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005B	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005C	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005D	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-005E	RRB-Q118	Groundwater	2/22/2018 9:40:00 AM	2/22/2018	3/7/2018
N028745-006A	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-006B	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-006C	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-006D	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028745-006E	C-CON-D-Q118	Groundwater	2/22/2018 10:25:00 AM	2/22/2018	3/7/2018
N028745-007A	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007B	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007C	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007D	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-007E	C-CON-S-Q118	Groundwater	2/22/2018 10:45:00 AM	2/22/2018	3/7/2018
N028745-008A	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008B	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008C	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008D	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-008E	C-NR1-D-Q118	Groundwater	2/22/2018 11:25:00 AM	2/22/2018	3/7/2018
N028745-009A	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009B	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009C	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009D	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-009E	C-NR1-S-Q118	Groundwater	2/22/2018 11:45:00 AM	2/22/2018	3/7/2018
N028745-010A	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010B	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010C	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010D	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-010E	C-NR3-D-Q118	Groundwater	2/22/2018 12:30:00 PM	2/22/2018	3/7/2018
N028745-011A	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011B	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011C	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011D	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-011E	C-NR3-S-Q118	Groundwater	2/22/2018 12:50:00 PM	2/22/2018	3/7/2018
N028745-012A	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-012B	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-012C	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-012D	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N028745
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028745-012E	C-NR4-D-Q118	Groundwater	2/22/2018 1:25:00 PM	2/22/2018	3/7/2018
N028745-013A	AB-3-Q118	Groundwater	2/22/2018 2:00:00 PM	2/22/2018	3/7/2018
N028745-014A	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014B	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014C	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014D	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-014E	C-NR4-S-Q118	Groundwater	2/22/2018 1:45:00 PM	2/22/2018	3/7/2018
N028745-015A	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015B	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015C	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015D	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018
N028745-015E	MW-910-Q118	Groundwater	2/22/2018 1:55:00 PM	2/22/2018	3/7/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:	B	Analyte detected in the associated Method Blank		E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded		ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference			Results are wet unless otherwise specified
	DO	Surrogate Diluted Out			

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-005

Client Sample ID: RRB-Q118
Collection Date: 2/22/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-006

Client Sample ID: C-CON-D-Q118
Collection Date: 2/22/2018 10:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223E**	QC Batch: **R122269**			PrepDate			Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	2/23/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028744-004DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122269
Client ID:	ZZZZZZ	Batch ID:	R122269	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940062

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	20000.000	0.10						20100	0.499	2	

Sample ID	N028745-015DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122269
Client ID:	ZZZZZZ	Batch ID:	R122269	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	983.000	0.10						985.0	0.203	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-001

Client Sample ID: C-MAR-D-Q118
Collection Date: 2/22/2018 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-002

Client Sample ID: MW-909-Q118
Collection Date: 2/22/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-003

Client Sample ID: C-MAR-S-Q118
Collection Date: 2/22/2018 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.4	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-005

Client Sample ID: RRB-Q118
Collection Date: 2/22/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-007

Client Sample ID: C-CON-S-Q118
Collection Date: 2/22/2018 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-008

Client Sample ID: C-NR1-D-Q118
Collection Date: 2/22/2018 11:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-009

Client Sample ID: C-NR1-S-Q118
Collection Date: 2/22/2018 11:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-010

Client Sample ID: C-NR3-D-Q118
Collection Date: 2/22/2018 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-011

Client Sample ID: C-NR3-S-Q118
Collection Date: 2/22/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-012

Client Sample ID: C-NR4-D-Q118
Collection Date: 2/22/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-014

Client Sample ID: C-NR4-S-Q118
Collection Date: 2/22/2018 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-015

Client Sample ID: MW-910-Q118
Collection Date: 2/22/2018 1:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180223D**	QC Batch: **R122268**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	2/23/2018 10:00 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	2/23/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028744-003DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122268**
Client ID: **ZZZZZZ** Batch ID: **R122268** TestNo: **SM4500-H+B** Analysis Date: **2/23/2018** SeqNo: **2940035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.370	0.10						7.330	0.544	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N028745-008DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122268**
Client ID: **ZZZZZZ** Batch ID: **R122268** TestNo: **SM4500-H+B** Analysis Date: **2/23/2018** SeqNo: **2940046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.260	0.10						8.220	0.485	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180223H**	QC Batch: **66912**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_180223G**	QC Batch: **66911**				PrepDate	**2/23/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/23/2018 09:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66911	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	LCSW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940085

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	944.000	10	1000	0	94.4	80	120				

Sample ID	MB-66911	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	PBW	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028745-011DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122271
Client ID:	ZZZZZZ	Batch ID:	66911	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940092

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-66912	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122272
Client ID:	LCSW	Batch ID:	66912	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	975.000	10	1000	0	97.5	80	120				

Sample ID	MB-66912	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122272
Client ID:	PBW	Batch ID:	66912	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N028745-001DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	2/23/2018	RunNo:	122272
Client ID:	ZZZZZZ	Batch ID:	66912	TestNo:	SM2540D			Analysis Date:	2/23/2018	SeqNo:	2940099

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 12:14 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 12:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 12:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**			PrepDate	**2/23/2018**			Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 01:12 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 01:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180223A** QC Batch: **R122254** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 03:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180227C** QC Batch: **66914** PrepDate **2/23/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 03:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 03:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 04:16 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 04:35 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 05:32 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 05:51 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB-3-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 2:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 06:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A** QC Batch: **R122254**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 06:29 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180227C** QC Batch: **66914**				PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180223A**	QC Batch: **R122254**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/23/2018 07:06 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180227C**	QC Batch: **66914**			PrepDate	**2/23/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	2/27/2018 04:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122254**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **PBW**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122254**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **LCSW**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.989	0.20	5.000	0	99.8	90	110				

Sample ID **N028745-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID **N028745-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N028745-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028745-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939483

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID	N028745-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.098	0.20	1.000	0	110	90	110				

Sample ID	N028745-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID	N028745-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939491

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0	109	90	110				

Sample ID	N028745-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939494

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028745-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N028745-006AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110	1.040	4.03	20	

Sample ID **N028745-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N028745-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N028745-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028745-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0	110	90	110				

Sample ID	N028745-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.096	0.20	1.000	0	110	90	110				

Sample ID	N028745-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.074	0.20	1.000	0	107	90	110				

Sample ID	N028745-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122254
Client ID:	ZZZZZZ	Batch ID:	R122254	TestNo:	EPA 218.6			Analysis Date:	2/23/2018	SeqNo:	2939513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66914**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **PBW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66914**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **LCSW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.585	1.0	10.00	0	106	85	115				

Sample ID **N028744-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	515.150	5.0	10.00	523.9	-87.5	75	125				S

Sample ID **N028744-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	520.905	5.0	10.00	523.9	-29.9	75	125	515.2	1.11	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.47	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 10:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.49	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.45	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180305E**	QC Batch: **R122450**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	3/5/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122450	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	PBW	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122450	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	LCSW	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947105

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.493	0.050	0.5000	0	98.7	85	115				

Sample ID	N028744-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947107

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.614	0.50						9.198	6.56	20	

Sample ID	N028744-005CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947111

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.336	0.25	2.500	4.015	92.8	75	125				

Sample ID	N028744-005CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122450
Client ID:	ZZZZZZ	Batch ID:	R122450	TestNo:	SM4500-NO3			Analysis Date:	3/5/2018	SeqNo:	2947112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.433	0.25	2.500	4.015	96.7	75	125	6.336	1.53	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-001

Client Sample ID: C-MAR-D-Q118
Collection Date: 2/22/2018 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	28	18	20		ug/L	1	2/27/2018 01:31 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	33	18	20		ug/L	1	2/27/2018 03:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-002

Client Sample ID: MW-909-Q118
Collection Date: 2/22/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	41	18	20		ug/L	1	2/27/2018 04:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-003

Client Sample ID: C-MAR-S-Q118
Collection Date: 2/22/2018 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**				PrepDate	**2/26/2018**	Analyst: **CEI**
Iron	28	18	20		ug/L	1	2/27/2018 02:26 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**				PrepDate	**2/26/2018**	Analyst: **CEI**
Iron	45	18	20		ug/L	1	2/27/2018 04:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	23	18	20		ug/L	1	2/27/2018 04:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-005

Client Sample ID: RRB-Q118
Collection Date: 2/22/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	21	18	20		ug/L	1	2/27/2018 02:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	41	18	20		ug/L	1	2/27/2018 04:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-006

Client Sample ID: C-CON-D-Q118
Collection Date: 2/22/2018 10:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	24	18	20		ug/L	1	2/27/2018 04:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-007

Client Sample ID: C-CON-S-Q118
Collection Date: 2/22/2018 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:45 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 02:50 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	26	18	20		ug/L	1	2/27/2018 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:05 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	23	18	20		ug/L	1	2/27/2018 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-010

Client Sample ID: C-NR3-D-Q118
Collection Date: 2/22/2018 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:10 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	24	18	20		ug/L	1	2/27/2018 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:15 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	48	18	20		ug/L	1	2/27/2018 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-012

Client Sample ID: C-NR4-D-Q118
Collection Date: 2/22/2018 1:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:41 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	20	18	20		ug/L	1	2/27/2018 05:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-014

Client Sample ID: C-NR4-S-Q118
Collection Date: 2/22/2018 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:25 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:55:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227C**	QC Batch: **66927**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	2/27/2018 03:29 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180227A**	QC Batch: **66926**			PrepDate	**2/26/2018**		Analyst: **CEI**
Iron	27	18	20		ug/L	1	2/27/2018 05:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-66927**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **PBW**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-66927**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **LCSW**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.498	20	100.0	0	103	85	115				

Sample ID **N028745-001B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.459	20	100.0	28.44	92.0	75	125				

Sample ID **N028745-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **2/26/2018**	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.378	20	100.0	28.44	91.9	75	125	120.5	0.0671	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-66926	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	PBW	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942510

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-66926	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	LCSW	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.984	20	100.0	0	103	85	115				

Sample ID	N028745-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942517

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	141.096	20	100.0	33.23	108	75	125				

Sample ID	N028745-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	2/26/2018	RunNo:	122332
Client ID:	ZZZZZZ	Batch ID:	66926	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2942518

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	140.027	20	100.0	33.23	107	75	125	141.1	0.760	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-001

Client Sample ID: C-MAR-D-Q118
Collection Date: 2/22/2018 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 01:28 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:28 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:28 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	2/27/2018 01:28 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-002

Client Sample ID: MW-909-Q118
Collection Date: 2/22/2018 8:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 01:40 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:40 PM
Manganese	0.76	0.26	0.50		µg/L	1	2/27/2018 01:40 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 01:40 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	2/27/2018 01:51 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 01:51 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 01:51 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 01:51 PM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-004

Client Sample ID: R-19-Q118
Collection Date: 2/22/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:02 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:02 PM
Manganese	3.3	0.26	0.50		µg/L	1	2/27/2018 02:02 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:02 PM
Selenium	1.6	0.36	0.50		µg/L	1	2/27/2018 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-005

Client Sample ID: RRB-Q118
Collection Date: 2/22/2018 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 02:25 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:25 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:25 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:25 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-006

Client Sample ID: C-CON-D-Q118
Collection Date: 2/22/2018 10:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.4	0.081	0.10		µg/L	1	2/27/2018 02:36 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 02:36 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:36 PM
Molybdenum	5.2	0.21	0.50		µg/L	1	2/27/2018 02:36 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-007

Client Sample ID: C-CON-S-Q118
Collection Date: 2/22/2018 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 02:47 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:47 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:47 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:47 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 02:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 02:59 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 02:59 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 02:59 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 02:59 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 02:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 11:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 03:10 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:10 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:10 PM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 03:10 PM
Selenium	1.9	0.36	0.50		µg/L	1	2/27/2018 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-010

Client Sample ID: C-NR3-D-Q118
Collection Date: 2/22/2018 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 03:33 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:33 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:33 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	2/27/2018 03:33 PM
Selenium	1.8	0.36	0.50		µg/L	1	2/27/2018 03:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-011

Client Sample ID: C-NR3-S-Q118
Collection Date: 2/22/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.3	0.081	0.10		µg/L	1	2/27/2018 03:45 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 03:45 PM
Manganese	ND	0.26	0.50		µg/L	1	2/27/2018 03:45 PM
Molybdenum	4.9	0.21	0.50		µg/L	1	2/27/2018 03:45 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 03:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q118
Lab Order:	N028745	**Collection Date:**	2/22/2018 1:25:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028745-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**				PrepDate	**2/23/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	2/27/2018 03:57 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 03:57 PM
Manganese	3.7	0.26	0.50		µg/L	1	2/27/2018 03:57 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 03:57 PM
Selenium	1.3	0.36	0.50		µg/L	1	2/27/2018 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-014

Client Sample ID: C-NR4-S-Q118
Collection Date: 2/22/2018 1:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 04:08 PM
Barium	110	0.15	1.0		µg/L	1	2/27/2018 04:08 PM
Manganese	5.7	0.26	0.50		µg/L	1	2/27/2018 04:08 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	2/27/2018 04:08 PM
Selenium	1.5	0.36	0.50		µg/L	1	2/27/2018 04:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028745
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N028745-015

Client Sample ID: MW-910-Q118
Collection Date: 2/22/2018 1:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180227D**	QC Batch: **66914**			PrepDate	**2/23/2018**	Analyst: **CEI**	
Arsenic	2.2	0.081	0.10		µg/L	1	2/27/2018 04:20 PM
Barium	120	0.15	1.0		µg/L	1	2/27/2018 04:20 PM
Manganese	4.2	0.26	0.50		µg/L	1	2/27/2018 04:20 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	2/27/2018 04:20 PM
Selenium	1.7	0.36	0.50		µg/L	1	2/27/2018 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66914**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **PBW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-66914**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **LCSW**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.373	0.10	10.00	0	104	85	115				
Barium	10.236	1.0	10.00	0	102	85	115				
Manganese	103.945	0.50	100.0	0	104	85	115				
Molybdenum	10.063	0.50	10.00	0	101	85	115				
Selenium	9.911	0.50	10.00	0	99.1	85	115				

Sample ID **N028744-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/23/2018**	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.917	0.10	10.00	2.071	108	75	125				
Barium	40.832	1.0	10.00	31.18	96.6	75	125				
Manganese	98.191	0.50	100.0	6.303	91.9	75	125				
Molybdenum	39.644	0.50	10.00	28.54	111	75	125				
Selenium	17.088	0.50	10.00	7.658	94.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028744-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/23/2018	RunNo:	122347
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.849	0.10	10.00	2.071	108	75	125	12.92	0.529	20	
Barium	41.197	1.0	10.00	31.18	100	75	125	40.83	0.889	20	
Manganese	98.374	0.50	100.0	6.303	92.1	75	125	98.19	0.186	20	
Molybdenum	39.467	0.50	10.00	28.54	109	75	125	39.64	0.448	20	
Selenium	17.130	0.50	10.00	7.658	94.7	75	125	17.09	0.247	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Global ID:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	
Title: SR. Technician	Phone: 916-786-3302 Fax:		
Signature: Date: 2-22-18	Sampled By: GARY CLIFT		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
Project Name: PG&E Topock - RMP	Signature: Date: 2-22-18		
Project Number: RC000753.0801			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	ice	

Sample Temp: 3.2°/2.6°/3.1°

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 Ca, Mg, K, Na, B (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028745-01	C-MAR-D-Q118	2/22/2018	0820		X		X		X	X		X	X			X	X	E	7	P	BN	
	-02	MW-909-Q118	2/22/2018	0830		X		X		X	X		X	X			X	X	E	7	P	BN	
	-03	C-MAR-S-Q118	2/22/2018	0845		X		X		X	X		X	X			X	X	E	7	P	BN	
	-04	R-19-Q118	2/22/2018	0915		X		X		X	X		X	X			X	X	E	7	P	BN	
	-05	RRB-Q118	2/22/2018	0940		X		X		X	X		X	X			X	X	E	7	P	BN	
	-06	C-CON-D-Q118	2/22/2018	1025		X		X		X	X		X	X			X	X	E	7	P	BN	
	-07	C-CON-S-Q118	2/22/2018	1045		X		X		X	X		X	X			X	X	E	7	P	BN	
	-08	C-NR1-D-Q118	2/22/2018	1125		X		X		X	X		X	X			X	X	E	7	P	BN	
	-09	C-NR1-S-Q118	2/22/2018	1145		X		X		X	X		X	X			X	X	E	7	P	BN	
	-10	C-NR3-D-Q118	2/22/2018	1230		X		X		X	X		X	X			X	X	E	7	P	BN	
	-11	C-NR3-S-Q118	2/22/2018	1250		X		X		X	X		X	X			X	X	E	7	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
GARY CLIFT	2-22-18 1610		2/22/18 1610
	2/22/18 1847		2/22/18 1847

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		
Others/Specify:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

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P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Others ✓ (Specify: RWQCB)
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RWQCB ✓
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	
Submitted By: Gary Clift		Phone: 949-727-1400, ext 200 Fax:	Global ID: Specify State:
Title: SR. Technician	Phone: 916-786-3302 Fax:		
Signature: Date: 2-22-18	Sampled By: GARY CLIFT		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 2-22-18		
Project Number: RC000753.0801			

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Sample Receipt Condition: 1. Chilled ✓; 2. Headspace; 3. Container Intact; 4. Seal Present; 5. IR number; 6. Method of Cooling: ice

Sample Temp: 3.2°C / 2.6°C / 3.1°C

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (1x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N028745-12	C-NR4-D-Q118	2/22/2018	1325		X		X		X	X		X	X			X	X	E	7	P	BN	
	-13	AB-3-Q118	2/22/2018	1400		X													E	1	P	BN	
	-14	C-NR4-S-Q118	2/22/2018	1345		X		X		X	X		X	X			X	X	E	7	P	BN	
	-15	MW-910-Q118	2/22/2018	1355		X		X		X	X		X	X			X	X	E	7	P	BN	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
GARY CLIFT 2-22-18	1610		2/22/18 1610
	2/22/18 1847		2/22/18 1847

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Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/22/2018	Workorder:	N028745
Rep sample Temp (Deg C):	3.2/2.6/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 2/28/2018

Reviewed By: 03/05/2018

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-001A	C-MAR-D-Q118	2/22/2018 8:20:00 AM	3/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-001B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-001C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-001D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-001E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-002A	MW-909-Q118	2/22/2018 8:30:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-002B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-002C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-002D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-002D	MW-909-Q118	2/22/2018 8:30:00 AM	3/8/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-002E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-003A	C-MAR-S-Q118	2/22/2018 8:45:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-003B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-003C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-003D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-003E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-004A	R-19-Q118	2/22/2018 9:15:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-004B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-004B	R-19-Q118	2/22/2018 9:15:00 AM	3/8/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-004C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-004D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-004E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-005A	RRB-Q118	2/22/2018 9:40:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-005B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-005C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-005D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-005E	RRB-Q118	2/22/2018 9:40:00 AM	3/8/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-006A	C-CON-D-Q118	2/22/2018 10:25:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-006B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-006C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-006D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-006E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-007A	C-CON-S-Q118	2/22/2018 10:45:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-007B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-007C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-007C	C-CON-S-Q118	2/22/2018 10:45:00 AM	3/8/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-007D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-007E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-008A	C-NR1-D-Q118	2/22/2018 11:25:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-008B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-008C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-008D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-008E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-009A	C-NR1-S-Q118	2/22/2018 11:45:00 AM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-009B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-009B	C-NR1-S-Q118	2/22/2018 11:45:00 AM	3/8/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-009C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-009D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-009E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-010A	C-NR3-D-Q118	2/22/2018 12:30:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-010B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-010C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-010D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-010D	C-NR3-D-Q118	2/22/2018 12:30:00 PM	3/8/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-010E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-011A	C-NR3-S-Q118	2/22/2018 12:50:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-011B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-011C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-011D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-011E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-012A	C-NR4-D-Q118	2/22/2018 1:25:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-012B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-012C	C-NR4-D-Q118	2/22/2018 1:25:00 PM	3/8/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-012D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-012E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-013A	AB-3-Q118	2/22/2018 2:00:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-014A	C-NR4-S-Q118	2/22/2018 1:45:00 PM	3/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-014B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-014C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-014D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-014E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028745

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/22/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028745-015A	MW-910-Q118	2/22/2018 1:55:00 PM	3/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028745-015B			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028745-015C			3/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/8/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N028745-015D			3/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/8/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/8/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/8/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N028745-015E			3/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028745-016A	FOLDER	3/8/2018	3/8/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB
			3/8/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028745

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122269 **Analyst:** LSR

ASSET #: N028745 **Date Analyzed:** 2/23/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/28/2018

2nd Level Reviewer: RLB 03/07/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/23/18 1515
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 mS/cm	CIW - 180108A	9.83 @19.3°C	% Rec: (90-110%)
1412	171121A	1417 @19.4°C	
9987	180108B	9970 @19.2°C	
99843	171121B	99800 @19.2°C	

	Sample ID	Matrix	Reading	Comments
1	N028744-001D	H2O	7750 @19.3°C	
2	2D		3610 @19.4°C	
3	3D		4080 @19.3°C	
4	4D		20100 @19.2°C	
5	4D DUP		20000 @19.1°C	
6	5D		15970 @19.2°C	
7	6D		3170 @19.2°C	
8	N028745-001D		972 @19.2°C	
9	2D		960 @19.3°C	
10	3D		957 @19.1°C	
Dup	4D		958 @19.0°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date:
Analyst: CONTD

Julia Ramit 2/28/2018
RB 03/07/2018

Standard	Std ID	Reading	Comments
1413 mS/cm	CIW - 171121C	1473 @19.1°C	% Rec: (90-110%)
10000	170828F	10110 @19.0°C	
99672	171215A	100300 @19.0°C	

	Sample ID	Matrix	Reading	Comments
1	N028745-005D	H2O	960 @19.3°C	
2	6D		965 @19.0°C	
3	7D		972 @19.1°C	14B CIW - 171121C
4	8D		974 @19.1°C	= 1466 @ 19.1°C
5	9D		985 @19.0°C	10000 CIW 170828F
6	10D		982 @19.2°C	= 10120 @ 19.0°C
7	11D		971 @19.3°C	99672 CIW 171215A
8	12D		980 @19.4°C	= 100600 @ 19.0°C
9	14D		981 @19.4°C	
10	15D		985 @19.4°C	
Dup	15D DUP		983 @19.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122268 **Instrument ID:** pH meter

ASSET #: N028745 **Analyst:** LSR

Date Analyzed: 23-Feb

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X			X		
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X			X	
QC Items						
5. Was a duplicate sample analyzed?	X			X		
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			X
7. Runlog complete and included in package.	X			X		
Preliminary Report						
8. Does the raw data match the preliminary report?	X			X		
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Silvia Ramit Date: 2/28/2018

2nd Level Reviewer RLB 03/07/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 2/23/18 1000

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIN-171215D	6.98 @ 25.0°C	SLOPE: 96.9%
Buffer 4	171208A	4.01 @ 25.0°C	
Buffer 10	170822B	10.02 @ 25.0°C	

	Sample ID	Matrix	pH	Comments
1	N028744-003D	H2O	7.33 @ 25.0°C	
2	3DDUP		7.37 @ 25.0°C	
3	4D		10.09 @ 25.0°C	
4	5D		7.42 @ 25.0°C	
5	N028745-001D		8.42 @ 25.0°C	
6	2D		8.38 @ 25.0°C	
7	3D		8.36 @ 25.0°C	
8	4D		8.35 @ 25.0°C	
9	5D		8.31 @ 25.0°C	
10	6D		8.27 @ 25.0°C	
Dup	7D		8.25 @ 25.0°C	Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	CIN-171023A	7.03 @ 25.0°C	Accept: +/-0.1 pH units from expected value

Date:

Analyst: CONTD

Standard	Std ID	pH	Comments
Buffer 7			
Buffer 4			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	N028745-008D	H2O	8.22 @ 25.0°C	
2	8D DUP		8.26 @ 25.0°C	
3	9D		8.25 @ 25.0°C	
4	10D		8.23 @ 25.0°C	
5	11D		8.24 @ 25.0°C	
6	12D		8.22 @ 25.0°C	
7	14D		8.22 @ 25.0°C	
8	15D		8.20 @ 25.0°C	Julia Ramit 2/28/2018
9	N028742-004F		7.90 @ 25.0°C	
10	16F		7.82 @ 25.0°C	03/07/2018
Dup	19F		7.68 @ 25.0°C	Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	CIN-171023A	7.04 @ 25.0°C	Accept: +/-0.1 pH units from expected value

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SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66911/66912 **Analyst:** LSR

ASSET #: N028745 **Date Analyzed:** 2/23/2018

Method: EPA 160.2

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		X
11. LCS compounds within control limits.	X			X		X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/26/2018

2nd Level Reviewer: RB 03/07/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N028745-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4150- 1.4146) *1000000}{100}$$

= 4 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Silvia Ramit 2/26/2018

RLB 03/07/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 9:01:09 A**
Prep End Date:

Reviewed/ Date: RB 03/07/2018

Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66911** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66911	Water	lwej180726B	100	☐	0	0	100	1.000		
MB-66911	Water		100	☐	0	0	100	1.000		
N028717-001A	Surface Water		100	☐	0	0	100	1.000		
N028727-012D	Groundwater		100	☐	0	0	100	1.000		
N028727-013D	Groundwater		100	☐	0	0	100	1.000		
N028739-001A	Groundwater		100	☐	0	0	100	1.000		
N028745-011D	Groundwater		100	☐	0	0	100	1.000		
N028745-011D-DU	Groundwater		100	☐	0	0	100	1.000		
N028745-012D	Groundwater		100	☐	0	0	100	1.000		
N028745-014D	Groundwater		100	☐	0	0	100	1.000		
N028745-015D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9699

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 9:01:09 A**
Prep End Date: **2/23/2018 3:00:00 P**

Reviewed/ Date: RB 03/07/2018

Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66911** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66911	Water		100	☐	0	0	100	1.000		
MB-66911	Water		100	☐	0	0	100	1.000		
N028717-001A	Surface Water		100	☐	0	0	100	1.000		
N028727-012D	Groundwater		100	☐	0	0	100	1.000		
N028727-013D	Groundwater		100	☐	0	0	100	1.000		
N028739-001A	Groundwater		100	☐	0	0	100	1.000		
N028745-011D	Groundwater		100	☐	0	0	100	1.000		
N028745-011D-DU	Groundwater		100	☐	0	0	100	1.000		
N028745-012D	Groundwater		100	☐	0	0	100	1.000		
N028745-014D	Groundwater		100	☐	0	0	100	1.000		
N028745-015D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208B	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 9:01:12 A**
Prep End Date:
Prep Batch **66912** Prep Code: **160.2_W_PRE**

Reviewed/ Date: RLB 03/07/2018
Initials/ Date: Lilia Ramit 2/26/2018
Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66912	Water		100	☐	0	0	100	1.000		
MB-66912	Water		100	☐	0	0	100	1.000		
N028745-001D	Groundwater		100	☐	0	0	100	1.000		
N028745-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N028745-002D	Groundwater		100	☐	0	0	100	1.000		
N028745-003D	Groundwater		100	☐	0	0	100	1.000		
N028745-004D	Groundwater		100	☐	0	0	100	1.000		
N028745-005D	Groundwater		100	☐	0	0	100	1.000		
N028745-006D	Groundwater		100	☐	0	0	100	1.000		
N028745-007D	Groundwater		100	☐	0	0	100	1.000		
N028745-008D	Groundwater		100	☐	0	0	100	1.000		
N028745-009D	Groundwater		100	☐	0	0	100	1.000		
N028745-010D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 9:01:12 A**
Prep End Date: **2/23/2018 3:00:00 P**

Reviewed/ Date: RLB 03/07/2018
Initials/ Date: Lilia Ramit 2/26/2018

Prep Batch **66912** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66912	Water		100	☐	0	0	100	1.000		
MB-66912	Water		100	☐	0	0	100	1.000		
N028745-001D	Groundwater		100	☐	0	0	100	1.000		
N028745-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N028745-002D	Groundwater		100	☐	0	0	100	1.000		
N028745-003D	Groundwater		100	☐	0	0	100	1.000		
N028745-004D	Groundwater		100	☐	0	0	100	1.000		
N028745-005D	Groundwater		100	☐	0	0	100	1.000		
N028745-006D	Groundwater		100	☐	0	0	100	1.000		
N028745-007D	Groundwater		100	☐	0	0	100	1.000		
N028745-008D	Groundwater		100	☐	0	0	100	1.000		
N028745-009D	Groundwater		100	☐	0	0	100	1.000		
N028745-010D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208B	1000 ppm Talc	LCS	0

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST : TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/18 901	MB 66911	100	1.4188 1.4186	1.4184 1.4184	
	LCS 66911	100	1.4147 1.4149	1.5095 1.5093	
1	NO28717-001A	100	1.4215 1.4216	1.4242 1.4240	
2	NO28727-002D	100	1.4064 1.4067	1.4070 1.4070	
3	3D	100	1.4149 1.4146	1.4147 1.4146	
4	NO28739-001A	100	1.4263 1.4263	1.4269 1.4265	
5	NO28745-011D	100	1.4065 1.4068	1.4069 1.4070	
D1	11D DUP	100	1.4198 1.4198	1.4201 1.4208	
6	12D	100	1.4189 1.4188	1.4188 1.4187	
7	14D	100	1.4209 1.4203	1.4204 1.4205	

Julia Ramit 2/26/2018

03/07/2018

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SOLIDS RAW DATA

TEST: TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/18 901 8	NO28745-015D	100	1.4074 1.4072	1.4073 1.4077	
	MB 66912	100	1.4153 1.4151	1.4152 1.4152	
	LCS 66912	100	1.4159 1.4156	1.5133 1.5131	
11	NO28745-001D	100	1.4147 1.4146	1.4150 1.4150	
D2	1D DUP	100	1.4112 1.4109	1.4113 1.4115	
12	2D	100	1.4167 1.4165	1.4171 1.4168	
13	3D	100	1.4152 1.4150	1.4150 1.4151	
14	4D	100	1.4181 1.4181	1.4187 1.4185	
15	5D	100	1.4140 1.4139	1.4139 1.4140	
16	6D	100	1.4079 1.4079	1.4083 1.4085	

ASSET Laboratories Logbook#9

Julia Ramit 2/26/2018

03/07/2018

SOLIDS RAW DATA

TEST (TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/23/18 17	NO 2-8745.007D	100	1.4112 1.4114	1.4116 1.4117	
18	8D	100	1.4178 1.4179	1.4181 1.4181	
19	9D	100	1.4081 1.4084	1.4089 1.4089	
20	10D	100	1.4259 1.4259	1.4262 1.4263	
	Silvia Ramit	2/26/2018			
	RB	03/07/2018			
	closing wt : 0.9999		2/23/18 @ 150		

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TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/23/2018							
MB-66911	100	1.4186	1.4184	-2.0000	1.00	-2	MBLK
LCS-66911	100	1.4149	1.5093	944.0000	1.00	944	LCS
N028717-001A	100	1.4216	1.424	24.0000	1.00	24	SAMP
N028727-012D	100	1.4067	1.407	3.0000	1.00	3	SAMP
N028727-013D	100	1.4146	1.4146	0.0000	1.00	0	SAMP
N028739-001A	100	1.4263	1.4265	2.0000	1.00	2	SAMP
N028745-011D	100	1.4068	1.407	2.0000	1.00	2	SAMP
N028745-011DDUP	100	1.4198	1.4202	4.0000	1.00	4	DUP
N028745-012D	100	1.4188	1.4187	-1.0000	1.00	-1	SAMP
N028745-014D	100	1.4203	1.4205	2.0000	1.00	2	SAMP
N028745-015D	100	1.4072	1.4077	5.0000	1.00	5	SAMP

Julia Ramit 2/26/2018

RLB 03/07/2018

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
2/23/2018							
MB-66912	100	1.4151	1.4152	1.0000	1.00	1	MBLK
LCS-66912	100	1.4156	1.5131	975.0000	1.00	975	LCS
N028745-001D	100	1.4146	1.415	4.0000	1.00	4	SAMP
N028745-001DDUP	100	1.4109	1.4115	6.0000	1.00	6	DUP
N028745-002D	100	1.4165	1.4168	3.0000	1.00	3	SAMP
N028745-003D	100	1.415	1.4151	1.0000	1.00	1	SAMP
N028745-004D	100	1.4181	1.4185	4.0000	1.00	4	SAMP
N028745-005D	100	1.4139	1.414	1.0000	1.00	1	SAMP
N028745-006D	100	1.4079	1.4085	6.0000	1.00	6	SAMP
N028745-007D	100	1.4114	1.4117	3.0000	1.00	3	SAMP
N028745-008D	100	1.4179	1.4181	2.0000	1.00	2	SAMP
N028745-009D	100	1.4084	1.4089	5.0000	1.00	5	SAMP
N028745-010D	100	1.4259	1.4263	4.0000	1.00	4	SAMP

Sujita Ramit 2/26/2018

RLB 03/07/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R122254
ASSET #: N028745

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/23/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/4/2018

2nd Level Reviewer RB 03/07/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028745-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.0000$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

rba 3/4/2018

RLB 03/07/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/23/18 6:45 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/23/18 6:56 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/23/18 7:05 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/23/18 7:15 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/23/18 7:24 AM	Reported
14	MB-R122254	MBLK	1	Hexavalent Chromium	02/23/18 7:34 AM	Reported
15	LCS-R122254	LCS	1	Hexavalent Chromium	02/23/18 7:43 AM	Reported
16	N028742-004B	SAMP	1	Hexavalent Chromium	02/23/18 8:07 AM	Not Reported
17	N028742-004B	SAMP	1	Hexavalent Chromium	02/23/18 8:27 AM	Not Reported
18	N028742-004B	SAMP	1	Hexavalent Chromium	02/23/18 8:38 AM	Reported
19	N028742-016B	SAMP	1	Hexavalent Chromium	02/23/18 8:47 AM	Not Reported
20	N028742-019B	SAMP	1	Hexavalent Chromium	02/23/18 8:57 AM	Reported
21	N028742-004BDUP	DUP	1	Hexavalent Chromium	02/23/18 9:06 AM	Reported
22	N028742-016BMS	MS	5	Hexavalent Chromium	02/23/18 9:16 AM	Not Reported
23	N028742-019BREP	DUP	1	Hexavalent Chromium	02/23/18 9:25 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/23/18 9:35 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/23/18 9:44 AM	Reported
26	N028746-001B	SAMP	1	Hexavalent Chromium	02/23/18 9:54 AM	Reported
27	N028746-002B	SAMP	1	Hexavalent Chromium	02/23/18 10:03 AM	Reported
28	N028742-016BMS	MS	10	Hexavalent Chromium	02/23/18 10:13 AM	Not Reported
29	N028746-001BREP	DUP	1	Hexavalent Chromium	02/23/18 10:22 AM	Reported
30	N028742-016B	SAMP	20	Hexavalent Chromium	02/23/18 10:45 AM	Reported
31	N028742-016BMS	MS	20	Hexavalent Chromium	02/23/18 10:56 AM	Reported
32	N028746-002BMS	MS	1	Hexavalent Chromium	02/23/18 11:06 AM	Reported
33	N028742-016BREP	DUP	20	Hexavalent Chromium	02/23/18 11:15 AM	Reported
34	N028742-016B	SAMP	10	Hexavalent Chromium	02/23/18 11:25 AM	Not Reported
35	N028746-002BREP	DUP	1	Hexavalent Chromium	02/23/18 11:34 AM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/23/18 11:44 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/23/18 11:53 AM	Reported
38	N028745-001A	SAMP	1	Hexavalent Chromium	02/23/18 12:14 PM	Reported
39	N028745-001AMS	MS	1	Hexavalent Chromium	02/23/18 12:24 PM	Reported
40	N028745-002A	SAMP	1	Hexavalent Chromium	02/23/18 12:34 PM	Reported
41	N028745-002AMS	MS	1	Hexavalent Chromium	02/23/18 12:43 PM	Reported
42	N028745-003A	SAMP	1	Hexavalent Chromium	02/23/18 12:53 PM	Reported

INJECTION LOG: 180223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028745-003AMS	MS	1	Hexavalent Chromium	02/23/18 1:02 PM	Reported
44	N028745-004A	SAMP	1	Hexavalent Chromium	02/23/18 1:12 PM	Reported
45	N028745-004AMS	MS	1	Hexavalent Chromium	02/23/18 1:21 PM	Reported
46	N028745-005A	SAMP	1	Hexavalent Chromium	02/23/18 1:40 PM	Reported
47	N028745-005AMS	MS	1	Hexavalent Chromium	02/23/18 1:51 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/23/18 2:01 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/23/18 2:30 PM	Not Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/23/18 3:09 PM	Reported
51	N028745-006A	SAMP	1	Hexavalent Chromium	02/23/18 3:19 PM	Reported
52	N028745-006AMS	MS	1	Hexavalent Chromium	02/23/18 3:29 PM	Reported
53	N028745-007A	SAMP	1	Hexavalent Chromium	02/23/18 3:38 PM	Reported
54	N028745-007AMS	MS	1	Hexavalent Chromium	02/23/18 3:48 PM	Reported
55	N028745-008A	SAMP	1	Hexavalent Chromium	02/23/18 3:57 PM	Reported
56	N028745-008AMS	MS	1	Hexavalent Chromium	02/23/18 4:07 PM	Not Reported
57	N028745-009A	SAMP	1	Hexavalent Chromium	02/23/18 4:16 PM	Reported
58	N028745-009AMS	MS	1	Hexavalent Chromium	02/23/18 4:26 PM	Reported
59	N028745-010A	SAMP	1	Hexavalent Chromium	02/23/18 4:35 PM	Reported
60	N028745-010AMS	MS	1	Hexavalent Chromium	02/23/18 4:45 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/23/18 4:54 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/23/18 5:03 PM	Reported
63	N028745-006AMSD	MSD	1	Hexavalent Chromium	02/23/18 5:13 PM	Reported
64	N028745-010ADUP	DUP	1	Hexavalent Chromium	02/23/18 5:22 PM	Reported
65	N028745-011A	SAMP	1	Hexavalent Chromium	02/23/18 5:32 PM	Reported
66	N028745-011AMS	MS	1	Hexavalent Chromium	02/23/18 5:41 PM	Reported
67	N028745-012A	SAMP	1	Hexavalent Chromium	02/23/18 5:51 PM	Reported
68	N028745-012AMS	MS	1	Hexavalent Chromium	02/23/18 6:00 PM	Not Reported
69	N028745-013A	SAMP	1	Hexavalent Chromium	02/23/18 6:10 PM	Reported
70	N028745-013AMS	MS	1	Hexavalent Chromium	02/23/18 6:19 PM	Reported
71	N028745-014A	SAMP	1	Hexavalent Chromium	02/23/18 6:29 PM	Reported
72	N028745-014AMS	MS	1	Hexavalent Chromium	02/23/18 6:38 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/23/18 6:48 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/23/18 6:57 PM	Reported
75	N028745-015A	SAMP	1	Hexavalent Chromium	02/23/18 7:06 PM	Reported
76	N028745-015AMS	MS	1	Hexavalent Chromium	02/23/18 7:16 PM	Reported
77	N028745-008AMS	MS	1	Hexavalent Chromium	02/23/18 7:25 PM	Reported
78	N028745-012AMS	MS	1	Hexavalent Chromium	02/23/18 7:35 PM	Reported
79	CCV-7	CCV	1	Hexavalent Chromium	02/23/18 7:44 PM	Reported
80	CCB-7	CCB	1	Hexavalent Chromium	02/23/18 7:54 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180223A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**24/Feb/18 10:56:10**
No. of Injections:	**83**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/23/2018 06:45	Finished	BLANK
10	BLANK	2	1000	Unknown		02/23/2018 06:56	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/23/2018 07:05	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/23/2018 07:15	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/23/2018 07:24	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/23/2018 07:34	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/23/2018 07:43	Finished	LCS, IWST-180129B
16	N028742-004B,SAMF	9	1000	Unknown		02/23/2018 08:07	Finished	SAMP,10mL
17	N028742-004B,SAMF	11	1000	Unknown		02/23/2018 08:27	Finished	SAMP,10mL
18	N028742-004B,SAMF	12	1000	Unknown		02/23/2018 08:38	Finished	SAMP,10mL
19	N028742-016B,SAMF	13	1000	Unknown		02/23/2018 08:47	Finished	SAMP,10mL
20	N028742-019B,SAMF	14	1000	Unknown		02/23/2018 08:57	Finished	SAMP,10mL
21	N028742-004BDUP,D	15	1000	Unknown		02/23/2018 09:06	Finished	DUP,10mL
22	N028742-016BMS,MS	17	1000	Unknown		02/23/2018 09:16	Finished	MS (1ppb), IWST-180129B,2>1
23	N028742-019BREP,D	18	1000	Unknown		02/23/2018 09:25	Finished	REP,10mL
24	CCV-2,CCV1,1,	19	1000	Unknown		02/23/2018 09:35	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	20	1000	Unknown		02/23/2018 09:44	Finished	CCB R180214B
26	N028746-001B,SAMF	21	1000	Unknown		02/23/2018 09:54	Finished	SAMP,10mL
27	N028746-002B,SAMF	22	1000	Unknown		02/23/2018 10:03	Finished	SAMP,10mL
28	N028742-016BMS,MS	23	1000	Unknown		02/23/2018 10:13	Finished	MS (1ppb), IWST-180129B,1>1
29	N028746-001BREP,D	24	1000	Unknown		02/23/2018 10:22	Finished	REP,10mL
30	N028742-016B,SAMF	26	1000	Unknown		02/23/2018 10:45	Finished	SAMP,0.5>10mL
31	N028742-016BMS,MS	27	1000	Unknown		02/23/2018 10:56	Finished	MS (1ppb), IWST-180129B,0.5
32	N028746-002BMS,MS	28	1000	Unknown		02/23/2018 11:06	Finished	MS (1ppb), IWST-180129B,10
33	N028742-016BREP,D	29	1000	Unknown		02/23/2018 11:15	Finished	REP,0.5>10mL
34	N028742-016B,SAMF	30	1000	Unknown		02/23/2018 11:25	Finished	SAMP,1>10mL
35	N028746-002BREP,D	31	1000	Unknown		02/23/2018 11:34	Finished	REP,10mL
36	CCV-3,CCV,1,	32	1000	Unknown		02/23/2018 11:44	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	33	1000	Unknown		02/23/2018 11:53	Finished	CCB R180214B
38	N028745-001A,SAMF	1	1000	Unknown		02/23/2018 12:14	Finished	SAMP,10mL
39	N028745-001AMS,MS	2	1000	Unknown		02/23/2018 12:24	Finished	MS (1ppb), IWST-180129B,10
40	N028745-002A,SAMF	3	1000	Unknown		02/23/2018 12:34	Finished	SAMP,10mL
41	N028745-002AMS,MS	4	1000	Unknown		02/23/2018 12:43	Finished	MS (1ppb), IWST-180129B,10
42	N028745-003A,SAMF	5	1000	Unknown		02/23/2018 12:53	Finished	SAMP,10mL
43	N028745-003AMS,MS	6	1000	Unknown		02/23/2018 13:02	Finished	MS (1ppb), IWST-180129B,10
44	N028745-004A,SAMF	7	1000	Unknown		02/23/2018 13:12	Finished	SAMP,10mL
45	N028745-004AMS,MS	8	1000	Unknown		02/23/2018 13:21	Finished	MS (1ppb), IWST-180129B,10
46	N028745-005A,SAMF	9	1000	Unknown		02/23/2018 13:40	Finished	SAMP,10mL
47	N028745-005AMS,MS	10	1000	Unknown		02/23/2018 13:51	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	11	1000	Unknown		02/23/2018 14:01	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	1	1000	Unknown		02/23/2018 14:30	Finished	CCB R180214B
50	CCB-4,CCB,1,	1	1000	Unknown		02/23/2018 15:09	Finished	CCB R180214B
51	N028745-006A,SAMF	2	1000	Unknown		02/23/2018 15:19	Finished	SAMP,10mL
52	N028745-006AMS,MS	3	1000	Unknown		02/23/2018 15:29	Finished	MS (1ppb), IWST-180129B,10
53	N028745-007A,SAMF	4	1000	Unknown		02/23/2018 15:38	Finished	SAMP,10mL
54	N028745-007AMS,MS	5	1000	Unknown		02/23/2018 15:48	Finished	MS (1ppb), IWST-180129B,10
55	N028745-008A,SAMF	6	1000	Unknown		02/23/2018 15:57	Finished	SAMP,10mL
56	N028745-008AMS,MS	7	1000	Unknown		02/23/2018 16:07	Finished	MS (1ppb), IWST-180129B,10
57	N028745-009A,SAMF	8	1000	Unknown		02/23/2018 16:16	Finished	SAMP,10mL
58	N028745-009AMS,MS	9	1000	Unknown		02/23/2018 16:26	Finished	MS (1ppb), IWST-180129B,10
59	N028745-010A,SAMF	10	1000	Unknown		02/23/2018 16:35	Finished	SAMP,10mL
60	N028745-010AMS,MS	11	1000	Unknown		02/23/2018 16:45	Finished	MS (1ppb), IWST-180129B,10

61	CCV-5,CCV,1,	12	1000	Unknown		02/23/2018 16:54	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	13	1000	Unknown		02/23/2018 17:03	Finished	CCB R180214B
63	N028745-006AMSD,M	14	1000	Unknown		02/23/2018 17:13	Finished	MSD (1ppb), IWST-180129B,10
64	N028745-010ADUP,D	15	1000	Unknown		02/23/2018 17:22	Finished	DUP,10mL
65	N028745-011A,SAMP	16	1000	Unknown		02/23/2018 17:32	Finished	SAMP,10mL
66	N028745-011AMS,MS	17	1000	Unknown		02/23/2018 17:41	Finished	MS (1ppb), IWST-180129B,10
67	N028745-012A,SAMP	18	1000	Unknown		02/23/2018 17:51	Finished	SAMP,10mL
68	N028745-012AMS,MS	19	1000	Unknown		02/23/2018 18:00	Finished	MS (1ppb), IWST-180129B,10
69	N028745-013A,SAMP	20	1000	Unknown		02/23/2018 18:10	Finished	SAMP,10mL
70	N028745-013AMS,MS	21	1000	Unknown		02/23/2018 18:19	Finished	MS (1ppb), IWST-180129B,10
71	N028745-014A,SAMP	22	1000	Unknown		02/23/2018 18:29	Finished	SAMP,10mL
72	N028745-014AMS,MS	23	1000	Unknown		02/23/2018 18:38	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	24	1000	Unknown		02/23/2018 18:48	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	25	1000	Unknown		02/23/2018 18:57	Finished	CCB R180214B
75	N028745-015A,SAMP	26	1000	Unknown		02/23/2018 19:06	Finished	SAMP,10mL
76	N028745-015AMS,MS	27	1000	Unknown		02/23/2018 19:16	Finished	MS (1ppb), IWST-180129B,10
77	N028745-008AMS,MS	28	1000	Unknown		02/23/2018 19:25	Finished	MS (1ppb), IWST-180129B,10
78	N028745-012AMS,MS	29	1000	Unknown		02/23/2018 19:35	Finished	MS (1ppb), IWST-180129B,10
79	CCV-7,CCV,1,	30	1000	Unknown		02/23/2018 19:44	Finished	CCV @5ppb, IWST-180129A
80	CCB-7,CCB,1,	31	1000	Unknown		02/23/2018 19:54	Finished	CCB R180214B
81	SHUTDOWN	32	1000	Unknown		02/23/2018 20:03	Finished	
82	Eluent: R180223A	33	1000	Unknown		n.a.	Finished	Eluent
83	PCR: R180223B	34	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/23/18
Time Prepared: 1125H
Prepared By: MBA

Slope: 96.92
pH 4: 4.01 @25.0°C
7: 6.98 @25.0°C
10: 10.02 @25.0°C
LCS: 7.01 @25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M80223A
NH4OH + NH4SO4 buffer: M80214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M28745-001A	9.45	-	~250ml	~250ml		1/3
2)	1A	9.44	-				2/3
3)	1A	9.43	-				3/3
4)	2A	9.44	-				1/3
5)	2A	9.42	-				2/3
6)	2A	9.40	-				3/3
7)	3A	9.42	-				1/3
8)	3A	9.41	-				2/3
9)	3A	9.39	-				3/3
10)	4A	9.44	-				1/3
11)	4A	9.39	-				2/3
12)	4A	9.42	-				3/3
13)	5A	9.44	-				1/3
14)	5A	9.48	-				2/3
15)	5A	9.46	-				3/3
	6A	9.43	-				1/3

Sample Preparation

Date Prepared: 2/23/18
Time Prepared: 1125H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M80223A
NH4OH + NH4SO4 buffer: M80214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M28745-6A	9.43	-	~250ml	~250ml		2/3
2)	6A	9.42	-				3/3
3)	7A	9.42	-				1/3
4)	7A	9.40	-				2/3
5)	7A	9.44	-				3/3
6)	8A	9.47	-				1/3
7)	8A	9.50	-				2/3
8)	8A	9.49	-				3/3
9)	9A	9.38	-				1/3
10)	9A	9.42	-				2/3
11)	9A	9.40	-				3/3
12)	10A	9.47	-				1/3
13)	10A	9.49	-				2/3
14)	10A	9.50	-				3/3
15)	11A	9.50	-				1/3
	11A	9.52	-				2/3

Logbook No. 14

mba 3/7/2018

RB 03/07/2018

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/23/18
Time Prepared: 1125H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M80223A / M80226A
NH4OH + NH4SO4 buffer: M80214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028745-11A	9.48	-	~250ml	~250ml		3/3
2)	12A	9.41	-				1/3
3)	12A	9.43	-				2/3
4)	12A	9.40	-				3/3
5)	13A	9.46	-				1/3
6)	13A	9.49	-				2/3
7)	13A	9.50	-				3/3
8)	14A	9.43	-				1/3
9)	14A	9.42	-				2/3
10)	14A	9.41	-				3/3
11)	15A	9.44	-				1/3
12)	15A	9.45	-				2/3
13)	15A	9.45	-				3/3
14)	N028744-1A	9.32	-				
15)	2A	9.33	-				
	3A	9.38	-				

Sample Preparation

Date Prepared: 2/23/18
Time Prepared: 1125A
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M80223A / M80226A
NH4OH + NH4SO4 buffer: M80214B

	Sample ID.44	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028754-4A	9.51	-	~250ml	~250ml		
2)	nba 5A	9.39	-				
3)	6A	9.32	-				
4)	7A	9.62	-				
5)	N028742-4B	7.66		~250ml	~250ml		
6)	19B	7.70					
7)	16B	7.69					
8)	N028746-1B	7.33					
9)	2B	7.74					
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

nba 3/52018

03/07/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9998 7

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 03/07/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ICV**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCV**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.898	0.20	5.000	0	98.0	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.202	0.20	0.2000	0	101	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.005	0.20	10.00	0	100	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCV**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.023	0.20	5.000	0	100	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.050	0.20	10.00	0	100	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCV**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.082	0.20	5.000	0	102	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ZZZZZZ**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.089	0.20	10.00	0	101	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCV**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.003	0.20	5.000	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **ICB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2939454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122254**
Client ID: **CCB**	Batch ID: **R122254**	TestNo: **EPA 218.6**		Analysis Date: **2/23/2018**	SeqNo: **2939515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/23/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.156	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.164
Actual RT Window	4.084 - 4.244
Applied RT Window	3.964 - 4.364

MB-R122254	N.A.	N.A.
LCS-R122254	4.156	PASS
N028742-004B	N.A.	N.A.
N028742-004B	3.973	PASS
N028742-004B	N.A.	N.A.
N028742-016B	N.A.	N.A.
N028742-019B	N.A.	N.A.
N028742-004BDUP	N.A.	N.A.
N028742-016BMS	4.148	PASS
N028742-019BREP	N.A.	N.A.
N028746-001B	4.140	PASS
N028746-002B	N.A.	N.A.
N028742-016BMS	4.156	PASS
N028746-001BREP	4.140	PASS
N028742-016B	N.A.	N.A.
N028742-016BMS	4.156	PASS
N028746-002BMS	4.131	PASS
N028742-016BREP	N.A.	N.A.
N028742-016B	N.A.	N.A.
N028746-002BREP	N.A.	N.A.
N028745-001A	N.A.	N.A.

RB 03/07/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/23/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.156	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.164	
Actual RT Window	4.084 - 4.244	
Applied RT Window	3.964 - 4.364	
N028745-001AMS	4.156	PASS
N028745-002A	N.A.	N.A.
N028745-002AMS	4.156	PASS
N028745-003A	N.A.	N.A.
N028745-003AMS	4.156	PASS
N028745-004A	N.A.	N.A.
N028745-004AMS	4.156	PASS
N028745-005A	N.A.	N.A.
N028745-005AMS	4.156	PASS
N028745-006A	N.A.	N.A.
N028745-006AMS	4.156	PASS
N028745-007A	N.A.	N.A.
N028745-007AMS	4.156	PASS
N028745-008A	N.A.	N.A.
N028745-008AMS	4.156	PASS
N028745-009A	N.A.	N.A.
N028745-009AMS	4.148	PASS
N028745-010A	N.A.	N.A.
N028745-010AMS	4.156	PASS
N028745-006AMSD	4.156	PASS
N028745-010ADUP	N.A.	N.A.
N028745-011A	N.A.	N.A.

RB 03/07/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/23/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.156	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	
Average	4.164	
Actual RT Window	4.084 - 4.244	
Applied RT Window	3.964 - 4.364	
N028745-011AMS	4.156	PASS
N028745-012A	N.A.	N.A.
N028745-012AMS	4.156	PASS
N028745-013A	N.A.	N.A.
N028745-013AMS	4.165	PASS
N028745-014A	N.A.	N.A.
N028745-014AMS	4.156	PASS
N028745-015A	N.A.	N.A.
N028745-015AMS	4.148	PASS
N028745-008AMS	4.148	PASS
N028745-012AMS	4.156	PASS

RLB 03/07/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

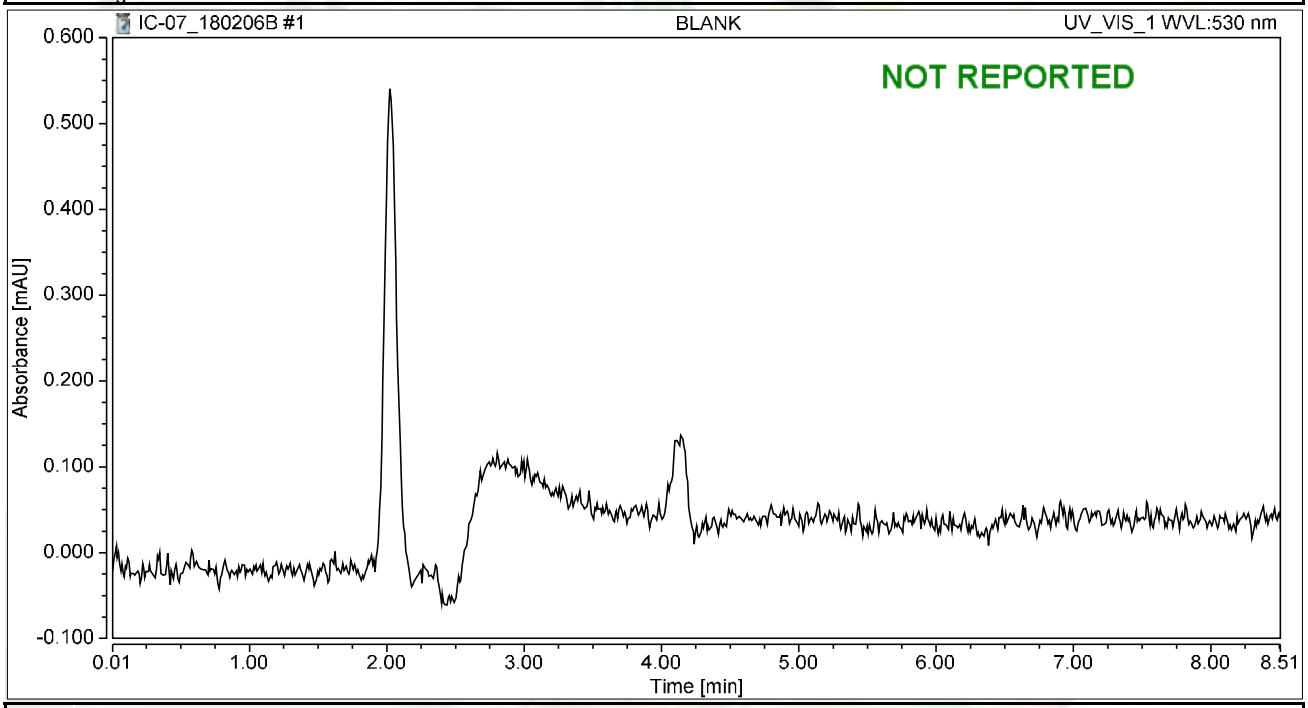
61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

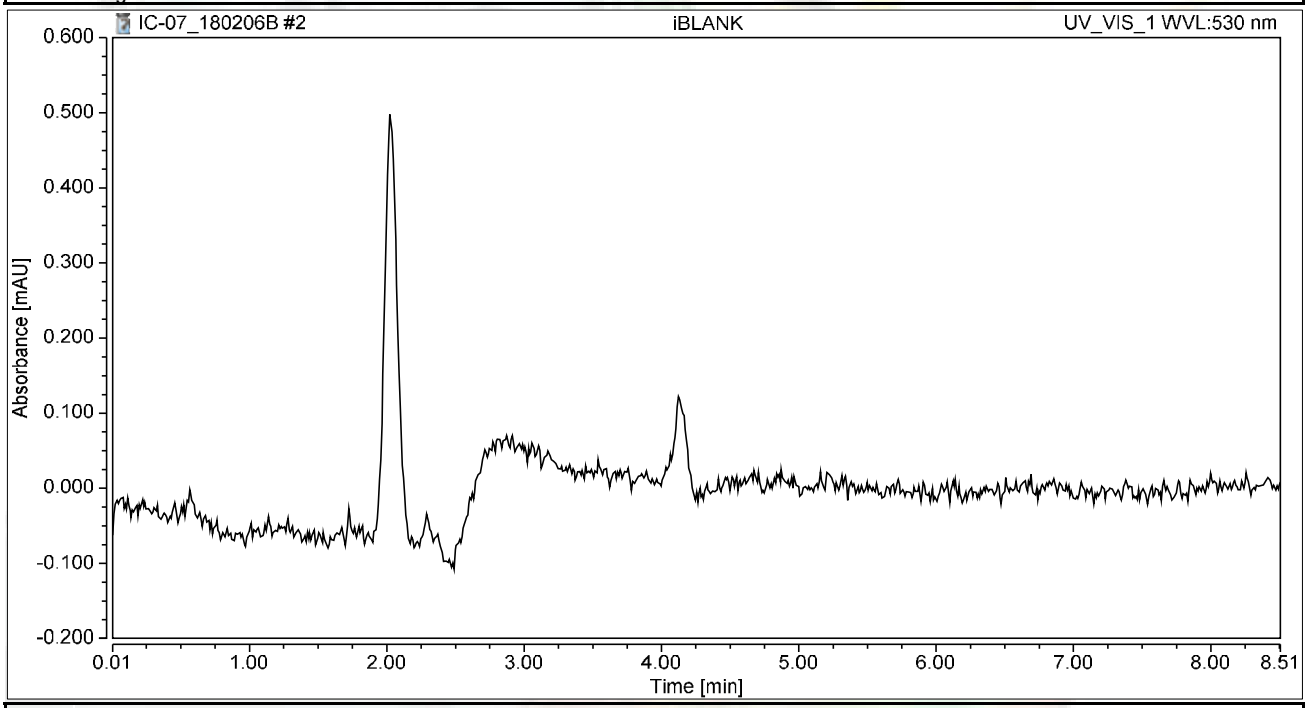
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

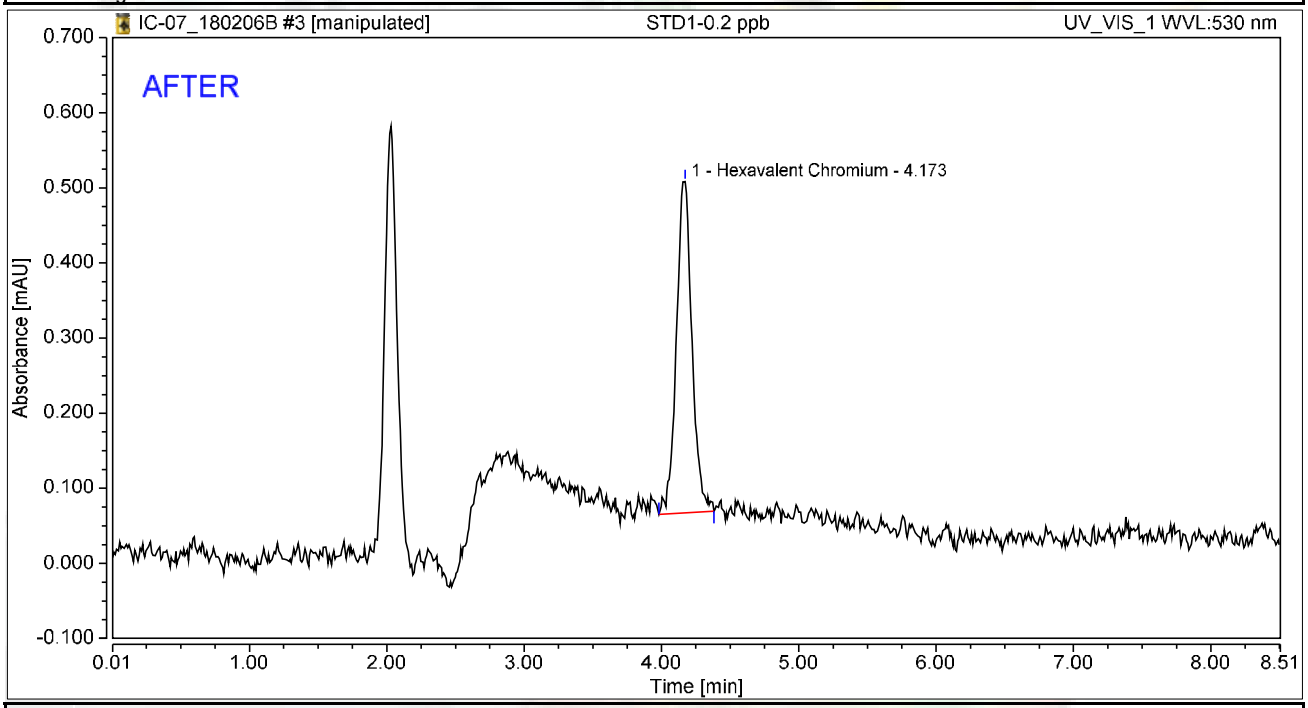
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

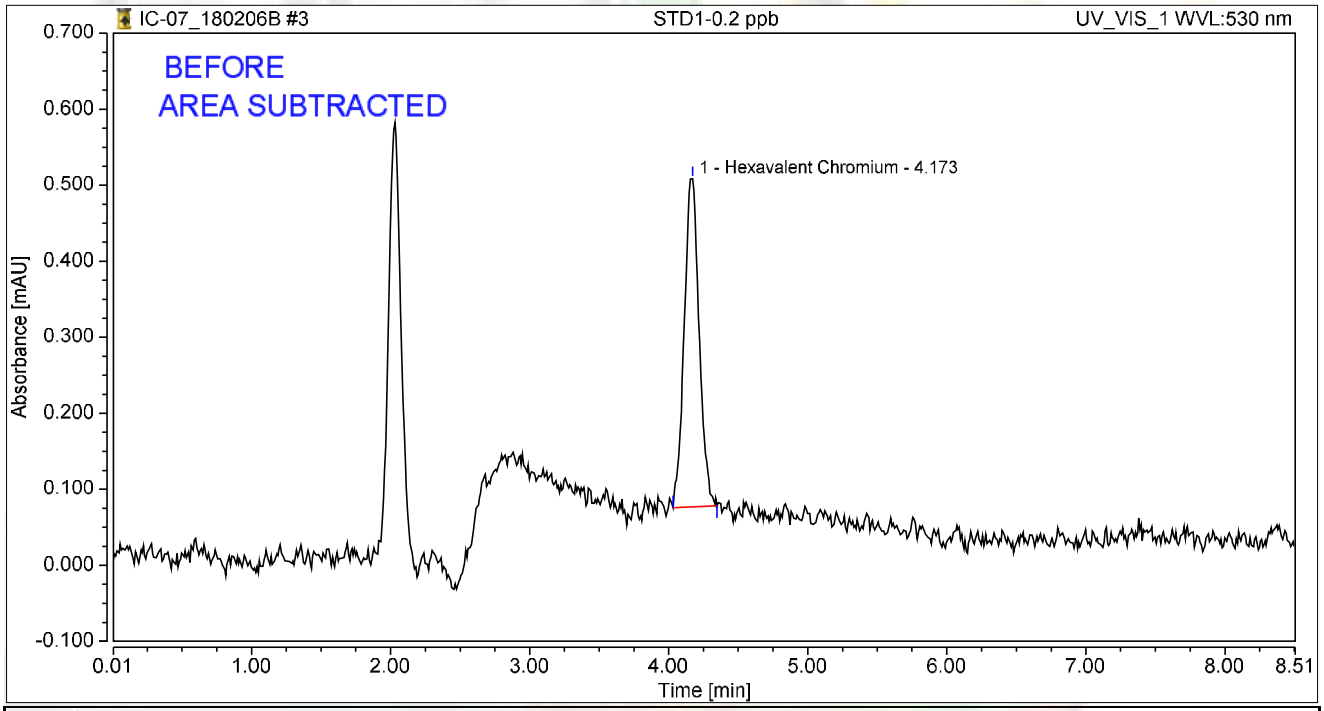
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

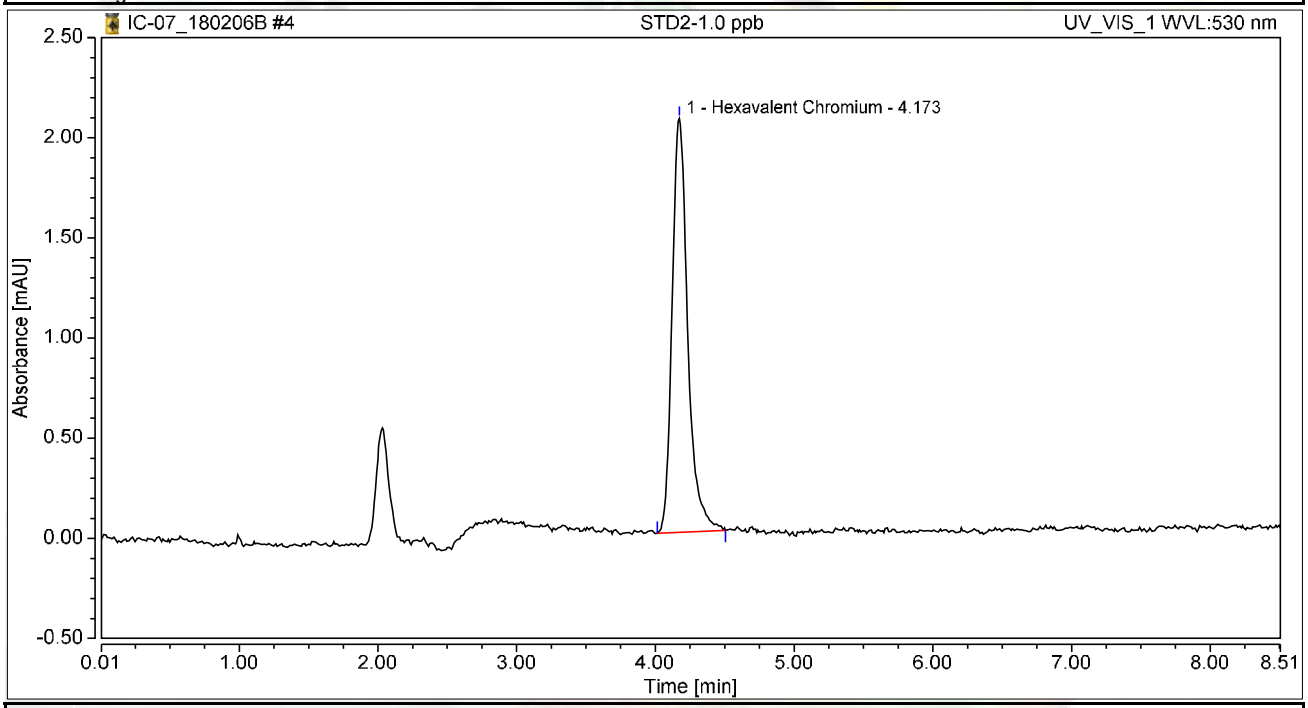
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

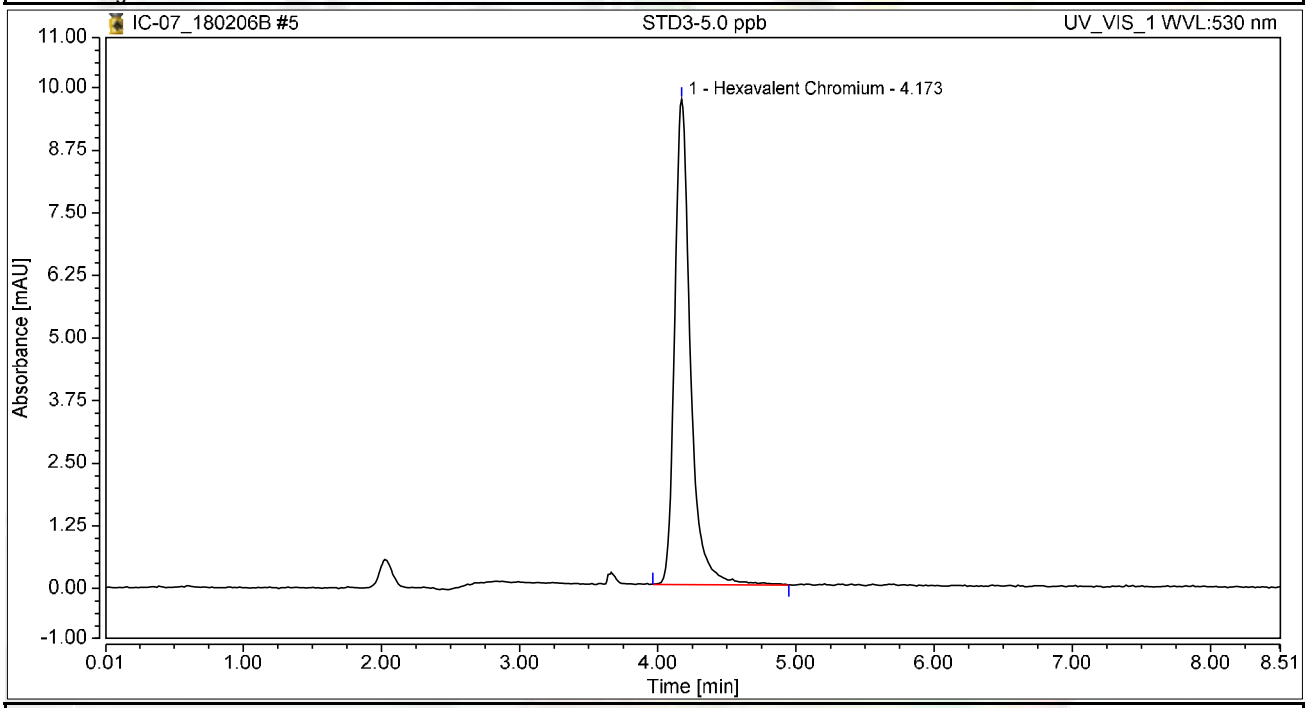
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

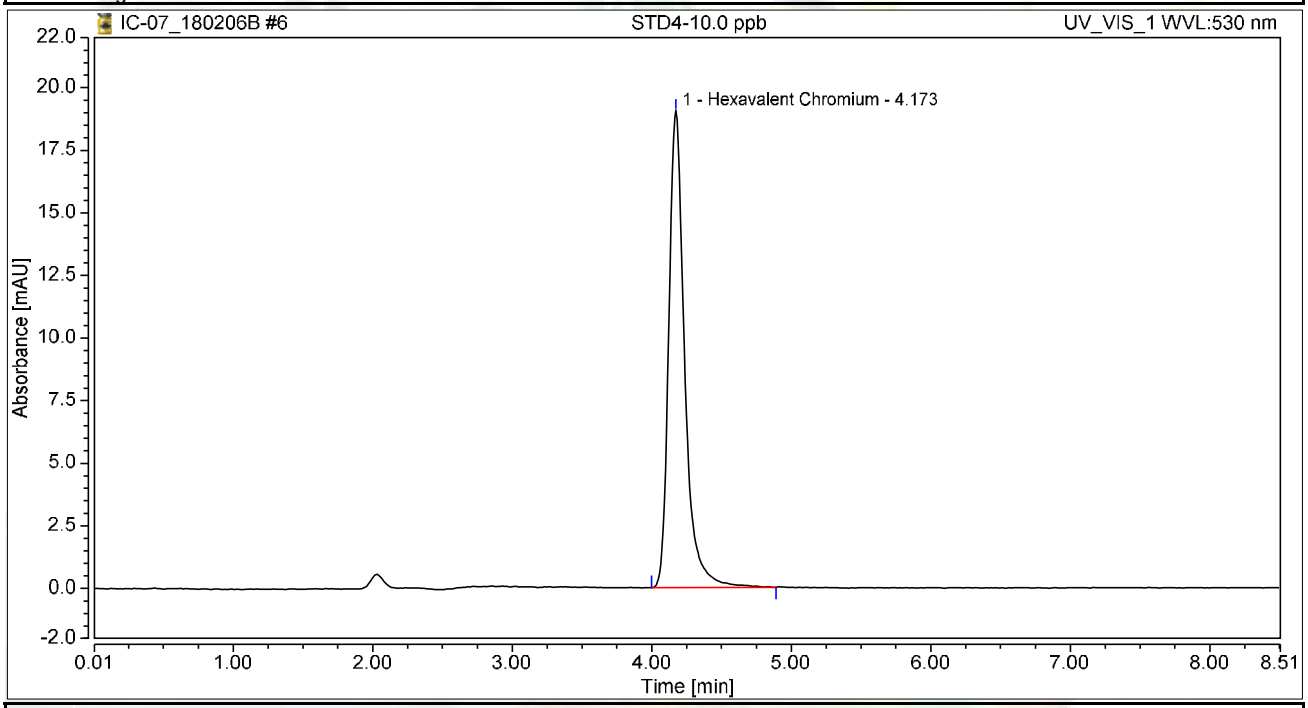
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

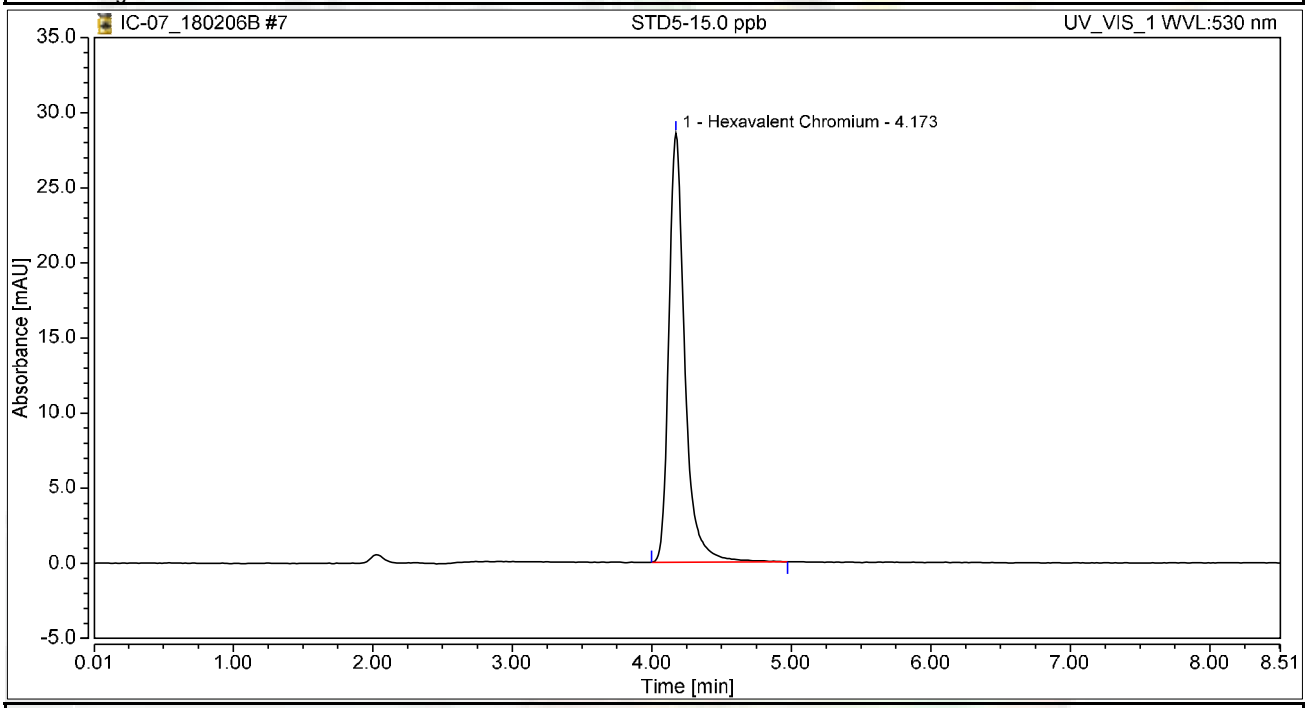
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

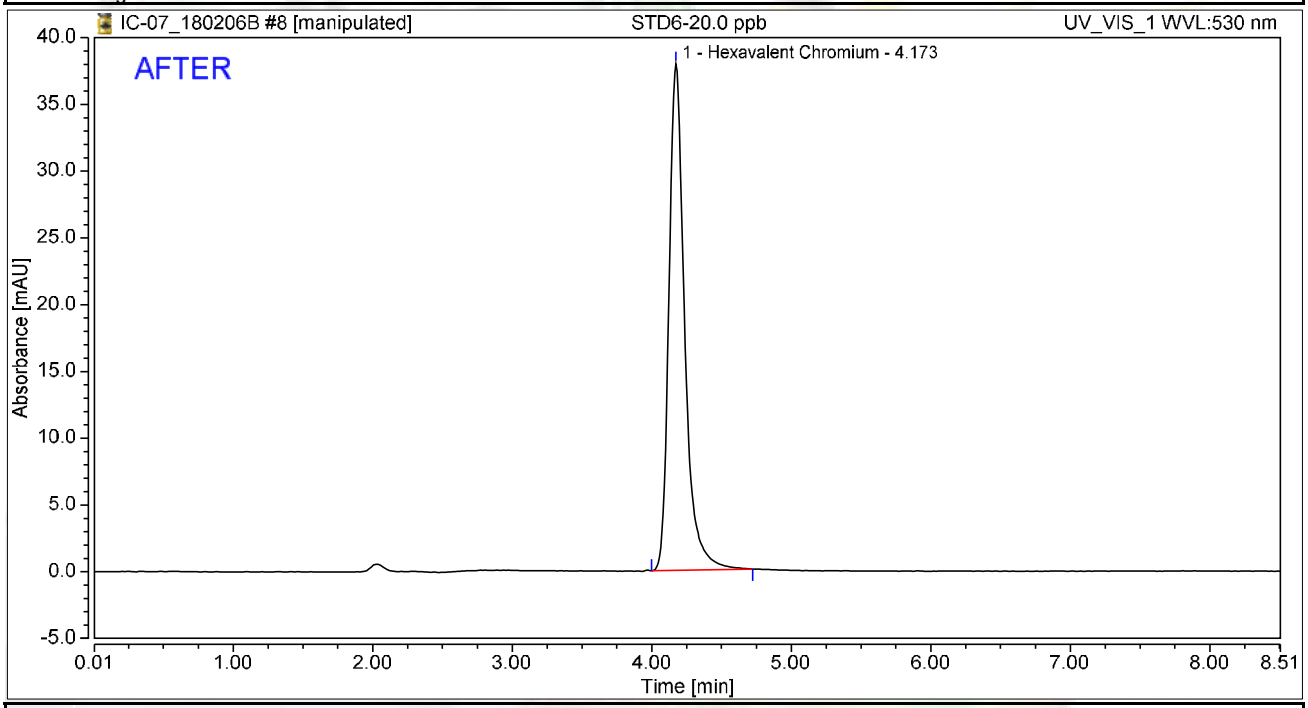
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

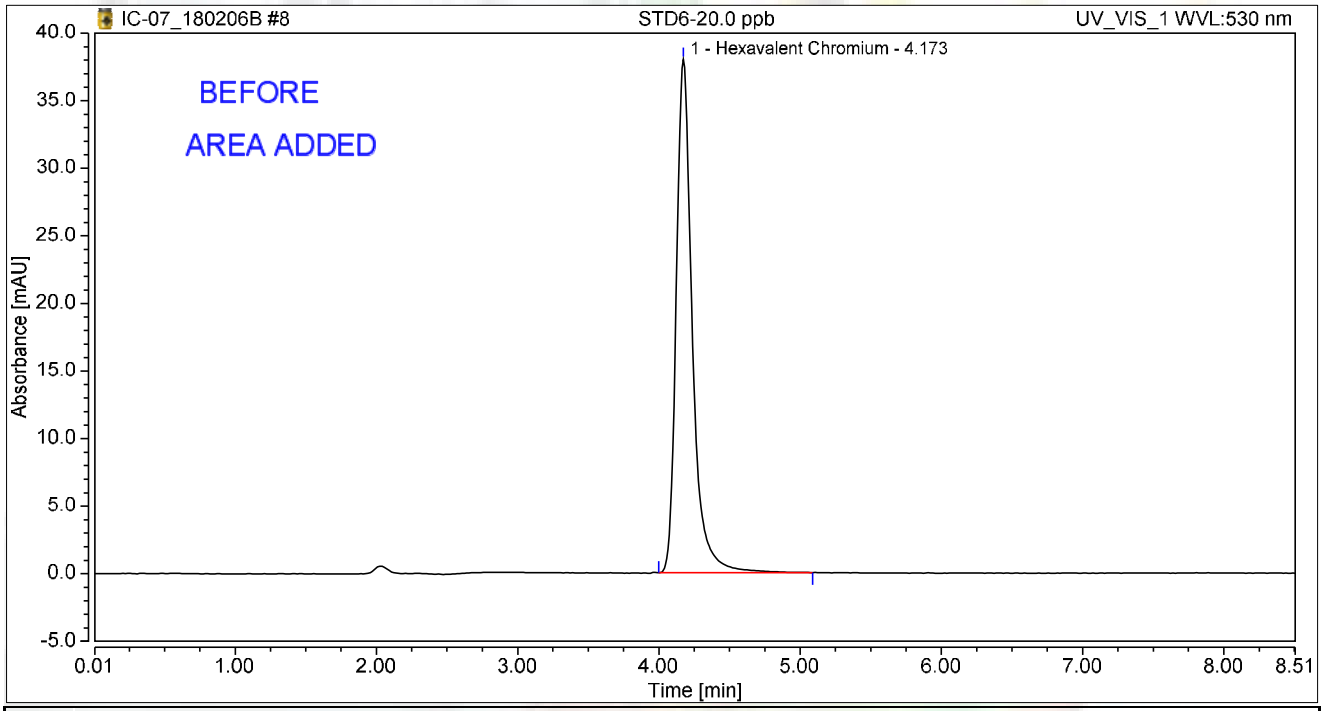
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

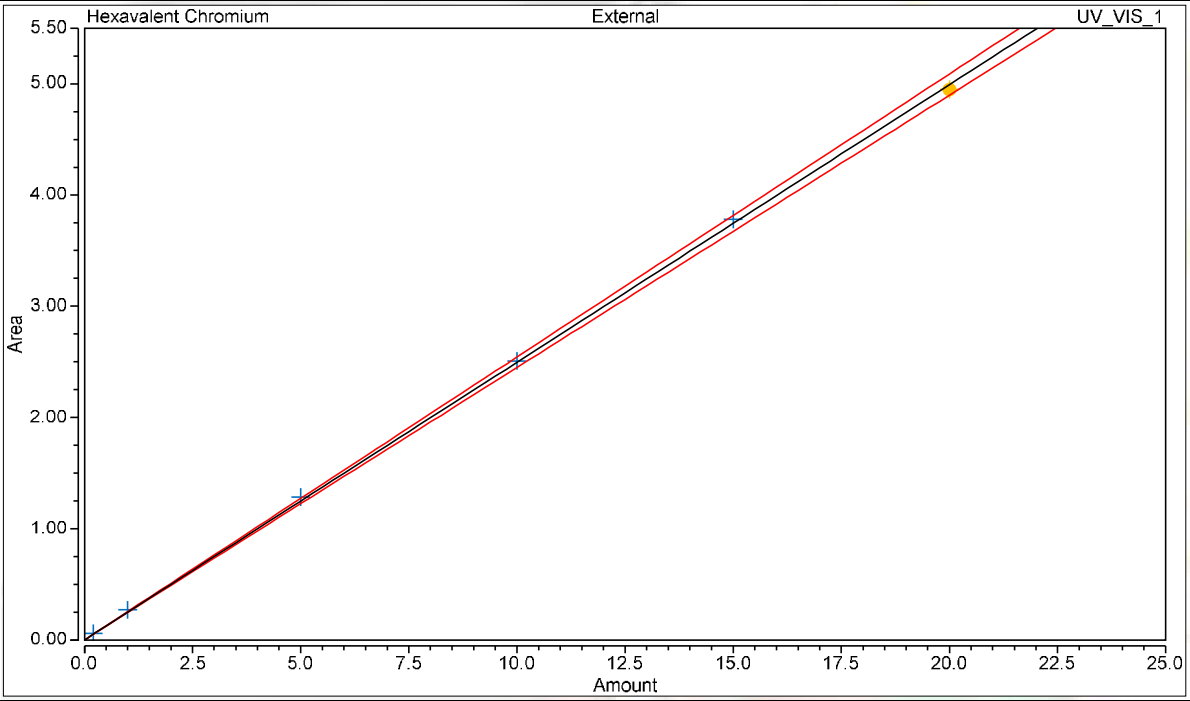
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

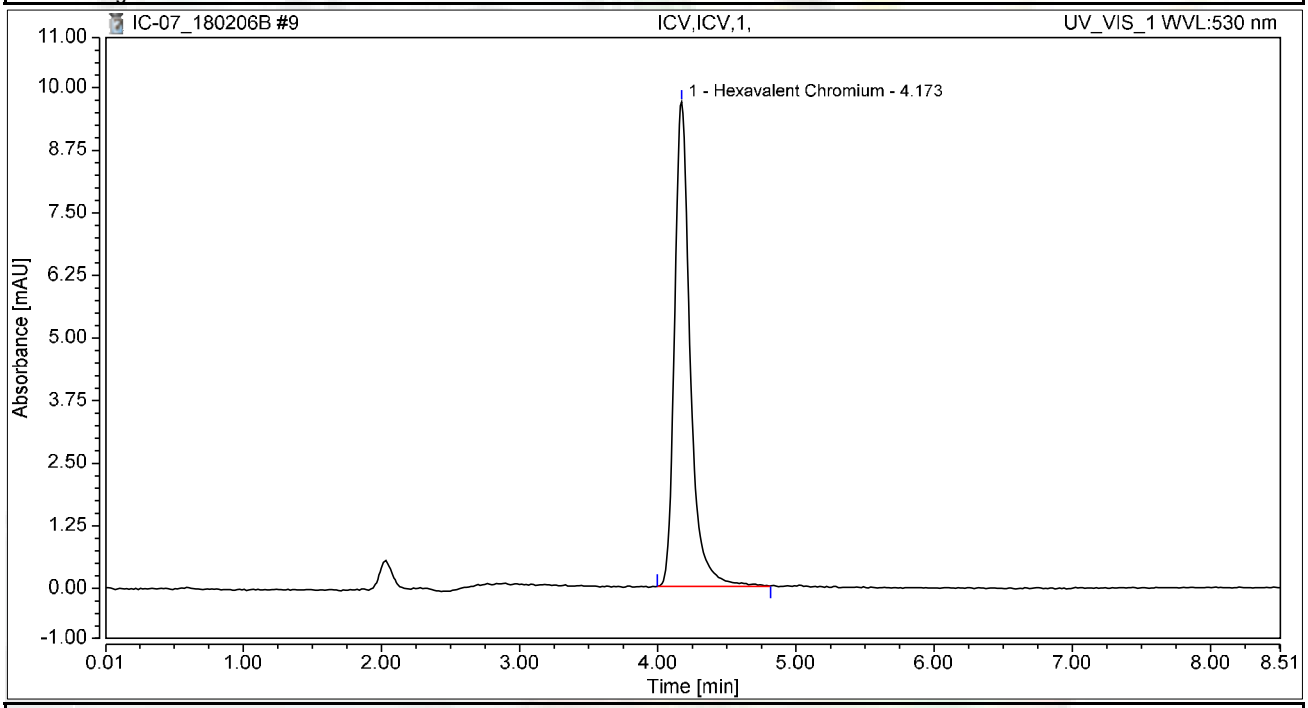
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

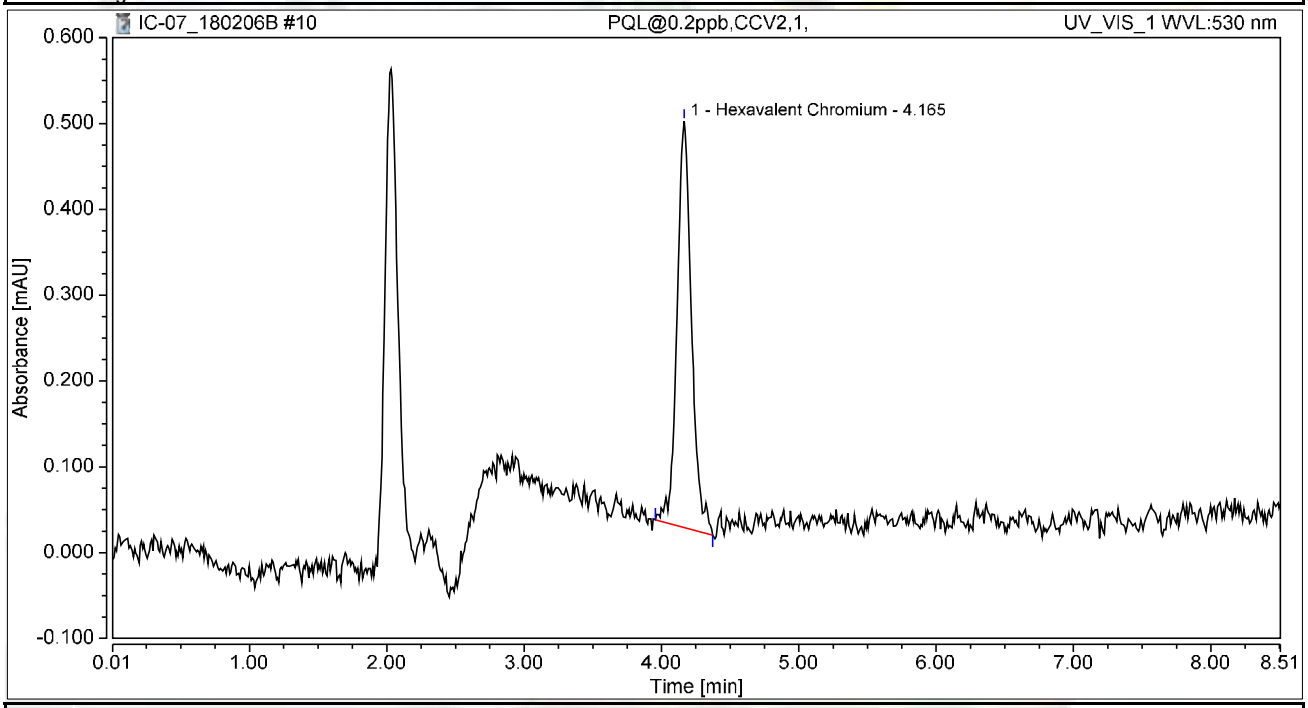
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

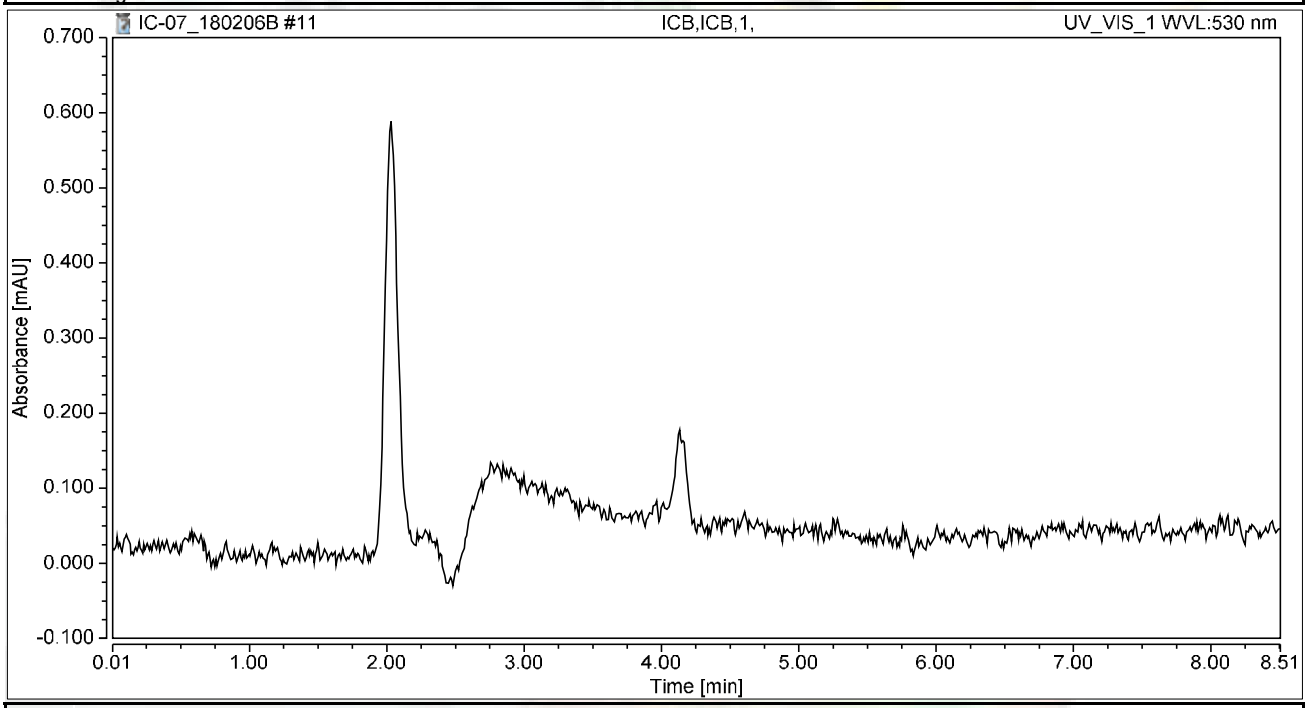
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/23/18 6:45 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/23/18 6:56 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/23/18 7:05 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/23/18 7:15 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/23/18 7:24 AM	Reported
14	MB-R122254	MBLK	1	Hexavalent Chromium	02/23/18 7:34 AM	Reported
15	LCS-R122254	LCS	1	Hexavalent Chromium	02/23/18 7:43 AM	Reported
16	N028742-004B	SAMP	1	Hexavalent Chromium	02/23/18 8:07 AM	Not Reported
17	N028742-004B	SAMP	1	Hexavalent Chromium	02/23/18 8:27 AM	Not Reported
18	N028742-004B	SAMP	1	Hexavalent Chromium	02/23/18 8:38 AM	Reported
19	N028742-016B	SAMP	1	Hexavalent Chromium	02/23/18 8:47 AM	Not Reported
20	N028742-019B	SAMP	1	Hexavalent Chromium	02/23/18 8:57 AM	Reported
21	N028742-004BDUP	DUP	1	Hexavalent Chromium	02/23/18 9:06 AM	Reported
22	N028742-016BMS	MS	5	Hexavalent Chromium	02/23/18 9:16 AM	Not Reported
23	N028742-019BREP	DUP	1	Hexavalent Chromium	02/23/18 9:25 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/23/18 9:35 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/23/18 9:44 AM	Reported
26	N028746-001B	SAMP	1	Hexavalent Chromium	02/23/18 9:54 AM	Reported
27	N028746-002B	SAMP	1	Hexavalent Chromium	02/23/18 10:03 AM	Reported
28	N028742-016BMS	MS	10	Hexavalent Chromium	02/23/18 10:13 AM	Not Reported
29	N028746-001BREP	DUP	1	Hexavalent Chromium	02/23/18 10:22 AM	Reported
30	N028742-016B	SAMP	20	Hexavalent Chromium	02/23/18 10:45 AM	Reported
31	N028742-016BMS	MS	20	Hexavalent Chromium	02/23/18 10:56 AM	Reported
32	N028746-002BMS	MS	1	Hexavalent Chromium	02/23/18 11:06 AM	Reported
33	N028742-016BREP	DUP	20	Hexavalent Chromium	02/23/18 11:15 AM	Reported
34	N028742-016B	SAMP	10	Hexavalent Chromium	02/23/18 11:25 AM	Not Reported
35	N028746-002BREP	DUP	1	Hexavalent Chromium	02/23/18 11:34 AM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/23/18 11:44 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/23/18 11:53 AM	Reported
38	N028745-001A	SAMP	1	Hexavalent Chromium	02/23/18 12:14 PM	Reported
39	N028745-001AMS	MS	1	Hexavalent Chromium	02/23/18 12:24 PM	Reported
40	N028745-002A	SAMP	1	Hexavalent Chromium	02/23/18 12:34 PM	Reported
41	N028745-002AMS	MS	1	Hexavalent Chromium	02/23/18 12:43 PM	Reported
42	N028745-003A	SAMP	1	Hexavalent Chromium	02/23/18 12:53 PM	Reported

rba 3/4/2018

INJECTION LOG: 180223A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028745-003AMS	MS	1	Hexavalent Chromium	02/23/18 1:02 PM	Reported
44	N028745-004A	SAMP	1	Hexavalent Chromium	02/23/18 1:12 PM	Reported
45	N028745-004AMS	MS	1	Hexavalent Chromium	02/23/18 1:21 PM	Reported
46	N028745-005A	SAMP	1	Hexavalent Chromium	02/23/18 1:40 PM	Reported
47	N028745-005AMS	MS	1	Hexavalent Chromium	02/23/18 1:51 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/23/18 2:01 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/23/18 2:30 PM	Not Reported
50	CCB-4	CCB	1	Hexavalent Chromium	02/23/18 3:09 PM	Reported
51	N028745-006A	SAMP	1	Hexavalent Chromium	02/23/18 3:19 PM	Reported
52	N028745-006AMS	MS	1	Hexavalent Chromium	02/23/18 3:29 PM	Reported
53	N028745-007A	SAMP	1	Hexavalent Chromium	02/23/18 3:38 PM	Reported
54	N028745-007AMS	MS	1	Hexavalent Chromium	02/23/18 3:48 PM	Reported
55	N028745-008A	SAMP	1	Hexavalent Chromium	02/23/18 3:57 PM	Reported
56	N028745-008AMS	MS	1	Hexavalent Chromium	02/23/18 4:07 PM	Not Reported
57	N028745-009A	SAMP	1	Hexavalent Chromium	02/23/18 4:16 PM	Reported
58	N028745-009AMS	MS	1	Hexavalent Chromium	02/23/18 4:26 PM	Reported
59	N028745-010A	SAMP	1	Hexavalent Chromium	02/23/18 4:35 PM	Reported
60	N028745-010AMS	MS	1	Hexavalent Chromium	02/23/18 4:45 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	02/23/18 4:54 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	02/23/18 5:03 PM	Reported
63	N028745-006AMSD	MSD	1	Hexavalent Chromium	02/23/18 5:13 PM	Reported
64	N028745-010ADUP	DUP	1	Hexavalent Chromium	02/23/18 5:22 PM	Reported
65	N028745-011A	SAMP	1	Hexavalent Chromium	02/23/18 5:32 PM	Reported
66	N028745-011AMS	MS	1	Hexavalent Chromium	02/23/18 5:41 PM	Reported
67	N028745-012A	SAMP	1	Hexavalent Chromium	02/23/18 5:51 PM	Reported
68	N028745-012AMS	MS	1	Hexavalent Chromium	02/23/18 6:00 PM	Not Reported
69	N028745-013A	SAMP	1	Hexavalent Chromium	02/23/18 6:10 PM	Reported
70	N028745-013AMS	MS	1	Hexavalent Chromium	02/23/18 6:19 PM	Reported
71	N028745-014A	SAMP	1	Hexavalent Chromium	02/23/18 6:29 PM	Reported
72	N028745-014AMS	MS	1	Hexavalent Chromium	02/23/18 6:38 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	02/23/18 6:48 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	02/23/18 6:57 PM	Reported
75	N028745-015A	SAMP	1	Hexavalent Chromium	02/23/18 7:06 PM	Reported
76	N028745-015AMS	MS	1	Hexavalent Chromium	02/23/18 7:16 PM	Reported
77	N028745-008AMS	MS	1	Hexavalent Chromium	02/23/18 7:25 PM	Reported
78	N028745-012AMS	MS	1	Hexavalent Chromium	02/23/18 7:35 PM	Reported
79	CCV-7	CCV	1	Hexavalent Chromium	02/23/18 7:44 PM	Reported
80	CCB-7	CCB	1	Hexavalent Chromium	02/23/18 7:54 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180223A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**24/Feb/18 10:56:10**
No. of Injections:	**83**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/23/2018 06:45	Finished	BLANK
10	BLANK	2	1000	Unknown		02/23/2018 06:56	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/23/2018 07:05	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/23/2018 07:15	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/23/2018 07:24	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/23/2018 07:34	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/23/2018 07:43	Finished	LCS, IWST-180129B
16	N028742-004B,SAMF	9	1000	Unknown		02/23/2018 08:07	Finished	SAMP,10mL
17	N028742-004B,SAMF	11	1000	Unknown		02/23/2018 08:27	Finished	SAMP,10mL
18	N028742-004B,SAMF	12	1000	Unknown		02/23/2018 08:38	Finished	SAMP,10mL
19	N028742-016B,SAMF	13	1000	Unknown		02/23/2018 08:47	Finished	SAMP,10mL
20	N028742-019B,SAMF	14	1000	Unknown		02/23/2018 08:57	Finished	SAMP,10mL
21	N028742-004BDUP,D	15	1000	Unknown		02/23/2018 09:06	Finished	DUP,10mL
22	N028742-016BMS,MS	17	1000	Unknown		02/23/2018 09:16	Finished	MS (1ppb), IWST-180129B,2>1
23	N028742-019BREP,D	18	1000	Unknown		02/23/2018 09:25	Finished	REP,10mL
24	CCV-2,CCV1,1,	19	1000	Unknown		02/23/2018 09:35	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	20	1000	Unknown		02/23/2018 09:44	Finished	CCB R180214B
26	N028746-001B,SAMF	21	1000	Unknown		02/23/2018 09:54	Finished	SAMP,10mL
27	N028746-002B,SAMF	22	1000	Unknown		02/23/2018 10:03	Finished	SAMP,10mL
28	N028742-016BMS,MS	23	1000	Unknown		02/23/2018 10:13	Finished	MS (1ppb), IWST-180129B,1>1
29	N028746-001BREP,D	24	1000	Unknown		02/23/2018 10:22	Finished	REP,10mL
30	N028742-016B,SAMF	26	1000	Unknown		02/23/2018 10:45	Finished	SAMP,0.5>10mL
31	N028742-016BMS,MS	27	1000	Unknown		02/23/2018 10:56	Finished	MS (1ppb), IWST-180129B,0.5
32	N028746-002BMS,MS	28	1000	Unknown		02/23/2018 11:06	Finished	MS (1ppb), IWST-180129B,10
33	N028742-016BREP,D	29	1000	Unknown		02/23/2018 11:15	Finished	REP,0.5>10mL
34	N028742-016B,SAMF	30	1000	Unknown		02/23/2018 11:25	Finished	SAMP,1>10mL
35	N028746-002BREP,D	31	1000	Unknown		02/23/2018 11:34	Finished	REP,10mL
36	CCV-3,CCV,1,	32	1000	Unknown		02/23/2018 11:44	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	33	1000	Unknown		02/23/2018 11:53	Finished	CCB R180214B
38	N028745-001A,SAMF	1	1000	Unknown		02/23/2018 12:14	Finished	SAMP,10mL
39	N028745-001AMS,MS	2	1000	Unknown		02/23/2018 12:24	Finished	MS (1ppb), IWST-180129B,10
40	N028745-002A,SAMF	3	1000	Unknown		02/23/2018 12:34	Finished	SAMP,10mL
41	N028745-002AMS,MS	4	1000	Unknown		02/23/2018 12:43	Finished	MS (1ppb), IWST-180129B,10
42	N028745-003A,SAMF	5	1000	Unknown		02/23/2018 12:53	Finished	SAMP,10mL
43	N028745-003AMS,MS	6	1000	Unknown		02/23/2018 13:02	Finished	MS (1ppb), IWST-180129B,10
44	N028745-004A,SAMF	7	1000	Unknown		02/23/2018 13:12	Finished	SAMP,10mL
45	N028745-004AMS,MS	8	1000	Unknown		02/23/2018 13:21	Finished	MS (1ppb), IWST-180129B,10
46	N028745-005A,SAMF	9	1000	Unknown		02/23/2018 13:40	Finished	SAMP,10mL
47	N028745-005AMS,MS	10	1000	Unknown		02/23/2018 13:51	Finished	MS (1ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	11	1000	Unknown		02/23/2018 14:01	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	1	1000	Unknown		02/23/2018 14:30	Finished	CCB R180214B
50	CCB-4,CCB,1,	1	1000	Unknown		02/23/2018 15:09	Finished	CCB R180214B
51	N028745-006A,SAMF	2	1000	Unknown		02/23/2018 15:19	Finished	SAMP,10mL
52	N028745-006AMS,MS	3	1000	Unknown		02/23/2018 15:29	Finished	MS (1ppb), IWST-180129B,10
53	N028745-007A,SAMF	4	1000	Unknown		02/23/2018 15:38	Finished	SAMP,10mL
54	N028745-007AMS,MS	5	1000	Unknown		02/23/2018 15:48	Finished	MS (1ppb), IWST-180129B,10
55	N028745-008A,SAMF	6	1000	Unknown		02/23/2018 15:57	Finished	SAMP,10mL
56	N028745-008AMS,MS	7	1000	Unknown		02/23/2018 16:07	Finished	MS (1ppb), IWST-180129B,10
57	N028745-009A,SAMF	8	1000	Unknown		02/23/2018 16:16	Finished	SAMP,10mL
58	N028745-009AMS,MS	9	1000	Unknown		02/23/2018 16:26	Finished	MS (1ppb), IWST-180129B,10
59	N028745-010A,SAMF	10	1000	Unknown		02/23/2018 16:35	Finished	SAMP,10mL
60	N028745-010AMS,MS	11	1000	Unknown		02/23/2018 16:45	Finished	MS (1ppb), IWST-180129B,10

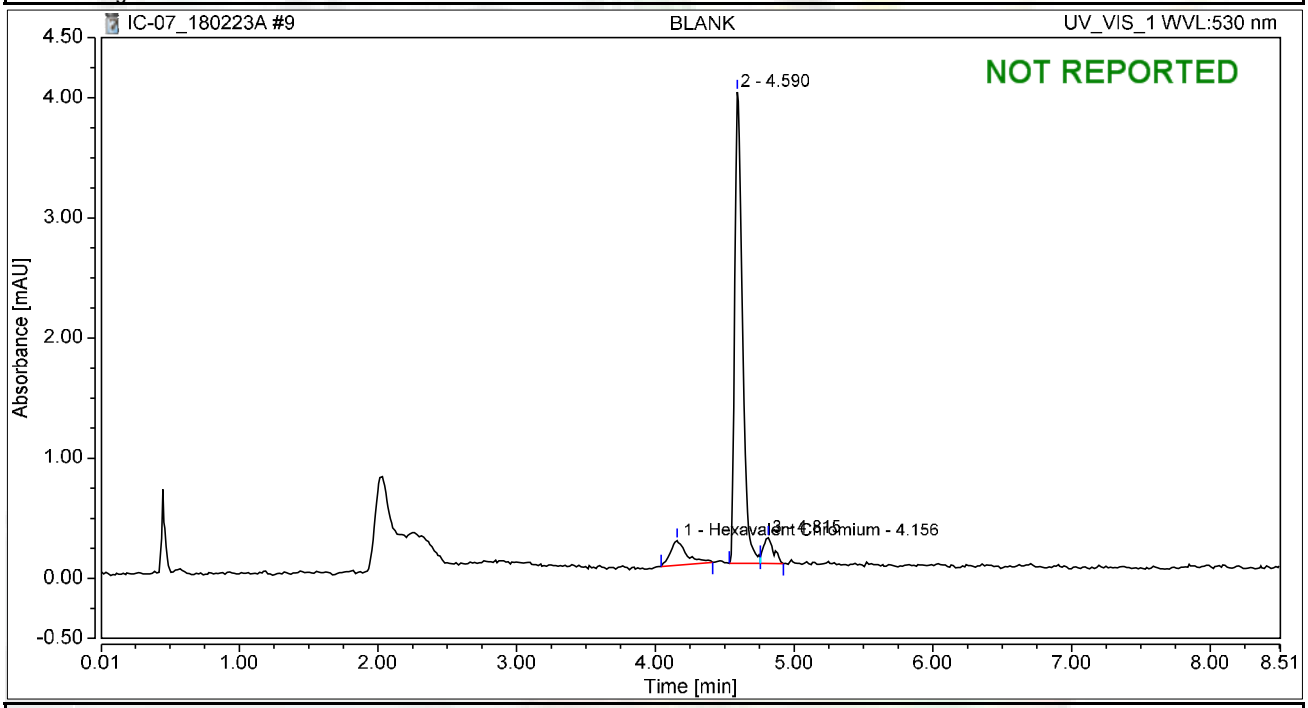
61	CCV-5,CCV,1,	12	1000	Unknown		02/23/2018 16:54	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	13	1000	Unknown		02/23/2018 17:03	Finished	CCB R180214B
63	N028745-006AMSD,M	14	1000	Unknown		02/23/2018 17:13	Finished	MSD (1ppb), IWST-180129B,10
64	N028745-010ADUP,D	15	1000	Unknown		02/23/2018 17:22	Finished	DUP,10mL
65	N028745-011A,SAMP	16	1000	Unknown		02/23/2018 17:32	Finished	SAMP,10mL
66	N028745-011AMS,MS	17	1000	Unknown		02/23/2018 17:41	Finished	MS (1ppb), IWST-180129B,10
67	N028745-012A,SAMP	18	1000	Unknown		02/23/2018 17:51	Finished	SAMP,10mL
68	N028745-012AMS,MS	19	1000	Unknown		02/23/2018 18:00	Finished	MS (1ppb), IWST-180129B,10
69	N028745-013A,SAMP	20	1000	Unknown		02/23/2018 18:10	Finished	SAMP,10mL
70	N028745-013AMS,MS	21	1000	Unknown		02/23/2018 18:19	Finished	MS (1ppb), IWST-180129B,10
71	N028745-014A,SAMP	22	1000	Unknown		02/23/2018 18:29	Finished	SAMP,10mL
72	N028745-014AMS,MS	23	1000	Unknown		02/23/2018 18:38	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	24	1000	Unknown		02/23/2018 18:48	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	25	1000	Unknown		02/23/2018 18:57	Finished	CCB R180214B
75	N028745-015A,SAMP	26	1000	Unknown		02/23/2018 19:06	Finished	SAMP,10mL
76	N028745-015AMS,MS	27	1000	Unknown		02/23/2018 19:16	Finished	MS (1ppb), IWST-180129B,10
77	N028745-008AMS,MS	28	1000	Unknown		02/23/2018 19:25	Finished	MS (1ppb), IWST-180129B,10
78	N028745-012AMS,MS	29	1000	Unknown		02/23/2018 19:35	Finished	MS (1ppb), IWST-180129B,10
79	CCV-7,CCV,1,	30	1000	Unknown		02/23/2018 19:44	Finished	CCV @5ppb, IWST-180129A
80	CCB-7,CCB,1,	31	1000	Unknown		02/23/2018 19:54	Finished	CCB R180214B
81	SHUTDOWN	32	1000	Unknown		02/23/2018 20:03	Finished	
82	Eluent: R180223A	33	1000	Unknown		n.a.	Finished	Eluent
83	PCR: R180223B	34	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 06:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

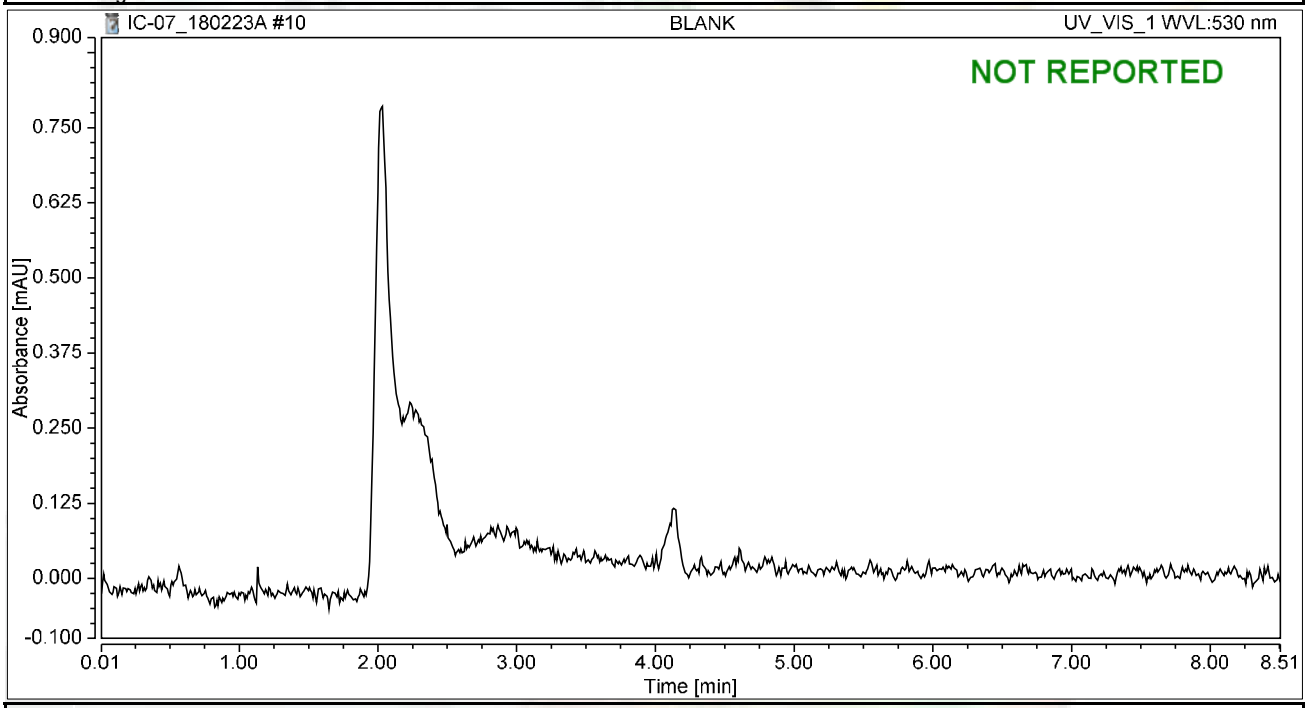
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.028	0.206	9.27	4.73	0.1121
2		4.590	0.255	3.924	84.60	90.38	n.a.
3		4.815	0.019	0.212	6.13	4.89	n.a.
Total:			**0.302**	**4.342**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 06:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

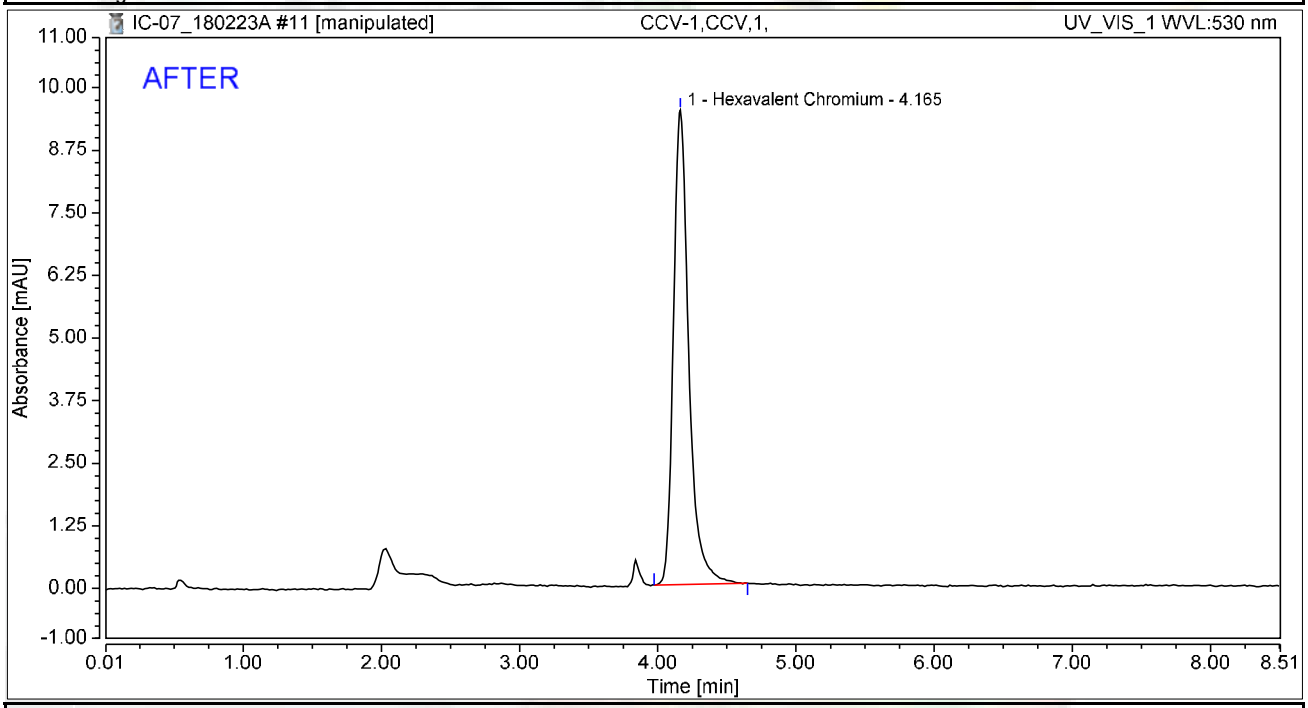
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 07:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.223	9.474	100.00	100.00	4.8975
Total:			**1.223**	**9.474**	**100.00**	**100.00**	

rba 3/4/2018

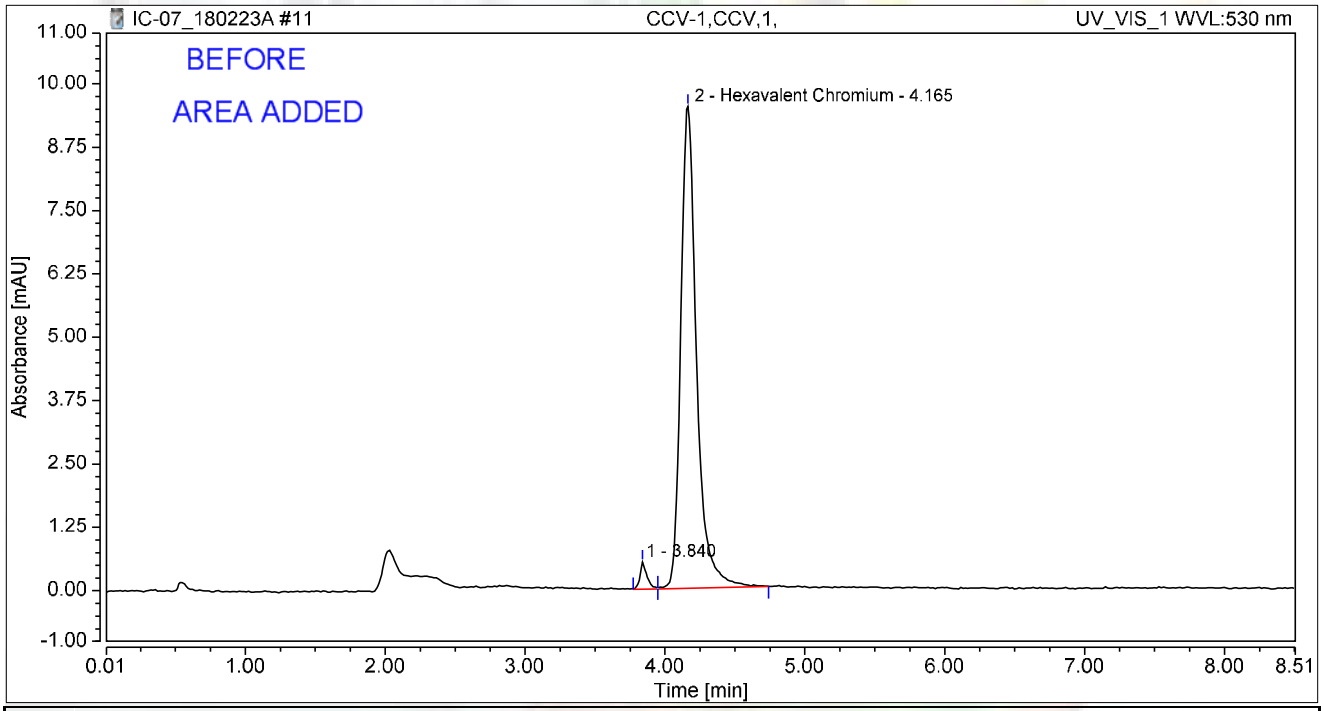
RB 03/07/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 07:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.840	0.031	0.533	2.42	5.31	n.a.
2	Hexavalent Chromium	4.165	1.242	9.501	97.58	94.69	4.9768
Total:			**1.273**	**10.034**	**100.00**	**100.00**	

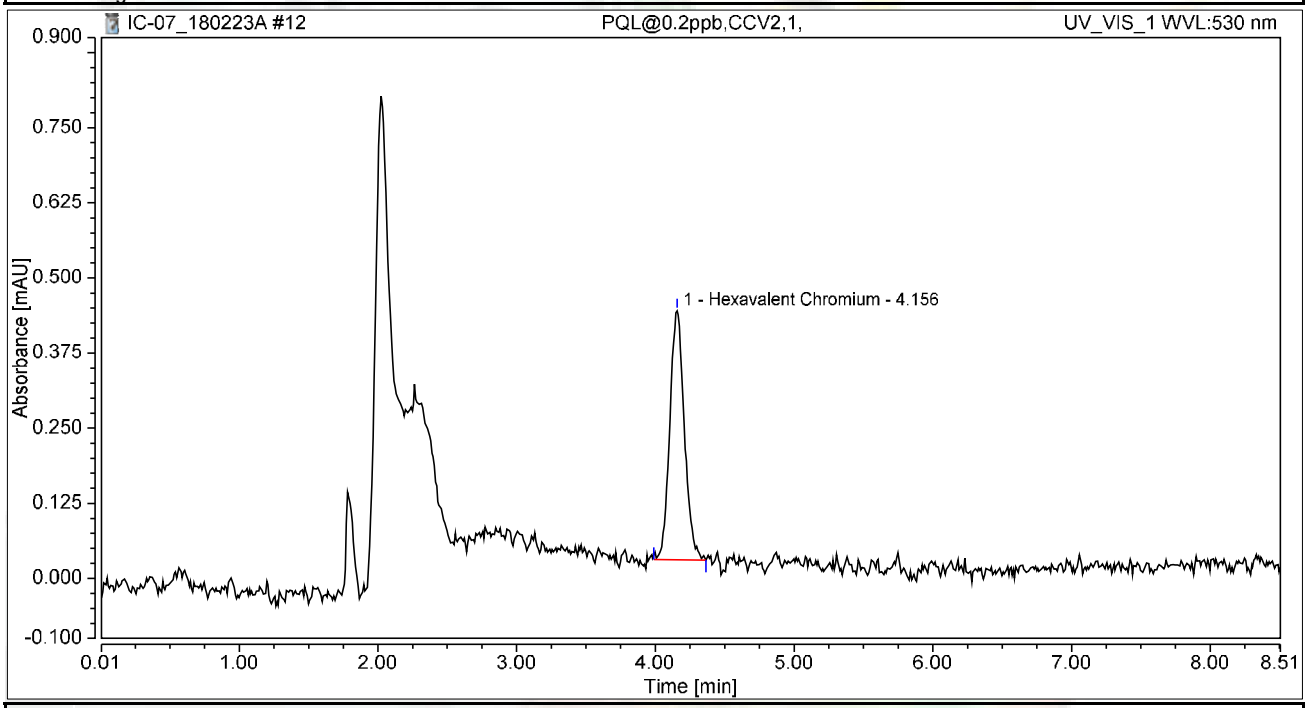
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 07:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

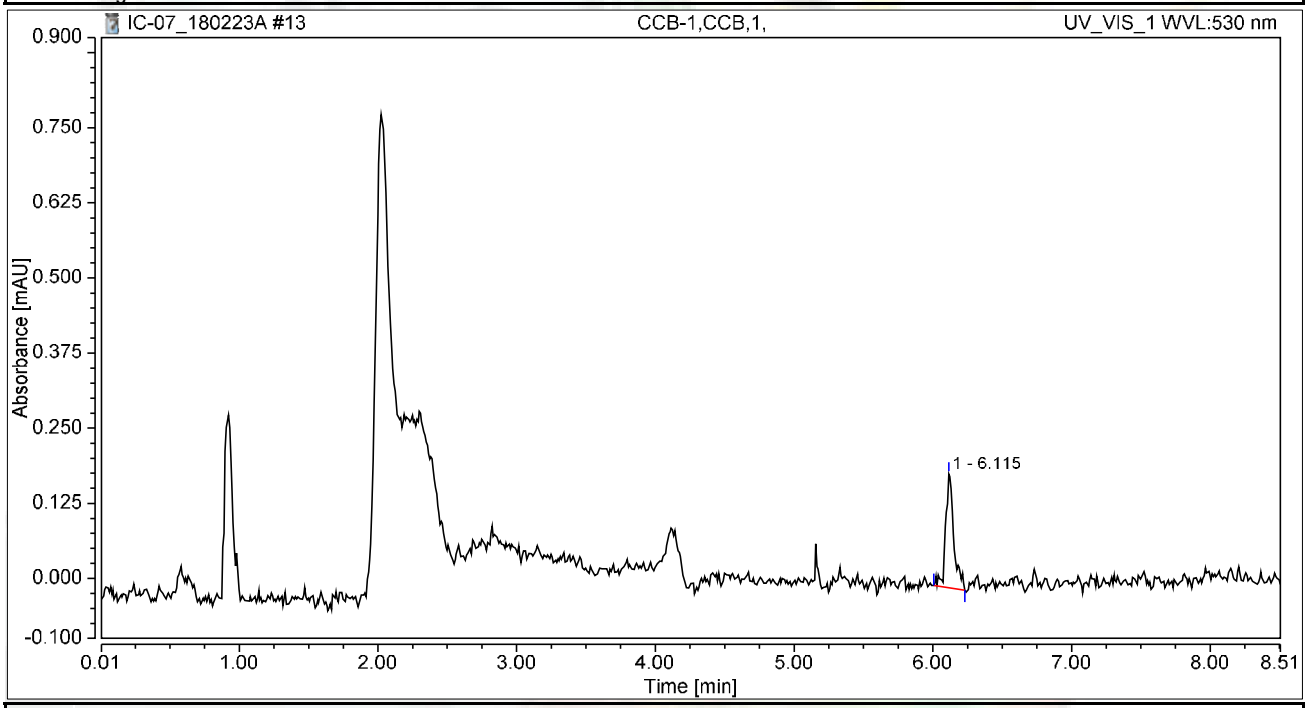
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.050	0.414	100.00	100.00	0.2022
Total:			**0.050**	**0.414**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 07:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

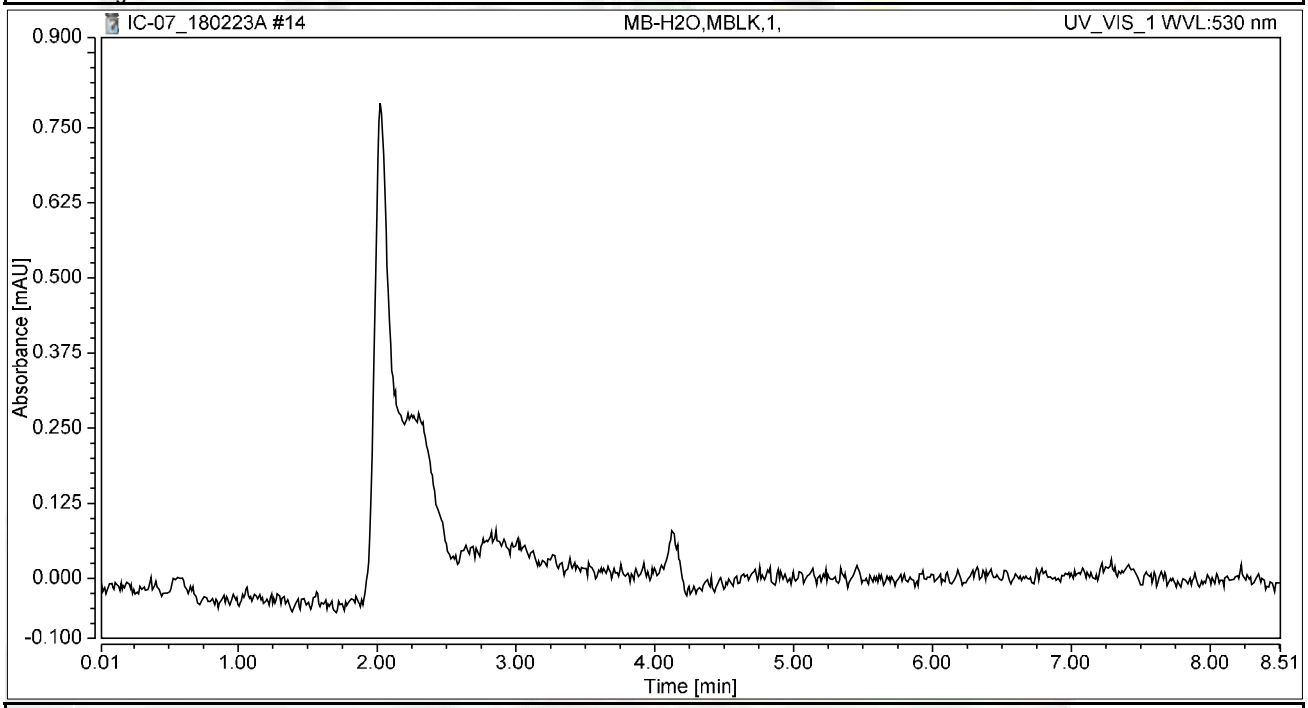
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.115	0.013	0.189	100.00	100.00	n.a.
Total:			**0.013**	**0.189**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 07:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

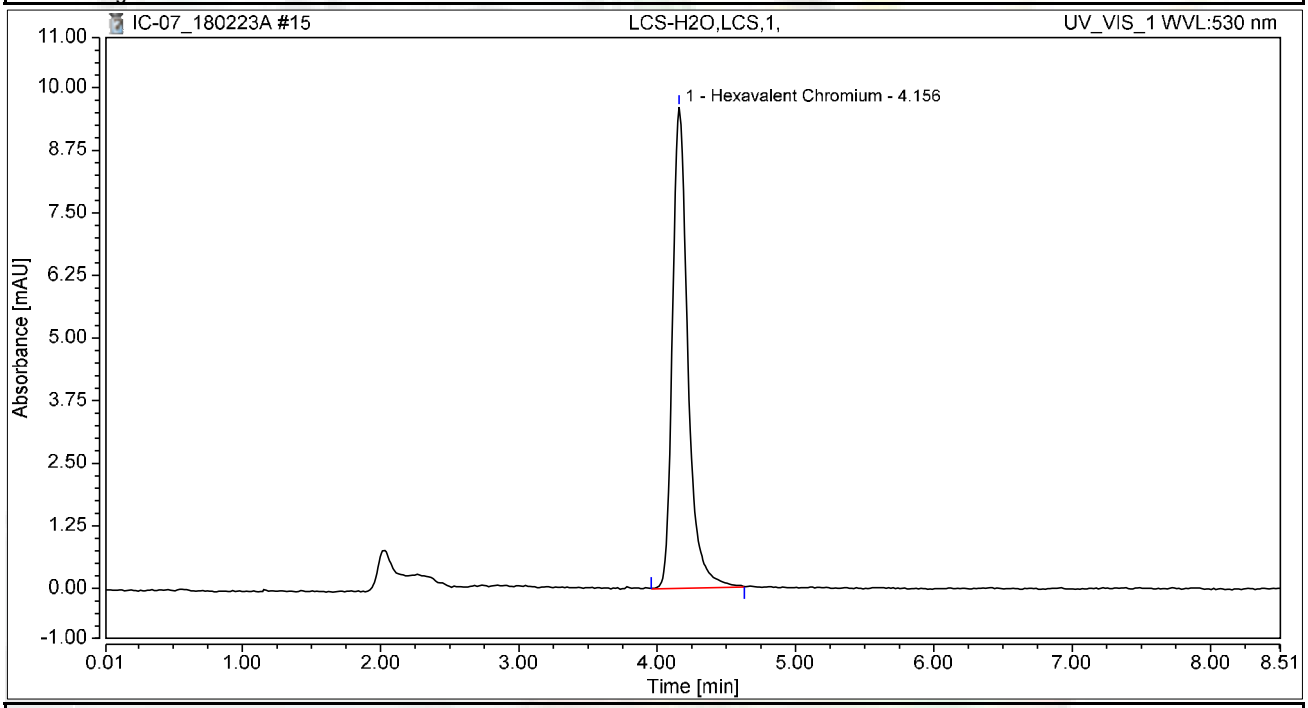
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 07:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

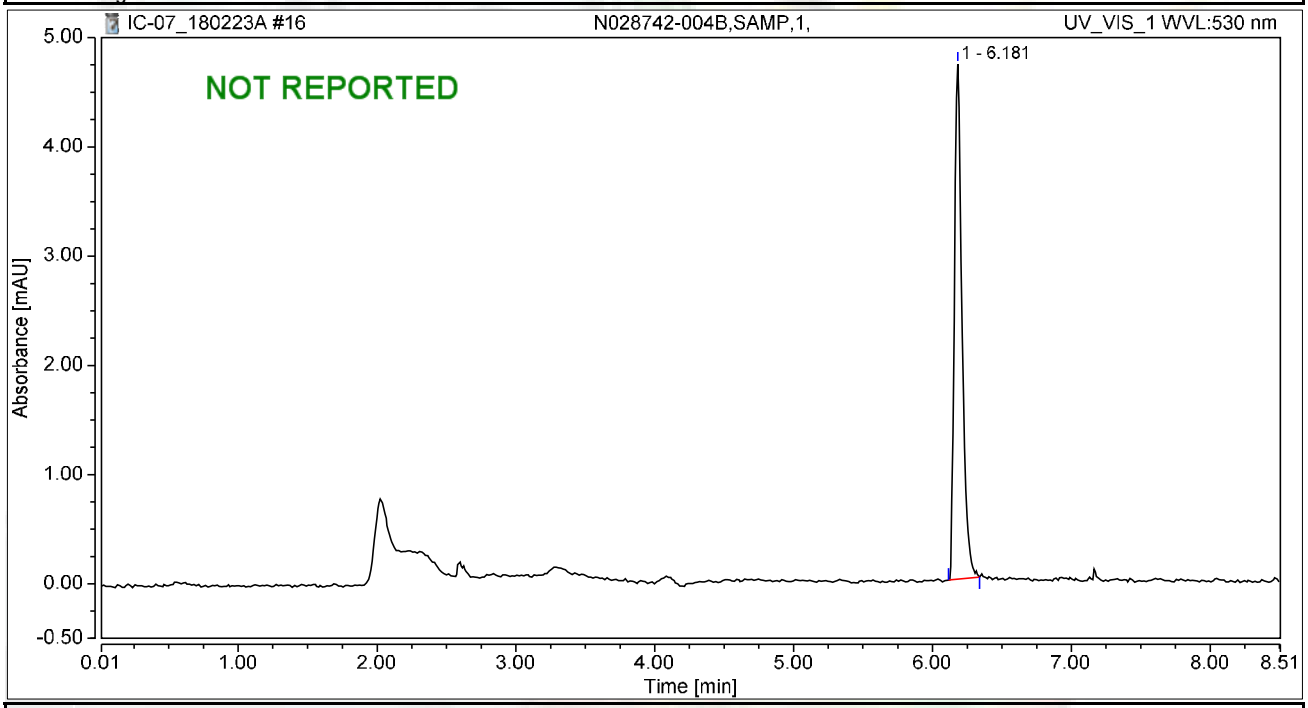
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.245	9.609	100.00	100.00	4.9886
Total:			**1.245**	**9.609**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-004B,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 08:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

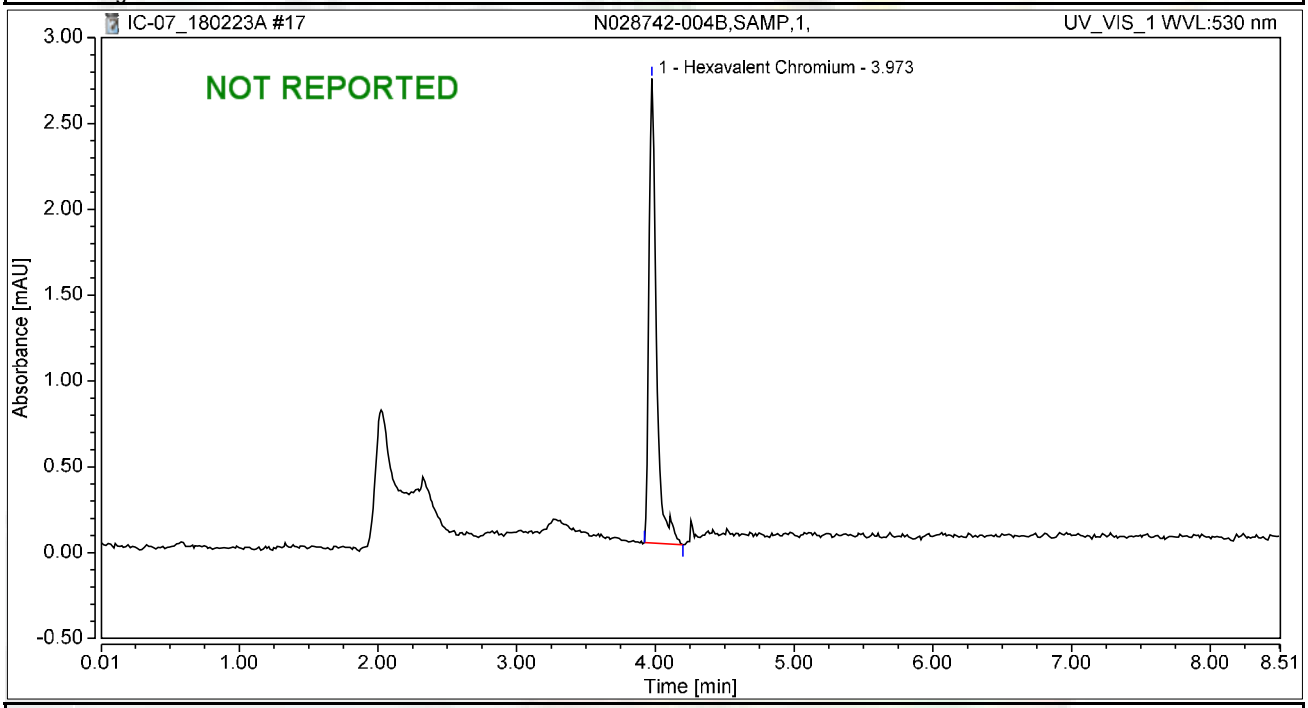
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.181	0.301	4.717	100.00	100.00	n.a.
Total:			**0.301**	**4.717**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-004B,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 08:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

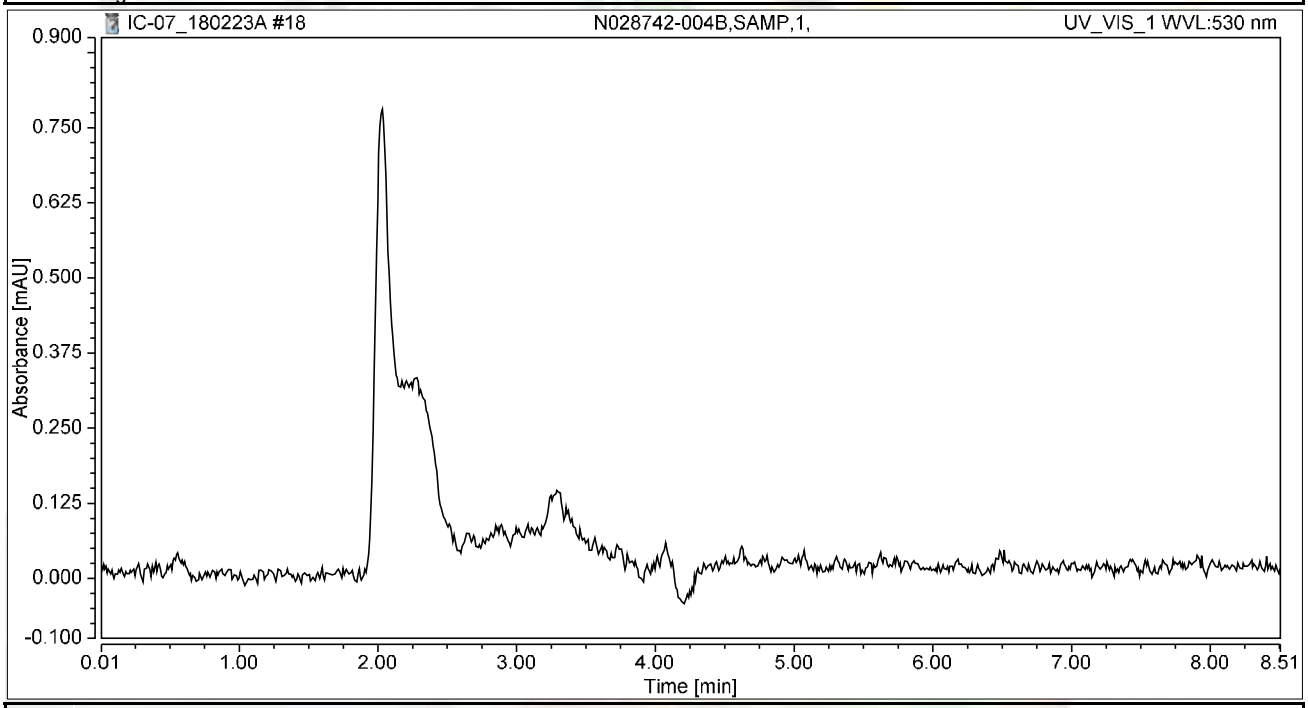
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.973	0.170	2.705	100.00	100.00	0.6792
Total:			**0.170**	**2.705**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-004B,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 08:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

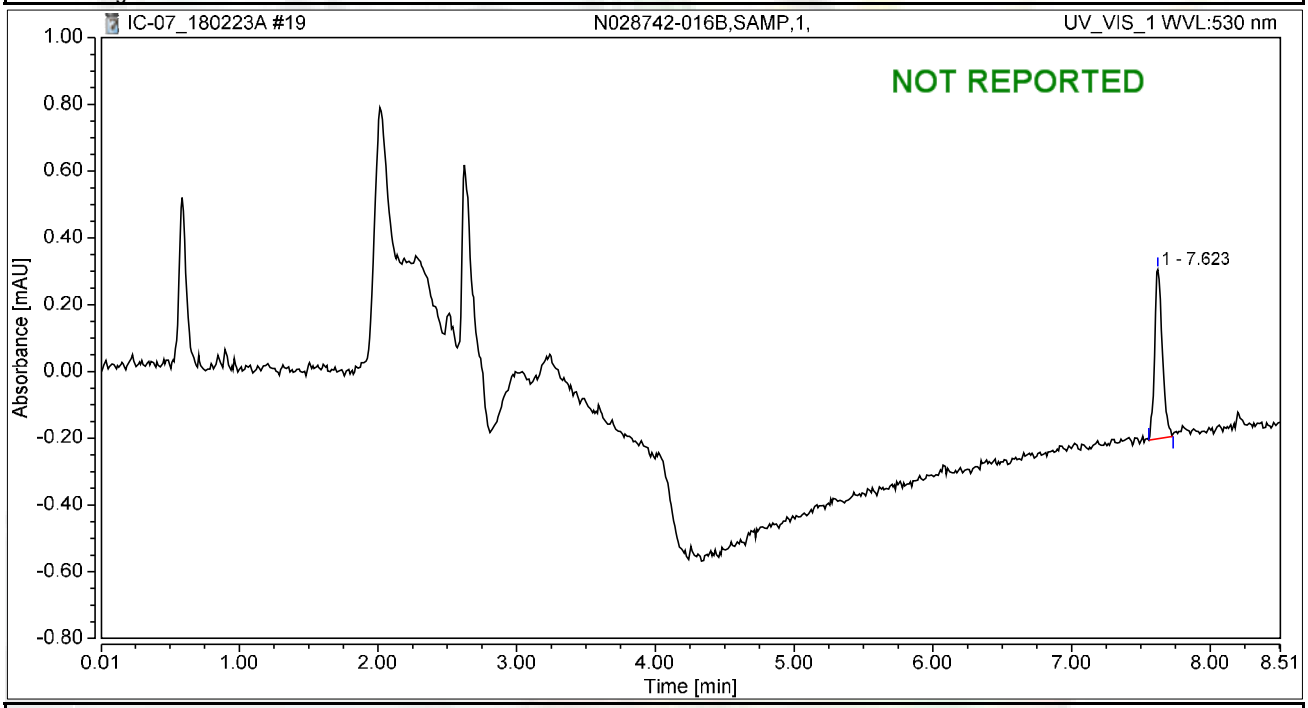
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016B,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 08:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.623	0.033	0.507	100.00	100.00	n.a.
Total:			**0.033**	**0.507**	**100.00**	**100.00**	

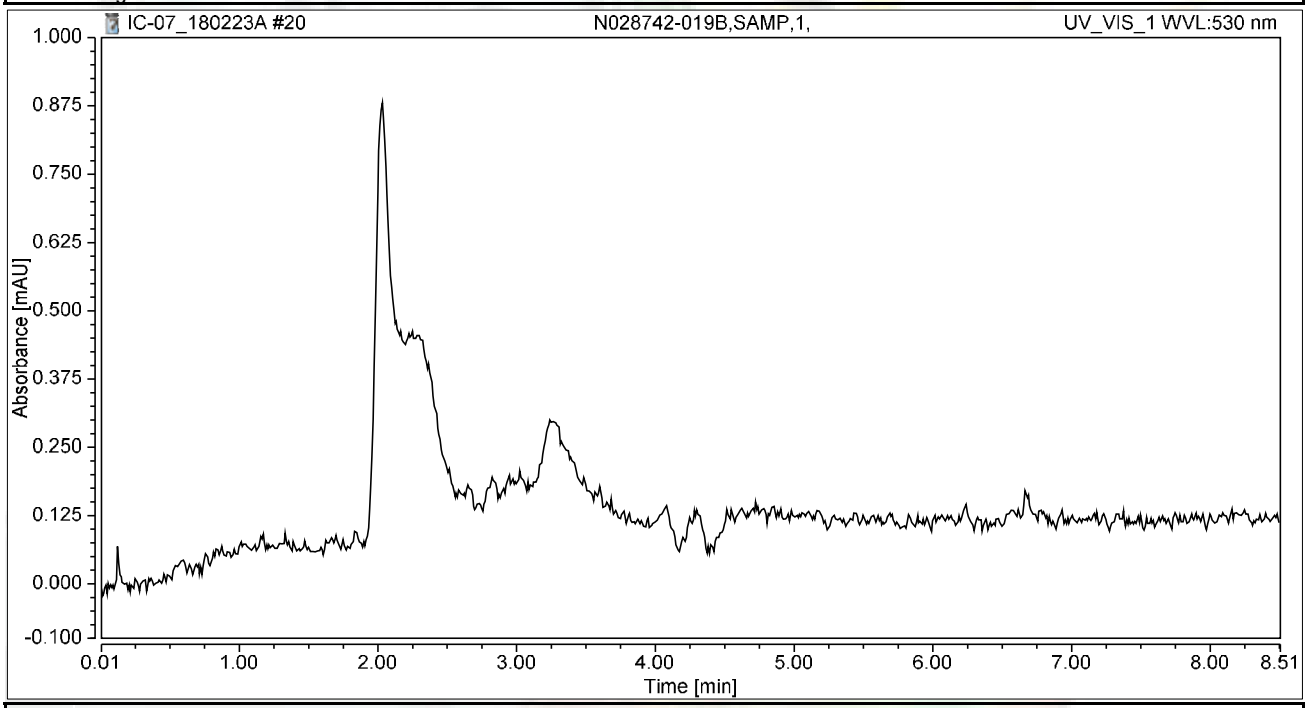
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028742-019B,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

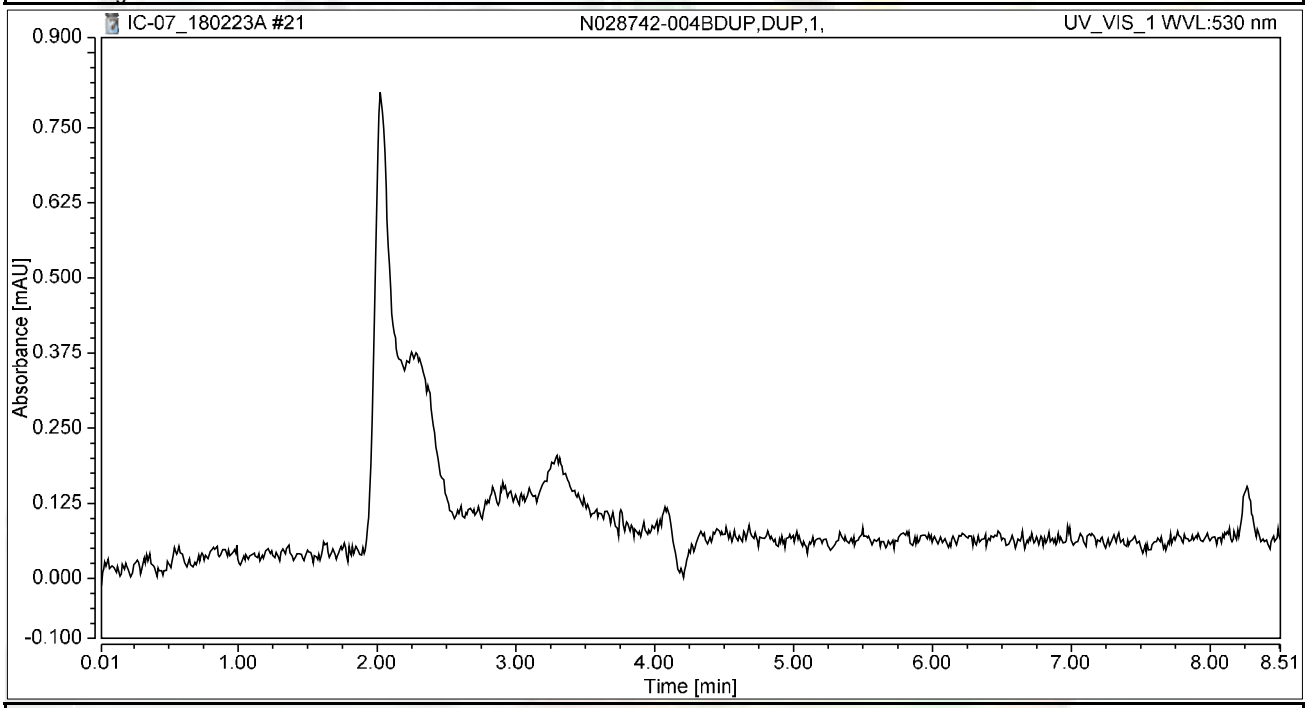
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-004BDUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

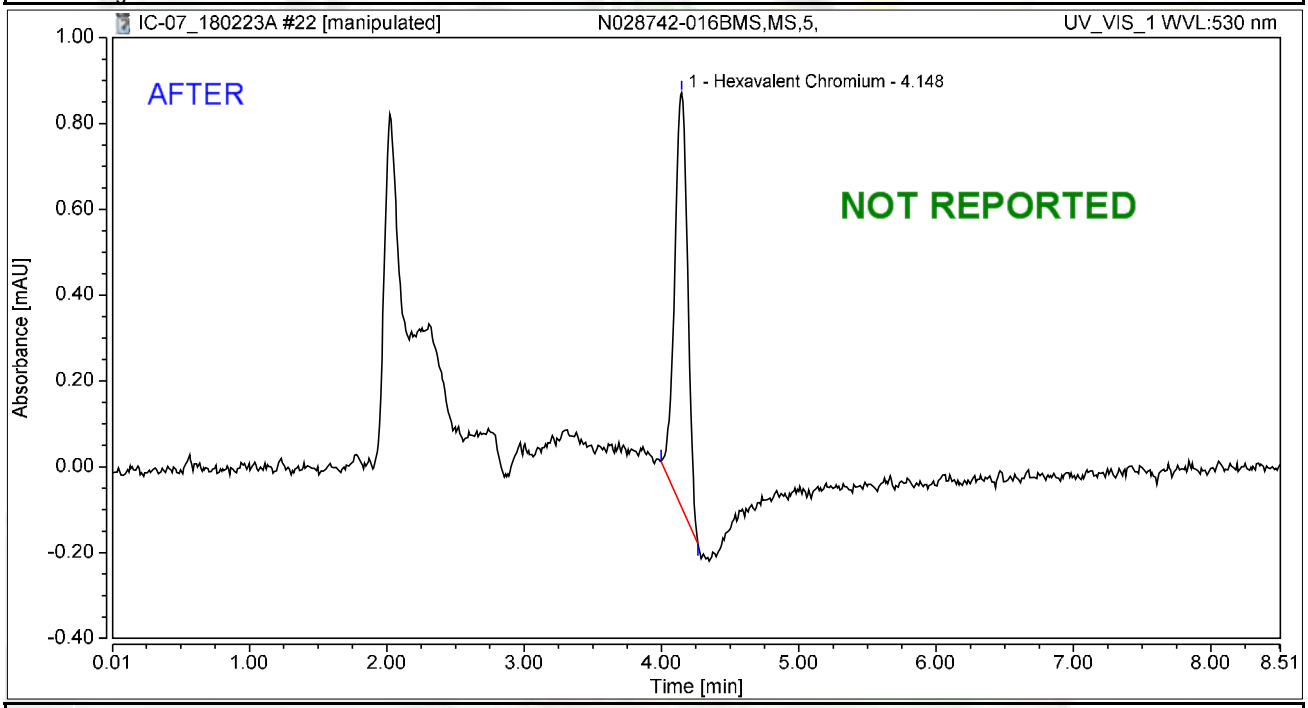
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016BMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.106	0.967	100.00	100.00	0.4260
Total:			**0.106**	**0.967**	**100.00**	**100.00**	

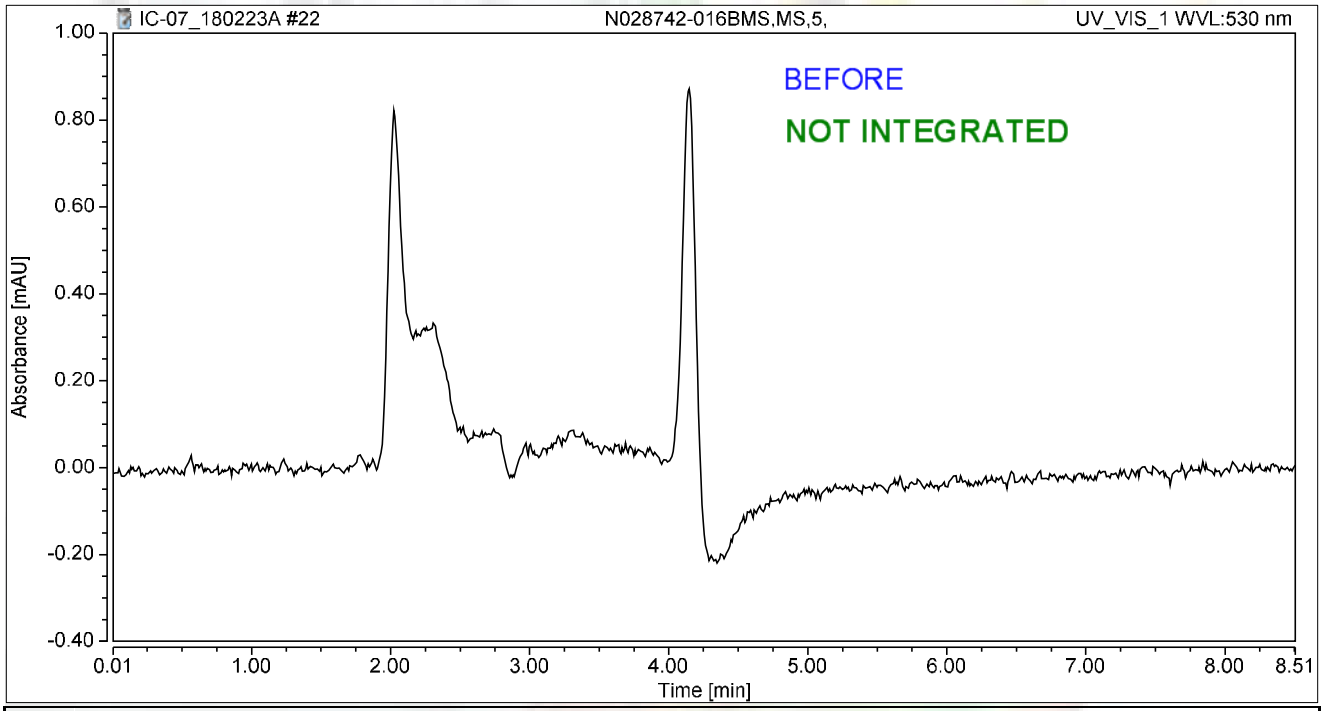
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016BMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

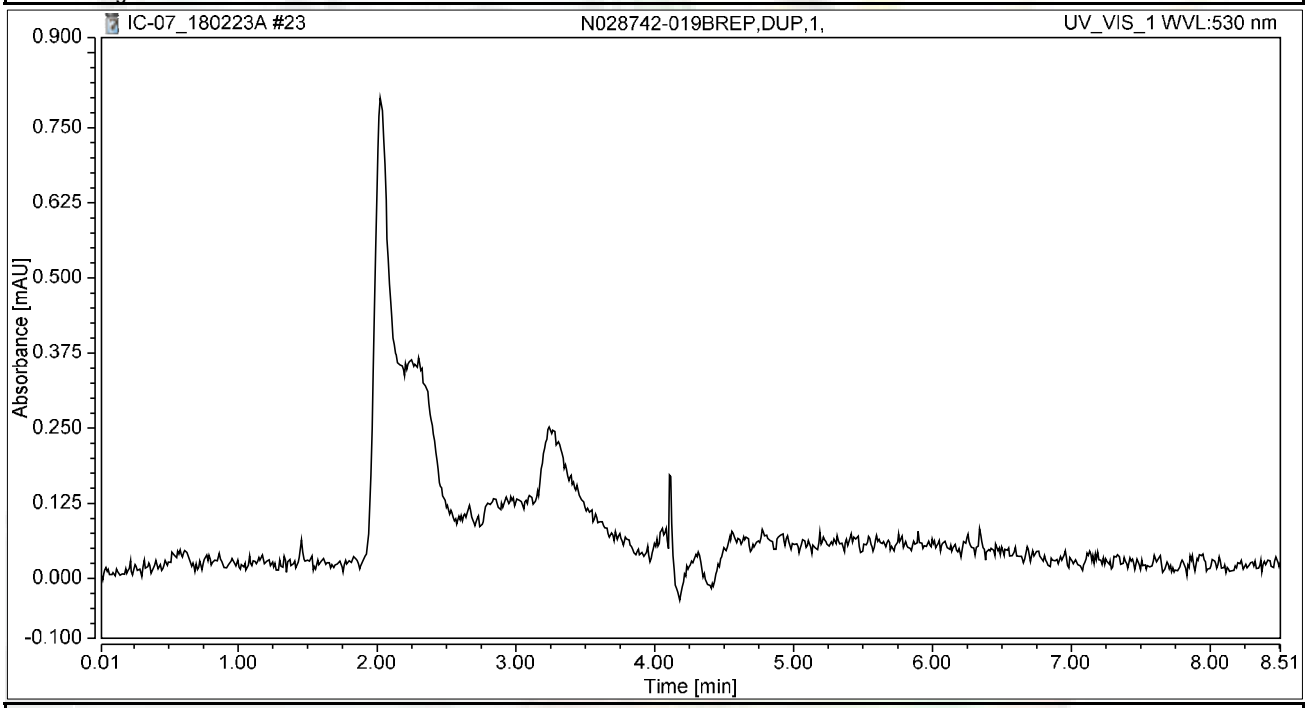
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028742-019BREP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

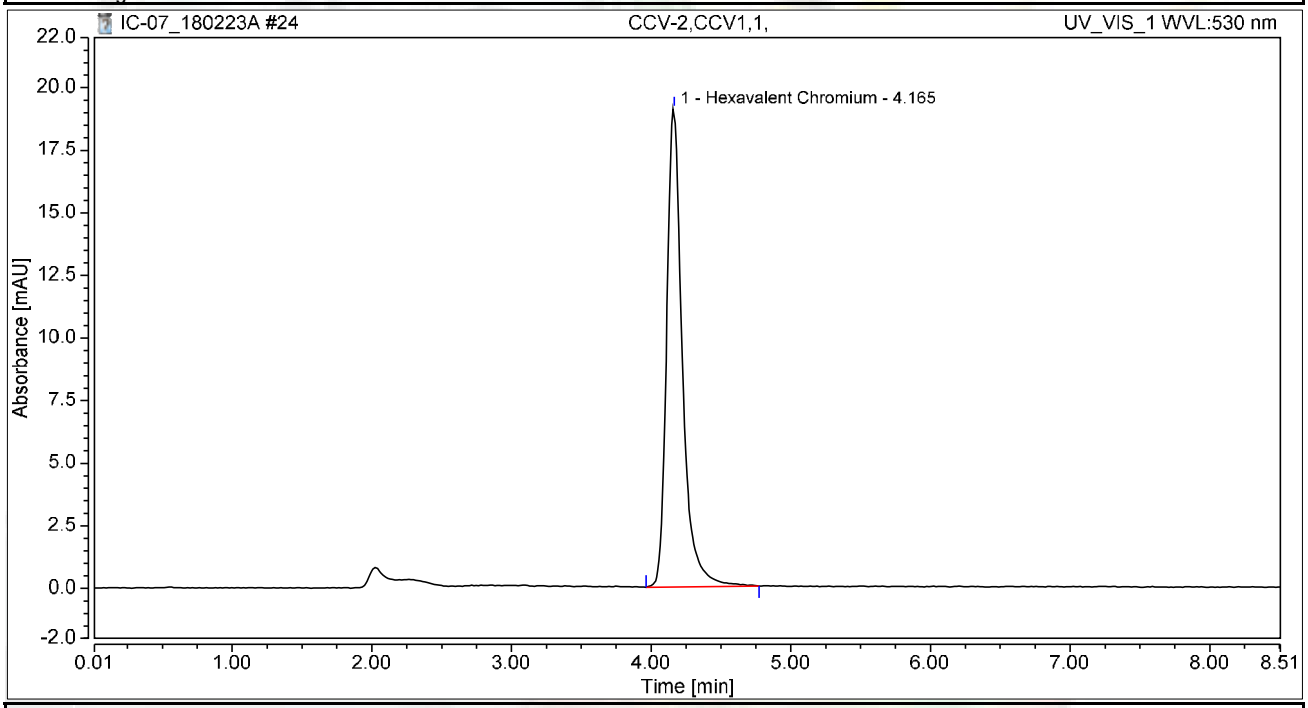
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

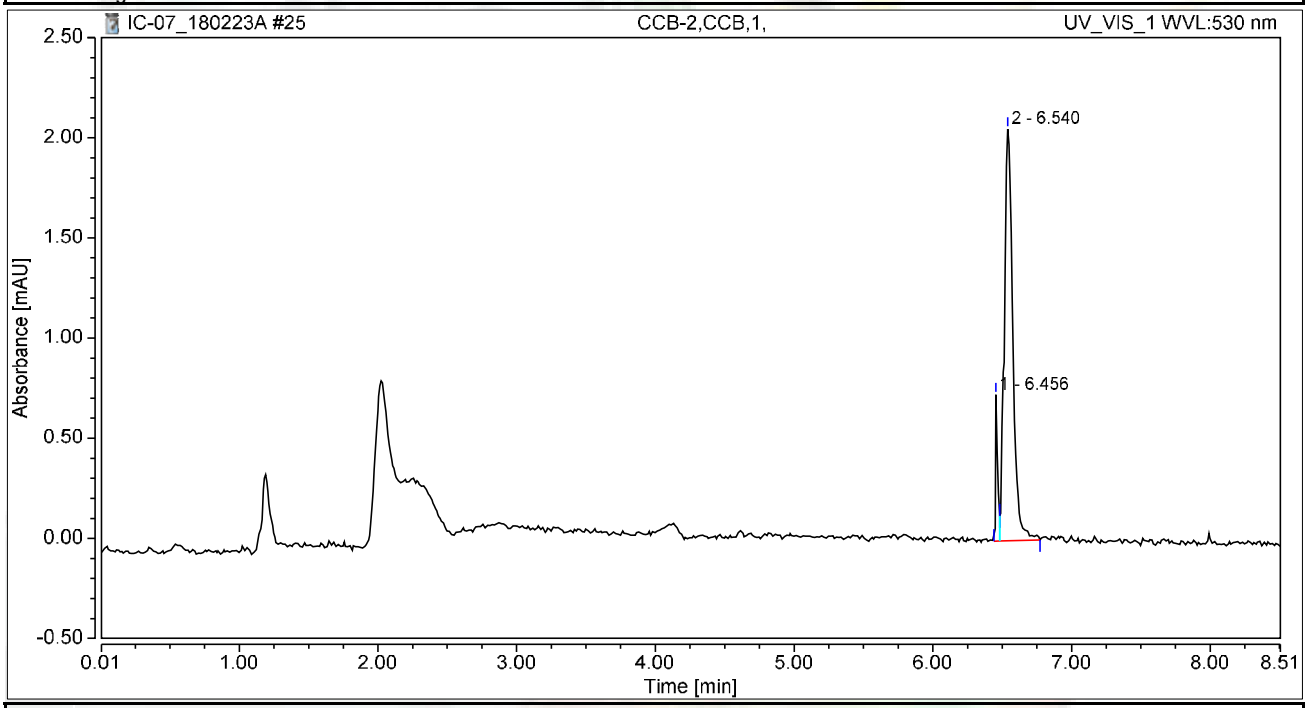
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.498	19.091	100.00	100.00	10.0046
Total:			**2.498**	**19.091**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

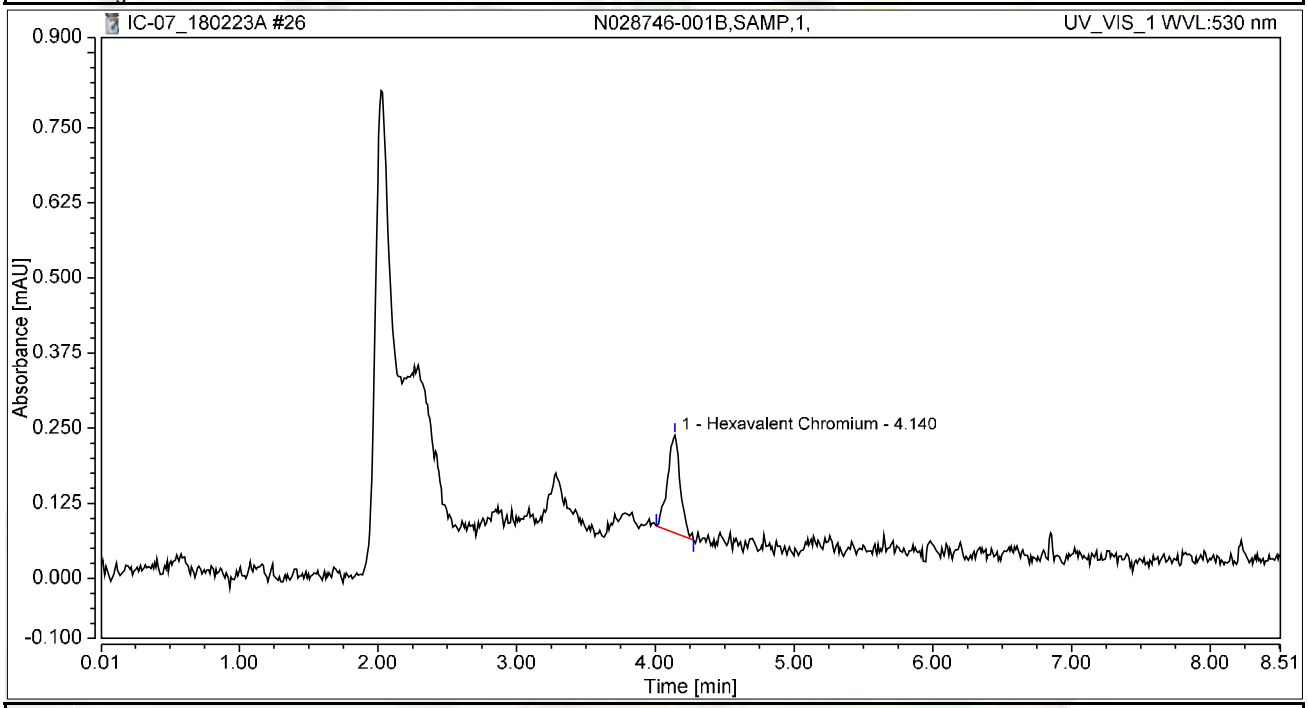
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.456	0.013	0.730	8.06	26.20	n.a.
2		6.540	0.146	2.055	91.94	73.80	n.a.
Total:			**0.159**	**2.785**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028746-001B,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

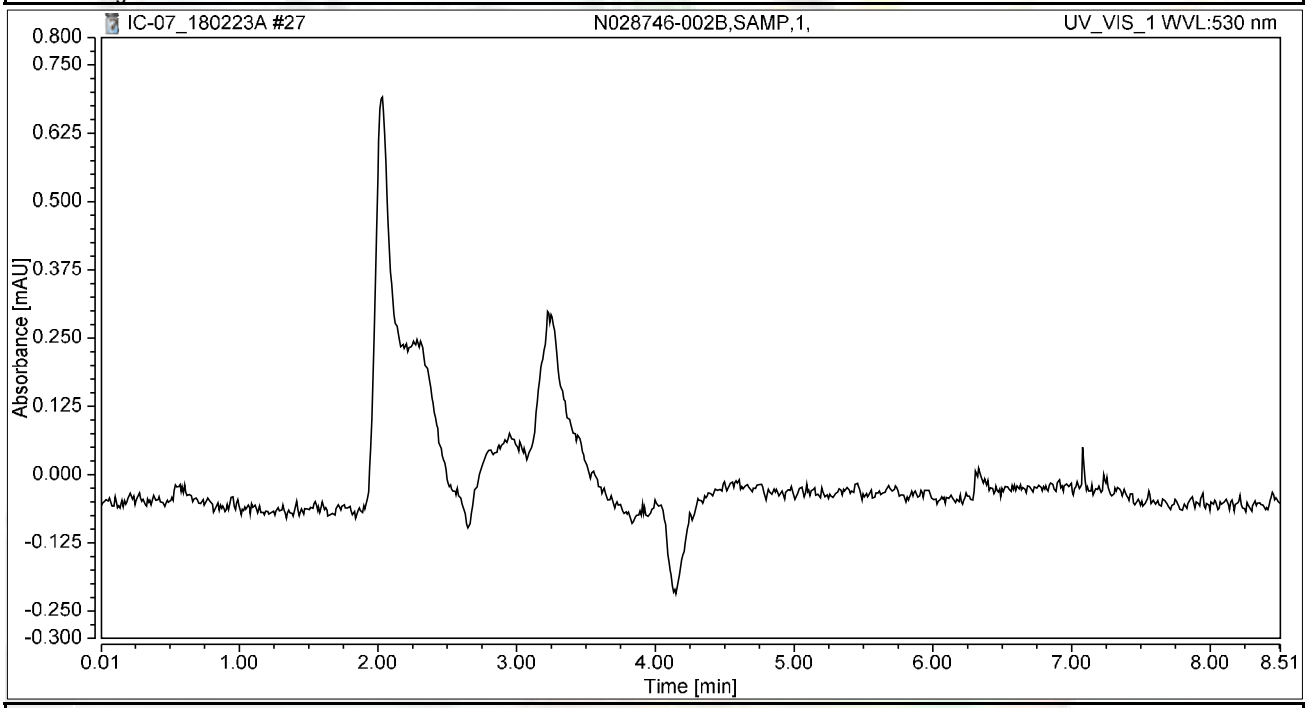
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.017	0.163	100.00	100.00	0.0696
Total:			**0.017**	**0.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028746-002B,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

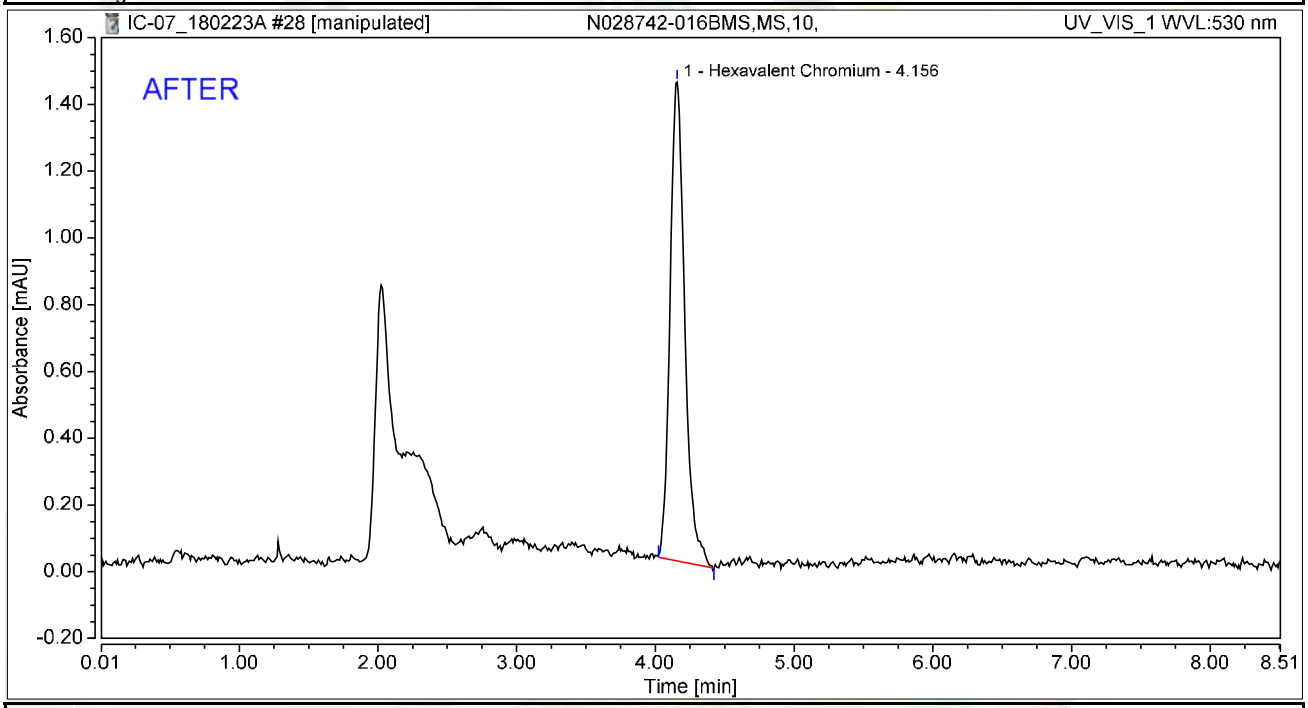
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016BMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.176	1.435	100.00	100.00	0.7040
Total:			**0.176**	**1.435**	**100.00**	**100.00**	

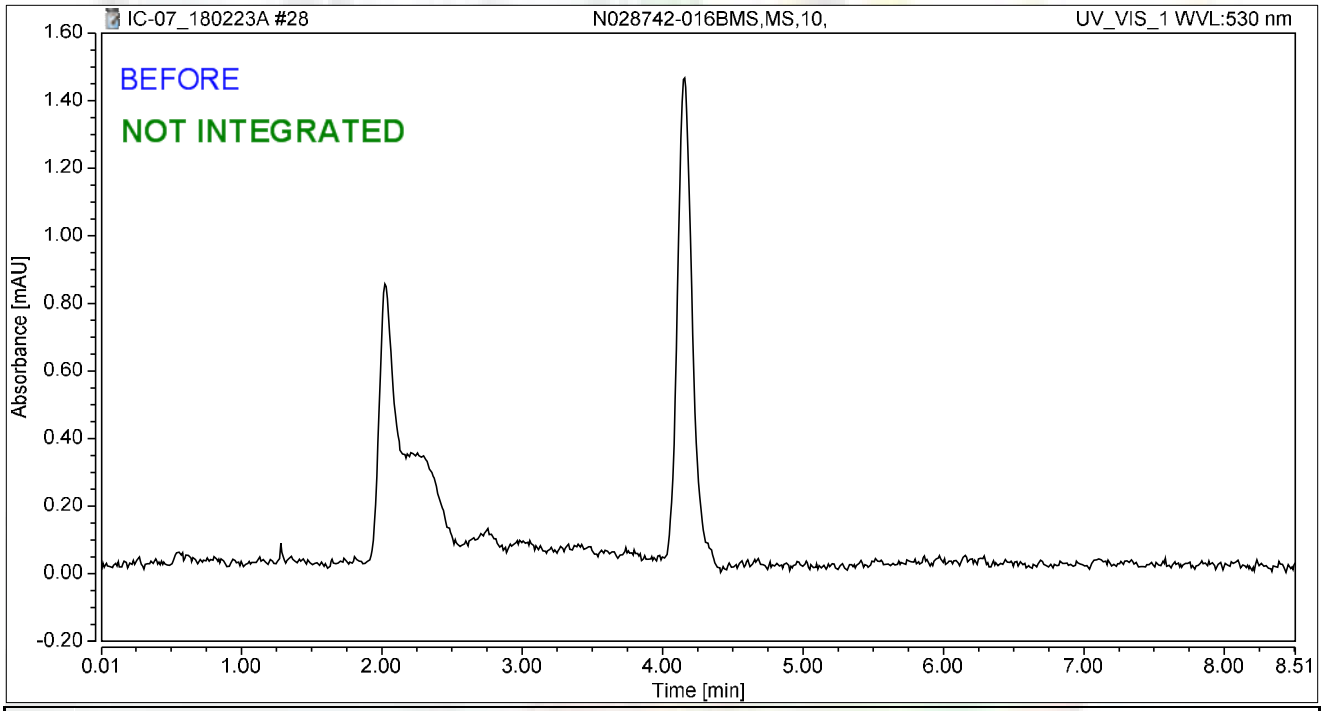
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016BMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

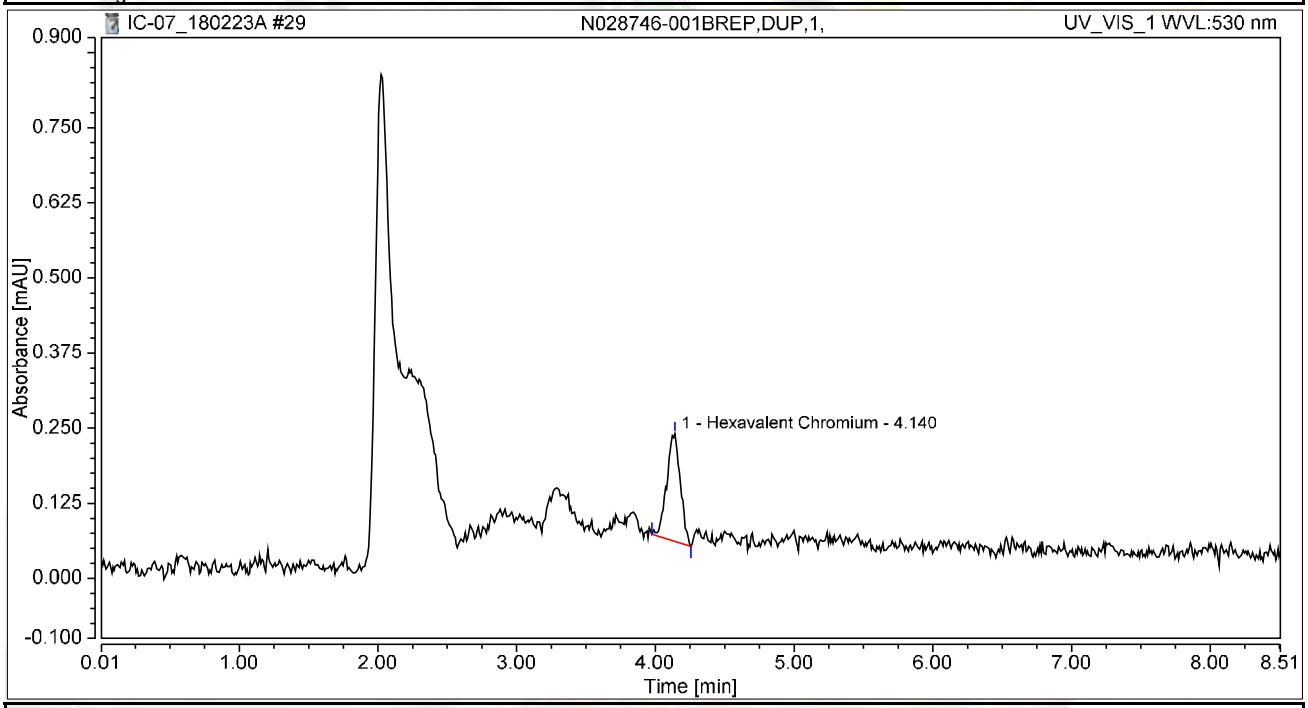
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028746-001BREP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

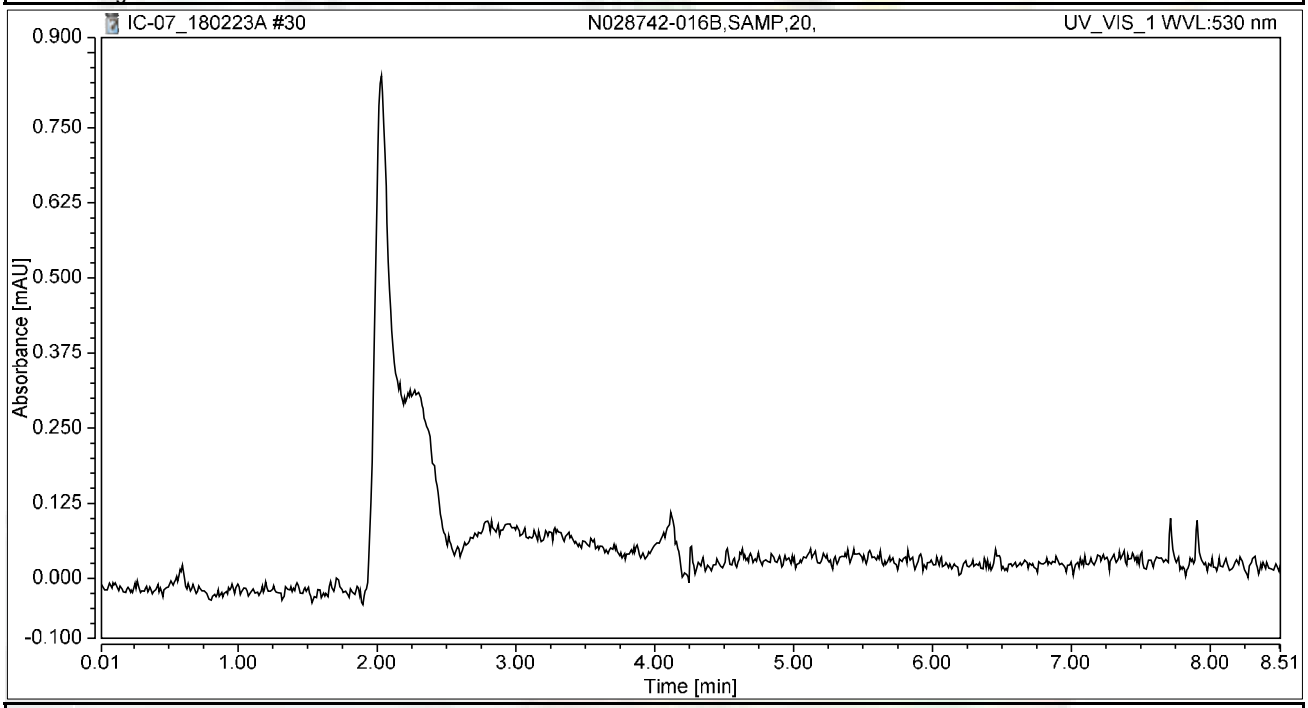
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.020	0.179	100.00	100.00	0.0811
Total:			**0.020**	**0.179**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016B,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 10:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

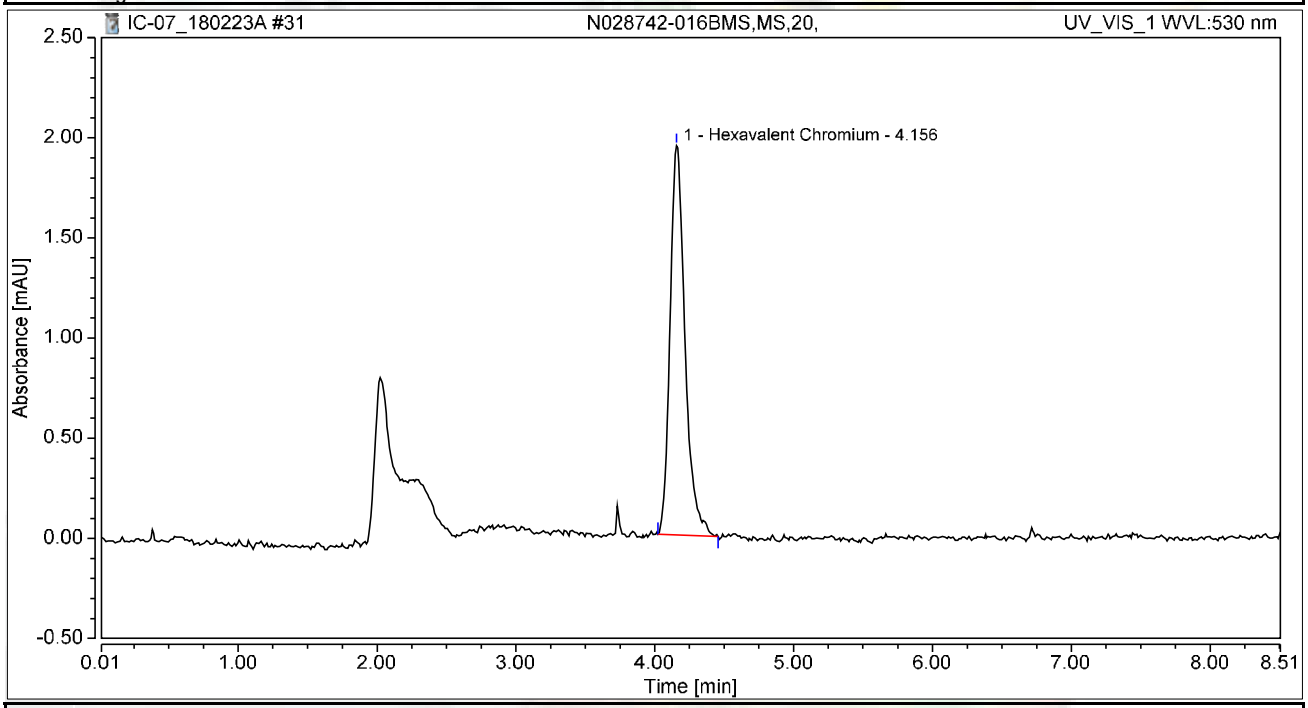
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016BMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 10:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

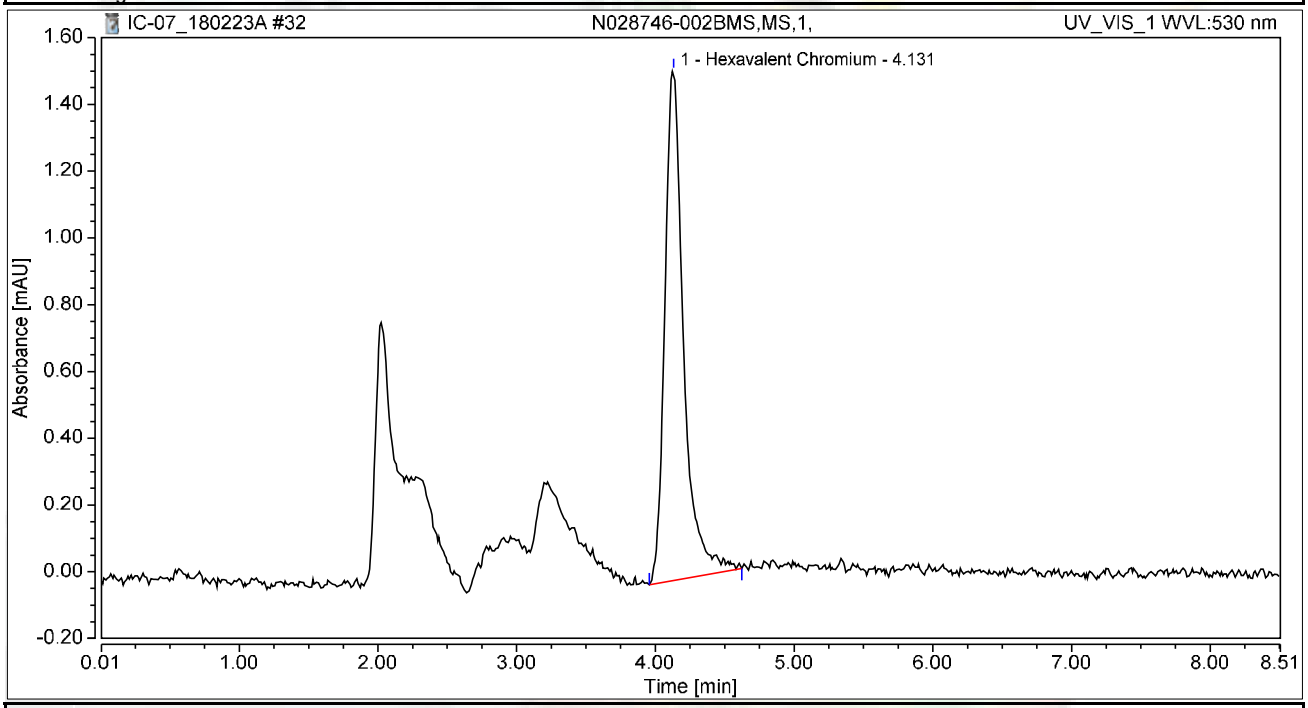
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.244	1.943	100.00	100.00	0.9755
Total:			**0.244**	**1.943**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028746-002BMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

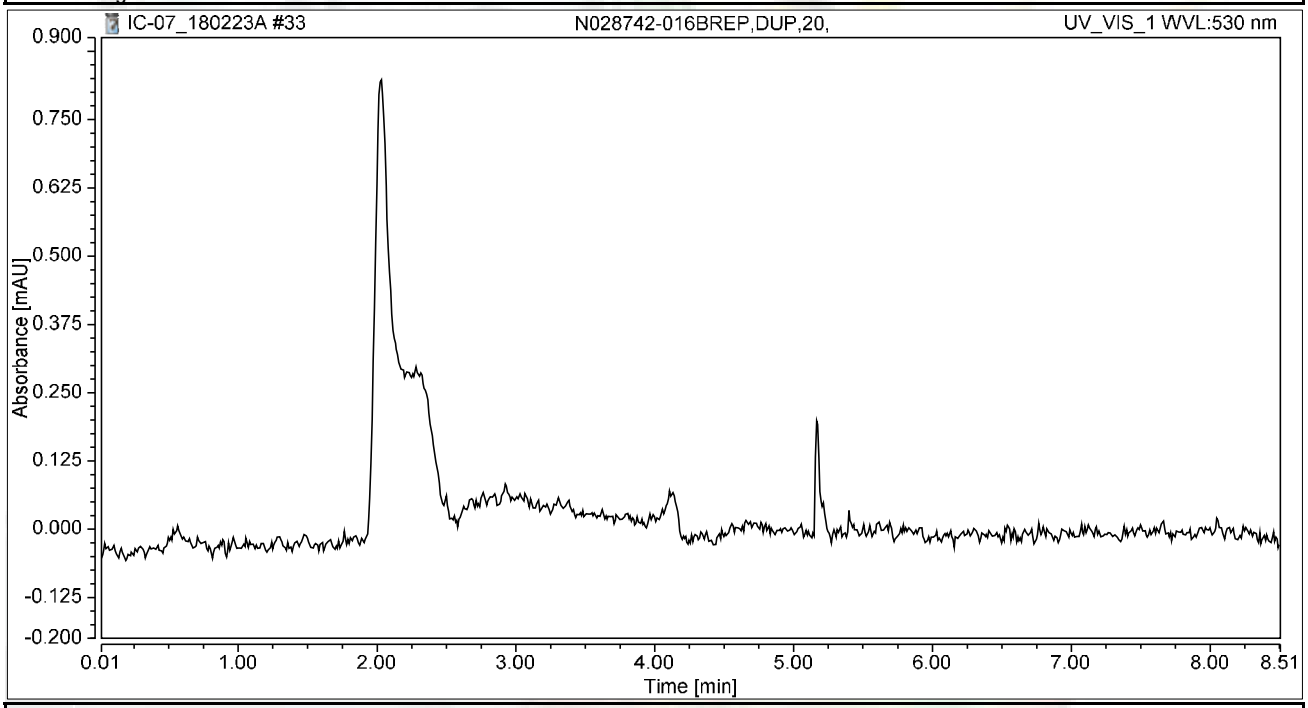
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.240	1.527	100.00	100.00	0.9599
Total:			**0.240**	**1.527**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016BREP,DUP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

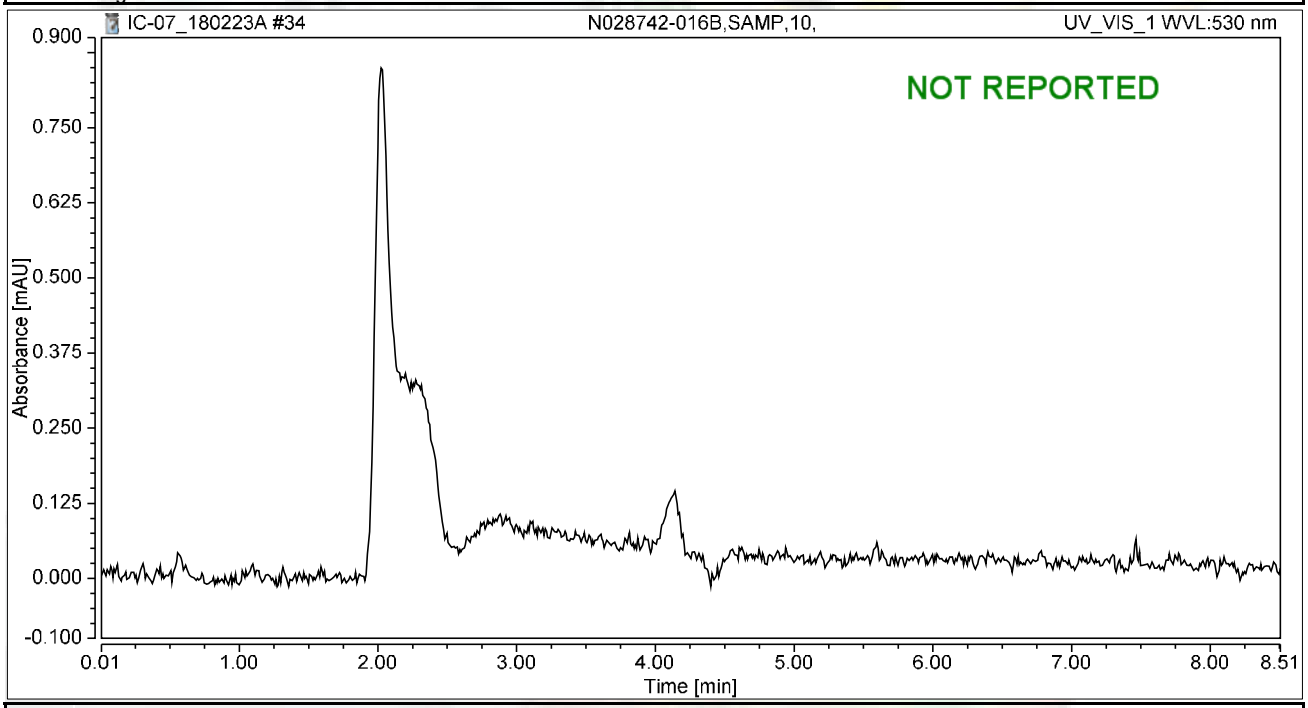
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028742-016B,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

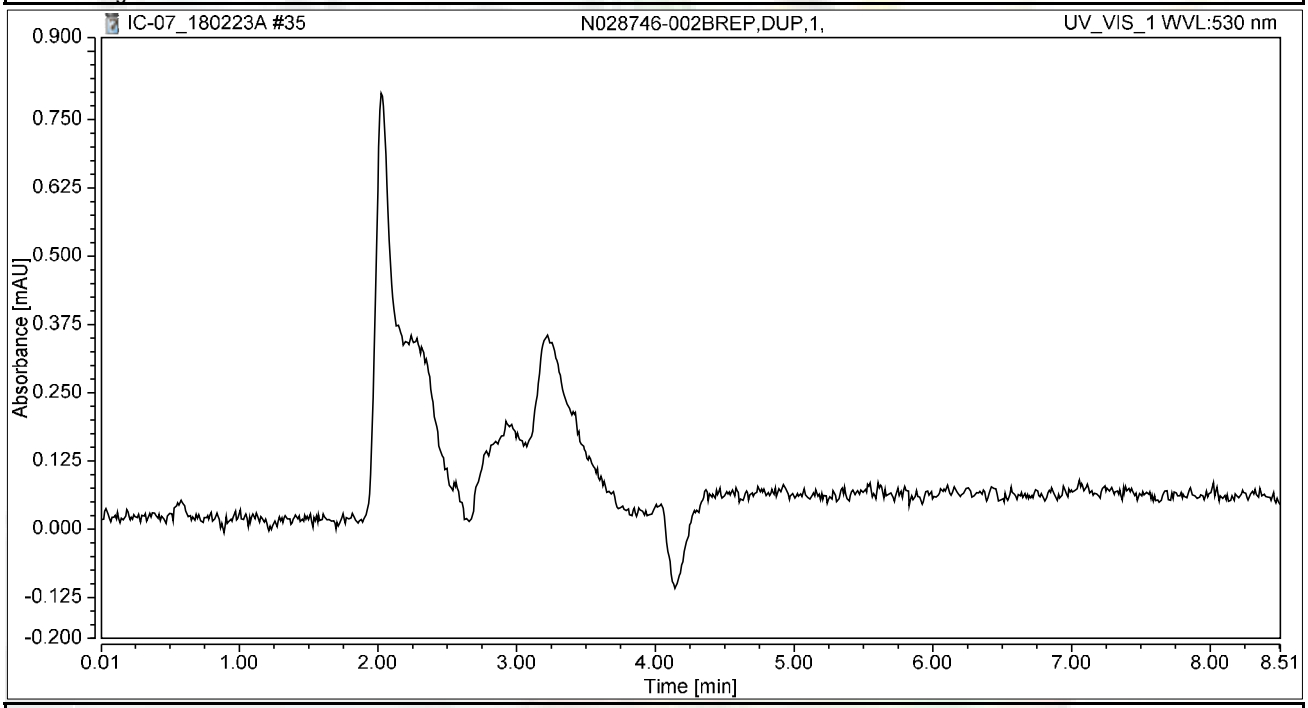
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028746-002BREP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

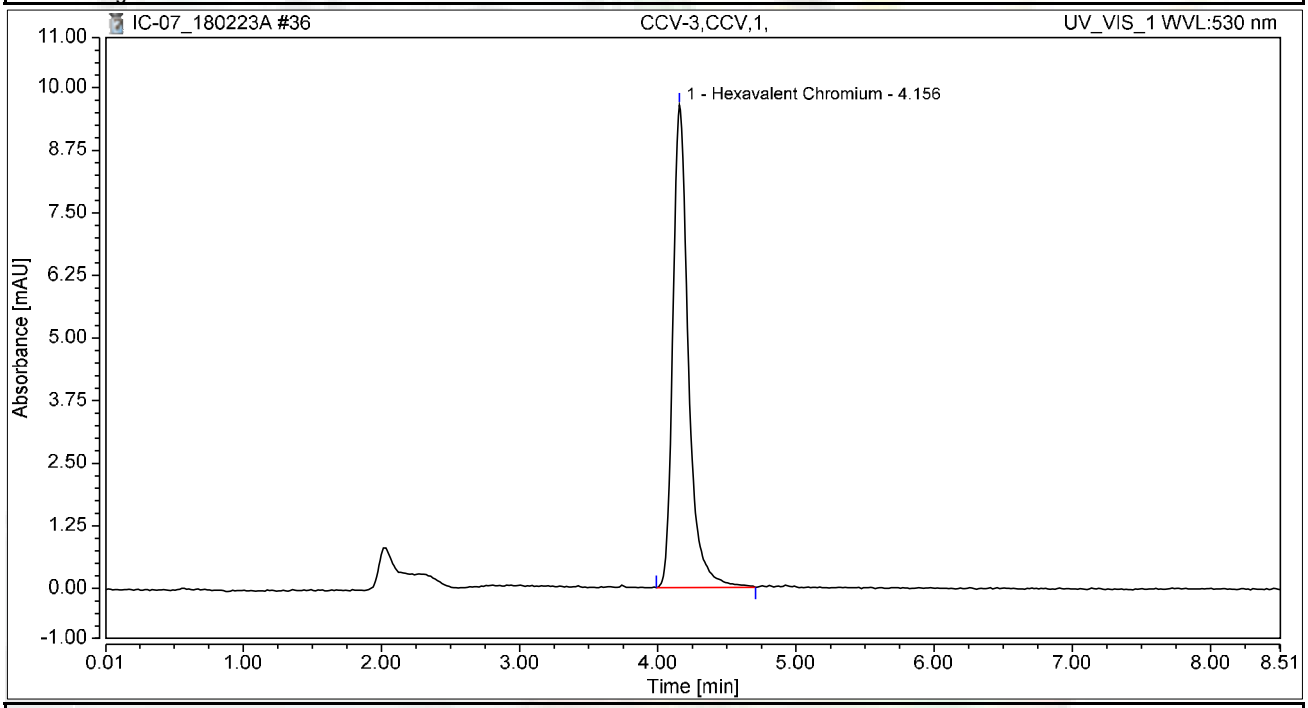
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

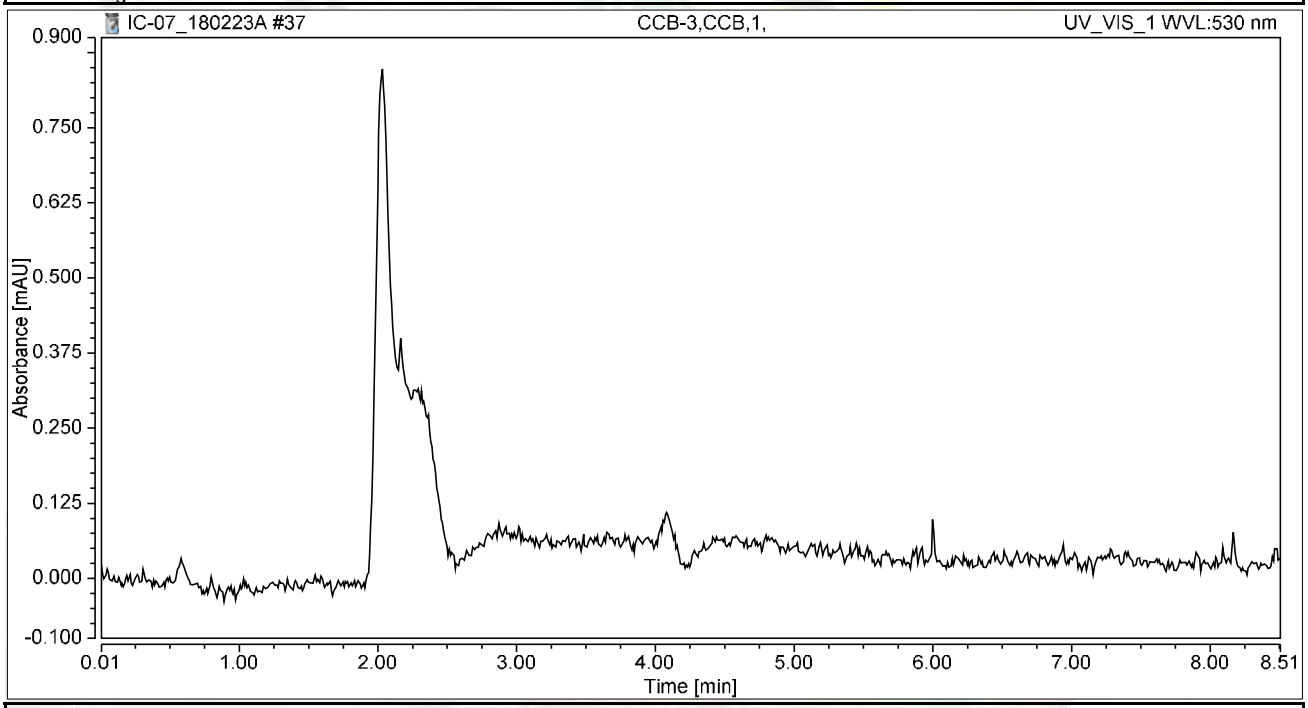
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.254	9.634	100.00	100.00	5.0227
Total:			**1.254**	**9.634**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

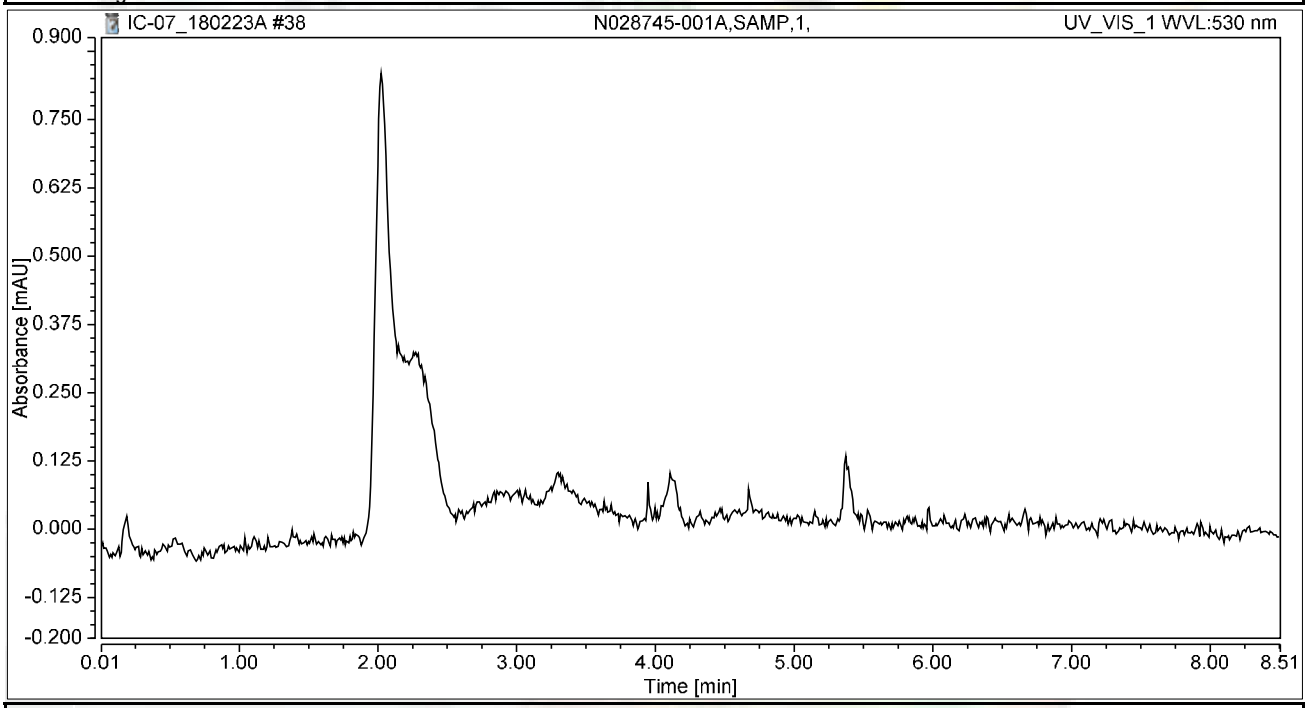
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

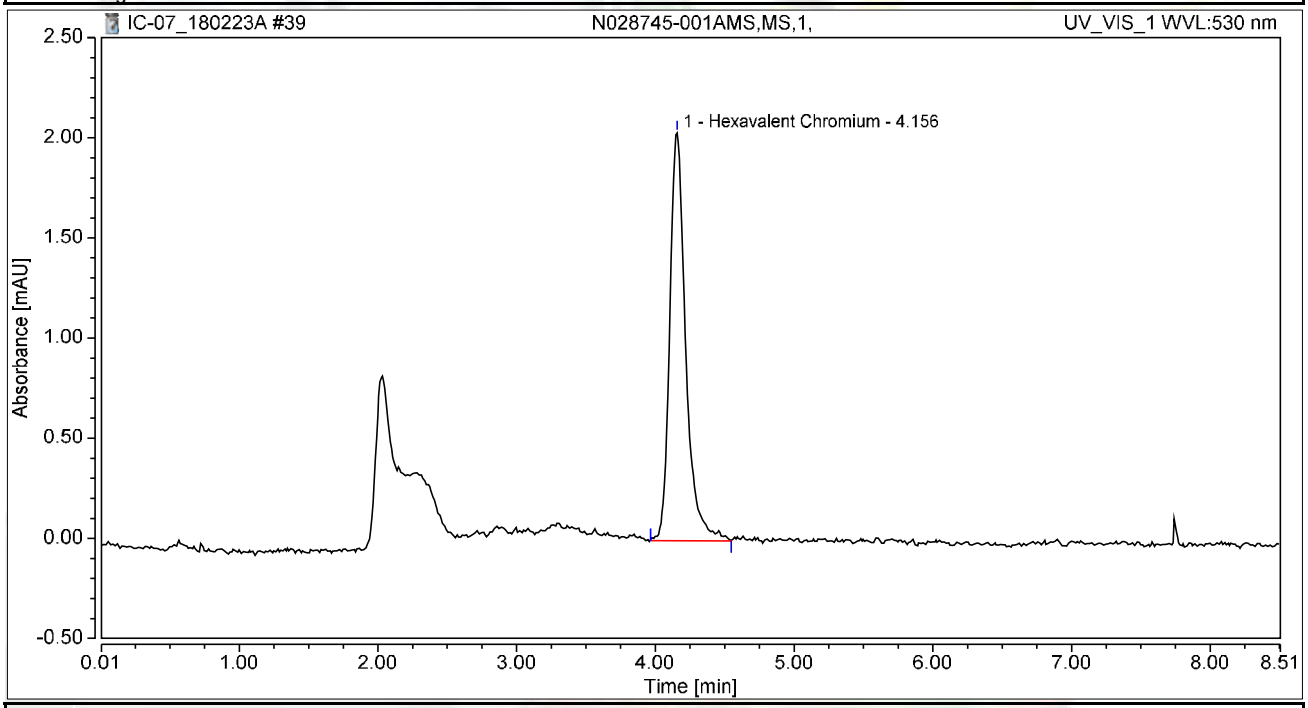
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

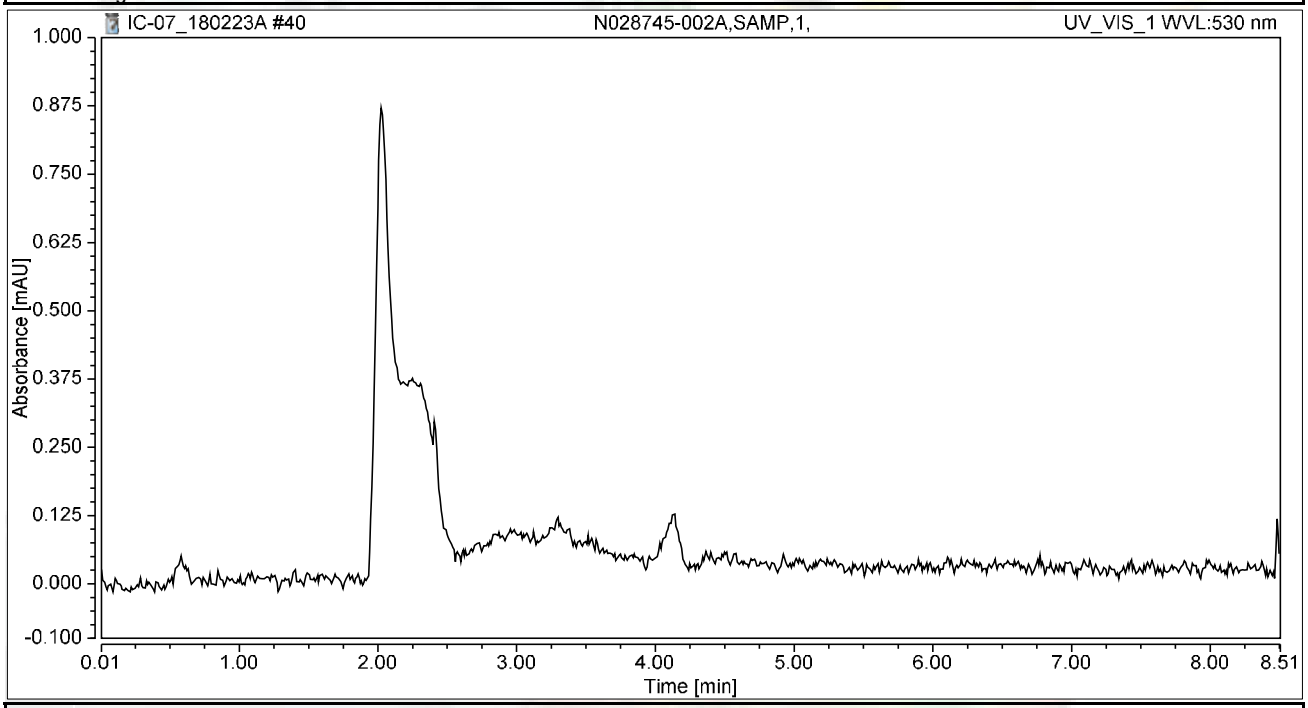
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.272	2.037	100.00	100.00	1.0881
Total:			**0.272**	**2.037**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 12:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

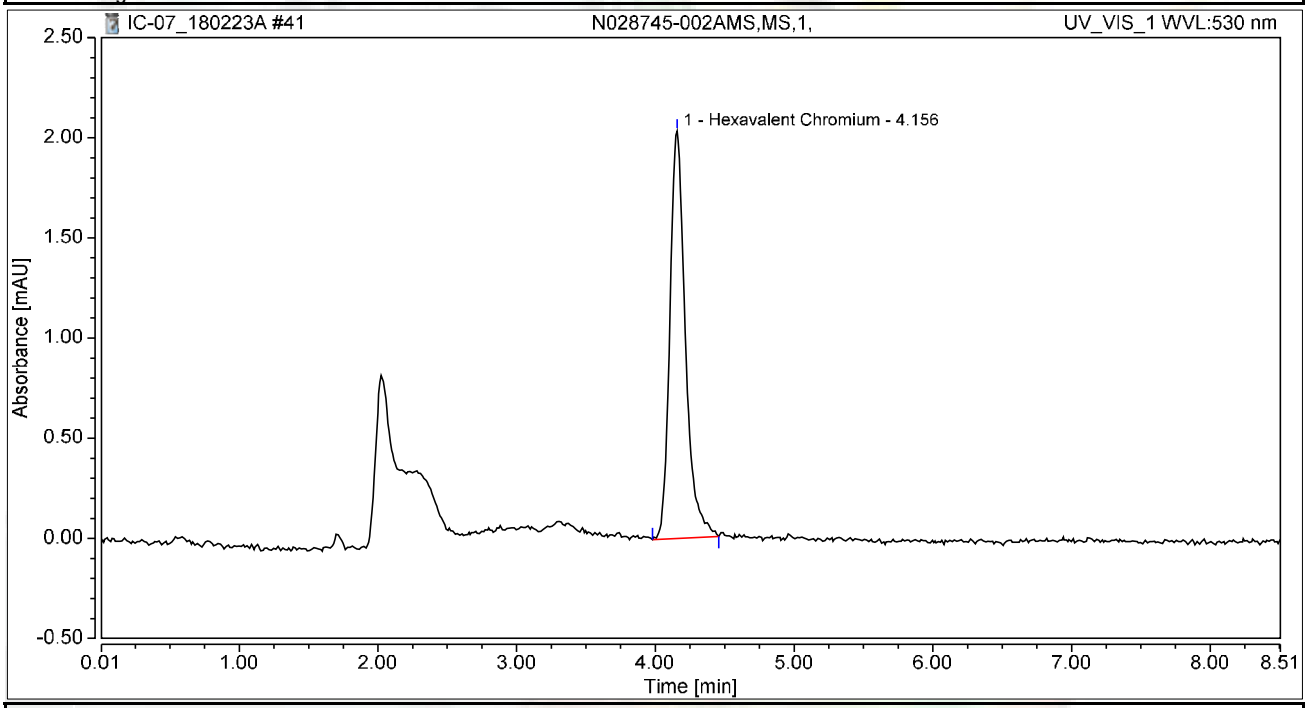
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

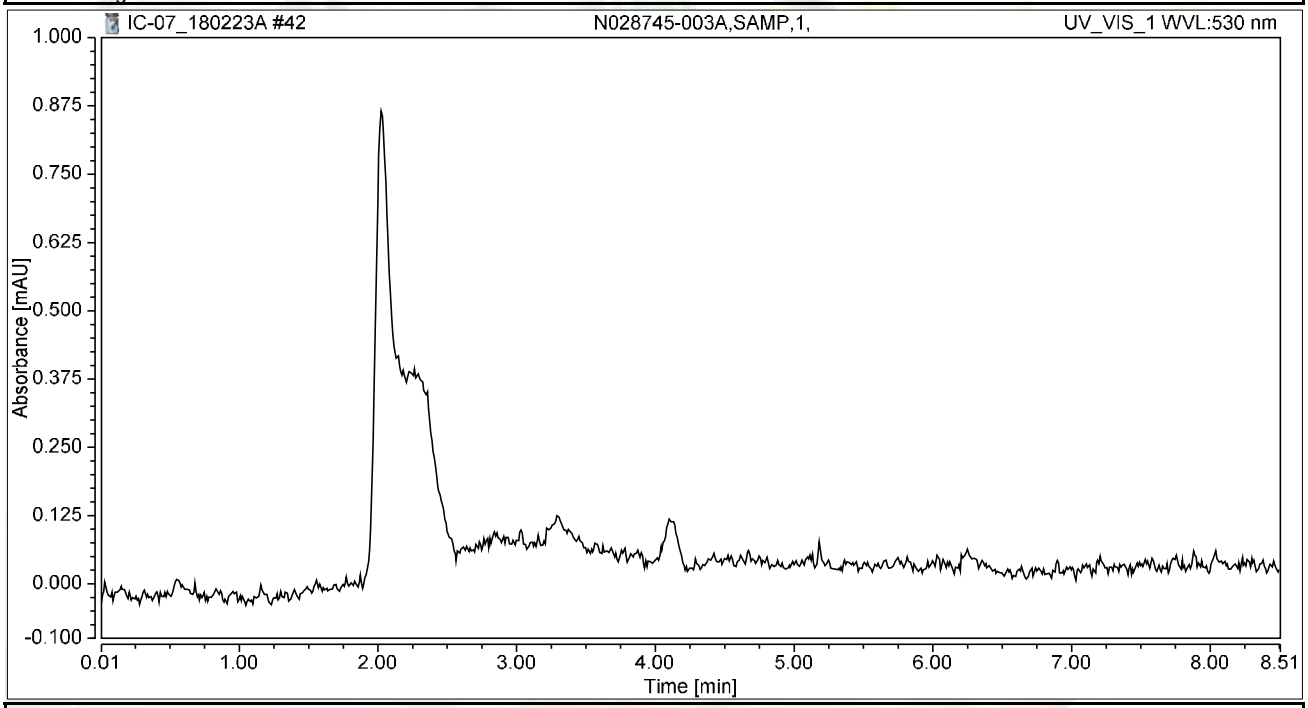
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	2.035	100.00	100.00	1.0590
Total:			**0.264**	**2.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

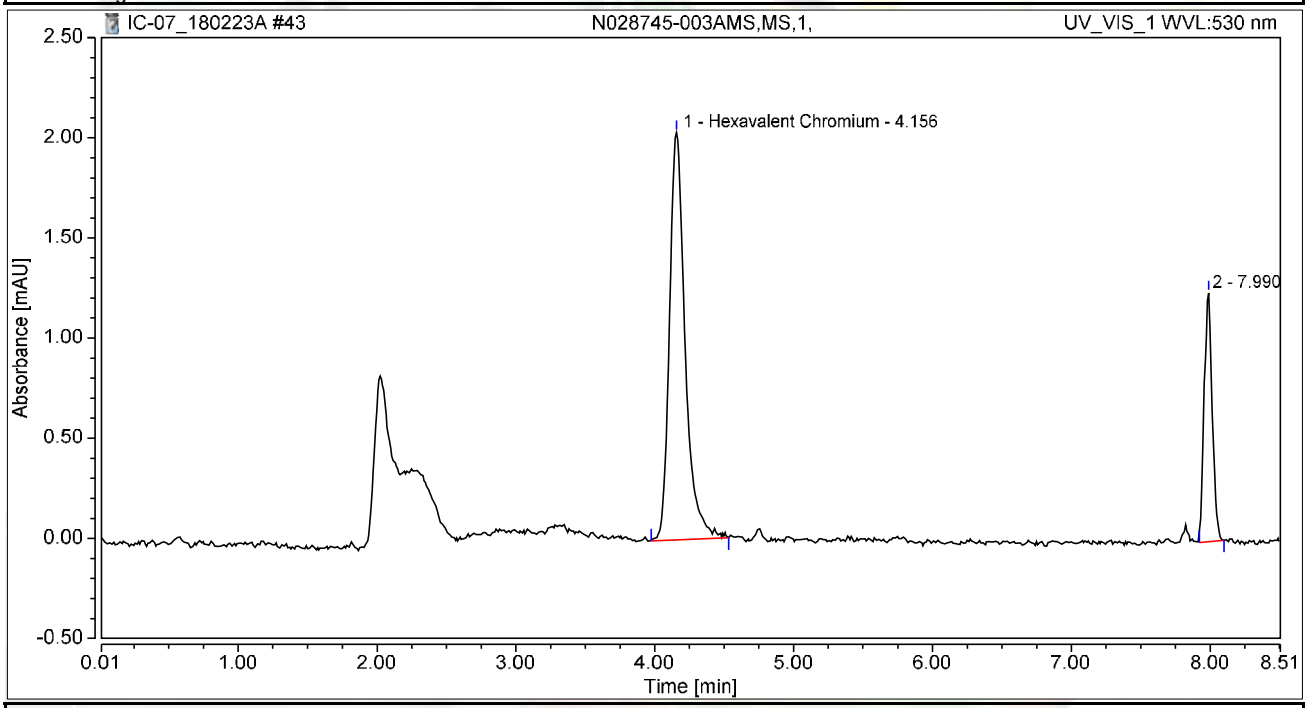
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

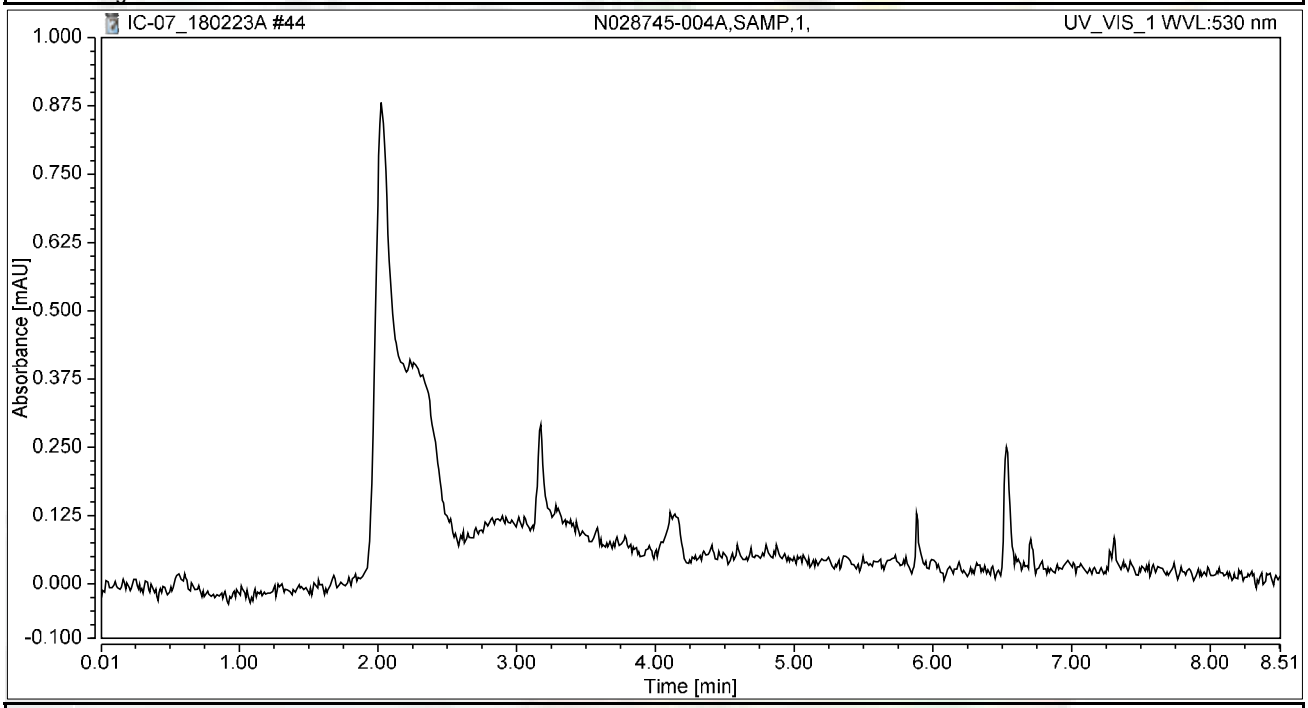
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.266	2.033	76.19	62.06	1.0658
2		7.990	0.083	1.243	23.81	37.94	n.a.
Total:			**0.349**	**3.277**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

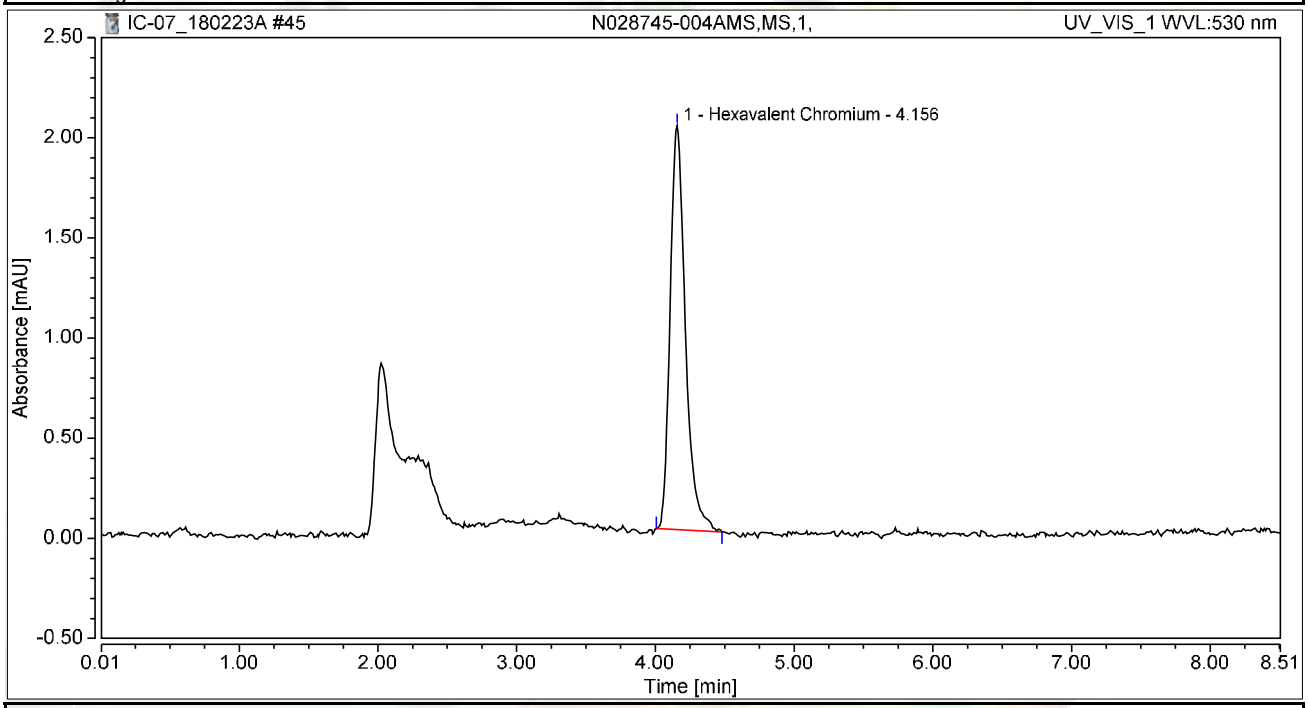
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

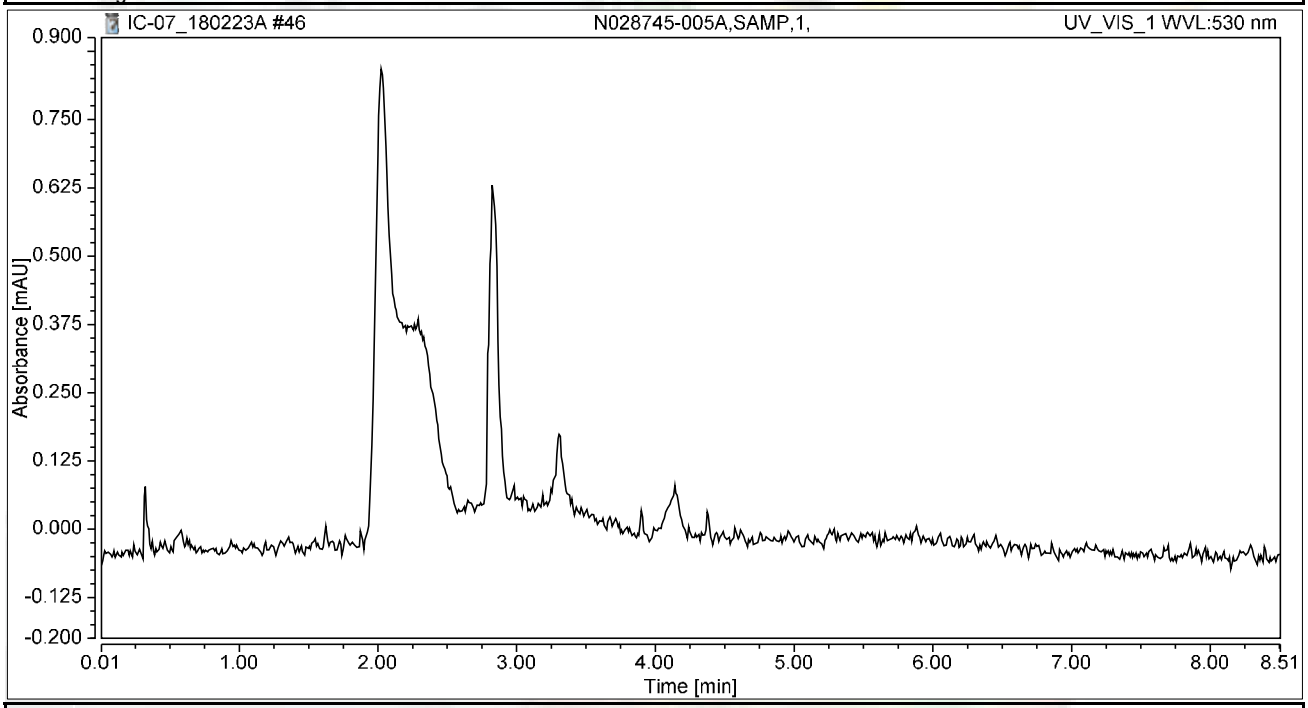
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.257	2.017	100.00	100.00	1.0305
Total:			**0.257**	**2.017**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 13:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

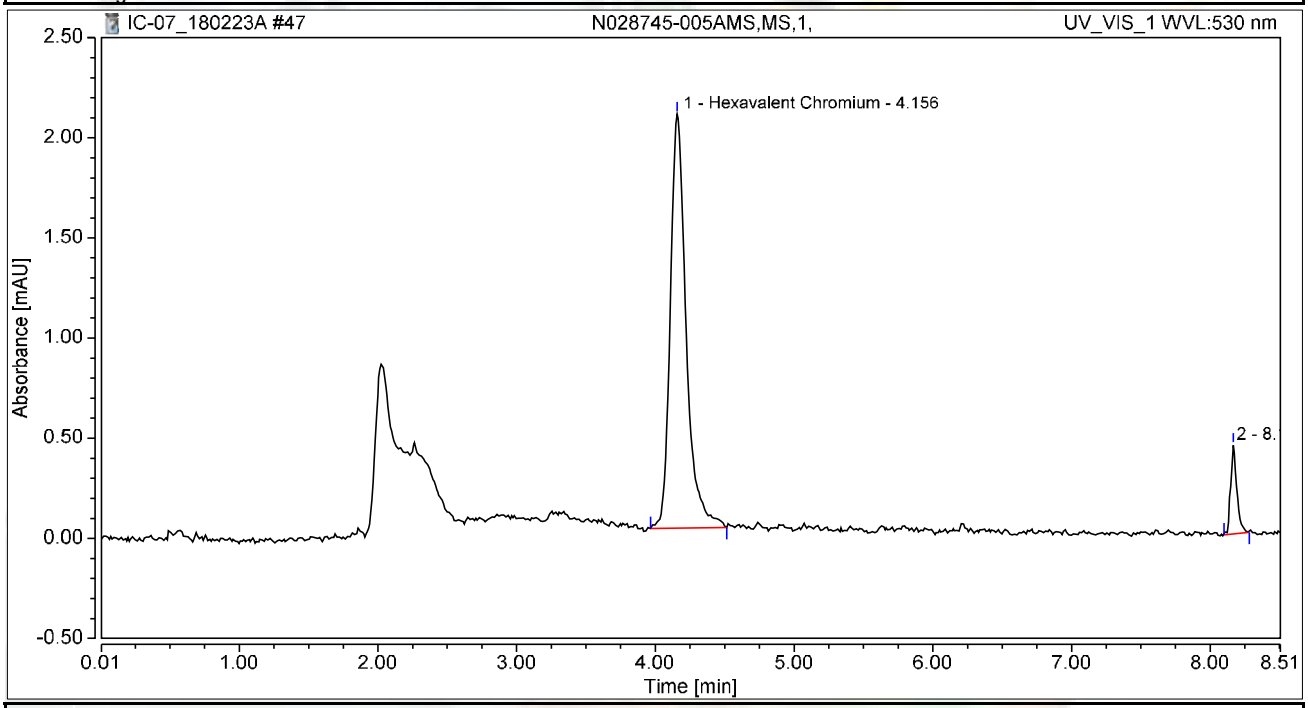
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

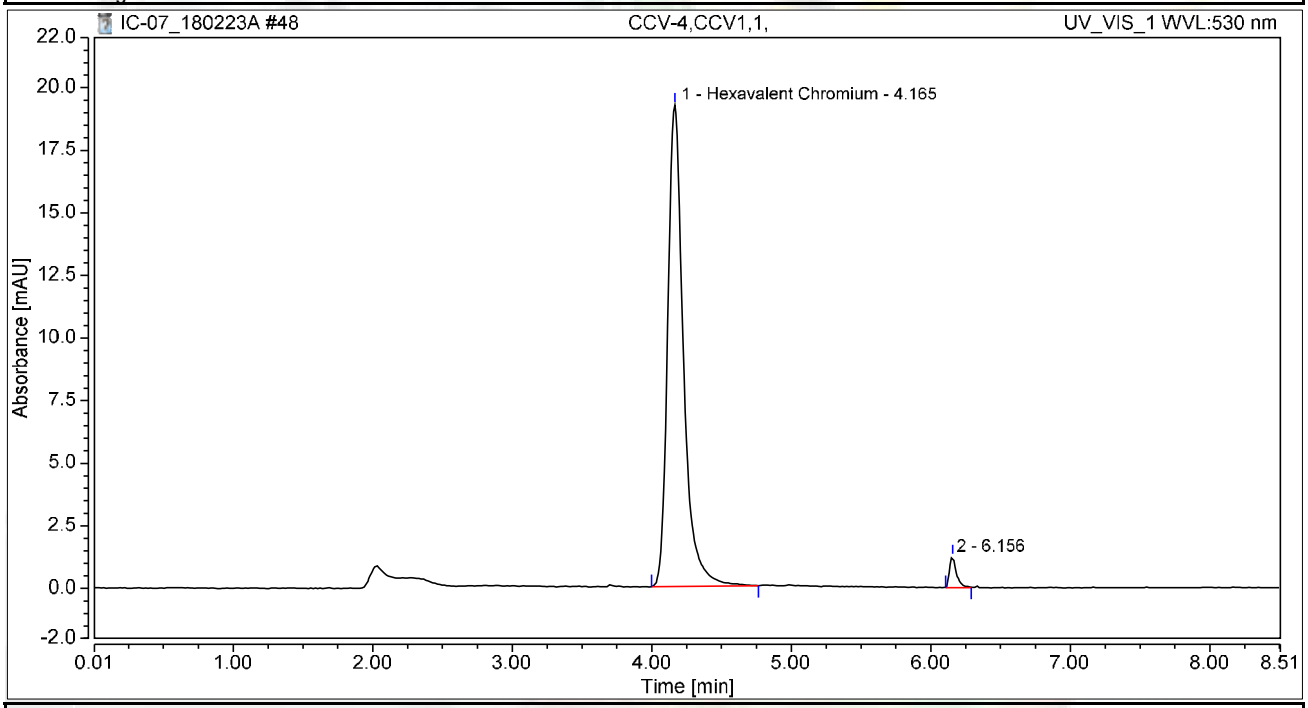
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.274	2.068	92.23	82.37	1.0979
2		8.165	0.023	0.443	7.77	17.63	n.a.
Total:			**0.297**	**2.510**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

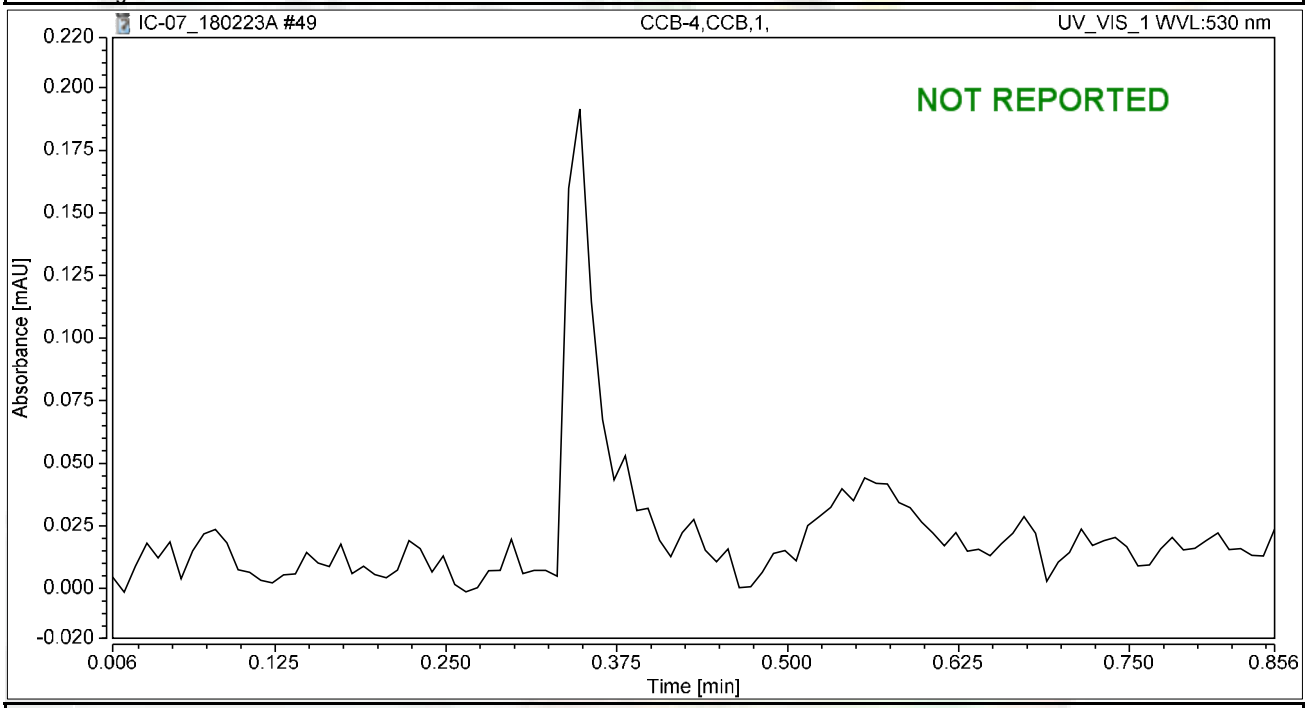
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.509	19.232	97.29	94.01	10.0498
2		6.156	0.070	1.225	2.71	5.99	n.a.
Total:			**2.579**	**20.457**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

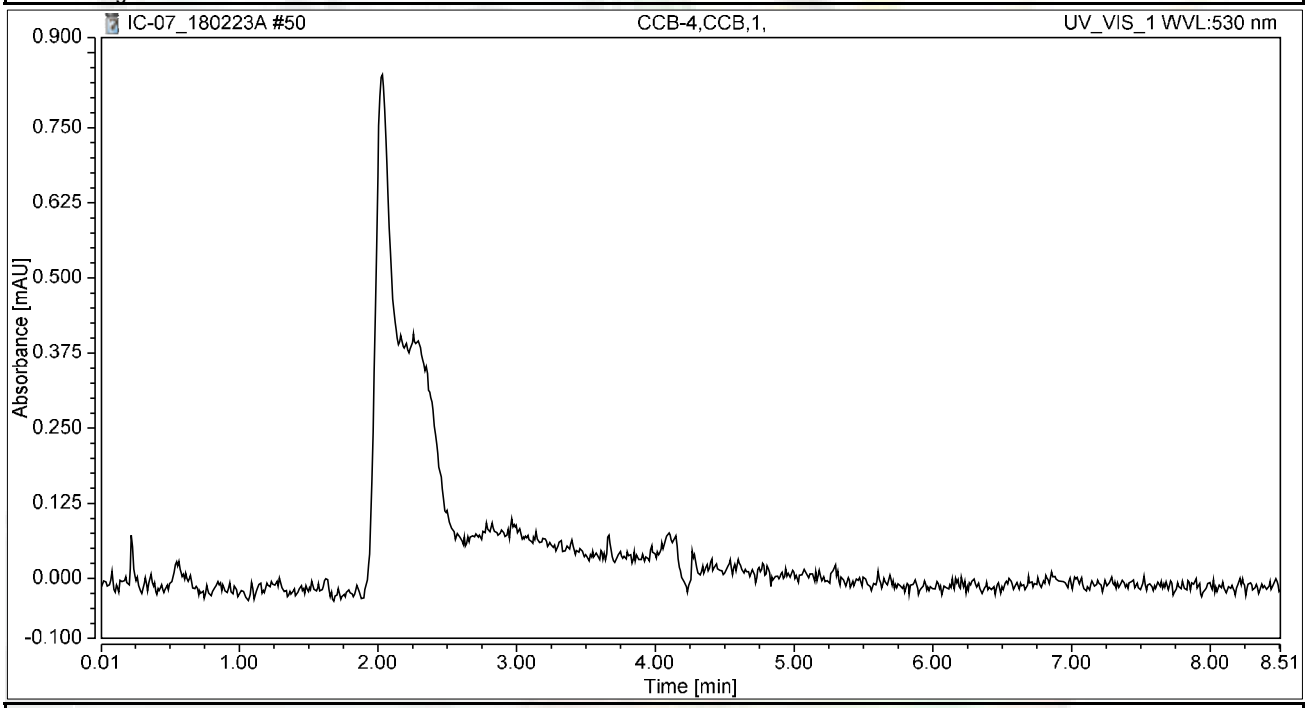
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

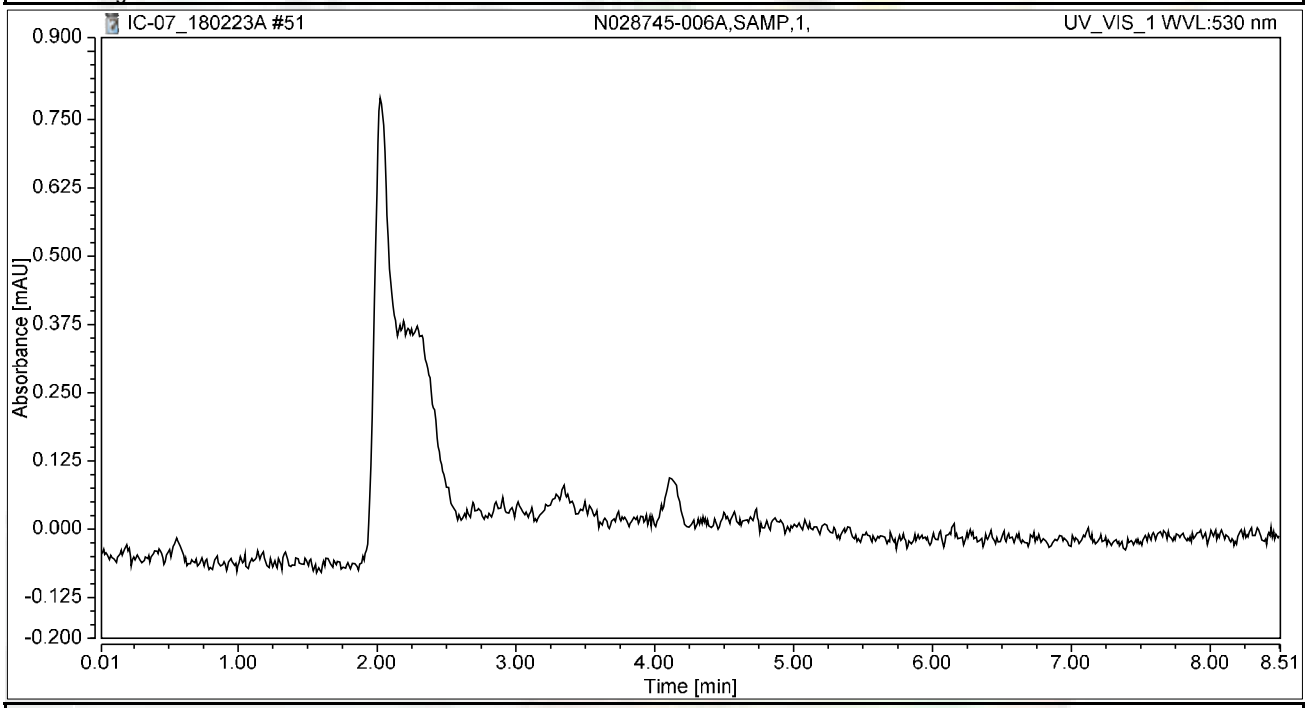
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

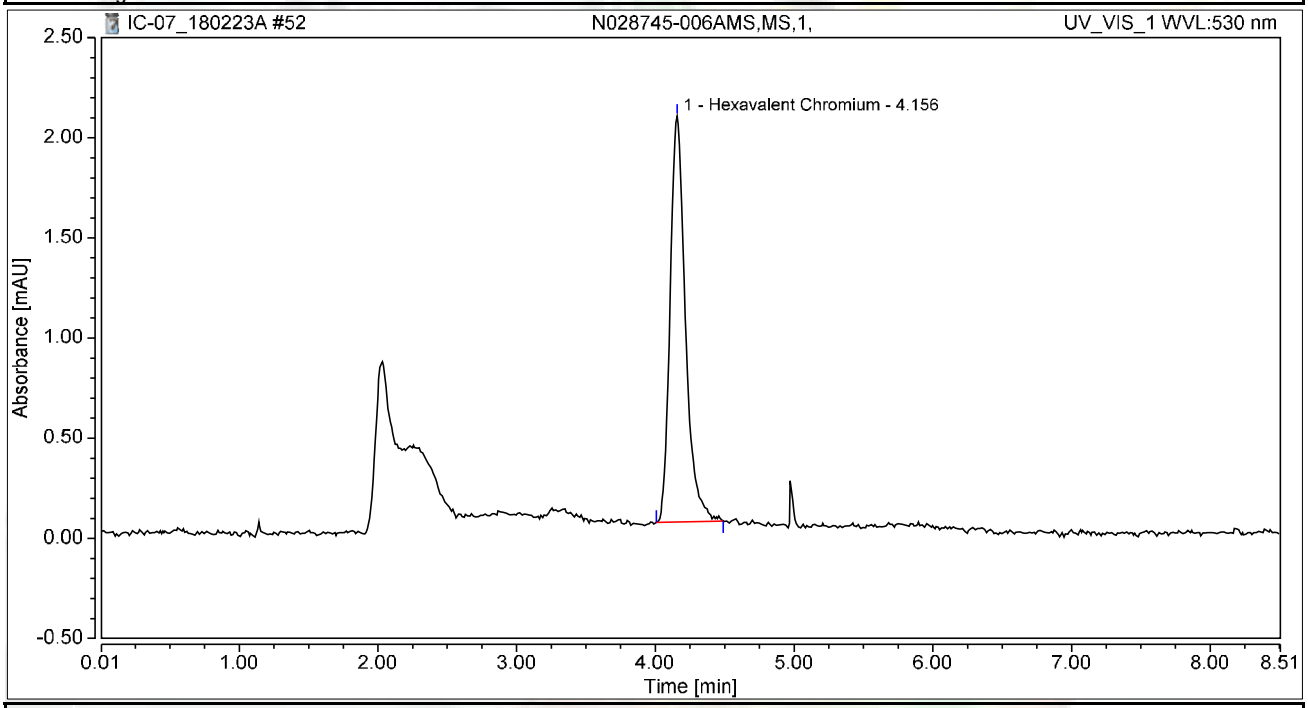
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

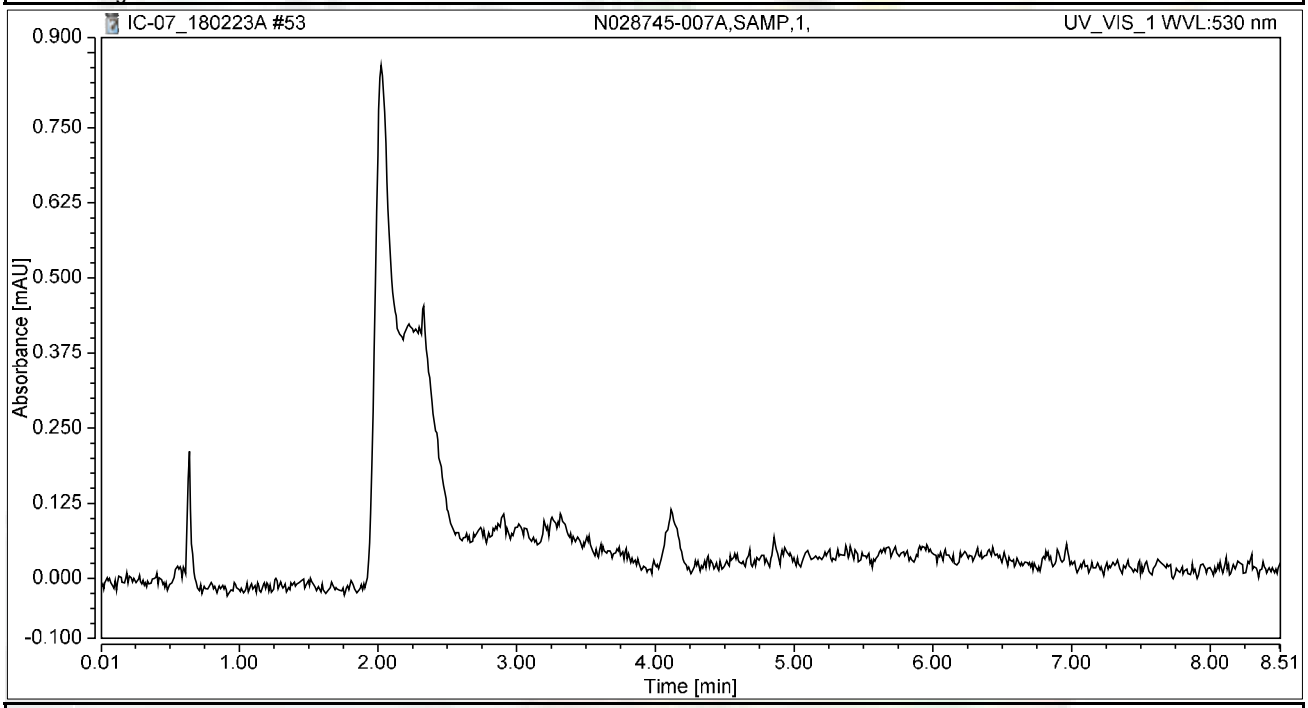
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.260	2.027	100.00	100.00	1.0403
Total:			**0.260**	**2.027**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

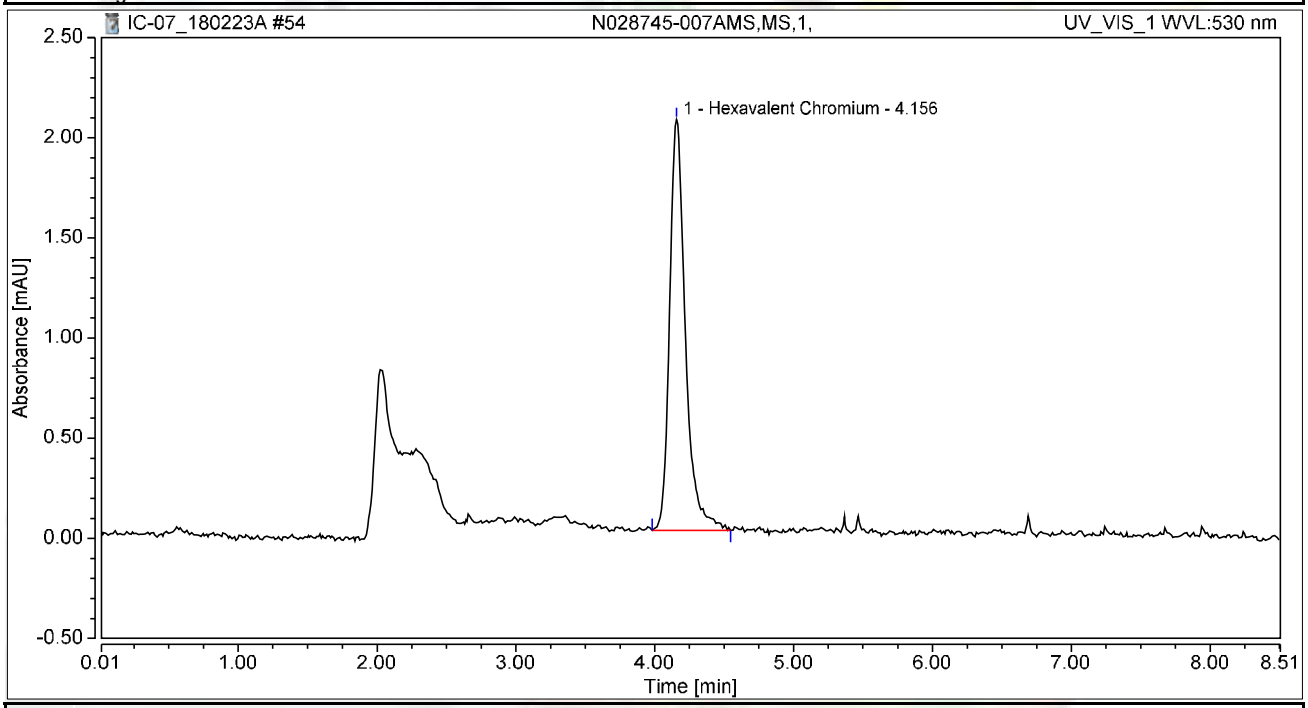
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

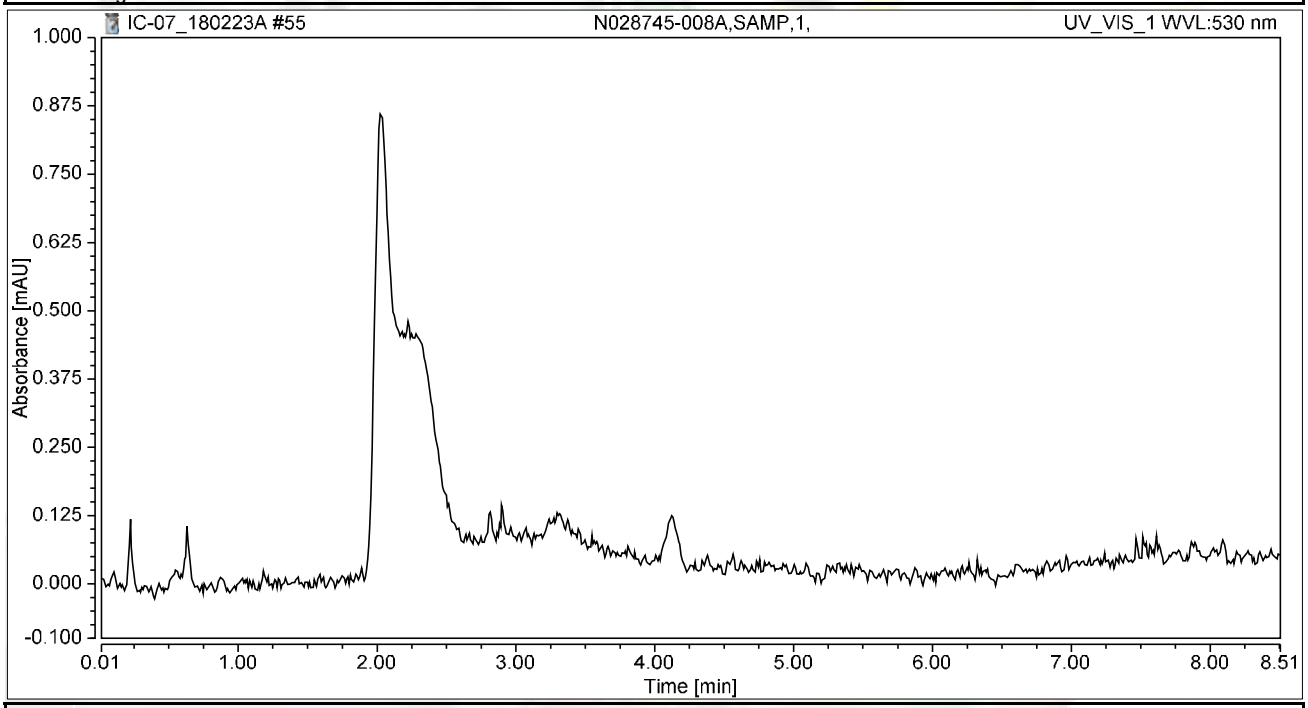
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.271	2.051	100.00	100.00	1.0856
Total:			**0.271**	**2.051**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

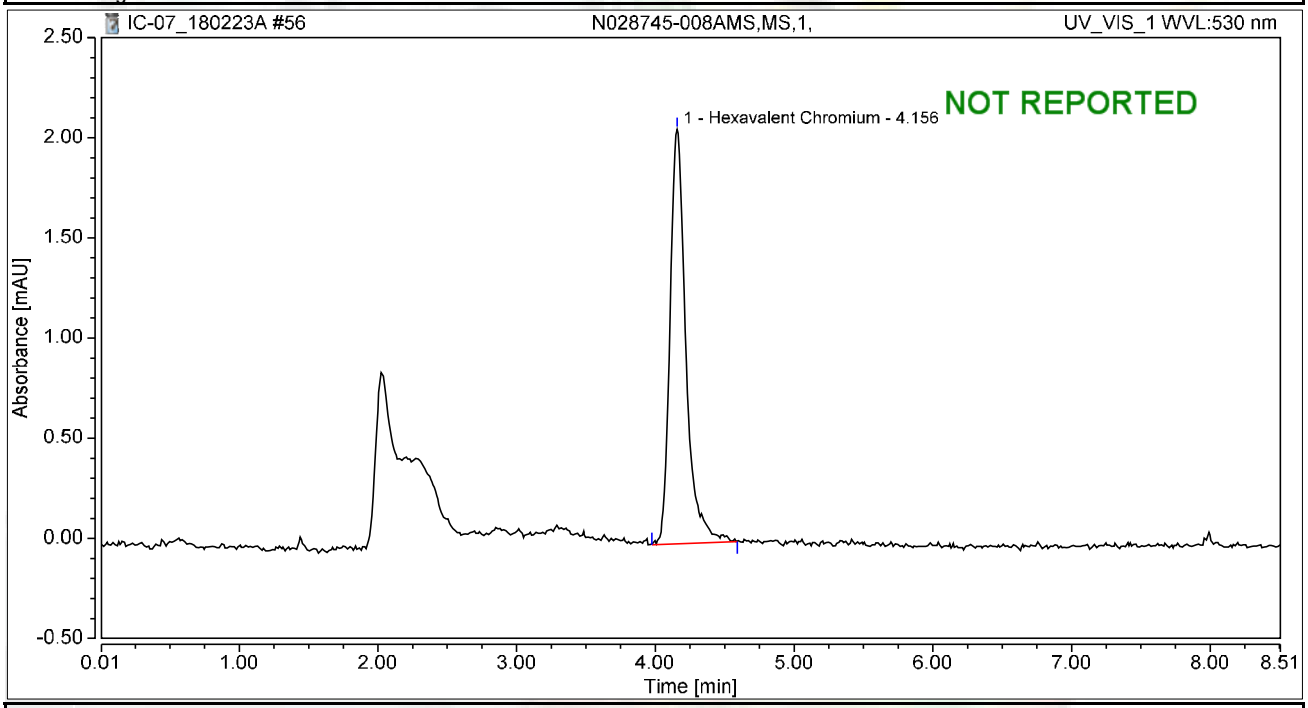
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

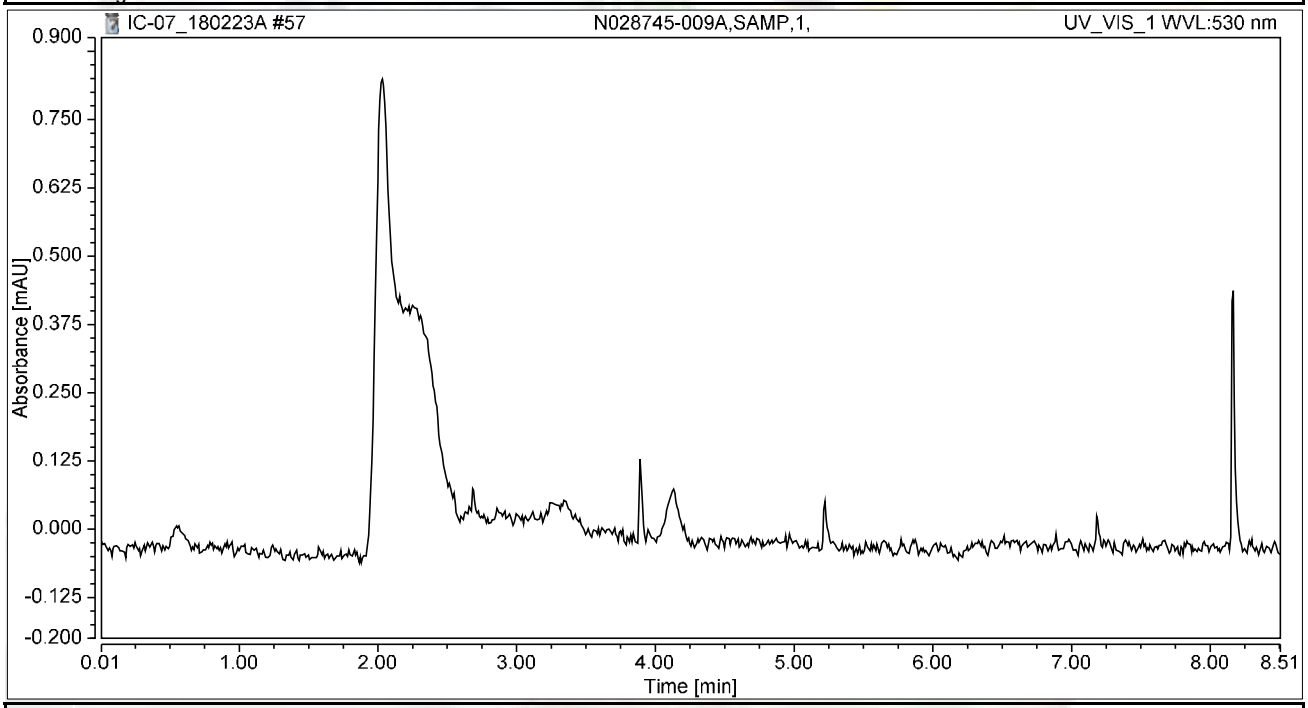
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.275	2.069	100.00	100.00	1.1033
Total:			**0.275**	**2.069**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 16:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

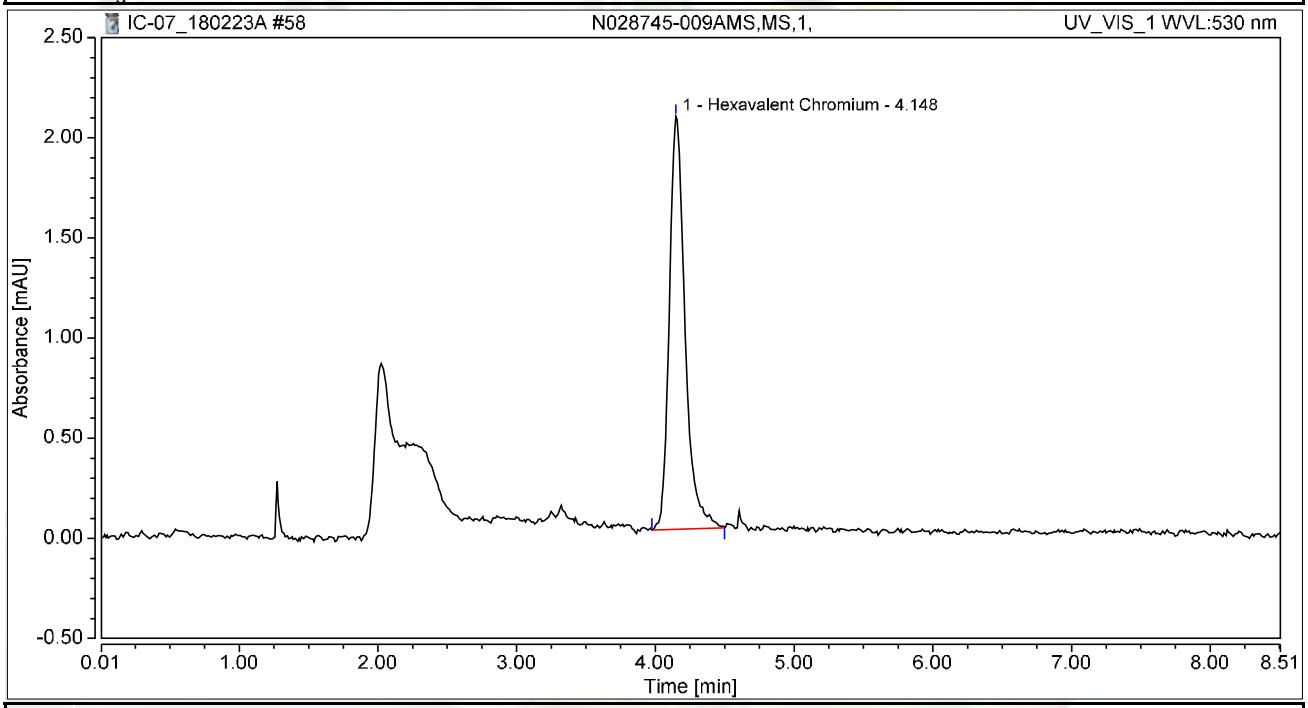
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

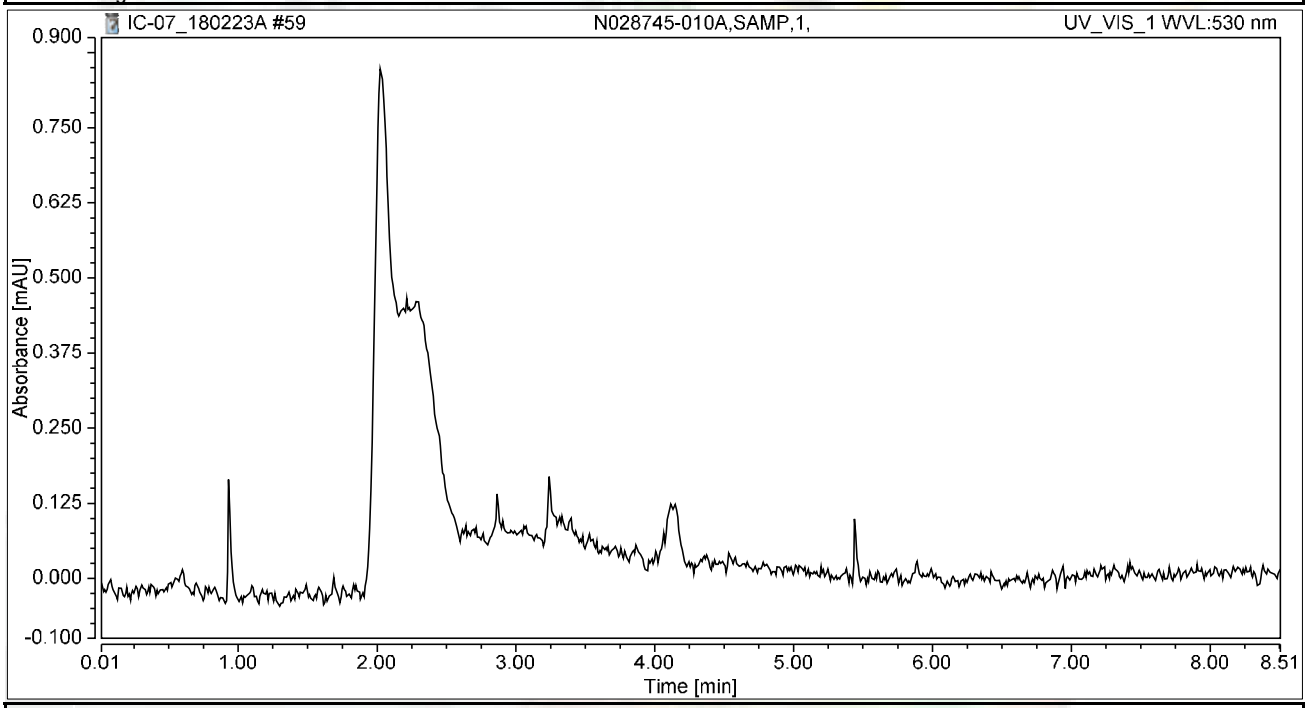
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.270	2.062	100.00	100.00	1.0834
Total:			**0.270**	**2.062**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-010A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 16:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

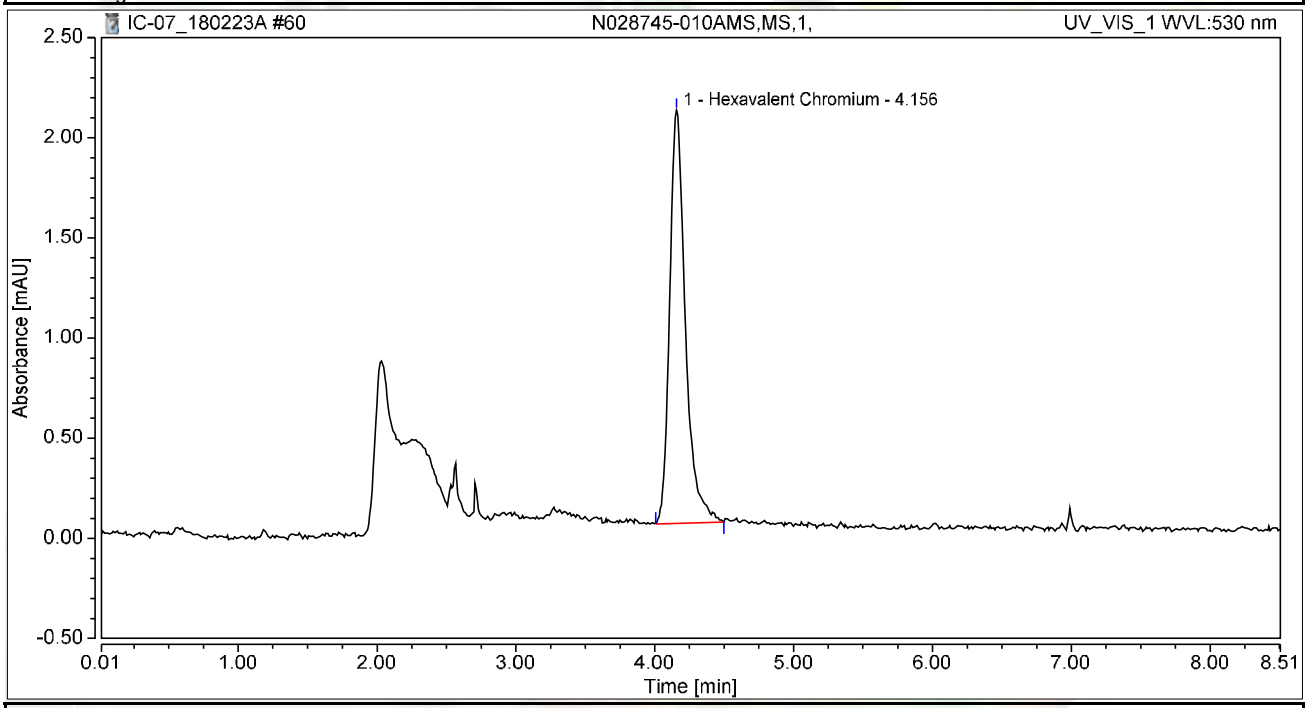
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

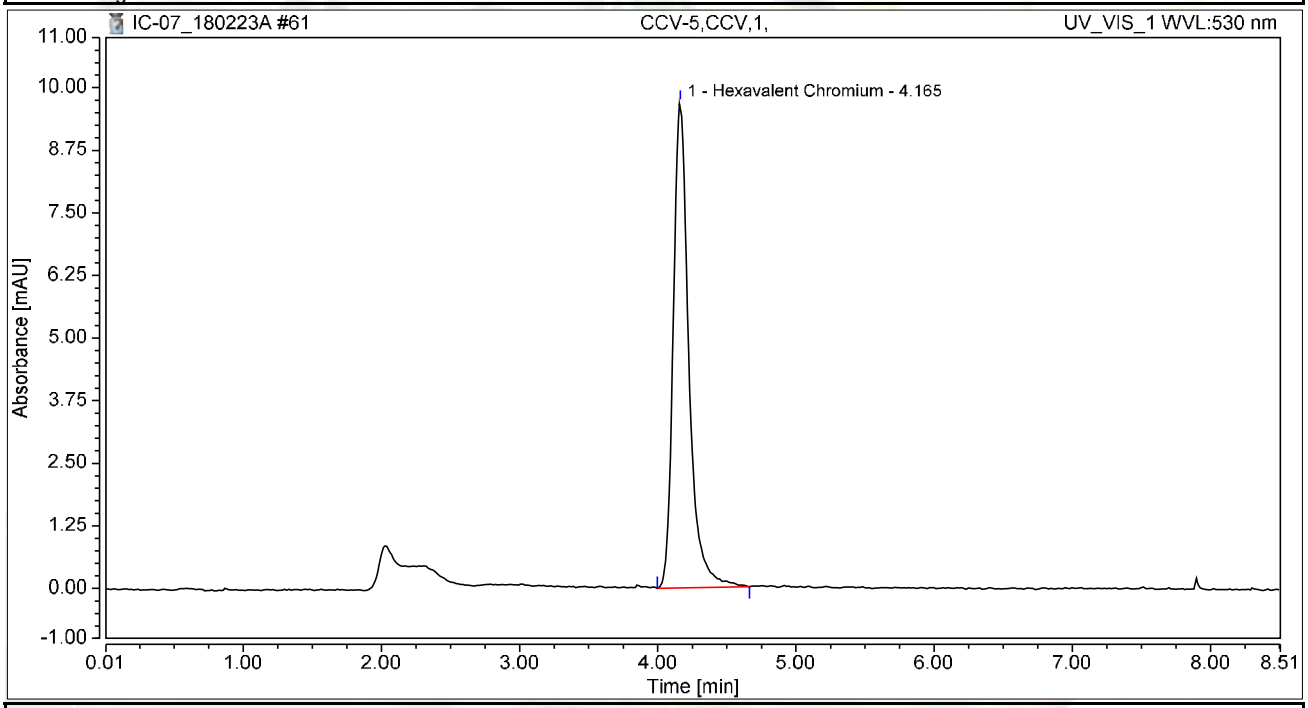
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.272	2.063	100.00	100.00	1.0890
Total:			**0.272**	**2.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

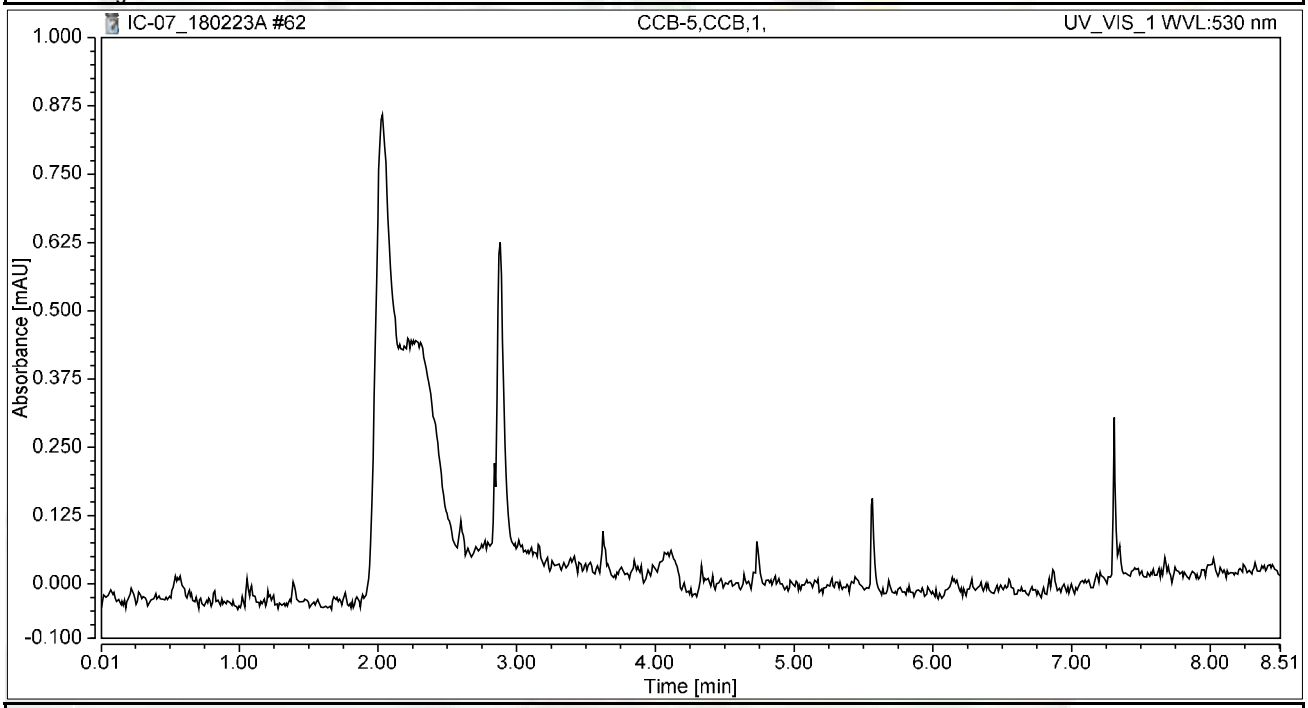
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.269	9.697	100.00	100.00	5.0815
Total:			**1.269**	**9.697**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

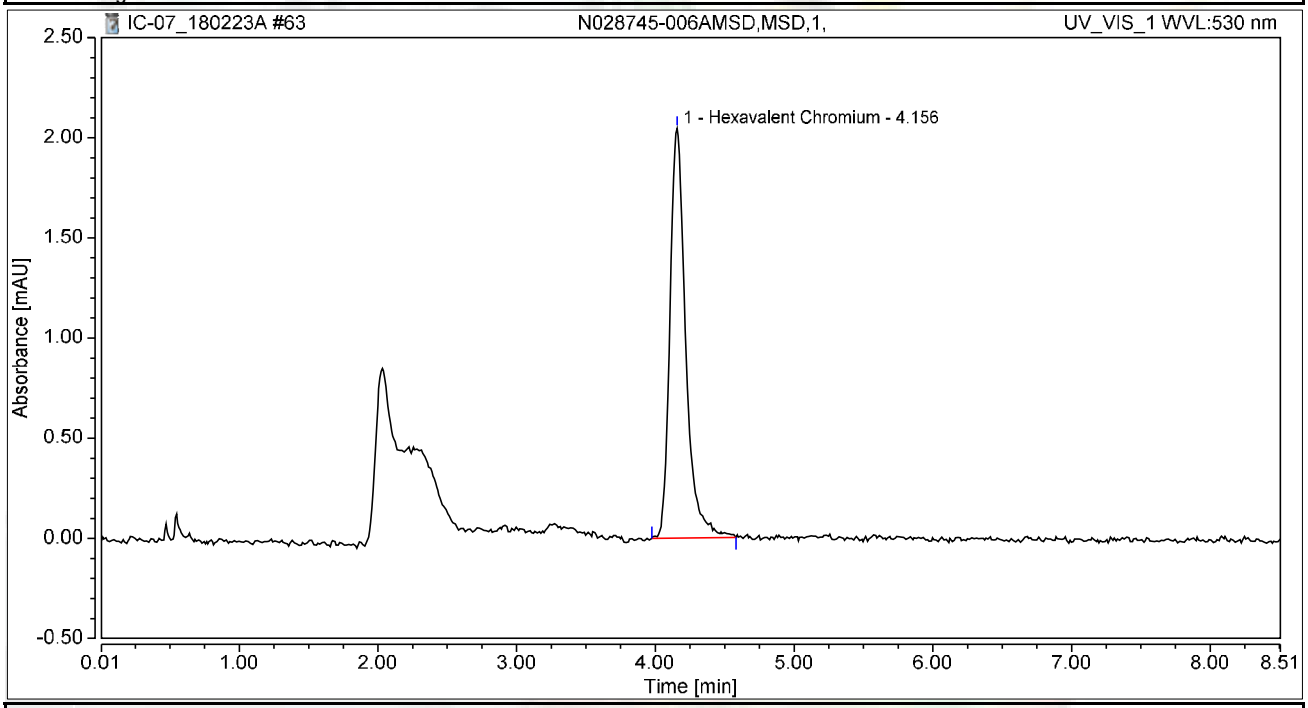
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-006AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

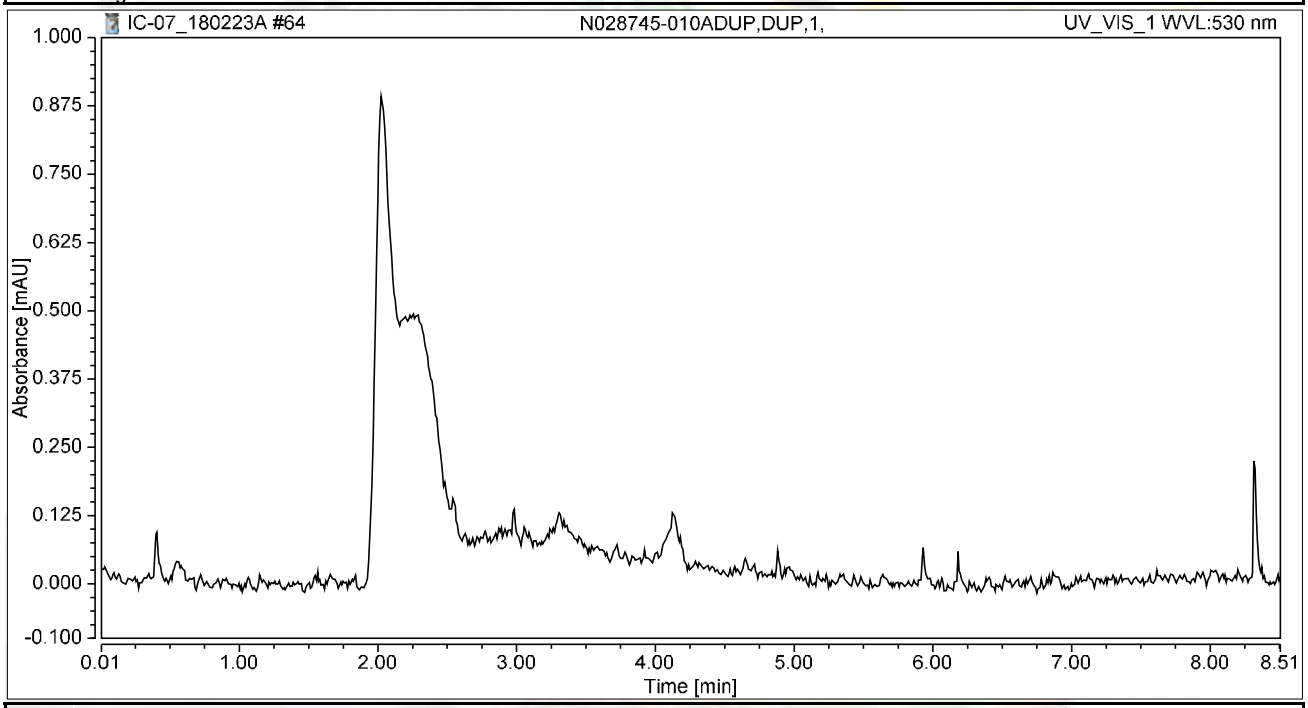
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.270	2.046	100.00	100.00	1.0831
Total:			**0.270**	**2.046**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-010ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

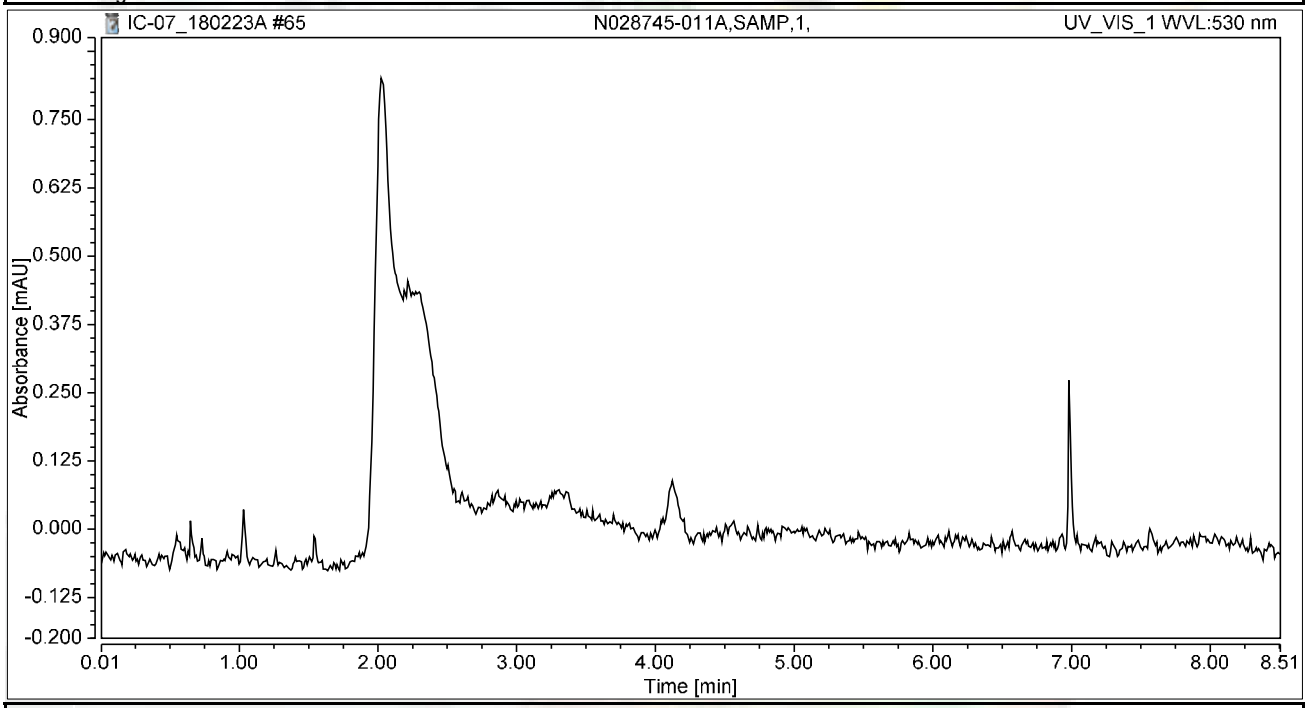
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 17:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

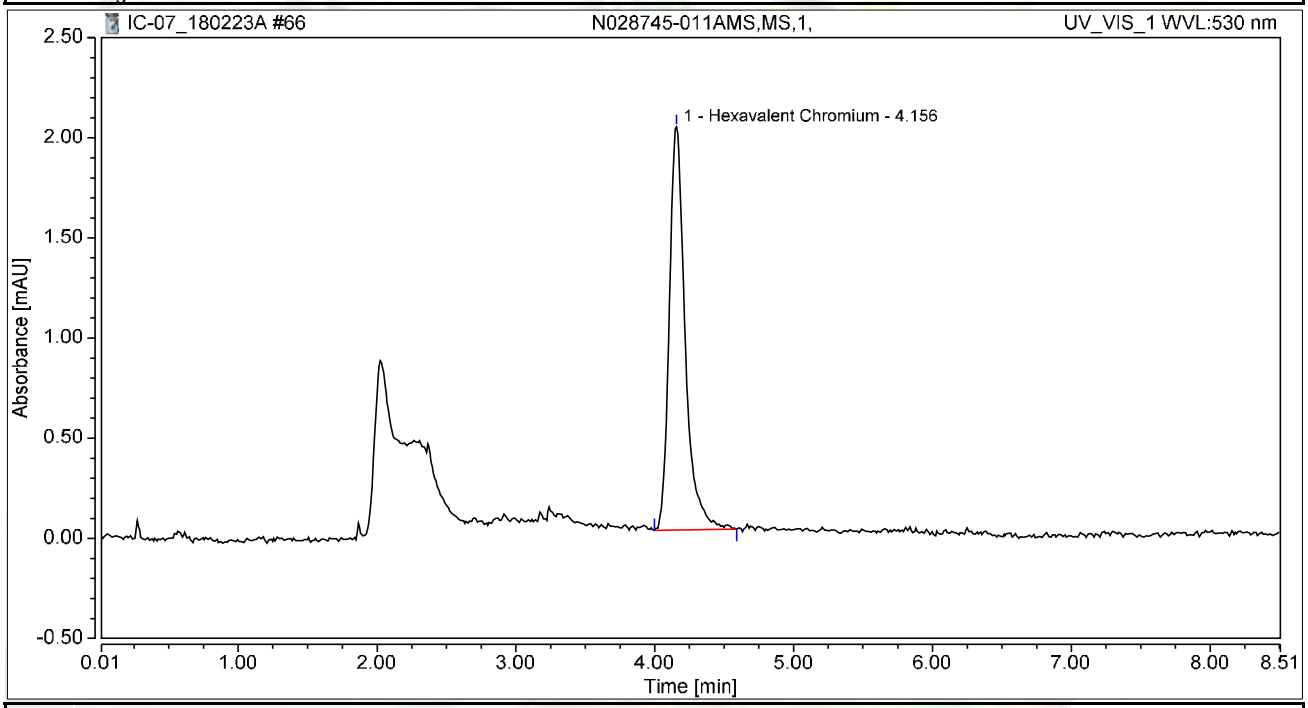
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

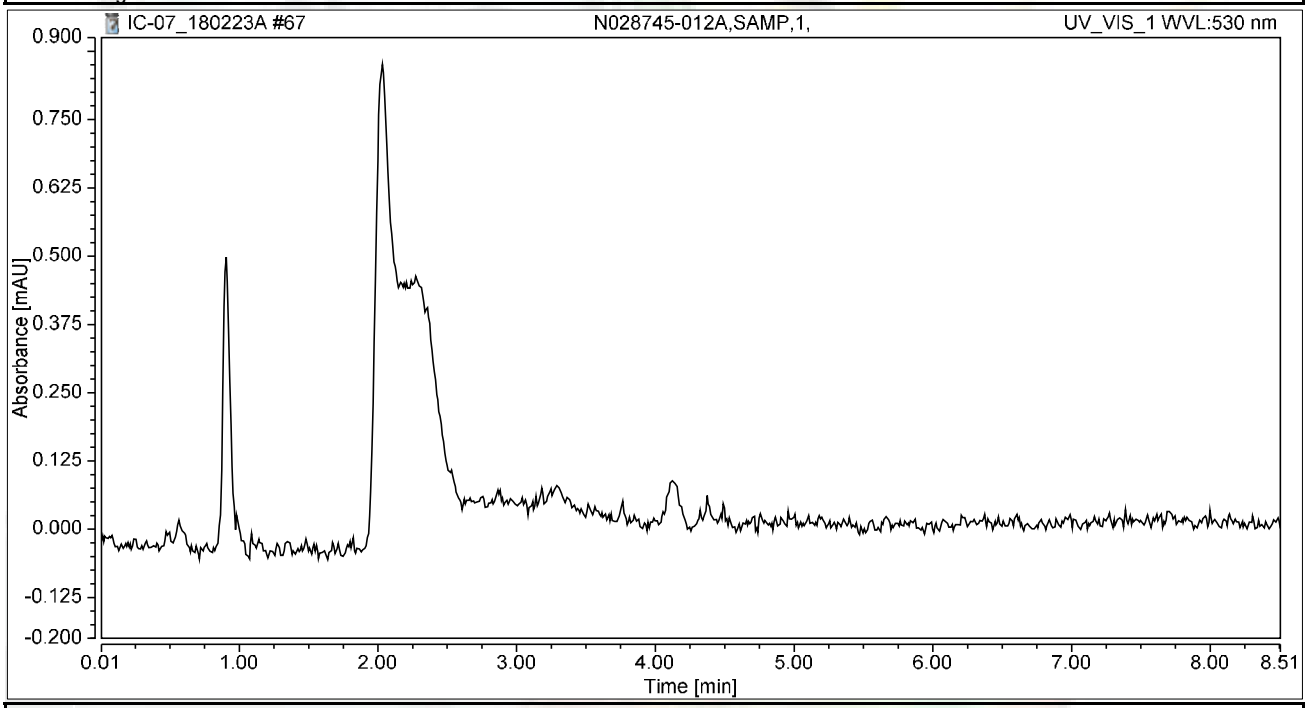
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.269	2.013	100.00	100.00	1.0765
Total:			**0.269**	**2.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 17:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

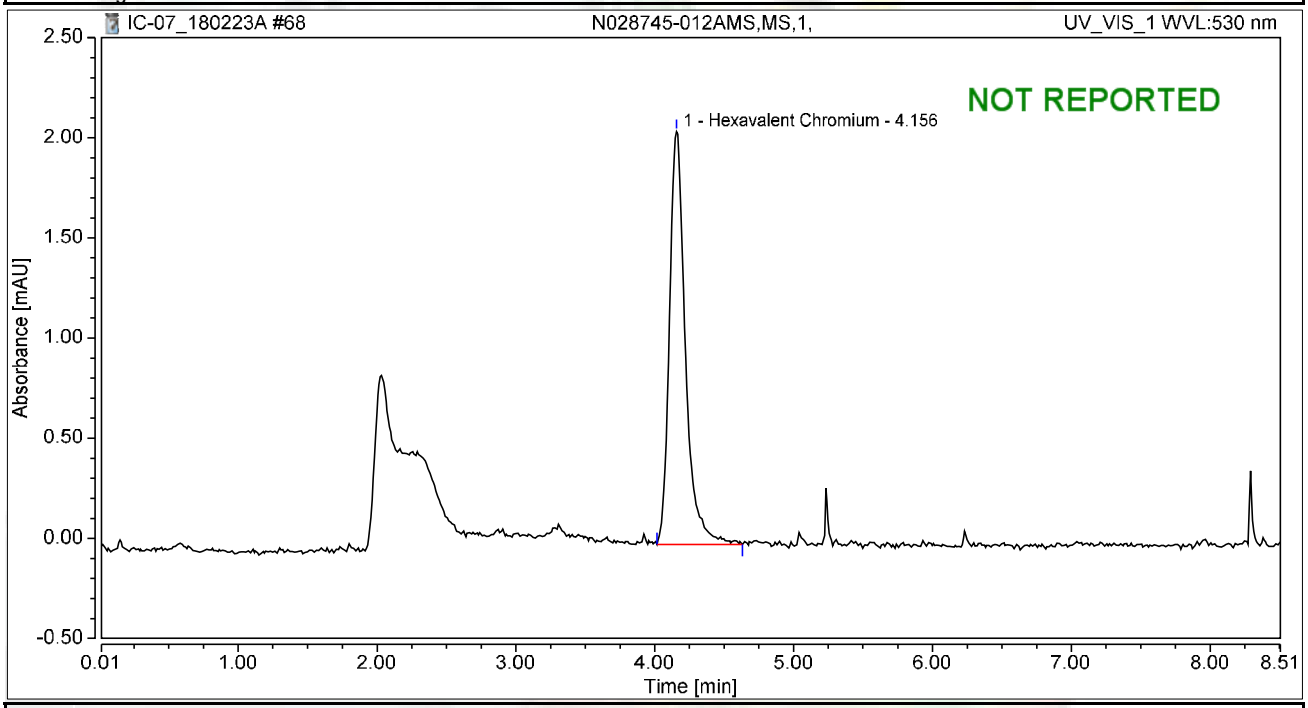
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-012AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

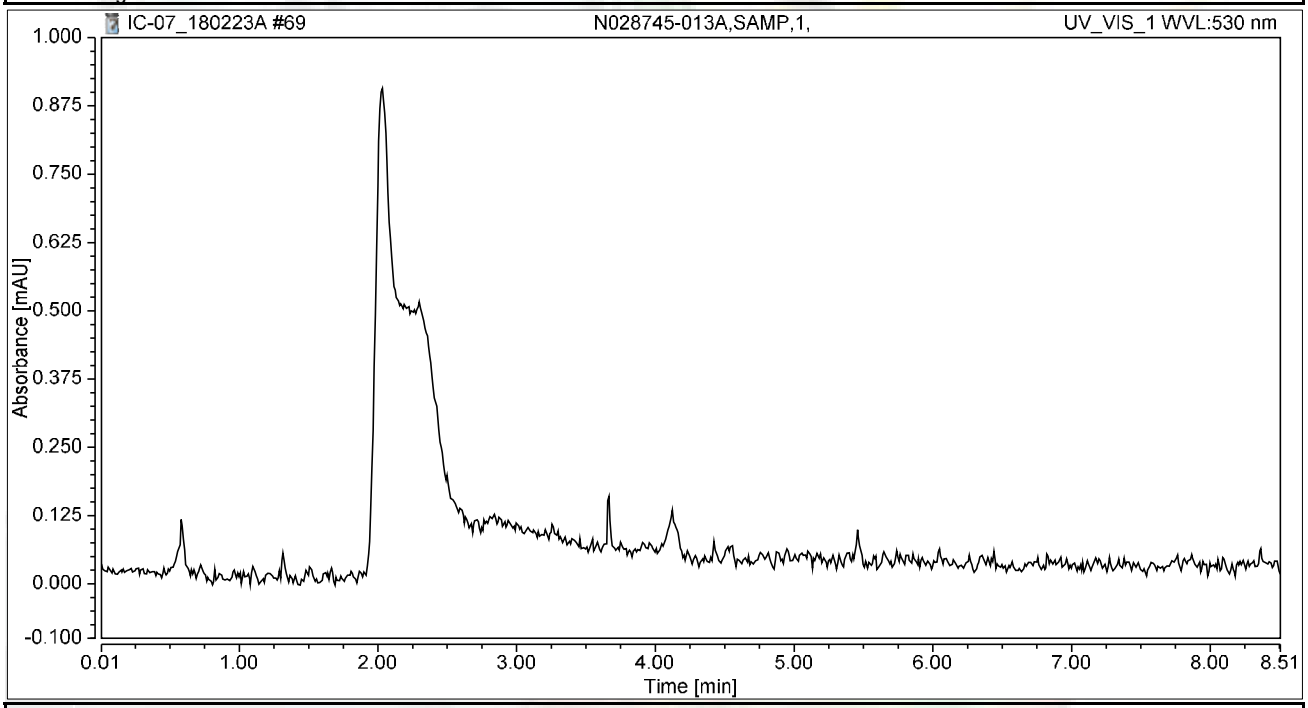
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.276	2.061	100.00	100.00	1.1036
Total:			**0.276**	**2.061**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

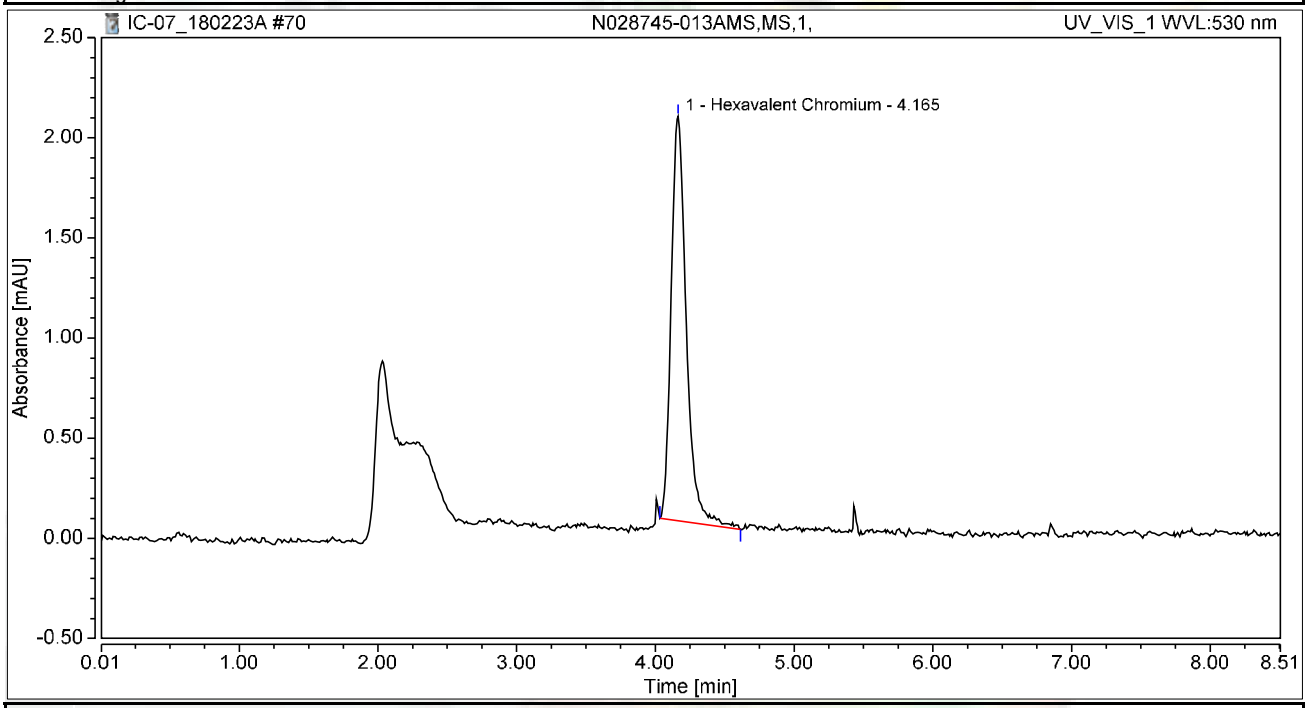
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

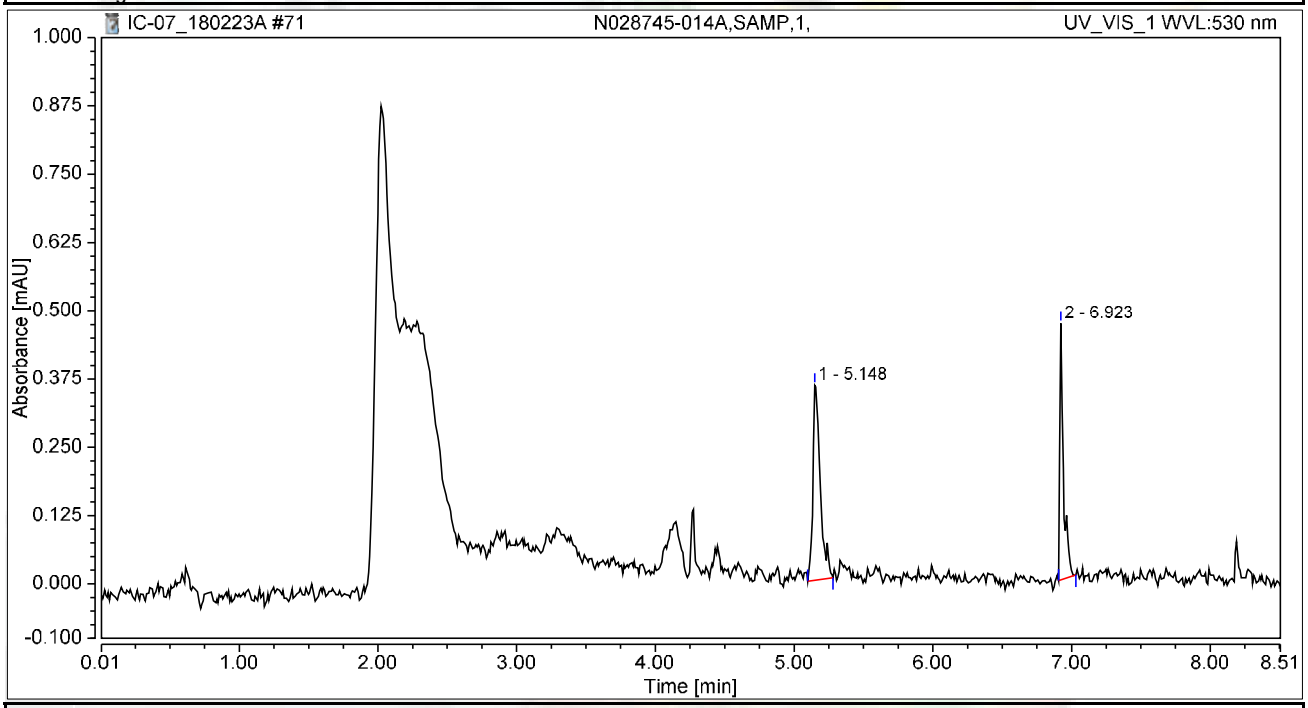
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.255	2.019	100.00	100.00	1.0210
Total:			**0.255**	**2.019**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

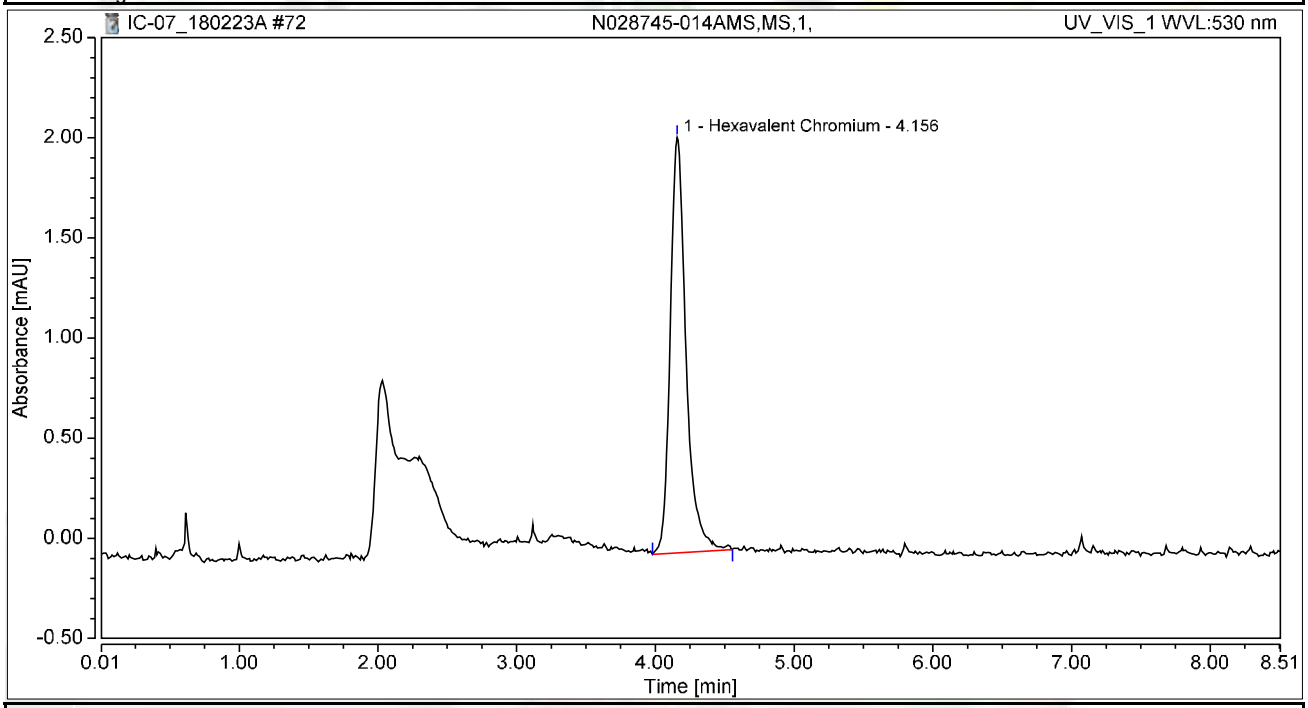
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.148	0.022	0.357	60.97	43.21	n.a.
2		6.923	0.014	0.470	39.03	56.79	n.a.
Total:			**0.036**	**0.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

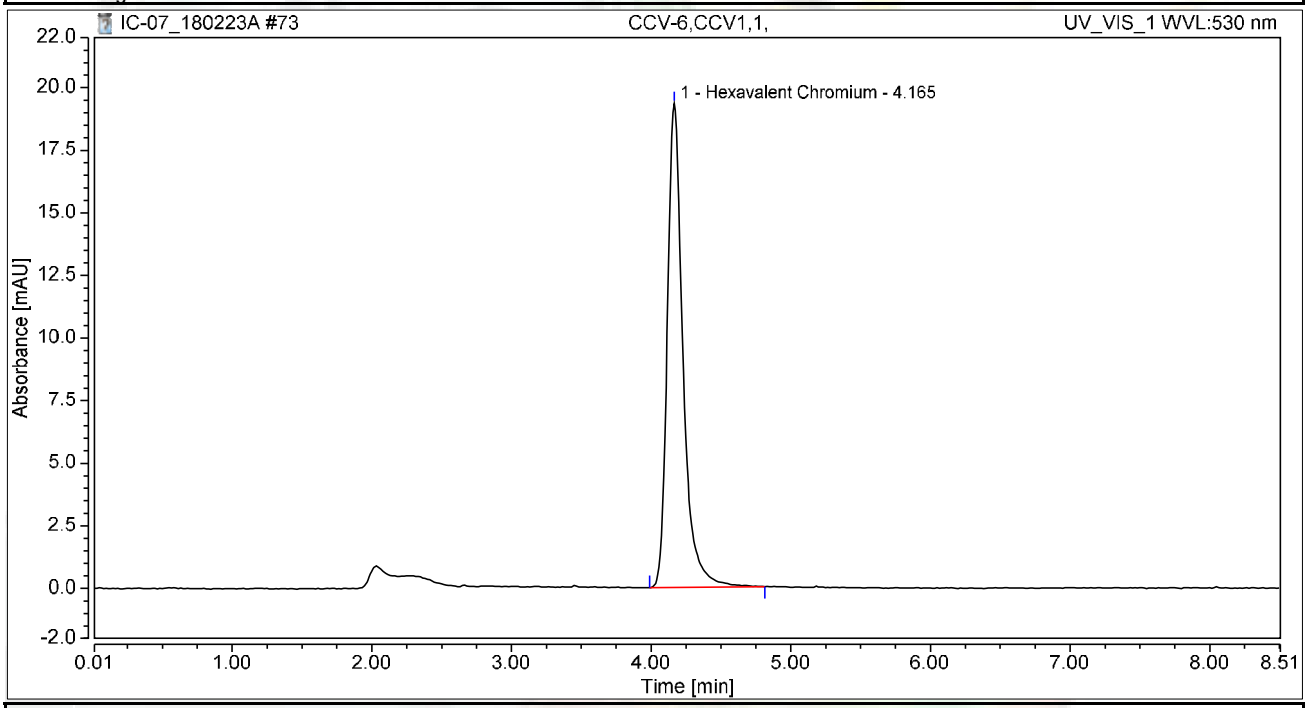
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.274	2.075	100.00	100.00	1.0990
Total:			**0.274**	**2.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

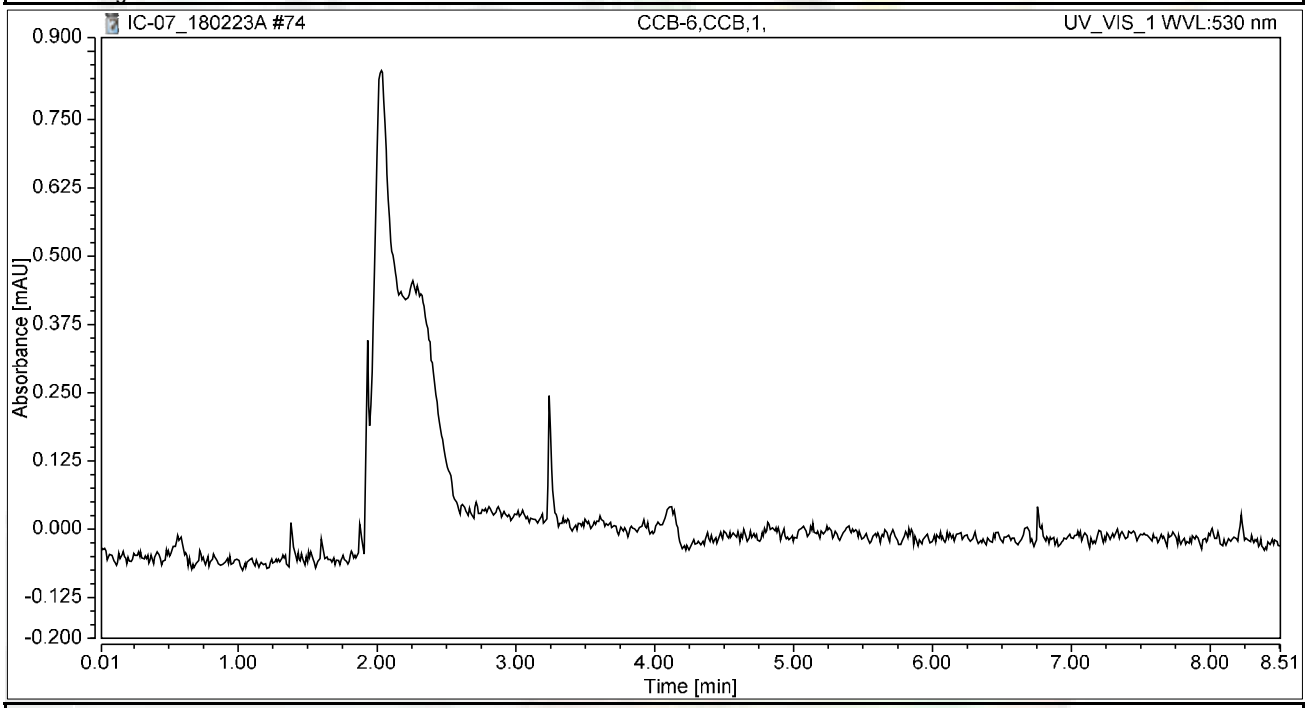
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.519	19.320	100.00	100.00	10.0891
Total:			**2.519**	**19.320**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 18:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

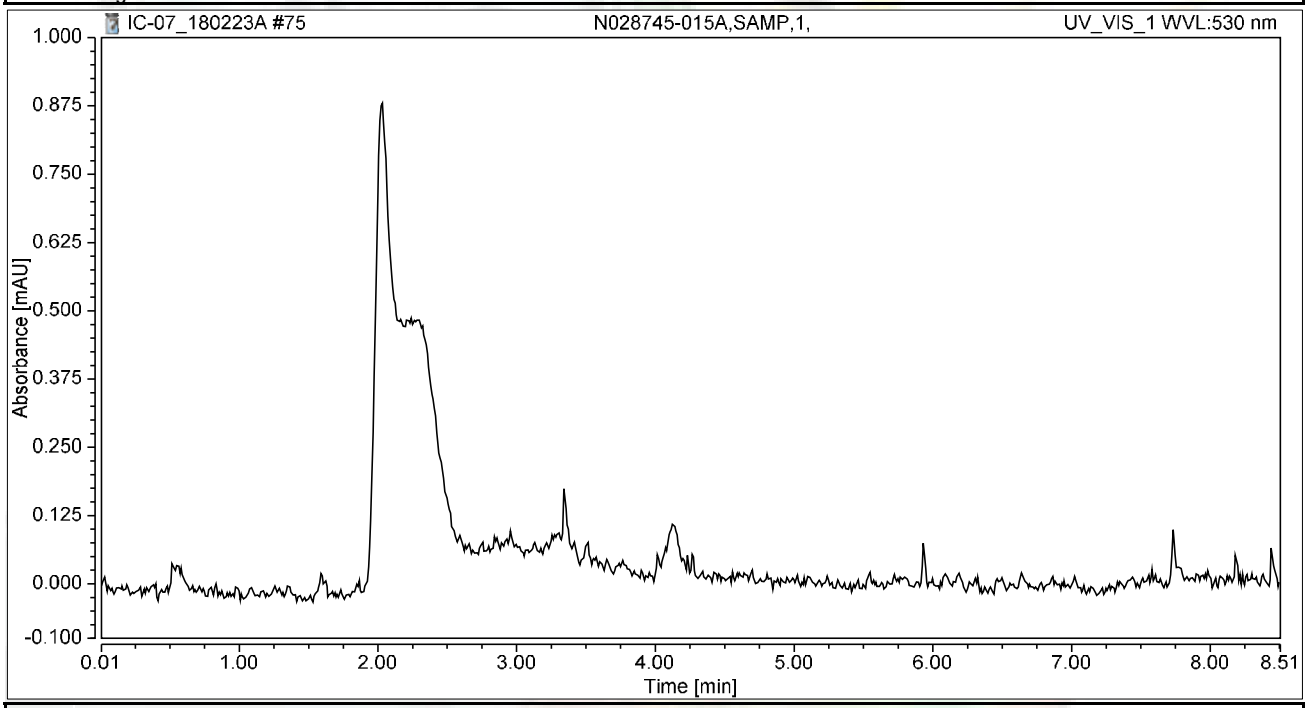
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

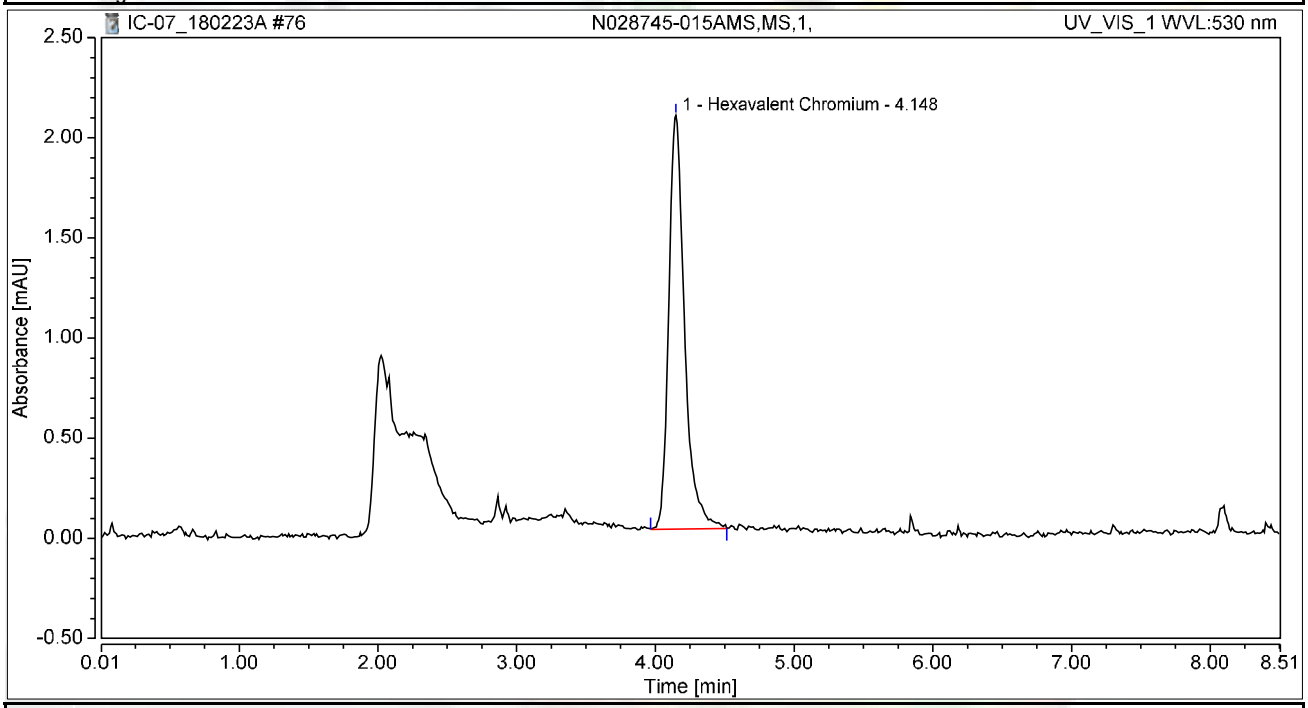
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 19:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

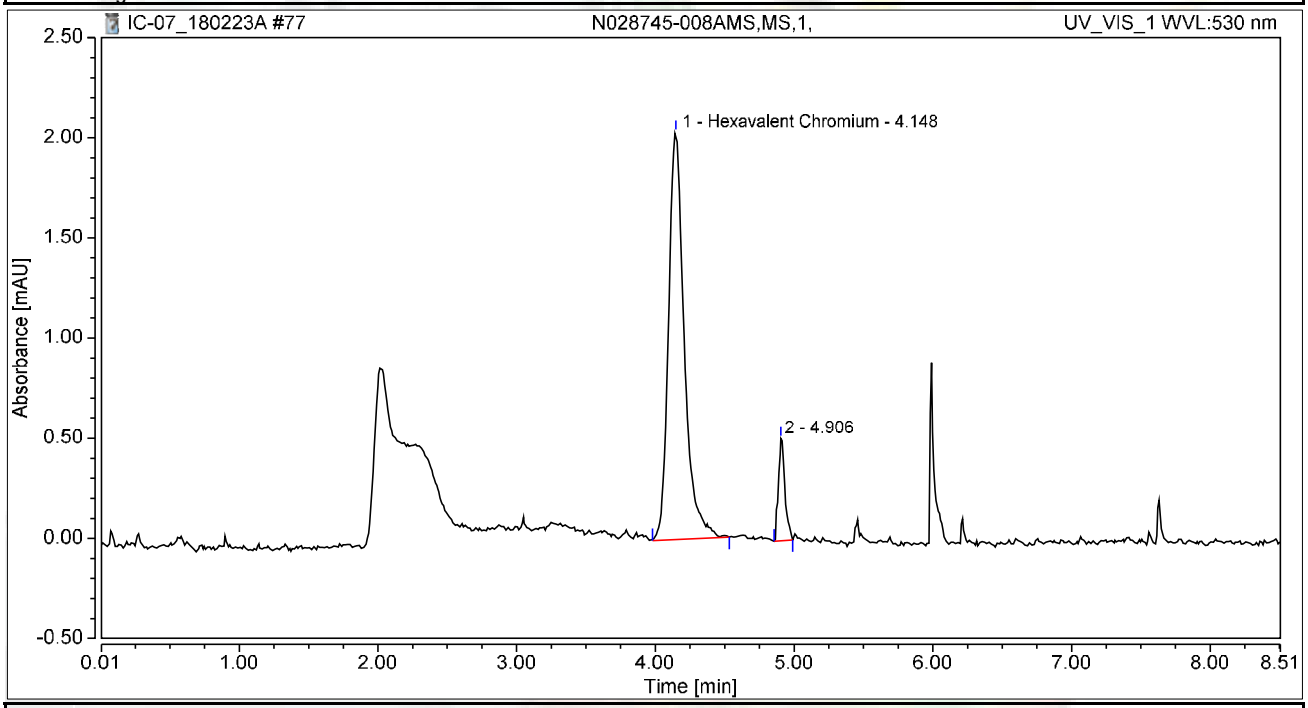
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.274	2.065	100.00	100.00	1.0957
Total:			**0.274**	**2.065**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 19:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

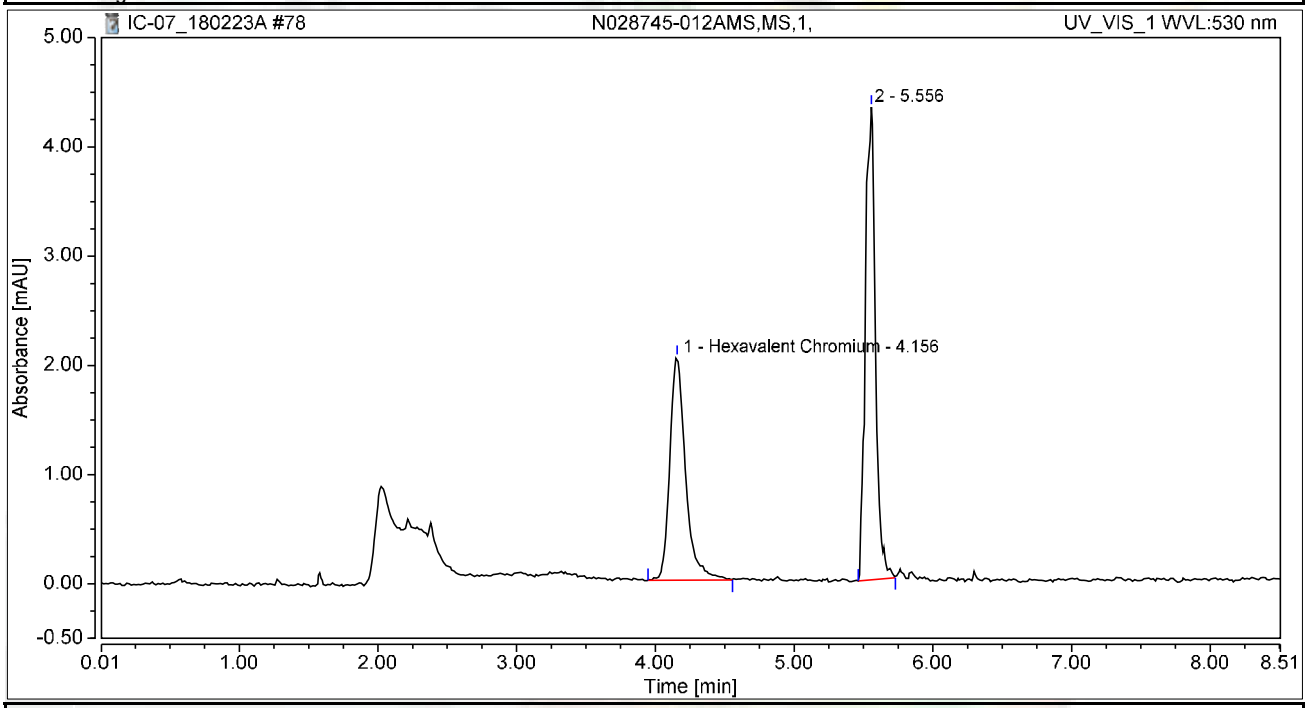
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.268	2.033	90.47	79.95	1.0736
2		4.906	0.028	0.510	9.53	20.05	n.a.
Total:			**0.296**	**2.543**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028745-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 19:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

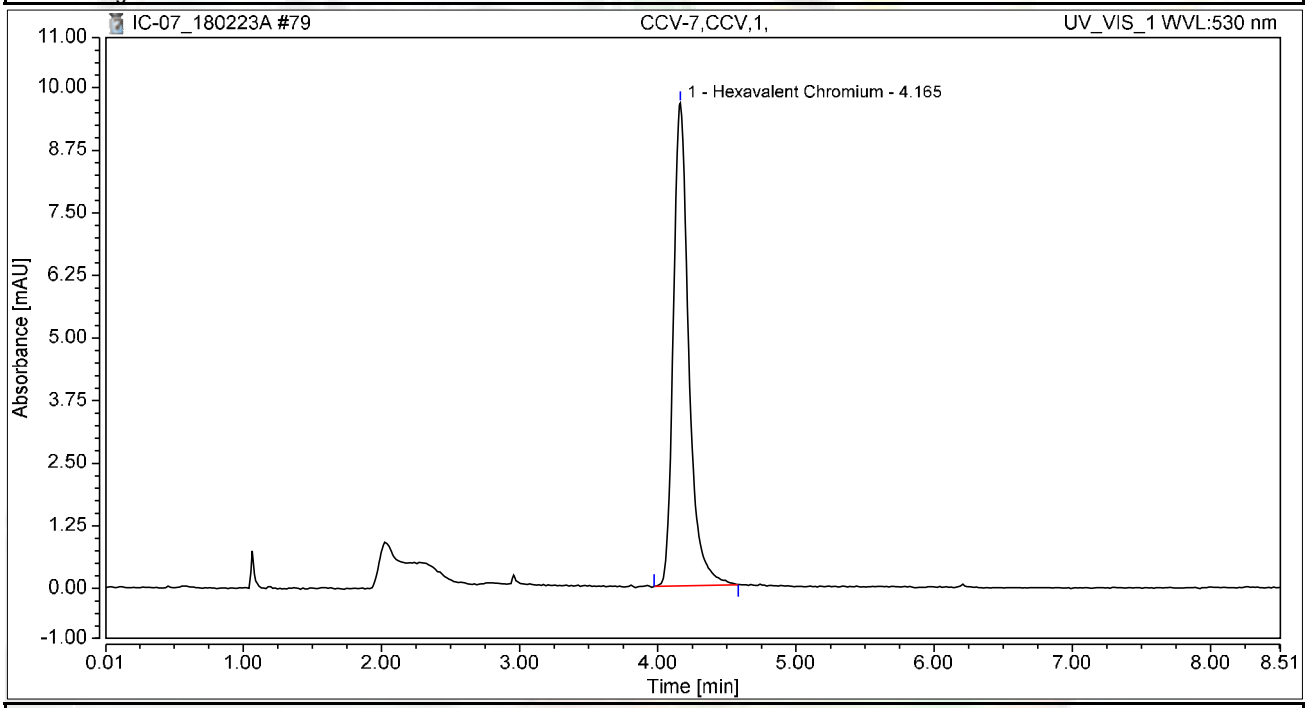
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.271	2.040	42.61	32.03	1.0849
2		5.556	0.365	4.328	57.39	67.97	n.a.
Total:			**0.636**	**6.367**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 19:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

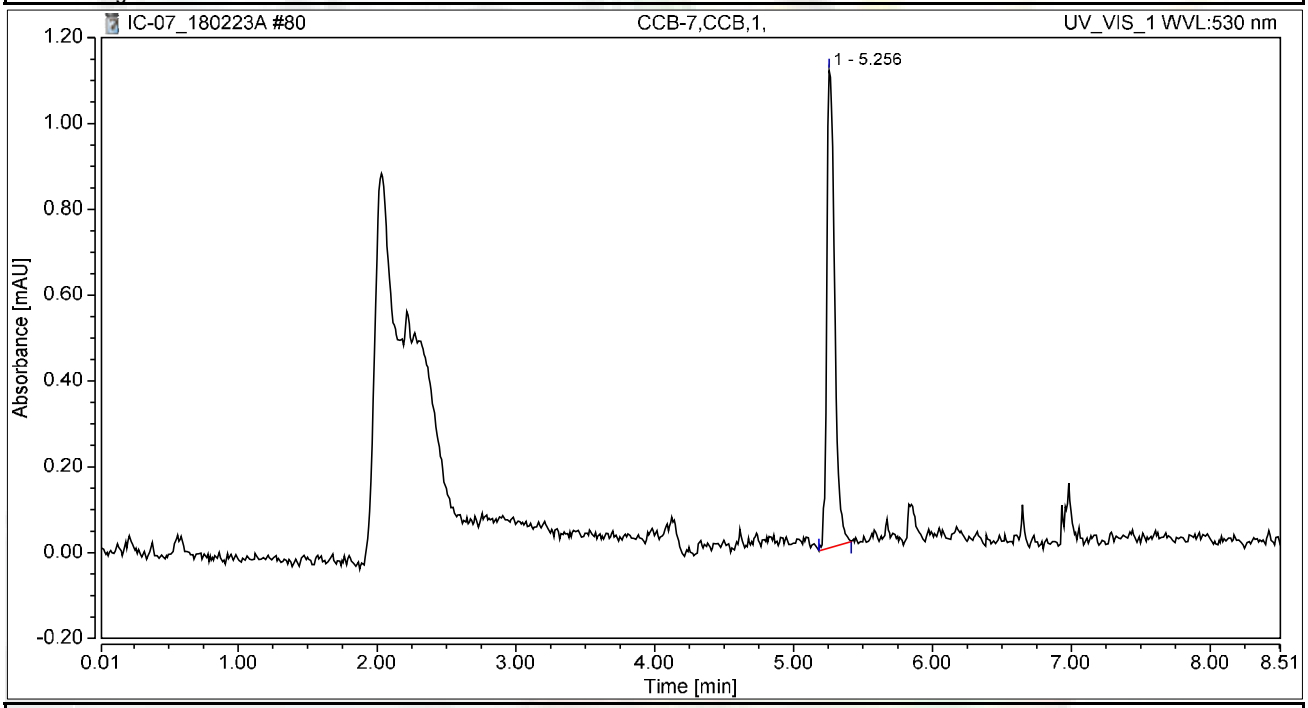
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.249	9.639	100.00	100.00	5.0034
Total:			**1.249**	**9.639**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**23/Feb/18 19:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.256	0.073	1.112	100.00	100.00	n.a.
Total:			**0.073**	**1.112**	**100.00**	**100.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122450 **Analyst:** QBM

ASSET #: N028744, N028745 **Date Analyzed:** 3/5/2018

Method: 4500_NO3

Initial Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/7/2018

2nd Level Reviewer RB 03/07/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028745-001E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4525	*	1
	=	0.4525	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.45 mg/L

RLB 03/07/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

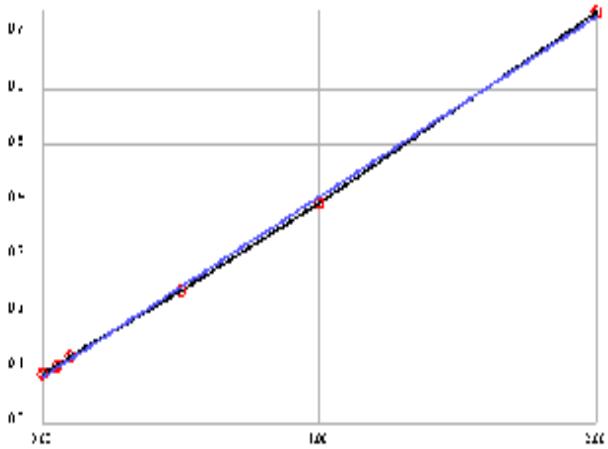
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.3236x + 0.0836
Correlation	.999477

Calibrant	Energy	Set	Conc
1	0.0882	0.0000	0.0143
2	0.1036	0.0500	0.0619
3	0.1198	0.1000	0.1120
4	0.2377	0.5000	0.4763
5	0.3945	1.0000	0.9609
6	0.7387	2.0000	2.0246

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **ICV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.517	0.050	0.5000	0	103	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.539	0.050	0.5000	0	108	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.465	0.050	0.5000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCV**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.485	0.050	0.5000	0	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **ICB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.030	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.038	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122450**
Client ID: **CCB**	Batch ID: **R122450**	TestNo: **SM4500-NO3**		Analysis Date: **3/5/2018**	SeqNo: **2947136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-05-2018 16:40
Time end: 03-05-2018 19:39

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	18:57:33	0.0103		0.0869
2	<BLANK>	18:58:32	0.0205		0.0902
3	<CAL1>	18:59:27	0.0143	[0]	0.0882
4	<CAL2>	19:00:23	0.0619	[0.05]	0.1036
5	<CAL3>	19:01:23	0.1120	[0.1]	0.1198
6	<CAL4>	19:02:19	0.4763	[0.5]	0.2377
7	<CAL5>	19:03:14	0.9609	[1]	0.3945
8	<CAL6>	19:04:16	2.0246	[2]	0.7387
9	,BLANK,BLANK,1, NOT REPORTED	19:05:10	0.0616		0.1035
10	,ICV,ICV,1,	19:06:06	0.5174		0.2510
11	,ICB,ICB,1,	19:07:08	0.0301		0.0933
12	,MB-H2O,MBLK,1,	19:08:02	0.0230		0.0910
13	,LCS-H2O,LCS,1,	19:08:57	0.4933		0.2432
14	,N028744-001C,SAMP,10,	19:09:59	0.9198		0.3812
15	,N028744-001CDUP,DUP,10,	19:10:55	0.8614		0.3623
16	,N028744-002C,SAMP,20,	19:11:49	0.6052		0.2794
17	,N028744-003C,SAMP,20,	19:12:51	0.9878		0.4032
18	,N028744-005C,SAMP,5,	19:13:46	0.8030		0.3434
19	,N028744-005CMS,MS,5,	19:14:40	1.2671		0.4936
20	,N028744-005CMSD,MSD,5,	19:15:42	1.2866		0.4999
21	,BLANK, NOT REPORTED	19:16:38	0.1386		0.1284
22	,CCV-1,CCV,1,	19:17:34	0.5387		0.2579
23	,CCB-1,CCB,1,	19:18:34	0.0384		0.0960
24	,N028744-004C,SAMP,1,	19:19:29	0.0520		0.1004
25	,N028744-006C,SAMP,20,	19:20:31	0.6951		0.3085
26	,N028745-001E,SAMP,1,	19:21:27	0.4525		0.2300

03/07/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028745-002E,SAMP,1,	19:22:21	0.4714		0.2361
28	,N028745-003E,SAMP,1,	19:23:23	0.4235		0.2206
29	,N028745-004E,SAMP,1,	19:24:06	0.4748		0.2372
30	,N028745-005E,SAMP,1,	19:24:54	0.4479		0.2285
31	,N028745-006E,SAMP,1,	19:25:38	0.4436		0.2271
32	,N028745-007E,SAMP,1,	19:26:26	0.4408		0.2262
33	,BLANK, NOT REPORTED	19:27:09	0.0208		0.0903
34	,CCV-2,CCV,1, NOT REPORTED	19:27:51	0.4680		0.2350
35	,CCV-2,CCV,1,	19:28:35	0.4649		0.2340
36	,CCB-2,CCB,1,	19:29:24	0.0180		0.0894
37	,N028745-008E,SAMP,1,	19:30:06	0.4565		0.2313
38	,N028745-009E,SAMP,1,	19:30:50	0.4912		0.2425
39	,N028745-010E,SAMP,1,	19:31:38	0.4068		0.2152
40	,N028745-011E,SAMP,1,	19:32:21	0.4510		0.2295
41	,N028745-012E,SAMP,1,	19:33:09	0.4479		0.2285
42	,N028745-014E,SAMP,1,	19:33:53	0.4476		0.2284
43	,N028745-015E,SAMP,1,	19:34:35	0.4362		0.2247
44	,BLANK, NOT REPORTED	19:35:24	0.0214		0.0905
45	,CCV-3,CCV,1, NOT REPORTED	19:36:08	0.4621		0.2331
46	,CCV-3,CCV,1,	19:36:50	0.4853		0.2406
47	,CCB-3,CCB,1,	19:37:39	0.0162		0.0888

03/07/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/5/2018
Time Analyzed: 4:37 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180302B
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028744-001C		8.30							
N028744-002C		6.08							
N028744-003C		6.46							
N028744-004C		7.37							
N028744-005C		6.79							
N028744-006C		7.39							
N028745-001E		6.84							
N028745-002E		7.71							
N028745-003E		7.30							
N028745-004E		7.6							
N028745-005E		7.48							
N028745-006E		7.51							
N028745-007E		8.01							
N028745-008E		7.75							
N028745-009E		8.50							
N028745-010E		7.38							
N028745-011E		7.23							
N028745-012E		8.05							
N028745-014E		7.41							
N028745-015E		7.18							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 03/07/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66927
ASSET #: N028745

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[X] EPA 6010B / 200.7 DISS
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18
2nd Level Reviewer 3/7/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028745-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02844 * 1 * (25/25) * 1000

Iron , ug/L = 28.44

Reporting results in two significant figures,

Iron , ug/L = 28

% RSD SUMMARY

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	40.14	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.37	15	PASS
Standard2	ICAL	1	Fe	0.05	0.73	15	PASS
Standard3	ICAL	1	Fe	2	0.74	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	0.063	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	9.97	0.13	15	PASS
ICB	ICB	1	Fe	-0.0007	38.13	15	<PQL
LLICV	CCV1	1	Fe	0.019	1.31	20	PASS
ICSA1	ICSA	1	Fe	162.75	0.094	15	PASS
ICSAB1	ICSAB	1	Fe	179.01	0.49	15	PASS
MB-66900	MBLK	1	Fe	0.00019	281.18	15	<PQL
LCS-66900	LCS	1	Fe	0.11	0.72	15	PASS
N028727-002B	SAMP	1	Fe	0.017	1.23	15	PASS
N028727-002B	SAMP	5	Fe	0.0023	11.99	15	PASS
N028727-002B-PS	PS	1	Fe	0.12	0.19	15	PASS
N028727-002B-MS	MS	1	Fe	0.12	0.89	15	PASS
N028727-002B-MSD	MSD	1	Fe	0.12	0.47	15	PASS
N028727-003B	SAMP	1	Fe	0.013	1.68	15	PASS
N028727-004B	SAMP	1	Fe	0.035	2.12	15	PASS
N028727-005B	SAMP	1	Fe	0.03	0.48	15	PASS
CCV1	CCV	1	Fe	9.94	0.064	15	PASS
CCB1	CCB	1	Fe	-0.00045	67.51	15	<PQL
N028727-006B	SAMP	1	Fe	0.1	0.82	15	PASS
N028727-007B	SAMP	1	Fe	0.034	4.041	15	PASS
N028727-008B	SAMP	1	Fe	0.0077	12.024	15	PASS
N028727-009B	SAMP	1	Fe	0.018	0.92	15	PASS
N028727-010B	SAMP	1	Fe	0.014	6.028	15	PASS
N028727-011B	SAMP	1	Fe	0.02	1.15	15	PASS
N028727-012B	SAMP	1	Fe	0.019	1.57	15	PASS
N028727-013B	SAMP	1	Fe	0.013	0.87	15	PASS
CCV2	CCV	1	Fe	9.93	0.1	15	PASS
CCB2	CCB	1	Fe	-0.00068	6.13	15	PASS
CCV3	CCV	1	Fe	9.94	0.044	15	PASS
CCB3	CCB	1	Fe	-0.00048	181.19	15	<PQL
MB-66927	MBLK	1	Fe	-0.0022	3.3	15	PASS
LCS-66927	LCS	1	Fe	0.1	0.35	15	PASS
N028745-001B	SAMP	1	Fe	0.028	0.84	15	PASS
N028745-001B	SAMP	5	Fe	0.005	2.55	15	PASS
CCV4	CCV	1	Fe	9.92	0.059	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB4	CCB	1	Fe	-0.00054	38.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.78	20	PASS
ICSA2	ICSA	1	Fe	162.75	0.38	15	PASS
ICSAB2	ICSAB	1	Fe	179.03	0.11	15	PASS
N028745-001B-PS	PS	1	Fe	0.13	0.42	15	PASS
N028745-001B-MS	MS	1	Fe	0.12	0.23	15	PASS
N028745-001B-MSD	MSD	1	Fe	0.12	0.53	15	PASS
N028745-002B	SAMP	1	Fe	0.049	1.055	15	PASS
N028745-003B	SAMP	1	Fe	0.028	1.7	15	PASS
N028745-004B	SAMP	1	Fe	0.0051	12.22	15	PASS
N028745-005B	SAMP	1	Fe	0.021	2.2	15	PASS
N028745-006B	SAMP	1	Fe	0.0026	7.89	15	PASS
N028745-007B	SAMP	1	Fe	0.0026	3.74	15	PASS
N028745-008B	SAMP	1	Fe	0.0053	23.074	15	<PQL
CCV5	CCV	1	Fe	10.014	0.083	15	PASS
CCB5	CCB	1	Fe	-0.00096	22.91	15	<PQL
N028745-009B	SAMP	1	Fe	0.0023	11.6	15	PASS
N028745-010B	SAMP	1	Fe	0.016	3.67	15	PASS
N028745-011B	SAMP	1	Fe	0.0038	7.83	15	PASS
N028745-012B	SAMP	1	Fe	0.022	2.15	15	PASS
N028745-014B	SAMP	1	Fe	0.011	6.75	15	PASS
N028745-015B	SAMP	1	Fe	0.0034	8.25	15	PASS
CCV6	CCV	1	Fe	9.96	0.088	15	PASS
CCB6	CCB	1	Fe	-0.0006	41.015	15	<PQL
CCV7	CCV	1	Fe	9.9	0.049	15	PASS
CCB7	CCB	1	Fe	-0.00051	30.17	15	<PQL
N028727-006B	SAMP	1	Fe	-0.0026	35.014	15	<PQL
N028745-002B	SAMP	1	Fe	0.0088	8.17	15	PASS
N028745-012B	SAMP	1	Fe	-0.00065	63.54	15	<PQL
CCV8	CCV	1	Fe	9.87	0.088	15	PASS
CCB8	CCB	1	Fe	-0.00016	387.45	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.26	20	PASS
ICSA3	ICSA	1	Fe	171.47	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	176.97	0.36	15	PASS
CCV9	CCV	1	Fe	9.83	0.16	15	PASS
CCB9	CCB	1	Fe	-0.001	64.011	15	<PQL
CCV10	CCV	1	Fe	9.92	0.078	15	PASS
CCB10	CCB	1	Fe	-0.0013	16.69	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.58	20	PASS
ICSA4	ICSA	1	Fe	172.57	0.3	15	PASS
ICSAB4	ICSAB	1	Fe	177.77	0.14	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/27/2018	08:57:36 AM
2	Standard1	ICAL	1	02/27/2018	09:02:24 AM
3	Standard2	ICAL	1	02/27/2018	09:06:43 AM
11	Standard3	ICAL	1	02/27/2018	09:11:33 AM
12	Standard4	ICAL	1	02/27/2018	09:16:25 AM
6	Standard5	ICAL	1	02/27/2018	09:21:18 AM
7	Standard6	ICAL	1	02/27/2018	09:26:07 AM
8	Standard7	ICAL	1	02/27/2018	09:30:30 AM
9	ICV	ICV	1	02/27/2018	09:34:02 AM
1	ICB	ICB	1	02/27/2018	09:38:27 AM
2	LLICV	CCV1	1	02/27/2018	09:42:46 AM
4	ICSA1	ICSA	1	02/27/2018	09:47:35 AM
5	ICSAB1	ICSAB	1	02/27/2018	09:53:39 AM
38	MB-66900	MBLK	1	02/27/2018	09:59:14 AM
39	LCS-66900	LCS	1	02/27/2018	10:04:04 AM
40	N028727-002B	SAMP	1	02/27/2018	10:08:55 AM
41	N028727-002B	SAMP	5	02/27/2018	10:13:45 AM
42	N028727-002B-PS	PS	1	02/27/2018	10:18:35 AM
43	N028727-002B-MS	MS	1	02/27/2018	10:23:26 AM
44	N028727-002B-MSD	MSD	1	02/27/2018	10:28:17 AM
45	N028727-003B	SAMP	1	02/27/2018	10:33:06 AM
46	N028727-004B	SAMP	1	02/27/2018	10:37:57 AM
47	N028727-005B	SAMP	1	02/27/2018	10:42:48 AM
7	CCV1	CCV	1	02/27/2018	10:47:39 AM
1	CCB1	CCB	1	02/27/2018	10:52:02 AM
48	N028727-006B	SAMP	1	02/27/2018	10:56:50 AM
49	N028727-007B	SAMP	1	02/27/2018	11:01:42 AM
50	N028727-008B	SAMP	1	02/27/2018	11:06:34 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N028727-009B	SAMP	1	02/27/2018	11:11:26 AM
52	N028727-010B	SAMP	1	02/27/2018	11:16:16 AM
53	N028727-011B	SAMP	1	02/27/2018	11:21:08 AM
54	N028727-012B	SAMP	1	02/27/2018	11:26:00 AM
55	N028727-013B	SAMP	1	02/27/2018	11:30:51 AM
56	MB-66899	MBLK	1	02/27/2018	11:35:41 AM
57	LCS-66899	LCS	1	02/27/2018	11:40:32 AM
7	CCV2	CCV	1	02/27/2018	11:45:23 AM
1	CCB2	CCB	1	02/27/2018	11:49:46 AM
58	N028727-002C	SAMP	1	02/27/2018	11:54:35 AM
59	N028727-002C	SAMP	5	02/27/2018	11:59:26 AM
60	N028727-002C-PS	PS	1	02/27/2018	12:04:17 PM
61	N028727-002C-MS	MS	1	02/27/2018	12:09:09 PM
62	N028727-002C-MSD	MSD	1	02/27/2018	12:14:02 PM
63	N028727-003C	SAMP	1	02/27/2018	12:18:54 PM
64	N028727-004C	SAMP	1	02/27/2018	12:23:46 PM
65	N028727-005C	SAMP	1	02/27/2018	12:28:38 PM
66	N028727-006C	SAMP	1	02/27/2018	12:33:30 PM
67	N028727-007C	SAMP	1	02/27/2018	12:38:22 PM
7	CCV3	CCV	1	02/27/2018	12:43:13 PM
1	CCB3	CCB	1	02/27/2018	12:47:36 PM
68	N028727-008C	SAMP	1	02/27/2018	12:52:25 PM
69	N028727-009C	SAMP	1	02/27/2018	12:57:17 PM
70	N028727-010C	SAMP	1	02/27/2018	01:02:07 PM
71	N028727-011C	SAMP	1	02/27/2018	01:06:58 PM
72	N028727-012C	SAMP	1	02/27/2018	01:11:48 PM
73	N028727-013C	SAMP	1	02/27/2018	01:16:40 PM
74	MB-66927	MBLK	1	02/27/2018	01:21:33 PM
75	LCS-66927	LCS	1	02/27/2018	01:26:24 PM
76	N028745-001B	SAMP	1	02/27/2018	01:31:15 PM
77	N028745-001B	SAMP	5	02/27/2018	01:36:06 PM
7	CCV4	CCV	1	02/27/2018	01:40:58 PM
1	CCB4	CCB	1	02/27/2018	01:45:21 PM
2	LLCCV1	CCV2	1	02/27/2018	01:50:10 PM
4	ICSA2	ICSA	1	02/27/2018	01:54:59 PM
5	ICSAB2	ICSAB	1	02/27/2018	02:01:03 PM
78	N028745-001B-PS	PS	1	02/27/2018	02:06:39 PM
79	N028745-001B-MS	MS	1	02/27/2018	02:11:30 PM
80	N028745-001B-MSD	MSD	1	02/27/2018	02:16:22 PM
81	N028745-002B	SAMP	1	02/27/2018	02:21:14 PM
82	N028745-003B	SAMP	1	02/27/2018	02:26:06 PM
83	N028745-004B	SAMP	1	02/27/2018	02:30:59 PM
84	N028745-005B	SAMP	1	02/27/2018	02:35:51 PM
85	N028745-006B	SAMP	1	02/27/2018	02:40:43 PM
86	N028745-007B	SAMP	1	02/27/2018	02:45:35 PM
87	N028745-008B	SAMP	1	02/27/2018	02:50:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/27/2018	02:55:19 PM
1	CCB5	CCB	1	02/27/2018	03:00:43 PM
88	N028745-009B	SAMP	1	02/27/2018	03:05:32 PM
89	N028745-010B	SAMP	1	02/27/2018	03:10:24 PM
90	N028745-011B	SAMP	1	02/27/2018	03:15:16 PM
91	N028745-012B	SAMP	1	02/27/2018	03:20:09 PM
92	N028745-014B	SAMP	1	02/27/2018	03:25:01 PM
93	N028745-015B	SAMP	1	02/27/2018	03:29:53 PM
94	MB-66926	MBLK	1	02/27/2018	03:34:45 PM
95	LCS-66926	LCS	1	02/27/2018	03:39:37 PM
96	N028745-001C	SAMP	1	02/27/2018	03:44:29 PM
97	N028745-001C	SAMP	5	02/27/2018	03:49:22 PM
7	CCV6	CCV	1	02/27/2018	03:54:13 PM
1	CCB6	CCB	1	02/27/2018	03:58:36 PM
98	N028745-001C-PS	PS	1	02/27/2018	04:03:24 PM
99	N028745-001C-MS	MS	1	02/27/2018	04:08:17 PM
100	N028745-001C-MSD	MSD	1	02/27/2018	04:13:11 PM
101	N028745-002C	SAMP	1	02/27/2018	04:18:04 PM
102	N028745-003C	SAMP	1	02/27/2018	04:22:57 PM
103	N028745-004C	SAMP	1	02/27/2018	04:27:48 PM
104	N028745-005C	SAMP	1	02/27/2018	04:32:41 PM
105	N028745-006C	SAMP	1	02/27/2018	04:37:34 PM
106	N028745-007C	SAMP	1	02/27/2018	04:42:25 PM
107	N028745-008C	SAMP	1	02/27/2018	04:47:17 PM
7	CCV7	CCV	1	02/27/2018	04:52:11 PM
1	CCB7	CCB	1	02/27/2018	04:56:34 PM
108	N028745-009C	SAMP	1	02/27/2018	05:01:23 PM
109	N028745-010C	SAMP	1	02/27/2018	05:06:15 PM
110	N028745-011C	SAMP	1	02/27/2018	05:11:09 PM
111	N028745-012C	SAMP	1	02/27/2018	05:16:02 PM
112	N028745-014C	SAMP	1	02/27/2018	05:20:54 PM
113	N028745-015C	SAMP	1	02/27/2018	05:25:48 PM
114	N028727-006B	SAMP	1	02/27/2018	05:30:40 PM
115	N028745-002B	SAMP	1	02/27/2018	05:35:34 PM
116	N028745-012B	SAMP	1	02/27/2018	05:41:13 PM
117	MB-66928	MBLK	1	02/27/2018	05:46:04 PM
7	CCV8	CCV	1	02/27/2018	05:50:56 PM
1	CCB8	CCB	1	02/27/2018	05:55:19 PM
2	LLCCV2	CCV2	1	02/27/2018	06:00:08 PM
4	ICSA3	ICSA	1	02/27/2018	06:04:58 PM
5	ICSAB3	ICSAB	1	02/27/2018	06:11:01 PM
118	LCS1-66928	LCS	1	02/27/2018	06:16:36 PM
119	N028744-003B	SAMP	1	02/27/2018	06:21:29 PM
120	N028744-003B	SAMP	5	02/27/2018	06:26:53 PM
121	N028744-003B-PS	PS	1	02/27/2018	06:32:47 PM
122	N028744-003B-MS1	MS	1	02/27/2018	06:38:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
123	N028744-003B-MSD1	MSD	1	02/27/2018	06:43:41 PM
124	N028744-004B	SAMP	1	02/27/2018	06:49:07 PM
125	N028744-005B	SAMP	1	02/27/2018	06:57:52 PM
126	N028775-001B	SAMP	1	02/27/2018	07:03:48 PM
127	N028775-002B	SAMP	1	02/27/2018	07:09:41 PM
7	CCV9	CCV	1	02/27/2018	07:15:35 PM
1	CCB9	CCB	1	02/27/2018	07:19:59 PM
128	N028775-003B	SAMP	1	02/27/2018	07:24:48 PM
129	N028744-005B	SAMP	5	02/27/2018	07:30:41 PM
7	CCV10	CCV	1	02/27/2018	07:36:34 PM
1	CCB10	CCB	1	02/27/2018	07:40:57 PM
2	LLCCV3	CCV2	1	02/27/2018	07:45:48 PM
4	ICSA4	ICSA	1	02/27/2018	07:50:36 PM
5	ICSAB4	ICSAB	1	02/27/2018	07:56:39 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 8:25:33**
Prep End Date: **2/26/2018 1:00:00**
Prep Batch **66927** Prep Code: **3010_W_DISS**

Reviewed/ Date: Mary 3/7/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-41**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66927	Aqueous		25	☐	0	0	25	1.000		
MB-66927	Aqueous		25	☐	0	0	25	1.000		
N028745-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-010B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9616	HYDROCHLORIC ACID
9767	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 8:25:33**
Prep End Date: **2/26/2018 1:00:00**
Reviewed/ Date: 3/7/2018
Initials/ Date: for
Prep Batch **66927** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-41**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028745-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9616	HYDROCHLORIC ACID
9767	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/27/2018	08:57:36 AM	Fe	273.953	-80	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Fe	273.953	597	0.0200	mg/L	
Standard2	02/27/2018	09:06:43 AM	Fe	273.953	2118	0.050	mg/L	
Standard3	02/27/2018	09:11:33 AM	Fe	273.953	65679	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Fe	273.953	173274	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Fe	273.953	259204	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Fe	273.953	329436	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Fe	273.953	654360	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9971.133	20	10000	0	99.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.964	20	20.00	0	94.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9936.606	20	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9928.011	20	10000	0	99.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9940.119	20	10000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9918.304	20	10000	0	99.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.135	20	20.00	0	95.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10013.653	20	10000	0	100	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9954.995	20	10000	0	99.5	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9900.900	20	10000	0	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCV**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9867.311	20	10000	0	98.7	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ZZZZZZ**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.571	20	20.00	0	92.9	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.696386	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.447249	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.680748	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.479551	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.538583	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.964491	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.596397	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.505015	20									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **CCB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.163844	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSA** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457594.887	50	500000	0	91.5	80	120				
Calcium	462616.028	500	500000	0	92.5	80	120				
Iron	162752.851	20	200000	0	81.4	80	120				
Magnesium	441828.543	100	500000	0	88.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSAB** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519567.949	50	500000	0	104	80	120				
Calcium	523203.344	500	500000	0	105	80	120				
Iron	179011.510	20	200000	0	89.5	80	120				
Magnesium	505392.169	100	500000	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSA** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	458954.094	50	500000	0	91.8	80	120				
Calcium	464043.458	500	500000	0	92.8	80	120				
Iron	162754.153	20	200000	0	81.4	80	120				
Magnesium	441622.966	100	500000	0	88.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **122334**
Client ID: **ICSAB** Batch ID: **R122334** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521810.062	50	500000	0	104	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICSAB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	524936.053	500	500000	0	105	80	120				
Iron	179026.484	20	200000	0	89.5	80	120				
Magnesium	503783.430	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICSA**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	480725.792	50	500000	0	96.1	80	120				
Calcium	493793.882	500	500000	0	98.8	80	120				
Iron	171468.486	20	200000	0	85.7	80	120				
Magnesium	466463.577	100	500000	0	93.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID: **ICSAB**	Batch ID: **R122334**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516193.347	50	500000	0	103	80	120				
Calcium	524006.828	500	500000	0	105	80	120				
Iron	176968.700	20	200000	0	88.5	80	120				
Magnesium	494006.955	100	500000	0	98.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1.046	104.64	65-125	PASS
Standard3	ICAL	1	1.012	101.25	65-125	PASS
Standard4	ICAL	1	1.0039	100.39	65-125	PASS
Standard5	ICAL	1	1.054	105.45	65-125	PASS
Standard6	ICAL	1	0.98	97.97	65-125	PASS
Standard7	ICAL	1	0.96	95.72	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	1	99.66	65-125	PASS
LLICV	CCV1	1	1	99.72	65-125	PASS
ICSA1	ICSA	1	1.14	113.65	65-125	PASS
ICSAB1	ICSAB	1	0.91	90.94	65-125	PASS
MB-66900	MBLK	1	1	99.52	65-125	PASS
LCS-66900	LCS	1	0.92	92.14	65-125	PASS
N028727-002B	SAMP	1	1.0076	100.76	65-125	PASS
N028727-002B	SAMP	5	1	99.51	65-125	PASS
N028727-002B-PS	PS	1	1.0043	100.43	65-125	PASS
N028727-002B-MS	MS	1	0.99	98.95	65-125	PASS
N028727-002B-MSD	MSD	1	0.99	98.82	65-125	PASS
N028727-003B	SAMP	1	0.99	98.62	65-125	PASS
N028727-004B	SAMP	1	1.0067	100.67	65-125	PASS
N028727-005B	SAMP	1	1.026	102.58	65-125	PASS
CCV1	CCV	1	0.99	99.22	65-125	PASS
CCB1	CCB	1	1.0052	100.52	65-125	PASS
N028727-006B	SAMP	1	1.028	102.84	65-125	PASS
N028727-007B	SAMP	1	1.026	102.65	65-125	PASS
N028727-008B	SAMP	1	1	99.85	65-125	PASS
N028727-009B	SAMP	1	1.005	100.5	65-125	PASS
N028727-010B	SAMP	1	0.98	98.44	65-125	PASS
N028727-011B	SAMP	1	1.02	102.01	65-125	PASS
N028727-012B	SAMP	1	1	99.97	65-125	PASS
N028727-013B	SAMP	1	0.99	98.97	65-125	PASS
CCV2	CCV	1	0.99	99.42	65-125	PASS
CCB2	CCB	1	1.0041	100.41	65-125	PASS
CCV3	CCV	1	1.0011	100.11	65-125	PASS
CCB3	CCB	1	1.013	101.34	65-125	PASS
MB-66927	MBLK	1	1.015	101.51	65-125	PASS
LCS-66927	LCS	1	0.93	93.22	65-125	PASS
N028745-001B	SAMP	1	1.11	111.11	65-125	PASS
N028745-001B	SAMP	5	1.024	102.41	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV4	CCV	1	1	99.86	65-125	PASS
CCB4	CCB	1	1.016	101.63	65-125	PASS
LLCCV1	CCV2	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.16	115.86	65-125	PASS
ICSAB2	ICSAB	1	0.92	92.44	65-125	PASS
N028745-001B-PS	PS	1	1.029	102.89	65-125	PASS
N028745-001B-MS	MS	1	1.11	111.36	65-125	PASS
N028745-001B-MSD	MSD	1	1.11	111.1	65-125	PASS
N028745-002B	SAMP	1	1.015	101.46	65-125	PASS
N028745-003B	SAMP	1	1.043	104.33	65-125	PASS
N028745-004B	SAMP	1	1.019	101.91	65-125	PASS
N028745-005B	SAMP	1	1.02	101.99	65-125	PASS
N028745-006B	SAMP	1	1.041	104.09	65-125	PASS
N028745-007B	SAMP	1	1	99.74	65-125	PASS
N028745-008B	SAMP	1	1	99.86	65-125	PASS
CCV5	CCV	1	1.0057	100.57	65-125	PASS
CCB5	CCB	1	1.018	101.79	65-125	PASS
N028745-009B	SAMP	1	0.99	98.73	65-125	PASS
N028745-010B	SAMP	1	1.016	101.65	65-125	PASS
N028745-011B	SAMP	1	1.015	101.52	65-125	PASS
N028745-012B	SAMP	1	1.0047	100.47	65-125	PASS
N028745-014B	SAMP	1	1	99.96	65-125	PASS
N028745-015B	SAMP	1	1.027	102.74	65-125	PASS
CCV6	CCV	1	1.0016	100.16	65-125	PASS
CCB6	CCB	1	1.021	102.06	65-125	PASS
CCV7	CCV	1	1.012	101.23	65-125	PASS
CCB7	CCB	1	1.028	102.75	65-125	PASS
N028727-006B	SAMP	1	0.99	98.99	65-125	PASS
N028745-002B	SAMP	1	0.96	96	65-125	PASS
N028745-012B	SAMP	1	1.0051	100.51	65-125	PASS
CCV8	CCV	1	1.002	100.2	65-125	PASS
CCB8	CCB	1	1.02	101.96	65-125	PASS
LLCCV2	CCV2	1	1.015	101.5	65-125	PASS
ICSA3	ICSA	1	0.95	95.32	65-125	PASS
ICSAB3	ICSAB	1	0.89	88.66	65-125	PASS
CCV9	CCV	1	1	99.78	65-125	PASS
CCB9	CCB	1	1.0016	100.16	65-125	PASS
CCV10	CCV	1	1	99.95	65-125	PASS
CCB10	CCB	1	1.0006	100.06	65-125	PASS
LLCCV3	CCV2	1	1.016	101.59	65-125	PASS
ICSA4	ICSA	1	0.95	95.044	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB4	ICSAB	1	0.89	88.55	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028745
Test Method: EPA 6010B
Analysis Date: 2/27/2018

Matrix: Groundwater
Batch No.: 66927

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028745-001B	Iron	ug/L	0	NA	28.44332	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N028745-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **122334**
Client ID:	**ZZZZZZ**	Batch ID: **66927**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	131.596	20	100.0	28.44	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66926
ASSET #: N028745

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18
2nd Level Reviewer 3/7/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028745-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.03323 * 1 * (25/25) * 1000

Iron , ug/L = 33.23

Reporting results in two significant figures,

Iron , ug/L = 33

% RSD SUMMARY

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	40.14	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.37	15	PASS
Standard2	ICAL	1	Fe	0.05	0.73	15	PASS
Standard3	ICAL	1	Fe	2	0.74	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	0.063	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	9.97	0.13	15	PASS
ICB	ICB	1	Fe	-0.0007	38.13	15	<PQL
LLICV	CCV1	1	Fe	0.019	1.31	20	PASS
ICSA1	ICSA	1	Fe	162.75	0.094	15	PASS
ICSAB1	ICSAB	1	Fe	179.01	0.49	15	PASS
CCV1	CCV	1	Fe	9.94	0.064	15	PASS
CCB1	CCB	1	Fe	-0.00045	67.51	15	<PQL
MB-66899	MBLK	1	Fe	-0.002	19.88	15	<PQL
LCS-66899	LCS	1	Fe	0.1	0.26	15	PASS
CCV2	CCV	1	Fe	9.93	0.1	15	PASS
CCB2	CCB	1	Fe	-0.00068	6.13	15	PASS
N028727-002C	SAMP	1	Fe	0.038	1.069	15	PASS
N028727-002C	SAMP	5	Fe	0.0065	3.54	15	PASS
N028727-002C-PS	PS	1	Fe	0.18	0.4	15	PASS
N028727-002C-MS	MS	1	Fe	0.13	0.56	15	PASS
N028727-002C-MSD	MSD	1	Fe	0.13	0.37	15	PASS
N028727-003C	SAMP	1	Fe	0.029	0.82	15	PASS
N028727-004C	SAMP	1	Fe	0.037	0.88	15	PASS
N028727-005C	SAMP	1	Fe	0.055	0.7	15	PASS
N028727-006C	SAMP	1	Fe	0.051	0.35	15	PASS
N028727-007C	SAMP	1	Fe	0.043	2.1	15	PASS
CCV3	CCV	1	Fe	9.94	0.044	15	PASS
CCB3	CCB	1	Fe	-0.00048	181.19	15	<PQL
N028727-008C	SAMP	1	Fe	0.05	1.25	15	PASS
N028727-009C	SAMP	1	Fe	0.083	0.37	15	PASS
N028727-010C	SAMP	1	Fe	0.043	0.52	15	PASS
N028727-011C	SAMP	1	Fe	0.058	0.77	15	PASS
N028727-012C	SAMP	1	Fe	0.036	1.6	15	PASS
N028727-013C	SAMP	1	Fe	0.064	0.72	15	PASS
CCV4	CCV	1	Fe	9.92	0.059	15	PASS
CCB4	CCB	1	Fe	-0.00054	38.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.78	20	PASS
ICSA2	ICSA	1	Fe	162.75	0.38	15	PASS
ICSAB2	ICSAB	1	Fe	179.03	0.11	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.014	0.083	15	PASS
CCB5	CCB	1	Fe	-0.00096	22.91	15	<PQL
MB-66926	MBLK	1	Fe	-0.0018	10.75	15	PASS
LCS-66926	LCS	1	Fe	0.1	0.48	15	PASS
N028745-001C	SAMP	1	Fe	0.033	1.08	15	PASS
N028745-001C	SAMP	5	Fe	0.0046	10.78	15	PASS
CCV6	CCV	1	Fe	9.96	0.088	15	PASS
CCB6	CCB	1	Fe	-0.0006	41.015	15	<PQL
N028745-001C-PS	PS	1	Fe	0.13	0.71	15	PASS
N028745-001C-MS	MS	1	Fe	0.14	0.07	15	PASS
N028745-001C-MSD	MSD	1	Fe	0.14	0.49	15	PASS
N028745-002C	SAMP	1	Fe	0.041	1.41	15	PASS
N028745-003C	SAMP	1	Fe	0.045	1.43	15	PASS
N028745-004C	SAMP	1	Fe	0.023	0.63	15	PASS
N028745-005C	SAMP	1	Fe	0.041	1.52	15	PASS
N028745-006C	SAMP	1	Fe	0.024	0.95	15	PASS
N028745-007C	SAMP	1	Fe	0.02	0.73	15	PASS
N028745-008C	SAMP	1	Fe	0.026	2.1	15	PASS
CCV7	CCV	1	Fe	9.9	0.049	15	PASS
CCB7	CCB	1	Fe	-0.00051	30.17	15	<PQL
N028745-009C	SAMP	1	Fe	0.023	1.59	15	PASS
N028745-010C	SAMP	1	Fe	0.024	3.21	15	PASS
N028745-011C	SAMP	1	Fe	0.048	1.77	15	PASS
N028745-012C	SAMP	1	Fe	0.02	2.24	15	PASS
N028745-014C	SAMP	1	Fe	0.019	2.93	15	PASS
N028745-015C	SAMP	1	Fe	0.027	1.23	15	PASS
N028727-006B	SAMP	1	Fe	-0.0026	35.014	15	<PQL
N028745-002B	SAMP	1	Fe	0.0088	8.17	15	PASS
N028745-012B	SAMP	1	Fe	-0.00065	63.54	15	<PQL
CCV8	CCV	1	Fe	9.87	0.088	15	PASS
CCB8	CCB	1	Fe	-0.00016	387.45	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.26	20	PASS
ICSA3	ICSA	1	Fe	171.47	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	176.97	0.36	15	PASS
CCV9	CCV	1	Fe	9.83	0.16	15	PASS
CCB9	CCB	1	Fe	-0.001	64.011	15	<PQL
CCV10	CCV	1	Fe	9.92	0.078	15	PASS
CCB10	CCB	1	Fe	-0.0013	16.69	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.58	20	PASS
ICSA4	ICSA	1	Fe	172.57	0.3	15	PASS
ICSAB4	ICSAB	1	Fe	177.77	0.14	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/27/2018	08:57:36 AM
2	Standard1	ICAL	1	02/27/2018	09:02:24 AM
3	Standard2	ICAL	1	02/27/2018	09:06:43 AM
11	Standard3	ICAL	1	02/27/2018	09:11:33 AM
12	Standard4	ICAL	1	02/27/2018	09:16:25 AM
6	Standard5	ICAL	1	02/27/2018	09:21:18 AM
7	Standard6	ICAL	1	02/27/2018	09:26:07 AM
8	Standard7	ICAL	1	02/27/2018	09:30:30 AM
9	ICV	ICV	1	02/27/2018	09:34:02 AM
1	ICB	ICB	1	02/27/2018	09:38:27 AM
2	LLICV	CCV1	1	02/27/2018	09:42:46 AM
4	ICSA1	ICSA	1	02/27/2018	09:47:35 AM
5	ICSAB1	ICSAB	1	02/27/2018	09:53:39 AM
38	MB-66900	MBLK	1	02/27/2018	09:59:14 AM
39	LCS-66900	LCS	1	02/27/2018	10:04:04 AM
40	N028727-002B	SAMP	1	02/27/2018	10:08:55 AM
41	N028727-002B	SAMP	5	02/27/2018	10:13:45 AM
42	N028727-002B-PS	PS	1	02/27/2018	10:18:35 AM
43	N028727-002B-MS	MS	1	02/27/2018	10:23:26 AM
44	N028727-002B-MSD	MSD	1	02/27/2018	10:28:17 AM
45	N028727-003B	SAMP	1	02/27/2018	10:33:06 AM
46	N028727-004B	SAMP	1	02/27/2018	10:37:57 AM
47	N028727-005B	SAMP	1	02/27/2018	10:42:48 AM
7	CCV1	CCV	1	02/27/2018	10:47:39 AM
1	CCB1	CCB	1	02/27/2018	10:52:02 AM
48	N028727-006B	SAMP	1	02/27/2018	10:56:50 AM
49	N028727-007B	SAMP	1	02/27/2018	11:01:42 AM
50	N028727-008B	SAMP	1	02/27/2018	11:06:34 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N028727-009B	SAMP	1	02/27/2018	11:11:26 AM
52	N028727-010B	SAMP	1	02/27/2018	11:16:16 AM
53	N028727-011B	SAMP	1	02/27/2018	11:21:08 AM
54	N028727-012B	SAMP	1	02/27/2018	11:26:00 AM
55	N028727-013B	SAMP	1	02/27/2018	11:30:51 AM
56	MB-66899	MBLK	1	02/27/2018	11:35:41 AM
57	LCS-66899	LCS	1	02/27/2018	11:40:32 AM
7	CCV2	CCV	1	02/27/2018	11:45:23 AM
1	CCB2	CCB	1	02/27/2018	11:49:46 AM
58	N028727-002C	SAMP	1	02/27/2018	11:54:35 AM
59	N028727-002C	SAMP	5	02/27/2018	11:59:26 AM
60	N028727-002C-PS	PS	1	02/27/2018	12:04:17 PM
61	N028727-002C-MS	MS	1	02/27/2018	12:09:09 PM
62	N028727-002C-MSD	MSD	1	02/27/2018	12:14:02 PM
63	N028727-003C	SAMP	1	02/27/2018	12:18:54 PM
64	N028727-004C	SAMP	1	02/27/2018	12:23:46 PM
65	N028727-005C	SAMP	1	02/27/2018	12:28:38 PM
66	N028727-006C	SAMP	1	02/27/2018	12:33:30 PM
67	N028727-007C	SAMP	1	02/27/2018	12:38:22 PM
7	CCV3	CCV	1	02/27/2018	12:43:13 PM
1	CCB3	CCB	1	02/27/2018	12:47:36 PM
68	N028727-008C	SAMP	1	02/27/2018	12:52:25 PM
69	N028727-009C	SAMP	1	02/27/2018	12:57:17 PM
70	N028727-010C	SAMP	1	02/27/2018	01:02:07 PM
71	N028727-011C	SAMP	1	02/27/2018	01:06:58 PM
72	N028727-012C	SAMP	1	02/27/2018	01:11:48 PM
73	N028727-013C	SAMP	1	02/27/2018	01:16:40 PM
74	MB-66927	MBLK	1	02/27/2018	01:21:33 PM
75	LCS-66927	LCS	1	02/27/2018	01:26:24 PM
76	N028745-001B	SAMP	1	02/27/2018	01:31:15 PM
77	N028745-001B	SAMP	5	02/27/2018	01:36:06 PM
7	CCV4	CCV	1	02/27/2018	01:40:58 PM
1	CCB4	CCB	1	02/27/2018	01:45:21 PM
2	LLCCV1	CCV2	1	02/27/2018	01:50:10 PM
4	ICSA2	ICSA	1	02/27/2018	01:54:59 PM
5	ICSAB2	ICSAB	1	02/27/2018	02:01:03 PM
78	N028745-001B-PS	PS	1	02/27/2018	02:06:39 PM
79	N028745-001B-MS	MS	1	02/27/2018	02:11:30 PM
80	N028745-001B-MSD	MSD	1	02/27/2018	02:16:22 PM
81	N028745-002B	SAMP	1	02/27/2018	02:21:14 PM
82	N028745-003B	SAMP	1	02/27/2018	02:26:06 PM
83	N028745-004B	SAMP	1	02/27/2018	02:30:59 PM
84	N028745-005B	SAMP	1	02/27/2018	02:35:51 PM
85	N028745-006B	SAMP	1	02/27/2018	02:40:43 PM
86	N028745-007B	SAMP	1	02/27/2018	02:45:35 PM
87	N028745-008B	SAMP	1	02/27/2018	02:50:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/27/2018	02:55:19 PM
1	CCB5	CCB	1	02/27/2018	03:00:43 PM
88	N028745-009B	SAMP	1	02/27/2018	03:05:32 PM
89	N028745-010B	SAMP	1	02/27/2018	03:10:24 PM
90	N028745-011B	SAMP	1	02/27/2018	03:15:16 PM
91	N028745-012B	SAMP	1	02/27/2018	03:20:09 PM
92	N028745-014B	SAMP	1	02/27/2018	03:25:01 PM
93	N028745-015B	SAMP	1	02/27/2018	03:29:53 PM
94	MB-66926	MBLK	1	02/27/2018	03:34:45 PM
95	LCS-66926	LCS	1	02/27/2018	03:39:37 PM
96	N028745-001C	SAMP	1	02/27/2018	03:44:29 PM
97	N028745-001C	SAMP	5	02/27/2018	03:49:22 PM
7	CCV6	CCV	1	02/27/2018	03:54:13 PM
1	CCB6	CCB	1	02/27/2018	03:58:36 PM
98	N028745-001C-PS	PS	1	02/27/2018	04:03:24 PM
99	N028745-001C-MS	MS	1	02/27/2018	04:08:17 PM
100	N028745-001C-MSD	MSD	1	02/27/2018	04:13:11 PM
101	N028745-002C	SAMP	1	02/27/2018	04:18:04 PM
102	N028745-003C	SAMP	1	02/27/2018	04:22:57 PM
103	N028745-004C	SAMP	1	02/27/2018	04:27:48 PM
104	N028745-005C	SAMP	1	02/27/2018	04:32:41 PM
105	N028745-006C	SAMP	1	02/27/2018	04:37:34 PM
106	N028745-007C	SAMP	1	02/27/2018	04:42:25 PM
107	N028745-008C	SAMP	1	02/27/2018	04:47:17 PM
7	CCV7	CCV	1	02/27/2018	04:52:11 PM
1	CCB7	CCB	1	02/27/2018	04:56:34 PM
108	N028745-009C	SAMP	1	02/27/2018	05:01:23 PM
109	N028745-010C	SAMP	1	02/27/2018	05:06:15 PM
110	N028745-011C	SAMP	1	02/27/2018	05:11:09 PM
111	N028745-012C	SAMP	1	02/27/2018	05:16:02 PM
112	N028745-014C	SAMP	1	02/27/2018	05:20:54 PM
113	N028745-015C	SAMP	1	02/27/2018	05:25:48 PM
114	N028727-006B	SAMP	1	02/27/2018	05:30:40 PM
115	N028745-002B	SAMP	1	02/27/2018	05:35:34 PM
116	N028745-012B	SAMP	1	02/27/2018	05:41:13 PM
117	MB-66928	MBLK	1	02/27/2018	05:46:04 PM
7	CCV8	CCV	1	02/27/2018	05:50:56 PM
1	CCB8	CCB	1	02/27/2018	05:55:19 PM
2	LLCCV2	CCV2	1	02/27/2018	06:00:08 PM
4	ICSA3	ICSA	1	02/27/2018	06:04:58 PM
5	ICSAB3	ICSAB	1	02/27/2018	06:11:01 PM
118	LCS1-66928	LCS	1	02/27/2018	06:16:36 PM
119	N028744-003B	SAMP	1	02/27/2018	06:21:29 PM
120	N028744-003B	SAMP	5	02/27/2018	06:26:53 PM
121	N028744-003B-PS	PS	1	02/27/2018	06:32:47 PM
122	N028744-003B-MS1	MS	1	02/27/2018	06:38:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
123	N028744-003B-MSD1	MSD	1	02/27/2018	06:43:41 PM
124	N028744-004B	SAMP	1	02/27/2018	06:49:07 PM
125	N028744-005B	SAMP	1	02/27/2018	06:57:52 PM
126	N028775-001B	SAMP	1	02/27/2018	07:03:48 PM
127	N028775-002B	SAMP	1	02/27/2018	07:09:41 PM
7	CCV9	CCV	1	02/27/2018	07:15:35 PM
1	CCB9	CCB	1	02/27/2018	07:19:59 PM
128	N028775-003B	SAMP	1	02/27/2018	07:24:48 PM
129	N028744-005B	SAMP	5	02/27/2018	07:30:41 PM
7	CCV10	CCV	1	02/27/2018	07:36:34 PM
1	CCB10	CCB	1	02/27/2018	07:40:57 PM
2	LLCCV3	CCV2	1	02/27/2018	07:45:48 PM
4	ICSA4	ICSA	1	02/27/2018	07:50:36 PM
5	ICSAB4	ICSAB	1	02/27/2018	07:56:39 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 8:23:09**
Prep End Date: **2/26/2018 1:00:00**
Prep Batch **66926** Prep Code: **3010_W**

Reviewed/ Date: 3/7/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-40**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66926	Aqueous		25	☐	0	0	25	1.000		
MB-66926	Aqueous		25	☐	0	0	25	1.000		
N028745-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-010C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9616	HYDROCHLORIC ACID
9767	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 8:23:09**
Prep End Date: **2/26/2018 1:00:00**
Prep Batch **66926** Prep Code: **3010_W**

Reviewed/ Date: 3/7/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-40**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028745-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-014C	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-015C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9616	HYDROCHLORIC ACID
9767	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	02/27/2018	08:57:36 AM	Fe	273.953	-80	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Fe	273.953	597	0.0200	mg/L	
Standard2	02/27/2018	09:06:43 AM	Fe	273.953	2118	0.050	mg/L	
Standard3	02/27/2018	09:11:33 AM	Fe	273.953	65679	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Fe	273.953	173274	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Fe	273.953	259204	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Fe	273.953	329436	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Fe	273.953	654360	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9971.133	20	10000	0	99.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ZZZZZZ**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.964	20	20.00	0	94.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9936.606	20	10000	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9928.011	20	10000	0	99.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9940.119	20	10000	0	99.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9918.304	20	10000	0	99.2	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ZZZZZZ**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.135	20	20.00	0	95.7	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10013.653	20	10000	0	100	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9954.995	20	10000	0	99.5	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9900.900	20	10000	0	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCV**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9867.311	20	10000	0	98.7	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ZZZZZZ**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.571	20	20.00	0	92.9	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.696386	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.447249	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.680748	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.479551	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.538583	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.964491	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.596397	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.505015	20									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **CCB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.163844	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSA** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457594.887	50	500000	0	91.5	80	120				
Calcium	462616.028	500	500000	0	92.5	80	120				
Iron	162752.851	20	200000	0	81.4	80	120				
Magnesium	441828.543	100	500000	0	88.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSAB** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519567.949	50	500000	0	104	80	120				
Calcium	523203.344	500	500000	0	105	80	120				
Iron	179011.510	20	200000	0	89.5	80	120				
Magnesium	505392.169	100	500000	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSA** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	458954.094	50	500000	0	91.8	80	120				
Calcium	464043.458	500	500000	0	92.8	80	120				
Iron	162754.153	20	200000	0	81.4	80	120				
Magnesium	441622.966	100	500000	0	88.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **122332**
Client ID: **ICSAB** Batch ID: **R122332** TestNo: **EPA 6010B** Analysis Date: **2/27/2018** SeqNo: **2942491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521810.062	50	500000	0	104	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICSAB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	524936.053	500	500000	0	105	80	120				
Iron	179026.484	20	200000	0	89.5	80	120				
Magnesium	503783.430	100	500000	0	101	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICSA**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	480725.792	50	500000	0	96.1	80	120				
Calcium	493793.882	500	500000	0	98.8	80	120				
Iron	171468.486	20	200000	0	85.7	80	120				
Magnesium	466463.577	100	500000	0	93.3	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID: **ICSAB**	Batch ID: **R122332**	TestNo: **EPA 6010B**		Analysis Date: **2/27/2018**	SeqNo: **2942542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516193.347	50	500000	0	103	80	120				
Calcium	524006.828	500	500000	0	105	80	120				
Iron	176968.700	20	200000	0	88.5	80	120				
Magnesium	494006.955	100	500000	0	98.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1.046	104.64	65-125	PASS
Standard3	ICAL	1	1.012	101.25	65-125	PASS
Standard4	ICAL	1	1.0039	100.39	65-125	PASS
Standard5	ICAL	1	1.054	105.45	65-125	PASS
Standard6	ICAL	1	0.98	97.97	65-125	PASS
Standard7	ICAL	1	0.96	95.72	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	1	99.66	65-125	PASS
LLICV	CCV1	1	1	99.72	65-125	PASS
ICSA1	ICSA	1	1.14	113.65	65-125	PASS
ICSAB1	ICSAB	1	0.91	90.94	65-125	PASS
CCV1	CCV	1	0.99	99.22	65-125	PASS
CCB1	CCB	1	1.0052	100.52	65-125	PASS
MB-66899	MBLK	1	1.0083	100.83	65-125	PASS
LCS-66899	LCS	1	0.93	93	65-125	PASS
CCV2	CCV	1	0.99	99.42	65-125	PASS
CCB2	CCB	1	1.0041	100.41	65-125	PASS
N028727-002C	SAMP	1	1.018	101.78	65-125	PASS
N028727-002C	SAMP	5	1.001	100.1	65-125	PASS
N028727-002C-PS	PS	1	0.99	98.82	65-125	PASS
N028727-002C-MS	MS	1	1.0055	100.55	65-125	PASS
N028727-002C-MSD	MSD	1	1.0024	100.24	65-125	PASS
N028727-003C	SAMP	1	1.0064	100.64	65-125	PASS
N028727-004C	SAMP	1	1.012	101.18	65-125	PASS
N028727-005C	SAMP	1	1	99.83	65-125	PASS
N028727-006C	SAMP	1	0.97	97.14	65-125	PASS
N028727-007C	SAMP	1	0.99	98.85	65-125	PASS
CCV3	CCV	1	1.0011	100.11	65-125	PASS
CCB3	CCB	1	1.013	101.34	65-125	PASS
N028727-008C	SAMP	1	1.022	102.15	65-125	PASS
N028727-009C	SAMP	1	1	99.73	65-125	PASS
N028727-010C	SAMP	1	1.0067	100.67	65-125	PASS
N028727-011C	SAMP	1	1.01	101.05	65-125	PASS
N028727-012C	SAMP	1	1.014	101.39	65-125	PASS
N028727-013C	SAMP	1	1.0083	100.83	65-125	PASS
CCV4	CCV	1	1	99.86	65-125	PASS
CCB4	CCB	1	1.016	101.63	65-125	PASS
LLCCV1	CCV2	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.16	115.86	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB2	ICSAB	1	0.92	92.44	65-125	PASS
CCV5	CCV	1	1.0057	100.57	65-125	PASS
CCB5	CCB	1	1.018	101.79	65-125	PASS
MB-66926	MBLK	1	1.025	102.46	65-125	PASS
LCS-66926	LCS	1	0.94	94.091	65-125	PASS
N028745-001C	SAMP	1	1.0057	100.57	65-125	PASS
N028745-001C	SAMP	5	1.011	101.06	65-125	PASS
CCV6	CCV	1	1.0016	100.16	65-125	PASS
CCB6	CCB	1	1.021	102.06	65-125	PASS
N028745-001C-PS	PS	1	1.0042	100.42	65-125	PASS
N028745-001C-MS	MS	1	1.0069	100.69	65-125	PASS
N028745-001C-MSD	MSD	1	1.0042	100.42	65-125	PASS
N028745-002C	SAMP	1	1.011	101.1	65-125	PASS
N028745-003C	SAMP	1	1.043	104.27	65-125	PASS
N028745-004C	SAMP	1	1.029	102.92	65-125	PASS
N028745-005C	SAMP	1	1.042	104.19	65-125	PASS
N028745-006C	SAMP	1	1.017	101.72	65-125	PASS
N028745-007C	SAMP	1	1.028	102.82	65-125	PASS
N028745-008C	SAMP	1	0.96	95.99	65-125	PASS
CCV7	CCV	1	1.012	101.23	65-125	PASS
CCB7	CCB	1	1.028	102.75	65-125	PASS
N028745-009C	SAMP	1	0.97	97.29	65-125	PASS
N028745-010C	SAMP	1	0.97	96.67	65-125	PASS
N028745-011C	SAMP	1	0.97	96.76	65-125	PASS
N028745-012C	SAMP	1	0.95	94.55	65-125	PASS
N028745-014C	SAMP	1	0.98	97.86	65-125	PASS
N028745-015C	SAMP	1	0.96	95.58	65-125	PASS
N028727-006B	SAMP	1	0.99	98.99	65-125	PASS
N028745-002B	SAMP	1	0.96	96	65-125	PASS
N028745-012B	SAMP	1	1.0051	100.51	65-125	PASS
CCV8	CCV	1	1.002	100.2	65-125	PASS
CCB8	CCB	1	1.02	101.96	65-125	PASS
LLCCV2	CCV2	1	1.015	101.5	65-125	PASS
ICSA3	ICSA	1	0.95	95.32	65-125	PASS
ICSAB3	ICSAB	1	0.89	88.66	65-125	PASS
CCV9	CCV	1	1	99.78	65-125	PASS
CCB9	CCB	1	1.0016	100.16	65-125	PASS
CCV10	CCV	1	1	99.95	65-125	PASS
CCB10	CCB	1	1.0006	100.06	65-125	PASS
LLCCV3	CCV2	1	1.016	101.59	65-125	PASS
ICSA4	ICSA	1	0.95	95.044	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB4	ICSAB	1	0.89	88.55	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028745
Test Method: EPA 6010B
Analysis Date: 2/27/2018

Matrix: Groundwater
Batch No.: 66926

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028745-001C DT 5X	Iron	ug/L	0	NA	33.22748	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N028745-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **122332**
Client ID:	**ZZZZZZ**	Batch ID: **66926**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2942516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	128.149	20	100.0	33.23	94.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66914
ASSET #: N028745

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?		X			X	
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Se CCV9 failed, bias low. However, samples affected are closed by CCV-6.
%Rec of Cr in N028744-001B PS/MS/MSD failed. However, LCS and DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18

2nd Level Reviewer [signature] 3/7/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028745-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 0.32217 * 1 * (25/25)

Chromium , ug/L = 0.32217

Reporting results in two significant figures,

Chromium , ug/L = 0.3

Since PQL of Chromium , in ug/L = 1.0

Chromium , ug/L = ND

% RSD SUMMARY

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	5.12	15	PASS	0.12	11.53	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	2.22	15	PASS	0.54	8.53	15	PASS
Std3-5/50 ppb	ICAL	1	5.097	0.38	15	PASS	5.23	1.053	15	PASS
Std4-10/100 ppb	ICAL	1	10.082	1.015	15	PASS	10.49	1.96	15	PASS
Std5-20/200 ppb	ICAL	1	19.99	0.9	15	PASS	20.53	1.81	15	PASS
Std6-40/400 ppb	ICAL	1	40	0.47	15	PASS	40.95	2.47	15	PASS
Std7-100/1000 ppb	ICAL	1	98.27	0.021	15	PASS	100.58	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	200.86	0.6	15	PASS	199.44	1.29	15	PASS
ICV	ICV	1	10.16	0.41	15	PASS	104.57	0.95	15	PASS
ICB	ICB	1	0.002	10.77	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.08	0.85	20	PASS	0.6	4.38	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.65	0.5	15	PASS	22.75	1.42	15	PASS
LLICV	CCV1	1	1.094	3.52	20	PASS	0.57	7.89	20	PASS
MB-66914	MBLK	1	0.0033	124.93	15	<PQL	<0.000	N/A	15	<PQL
LCS-66914	LCS	1	10.24	0.87	15	PASS	103.94	1.36	15	PASS
N028744-001B	SAMP	1	31.18	0.59	15	PASS	6.3	1.94	15	PASS
N028744-001B	SAMP	5	6.64	0.43	15	PASS	1.4	4.13	15	PASS
N028744-001B	SAMP	25	<0.000	N/A	15	<PQL	0.29	9.98	15	PASS
N028744-001B-PS	PS	1	40.13	0.91	15	PASS	100.17	0.78	15	PASS
N028744-001B-PS	PS	5	8.71	0.7	15	PASS	22.051	0.3	15	PASS
N028744-001B-MS	MS	1	40.83	0.58	15	PASS	98.19	1.58	15	PASS
N028744-001B-MS	MS	5	8.77	0.92	15	PASS	21.69	2.13	15	PASS
N028744-001B-MSD	MSD	1	41.2	0.63	15	PASS	98.37	0.94	15	PASS
CCV1	CCV	1	20.64	0.29	15	PASS	20.64	0.66	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.00011	2757.76	15	<PQL
N028744-001B-MSD	MSD	5	8.82	1.8	15	PASS	21.92	1.41	15	PASS
N028744-002B	SAMP	1	39.96	0.18	15	PASS	47.93	0.91	15	PASS
N028744-002B	SAMP	5	5.44	2	15	PASS	10.61	2.099	15	PASS
N028744-003B	SAMP	1	27.76	0.42	15	PASS	1.013	8.23	15	PASS
N028744-003B	SAMP	5	2.87	1.15	15	PASS	0.27	23.51	15	<PQL
N028744-003B	SAMP	25	0.58	3.17	15	PASS	0.044	55.87	15	<PQL
N028744-004B	SAMP	1	65.2	0.77	15	PASS	21.53	0.46	15	PASS
N028744-004B	SAMP	5	13.57	0.42	15	PASS	4.47	1.44	15	PASS
N028744-005B	SAMP	1	41.95	0.093	15	PASS	23.58	0.18	15	PASS
N028744-005B	SAMP	5	8.88	0.26	15	PASS	5.17	2.48	15	PASS
CCV2	CCV	1	21.19	0.23	15	PASS	20.17	0.42	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0023	100.12	15	<PQL
N028744-006B	SAMP	1	28.059	0.23	15	PASS	3.27	2.19	15	PASS
N028744-006B	SAMP	5	2.79	3.1	15	PASS	0.74	6.31	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	119.48	1.12	15	PASS	0.33	26.08	15	<PQL
N028745-001B	SAMP	5	24.95	0.6	15	PASS	0.13	18.96	15	<PQL
N028745-002B	SAMP	1	115.31	0.75	15	PASS	0.76	11.82	15	PASS
N028745-002B	SAMP	5	24.27	0.83	15	PASS	0.16	7.54	15	PASS
N028745-003B	SAMP	1	118.82	0.46	15	PASS	<0.000	N/A	15	<PQL
N028745-003B	SAMP	5	25.019	0.2	15	PASS	<0.000	N/A	15	<PQL
N028745-004B	SAMP	1	115.62	0.33	15	PASS	3.32	1.84	15	PASS
N028745-004B	SAMP	5	24.42	0.46	15	PASS	0.7	4.17	15	PASS
CCV3	CCV	1	21.25	0.69	15	PASS	20.63	1.85	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0041	74.06	15	<PQL
N028745-005B	SAMP	1	117.44	0.17	15	PASS	0.31	22.65	15	<PQL
N028745-005B	SAMP	5	24.45	0.25	15	PASS	0.058	6.43	15	PASS
N028745-006B	SAMP	1	119.88	0.4	15	PASS	<0.000	N/A	15	<PQL
N028745-006B	SAMP	5	24.82	0.32	15	PASS	<0.000	N/A	15	<PQL
N028745-007B	SAMP	1	114.054	0.45	15	PASS	<0.000	N/A	15	<PQL
N028745-007B	SAMP	5	23.62	0.39	15	PASS	<0.000	N/A	15	<PQL
N028745-008B	SAMP	1	115	0.46	15	PASS	0.17	55.12	15	<PQL
N028745-008B	SAMP	5	23.54	0.4	15	PASS	0.031	33.11	15	<PQL
N028745-009B	SAMP	1	116.58	0.37	15	PASS	0.28	15.019	15	<PQL
N028745-009B	SAMP	5	24.28	0.9	15	PASS	0.095	15.19	15	<PQL
CCV4	CCV	1	20.89	0.15	15	PASS	20.71	0.75	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028745-010B	SAMP	1	116.31	0.21	15	PASS	<0.000	N/A	15	<PQL
N028745-010B	SAMP	5	24.35	0.37	15	PASS	<0.000	N/A	15	<PQL
N028745-011B	SAMP	1	116.71	0.51	15	PASS	<0.000	N/A	15	<PQL
N028745-011B	SAMP	5	24.085	0.48	15	PASS	<0.000	N/A	15	<PQL
N028745-012B	SAMP	1	113.84	0.4	15	PASS	3.75	5.3	15	PASS
N028745-012B	SAMP	5	23.32	0.93	15	PASS	0.61	6.95	15	PASS
N028745-014B	SAMP	1	114.48	0.48	15	PASS	5.72	1.32	15	PASS
N028745-014B	SAMP	5	23.49	0.67	15	PASS	1.23	4.3	15	PASS
N028745-015B	SAMP	1	118.89	0.4	15	PASS	4.17	2.7	15	PASS
N028745-015B	SAMP	5	23.93	0.3	15	PASS	1.1	32.63	15	NR!
CCV5	CCV	1	20.82	0.56	15	PASS	20.86	1.3	15	PASS
CCB5	CCB	1	0.00068	364.98	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.092	0.11	20	PASS	0.56	3.33	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.72	0.27	15	PASS	22.89	1.074	15	PASS
N028745-005B	SAMP	1	117.73	0.32	15	PASS	0.33	36.81	15	<PQL
N028745-009B	SAMP	1	115.49	0.92	15	PASS	0.23	29.25	15	<PQL
N028745-012B	SAMP	1	113.84	0.77	15	PASS	3.83	3.25	15	PASS
N028745-015B	SAMP	1	118.44	0.34	15	PASS	16.22	55.066	15	NR!

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	0.9	1.66	15	PASS	0.23	5.9	15	PASS
N028744-005B	SAMP	25	<0.000	N/A	15	<PQL	1.14	2.011	15	PASS
N028726-001B-MSD	MSD	5	10.47	0.99	15	PASS	46.56	0.73	15	PASS
N028726-003B	SAMP	5	8.28	1.92	15	PASS	2.2	0.91	15	PASS
N028727-006B	SAMP	1	116.82	0.38	15	PASS	<0.000	N/A	15	<PQL
N028745-015B	SAMP	1	120.74	0.42	15	PASS	4.21	2.52	15	PASS
CCV6	CCV	1	21.25	0.66	15	PASS	20.56	2.65	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028717-001C	SAMP	25	1.99	1.75	15	PASS	2.017	7.22	15	PASS
N028696-001B	SAMP	1	17.25	0.86	15	PASS	120.098	1.39	15	PASS
N028696-001A	SAMP	1	7.32	0.37	15	PASS	5.49	0.54	15	PASS
N028696-005B	SAMP	1	44.88	0.29	15	PASS	58.85	1.67	15	PASS
N028696-005A	SAMP	1	47.17	0.93	15	PASS	61.34	0.9	15	PASS
CCV7	CCV	1	21.35	1.097	15	PASS	20.19	2.44	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	21.014	0.73	15	PASS	20.017	0.57	15	PASS
CCB8	CCB	1	0.0033	110.87	15	<PQL	0.006	134.007	15	<PQL
CCV9	CCV	1	20.83	0.31	15	PASS	20.98	1.36	15	PASS
CCB9	CCB	1	0.01	13.17	15	PASS	0.038	29.42	15	<PQL
CCV10	CCV	1	20.81	1.29	15	PASS	20.93	2.17	15	PASS
CCB10	CCB	1	0.014	16.16	15	<PQL	0.027	51.11	15	<PQL
LLCCV2	CCV2	1	1.13	0.81	20	PASS	0.59	1.29	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.36	0.49	15	PASS	23.61	0.69	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	14.15	15	PASS	0.086	57.34	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.55	2.084	15	PASS	0.53	19.27	15	NR!
Std3-5/50 ppb	ICAL	1	5.31	3.62	15	PASS	5.015	8.17	15	PASS
Std4-10/100 ppb	ICAL	1	10.0062	2.63	15	PASS	9.86	5.61	15	PASS
Std5-20/200 ppb	ICAL	1	19.88	2.3	15	PASS	19.72	2.077	15	PASS
Std6-40/400 ppb	ICAL	1	40.96	0.82	15	PASS	40.13	4.25	15	PASS
Std7-100/1000 ppb	ICAL	1	99.5	0.91	15	PASS	100.19	1.56	15	PASS
Std8-200/2000 ppb	ICAL	1	200.063	0.79	15	PASS	199.91	1.53	15	PASS
ICV	ICV	1	10.17	1.51	15	PASS	10.17	3.49	15	PASS
ICB	ICB	1	0.022	42.45	15	<PQL	0.029	59.41	15	<PQL
LLICV	CCV1	1	0.11	14.76	20	PASS	0.47	20.13	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.012	151.17	15	<PQL
ICSAB1	ICSAB	1	19.17	2.38	15	PASS	17.36	4.053	15	PASS
LLICV	CCV1	1	0.13	7.93	20	PASS	0.5	18.72	20	PASS
MB-66914	MBLK	1	0.0018	326.15	15	<PQL	0.015	159.33	15	<PQL
LCS-66914	LCS	1	10.37	1.57	15	PASS	9.91	2.32	15	PASS
N028744-001B	SAMP	1	2.071	3.13	15	PASS	7.66	4.3	15	PASS
N028744-001B	SAMP	5	0.41	10.61	15	PASS	1.32	1.31	15	PASS
N028744-001B	SAMP	25	0.087	25.27	15	<PQL	0.3	14.97	15	PASS
N028744-001B-PS	PS	1	12.79	0.3	15	PASS	16.99	7.74	15	PASS
N028744-001B-PS	PS	5	2.73	2.84	15	PASS	3.55	3.077	15	PASS
N028744-001B-MS	MS	1	12.92	2.0079	15	PASS	17.088	3.5	15	PASS
N028744-001B-MS	MS	5	2.66	1.7	15	PASS	3.6	3.79	15	PASS
N028744-001B-MSD	MSD	1	12.85	0.81	15	PASS	17.13	3.41	15	PASS
CCV1	CCV	1	20.29	2.048	15	PASS	19.41	2.69	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028744-001B-MSD	MSD	5	2.67	2.19	15	PASS	3.6	9.41	15	PASS
N028744-002B	SAMP	1	0.8	10.48	15	PASS	8.5	6.55	15	PASS
N028744-002B	SAMP	5	0.18	11.44	15	PASS	1.9	20.82	15	NR!
N028744-003B	SAMP	1	2.69	4.5	15	PASS	12.74	3.05	15	PASS
N028744-003B	SAMP	5	0.57	6.61	15	PASS	2.47	25.6	15	NR!
N028744-003B	SAMP	25	0.1	15.088	15	NR!	0.61	16.1	15	NR!
N028744-004B	SAMP	1	0.89	0.16	15	PASS	0.066	34.63	15	<PQL
N028744-004B	SAMP	5	0.19	11.71	15	PASS	0.028	105.61	15	<PQL
N028744-005B	SAMP	1	1.65	3.24	15	PASS	4	6.36	15	PASS
N028744-005B	SAMP	5	0.35	11.066	15	PASS	0.8	7.31	15	PASS
CCV2	CCV	1	20.62	1.63	15	PASS	19.26	3.42	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0047	196.16	15	<PQL
N028744-006B	SAMP	1	2.11	2.88	15	PASS	10.63	4.85	15	PASS
N028744-006B	SAMP	5	0.4	3.79	15	PASS	2.079	15.8	15	NR!

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	2.27	0.54	15	PASS	1.66	15.013	15	NR! *
N028745-001B	SAMP	5	0.44	11.64	15	PASS	0.41	21.2	15	<PQL
N028745-002B	SAMP	1	2.3	1.63	15	PASS	1.45	11.32	15	PASS
N028745-002B	SAMP	5	0.45	1.95	15	PASS	0.34	8.57	15	PASS
N028745-003B	SAMP	1	2.41	2.52	15	PASS	1.63	9.51	15	PASS
N028745-003B	SAMP	5	0.52	10.071	15	PASS	0.38	20.54	15	<PQL
N028745-004B	SAMP	1	2.19	4.11	15	PASS	1.61	9.14	15	PASS
N028745-004B	SAMP	5	0.46	9.85	15	PASS	0.31	46.24	15	<PQL
CCV3	CCV	1	20.42	1.056	15	PASS	19.43	1.72	15	PASS
CCB3	CCB	1	0.0018	420.41	15	<PQL	0.036	89.66	15	<PQL
N028745-005B	SAMP	1	2.27	4.4	15	PASS	1.54	19.99	15	NR!
N028745-005B	SAMP	5	0.46	7	15	PASS	0.32	13.26	15	PASS
N028745-006B	SAMP	1	2.36	7.46	15	PASS	1.72	4.45	15	PASS
N028745-006B	SAMP	5	0.47	5.26	15	PASS	0.3	17.48	15	<PQL
N028745-007B	SAMP	1	2.14	3	15	PASS	1.72	5.16	15	PASS
N028745-007B	SAMP	5	0.47	3.7	15	PASS	0.28	29.5	15	<PQL
N028745-008B	SAMP	1	2.22	0.79	15	PASS	1.48	11.12	15	PASS
N028745-008B	SAMP	5	0.48	3.31	15	PASS	0.27	36.38	15	<PQL
N028745-009B	SAMP	1	2.23	2.92	15	PASS	1.43	16.67	15	NR!
N028745-009B	SAMP	5	0.43	9.16	15	PASS	0.3	20.16	15	<PQL
CCV4	CCV	1	20.24	4.11	15	PASS	19.64	3.32	15	PASS
CCB4	CCB	1	0.00058	1699.67	15	<PQL	0.011	155.22	15	<PQL
N028745-010B	SAMP	1	2.15	3.43	15	PASS	1.76	4.12	15	PASS
N028745-010B	SAMP	5	0.42	2.079	15	PASS	0.31	23.17	15	<PQL
N028745-011B	SAMP	1	2.28	2.98	15	PASS	1.54	10.12	15	PASS
N028745-011B	SAMP	5	0.47	8.92	15	PASS	0.32	39.52	15	<PQL
N028745-012B	SAMP	1	2.051	4.95	15	PASS	1.52	19.5	15	NR!
N028745-012B	SAMP	5	0.47	5.42	15	PASS	0.24	42.28	15	<PQL
N028745-014B	SAMP	1	2.17	4.94	15	PASS	1.55	13.25	15	PASS
N028745-014B	SAMP	5	0.42	6.41	15	PASS	0.38	40.44	15	<PQL
N028745-015B	SAMP	1	2.24	3.68	15	PASS	1.62	18.37	15	NR!
N028745-015B	SAMP	5	0.42	8.011	15	PASS	0.3	25.53	15	<PQL
CCV5	CCV	1	20.33	2.084	15	PASS	19.47	1.2	15	PASS
CCB5	CCB	1	0.0096	69.42	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.094	6.052	20	PASS	0.51	21.97	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.29	0.91	15	PASS	17.66	4.018	15	PASS
N028745-005B	SAMP	1	2.29	4.95	15	PASS	1.65	10.94	15	PASS
N028745-009B	SAMP	1	2.15	4.83	15	PASS	1.86	7.91	15	PASS
N028745-012B	SAMP	1	2.13	0.3	15	PASS	1.33	12.55	15	PASS
N028745-015B	SAMP	1	28.62	91.77	15	NR!	87.28	32.8	15	NR!

* RSD still within 15%

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	0.0091	131.87	15	<PQL	0.04	88.87	15	<PQL
N028744-005B	SAMP	25	0.071	1.9	15	PASS	0.11	25.55	15	<PQL
N028726-001B-MSD	MSD	5	3.79	0.81	15	PASS	2.21	6.48	15	PASS
N028726-003B	SAMP	5	1.64	6.17	15	PASS	0.56	13.76	15	PASS
N028727-006B	SAMP	1	2.21	1.41	15	PASS	1.8	10.85	15	PASS
N028745-015B	SAMP	1	2.22	1.74	15	PASS	1.65	13.13	15	PASS
CCV6	CCV	1	20.18	0.78	15	PASS	18.77	1.14	15	PASS
CCB6	CCB	1	0.0069	203	15	<PQL	0.021	45.37	15	<PQL
N028717-001C	SAMP	25	0.051	11.88	15	PASS	0.053	46.61	15	<PQL
N028696-001B	SAMP	1	1.32	6.99	15	PASS	0.061	73.044	15	<PQL
N028696-001A	SAMP	1	1.26	9.52	15	PASS	0.029	81.56	15	<PQL
N028696-005B	SAMP	1	12.98	2.36	15	PASS	0.18	26.16	15	<PQL
N028696-005A	SAMP	1	13.76	2.78	15	PASS	0.11	40.26	15	<PQL
CCV7	CCV	1	20.66	1.56	15	PASS	19.38	0.73	15	PASS
CCB7	CCB	1	0.000093	6115.25	15	<PQL	0.01	158.58	15	<PQL
CCV8	CCV	1	20.81	1.23	15	PASS	19.96	2.88	15	PASS
CCB8	CCB	1	0.0011	353.57	15	<PQL	0.046	38.65	15	<PQL
CCV9	CCV	1	20.039	0.3	15	PASS	17.82	4.35	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	0.025	113.29	15	<PQL
CCV10	CCV	1	20.34	0.89	15	PASS	19.12	1.8	15	PASS
CCB10	CCB	1	0.0031	241.38	15	<PQL	0.013	2.041	15	PASS
LLCCV2	CCV2	1	0.11	24.16	20	NR!	0.45	14.31	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.027	151.89	15	<PQL
ICSAB3	ICSAB	1	19.52	1.034	15	PASS	17.81	1.82	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.082	7.055	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	2.43	15	PASS
Std3-5/50 ppb	ICAL	1	4.93	1.78	15	PASS
Std4-10/100 ppb	ICAL	1	9.93	0.36	15	PASS
Std5-20/200 ppb	ICAL	1	19.6	1.06	15	PASS
Std6-40/400 ppb	ICAL	1	39.74	0.97	15	PASS
Std7-100/1000 ppb	ICAL	1	99.1	0.41	15	PASS
Std8-200/2000 ppb	ICAL	1	200.55	0.64	15	PASS
ICV	ICV	1	10.86	1.17	15	PASS
ICB	ICB	1	0.24	10.011	15	PASS
LLICV	CCV1	1	0.6	4.24	20	PASS
ICSA1	ICSA	1	0.078	10.095	15	PASS
ICSAB1	ICSAB	1	20.43	0.63	15	PASS
LLICV	CCV1	1	0.58	2.76	20	PASS
MB-66914	MBLK	1	0.03	26.59	15	<PQL
LCS-66914	LCS	1	10.063	0.43	15	PASS
N028744-001B	SAMP	1	28.54	0.66	15	PASS
N028744-001B	SAMP	5	5.8	0.48	15	PASS
N028744-001B	SAMP	25	1.092	3.007	15	PASS
N028744-001B-PS	PS	1	39.34	0.4	15	PASS
N028744-001B-PS	PS	5	7.98	0.77	15	PASS
N028744-001B-MS	MS	1	39.64	1.3	15	PASS
N028744-001B-MS	MS	5	8.13	1.41	15	PASS
N028744-001B-MSD	MSD	1	39.47	1.44	15	PASS
CCV1	CCV	1	19.8	0.37	15	PASS
CCB1	CCB	1	0.13	6.12	15	PASS
N028744-001B-MSD	MSD	5	7.87	1.95	15	PASS
N028744-002B	SAMP	1	61.68	0.61	15	PASS
N028744-002B	SAMP	5	12.096	1.085	15	PASS
N028744-003B	SAMP	1	42.066	1.12	15	PASS
N028744-003B	SAMP	5	8.37	1.59	15	PASS
N028744-003B	SAMP	25	1.72	2.53	15	PASS
N028744-004B	SAMP	1	41.19	1.62	15	PASS
N028744-004B	SAMP	5	8.16	2.88	15	PASS
N028744-005B	SAMP	1	23.26	0.31	15	PASS
N028744-005B	SAMP	5	4.68	1.034	15	PASS
CCV2	CCV	1	20.25	0.069	15	PASS
CCB2	CCB	1	0.1	17.75	15	<PQL
N028744-006B	SAMP	1	67.096	1.25	15	PASS
N028744-006B	SAMP	5	13.14	0.92	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	5.066	1.42	15	PASS
N028745-001B	SAMP	5	1.053	3.06	15	PASS
N028745-002B	SAMP	1	5	0.52	15	PASS
N028745-002B	SAMP	5	1.0086	2.034	15	PASS
N028745-003B	SAMP	1	4.98	2.75	15	PASS
N028745-003B	SAMP	5	1.024	4.27	15	PASS
N028745-004B	SAMP	1	4.96	2.38	15	PASS
N028745-004B	SAMP	5	0.98	2.27	15	PASS
CCV3	CCV	1	20.051	0.43	15	PASS
CCB3	CCB	1	0.11	9.52	15	PASS
N028745-005B	SAMP	1	5.041	0.29	15	PASS
N028745-005B	SAMP	5	0.98	2.74	15	PASS
N028745-006B	SAMP	1	5.15	2.89	15	PASS
N028745-006B	SAMP	5	0.98	3.14	15	PASS
N028745-007B	SAMP	1	4.97	1.93	15	PASS
N028745-007B	SAMP	5	0.95	2.075	15	PASS
N028745-008B	SAMP	1	4.97	1.35	15	PASS
N028745-008B	SAMP	5	0.93	1.44	15	PASS
N028745-009B	SAMP	1	4.94	1.19	15	PASS
N028745-009B	SAMP	5	0.96	3.61	15	PASS
CCV4	CCV	1	19.91	0.43	15	PASS
CCB4	CCB	1	0.082	14.22	15	PASS
N028745-010B	SAMP	1	4.98	2.46	15	PASS
N028745-010B	SAMP	5	0.95	1.75	15	PASS
N028745-011B	SAMP	1	4.91	1.82	15	PASS
N028745-011B	SAMP	5	0.95	4.53	15	PASS
N028745-012B	SAMP	1	4.84	1.34	15	PASS
N028745-012B	SAMP	5	0.94	1.69	15	PASS
N028745-014B	SAMP	1	4.83	3.68	15	PASS
N028745-014B	SAMP	5	0.94	2.15	15	PASS
N028745-015B	SAMP	1	5.13	2.33	15	PASS
N028745-015B	SAMP	5	0.95	5.059	15	PASS
CCV5	CCV	1	19.97	0.41	15	PASS
CCB5	CCB	1	0.082	12.3	15	PASS
LLCCV1	CCV2	1	0.49	1.95	20	PASS
ICSA2	ICSA	1	0.042	17.6	15	<PQL
ICSAB2	ICSAB	1	20.48	0.29	15	PASS
N028745-005B	SAMP	1	5.23	1.13	15	PASS
N028745-009B	SAMP	1	4.98	0.8	15	PASS
N028745-012B	SAMP	1	4.91	1.43	15	PASS
N028745-015B	SAMP	1	851.45	2.57	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	0.2	15.49	15	<PQL
N028744-005B	SAMP	25	0.89	3.48	15	PASS
N028726-001B-MSD	MSD	5	16.0039	0.78	15	PASS
N028726-003B	SAMP	5	11.92	1.14	15	PASS
N028727-006B	SAMP	1	5.074	0.39	15	PASS
N028745-015B	SAMP	1	5.16	2.44	15	PASS
CCV6	CCV	1	20.11	0.41	15	PASS
CCB6	CCB	1	0.11	8.48	15	PASS
N028717-001C	SAMP	25	0.21	6.21	15	PASS
N028696-001B	SAMP	1	49.21	0.98	15	PASS
N028696-001A	SAMP	1	51.42	0.52	15	PASS
N028696-005B	SAMP	1	75.19	0.73	15	PASS
N028696-005A	SAMP	1	80.35	0.93	15	PASS
CCV7	CCV	1	20.17	0.39	15	PASS
CCB7	CCB	1	0.1	0.46	15	PASS
CCV8	CCV	1	19.7	2.26	15	PASS
CCB8	CCB	1	0.073	19.32	15	<PQL
CCV9	CCV	1	20.19	0.86	15	PASS
CCB9	CCB	1	0.18	12.35	15	PASS
CCV10	CCV	1	20.0042	0.36	15	PASS
CCB10	CCB	1	0.093	21.15	15	<PQL
LLCCV2	CCV2	1	0.54	4.86	20	PASS
ICSA3	ICSA	1	0.054	16.76	15	<PQL
ICSAB3	ICSAB	1	20.69	0.81	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0.00	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.10	9.08	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	1.39	15	PASS
Std3-5/50 ppb	ICAL	1	5.27	0.35	15	PASS
Std4-10/100 ppb	ICAL	1	10.63	2.71	15	PASS
Std5-20/200 ppb	ICAL	1	20.77	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	41.09	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	100.83	0.89	15	PASS
Std8-200/2000 ppb	ICAL	1	199.25	1.29	15	PASS
ICV	ICV	1	10.52	1.76	15	PASS
ICB	ICB	1	0.00	2951.86	15	<PQL
LLICV	CCV1	1	1.07	2.90	20	PASS
ICSA1	ICSA	1	0.11	19.29	15	<PQL
ICSAB1	ICSAB	1	19.43	2.19	15	PASS
LLICV	CCV1	1	1.07	2.10	20	PASS
MB-66914	MBLK	1	<0.000	N/A	15	<PQL
LCS-66914	LCS	1	10.58	1.63	15	PASS
N028744-001B	SAMP	1	494.90	1.88	15	PASS
N028744-001B	SAMP	5	104.78	1.78	15	PASS
N028744-001B	SAMP	25	22.01	1.89	15	PASS
N028744-001B-PS	PS	1	478.07	0.66	15	PASS
N028744-001B-PS	PS	5	103.62	0.99	15	PASS
N028744-001B-MS	MS	1	473.34	1.86	15	PASS
N028744-001B-MS	MS	5	103.03	1.74	15	PASS
N028744-001B-MSD	MSD	1	476.74	1.26	15	PASS
CCV1	CCV	1	21.30	1.74	15	PASS
CCB1	CCB	1	0.04	4.43	15	PASS
N028744-001B-MSD	MSD	5	104.18	1.18	15	PASS
N028744-002B	SAMP	1	171.96	0.68	15	PASS
N028744-002B	SAMP	5	37.65	0.62	15	PASS
N028744-003B	SAMP	1	21916.20	1.22	15	PASS
N028744-003B	SAMP	5	4775.02	1.73	15	PASS
N028744-003B	SAMP	25	979.44	0.21	15	PASS
N028744-004B	SAMP	1	0.89	9.50	15	PASS
N028744-004B	SAMP	5	0.56	13.40	15	PASS
N028744-005B	SAMP	1	1749.56	0.71	15	PASS
N028744-005B	SAMP	5	390.68	0.34	15	PASS
CCV2	CCV	1	20.99	1.06	15	PASS
CCB2	CCB	1	0.40	4.23	15	PASS
N028744-006B	SAMP	1	113.49	0.83	15	PASS
N028744-006B	SAMP	5	24.27	1.69	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028745-001B	SAMP	1	0.32	10.21	15	PASS
N028745-001B	SAMP	5	0.23	7.59	15	PASS
N028745-002B	SAMP	1	0.24	3.59	15	PASS
N028745-002B	SAMP	5	0.16	9.72	15	PASS
N028745-003B	SAMP	1	0.54	1.69	15	PASS
N028745-003B	SAMP	5	0.22	3.06	15	PASS
N028745-004B	SAMP	1	0.23	11.97	15	PASS
N028745-004B	SAMP	5	0.14	3.92	15	PASS
CCV3	CCV	1	20.72	2.31	15	PASS
CCB3	CCB	1	0.12	6.40	15	PASS
N028745-005B	SAMP	1	0.20	2.63	15	PASS
N028745-005B	SAMP	5	0.13	12.71	15	PASS
N028745-006B	SAMP	1	0.16	2.55	15	PASS
N028745-006B	SAMP	5	0.08	9.55	15	PASS
N028745-007B	SAMP	1	0.54	2.97	15	PASS
N028745-007B	SAMP	5	0.19	9.99	15	PASS
N028745-008B	SAMP	1	0.12	8.65	15	PASS
N028745-008B	SAMP	5	0.08	1.96	15	PASS
N028745-009B	SAMP	1	0.27	4.41	15	PASS
N028745-009B	SAMP	5	0.12	9.61	15	PASS
CCV4	CCV	1	20.86	0.21	15	PASS
CCB4	CCB	1	0.07	0.77	15	PASS
N028745-010B	SAMP	1	0.20	5.75	15	PASS
N028745-010B	SAMP	5	0.09	4.82	15	PASS
N028745-011B	SAMP	1	0.11	20.73	15	<PQL
N028745-011B	SAMP	5	0.07	25.13	15	<PQL
N028745-012B	SAMP	1	0.24	3.93	15	PASS
N028745-012B	SAMP	5	0.09	6.11	15	PASS
N028745-014B	SAMP	1	0.14	9.32	15	PASS
N028745-014B	SAMP	5	0.06	23.95	15	<PQL
N028745-015B	SAMP	1	0.07	32.69	15	<PQL
N028745-015B	SAMP	5	0.05	15.03	15	<PQL
CCV5	CCV	1	20.81	1.44	15	PASS
CCB5	CCB	1	0.04	26.32	15	<PQL
LLCCV1	CCV2	1	1.12	2.59	20	PASS
ICSA2	ICSA	1	0.14	13.90	15	PASS
ICSAB2	ICSAB	1	19.61	1.29	15	PASS
N028745-005B	SAMP	1	0.16	7.42	15	PASS
N028745-009B	SAMP	1	0.29	3.35	15	PASS
N028745-012B	SAMP	1	0.21	1.93	15	PASS
N028745-015B	SAMP	1	16.47	13.69	15	PASS

PERCENT RSD SUMMARY: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N028744-003B	SAMP	250	96.71	2.52	15	PASS
N028744-005B	SAMP	25	81.75	1.71	15	PASS
N028745-015B	SAMP	1	0.06	15.96	15	<PQL
CCV6	CCV	1	20.75	2.77	15	PASS
CCB6	CCB	1	0.03	18.38	15	<PQL
CCV7	CCV	1	20.16	0.27	15	PASS
CCB7	CCB	1	0.03	27.41	15	<PQL
CCV8	CCV	1	20.12	0.71	15	PASS
CCB8	CCB	1	0.02	37.09	15	<PQL
CCV9	CCV	1	20.98	0.57	15	PASS
CCB9	CCB	1	0.04	21.43	15	<PQL
CCV10	CCV	1	20.57	1.55	15	PASS
CCB10	CCB	1	0.03	13.60	15	PASS
LLCCV2	CCV2	1	1.13	2.27	20	PASS
ICSA3	ICSA	1	0.13	13.02	15	PASS
ICSAB3	ICSAB	1	18.77	1.43	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227001.D	RINSE	RINSE	1	02/27/18 9:32 AM
A0227002.D	Cal Blank	IBLK	1	02/27/18 9:38 AM
A0227003.D	Std1-0.1/1 ppb	ICAL	1	02/27/18 9:44 AM
A0227004.D	Std2-0.5/5 ppb	ICAL	1	02/27/18 9:49 AM
A0227005.D	Std3-5/50 ppb	ICAL	1	02/27/18 9:55 AM
A0227006.D	Std4-10/100 ppb	ICAL	1	02/27/18 10:00 AM
A0227007.D	Std5-20/200 ppb	ICAL	1	02/27/18 10:06 AM
A0227008.D	Std6-40/400 ppb	ICAL	1	02/27/18 10:12 AM
A0227009.D	Std7-100/1000 ppb	ICAL	1	02/27/18 10:17 AM
A0227010.D	Std8-200/2000 ppb	ICAL	1	02/27/18 10:23 AM
A0227011.D	ICV	ICV	1	02/27/18 10:29 AM
A0227012.D	ICB	ICB	1	02/27/18 10:34 AM
A0227013.D	LLICV	CCV1	1	02/27/18 10:40 AM
A0227014.D	ICSA1	ICSA	1	02/27/18 10:45 AM
A0227015.D	ICSAB1	ICSAB	1	02/27/18 10:51 AM
A0227016.D	LLICV	CCV1	1	02/27/18 10:57 AM
A0227017.D	MB-66914	MBLK	1	02/27/18 11:02 AM
A0227018.D	LCS-66914	LCS	1	02/27/18 11:08 AM
A0227019.D	N028744-001B	SAMP	1	02/27/18 11:13 AM
A0227020.D	N028744-001B	SAMP	5	02/27/18 11:19 AM
A0227021.D	N028744-001B	SAMP	25	02/27/18 11:25 AM
A0227022.D	N028744-001B-PS	PS	1	02/27/18 11:30 AM
A0227023.D	N028744-001B-PS	PS	5	02/27/18 11:36 AM
A0227024.D	N028744-001B-MS	MS	1	02/27/18 11:41 AM
A0227025.D	N028744-001B-MS	MS	5	02/27/18 11:47 AM
A0227026.D	N028744-001B-MSD	MSD	1	02/27/18 11:53 AM
A0227027.D	CCV1	CCV	1	02/27/18 11:58 AM
A0227028.D	CCB1	CCB	1	02/27/18 12:04 PM
A0227029.D	N028744-001B-MSD	MSD	5	02/27/18 12:10 PM
A0227030.D	N028744-002B	SAMP	1	02/27/18 12:15 PM
A0227031.D	N028744-002B	SAMP	5	02/27/18 12:21 PM
A0227032.D	N028744-003B	SAMP	1	02/27/18 12:26 PM
A0227033.D	N028744-003B	SAMP	5	02/27/18 12:32 PM
A0227034.D	N028744-003B	SAMP	25	02/27/18 12:38 PM
A0227035.D	N028744-004B	SAMP	1	02/27/18 12:43 PM
A0227036.D	N028744-004B	SAMP	5	02/27/18 12:49 PM
A0227037.D	N028744-005B	SAMP	1	02/27/18 12:55 PM
A0227038.D	N028744-005B	SAMP	5	02/27/18 1:00 PM
A0227039.D	CCV2	CCV	1	02/27/18 1:06 PM
A0227040.D	CCB2	CCB	1	02/27/18 1:12 PM
A0227041.D	N028744-006B	SAMP	1	02/27/18 1:17 PM
A0227042.D	N028744-006B	SAMP	5	02/27/18 1:23 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227001.D	RINSE	RINSE	1	02/27/18 9:32 AM
A0227002.D	Cal Blank	IBLK	1	02/27/18 9:38 AM
A0227003.D	Std1-0.1/1 ppb	ICAL	1	02/27/18 9:44 AM
A0227004.D	Std2-0.5/5 ppb	ICAL	1	02/27/18 9:49 AM
A0227005.D	Std3-5/50 ppb	ICAL	1	02/27/18 9:55 AM
A0227006.D	Std4-10/100 ppb	ICAL	1	02/27/18 10:00 AM
A0227007.D	Std5-20/200 ppb	ICAL	1	02/27/18 10:06 AM
A0227008.D	Std6-40/400 ppb	ICAL	1	02/27/18 10:12 AM
A0227009.D	Std7-100/1000 ppb	ICAL	1	02/27/18 10:17 AM
A0227010.D	Std8-200/2000 ppb	ICAL	1	02/27/18 10:23 AM
A0227011.D	ICV	ICV	1	02/27/18 10:29 AM
A0227012.D	ICB	ICB	1	02/27/18 10:34 AM
A0227013.D	LLICV	CCV1	1	02/27/18 10:40 AM
A0227014.D	ICSA1	ICSA	1	02/27/18 10:45 AM
A0227015.D	ICSAB1	ICSAB	1	02/27/18 10:51 AM
A0227016.D	LLICV	CCV1	1	02/27/18 10:57 AM
A0227017.D	MB-66914	MBLK	1	02/27/18 11:02 AM
A0227018.D	LCS-66914	LCS	1	02/27/18 11:08 AM
A0227019.D	N028744-001B	SAMP	1	02/27/18 11:13 AM
A0227020.D	N028744-001B	SAMP	5	02/27/18 11:19 AM
A0227021.D	N028744-001B	SAMP	25	02/27/18 11:25 AM
A0227022.D	N028744-001B-PS	PS	1	02/27/18 11:30 AM
A0227023.D	N028744-001B-PS	PS	5	02/27/18 11:36 AM
A0227024.D	N028744-001B-MS	MS	1	02/27/18 11:41 AM
A0227025.D	N028744-001B-MS	MS	5	02/27/18 11:47 AM
A0227026.D	N028744-001B-MSD	MSD	1	02/27/18 11:53 AM
A0227027.D	CCV1	CCV	1	02/27/18 11:58 AM
A0227028.D	CCB1	CCB	1	02/27/18 12:04 PM
A0227029.D	N028744-001B-MSD	MSD	5	02/27/18 12:10 PM
A0227030.D	N028744-002B	SAMP	1	02/27/18 12:15 PM
A0227031.D	N028744-002B	SAMP	5	02/27/18 12:21 PM
A0227032.D	N028744-003B	SAMP	1	02/27/18 12:26 PM
A0227033.D	N028744-003B	SAMP	5	02/27/18 12:32 PM
A0227034.D	N028744-003B	SAMP	25	02/27/18 12:38 PM
A0227035.D	N028744-004B	SAMP	1	02/27/18 12:43 PM
A0227036.D	N028744-004B	SAMP	5	02/27/18 12:49 PM
A0227037.D	N028744-005B	SAMP	1	02/27/18 12:55 PM
A0227038.D	N028744-005B	SAMP	5	02/27/18 1:00 PM
A0227039.D	CCV2	CCV	1	02/27/18 1:06 PM
A0227040.D	CCB2	CCB	1	02/27/18 1:12 PM
A0227041.D	N028744-006B	SAMP	1	02/27/18 1:17 PM
A0227042.D	N028744-006B	SAMP	5	02/27/18 1:23 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227043.D	N028745-001B	SAMP	1	02/27/18 1:28 PM
A0227044.D	N028745-001B	SAMP	5	02/27/18 1:34 PM
A0227045.D	N028745-002B	SAMP	1	02/27/18 1:40 PM
A0227046.D	N028745-002B	SAMP	5	02/27/18 1:45 PM
A0227047.D	N028745-003B	SAMP	1	02/27/18 1:51 PM
A0227048.D	N028745-003B	SAMP	5	02/27/18 1:57 PM
A0227049.D	N028745-004B	SAMP	1	02/27/18 2:02 PM
A0227050.D	N028745-004B	SAMP	5	02/27/18 2:08 PM
A0227051.D	CCV3	CCV	1	02/27/18 2:14 PM
A0227052.D	CCB3	CCB	1	02/27/18 2:19 PM
A0227053.D	N028745-005B	SAMP	1	02/27/18 2:25 PM
A0227054.D	N028745-005B	SAMP	5	02/27/18 2:30 PM
A0227055.D	N028745-006B	SAMP	1	02/27/18 2:36 PM
A0227056.D	N028745-006B	SAMP	5	02/27/18 2:42 PM
A0227057.D	N028745-007B	SAMP	1	02/27/18 2:47 PM
A0227058.D	N028745-007B	SAMP	5	02/27/18 2:53 PM
A0227059.D	N028745-008B	SAMP	1	02/27/18 2:59 PM
A0227060.D	N028745-008B	SAMP	5	02/27/18 3:05 PM
A0227061.D	N028745-009B	SAMP	1	02/27/18 3:10 PM
A0227062.D	N028745-009B	SAMP	5	02/27/18 3:16 PM
A0227063.D	CCV4	CCV	1	02/27/18 3:21 PM
A0227064.D	CCB4	CCB	1	02/27/18 3:27 PM
A0227065.D	N028745-010B	SAMP	1	02/27/18 3:33 PM
A0227066.D	N028745-010B	SAMP	5	02/27/18 3:40 PM
A0227067.D	N028745-011B	SAMP	1	02/27/18 3:45 PM
A0227068.D	N028745-011B	SAMP	5	02/27/18 3:51 PM
A0227069.D	N028745-012B	SAMP	1	02/27/18 3:57 PM
A0227070.D	N028745-012B	SAMP	5	02/27/18 4:03 PM
A0227071.D	N028745-014B	SAMP	1	02/27/18 4:08 PM
A0227072.D	N028745-014B	SAMP	5	02/27/18 4:14 PM
A0227073.D	N028745-015B	SAMP	1	02/27/18 4:20 PM
A0227074.D	N028745-015B	SAMP	5	02/27/18 4:25 PM
A0227075.D	CCV5	CCV	1	02/27/18 4:31 PM
A0227076.D	CCB5	CCB	1	02/27/18 4:37 PM
A0227077.D	LLCCV1	CCV2	1	02/27/18 4:42 PM
A0227078.D	ICSA2	ICSA	1	02/27/18 4:48 PM
A0227079.D	ICSAB2	ICSAB	1	02/27/18 4:54 PM
A0227080.D	N028745-005B	SAMP	1	02/27/18 4:59 PM
A0227081.D	N028745-009B	SAMP	1	02/27/18 5:06 PM
A0227082.D	N028745-012B	SAMP	1	02/27/18 5:12 PM
A0227083.D	N028745-015B	SAMP	1	02/27/18 5:17 PM
A0227084.D	N028744-003B	SAMP	250	02/27/18 5:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227043.D	N028745-001B	SAMP	1	02/27/18 1:28 PM
A0227044.D	N028745-001B	SAMP	5	02/27/18 1:34 PM
A0227045.D	N028745-002B	SAMP	1	02/27/18 1:40 PM
A0227046.D	N028745-002B	SAMP	5	02/27/18 1:45 PM
A0227047.D	N028745-003B	SAMP	1	02/27/18 1:51 PM
A0227048.D	N028745-003B	SAMP	5	02/27/18 1:57 PM
A0227049.D	N028745-004B	SAMP	1	02/27/18 2:02 PM
A0227050.D	N028745-004B	SAMP	5	02/27/18 2:08 PM
A0227051.D	CCV3	CCV	1	02/27/18 2:14 PM
A0227052.D	CCB3	CCB	1	02/27/18 2:19 PM
A0227053.D	N028745-005B	SAMP	1	02/27/18 2:25 PM
A0227054.D	N028745-005B	SAMP	5	02/27/18 2:30 PM
A0227055.D	N028745-006B	SAMP	1	02/27/18 2:36 PM
A0227056.D	N028745-006B	SAMP	5	02/27/18 2:42 PM
A0227057.D	N028745-007B	SAMP	1	02/27/18 2:47 PM
A0227058.D	N028745-007B	SAMP	5	02/27/18 2:53 PM
A0227059.D	N028745-008B	SAMP	1	02/27/18 2:59 PM
A0227060.D	N028745-008B	SAMP	5	02/27/18 3:05 PM
A0227061.D	N028745-009B	SAMP	1	02/27/18 3:10 PM
A0227062.D	N028745-009B	SAMP	5	02/27/18 3:16 PM
A0227063.D	CCV4	CCV	1	02/27/18 3:21 PM
A0227064.D	CCB4	CCB	1	02/27/18 3:27 PM
A0227065.D	N028745-010B	SAMP	1	02/27/18 3:33 PM
A0227066.D	N028745-010B	SAMP	5	02/27/18 3:40 PM
A0227067.D	N028745-011B	SAMP	1	02/27/18 3:45 PM
A0227068.D	N028745-011B	SAMP	5	02/27/18 3:51 PM
A0227069.D	N028745-012B	SAMP	1	02/27/18 3:57 PM
A0227070.D	N028745-012B	SAMP	5	02/27/18 4:03 PM
A0227071.D	N028745-014B	SAMP	1	02/27/18 4:08 PM
A0227072.D	N028745-014B	SAMP	5	02/27/18 4:14 PM
A0227073.D	N028745-015B	SAMP	1	02/27/18 4:20 PM
A0227074.D	N028745-015B	SAMP	5	02/27/18 4:25 PM
A0227075.D	CCV5	CCV	1	02/27/18 4:31 PM
A0227076.D	CCB5	CCB	1	02/27/18 4:37 PM
A0227077.D	LLCCV1	CCV2	1	02/27/18 4:42 PM
A0227078.D	ICSA2	ICSA	1	02/27/18 4:48 PM
A0227079.D	ICSAB2	ICSAB	1	02/27/18 4:54 PM
A0227080.D	N028745-005B	SAMP	1	02/27/18 4:59 PM
A0227081.D	N028745-009B	SAMP	1	02/27/18 5:06 PM
A0227082.D	N028745-012B	SAMP	1	02/27/18 5:12 PM
A0227083.D	N028745-015B	SAMP	1	02/27/18 5:17 PM
A0227084.D	N028744-003B	SAMP	250	02/27/18 5:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227085.D	N028744-005B	SAMP	25	02/27/18 5:28 PM
A0227086.D	N028726-001B-MSD	MSD	5	02/27/18 5:35 PM
A0227087.D	N028726-003B	SAMP	5	02/27/18 5:39 PM
A0227088.D	N028727-006B	SAMP	1	02/27/18 5:45 PM
A0227089.D	N028745-015B	SAMP	1	02/27/18 5:51 PM
A0227090.D	CCV6	CCV	1	02/27/18 5:56 PM
A0227091.D	CCB6	CCB	1	02/27/18 6:02 PM
A0227092.D	N028717-001C	SAMP	25	02/27/18 6:08 PM
A0227093.D	N028696-001B	SAMP	1	02/27/18 6:14 PM
A0227094.D	N028696-001A	SAMP	1	02/27/18 6:20 PM
A0227095.D	N028696-005B	SAMP	1	02/27/18 6:25 PM
A0227096.D	N028696-005A	SAMP	1	02/27/18 6:31 PM
A0227097.D	MB-66941	MBLK	1	02/27/18 6:37 PM
A0227098.D	LCS-66941	LCS	1	02/27/18 6:43 PM
A0227099.D	N028790-001A	SAMP	1	02/27/18 6:48 PM
A0227100.D	N028790-001A	SAMP	5	02/27/18 6:53 PM
A0227101.D	N028790-001A-PS	PS	1	02/27/18 6:59 PM
A0227102.D	CCV7	CCV	1	02/27/18 7:05 PM
A0227103.D	CCB7	CCB	1	02/27/18 7:11 PM
A0227104.D	N028790-001A-MS	MS	1	02/27/18 7:16 PM
A0227105.D	N028790-001A-MSD	MSD	1	02/27/18 7:22 PM
A0227106.D	N028790-002A	SAMP	1	02/27/18 7:28 PM
A0227107.D	N028790-003A	SAMP	1	02/27/18 7:34 PM
A0227108.D	N028790-004A	SAMP	1	02/27/18 7:39 PM
A0227109.D	N028792-005A	SAMP	1	02/27/18 7:45 PM
A0227110.D	N028792-010A	SAMP	1	02/27/18 7:51 PM
A0227111.D	N028792-015A	SAMP	1	02/27/18 7:56 PM
A0227112.D	N028792-020A	SAMP	1	02/27/18 8:02 PM
A0227113.D	N028792-025A	SAMP	1	02/27/18 8:08 PM
A0227114.D	CCV8	CCV	1	02/27/18 8:13 PM
A0227115.D	CCB8	CCB	1	02/27/18 8:19 PM
A0227116.D	N028738-005A	SAMP	1	02/27/18 8:26 PM
A0227117.D	MB-66959	MBLK	1	02/27/18 8:31 PM
A0227118.D	LCS-66959	LCS	1	02/27/18 8:37 PM
A0227119.D	N028808-001A	SAMP	1	02/27/18 8:42 PM
A0227120.D	N028808-001A	SAMP	5	02/27/18 8:48 PM
A0227121.D	N028808-001A-PS	PS	1	02/27/18 8:54 PM
A0227122.D	N028808-001A-MS	MS	1	02/27/18 8:59 PM
A0227123.D	N028808-001A-MSD	MSD	1	02/27/18 9:05 PM
A0227124.D	N028809-001A	SAMP	1	02/27/18 9:11 PM
A0227125.D	N028810-001A	SAMP	1	02/27/18 9:16 PM
A0227126.D	CCV9	CCV	1	02/27/18 9:22 PM

INJECTION LOG: 180227A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0227127.D	CCB9	CCB	1	02/27/18 9:27 PM
A0227128.D	N028811-001A	SAMP	1	02/27/18 9:32 PM
A0227129.D	CCV10	CCV	1	02/27/18 9:39 PM
A0227130.D	CCB10	CCB	1	02/27/18 9:44 PM
A0227131.D	LLCCV2	CCV2	1	02/27/18 9:50 PM
A0227132.D	ICSA3	ICSA	1	02/27/18 9:55 PM
A0227133.D	ICSAB3	ICSAB	1	02/27/18 10:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 10:05:23**
Prep End Date: **2/23/2018 2:00:00 P**

Reviewed/ Date: 3/7/2018
Initials/ Date: 3/7/2018

Prep Batch **66914** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66914	Aqueous		25	☐	0	0	25	1.000		
MB-66914	Aqueous		25	☐	0	0	25	1.000		
N028744-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/23/2018 10:05:23**
Prep End Date: **2/23/2018 2:00:00 P**

Reviewed/ Date: 3/7/2018
Initials/ Date: 3/7/2018

Prep Batch **66914** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-16**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N028745-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N028745-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 27 Feb 2018 07:52:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	89591.20	0.00	
24 Mg	338443.00	0.00	
25 Mg	44194.50	0.00	
26 Mg	52079.10	0.00	
59 Co	444006.00	0.00	
115 In	830117.00	0.00	
206 Pb	245728.00	0.00	
207 Pb	214689.00	0.00	
208 Pb	524452.00	0.00	

RSD (%)

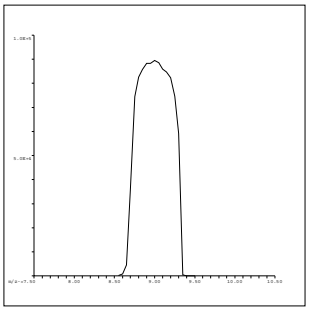
Element	Actual	Required	Flag
9 Be	1.09	5.00	
24 Mg	2.76	5.00	
25 Mg	1.42	5.00	
26 Mg	0.82	5.00	
59 Co	0.39	5.00	
115 In	0.53	5.00	
206 Pb	0.44	5.00	
207 Pb	0.39	5.00	
208 Pb	0.73	5.00	

Ion Ratio

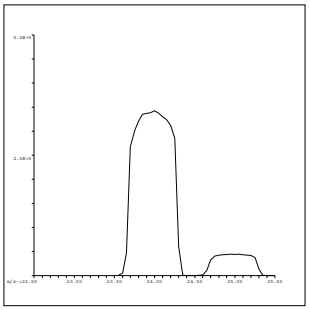
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

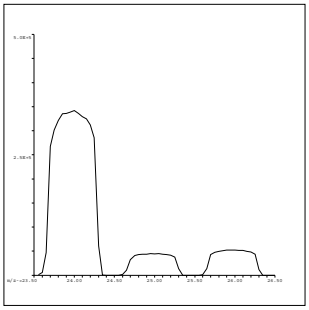
Element	Actual	Required	Flag



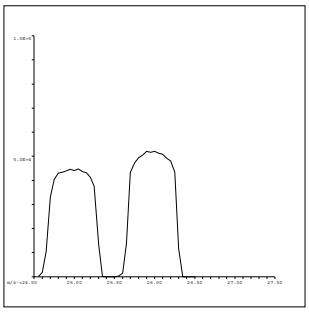
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



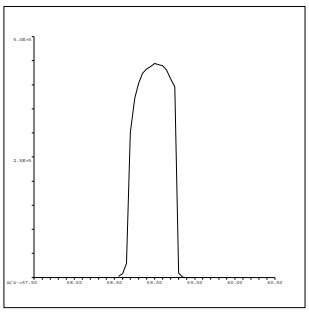
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



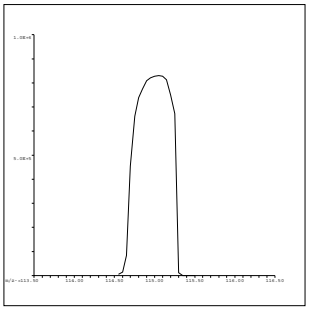
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



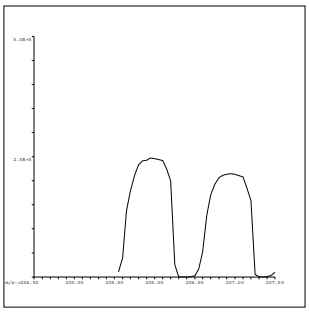
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



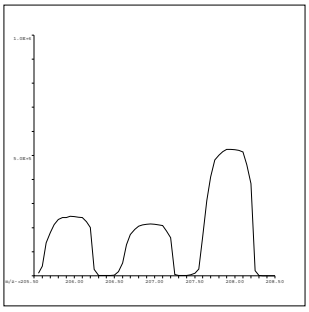
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



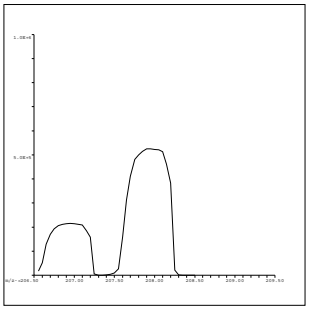
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICPMS-02

Analyte	Data File	A0227002.D	A0227003.D	A0227004.D	A0227005.D	A0227006.D	A0227007.D	A0227008.D	A0227009.D	A0227010.D	
	Acq. Date-Time	02/27/2018 09:38 AM	02/27/2018 09:44 AM	02/27/2018 09:49 AM	02/27/2018 09:55 AM	02/27/2018 10:00 AM	02/27/2018 10:06 AM	02/27/2018 10:12 AM	02/27/2018 10:17 AM	02/27/2018 10:23 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	62542.5		62679.5	63043.2	62912.1	63585.2	63979.9	64346.8	64115.1	
55 Mn [2]	CPS	68.8		1439.9	13350.7	26637.3	52631.7	105506.3	260653.5	514834.7	1.0000
72 Ge (ISTD) [1]	CPS	53663.1		54328.8	54076.8	54085.8	54306.5	53351.1	54387.8	52916.4	
78 Se [1]	CPS	1.1		103.3	967.8	1901.3	3817.3	7629.8	19411.1	37683.4	1.0000
72 Ge (ISTD) [2]	CPS	46628.3	47160	47197.7	47257	46995.1	47762.9	47012.8	47262.4	46491.5	
75 As [2]	CPS	16	77.3	316.5	2937.6	5490.3	11070.1	22431	54755.5	108291.6	1.0000
103 Rh (ISTD) [2]	CPS	1451516.4		1448560.3	1461389.1	1459884.1	1462552	1452955.8	1440505.5	1410396.5	
95 Mo [2]	CPS	71.1		1855.7	17047.4	34259.5	67650.9	136195	336617.5	666955.2	1.0000
159 Tb (ISTD) [3]	CPS	5025220.4		4984431.4	5022113.6	4986702.3	5007356.8	4975519.8	4962953.4	4924105.4	
137 Ba [3]	CPS	21.2		4412.2	41961.3	82387.5	164021.2	326080.2	799102.5	1620493.7	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICPMS-02

Analyte	Data File	A0227002.D	A0227004.D	A0227005.D	A0227006.D	A0227007.D	A0227008.D	A0227009.D	A0227010.D	
	Acq. Date-Time	02/27/2018 09:38 AM	02/27/2018 09:49 AM	02/27/2018 09:55 AM	02/27/2018 10:00 AM	02/27/2018 10:06 AM	02/27/2018 10:12 AM	02/27/2018 10:17 AM	02/27/2018 10:23 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	62542.5	62679.5	63043.2	62912.1	63585.2	63979.9	64346.8	64115.1	
52 Cr [2]	CPS	224.4	2982.5	26839.8	53771.5	105978.4	210675	519766.1	1023033.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-170428A
IS Mix: 2MWST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ICV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.170	0.10	10.00	0	102	90	110				
Barium	10.163	1.0	10.00	0	102	90	110				
Chromium	10.519	1.0	10.00	0	105	90	110				
Manganese	104.573	0.50	100.0	0	105	90	110				
Molybdenum	10.864	0.50	10.00	0	109	90	110				
Selenium	10.172	0.50	10.00	0	102	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ZZZZZZ** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.113	0.10	0.1000	0	113	80	120				
Barium	1.080	1.0	1.000	0	108	80	120				
Chromium	1.065	1.0	1.000	0	106	80	120				
Manganese	0.599	0.50	0.5000	0	120	80	120				
Molybdenum	0.596	0.50	0.5000	0	119	80	120				
Selenium	0.469	0.50	0.5000	0	93.9	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.289	0.10	20.00	0	101	90	110				
Barium	20.639	1.0	20.00	0	103	90	110				
Chromium	21.298	1.0	20.00	0	106	90	110				
Manganese	20.639	0.50	20.00	0	103	90	110				
Molybdenum	19.795	0.50	20.00	0	99.0	90	110				
Selenium	19.408	0.50	20.00	0	97.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.624	0.10	20.00	0	103	90	110				
Barium	21.194	1.0	20.00	0	106	90	110				
Chromium	20.991	1.0	20.00	0	105	90	110				
Manganese	20.167	0.50	20.00	0	101	90	110				
Molybdenum	20.248	0.50	20.00	0	101	90	110				
Selenium	19.257	0.50	20.00	0	96.3	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.419	0.10	20.00	0	102	90	110				
Barium	21.255	1.0	20.00	0	106	90	110				
Chromium	20.717	1.0	20.00	0	104	90	110				
Manganese	20.633	0.50	20.00	0	103	90	110				
Molybdenum	20.051	0.50	20.00	0	100	90	110				
Selenium	19.434	0.50	20.00	0	97.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943894**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.244	0.10	20.00	0	101	90	110				
Barium	20.887	1.0	20.00	0	104	90	110				
Chromium	20.864	1.0	20.00	0	104	90	110				
Manganese	20.714	0.50	20.00	0	104	90	110				
Molybdenum	19.910	0.50	20.00	0	99.6	90	110				
Selenium	19.636	0.50	20.00	0	98.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.330	0.10	20.00	0	102	90	110				
Barium	20.823	1.0	20.00	0	104	90	110				
Chromium	20.806	1.0	20.00	0	104	90	110				
Manganese	20.858	0.50	20.00	0	104	90	110				
Molybdenum	19.971	0.50	20.00	0	99.9	90	110				
Selenium	19.472	0.50	20.00	0	97.4	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ZZZZZZ** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	94.1	70	130				
Barium	1.092	1.0	1.000	0	109	70	130				
Chromium	1.117	1.0	1.000	0	112	70	130				
Manganese	0.557	0.50	0.5000	0	111	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.6	70	130				
Selenium	0.511	0.50	0.5000	0	102	70	130				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.178	0.10	20.00	0	101	90	110				
Barium	21.251	1.0	20.00	0	106	90	110				
Chromium	20.745	1.0	20.00	0	104	90	110				
Manganese	20.559	0.50	20.00	0	103	90	110				
Molybdenum	20.111	0.50	20.00	0	101	90	110				
Selenium	18.767	0.50	20.00	0	93.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.655	0.10	20.00	0	103	90	110				
Barium	21.348	1.0	20.00	0	107	90	110				
Chromium	20.155	1.0	20.00	0	101	90	110				
Manganese	20.193	0.50	20.00	0	101	90	110				
Molybdenum	20.173	0.50	20.00	0	101	90	110				
Selenium	19.376	0.50	20.00	0	96.9	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.807	0.10	20.00	0	104	90	110				
Barium	21.014	1.0	20.00	0	105	90	110				
Chromium	20.123	1.0	20.00	0	101	90	110				
Manganese	20.017	0.50	20.00	0	100	90	110				
Molybdenum	19.696	0.50	20.00	0	98.5	90	110				
Selenium	19.964	0.50	20.00	0	99.8	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCV** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.039	0.10	20.00	0	100	90	110				
Barium	20.832	1.0	20.00	0	104	90	110				
Chromium	20.975	1.0	20.00	0	105	90	110				
Manganese	20.982	0.50	20.00	0	105	90	110				
Molybdenum	20.193	0.50	20.00	0	101	90	110				
Selenium	17.816	0.50	20.00	0	89.1	90	110				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Samples were not affected by the low biased Se on CCV9.

3/7/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCV**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.338	0.10	20.00	0	102	90	110				
Barium	20.815	1.0	20.00	0	104	90	110				
Chromium	20.572	1.0	20.00	0	103	90	110				
Manganese	20.931	0.50	20.00	0	105	90	110				
Molybdenum	20.004	0.50	20.00	0	100	90	110				
Selenium	19.124	0.50	20.00	0	95.6	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ZZZZZZ**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.109	0.10	0.1000	0	109	70	130				
Barium	1.128	1.0	1.000	0	113	70	130				
Chromium	1.135	1.0	1.000	0	113	70	130				
Manganese	0.588	0.50	0.5000	0	118	70	130				
Molybdenum	0.542	0.50	0.5000	0	108	70	130				
Selenium	0.447	0.50	0.5000	0	89.4	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ICV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.519	1.0	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.065	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.298	1.0	20.00	0	106	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.991	1.0	20.00	0	105	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.717	1.0	20.00	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.864	1.0	20.00	0	104	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.806	1.0	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.117	1.0	1.000	0	112	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.745	1.0	20.00	0	104	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.155	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.123	1.0	20.00	0	101	90	110				

Sample ID **CCV9**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.975	1.0	20.00	0	105	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCV**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.572	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ZZZZZZ**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.135	1.0	1.000	0	113	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **ICB** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.240	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCB** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122347**
Client ID: **CCB** Batch ID: **R122347** TestNo: **EPA 6020** Analysis Date: **2/27/2018** SeqNo: **2943871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	0.398	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB10**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **CCB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943720

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	CCB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943736

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	CCB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943748

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.398	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	CCB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943760

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	CCB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943772

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **CCB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**CCB10**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**122346**
Client ID:	**CCB**	Batch ID:	**R122346**	TestNo:	**EPA 6020**			Analysis Date:	**2/27/2018**	SeqNo:	**2943838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.173	0.10	20.00	0	95.9	80	120				
Barium	19.649	1.0	20.00	0	98.2	80	120				
Chromium	19.434	1.0	20.00	0	97.2	80	120				
Manganese	22.748	0.50	20.00	0	114	80	120				
Molybdenum	20.428	0.50	20.00	0	102	80	120				
Selenium	17.363	0.50	20.00	0	86.8	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	0.143	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.288	0.10	20.00	0	96.4	80	120				
Barium	19.725	1.0	20.00	0	98.6	80	120				
Chromium	19.609	1.0	20.00	0	98.0	80	120				
Manganese	22.886	0.50	20.00	0	114	80	120				
Molybdenum	20.479	0.50	20.00	0	102	80	120				
Selenium	17.660	0.50	20.00	0	88.3	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSA**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	0.131	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID: **ICSAB**	Batch ID: **R122347**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.518	0.10	20.00	0	97.6	80	120				
Barium	20.356	1.0	20.00	0	102	80	120				
Chromium	18.767	1.0	20.00	0	93.8	80	120				
Manganese	23.612	0.50	20.00	0	118	80	120				
Molybdenum	20.691	0.50	20.00	0	103	80	120				
Selenium	17.809	0.50	20.00	0	89.0	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSA	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943722

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSAB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943723

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.434	1.0	20.00	0	97.2	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSA	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.143	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSAB	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943787

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.609	1.0	20.00	0	98.0	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ICSA	Batch ID:	R122346	TestNo:	EPA 6020			Analysis Date:	2/27/2018	SeqNo:	2943840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.131	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122346**
Client ID: **ICSAB**	Batch ID: **R122346**	TestNo: **EPA 6020**		Analysis Date: **2/27/2018**	SeqNo: **2943841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.767	1.0	20.00	0	93.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5025220.4	5025220.4	100	PASS	70-125	62542.5	62542.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	4978836.5	5025220.4	99.077	PASS	70-125	63125.6	62542.5	100.93	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	4984431.4	5025220.4	99.19	PASS	70-125	62679.5	62542.5	100.22	PASS	70-125
Std3-5/50 ppb	ICAL	1	5022113.6	5025220.4	99.94	PASS	70-125	63043.2	62542.5	100.8	PASS	70-125
Std4-10/100 ppb	ICAL	1	4986702.3	5025220.4	99.23	PASS	70-125	62912.1	62542.5	100.59	PASS	70-125
Std5-20/200 ppb	ICAL	1	5007356.8	5025220.4	99.64	PASS	70-125	63585.2	62542.5	101.67	PASS	70-125
Std6-40/400 ppb	ICAL	1	4975519.8	5025220.4	99.011	PASS	70-125	63979.9	62542.5	102.3	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4962953.4	5025220.4	98.76	PASS	70-125	64346.8	62542.5	102.88	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4924105.4	5025220.4	97.99	PASS	70-125	64115.1	62542.5	102.51	PASS	70-125
ICV	ICV	1	5589115	5025220.4	111.22	PASS	70-125	69599	62542.5	111.28	PASS	70-125
ICB	ICB	1	4919110.6	5025220.4	97.89	PASS	70-125	61054.7	62542.5	97.62	PASS	70-125
LLICV	CCV1	1	5148352	5025220.4	102.45	PASS	70-125	63945.4	62542.5	102.24	PASS	70-125
ICSA1	ICSA	1	4818191.1	5025220.4	95.88	PASS	70-125	65427.7	62542.5	104.61	PASS	70-125
ICSAB1	ICSAB	1	4461170.4	5025220.4	88.78	PASS	70-125	60371.1	62542.5	96.53	PASS	70-125
LLICV	CCV1	1	5375186.9	5025220.4	106.96	PASS	70-125	73821.2	62542.5	118.03	PASS	70-125
MB-66914	MBLK	1	5117786.9	5025220.4	101.84	PASS	70-125	69526.4	62542.5	111.17	PASS	70-125
LCS-66914	LCS	1	5606144.2	5025220.4	111.56	PASS	70-125	72975.3	62542.5	116.68	PASS	70-125
N028744-001B	SAMP	1	4117542.5	5025220.4	81.94	PASS	70-125	61634.7	62542.5	98.55	PASS	70-125
N028744-001B	SAMP	5	4652499.9	5025220.4	92.58	PASS	70-125	63648.6	62542.5	101.77	PASS	70-125
N028744-001B	SAMP	25	4973949.8	5025220.4	98.98	PASS	70-125	67162.5	62542.5	107.39	PASS	70-125
N028744-001B-PS	PS	1	4225244.2	5025220.4	84.081	PASS	70-125	64550.9	62542.5	103.21	PASS	70-125
N028744-001B-PS	PS	5	4588524.5	5025220.4	91.31	PASS	70-125	68618	62542.5	109.71	PASS	70-125
N028744-001B-MS	MS	1	4270380.9	5025220.4	84.98	PASS	70-125	71055.2	62542.5	113.61	PASS	70-125
N028744-001B-MS	MS	5	4678839	5025220.4	93.11	PASS	70-125	74081.7	62542.5	118.45	PASS	70-125
N028744-001B-MSD	MSD	1	4162104.4	5025220.4	82.82	PASS	70-125	74178.6	62542.5	118.61	PASS	70-125
CCV1	CCV	1	4567140.9	5025220.4	90.88	PASS	70-125	59147.8	62542.5	94.57	PASS	70-125
CCB1	CCB	1	5092401.3	5025220.4	101.34	PASS	70-125	77984.8	62542.5	124.69	PASS	70-125
N028744-001B-MSD	MSD	5	4648896.5	5025220.4	92.51	PASS	70-125	72072.9	62542.5	115.24	PASS	70-125
N028744-002B	SAMP	1	4601250.6	5025220.4	91.56	PASS	70-125	74355	62542.5	118.89	PASS	70-125
N028744-002B	SAMP	5	4799110.4	5025220.4	95.5	PASS	70-125	72962.3	62542.5	116.66	PASS	70-125
N028744-003B	SAMP	1	4380146.8	5025220.4	87.16	PASS	70-125	69959.3	62542.5	111.86	PASS	70-125
N028744-003B	SAMP	5	4643242.1	5025220.4	92.4	PASS	70-125	69389.4	62542.5	110.95	PASS	70-125
N028744-003B	SAMP	25	4915855	5025220.4	97.82	PASS	70-125	72683.4	62542.5	116.21	PASS	70-125
N028744-004B	SAMP	1	3066730.2	5025220.4	61.027	NR!	70-125	59004.9	62542.5	94.34	PASS	70-125
N028744-004B	SAMP	5	4203842.2	5025220.4	83.65	PASS	70-125	75892.8	62542.5	121.35	PASS	70-125
N028744-005B	SAMP	1	3259366.4	5025220.4	64.86	NR!	70-125	68175.5	62542.5	109.01	PASS	70-125
N028744-005B	SAMP	5	3948136.3	5025220.4	78.57	PASS	70-125	69494.1	62542.5	111.12	PASS	70-125
CCV2	CCV	1	4685600.1	5025220.4	93.24	PASS	70-125	76300.6	62542.5	122	PASS	70-125
CCB2	CCB	1	4656589.9	5025220.4	92.66	PASS	70-125	72724.3	62542.5	116.28	PASS	70-125
N028744-006B	SAMP	1	4127444.3	5025220.4	82.13	PASS	70-125	67692.3	62542.5	108.23	PASS	70-125
N028744-006B	SAMP	5	4480470.4	5025220.4	89.16	PASS	70-125	73362.7	62542.5	117.3	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028745-001B	SAMP	1	4544026	5025220.4	90.42	PASS	70-125	72646.4	62542.5	116.16	PASS	70-125
N028745-001B	SAMP	5	4530440.2	5025220.4	90.15	PASS	70-125	71433.3	62542.5	114.22	PASS	70-125
N028745-002B	SAMP	1	4646825.2	5025220.4	92.47	PASS	70-125	72785.6	62542.5	116.38	PASS	70-125
N028745-002B	SAMP	5	4662102.9	5025220.4	92.77	PASS	70-125	72063.8	62542.5	115.22	PASS	70-125
N028745-003B	SAMP	1	4642778.5	5025220.4	92.39	PASS	70-125	72394.3	62542.5	115.75	PASS	70-125
N028745-003B	SAMP	5	4630009.1	5025220.4	92.14	PASS	70-125	70986.2	62542.5	113.5	PASS	70-125
N028745-004B	SAMP	1	4601060.8	5025220.4	91.56	PASS	70-125	71720.2	62542.5	114.67	PASS	70-125
N028745-004B	SAMP	5	4674675.3	5025220.4	93.024	PASS	70-125	71614.2	62542.5	114.5	PASS	70-125
CCV3	CCV	1	4694133.8	5025220.4	93.41	PASS	70-125	70973.6	62542.5	113.48	PASS	70-125
CCB3	CCB	1	4699283.6	5025220.4	93.51	PASS	70-125	70386.5	62542.5	112.54	PASS	70-125
N028745-005B	SAMP	1	4753923.7	5025220.4	94.6	PASS	70-125	70122.2	62542.5	112.12	PASS	70-125
N028745-005B	SAMP	5	4590583.9	5025220.4	91.35	PASS	70-125	67652.3	62542.5	108.17	PASS	70-125
N028745-006B	SAMP	1	4716164.8	5025220.4	93.85	PASS	70-125	72025.9	62542.5	115.16	PASS	70-125
N028745-006B	SAMP	5	4691844.5	5025220.4	93.37	PASS	70-125	69734	62542.5	111.5	PASS	70-125
N028745-007B	SAMP	1	4716372	5025220.4	93.85	PASS	70-125	70414.7	62542.5	112.59	PASS	70-125
N028745-007B	SAMP	5	4737912.7	5025220.4	94.28	PASS	70-125	70604.3	62542.5	112.89	PASS	70-125
N028745-008B	SAMP	1	4562845.9	5025220.4	90.8	PASS	70-125	68169.9	62542.5	109	PASS	70-125
N028745-008B	SAMP	5	4684970.6	5025220.4	93.23	PASS	70-125	67654.3	62542.5	108.17	PASS	70-125
N028745-009B	SAMP	1	4687257.1	5025220.4	93.27	PASS	70-125	67255.1	62542.5	107.54	PASS	70-125
N028745-009B	SAMP	5	4676320	5025220.4	93.057	PASS	70-125	67101.1	62542.5	107.29	PASS	70-125
CCV4	CCV	1	4685905	5025220.4	93.25	PASS	70-125	67603.1	62542.5	108.09	PASS	70-125
CCB4	CCB	1	4630448.6	5025220.4	92.14	PASS	70-125	64644.6	62542.5	103.36	PASS	70-125
N028745-010B	SAMP	1	4667317	5025220.4	92.88	PASS	70-125	65218	62542.5	104.28	PASS	70-125
N028745-010B	SAMP	5	4667143.2	5025220.4	92.87	PASS	70-125	67275.1	62542.5	107.57	PASS	70-125
N028745-011B	SAMP	1	4635709.5	5025220.4	92.25	PASS	70-125	66008.9	62542.5	105.54	PASS	70-125
N028745-011B	SAMP	5	4618298	5025220.4	91.9	PASS	70-125	65896.4	62542.5	105.36	PASS	70-125
N028745-012B	SAMP	1	4538080.8	5025220.4	90.31	PASS	70-125	64207.4	62542.5	102.66	PASS	70-125
N028745-012B	SAMP	5	4576541.9	5025220.4	91.071	PASS	70-125	65208.1	62542.5	104.26	PASS	70-125
N028745-014B	SAMP	1	4510828.1	5025220.4	89.76	PASS	70-125	64306.9	62542.5	102.82	PASS	70-125
N028745-014B	SAMP	5	4586215.3	5025220.4	91.26	PASS	70-125	64068.1	62542.5	102.44	PASS	70-125
N028745-015B	SAMP	1	4445328.8	5025220.4	88.46	PASS	70-125	62977.2	62542.5	100.7	PASS	70-125
N028745-015B	SAMP	5	4621882.2	5025220.4	91.97	PASS	70-125	63569.4	62542.5	101.64	PASS	70-125
CCV5	CCV	1	4681545.9	5025220.4	93.16	PASS	70-125	65061	62542.5	104.03	PASS	70-125
CCB5	CCB	1	4594732	5025220.4	91.43	PASS	70-125	63557.4	62542.5	101.62	PASS	70-125
LLCCV1	CCV2	1	4784222.9	5025220.4	95.2	PASS	70-125	64312.2	62542.5	102.83	PASS	70-125
ICSA2	ICSA	1	4442744	5025220.4	88.41	PASS	70-125	64326.8	62542.5	102.85	PASS	70-125
ICSAB2	ICSAB	1	4423657	5025220.4	88.029	PASS	70-125	58915.9	62542.5	94.2	PASS	70-125
N028745-005B	SAMP	1	4431851.4	5025220.4	88.19	PASS	70-125	64442.8	62542.5	103.04	PASS	70-125
N028745-009B	SAMP	1	4585406.4	5025220.4	91.25	PASS	70-125	58760.2	62542.5	93.95	PASS	70-125
N028745-012B	SAMP	1	4509079.2	5025220.4	89.73	PASS	70-125	62510.1	62542.5	99.95	PASS	70-125
N028745-015B	SAMP	1	4443829.6	5025220.4	88.43	PASS	70-125	106.7	62542.5	0.17	NR!	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028744-003B	SAMP	250	4778458.7	5025220.4	95.09	PASS	70-125	64391.6	62542.5	102.96	PASS	70-125
N028744-005B	SAMP	25	4361430.5	5025220.4	86.79	PASS	70-125	60984.5	62542.5	97.51	PASS	70-125
N028726-001B-MSD	MSD	5	4335576.9	5025220.4	86.28	PASS	70-125	54671.6	62542.5	87.42	PASS	70-125
N028726-003B	SAMP	5	4198198.9	5025220.4	83.54	PASS	70-125	65588.4	62542.5	104.87	PASS	70-125
N028727-006B	SAMP	1	4860361.7	5025220.4	96.72	PASS	70-125	73866	62542.5	118.11	PASS	70-125
N028745-015B	SAMP	1	4615035	5025220.4	91.84	PASS	70-125	69688.1	62542.5	111.43	PASS	70-125
CCV6	CCV	1	4789081.6	5025220.4	95.3	PASS	70-125	70736	62542.5	113.1	PASS	70-125
CCB6	CCB	1	4706285.7	5025220.4	93.65	PASS	70-125	68889.2	62542.5	110.15	PASS	70-125
N028717-001C	SAMP	25	4656396.5	5025220.4	92.66	PASS	70-125	68052.7	62542.5	108.81	PASS	70-125
N028696-001B	SAMP	1	3287852.4	5025220.4	65.43	NR!	70-125	58700.7	62542.5	93.86	PASS	70-125
N028696-001A	SAMP	1	3414960.9	5025220.4	67.96	NR!	70-125	63487.1	62542.5	101.51	PASS	70-125
N028696-005B	SAMP	1	3207565.2	5025220.4	63.83	NR!	70-125	61902.1	62542.5	98.98	PASS	70-125
N028696-005A	SAMP	1	3117623.7	5025220.4	62.04	NR!	70-125	60499.3	62542.5	96.73	PASS	70-125
CCV7	CCV	1	4672020.4	5025220.4	92.97	PASS	70-125	70315.2	62542.5	112.43	PASS	70-125
CCB7	CCB	1	4669682.4	5025220.4	92.92	PASS	70-125	68816.9	62542.5	110.03	PASS	70-125
CCV8	CCV	1	4776670.8	5025220.4	95.054	PASS	70-125	66737.3	62542.5	106.71	PASS	70-125
CCB8	CCB	1	4674796	5025220.4	93.027	PASS	70-125	64324.8	62542.5	102.85	PASS	70-125
CCV9	CCV	1	4504115.1	5025220.4	89.63	PASS	70-125	57562.4	62542.5	92.037	PASS	70-125
CCB9	CCB	1	4506261.8	5025220.4	89.67	PASS	70-125	55714.8	62542.5	89.083	PASS	70-125
CCV10	CCV	1	4473002.6	5025220.4	89.011	PASS	70-125	57035	62542.5	91.19	PASS	70-125
CCB10	CCB	1	4443101.8	5025220.4	88.42	PASS	70-125	55614.8	62542.5	88.92	PASS	70-125
LLCCV2	CCV2	1	4634296.8	5025220.4	92.22	PASS	70-125	58041.8	62542.5	92.8	PASS	70-125
ICSA3	ICSA	1	4311674.1	5025220.4	85.8	PASS	70-125	55749.6	62542.5	89.14	PASS	70-125
ICSAB3	ICSAB	1	4241951.3	5025220.4	84.41	PASS	70-125	56971.4	62542.5	91.092	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46628.3	46628.3	100	PASS	70-125	53663.1	53663.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	47160	46628.3	101.14	PASS	70-125	54213.8	53663.1	101.03	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	47197.7	46628.3	101.22	PASS	70-125	54328.8	53663.1	101.24	PASS	70-125
Std3-5/50 ppb	ICAL	1	47257	46628.3	101.35	PASS	70-125	54076.8	53663.1	100.77	PASS	70-125
Std4-10/100 ppb	ICAL	1	46995.1	46628.3	100.79	PASS	70-125	54085.8	53663.1	100.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	47762.9	46628.3	102.43	PASS	70-125	54306.5	53663.1	101.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	47012.8	46628.3	100.82	PASS	70-125	53351.1	53663.1	99.42	PASS	70-125
Std7-100/1000 ppb	ICAL	1	47262.4	46628.3	101.36	PASS	70-125	54387.8	53663.1	101.35	PASS	70-125
Std8-200/2000 ppb	ICAL	1	46491.5	46628.3	99.71	PASS	70-125	52916.4	53663.1	98.61	PASS	70-125
ICV	ICV	1	52516.3	46628.3	112.63	PASS	70-125	59218	53663.1	110.35	PASS	70-125
ICB	ICB	1	46082.4	46628.3	98.83	PASS	70-125	52728	53663.1	98.26	PASS	70-125
LLICV	CCV1	1	48271	46628.3	103.52	PASS	70-125	55108	53663.1	102.69	PASS	70-125
ICSA1	ICSA	1	47852	46628.3	102.62	PASS	70-125	53017.8	53663.1	98.8	PASS	70-125
ICSAB1	ICSAB	1	43562.2	46628.3	93.42	PASS	70-125	46264	53663.1	86.21	PASS	70-125
LLICV	CCV1	1	54859.1	46628.3	117.65	PASS	70-125	63565	53663.1	118.45	PASS	70-125
MB-66914	MBLK	1	51338.3	46628.3	110.1	PASS	70-125	59485.6	53663.1	110.85	PASS	70-125
LCS-66914	LCS	1	54694.4	46628.3	117.3	PASS	70-125	63189.5	53663.1	117.75	PASS	70-125
N028744-001B	SAMP	1	42683.2	46628.3	91.54	PASS	70-125	47171	53663.1	87.9	PASS	70-125
N028744-001B	SAMP	5	45568.8	46628.3	97.73	PASS	70-125	52508.4	53663.1	97.85	PASS	70-125
N028744-001B	SAMP	25	50562.3	46628.3	108.44	PASS	70-125	58340.4	53663.1	108.72	PASS	70-125
N028744-001B-PS	PS	1	44330.9	46628.3	95.073	PASS	70-125	49031.1	53663.1	91.37	PASS	70-125
N028744-001B-PS	PS	5	48841.7	46628.3	104.75	PASS	70-125	55604.2	53663.1	103.62	PASS	70-125
N028744-001B-MS	MS	1	47412.9	46628.3	101.68	PASS	70-125	51668	53663.1	96.28	PASS	70-125
N028744-001B-MS	MS	5	51499.7	46628.3	110.45	PASS	70-125	57750.3	53663.1	107.62	PASS	70-125
N028744-001B-MSD	MSD	1	49883.4	46628.3	106.98	PASS	70-125	52809.4	53663.1	98.41	PASS	70-125
CCV1	CCV	1	43812.9	46628.3	93.96	PASS	70-125	47776.3	53663.1	89.03	PASS	70-125
CCB1	CCB	1	56147	46628.3	120.41	PASS	70-125	62887.2	53663.1	117.19	PASS	70-125
N028744-001B-MSD	MSD	5	51017.1	46628.3	109.41	PASS	70-125	57066.9	53663.1	106.34	PASS	70-125
N028744-002B	SAMP	1	50863.1	46628.3	109.08	PASS	70-125	56589.7	53663.1	105.45	PASS	70-125
N028744-002B	SAMP	5	51248.8	46628.3	109.91	PASS	70-125	58923.6	53663.1	109.8	PASS	70-125
N028744-003B	SAMP	1	48841.4	46628.3	104.75	PASS	70-125	52332.3	53663.1	97.52	PASS	70-125
N028744-003B	SAMP	5	50221.1	46628.3	107.71	PASS	70-125	56874	53663.1	105.98	PASS	70-125
N028744-003B	SAMP	25	53418.1	46628.3	114.56	PASS	70-125	59293.7	53663.1	110.49	PASS	70-125
N028744-004B	SAMP	1	37938.3	46628.3	81.36	PASS	70-125	39062.9	53663.1	72.79	PASS	70-125
N028744-004B	SAMP	5	51310.2	46628.3	110.04	PASS	70-125	55177.3	53663.1	102.82	PASS	70-125
N028744-005B	SAMP	1	43967.7	46628.3	94.29	PASS	70-125	43397.4	53663.1	80.87	PASS	70-125
N028744-005B	SAMP	5	47717.2	46628.3	102.34	PASS	70-125	49367.6	53663.1	92	PASS	70-125
CCV2	CCV	1	54022.2	46628.3	115.86	PASS	70-125	59691.9	53663.1	111.23	PASS	70-125
CCB2	CCB	1	52459.4	46628.3	112.51	PASS	70-125	59054.1	53663.1	110.05	PASS	70-125
N028744-006B	SAMP	1	47099.7	46628.3	101.01	PASS	70-125	50843.2	53663.1	94.75	PASS	70-125
N028744-006B	SAMP	5	52067	46628.3	111.66	PASS	70-125	57656.8	53663.1	107.44	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028745-001B	SAMP	1	51646.9	46628.3	110.76	PASS	70-125	57926.5	53663.1	107.94	PASS	70-125
N028745-001B	SAMP	5	51378.1	46628.3	110.19	PASS	70-125	58391.6	53663.1	108.81	PASS	70-125
N028745-002B	SAMP	1	52515	46628.3	112.62	PASS	70-125	58759.6	53663.1	109.5	PASS	70-125
N028745-002B	SAMP	5	51780.6	46628.3	111.05	PASS	70-125	59792.3	53663.1	111.42	PASS	70-125
N028745-003B	SAMP	1	51677	46628.3	110.83	PASS	70-125	58922.2	53663.1	109.8	PASS	70-125
N028745-003B	SAMP	5	51658.1	46628.3	110.79	PASS	70-125	59717.6	53663.1	111.28	PASS	70-125
N028745-004B	SAMP	1	51299.3	46628.3	110.02	PASS	70-125	58852.2	53663.1	109.67	PASS	70-125
N028745-004B	SAMP	5	51843.1	46628.3	111.18	PASS	70-125	59924.9	53663.1	111.67	PASS	70-125
CCV3	CCV	1	52075.8	46628.3	111.68	PASS	70-125	59191.1	53663.1	110.3	PASS	70-125
CCB3	CCB	1	51329.2	46628.3	110.08	PASS	70-125	58905.8	53663.1	109.77	PASS	70-125
N028745-005B	SAMP	1	51068.4	46628.3	109.52	PASS	70-125	56675.5	53663.1	105.61	PASS	70-125
N028745-005B	SAMP	5	50524.3	46628.3	108.36	PASS	70-125	58276.7	53663.1	108.6	PASS	70-125
N028745-006B	SAMP	1	51700.3	46628.3	110.88	PASS	70-125	58976	53663.1	109.9	PASS	70-125
N028745-006B	SAMP	5	51106.1	46628.3	109.6	PASS	70-125	58786.5	53663.1	109.55	PASS	70-125
N028745-007B	SAMP	1	51055	46628.3	109.49	PASS	70-125	57515.1	53663.1	107.18	PASS	70-125
N028745-007B	SAMP	5	51029.4	46628.3	109.44	PASS	70-125	59394	53663.1	110.68	PASS	70-125
N028745-008B	SAMP	1	49830	46628.3	106.87	PASS	70-125	56626.4	53663.1	105.52	PASS	70-125
N028745-008B	SAMP	5	50404.1	46628.3	108.1	PASS	70-125	58121.7	53663.1	108.31	PASS	70-125
N028745-009B	SAMP	1	49157.1	46628.3	105.42	PASS	70-125	55523.9	53663.1	103.47	PASS	70-125
N028745-009B	SAMP	5	49893.6	46628.3	107	PASS	70-125	57286.5	53663.1	106.75	PASS	70-125
CCV4	CCV	1	50421.3	46628.3	108.13	PASS	70-125	56869.6	53663.1	105.98	PASS	70-125
CCB4	CCB	1	48431.4	46628.3	103.87	PASS	70-125	56007.8	53663.1	104.37	PASS	70-125
N028745-010B	SAMP	1	47615.6	46628.3	102.12	PASS	70-125	53966.5	53663.1	100.57	PASS	70-125
N028745-010B	SAMP	5	49716.4	46628.3	106.62	PASS	70-125	57720.3	53663.1	107.56	PASS	70-125
N028745-011B	SAMP	1	48176.1	46628.3	103.32	PASS	70-125	54853.7	53663.1	102.22	PASS	70-125
N028745-011B	SAMP	5	48872.7	46628.3	104.81	PASS	70-125	56716.8	53663.1	105.69	PASS	70-125
N028745-012B	SAMP	1	47172.4	46628.3	101.17	PASS	70-125	52870.5	53663.1	98.52	PASS	70-125
N028745-012B	SAMP	5	48273.3	46628.3	103.53	PASS	70-125	55478.4	53663.1	103.38	PASS	70-125
N028745-014B	SAMP	1	47043	46628.3	100.89	PASS	70-125	53532.8	53663.1	99.76	PASS	70-125
N028745-014B	SAMP	5	47972.2	46628.3	102.88	PASS	70-125	55057.8	53663.1	102.6	PASS	70-125
N028745-015B	SAMP	1	46265.1	46628.3	99.22	PASS	70-125	52720.2	53663.1	98.24	PASS	70-125
N028745-015B	SAMP	5	47380.5	46628.3	101.61	PASS	70-125	55493.7	53663.1	103.41	PASS	70-125
CCV5	CCV	1	48178.3	46628.3	103.32	PASS	70-125	55567.4	53663.1	103.55	PASS	70-125
CCB5	CCB	1	46987.4	46628.3	100.77	PASS	70-125	54966.6	53663.1	102.43	PASS	70-125
LLCCV1	CCV2	1	48209.6	46628.3	103.39	PASS	70-125	55528.3	53663.1	103.48	PASS	70-125
ICSA2	ICSA	1	47119.9	46628.3	101.05	PASS	70-125	52542.9	53663.1	97.91	PASS	70-125
ICSAB2	ICSAB	1	42771.2	46628.3	91.73	PASS	70-125	45504.1	53663.1	84.8	PASS	70-125
N028745-005B	SAMP	1	45606.8	46628.3	97.81	PASS	70-125	53956.5	53663.1	100.55	PASS	70-125
N028745-009B	SAMP	1	42660.9	46628.3	91.49	PASS	70-125	45753.7	53663.1	85.26	PASS	70-125
N028745-012B	SAMP	1	45290.1	46628.3	97.13	PASS	70-125	51770.5	53663.1	96.47	PASS	70-125
N028745-015B	SAMP	1	13.3	46628.3	0.029	NR!	70-125	14.4	53663.1	0.027	NR!	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N028744-003B	SAMP	250	46599.7	46628.3	99.94	PASS	70-125	54226.3	53663.1	101.05	PASS	70-125
N028744-005B	SAMP	25	43975.6	46628.3	94.31	PASS	70-125	51073.8	53663.1	95.17	PASS	70-125
N028726-001B-MSD	MSD	5	39224.6	46628.3	84.12	PASS	70-125	40918.7	53663.1	76.25	PASS	70-125
N028726-003B	SAMP	5	45953.1	46628.3	98.55	PASS	70-125	50949	53663.1	94.94	PASS	70-125
N028727-006B	SAMP	1	52790.4	46628.3	113.22	PASS	70-125	60230.4	53663.1	112.24	PASS	70-125
N028745-015B	SAMP	1	50120.9	46628.3	107.49	PASS	70-125	58566.9	53663.1	109.14	PASS	70-125
CCV6	CCV	1	51846.3	46628.3	111.19	PASS	70-125	59888.1	53663.1	111.6	PASS	70-125
CCB6	CCB	1	49427.7	46628.3	106	PASS	70-125	58142.9	53663.1	108.35	PASS	70-125
N028717-001C	SAMP	25	49905.8	46628.3	107.03	PASS	70-125	58067.2	53663.1	108.21	PASS	70-125
N028696-001B	SAMP	1	39156.7	46628.3	83.98	PASS	70-125	41837.7	53663.1	77.96	PASS	70-125
N028696-001A	SAMP	1	41692.9	46628.3	89.42	PASS	70-125	44146.1	53663.1	82.27	PASS	70-125
N028696-005B	SAMP	1	40398.5	46628.3	86.64	PASS	70-125	42432.5	53663.1	79.072	PASS	70-125
N028696-005A	SAMP	1	39927.4	46628.3	85.63	PASS	70-125	41833.1	53663.1	77.96	PASS	70-125
CCV7	CCV	1	50311.7	46628.3	107.9	PASS	70-125	58521.1	53663.1	109.05	PASS	70-125
CCB7	CCB	1	50359.6	46628.3	108	PASS	70-125	57833	53663.1	107.77	PASS	70-125
CCV8	CCV	1	48148.3	46628.3	103.26	PASS	70-125	54923.9	53663.1	102.35	PASS	70-125
CCB8	CCB	1	47543.3	46628.3	101.96	PASS	70-125	54207.3	53663.1	101.01	PASS	70-125
CCV9	CCV	1	44068.1	46628.3	94.51	PASS	70-125	51503	53663.1	95.97	PASS	70-125
CCB9	CCB	1	42754.4	46628.3	91.69	PASS	70-125	50053	53663.1	93.27	PASS	70-125
CCV10	CCV	1	43227	46628.3	92.71	PASS	70-125	50397.2	53663.1	93.91	PASS	70-125
CCB10	CCB	1	42337.8	46628.3	90.8	PASS	70-125	49587.2	53663.1	92.4	PASS	70-125
LLCCV2	CCV2	1	44026.9	46628.3	94.42	PASS	70-125	50928.7	53663.1	94.9	PASS	70-125
ICSA3	ICSA	1	41378.8	46628.3	88.74	PASS	70-125	47515.4	53663.1	88.54	PASS	70-125
ICSAB3	ICSAB	1	42200	46628.3	90.5	PASS	70-125	48206.3	53663.1	89.83	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1451516.4	1451516.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1454682.2	1451516.4	100.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1448560.3	1451516.4	99.8	PASS	70-125
Std3-5/50 ppb	ICAL	1	1461389.1	1451516.4	100.68	PASS	70-125
Std4-10/100 ppb	ICAL	1	1459884.1	1451516.4	100.58	PASS	70-125
Std5-20/200 ppb	ICAL	1	1462552	1451516.4	100.76	PASS	70-125
Std6-40/400 ppb	ICAL	1	1452955.8	1451516.4	100.1	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1440505.5	1451516.4	99.24	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1410396.5	1451516.4	97.17	PASS	70-125
ICV	ICV	1	1622405.3	1451516.4	111.77	PASS	70-125
ICB	ICB	1	1445519.2	1451516.4	99.59	PASS	70-125
LLICV	CCV1	1	1491617.4	1451516.4	102.76	PASS	70-125
ICSA1	ICSA	1	1355889.9	1451516.4	93.41	PASS	70-125
ICSAB1	ICSAB	1	1200987.9	1451516.4	82.74	PASS	70-125
LLICV	CCV1	1	1655303.4	1451516.4	114.04	PASS	70-125
MB-66914	MBLK	1	1555620.7	1451516.4	107.17	PASS	70-125
LCS-66914	LCS	1	1673202.5	1451516.4	115.27	PASS	70-125
N028744-001B	SAMP	1	1146426.7	1451516.4	78.98	PASS	70-125
N028744-001B	SAMP	5	1271199.1	1451516.4	87.58	PASS	70-125
N028744-001B	SAMP	25	1450929.3	1451516.4	99.96	PASS	70-125
N028744-001B-PS	PS	1	1168888.3	1451516.4	80.53	PASS	70-125
N028744-001B-PS	PS	5	1357600.1	1451516.4	93.53	PASS	70-125
N028744-001B-MS	MS	1	1235133.5	1451516.4	85.093	PASS	70-125
N028744-001B-MS	MS	5	1401249.8	1451516.4	96.54	PASS	70-125
N028744-001B-MSD	MSD	1	1272172.3	1451516.4	87.64	PASS	70-125
CCV1	CCV	1	1348269.9	1451516.4	92.89	PASS	70-125
CCB1	CCB	1	1646038.1	1451516.4	113.4	PASS	70-125
N028744-001B-MSD	MSD	5	1415355.3	1451516.4	97.51	PASS	70-125
N028744-002B	SAMP	1	1349957.9	1451516.4	93.003	PASS	70-125
N028744-002B	SAMP	5	1430463.1	1451516.4	98.55	PASS	70-125
N028744-003B	SAMP	1	1311718.2	1451516.4	90.37	PASS	70-125
N028744-003B	SAMP	5	1411269.8	1451516.4	97.23	PASS	70-125
N028744-003B	SAMP	25	1519538.8	1451516.4	104.69	PASS	70-125
N028744-004B	SAMP	1	950232.5	1451516.4	65.46	NR!	70-125
N028744-004B	SAMP	5	1355006.9	1451516.4	93.35	PASS	70-125
N028744-005B	SAMP	1	1063982	1451516.4	73.3	PASS	70-125
N028744-005B	SAMP	5	1228989.1	1451516.4	84.67	PASS	70-125
CCV2	CCV	1	1543395.4	1451516.4	106.33	PASS	70-125
CCB2	CCB	1	1518339.5	1451516.4	104.6	PASS	70-125
N028744-006B	SAMP	1	1233946.1	1451516.4	85.011	PASS	70-125
N028744-006B	SAMP	5	1423550.1	1451516.4	98.073	PASS	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028745-001B	SAMP	1	1400403.4	1451516.4	96.48	PASS	70-125
N028745-001B	SAMP	5	1439829.3	1451516.4	99.19	PASS	70-125
N028745-002B	SAMP	1	1401674.2	1451516.4	96.57	PASS	70-125
N028745-002B	SAMP	5	1476312.4	1451516.4	101.71	PASS	70-125
N028745-003B	SAMP	1	1407570.9	1451516.4	96.97	PASS	70-125
N028745-003B	SAMP	5	1445136.2	1451516.4	99.56	PASS	70-125
N028745-004B	SAMP	1	1390916.4	1451516.4	95.83	PASS	70-125
N028745-004B	SAMP	5	1472806.7	1451516.4	101.47	PASS	70-125
CCV3	CCV	1	1515436.6	1451516.4	104.4	PASS	70-125
CCB3	CCB	1	1498587.6	1451516.4	103.24	PASS	70-125
N028745-005B	SAMP	1	1380680.8	1451516.4	95.12	PASS	70-125
N028745-005B	SAMP	5	1414405.9	1451516.4	97.44	PASS	70-125
N028745-006B	SAMP	1	1411699.5	1451516.4	97.26	PASS	70-125
N028745-006B	SAMP	5	1449595	1451516.4	99.87	PASS	70-125
N028745-007B	SAMP	1	1386606.6	1451516.4	95.53	PASS	70-125
N028745-007B	SAMP	5	1441477.3	1451516.4	99.31	PASS	70-125
N028745-008B	SAMP	1	1347812.9	1451516.4	92.86	PASS	70-125
N028745-008B	SAMP	5	1425427.7	1451516.4	98.2	PASS	70-125
N028745-009B	SAMP	1	1347829.9	1451516.4	92.86	PASS	70-125
N028745-009B	SAMP	5	1421088.7	1451516.4	97.9	PASS	70-125
CCV4	CCV	1	1473106.1	1451516.4	101.49	PASS	70-125
CCB4	CCB	1	1459506.9	1451516.4	100.55	PASS	70-125
N028745-010B	SAMP	1	1300702.1	1451516.4	89.61	PASS	70-125
N028745-010B	SAMP	5	1400915.5	1451516.4	96.51	PASS	70-125
N028745-011B	SAMP	1	1329250.4	1451516.4	91.58	PASS	70-125
N028745-011B	SAMP	5	1382298.4	1451516.4	95.23	PASS	70-125
N028745-012B	SAMP	1	1286244.4	1451516.4	88.61	PASS	70-125
N028745-012B	SAMP	5	1364529.7	1451516.4	94.007	PASS	70-125
N028745-014B	SAMP	1	1283407.9	1451516.4	88.42	PASS	70-125
N028745-014B	SAMP	5	1373393.6	1451516.4	94.62	PASS	70-125
N028745-015B	SAMP	1	1248545.1	1451516.4	86.017	PASS	70-125
N028745-015B	SAMP	5	1366039.3	1451516.4	94.11	PASS	70-125
CCV5	CCV	1	1436583.5	1451516.4	98.97	PASS	70-125
CCB5	CCB	1	1421725.6	1451516.4	97.95	PASS	70-125
LLCCV1	CCV2	1	1444896.1	1451516.4	99.54	PASS	70-125
ICSA2	ICSA	1	1281769.1	1451516.4	88.31	PASS	70-125
ICSAB2	ICSAB	1	1186629.9	1451516.4	81.75	PASS	70-125
N028745-005B	SAMP	1	1245404.4	1451516.4	85.8	PASS	70-125
N028745-009B	SAMP	1	1196590.1	1451516.4	82.44	PASS	70-125
N028745-012B	SAMP	1	1233948.6	1451516.4	85.011	PASS	70-125
N028745-015B	SAMP	1	80	1451516.4	0.0055	NR!	70-125

INTERNAL STANDARD: 180227A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N028744-003B	SAMP	250	1417181.8	1451516.4	97.63	PASS	70-125
N028744-005B	SAMP	25	1229980.8	1451516.4	84.74	PASS	70-125
N028726-001B-MSD	MSD	5	1110603.3	1451516.4	76.51	PASS	70-125
N028726-003B	SAMP	5	1192489.1	1451516.4	82.15	PASS	70-125
N028727-006B	SAMP	1	1427384.7	1451516.4	98.34	PASS	70-125
N028745-015B	SAMP	1	1357233.2	1451516.4	93.5	PASS	70-125
CCV6	CCV	1	1501301	1451516.4	103.43	PASS	70-125
CCB6	CCB	1	1477512.6	1451516.4	101.79	PASS	70-125
N028717-001C	SAMP	25	1437256	1451516.4	99.018	PASS	70-125
N028696-001B	SAMP	1	979885.9	1451516.4	67.51	NR!	70-125
N028696-001A	SAMP	1	1033522	1451516.4	71.2	PASS	70-125
N028696-005B	SAMP	1	981861.3	1451516.4	67.64	NR!	70-125
N028696-005A	SAMP	1	958294.1	1451516.4	66.02	NR!	70-125
CCV7	CCV	1	1477327.1	1451516.4	101.78	PASS	70-125
CCB7	CCB	1	1459628.2	1451516.4	100.56	PASS	70-125
CCV8	CCV	1	1469827.7	1451516.4	101.26	PASS	70-125
CCB8	CCB	1	1438063.6	1451516.4	99.073	PASS	70-125
CCV9	CCV	1	1319568.2	1451516.4	90.91	PASS	70-125
CCB9	CCB	1	1298631.4	1451516.4	89.47	PASS	70-125
CCV10	CCV	1	1293312.5	1451516.4	89.1	PASS	70-125
CCB10	CCB	1	1289991.6	1451516.4	88.87	PASS	70-125
LLCCV2	CCV2	1	1338734.5	1451516.4	92.23	PASS	70-125
ICSA3	ICSA	1	1141510.5	1451516.4	78.64	PASS	70-125
ICSAB3	ICSAB	1	1148627.8	1451516.4	79.13	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028745
Test Method: EPA 6020
Analysis Date: 2/27/2018

Matrix: Groundwater
Batch No.: 66914

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Man and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028744-001B DT 5X	Arsenic	ug/L	2.041089	NA	2.071188	1.45%	10
N028744-001B DT 5X	Barium	ug/L	33.17754	PASS	31.17527	6.42%	10
N028744-001B DT 25X	Chromium	ug/L	550.3148	PASS	523.8971	5.04%	10
N028744-001B DT 5X	Manganese	ug/L	6.994867	NA	6.303051	10.98%	10
N028744-001B DT 5X	Molybdenum	ug/L	28.9895	PASS	28.53612	1.59%	10
N028744-001B DT 5X	Selenium	ug/L	6.624075	NA	7.657848	13.50%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N028744-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122347**
Client ID:	**ZZZZZZ**	Batch ID: **66914**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/27/2018**	SeqNo: **2943853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.795	0.10	10.00	2.071	107	80	120				
Barium	40.127	1.0	10.00	31.18	89.5	80	120				
Manganese	100.171	0.50	100.0	6.303	93.9	80	120				
Molybdenum	39.336	0.50	10.00	28.54	108	80	120				
Selenium	16.990	0.50	10.00	7.658	93.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028745
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028744-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122346
Client ID:	ZZZZZZ	Batch ID:	66914	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/27/2018	SeqNo:	2943731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	518.083	5.0	10.00	523.9	-58.1	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 08, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028775

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucan for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N028744-003B-MS1 and N028744-003B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028744-004B-MS2 and N028744-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N028775-001B-MS and N028775-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N028775-004CMS and N028775-004CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028775
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028775-001A	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-001B	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-001C	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-001D	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-002A	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-002B	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-002C	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-002D	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-003A	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-003B	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-003C	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-003D	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-004A	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-004B	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-004C	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-004D	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-005A	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-005B	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-005C	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-005D	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-006A	TW-02D-Q118	Groundwater	2/23/2018 9:53:00 AM	2/23/2018	3/8/2018
N028775-006B	TW-02D-Q118	Groundwater	2/23/2018 9:53:00 AM	2/23/2018	3/8/2018
N028775-006C	TW-02D-Q118	Groundwater	2/23/2018 9:53:00 AM	2/23/2018	3/8/2018
N028775-007A	MW-904-Q118	Groundwater	2/23/2018 10:03:00 AM	2/23/2018	3/8/2018
N028775-007B	MW-904-Q118	Groundwater	2/23/2018 10:03:00 AM	2/23/2018	3/8/2018
N028775-007C	MW-904-Q118	Groundwater	2/23/2018 10:03:00 AM	2/23/2018	3/8/2018
N028775-008A	MW-715-Q118	Groundwater	2/23/2018 1:00:00 PM	2/23/2018	3/8/2018
N028775-009A	MW-716-Q118	Groundwater	2/23/2018 1:20:00 PM	2/23/2018	3/8/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	5200	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028775-007CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122270
Client ID:	ZZZZZZ	Batch ID:	R122270	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	5380.000	0.10						5390	0.186	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1800	25	25		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3200	50	50		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3300	50	50		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66936**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **LCSW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	982.000	10	1000	0	98.2	80	120				

Sample ID **MB-66936**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **PBW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N028744-004DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **ZZZZZZ**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12780.000	200						13100	2.47	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	110000	85	500		µg/L	1	2/27/2018 07:03 PM
Iron	31	18	20		µg/L	1	2/27/2018 07:03 PM
Magnesium	28000	48	100		µg/L	1	2/27/2018 07:03 PM
Sodium	520000	660	12000		µg/L	25	2/28/2018 03:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-002

Client Sample ID: MW-10-Q118
Collection Date: 2/23/2018 12:46:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	110000	85	500		µg/L	1	2/27/2018 07:09 PM
Iron	250	18	20		µg/L	1	2/27/2018 07:09 PM
Magnesium	17000	48	100		µg/L	1	2/27/2018 07:09 PM
Sodium	470000	660	12000		µg/L	25	2/28/2018 03:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-003

Client Sample ID: MW-11-Q118
Collection Date: 2/23/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	120000	85	500		µg/L	1	2/27/2018 07:24 PM
Iron	ND	18	20		µg/L	1	2/27/2018 07:24 PM
Magnesium	21000	48	100		µg/L	1	2/27/2018 07:24 PM
Sodium	320000	660	12000		µg/L	25	2/28/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **PBW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66928**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **LCSW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9493.819	500	10000	0	94.9	85	115				
Iron	107.627	20	100.0	0	108	85	115				
Magnesium	9777.591	100	10000	0	97.8	85	115				

Sample ID **N028744-003B-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365303.653	500	10000	343700	216	75	125				S
Iron	181.066	20	100.0	89.08	92.0	75	125				
Magnesium	44195.279	100	10000	34080	101	75	125				

Sample ID **N028744-003B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122333**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365559.301	500	10000	343700	218	75	125	365300	0.0700	20	S
Iron	178.733	20	100.0	89.08	89.7	75	125	181.1	1.30	20	
Magnesium	44272.258	100	10000	34080	102	75	125	44200	0.174	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **PBW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-66928**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **LCSW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	22052.658	500	20000	0	110	85	115				

Sample ID **N028744-004B-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5224198.785	120000	20000	5171000	266	75	125				S

Sample ID **N028744-004B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5163013.283	120000	20000	5171000	-40.2	75	125	5224000	1.18	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	2/26/2018 02:40 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	150	0.13	1.0		µg/L	1	2/28/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	2/26/2018 03:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	160	0.13	1.0		µg/L	1	2/28/2018 04:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	57	0.33	2.0		µg/L	10	2/26/2018 03:19 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	56	0.13	1.0		µg/L	1	2/28/2018 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.8	0.033	0.20		µg/L	1	2/26/2018 03:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate **2/27/2018**			Analyst: **CEI**
Chromium	2.4	0.13	1.0		µg/L	1	2/28/2018 04:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.8	0.033	0.20		µg/L	1	2/26/2018 04:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	2.5	0.13	1.0		µg/L	1	2/28/2018 04:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	140	0.66	4.0		µg/L	20	2/26/2018 04:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate **2/27/2018**			Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	2/28/2018 04:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	2/26/2018 04:58 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	2/28/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-715-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/26/2018 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-716-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/26/2018 05:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122291**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **PBW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122291**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **LCSW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.021	0.20	5.000	0	100	90	110				

Sample ID **N028744-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	765.890	10	250.0	513.9	101	90	110				

Sample ID **N028744-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	291.056	4.0	100.0	190.5	101	90	110				

Sample ID **N028744-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.583	1.0	5.000	0	91.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3072.060	40	1000	2050	102	90	110				

Sample ID **N028744-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	370.000	10	250.0	119.8	100	90	110				

Sample ID **N028744-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N028744-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	767.120	10	250.0	513.9	101	90	110	765.9	0.160	20	

Sample ID **N028744-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	188.886	4.0						190.5	0.874	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	33755.800	400	10000	23950	98.1	90	110				

Sample ID **N028775-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	249.822	4.0	100.0	146.3	103	90	110				

Sample ID **N028775-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	255.758	4.0	100.0	155.7	100	90	110				

Sample ID **N028775-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.849	2.0	50.00	56.76	102	90	110				

Sample ID **N028775-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.952	0.20	5.000	2.811	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028775-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.044	0.20	5.000	2.773	105	90	110				

Sample ID **N028775-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	238.960	4.0	100.0	136.6	102	90	110				

Sample ID **N028775-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	247.136	4.0	100.0	147.4	99.7	90	110				

Sample ID **N028775-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.04890	101	90	110				

Sample ID **N028775-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66954**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **PBW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66954**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **LCSW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.634	1.0	10.00	0	96.3	85	115				

Sample ID **N028775-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.212	1.0	10.00	152.7	35.0	75	125				S

Sample ID **N028775-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.904	1.0	10.00	152.7	41.9	75	125	156.2	0.442	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R122315**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **LCSW**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.576	5.0	100.0	0	99.6	85	115				

Sample ID **MB-R122315**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **PBW**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028775-001DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **ZZZZZZ**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	125.000	5.0						127.1	1.68	30	

Sample ID **N028775-003DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **ZZZZZZ**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	188.559	5.0	100.0	92.16	96.4	75	125				

Sample ID **N028775-003DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **ZZZZZZ**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	187.500	5.0	100.0	92.16	95.3	75	125	188.6	0.563	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	2/26/2018 10:53 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	2/26/2018 01:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	2/26/2018 02:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-002

Client Sample ID: MW-10-Q118
Collection Date: 2/23/2018 12:46:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	0.86	0.020	0.50		mg/L	1	2/26/2018 11:08 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	670	1.8	100		mg/L	200	2/26/2018 02:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	270	1.1	25		mg/L	50	2/26/2018 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-003

Client Sample ID: MW-11-Q118
Collection Date: 2/23/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	2/26/2018 11:24 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	560	1.8	100		mg/L	200	2/26/2018 02:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	190	0.46	10		mg/L	20	2/26/2018 03:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-006

Client Sample ID: TW-02D-Q118
Collection Date: 2/23/2018 9:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/26/2018 11:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	2/26/2018 03:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	370	1.1	25		mg/L	50	2/26/2018 05:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-007

Client Sample ID: MW-904-Q118
Collection Date: 2/23/2018 10:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**			PrepDate				Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/26/2018 11:57 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**			PrepDate				Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	2/26/2018 04:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**			PrepDate				Analyst: **RAB**
Sulfate	390	1.1	25		mg/L	50	2/26/2018 06:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R122307_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	PBW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R122307_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	LCSW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.255	0.50	1.250	0	100	90	110				

Sample ID	N028775-001DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941316

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.171	1.0	2.500	0.6422	101	80	120				

Sample ID	N028775-001DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.198	1.0	2.500	0.6422	102	80	120	3.171	0.835	20	

Sample ID	N028775-002DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.834	0.50						0.8629	3.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R122307_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	PBW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941289

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R122307_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	LCSW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941290

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.091	0.50	2.000	0	105	90	110				

Sample ID	N028775-006CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2714.100	250	1000	1653	106	80	120				

Sample ID	N028775-006CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941298

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2689.850	250	1000	1653	104	80	120	2714	0.897	20	

Sample ID	N028775-006CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1643.500	250						1653	0.591	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R122307_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	PBW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941329

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R122307_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	LCSW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.925	0.50	4.000	0	98.1	90	110				

Sample ID	N028775-006CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941339

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	570.030	25	200.0	369.7	100	80	120				

Sample ID	N028775-006CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941340

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	563.625	25	200.0	369.7	97.0	80	120	570.0	1.13	20	

Sample ID	N028775-006CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941341

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	364.590	25						369.7	1.40	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.32	0.50		mg/L	10	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	11	0.32	0.50		mg/L	10	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	5.3	0.32	0.50		mg/L	10	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.7	0.16	0.25		mg/L	5	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.3	0.16	0.25		mg/L	5	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122394**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **PBW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122394**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **LCSW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	85	115				

Sample ID **N028727-004EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050						0.4675	7.83	20	

Sample ID **N028775-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.986	0.50	5.000	5.309	93.5	75	125				

Sample ID **N028775-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.195	0.50	5.000	5.309	97.7	75	125	9.986	2.07	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122395	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	PBW	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945459		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	ND	0.050											

Sample ID	LCS-R122395	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	LCSW	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945460		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.0	85	115						

Sample ID	N028727-007EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945464		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.458	0.050						0.4871	6.07	20			

Sample ID	N028775-004CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945466		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	7.252	0.25	2.500	3.688	143	75	125				S		

Sample ID	N028775-004CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945467		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	6.841	0.25	2.500	3.688	126	75	125	7.252	5.84	20	S		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**				PrepDate	**2/27/2018**	Analyst: **CEI**
Arsenic	1.6	0.081	0.10		µg/L	1	2/28/2018 03:09 PM
Manganese	ND	0.26	0.50		µg/L	1	2/28/2018 03:09 PM
Molybdenum	4.2	0.21	0.50		µg/L	1	2/28/2018 03:09 PM
Selenium	5.1	0.36	0.50		µg/L	1	3/5/2018 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**				PrepDate	**2/27/2018**	Analyst: **CEI**
Molybdenum	22	0.21	0.50		µg/L	1	2/28/2018 04:12 PM
Selenium	6.3	0.36	0.50		µg/L	1	3/5/2018 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-003

Client Sample ID: MW-11-Q118
Collection Date: 2/23/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**	Analyst: **CEI**	
Arsenic	1.4	0.081	0.10		µg/L	1	2/28/2018 04:23 PM
Manganese	ND	0.26	0.50		µg/L	1	2/28/2018 04:23 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	2/28/2018 04:23 PM
Selenium	5.2	0.36	0.50		µg/L	1	3/5/2018 04:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**	Analyst: **CEI**	
Arsenic	6.8	0.081	0.10		µg/L	1	2/28/2018 04:35 PM
Manganese	37	0.26	0.50		µg/L	1	2/28/2018 04:35 PM
Molybdenum	32	0.21	0.50		µg/L	1	2/28/2018 04:35 PM
Selenium	2.3	0.36	0.50		µg/L	1	3/5/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**	Analyst: **CEI**	
Arsenic	6.9	0.081	0.10		µg/L	1	2/28/2018 04:46 PM
Manganese	36	0.26	0.50		µg/L	1	2/28/2018 04:46 PM
Molybdenum	34	0.21	0.50		µg/L	1	2/28/2018 04:46 PM
Selenium	2.5	0.36	0.50		µg/L	1	3/5/2018 04:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-006

Client Sample ID: TW-02D-Q118
Collection Date: 2/23/2018 9:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**	Analyst: **CEI**	
Manganese	23	0.26	0.50		µg/L	1	2/28/2018 04:57 PM
Molybdenum	12	0.21	0.50		µg/L	1	2/28/2018 04:57 PM
Selenium	1.8	0.36	0.50		µg/L	1	3/5/2018 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**				PrepDate	**2/27/2018**	Analyst: **CEI**
Manganese	20	0.26	0.50		µg/L	1	2/28/2018 05:20 PM
Molybdenum	12	0.21	0.50		µg/L	1	2/28/2018 05:20 PM
Selenium	1.5	0.36	0.50		µg/L	1	3/5/2018 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66954**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **PBW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **LCS-66954**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **LCSW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.621	0.10	10.00	0	96.2	85	115				
Manganese	96.640	0.50	100.0	0	96.6	85	115				
Molybdenum	9.271	0.50	10.00	0	92.7	85	115				

Sample ID **N028775-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.291	0.10	10.00	1.617	107	75	125				
Manganese	98.636	0.50	100.0	0.2977	98.3	75	125				
Molybdenum	15.566	0.50	10.00	4.168	114	75	125				

Sample ID **N028775-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.015	0.10	10.00	1.617	104	75	125	12.29	2.27	20	
Manganese	99.705	0.50	100.0	0.2977	99.4	75	125	98.64	1.08	20	
Molybdenum	15.534	0.50	10.00	4.168	114	75	125	15.57	0.200	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-66954	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/27/2018	RunNo:	122487
Client ID:	PBW	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/5/2018	SeqNo:	2948629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	LCS-66954	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/27/2018	RunNo:	122487
Client ID:	LCSW	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/5/2018	SeqNo:	2948630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.991	0.50	10.00	0	99.9	85	115				

Sample ID	N028775-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/27/2018	RunNo:	122487
Client ID:	ZZZZZZ	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/5/2018	SeqNo:	2948636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	15.157	0.50	10.00	5.113	100	75	125				

Sample ID	N028775-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	2/27/2018	RunNo:	122487
Client ID:	ZZZZZZ	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/5/2018	SeqNo:	2948637

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	14.462	0.50	10.00	5.113	93.5	75	125	15.16	4.70	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift			Others ✓	LEVEL III	3. Container Intact
SR. Technician	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Specify: RWQCB	LEVEL IV	4. Seal Present
			Global ID:	Regulatory	5. IR number c
				Specify State:	6. Method of Cooling: ice
Signature: Date: 2-23-18	Sampled By: Gary Clift				Sample Temp: ~~FF~~ 2-9°C

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP — Signature: — Date: 2-23-18

Project Number: RC000753.0801

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 500 ml poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028775-01	MW-09-Q118	2/23/2018	1127		X		X		X	X	X		X	X		X	X	E	4	P	BN	
2	-02	MW-10-Q118	2/23/2018	1246		X		X	X		X	X		X	X		X		E	4	P	BN	
3	-03	MW-11-Q118	2/23/2018	1123		X		X		X	X	X		X	X		X	X	E	4	P	BN	
4	-04	MW-38S-Q118	2/23/2018	1236		X		X		X	X		X					X	E	4	P	BN	
5	-05	MW-38S-SMT-Q118	2/23/2018	1217		X		X		X	X		X					X	E	4	P	BN	
6	-06	TW-02D-Q118	2/23/2018	953		X		X		X		X	X	X	X				E	3	P	BN	
7	-07	MW-904-Q118	2/23/2018	1003		X		X		X		X	X	X	X				E	3	P	BN	
8	-08	MW-715-Q118	2/23/2018	1300		X													E	1	P	BN	
9	-09	MW-716-Q118	2/23/2018	1320		X													E	1	P	BN	
10																							

Reliquished by (Signature and Printed Name): GARY CLIFF — Date/Time: 2-23-18 1330	Reliquished by (Signature and Printed Name): — Date/Time: 2/23/18 1330
Reliquished by (Signature and Printed Name): — Date/Time: 2/23/18 1556	Reliquished by (Signature and Printed Name): — Date/Time: 2/23/18 1556
Reliquished by (Signature and Printed Name): — Date/Time:	Reliquished by (Signature and Printed Name): — Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

White=Laboratory Copy — Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/23/2018	Workorder:	N028775
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 3/5/2018

Reviewed By: 03/05/2018

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-001A	MW-09-Q118	2/23/2018 11:27:00 AM	3/9/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-001B			3/9/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-001C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-001D			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N028775-002A	MW-10-Q118	2/23/2018 12:46:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-002B			3/9/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-002C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-002D	MW-10-Q118	2/23/2018 12:46:00 PM	3/9/2018	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N028775-003A	MW-11-Q118	2/23/2018 11:23:00 AM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-003B			3/9/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-003C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-003D			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N028775-004A	MW-38S-Q118	2/23/2018 12:36:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-004B	MW-38S-Q118	2/23/2018 12:36:00 PM	3/9/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-004C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-004D			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028775-005A	MW-38S-SMT-Q118	2/23/2018 12:17:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-005B			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-005C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-005D			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028775-006A	TW-02D-Q118	2/23/2018 9:53:00 AM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-006B			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-006C			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-006C	TW-02D-Q118	2/23/2018 9:53:00 AM	3/9/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N028775-007A	MW-904-Q118	2/23/2018 10:03:00 AM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-007B			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-007C			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N028775-008A	MW-715-Q118	2/23/2018 1:00:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-009A	MW-716-Q118	2/23/2018 1:20:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-010A	FOLDER	3/9/2018	3/9/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/9/2018		Folder	Folder	☐	☐	☐	LAB
			3/9/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N028775

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028775

Item	Page
Cover Page	1-6
Analytical Result/QC Summary Reports	7-66
Sample Receiving Items	67-73
List of Analysts	74
Raw Data	
EPA 120.1	75-78
SM 2540C	79-89
EPA 200.7_Dissolved	90-140
EPA 218.6	141-246
SM 2320 B	247-256
EPA 300.0	257-288
SM 4500-NO3F	289-311
EPA 6020_Dissolved	312-372

March 08, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028775

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on February 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Litucan for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028775

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N028744-003B-MS1 and N028744-003B-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028744-004B-MS2 and N028744-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 300.0:

Dilution was necessary for some samples due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N028775-001B-MS and N028775-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N028775-004CMS and N028775-004CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *08-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N028775
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028775-001A	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-001B	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-001C	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-001D	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	2/23/2018	3/8/2018
N028775-002A	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-002B	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-002C	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-002D	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	2/23/2018	3/8/2018
N028775-003A	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-003B	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-003C	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-003D	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	2/23/2018	3/8/2018
N028775-004A	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-004B	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-004C	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-004D	MW-38S-Q118	Groundwater	2/23/2018 12:36:00 PM	2/23/2018	3/8/2018
N028775-005A	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-005B	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-005C	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-005D	MW-38S-SMT-Q118	Groundwater	2/23/2018 12:17:00 PM	2/23/2018	3/8/2018
N028775-006A	TW-02D-Q118	Groundwater	2/23/2018 9:53:00 AM	2/23/2018	3/8/2018
N028775-006B	TW-02D-Q118	Groundwater	2/23/2018 9:53:00 AM	2/23/2018	3/8/2018
N028775-006C	TW-02D-Q118	Groundwater	2/23/2018 9:53:00 AM	2/23/2018	3/8/2018
N028775-007A	MW-904-Q118	Groundwater	2/23/2018 10:03:00 AM	2/23/2018	3/8/2018
N028775-007B	MW-904-Q118	Groundwater	2/23/2018 10:03:00 AM	2/23/2018	3/8/2018
N028775-007C	MW-904-Q118	Groundwater	2/23/2018 10:03:00 AM	2/23/2018	3/8/2018
N028775-008A	MW-715-Q118	Groundwater	2/23/2018 1:00:00 PM	2/23/2018	3/8/2018
N028775-009A	MW-716-Q118	Groundwater	2/23/2018 1:20:00 PM	2/23/2018	3/8/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	5200	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180223F**	QC Batch: **R122270**			PrepDate			Analyst: **LR**
Specific Conductance	5400	0.10	0.10		umhos/cm	1	2/23/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N028775-007CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	122270
Client ID:	ZZZZZZ	Batch ID:	R122270	TestNo:	EPA 120.1			Analysis Date:	2/23/2018	SeqNo:	2940084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	5380.000	0.10						5390	0.186	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**				PrepDate	**2/26/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1800	25	25		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3200	50	50		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180226D**	QC Batch: **66936**			PrepDate	**2/26/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3300	50	50		mg/L	1	2/26/2018 01:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-66936**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **LCSW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	982.000	10	1000	0	98.2	80	120				

Sample ID **MB-66936**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **PBW**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N028744-004DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **2/26/2018**	RunNo: **122311**
Client ID: **ZZZZZZ**	Batch ID: **66936**	TestNo: **SM2540C**		Analysis Date: **2/26/2018**	SeqNo: **2941606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	12780.000	200						13100	2.47	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	110000	85	500		µg/L	1	2/27/2018 07:03 PM
Iron	31	18	20		µg/L	1	2/27/2018 07:03 PM
Magnesium	28000	48	100		µg/L	1	2/27/2018 07:03 PM
Sodium	520000	660	12000		µg/L	25	2/28/2018 03:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**				PrepDate	**2/26/2018**	Analyst: **CEI**
Calcium	110000	85	500		µg/L	1	2/27/2018 07:09 PM
Iron	250	18	20		µg/L	1	2/27/2018 07:09 PM
Magnesium	17000	48	100		µg/L	1	2/27/2018 07:09 PM
Sodium	470000	660	12000		µg/L	25	2/28/2018 03:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-003

Client Sample ID: MW-11-Q118
Collection Date: 2/23/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180227B**	QC Batch: **66928**			PrepDate	**2/26/2018**	Analyst: **CEI**	
Calcium	120000	85	500		µg/L	1	2/27/2018 07:24 PM
Iron	ND	18	20		µg/L	1	2/27/2018 07:24 PM
Magnesium	21000	48	100		µg/L	1	2/27/2018 07:24 PM
Sodium	320000	660	12000		µg/L	25	2/28/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **PBW** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-66928** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **LCSW** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9493.819	500	10000	0	94.9	85	115				
Iron	107.627	20	100.0	0	108	85	115				
Magnesium	9777.591	100	10000	0	97.8	85	115				

Sample ID **N028744-003B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365303.653	500	10000	343700	216	75	125				S
Iron	181.066	20	100.0	89.08	92.0	75	125				
Magnesium	44195.279	100	10000	34080	101	75	125				

Sample ID **N028744-003B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **2/26/2018** RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **66928** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365559.301	500	10000	343700	218	75	125	365300	0.0700	20	S
Iron	178.733	20	100.0	89.08	89.7	75	125	181.1	1.30	20	
Magnesium	44272.258	100	10000	34080	102	75	125	44200	0.174	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-66928**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **PBW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-66928**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **LCSW**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	22052.658	500	20000	0	110	85	115				

Sample ID **N028744-004B-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5224198.785	120000	20000	5171000	266	75	125				S

Sample ID **N028744-004B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **2/26/2018**	RunNo: **122371**
Client ID: **ZZZZZZ**	Batch ID: **66928**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944612**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5163013.283	120000	20000	5171000	-40.2	75	125	5224000	1.18	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	2/26/2018 02:40 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate **2/27/2018**			Analyst: **CEI**
Chromium	150	0.13	1.0		µg/L	1	2/28/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	2/26/2018 03:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	160	0.13	1.0		µg/L	1	2/28/2018 04:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	57	0.33	2.0		µg/L	10	2/26/2018 03:19 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	56	0.13	1.0		µg/L	1	2/28/2018 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A** QC Batch: **R122291**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.8	0.033	0.20		µg/L	1	2/26/2018 03:40 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180228D** QC Batch: **66954**				PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	2.4	0.13	1.0		µg/L	1	2/28/2018 04:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.8	0.033	0.20		µg/L	1	2/26/2018 04:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	2.5	0.13	1.0		µg/L	1	2/28/2018 04:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	140	0.66	4.0		µg/L	20	2/26/2018 04:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	2/28/2018 04:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	2/26/2018 04:58 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	2/28/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-715-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 1:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/26/2018 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-716-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 1:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180226A**	QC Batch: **R122291**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/26/2018 05:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R122291**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **PBW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R122291**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **LCSW**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.021	0.20	5.000	0	100	90	110				

Sample ID **N028744-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	765.890	10	250.0	513.9	101	90	110				

Sample ID **N028744-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	291.056	4.0	100.0	190.5	101	90	110				

Sample ID **N028744-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.583	1.0	5.000	0	91.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3072.060	40	1000	2050	102	90	110				

Sample ID **N028744-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	370.000	10	250.0	119.8	100	90	110				

Sample ID **N028744-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N028744-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	767.120	10	250.0	513.9	101	90	110	765.9	0.160	20	

Sample ID **N028744-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	188.886	4.0						190.5	0.874	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028744-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	33755.800	400	10000	23950	98.1	90	110				

Sample ID **N028775-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	249.822	4.0	100.0	146.3	103	90	110				

Sample ID **N028775-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	255.758	4.0	100.0	155.7	100	90	110				

Sample ID **N028775-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.849	2.0	50.00	56.76	102	90	110				

Sample ID **N028775-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940729**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.952	0.20	5.000	2.811	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N028775-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.044	0.20	5.000	2.773	105	90	110				

Sample ID **N028775-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	238.960	4.0	100.0	136.6	102	90	110				

Sample ID **N028775-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	247.136	4.0	100.0	147.4	99.7	90	110				

Sample ID **N028775-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0.04890	101	90	110				

Sample ID **N028775-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-66954**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **PBW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-66954**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **LCSW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.634	1.0	10.00	0	96.3	85	115				

Sample ID **N028775-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.212	1.0	10.00	152.7	35.0	75	125				S

Sample ID **N028775-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.904	1.0	10.00	152.7	41.9	75	125	156.2	0.442	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	130	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	120	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	92	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 9:53:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180227A**	QC Batch: **R122315**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	2/27/2018 09:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R122315**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **LCSW**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	99.576	5.0	100.0	0	99.6	85	115				

Sample ID **MB-R122315**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **PBW**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028775-001DDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **ZZZZZZ**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	125.000	5.0						127.1	1.68	30	

Sample ID **N028775-003DMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **ZZZZZZ**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	188.559	5.0	100.0	92.16	96.4	75	125				

Sample ID **N028775-003DMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122315**
Client ID: **ZZZZZZ**	Batch ID: **R122315**	TestNo: **SM 2320 B**		Analysis Date: **2/27/2018**	SeqNo: **2941516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	187.500	5.0	100.0	92.16	95.3	75	125	188.6	0.563	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	2/26/2018 10:53 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	770	1.8	100		mg/L	200	2/26/2018 01:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	240	0.46	10		mg/L	20	2/26/2018 02:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-002

Client Sample ID: MW-10-Q118
Collection Date: 2/23/2018 12:46:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	0.86	0.020	0.50		mg/L	1	2/26/2018 11:08 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	670	1.8	100		mg/L	200	2/26/2018 02:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	270	1.1	25		mg/L	50	2/26/2018 02:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-003

Client Sample ID: MW-11-Q118
Collection Date: 2/23/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.039	1.0		mg/L	2	2/26/2018 11:24 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	560	1.8	100		mg/L	200	2/26/2018 02:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	190	0.46	10		mg/L	20	2/26/2018 03:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-006

Client Sample ID: TW-02D-Q118
Collection Date: 2/23/2018 9:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/26/2018 11:42 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	2/26/2018 03:25 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	370	1.1	25		mg/L	50	2/26/2018 05:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-007

Client Sample ID: MW-904-Q118
Collection Date: 2/23/2018 10:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	2/26/2018 11:57 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Chloride	1700	4.6	250		mg/L	500	2/26/2018 04:57 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180226A** QC Batch: **R122307**				PrepDate			Analyst: **RAB**
Sulfate	390	1.1	25		mg/L	50	2/26/2018 06:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R122307_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	PBW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941309

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	LCS-R122307_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	LCSW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.255	0.50	1.250	0	100	90	110				

Sample ID	N028775-001DMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941316

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.171	1.0	2.500	0.6422	101	80	120				

Sample ID	N028775-001DMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	3.198	1.0	2.500	0.6422	102	80	120	3.171	0.835	20	

Sample ID	N028775-002DDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.834	0.50						0.8629	3.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R122307_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	PBW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941289

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R122307_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	LCSW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941290

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.091	0.50	2.000	0	105	90	110				

Sample ID	N028775-006CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2714.100	250	1000	1653	106	80	120				

Sample ID	N028775-006CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941298

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2689.850	250	1000	1653	104	80	120	2714	0.897	20	

Sample ID	N028775-006CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1643.500	250						1653	0.591	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R122307_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	PBW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941329

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R122307_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	LCSW	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.925	0.50	4.000	0	98.1	90	110				

Sample ID	N028775-006CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941339

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	570.030	25	200.0	369.7	100	80	120				

Sample ID	N028775-006CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941340

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	563.625	25	200.0	369.7	97.0	80	120	570.0	1.13	20	

Sample ID	N028775-006CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122307
Client ID:	ZZZZZZ	Batch ID:	R122307	TestNo:	EPA 300.0			Analysis Date:	2/26/2018	SeqNo:	2941341

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	364.590	25						369.7	1.40	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	12	0.32	0.50		mg/L	10	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	11	0.32	0.50		mg/L	10	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301G**	QC Batch: **R122394**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	5.3	0.32	0.50		mg/L	10	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.7	0.16	0.25		mg/L	5	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180301H**	QC Batch: **R122395**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.3	0.16	0.25		mg/L	5	3/1/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R122394**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122394**			
Client ID: **PBW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**			SeqNo: **2945427**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R122394**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122394**			
Client ID: **LCSW**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**			SeqNo: **2945428**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	85	115				

Sample ID **N028727-004EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122394**			
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**			SeqNo: **2945432**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050						0.4675	7.83	20	

Sample ID **N028775-003CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122394**			
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**			SeqNo: **2945434**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.986	0.50	5.000	5.309	93.5	75	125				

Sample ID **N028775-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:			RunNo: **122394**			
Client ID: **ZZZZZZ**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**			SeqNo: **2945435**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	10.195	0.50	5.000	5.309	97.7	75	125	9.986	2.07	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122395	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	PBW	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945459		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	ND	0.050											

Sample ID	LCS-R122395	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	LCSW	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945460		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.0	85	115						

Sample ID	N028727-007EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945464		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.458	0.050						0.4871	6.07	20			

Sample ID	N028775-004CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945466		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	7.252	0.25	2.500	3.688	143	75	125				S		

Sample ID	N028775-004CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122395		
Client ID:	ZZZZZZ	Batch ID:	R122395	TestNo:	SM4500-NO3			Analysis Date:	3/1/2018	SeqNo:	2945467		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	6.841	0.25	2.500	3.688	126	75	125	7.252	5.84	20	S		

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Arsenic	1.6	0.081	0.10		µg/L	1	2/28/2018 03:09 PM
Manganese	ND	0.26	0.50		µg/L	1	2/28/2018 03:09 PM
Molybdenum	4.2	0.21	0.50		µg/L	1	2/28/2018 03:09 PM
Selenium	5.1	0.36	0.50		µg/L	1	3/5/2018 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**				PrepDate	**2/27/2018**	Analyst: **CEI**
Molybdenum	22	0.21	0.50		µg/L	1	2/28/2018 04:12 PM
Selenium	6.3	0.36	0.50		µg/L	1	3/5/2018 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**				PrepDate	**2/27/2018**	Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	2/28/2018 04:23 PM
Manganese	ND	0.26	0.50		µg/L	1	2/28/2018 04:23 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	2/28/2018 04:23 PM
Selenium	5.2	0.36	0.50		µg/L	1	3/5/2018 04:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**		Analyst: **CEI**
Arsenic	6.8	0.081	0.10		µg/L	1	2/28/2018 04:35 PM
Manganese	37	0.26	0.50		µg/L	1	2/28/2018 04:35 PM
Molybdenum	32	0.21	0.50		µg/L	1	2/28/2018 04:35 PM
Selenium	2.3	0.36	0.50		µg/L	1	3/5/2018 04:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**	Analyst: **CEI**	
Arsenic	6.9	0.081	0.10		µg/L	1	2/28/2018 04:46 PM
Manganese	36	0.26	0.50		µg/L	1	2/28/2018 04:46 PM
Molybdenum	34	0.21	0.50		µg/L	1	2/28/2018 04:46 PM
Selenium	2.5	0.36	0.50		µg/L	1	3/5/2018 04:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028775
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N028775-006

Client Sample ID: TW-02D-Q118
Collection Date: 2/23/2018 9:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**			PrepDate	**2/27/2018**	Analyst: **CEI**	
Manganese	23	0.26	0.50		µg/L	1	2/28/2018 04:57 PM
Molybdenum	12	0.21	0.50		µg/L	1	2/28/2018 04:57 PM
Selenium	1.8	0.36	0.50		µg/L	1	3/5/2018 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q118
Lab Order:	N028775	**Collection Date:**	2/23/2018 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N028775-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_180228D**	QC Batch: **66954**				PrepDate	**2/27/2018**	Analyst: **CEI**
Manganese	20	0.26	0.50		µg/L	1	2/28/2018 05:20 PM
Molybdenum	12	0.21	0.50		µg/L	1	2/28/2018 05:20 PM
Selenium	1.5	0.36	0.50		µg/L	1	3/5/2018 04:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66954**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **PBW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **LCS-66954**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **LCSW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.621	0.10	10.00	0	96.2	85	115				
Manganese	96.640	0.50	100.0	0	96.6	85	115				
Molybdenum	9.271	0.50	10.00	0	92.7	85	115				

Sample ID **N028775-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.291	0.10	10.00	1.617	107	75	125				
Manganese	98.636	0.50	100.0	0.2977	98.3	75	125				
Molybdenum	15.566	0.50	10.00	4.168	114	75	125				

Sample ID **N028775-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **2/28/2018**	SeqNo: **2945316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.015	0.10	10.00	1.617	104	75	125	12.29	2.27	20	
Manganese	99.705	0.50	100.0	0.2977	99.4	75	125	98.64	1.08	20	
Molybdenum	15.534	0.50	10.00	4.168	114	75	125	15.57	0.200	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-66954**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122487**
Client ID: **PBW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/5/2018**	SeqNo: **2948629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **LCS-66954**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122487**
Client ID: **LCSW**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/5/2018**	SeqNo: **2948630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.991	0.50	10.00	0	99.9	85	115				

Sample ID **N028775-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122487**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/5/2018**	SeqNo: **2948636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	15.157	0.50	10.00	5.113	100	75	125				

Sample ID **N028775-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **2/27/2018**	RunNo: **122487**
Client ID: **ZZZZZZ**	Batch ID: **66954**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **3/5/2018**	SeqNo: **2948637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	14.462	0.50	10.00	5.113	93.5	75	125	15.16	4.70	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Labspec	CalTrans	2. Headspace
Submitted By: Gary Clift			Others ✓	LEVEL III	3. Container Intact
SR. Technician	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Specify: RWQCB	LEVEL IV	4. Seal Present
				Regulatory	5. IR number c
			Global ID:	Specify State:	6. Method of Cooling: ice
Signature: Date: Gary Clift 2-23-18	Sampled By: Gary Clift				Sample Temp: ~~FF~~ 2-9°C

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Project Name: PG&E Topock - GMP — Signature: Gary Clift — Date: 2-23-18

Project Number: RC000753.0801

Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2x250 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 500 mL poly	Dissolved ICP metals (SW6010B/SW6020A) FF (Mo, Se); HNO3 500 mL poly	Dissolved metals (SW6020A) FF (Mo, Se, Mn); HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) 1 liter poly	Specific Conductance (EPA 120.1) 1 liter poly	Total Dissolved Solids (SM92540) 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) 1 liter poly	pH (SM4500-HB) 1 liter poly	Dissolved metals, Calcium, Magnesium, sodium, iron (EPA 200.7), HNO3 500 mL poly	Dissolved Arsenic SW 6020 500 ml poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N028775-01	MW-09-Q118	2/23/2018	1127		X		X		X	X	X		X	X		X	X	E	4	P	BN	
2	-02	MW-10-Q118	2/23/2018	1246		X		X	X		X	X		X	X		X		E	4	P	BN	
3	-03	MW-11-Q118	2/23/2018	1123		X		X		X	X	X		X	X		X	X	E	4	P	BN	
4	-04	MW-38S-Q118	2/23/2018	1236		X		X		X	X		X					X	E	4	P	BN	
5	-05	MW-38S-SMT-Q118	2/23/2018	1217		X		X		X	X		X					X	E	4	P	BN	
6	-06	TW-02D-Q118	2/23/2018	953		X		X		X		X	X	X	X				E	3	P	BN	
7	-07	MW-904-Q118	2/23/2018	1003		X		X		X		X	X	X	X				E	3	P	BN	
8	-08	MW-715-Q118	2/23/2018	1300		X													E	1	P	BN	
9	-09	MW-716-Q118	2/23/2018	1320		X													E	1	P	BN	
10																							

Reliquished by (Signature and Printed Name): Gary Clift GARY CLIFF	Date/Time: 2-23-18 1330	Reliquished by (Signature and Printed Name):	Date/Time: 2/23/18 1330
Reliquished by (Signature and Printed Name):	Date/Time: 2/23/18 1556	Reliquished by (Signature and Printed Name):	Date/Time: 2/23/18 1556
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	2/23/2018	Workorder:	N028775
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 3/5/2018

Reviewed By: 03/05/2018

ASSET Laboratories

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-001A	MW-09-Q118	2/23/2018 11:27:00 AM	3/9/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-001B			3/9/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-001C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-001D			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N028775-002A	MW-10-Q118	2/23/2018 12:46:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-002B			3/9/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-002C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-002D	MW-10-Q118	2/23/2018 12:46:00 PM	3/9/2018	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N028775-003A	MW-11-Q118	2/23/2018 11:23:00 AM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-003B			3/9/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-003C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-003D			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	WW
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			3/9/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N028775-004A	MW-38S-Q118	2/23/2018 12:36:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-004B	MW-38S-Q118	2/23/2018 12:36:00 PM	3/9/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-004C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-004D			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028775-005A	MW-38S-SMT-Q118	2/23/2018 12:17:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-005B			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-005C			3/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028775-005D			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N028775-006A	TW-02D-Q118	2/23/2018 9:53:00 AM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-006B			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-006C			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

WORK ORDER Summary

23-Feb-18

WorkOrder: N028775

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 2/23/2018

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028775-006C	TW-02D-Q118	2/23/2018 9:53:00 AM	3/9/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N028775-007A	MW-904-Q118	2/23/2018 10:03:00 AM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-007B			3/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			3/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N028775-007C			3/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/9/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/9/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/9/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/9/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N028775-008A	MW-715-Q118	2/23/2018 1:00:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-009A	MW-716-Q118	2/23/2018 1:20:00 PM	3/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028775-010A	FOLDER	3/9/2018	3/9/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/9/2018		Folder	Folder	☐	☐	☐	LAB
			3/9/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028775

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122270 **Analyst:** LSR

ASSET #: N028775 **Date Analyzed:** 2/23/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 2/28/2018

2nd Level Reviewer: RLB 03/08/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 2/23/18 1630

Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 µS/cm	CINV-180108A	9.83 @ 19.3°C	% Rec: (90-110%)
1412	171121A	1417 @ 19.4°C	
9987	180108B	9970 @ 19.2°C	
99842	171121B	99800 @ 19.3°C	

	Sample ID	Matrix	Reading	Comments
1	N028775-004D	H2O	1664 @ 19.7°C	
2	5D		1687 @ 19.7°C	
3	6C		5220 @ 19.3°C	
4	7C		5290 @ 19.4°C	
5	7CDUP		5280 @ 19.3°C	
6				
7				
8				
9	1413 µS/cm	CINV-171121C	1465 @ 19.7°C	
10	16000	170828F	10140 @ 19.7°C	
Dup	99672	171215A	99800 @ 19.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: Julia Ramit 2/28/2018

Analyst: RLB 03/08/2018

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66936 **Analyst:** LSR

ASSET #: N028775 **Date Analyzed:** 2/26/2018

Method: EPA 160.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 3/1/2018

2nd Level Reviewer: RLB 03/08/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N028775-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(49.4535 - 49.3816)*1000000}{40}$$

= 1797.5 mg/L

Reporting result in two significant figures,

TDS = 1800 mg/L

Sulia Ramit 3/1/2018

RLB 03/08/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 1:16:53 P**
Prep End Date:

Reviewed/ Date: RB 03/08/2018
Initials/ Date: Lilia Ramit 3/1/2018

Prep Batch **66936** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66936	Water	MOD1180208A	100	☐	0	0	100	1.000		
MB-66936	Water		100	☐	0	0	100	1.000		
N028744-003D	Groundwater	4080	100/30	☐	0	0	100	1.000		
N028744-004D	Groundwater	20100	100/5	☐	0	0	100	1.000		
N028744-004D-DU	Groundwater	↓	100/5	☐	0	0	100	1.000		
N028744-005D	Groundwater	15970	100/10	☐	0	0	100	1.000		
N028775-001D	Groundwater	3150	100/40	☐	0	0	100	1.000		
N028775-002D	Groundwater	2920	100/50	☐	0	0	100	1.000		
N028775-003D	Groundwater	2370	100/60	☐	0	0	100	1.000		
N028775-006C	Groundwater	5220	100/20	☐	0	0	100	1.000		
N028775-007C	Groundwater	5390	100/20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9699

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 1:16:53 P**
Prep End Date: **2/27/2018 10:30:00**

Reviewed/ Date: RB 03/08/2018
Initials/ Date: Lilia Ramit 3/1/2018

Prep Batch **66936** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66936	Water		100	☐	0	0	100	1.000		
MB-66936	Water		100	☐	0	0	100	1.000		
N028744-003D	Groundwater		30	☐	0	0	100	3.333		
N028744-004D	Groundwater		5	☐	0	0	100	20.000		
N028744-004D-DU	Groundwater		5	☐	0	0	100	20.000		
N028744-005D	Groundwater		10	☐	0	0	100	10.000		
N028775-001D	Groundwater		40	☐	0	0	100	2.500		
N028775-002D	Groundwater		50	☐	0	0	100	2.000		
N028775-003D	Groundwater		60	☐	0	0	100	1.667		
N028775-006C	Groundwater		20	☐	0	0	100	5.000		
N028775-007C	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9699	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/26/18 13:16 AA	MB 66936	100	68.3806 68.3803	68.3807 68.3806	
KK	LCS 66936	100	70.7535 70.7534	70.8520 70.8516	
T	N028744-003D	30	46.0485 46.0483	46.1365 46.1362	
IS	4D	5	48.8847 48.8844	48.9502 48.9499	
XX	4D DUP	5	49.5288 → 49.5282 49.5282	49.5924 49.5925	
V	5D	10	48.8860 48.8859	48.9849 48.9846	
E	N028775-001D	40	49.3819 49.3816	49.4534 49.4535	
IJ	2D	50	61.5310 61.5308	61.6158 61.6157	
IA	3D	60	60.9771 60.9768	61.0572 61.0571	
IF	6C	20	60.6245 60.6242	60.6887 60.6884	

Julia Ramit 3/1/2018

03/08/2018

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV0022
ORELAP/NELAP Cert 4046 ID CA01638

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
2/26/18 A	1028775-007C	20	62.4004 62.4003	62.4665 62.4663	
	Julia Ramit	3/1/2018			
	RB	03/08/2018			
	Closing WT: 49.9997 2/27/18 @ 1030 ISR				

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
2/27/2018									
MB-66936	100	68.3803	68.3806	3	1	3			MBLK
LCS-66936	100	70.7534	70.8516	982	1	982			LCS
N028744-003D	30	46.0483	46.1362	879	3.33333333	2930	4080	0.718	SAMP
N028744-004D	5	48.8844	48.9499	655	20	13100	20100	0.652	SAMP
N028744-004DDUP	5	49.5286	49.5925	639	20	12780	20100	0.636	DUP
N028744-005D	10	48.8859	48.9846	987	10	9870	15970	0.618	SAMP
N028775-001D	40	49.3816	49.4535	719	2.5	1797.5	3150	0.571	SAMP
N028775-002D	50	61.5308	61.6157	849	2	1698	2920	0.582	SAMP
N028775-003D	60	60.9768	61.0571	803	1.66666667	1338.33333	2370	0.565	SAMP
N028775-006C	20	60.6242	60.6884	642	5	3210	5220	0.615	SAMP
N028775-007C	20	62.4003	62.4663	660	5	3300	5390	0.612	SAMP

Julia Ramit 3/1/2018

RLB 03/08/2018

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66928
ASSET #: N028775

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/27/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in N028744-003B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18

2nd Level Reviewer 3/7/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66928
ASSET #: N028775

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 2/28/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Na in N028744-004B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/7/18

2nd Level Reviewer 3/7/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028775-001B** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 110.868 * 1 * (25/25) * 1000

Calcium , ug/L = 110868

Reporting results in two significant figures,

Calcium , ug/L = 110000

% RSD SUMMARY

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	9.0052	15	PASS
Standard1	ICAL	1	Ca	0.2	15.23	15	<PQL
Standard2	ICAL	1	Ca	1	1.67	15	PASS
Standard3	ICAL	1	Ca	2	2.43	15	PASS
Standard4	ICAL	1	Ca	5	0.31	15	PASS
Standard5	ICAL	1	Ca	7.5	0.69	15	PASS
Standard6	ICAL	1	Ca	10	0.24	15	PASS
Standard7	ICAL	1	Ca	20	0.48	15	PASS
ICV	ICV	1	Ca	9.85	0.56	15	PASS
ICB	ICB	1	Ca	-0.0074	508.54	15	<PQL
LLICV	CCV1	1	Ca	0.19	9.2	20	PASS
ICSA1	ICSA	1	Ca	462.62	0.044	15	PASS
ICSAB1	ICSAB	1	Ca	523.2	0.025	15	PASS
CCV1	CCV	1	Ca	9.9	0.098	15	PASS
CCB1	CCB	1	Ca	0.00013	1792.65	15	<PQL
CCV2	CCV	1	Ca	9.87	0.083	15	PASS
CCB2	CCB	1	Ca	0.016	176.9	15	<PQL
CCV3	CCV	1	Ca	9.87	0.26	15	PASS
CCB3	CCB	1	Ca	0.015	85.86	15	<PQL
CCV4	CCV	1	Ca	9.87	0.16	15	PASS
CCB4	CCB	1	Ca	0.0056	355.72	15	<PQL
LLCCV1	CCV2	1	Ca	0.21	11.73	20	PASS
ICSA2	ICSA	1	Ca	464.04	0.18	15	PASS
ICSAB2	ICSAB	1	Ca	524.94	0.049	15	PASS
CCV5	CCV	1	Ca	9.99	0.45	15	PASS
CCB5	CCB	1	Ca	0.0061	70.53	15	<PQL
CCV6	CCV	1	Ca	9.94	0.2	15	PASS
CCB6	CCB	1	Ca	0.032	66.78	15	<PQL
CCV7	CCV	1	Ca	9.94	0.49	15	PASS
CCB7	CCB	1	Ca	0.029	45.96	15	<PQL
MB-66928	MBLK	1	Ca	0.0069	349.48	15	<PQL
CCV8	CCV	1	Ca	9.92	0.36	15	PASS
CCB8	CCB	1	Ca	0.0086	165.54	15	<PQL
LLCCV2	CCV2	1	Ca	0.22	0.67	20	PASS
ICSA3	ICSA	1	Ca	493.79	0.065	15	PASS
ICSAB3	ICSAB	1	Ca	524.01	0.091	15	PASS
LCS1-66928	LCS	1	Ca	9.49	0.43	15	PASS
N028744-003B	SAMP	1	Ca	343.72	0.1	15	PASS
N028744-003B	SAMP	5	Ca	68.39	0.29	15	PASS
N028744-003B-PS	PS	1	Ca	365.73	0.1	15	PASS
N028744-003B-MS1	MS	1	Ca	365.3	0.091	15	PASS
N028744-003B-MSD1	MSD	1	Ca	365.56	0.094	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N028744-004B	SAMP	1	Ca	383.79	0.62	15	PASS
N028744-005B	SAMP	1	Ca	535.12	0.34	15	PASS
N028775-001B	SAMP	1	Ca	110.87	0.43	15	PASS
N028775-002B	SAMP	1	Ca	106.6	0.27	15	PASS
CCV9	CCV	1	Ca	9.91	0.6	15	PASS
CCB9	CCB	1	Ca	0.019	34.6	15	<PQL
N028775-003B	SAMP	1	Ca	122.61	0.48	15	PASS
N028744-005B	SAMP	5	Ca	101.91	0.29	15	PASS
CCV10	CCV	1	Ca	9.98	0.48	15	PASS
CCB10	CCB	1	Ca	0.011	48.94	15	<PQL
LLCCV3	CCV2	1	Ca	0.21	19.7	20	PASS
ICSA4	ICSA	1	Ca	497.12	0.097	15	PASS
ICSAB4	ICSAB	1	Ca	527.52	0.16	15	PASS
CalBlk	IBLK	1	Fe	0	40.14	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.37	15	PASS
Standard2	ICAL	1	Fe	0.05	0.73	15	PASS
Standard3	ICAL	1	Fe	2	0.74	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.33	15	PASS
Standard6	ICAL	1	Fe	10	0.063	15	PASS
Standard7	ICAL	1	Fe	20	0.12	15	PASS
ICV	ICV	1	Fe	9.97	0.13	15	PASS
ICB	ICB	1	Fe	-0.0007	38.13	15	<PQL
LLICV	CCV1	1	Fe	0.019	1.31	20	PASS
ICSA1	ICSA	1	Fe	162.75	0.094	15	PASS
ICSAB1	ICSAB	1	Fe	179.01	0.49	15	PASS
CCV1	CCV	1	Fe	9.94	0.064	15	PASS
CCB1	CCB	1	Fe	-0.00045	67.51	15	<PQL
CCV2	CCV	1	Fe	9.93	0.1	15	PASS
CCB2	CCB	1	Fe	-0.00068	6.13	15	PASS
CCV3	CCV	1	Fe	9.94	0.044	15	PASS
CCB3	CCB	1	Fe	-0.00048	181.19	15	<PQL
CCV4	CCV	1	Fe	9.92	0.059	15	PASS
CCB4	CCB	1	Fe	-0.00054	38.67	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.78	20	PASS
ICSA2	ICSA	1	Fe	162.75	0.38	15	PASS
ICSAB2	ICSAB	1	Fe	179.03	0.11	15	PASS
CCV5	CCV	1	Fe	10.014	0.083	15	PASS
CCB5	CCB	1	Fe	-0.00096	22.91	15	<PQL
CCV6	CCV	1	Fe	9.96	0.088	15	PASS
CCB6	CCB	1	Fe	-0.0006	41.015	15	<PQL
CCV7	CCV	1	Fe	9.9	0.049	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB7	CCB	1	Fe	-0.00051	30.17	15	<PQL
MB-66928	MBLK	1	Fe	-0.0021	25.047	15	<PQL
CCV8	CCV	1	Fe	9.87	0.088	15	PASS
CCB8	CCB	1	Fe	-0.00016	387.45	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.26	20	PASS
ICSA3	ICSA	1	Fe	171.47	0.23	15	PASS
ICSAB3	ICSAB	1	Fe	176.97	0.36	15	PASS
LCS1-66928	LCS	1	Fe	0.11	1.56	15	PASS
N028744-003B	SAMP	1	Fe	0.089	1.17	15	PASS
N028744-003B	SAMP	5	Fe	0.019	7.14	15	PASS
N028744-003B-PS	PS	1	Fe	0.19	0.95	15	PASS
N028744-003B-MS1	MS	1	Fe	0.18	1.72	15	PASS
N028744-003B-MSD1	MSD	1	Fe	0.18	0.79	15	PASS
N028744-004B	SAMP	1	Fe	0.32	0.43	15	PASS
N028744-005B	SAMP	1	Fe	0.01	8.59	15	PASS
N028775-001B	SAMP	1	Fe	0.031	2.3	15	PASS
N028775-002B	SAMP	1	Fe	0.25	0.47	15	PASS
CCV9	CCV	1	Fe	9.83	0.16	15	PASS
CCB9	CCB	1	Fe	-0.001	64.011	15	<PQL
N028775-003B	SAMP	1	Fe	0.0036	6.71	15	PASS
N028744-005B	SAMP	5	Fe	0.00038	107.8	15	<PQL
CCV10	CCV	1	Fe	9.92	0.078	15	PASS
CCB10	CCB	1	Fe	-0.0013	16.69	15	<PQL
LLCCV3	CCV2	1	Fe	0.019	2.58	20	PASS
ICSA4	ICSA	1	Fe	172.57	0.3	15	PASS
ICSAB4	ICSAB	1	Fe	177.77	0.14	15	PASS
CalBlk	IBLK	1	Mg	0	8.52	15	PASS
Standard1	ICAL	1	Mg	0.1	0.16	15	PASS
Standard2	ICAL	1	Mg	1	0.22	15	PASS
Standard3	ICAL	1	Mg	2	0.92	15	PASS
Standard4	ICAL	1	Mg	5	0.14	15	PASS
Standard5	ICAL	1	Mg	7.5	0.31	15	PASS
Standard6	ICAL	1	Mg	10	0.089	15	PASS
Standard7	ICAL	1	Mg	20	0.16	15	PASS
ICV	ICV	1	Mg	9.94	0.14	15	PASS
ICB	ICB	1	Mg	0.00001	2777.71	15	<PQL
LLICV	CCV1	1	Mg	0.096	1.0018	20	PASS
ICSA1	ICSA	1	Mg	441.83	0.21	15	PASS
ICSAB1	ICSAB	1	Mg	505.39	0.45	15	PASS
CCV1	CCV	1	Mg	9.88	0.19	15	PASS
CCB1	CCB	1	Mg	-0.0012	26.79	15	<PQL
CCV2	CCV	1	Mg	9.86	0.12	15	PASS

RSD SUMMARY: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB2	CCB	1	Mg	-0.00058	79.72	15	<PQL
CCV3	CCV	1	Mg	9.88	0.13	15	PASS
CCB3	CCB	1	Mg	-0.00045	72.064	15	<PQL
CCV4	CCV	1	Mg	9.86	0.11	15	PASS
CCB4	CCB	1	Mg	-0.0019	20.41	15	<PQL
LLCCV1	CCV2	1	Mg	0.094	0.21	20	PASS
ICSA2	ICSA	1	Mg	441.62	0.41	15	PASS
ICSAB2	ICSAB	1	Mg	503.78	0.04	15	PASS
CCV5	CCV	1	Mg	9.93	0.087	15	PASS
CCB5	CCB	1	Mg	-0.0016	42.91	15	<PQL
CCV6	CCV	1	Mg	9.87	0.18	15	PASS
CCB6	CCB	1	Mg	-0.0011	51.38	15	<PQL
CCV7	CCV	1	Mg	9.81	0.015	15	PASS
CCB7	CCB	1	Mg	-0.00057	58.69	15	<PQL
MB-66928	MBLK	1	Mg	-0.0018	56.26	15	<PQL
CCV8	CCV	1	Mg	9.76	0.13	15	PASS
CCB8	CCB	1	Mg	-0.00078	11.64	15	PASS
LLCCV2	CCV2	1	Mg	0.092	1.069	20	PASS
ICSA3	ICSA	1	Mg	466.46	0.16	15	PASS
ICSAB3	ICSAB	1	Mg	494.01	0.41	15	PASS
LCS1-66928	LCS	1	Mg	9.78	0.24	15	PASS
N028744-003B	SAMP	1	Mg	34.077	0.2	15	PASS
N028744-003B	SAMP	5	Mg	7.43	0.49	15	PASS
N028744-003B-PS	PS	1	Mg	44.34	0.073	15	PASS
N028744-003B-MS1	MS	1	Mg	44.2	0.11	15	PASS
N028744-003B-MSD1	MSD	1	Mg	44.27	0.48	15	PASS
N028744-004B	SAMP	1	Mg	0.74	0.67	15	PASS
N028744-005B	SAMP	1	Mg	18.45	0.26	15	PASS
N028775-001B	SAMP	1	Mg	27.84	0.42	15	PASS
N028775-002B	SAMP	1	Mg	16.56	0.28	15	PASS
CCV9	CCV	1	Mg	9.76	0.26	15	PASS
CCB9	CCB	1	Mg	-0.00035	554.59	15	<PQL
N028775-003B	SAMP	1	Mg	20.53	0.37	15	PASS
N028744-005B	SAMP	5	Mg	4.35	0.14	15	PASS
CCV10	CCV	1	Mg	9.86	0.057	15	PASS
CCB10	CCB	1	Mg	-0.002	22.73	15	<PQL
LLCCV3	CCV2	1	Mg	0.092	0.72	20	PASS
ICSA4	ICSA	1	Mg	471.86	0.27	15	PASS
ICSAB4	ICSAB	1	Mg	498.93	0.25	15	PASS

RSD SUMMARY: 180228D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	23.51	20	<PQL
Standard1	ICAL	1	Na	0.1	4.11	20	PASS
Standard2	ICAL	1	Na	1	0.64	20	PASS
Standard3	ICAL	1	Na	5	0.3	20	PASS
Standard4	ICAL	1	Na	10	0.044	20	PASS
Standard5	ICAL	1	Na	20	0.13	20	PASS
Standard6	ICAL	1	Na	40	0.07	20	PASS
ICV	ICV	1	Na	10.24	0.37	20	PASS
ICB	ICB	1	Na	-0.0048	105.49	20	<PQL
ICSA1	ICSA	1	Na	-0.00096	90.8	20	<PQL
ICSAB1	ICSAB	1	Na	10.26	0.18	20	PASS
CCV1	CCV	1	Na	10.26	0.2	20	PASS
CCB1	CCB	1	Na	0.015	15.37	20	PASS
MB-66928	MBLK	1	Na	-0.0014	422.67	20	<PQL
LCS2-66928	LCS	1	Na	22.053	0.063	20	PASS
N028744-003B	SAMP	1	Na	532.69	0.54	20	PASS
CCV2	CCV	1	Na	10.47	0.43	20	PASS
CCB2	CCB	1	Na	0.084	3.51	20	PASS
N028744-005B	SAMP	1	Na	2840.2	0.2	20	PASS
N028775-001B	SAMP	1	Na	488.03	0.29	20	PASS
N028775-002B	SAMP	1	Na	445.04	0.38	20	PASS
N028775-003B	SAMP	1	Na	304.3	0.43	20	PASS
N028744-003B	SAMP	25	Na	23.92	0.01	20	PASS
N028744-004B	SAMP	5	Na	1003.1	0.31	20	PASS
N028744-005B	SAMP	100	Na	34.59	0.2	20	PASS
N028775-001B	SAMP	25	Na	20.91	0.19	20	PASS
N028775-002B	SAMP	25	Na	18.63	0.076	20	PASS
N028775-003B	SAMP	25	Na	12.79	0.14	20	PASS
CCV3	CCV	1	Na	10.88	0.035	20	PASS
CCB3	CCB	1	Na	0.097	5.37	20	PASS
N028744-004B	SAMP	250	Na	205.28	14.079	20	PASS
N028744-004B	SAMP	250	Na	20.68	0.14	20	PASS
N028744-004B	SAMP	1250	Na	4.1	0.38	20	PASS
N028744-004B-PS	PS	250	Na	20.62	0.14	20	PASS
N028744-004B-MS2	MS	250	Na	20.9	0.13	20	PASS
N028744-004B-MSD2	MSD	250	Na	20.65	0.14	20	PASS
CCV4	CCV	1	Na	10.88	0.25	20	PASS
CCB4	CCB	1	Na	0.048	16.89	20	PASS
ICSA2	ICSA	1	Na	0.041	20.33	20	<PQL
ICSAB2	ICSAB	1	Na	10.85	0.27	20	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180227A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-171201G/ -171030G/ -171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/27/2018	08:57:36 AM
2	Standard1	ICAL	1	02/27/2018	09:02:24 AM
3	Standard2	ICAL	1	02/27/2018	09:06:43 AM
11	Standard3	ICAL	1	02/27/2018	09:11:33 AM
12	Standard4	ICAL	1	02/27/2018	09:16:25 AM
6	Standard5	ICAL	1	02/27/2018	09:21:18 AM
7	Standard6	ICAL	1	02/27/2018	09:26:07 AM
8	Standard7	ICAL	1	02/27/2018	09:30:30 AM
9	ICV	ICV	1	02/27/2018	09:34:02 AM
1	ICB	ICB	1	02/27/2018	09:38:27 AM
2	LLICV	CCV1	1	02/27/2018	09:42:46 AM
4	ICSA1	ICSA	1	02/27/2018	09:47:35 AM
5	ICSAB1	ICSAB	1	02/27/2018	09:53:39 AM
38	MB-66900	MBLK	1	02/27/2018	09:59:14 AM
39	LCS-66900	LCS	1	02/27/2018	10:04:04 AM
40	N028727-002B	SAMP	1	02/27/2018	10:08:55 AM
41	N028727-002B	SAMP	5	02/27/2018	10:13:45 AM
42	N028727-002B-PS	PS	1	02/27/2018	10:18:35 AM
43	N028727-002B-MS	MS	1	02/27/2018	10:23:26 AM
44	N028727-002B-MSD	MSD	1	02/27/2018	10:28:17 AM
45	N028727-003B	SAMP	1	02/27/2018	10:33:06 AM
46	N028727-004B	SAMP	1	02/27/2018	10:37:57 AM
47	N028727-005B	SAMP	1	02/27/2018	10:42:48 AM
7	CCV1	CCV	1	02/27/2018	10:47:39 AM
1	CCB1	CCB	1	02/27/2018	10:52:02 AM
48	N028727-006B	SAMP	1	02/27/2018	10:56:50 AM
49	N028727-007B	SAMP	1	02/27/2018	11:01:42 AM
50	N028727-008B	SAMP	1	02/27/2018	11:06:34 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N028727-009B	SAMP	1	02/27/2018	11:11:26 AM
52	N028727-010B	SAMP	1	02/27/2018	11:16:16 AM
53	N028727-011B	SAMP	1	02/27/2018	11:21:08 AM
54	N028727-012B	SAMP	1	02/27/2018	11:26:00 AM
55	N028727-013B	SAMP	1	02/27/2018	11:30:51 AM
56	MB-66899	MBLK	1	02/27/2018	11:35:41 AM
57	LCS-66899	LCS	1	02/27/2018	11:40:32 AM
7	CCV2	CCV	1	02/27/2018	11:45:23 AM
1	CCB2	CCB	1	02/27/2018	11:49:46 AM
58	N028727-002C	SAMP	1	02/27/2018	11:54:35 AM
59	N028727-002C	SAMP	5	02/27/2018	11:59:26 AM
60	N028727-002C-PS	PS	1	02/27/2018	12:04:17 PM
61	N028727-002C-MS	MS	1	02/27/2018	12:09:09 PM
62	N028727-002C-MSD	MSD	1	02/27/2018	12:14:02 PM
63	N028727-003C	SAMP	1	02/27/2018	12:18:54 PM
64	N028727-004C	SAMP	1	02/27/2018	12:23:46 PM
65	N028727-005C	SAMP	1	02/27/2018	12:28:38 PM
66	N028727-006C	SAMP	1	02/27/2018	12:33:30 PM
67	N028727-007C	SAMP	1	02/27/2018	12:38:22 PM
7	CCV3	CCV	1	02/27/2018	12:43:13 PM
1	CCB3	CCB	1	02/27/2018	12:47:36 PM
68	N028727-008C	SAMP	1	02/27/2018	12:52:25 PM
69	N028727-009C	SAMP	1	02/27/2018	12:57:17 PM
70	N028727-010C	SAMP	1	02/27/2018	01:02:07 PM
71	N028727-011C	SAMP	1	02/27/2018	01:06:58 PM
72	N028727-012C	SAMP	1	02/27/2018	01:11:48 PM
73	N028727-013C	SAMP	1	02/27/2018	01:16:40 PM
74	MB-66927	MBLK	1	02/27/2018	01:21:33 PM
75	LCS-66927	LCS	1	02/27/2018	01:26:24 PM
76	N028745-001B	SAMP	1	02/27/2018	01:31:15 PM
77	N028745-001B	SAMP	5	02/27/2018	01:36:06 PM
7	CCV4	CCV	1	02/27/2018	01:40:58 PM
1	CCB4	CCB	1	02/27/2018	01:45:21 PM
2	LLCCV1	CCV2	1	02/27/2018	01:50:10 PM
4	ICSA2	ICSA	1	02/27/2018	01:54:59 PM
5	ICSAB2	ICSAB	1	02/27/2018	02:01:03 PM
78	N028745-001B-PS	PS	1	02/27/2018	02:06:39 PM
79	N028745-001B-MS	MS	1	02/27/2018	02:11:30 PM
80	N028745-001B-MSD	MSD	1	02/27/2018	02:16:22 PM
81	N028745-002B	SAMP	1	02/27/2018	02:21:14 PM
82	N028745-003B	SAMP	1	02/27/2018	02:26:06 PM
83	N028745-004B	SAMP	1	02/27/2018	02:30:59 PM
84	N028745-005B	SAMP	1	02/27/2018	02:35:51 PM
85	N028745-006B	SAMP	1	02/27/2018	02:40:43 PM
86	N028745-007B	SAMP	1	02/27/2018	02:45:35 PM
87	N028745-008B	SAMP	1	02/27/2018	02:50:27 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	02/27/2018	02:55:19 PM
1	CCB5	CCB	1	02/27/2018	03:00:43 PM
88	N028745-009B	SAMP	1	02/27/2018	03:05:32 PM
89	N028745-010B	SAMP	1	02/27/2018	03:10:24 PM
90	N028745-011B	SAMP	1	02/27/2018	03:15:16 PM
91	N028745-012B	SAMP	1	02/27/2018	03:20:09 PM
92	N028745-014B	SAMP	1	02/27/2018	03:25:01 PM
93	N028745-015B	SAMP	1	02/27/2018	03:29:53 PM
94	MB-66926	MBLK	1	02/27/2018	03:34:45 PM
95	LCS-66926	LCS	1	02/27/2018	03:39:37 PM
96	N028745-001C	SAMP	1	02/27/2018	03:44:29 PM
97	N028745-001C	SAMP	5	02/27/2018	03:49:22 PM
7	CCV6	CCV	1	02/27/2018	03:54:13 PM
1	CCB6	CCB	1	02/27/2018	03:58:36 PM
98	N028745-001C-PS	PS	1	02/27/2018	04:03:24 PM
99	N028745-001C-MS	MS	1	02/27/2018	04:08:17 PM
100	N028745-001C-MSD	MSD	1	02/27/2018	04:13:11 PM
101	N028745-002C	SAMP	1	02/27/2018	04:18:04 PM
102	N028745-003C	SAMP	1	02/27/2018	04:22:57 PM
103	N028745-004C	SAMP	1	02/27/2018	04:27:48 PM
104	N028745-005C	SAMP	1	02/27/2018	04:32:41 PM
105	N028745-006C	SAMP	1	02/27/2018	04:37:34 PM
106	N028745-007C	SAMP	1	02/27/2018	04:42:25 PM
107	N028745-008C	SAMP	1	02/27/2018	04:47:17 PM
7	CCV7	CCV	1	02/27/2018	04:52:11 PM
1	CCB7	CCB	1	02/27/2018	04:56:34 PM
108	N028745-009C	SAMP	1	02/27/2018	05:01:23 PM
109	N028745-010C	SAMP	1	02/27/2018	05:06:15 PM
110	N028745-011C	SAMP	1	02/27/2018	05:11:09 PM
111	N028745-012C	SAMP	1	02/27/2018	05:16:02 PM
112	N028745-014C	SAMP	1	02/27/2018	05:20:54 PM
113	N028745-015C	SAMP	1	02/27/2018	05:25:48 PM
114	N028727-006B	SAMP	1	02/27/2018	05:30:40 PM
115	N028745-002B	SAMP	1	02/27/2018	05:35:34 PM
116	N028745-012B	SAMP	1	02/27/2018	05:41:13 PM
117	MB-66928	MBLK	1	02/27/2018	05:46:04 PM
7	CCV8	CCV	1	02/27/2018	05:50:56 PM
1	CCB8	CCB	1	02/27/2018	05:55:19 PM
2	LLCCV2	CCV2	1	02/27/2018	06:00:08 PM
4	ICSA3	ICSA	1	02/27/2018	06:04:58 PM
5	ICSAB3	ICSAB	1	02/27/2018	06:11:01 PM
118	LCS1-66928	LCS	1	02/27/2018	06:16:36 PM
119	N028744-003B	SAMP	1	02/27/2018	06:21:29 PM
120	N028744-003B	SAMP	5	02/27/2018	06:26:53 PM
121	N028744-003B-PS	PS	1	02/27/2018	06:32:47 PM
122	N028744-003B-MS1	MS	1	02/27/2018	06:38:14 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
123	N028744-003B-MSD1	MSD	1	02/27/2018	06:43:41 PM
124	N028744-004B	SAMP	1	02/27/2018	06:49:07 PM
125	N028744-005B	SAMP	1	02/27/2018	06:57:52 PM
126	N028775-001B	SAMP	1	02/27/2018	07:03:48 PM
127	N028775-002B	SAMP	1	02/27/2018	07:09:41 PM
7	CCV9	CCV	1	02/27/2018	07:15:35 PM
1	CCB9	CCB	1	02/27/2018	07:19:59 PM
128	N028775-003B	SAMP	1	02/27/2018	07:24:48 PM
129	N028744-005B	SAMP	5	02/27/2018	07:30:41 PM
7	CCV10	CCV	1	02/27/2018	07:36:34 PM
1	CCB10	CCB	1	02/27/2018	07:40:57 PM
2	LLCCV3	CCV2	1	02/27/2018	07:45:48 PM
4	ICSA4	ICSA	1	02/27/2018	07:50:36 PM
5	ICSAB4	ICSAB	1	02/27/2018	07:56:39 PM

INJECTION LOG: 180228D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171201R,0.025<50mL
Standard2	MWST-171201R,0.25<50mL
Standard3	MWST-171201R,1.25<50mL
Standard4	MWST-171201R,2.5<50mL
Standard5	MWST-171201R,5<50mL
Standard6	MWST-171201R,10<50mL
ICV	MWST-171030L
CCV	MWST-171201R,2.5<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	02/28/2018	12:07:32 PM
26	Standard1	ICAL	1	02/28/2018	12:10:50 PM
27	Standard2	ICAL	1	02/28/2018	12:14:08 PM
28	Standard3	ICAL	1	02/28/2018	12:17:57 PM
29	Standard4	ICAL	1	02/28/2018	12:21:45 PM
30	Standard5	ICAL	1	02/28/2018	12:25:37 PM
31	Standard6	ICAL	1	02/28/2018	12:29:30 PM
32	ICV	ICV	1	02/28/2018	12:33:25 PM
1	ICB	ICB	1	02/28/2018	12:37:17 PM
33	ICSA1	ICSA	1	02/28/2018	12:40:35 PM
34	ICSAB1	ICSAB	1	02/28/2018	12:46:09 PM
110	MB-66957	MBLK	1	02/28/2018	12:49:43 PM
131	LCS2-66957	LCS	1	02/28/2018	12:53:04 PM
112	N028808-001A	SAMP	1	02/28/2018	12:57:55 PM
117	N028809-001A	SAMP	1	02/28/2018	01:02:17 PM
118	N028810-001A	SAMP	1	02/28/2018	01:05:38 PM
119	N028811-001A	SAMP	1	02/28/2018	01:08:58 PM
132	N028809-001A	SAMP	5	02/28/2018	01:13:10 PM
133	N028809-001A-PS	PS	1	02/28/2018	01:16:32 PM
134	N028809-001A-MS2	MS	1	02/28/2018	01:20:30 PM
135	N028809-001A-MSD2	MSD	1	02/28/2018	01:24:27 PM
29	CCV1	CCV	1	02/28/2018	01:28:25 PM
1	CCB1	CCB	1	02/28/2018	01:32:15 PM
131	LCS2-66957	LCS	1	02/28/2018	01:35:32 PM
113	N028808-001A	SAMP	5	02/28/2018	01:39:30 PM
136	N028809-001A	SAMP	25	02/28/2018	01:42:51 PM
137	N028809-001A-PS	PS	5	02/28/2018	01:46:14 PM
138	N028809-001A-MS2	MS	5	02/28/2018	01:50:07 PM
139	N028809-001A-MSD2	MSD	5	02/28/2018	01:54:00 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
38	MB-66928	MBLK	1	02/28/2018	01:57:53 PM
39	LCS2-66928	LCS	1	02/28/2018	02:01:12 PM
40	N028744-003B	SAMP	1	02/28/2018	02:05:07 PM
29	CCV2	CCV	1	02/28/2018	02:24:56 PM
1	CCB2	CCB	1	02/28/2018	02:28:46 PM
42	N028744-005B	SAMP	1	02/28/2018	02:32:03 PM
43	N028775-001B	SAMP	1	02/28/2018	02:37:02 PM
44	N028775-002B	SAMP	1	02/28/2018	02:41:53 PM
45	N028775-003B	SAMP	1	02/28/2018	02:46:43 PM
46	N028744-003B	SAMP	25	02/28/2018	02:51:33 PM
47	N028744-004B	SAMP	5	02/28/2018	02:54:52 PM
48	N028744-005B	SAMP	100	02/28/2018	02:59:44 PM
49	N028775-001B	SAMP	25	02/28/2018	03:03:05 PM
50	N028775-002B	SAMP	25	02/28/2018	03:06:27 PM
51	N028775-003B	SAMP	25	02/28/2018	03:09:45 PM
29	CCV3	CCV	1	02/28/2018	03:13:05 PM
1	CCB3	CCB	1	02/28/2018	03:16:55 PM
52	N028744-004B	SAMP	250	02/28/2018	03:20:12 PM
52	N028744-004B	SAMP	250	02/28/2018	03:27:38 PM
53	N028744-004B	SAMP	1250	02/28/2018	03:30:57 PM
54	N028744-004B-PS	PS	250	02/28/2018	03:34:16 PM
55	N028744-004B-MS2	MS	250	02/28/2018	03:37:35 PM
56	N028744-004B-MSD2	MSD	250	02/28/2018	03:40:54 PM
29	CCV4	CCV	1	02/28/2018	03:44:14 PM
1	CCB4	CCB	1	02/28/2018	03:48:04 PM
33	ICSA2	ICSA	1	02/28/2018	03:51:21 PM
34	ICSAB2	ICSAB	1	02/28/2018	03:54:40 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/26/2018 8:25:53**
Prep End Date: **2/26/2018 12:00:00**
Prep Batch **66928** Prep Code: **200.7_PR**

Reviewed/ Date: 3/7/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**Db-2-42**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-66928	Aqueous		25	☐	0	0	25	1.000		
LCS2-66928	Aqueous		25	☐	0	0	25	1.000		
MB-66928	Aqueous		25	☐	0	0	25	1.000		
N028744-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028744-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9616	HYDROCHLORIC ACID
9767	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180227A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	02/27/2018	08:57:36 AM	Mg	279.079	347	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Mg	279.079	2070	0.1000	mg/L	
Standard2	02/27/2018	09:06:43 AM	Mg	279.079	19689	1.000	mg/L	
Standard3	02/27/2018	09:11:33 AM	Mg	279.079	40251	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Mg	279.079	106097	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Mg	279.079	159271	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Mg	279.079	201702	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Mg	279.079	403058	20.000	mg/L	0.9998
Calcium								
CalBlk	02/27/2018	08:57:36 AM	Ca	227.546	-169	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Ca	227.546	90	0.2000	mg/L	
Standard2	02/27/2018	09:06:43 AM	Ca	227.546	427	1.000	mg/L	
Standard3	02/27/2018	09:11:33 AM	Ca	227.546	857	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Ca	227.546	2231	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Ca	227.546	3330	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Ca	227.546	4288	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Ca	227.546	8679	20.000	mg/L	0.9999
Iron								
CalBlk	02/27/2018	08:57:36 AM	Fe	273.953	-80	0.00	mg/L	
Standard1	02/27/2018	09:02:24 AM	Fe	273.953	597	0.0200	mg/L	
Standard2	02/27/2018	09:06:43 AM	Fe	273.953	2118	0.050	mg/L	
Standard3	02/27/2018	09:11:33 AM	Fe	273.953	65679	2.000	mg/L	
Standard4	02/27/2018	09:16:25 AM	Fe	273.953	173274	5.000	mg/L	
Standard5	02/27/2018	09:21:18 AM	Fe	273.953	259204	7.500	mg/L	
Standard6	02/27/2018	09:26:07 AM	Fe	273.953	329436	10.000	mg/L	
Standard7	02/27/2018	09:30:30 AM	Fe	273.953	654360	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 180228D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	02/28/2018	12:07:32 PM	Na	589.594	-47	0.00	mg/L	
Standard1	02/28/2018	12:10:50 PM	Na	589.594	268	0.1000	mg/L	
Standard2	02/28/2018	12:14:08 PM	Na	589.594	2360	1.000	mg/L	
Standard3	02/28/2018	12:17:57 PM	Na	589.594	11870	5.000	mg/L	
Standard4	02/28/2018	12:21:45 PM	Na	589.594	23155	10.000	mg/L	
Standard5	02/28/2018	12:25:37 PM	Na	589.594	46238	20.000	mg/L	
Standard6	02/28/2018	12:29:30 PM	Na	589.594	90512	40.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9847.234	500	10000	0	98.5	90	110				
Iron	9971.133	20	10000	0	99.7	90	110				
Magnesium	9936.474	100	10000	0	99.4	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	191.937	500	200.0	0	96.0	80	120				
Iron	18.964	20	20.00	0	94.8	80	120				
Magnesium	95.825	100	100.0	0	95.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9902.289	500	10000	0	99.0	90	110				
Iron	9936.606	20	10000	0	99.4	90	110				
Magnesium	9881.004	100	10000	0	98.8	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9873.443	500	10000	0	98.7	90	110				
Iron	9928.011	20	10000	0	99.3	90	110				
Magnesium	9862.143	100	10000	0	98.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9865.971	500	10000	0	98.7	90	110				
Iron	9940.119	20	10000	0	99.4	90	110				
Magnesium	9877.853	100	10000	0	98.8	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9867.065	500	10000	0	98.7	90	110				
Iron	9918.304	20	10000	0	99.2	90	110				
Magnesium	9863.878	100	10000	0	98.6	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205.785	500	200.0	0	103	70	130				
Iron	19.135	20	20.00	0	95.7	70	130				
Magnesium	94.237	100	100.0	0	94.2	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9989.312	500	10000	0	99.9	90	110				
Iron	10013.653	20	10000	0	100	90	110				
Magnesium	9925.719	100	10000	0	99.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV6** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9938.585	500	10000	0	99.4	90	110				
Iron	9954.995	20	10000	0	99.5	90	110				
Magnesium	9868.812	100	10000	0	98.7	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9937.706	500	10000	0	99.4	90	110				
Iron	9900.900	20	10000	0	99.0	90	110				
Magnesium	9807.914	100	10000	0	98.1	90	110				

Sample ID **CCV8** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCV** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9921.528	500	10000	0	99.2	90	110				
Iron	9867.311	20	10000	0	98.7	90	110				
Magnesium	9759.138	100	10000	0	97.6	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ZZZZZZ** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	220.804	500	200.0	0	110	70	130				
Iron	18.571	20	20.00	0	92.9	70	130				
Magnesium	92.121	100	100.0	0	92.1	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV9**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCV**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9914.397	500	10000	0	99.1	90	110				
Iron	9827.758	20	10000	0	98.3	90	110				
Magnesium	9755.639	100	10000	0	97.6	90	110				

Sample ID **CCV10**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCV**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9980.941	500	10000	0	99.8	90	110				
Iron	9918.259	20	10000	0	99.2	90	110				
Magnesium	9859.723	100	10000	0	98.6	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ZZZZZZ**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	211.390	500	200.0	0	106	70	130				
Iron	18.834	20	20.00	0	94.2	70	130				
Magnesium	91.971	100	100.0	0	92.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10239.524	500	10000	0	102	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10254.833	500	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10472.628	500	10000	0	105	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10881.218	500	10000	0	109	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCV**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10878.961	500	10000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-7.402967	500									
Iron	-0.696386	20									
Magnesium	0.009	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.129	500									
Iron	-0.447249	20									
Magnesium	-1.158627	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	15.889	500									
Iron	-0.680748	20									
Magnesium	-0.581797	100									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	14.648	500									
Iron	-0.479551	20									
Magnesium	-0.451134	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.547	500									
Iron	-0.538583	20									
Magnesium	-1.884182	100									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	6.131	500									
Iron	-0.964491	20									
Magnesium	-1.604119	100									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	31.505	500									
Iron	-0.596397	20									
Magnesium	-1.080566	100									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **CCB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942653**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.341	500									
Iron	-0.505015	20									
Magnesium	-0.569754	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB8** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	8.632	500									
Iron	-0.163844	20									
Magnesium	-0.779367	100									

Sample ID **CCB9** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	18.729	500									
Iron	-1.030656	20									
Magnesium	-0.353972	100									

Sample ID **CCB10** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **CCB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.940	500									
Iron	-1.315819	20									
Magnesium	-2.041458	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.832063	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	14.845	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	84.208	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	96.662	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **CCB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	48.004	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSA**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	457594.887	50	500000	0	91.5	80	120				
Calcium	462616.028	500	500000	0	92.5	80	120				
Iron	162752.851	20	200000	0	81.4	80	120				
Magnesium	441828.543	100	500000	0	88.4	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSAB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	519567.949	50	500000	0	104	80	120				
Calcium	523203.344	500	500000	0	105	80	120				
Iron	179011.510	20	200000	0	89.5	80	120				
Magnesium	505392.169	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSA**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	458954.094	50	500000	0	91.8	80	120				
Calcium	464043.458	500	500000	0	92.8	80	120				
Iron	162754.153	20	200000	0	81.4	80	120				
Magnesium	441622.966	100	500000	0	88.3	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSAB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521810.062	50	500000	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSAB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	524936.053	500	500000	0	105	80	120				
Iron	179026.484	20	200000	0	89.5	80	120				
Magnesium	503783.430	100	500000	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSA** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	480725.792	50	500000	0	96.1	80	120				
Calcium	493793.882	500	500000	0	98.8	80	120				
Iron	171468.486	20	200000	0	85.7	80	120				
Magnesium	466463.577	100	500000	0	93.3	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSAB** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516193.347	50	500000	0	103	80	120				
Calcium	524006.828	500	500000	0	105	80	120				
Iron	176968.700	20	200000	0	88.5	80	120				
Magnesium	494006.955	100	500000	0	98.8	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **122333**
Client ID: **ICSA** Batch ID: **R122333** TestNo: **EPA 200.7** Analysis Date: **2/27/2018** SeqNo: **2942686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486430.979	50	500000	0	97.3	80	120				
Calcium	497118.455	500	500000	0	99.4	80	120				
Iron	172570.528	20	200000	0	86.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSA**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	471858.518	100	500000	0	94.4	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122333**
Client ID: **ICSAB**	Batch ID: **R122333**	TestNo: **EPA 200.7**		Analysis Date: **2/27/2018**	SeqNo: **2942687**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	521106.682	50	500000	0	104	80	120				
Calcium	527518.713	500	500000	0	106	80	120				
Iron	177773.615	20	200000	0	88.9	80	120				
Magnesium	498933.658	100	500000	0	99.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSA**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.962147	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSAB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10255.564	500	10000	0	103	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSA**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	40.571	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122371**
Client ID: **ICSAB**	Batch ID: **R122371**	TestNo: **EPA 200.7**		Analysis Date: **2/28/2018**	SeqNo: **2944616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10848.365	500	10000	0	108	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.38	65-125	PASS
Standard2	ICAL	1	1.046	104.64	65-125	PASS
Standard3	ICAL	1	1.012	101.25	65-125	PASS
Standard4	ICAL	1	1.0039	100.39	65-125	PASS
Standard5	ICAL	1	1.054	105.45	65-125	PASS
Standard6	ICAL	1	0.98	97.97	65-125	PASS
Standard7	ICAL	1	0.96	95.72	65-125	PASS
ICV	ICV	1	0.99	98.6	65-125	PASS
ICB	ICB	1	1	99.66	65-125	PASS
LLICV	CCV1	1	1	99.72	65-125	PASS
ICSA1	ICSA	1	1.14	113.65	65-125	PASS
ICSAB1	ICSAB	1	0.91	90.94	65-125	PASS
CCV1	CCV	1	0.99	99.22	65-125	PASS
CCB1	CCB	1	1.0052	100.52	65-125	PASS
CCV2	CCV	1	0.99	99.42	65-125	PASS
CCB2	CCB	1	1.0041	100.41	65-125	PASS
CCV3	CCV	1	1.0011	100.11	65-125	PASS
CCB3	CCB	1	1.013	101.34	65-125	PASS
CCV4	CCV	1	1	99.86	65-125	PASS
CCB4	CCB	1	1.016	101.63	65-125	PASS
LLCCV1	CCV2	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.16	115.86	65-125	PASS
ICSAB2	ICSAB	1	0.92	92.44	65-125	PASS
CCV5	CCV	1	1.0057	100.57	65-125	PASS
CCB5	CCB	1	1.018	101.79	65-125	PASS
CCV6	CCV	1	1.0016	100.16	65-125	PASS
CCB6	CCB	1	1.021	102.06	65-125	PASS
CCV7	CCV	1	1.012	101.23	65-125	PASS
CCB7	CCB	1	1.028	102.75	65-125	PASS
MB-66928	MBLK	1	1	99.67	65-125	PASS
CCV8	CCV	1	1.002	100.2	65-125	PASS
CCB8	CCB	1	1.02	101.96	65-125	PASS
LLCCV2	CCV2	1	1.015	101.5	65-125	PASS
ICSA3	ICSA	1	0.95	95.32	65-125	PASS
ICSAB3	ICSAB	1	0.89	88.66	65-125	PASS
LCS1-66928	LCS	1	0.94	94.12	65-125	PASS
N028744-003B	SAMP	1	0.91	91.007	65-125	PASS
N028744-003B	SAMP	5	0.95	94.77	65-125	PASS
N028744-003B-PS	PS	1	0.92	92.3	65-125	PASS
N028744-003B-MS1	MS	1	0.92	91.79	65-125	PASS

INTERNAL STANDARD: 180227A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N028744-003B-MSD1	MSD	1	0.92	92.38	65-125	PASS
N028744-004B	SAMP	1	0.75	74.65	65-125	PASS
N028744-005B	SAMP	1	0.76	75.95	65-125	PASS
N028775-001B	SAMP	1	0.93	93.33	65-125	PASS
N028775-002B	SAMP	1	0.92	92.25	65-125	PASS
CCV9	CCV	1	1	99.78	65-125	PASS
CCB9	CCB	1	1.0016	100.16	65-125	PASS
N028775-003B	SAMP	1	0.94	93.54	65-125	PASS
N028744-005B	SAMP	5	0.86	86.26	65-125	PASS
CCV10	CCV	1	1	99.95	65-125	PASS
CCB10	CCB	1	1.0006	100.06	65-125	PASS
LLCCV3	CCV2	1	1.016	101.59	65-125	PASS
ICSA4	ICSA	1	0.95	95.044	65-125	PASS
ICSAB4	ICSAB	1	0.89	88.55	65-125	PASS

INTERNAL STANDARD: 180228D

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.12	65-125	PASS
Standard2	ICAL	1	0.99	98.54	65-125	PASS
Standard3	ICAL	1	1.036	103.65	65-125	PASS
Standard4	ICAL	1	0.99	98.61	65-125	PASS
Standard5	ICAL	1	1.023	102.26	65-125	PASS
Standard6	ICAL	1	1.019	101.94	65-125	PASS
ICV	ICV	1	0.99	98.97	65-125	PASS
ICB	ICB	1	0.98	97.69	65-125	PASS
ICSA1	ICSA	1	0.97	97.18	65-125	PASS
ICSAB1	ICSAB	1	0.99	99.41	65-125	PASS
CCV1	CCV	1	0.99	99.23	65-125	PASS
CCB1	CCB	1	0.98	98.14	65-125	PASS
MB-66928	MBLK	1	1.0073	100.73	65-125	PASS
LCS2-66928	LCS	1	1.027	102.67	65-125	PASS
N028744-003B	SAMP	1	1.016	101.63	65-125	PASS
CCV2	CCV	1	0.88	87.52	65-125	PASS
CCB2	CCB	1	0.87	86.7	65-125	PASS
N028744-005B	SAMP	1	0.82	82.32	65-125	PASS
N028775-001B	SAMP	1	0.91	90.51	65-125	PASS
N028775-002B	SAMP	1	0.89	88.78	65-125	PASS
N028775-003B	SAMP	1	0.9	89.51	65-125	PASS
N028744-003B	SAMP	25	0.88	87.64	65-125	PASS
N028744-004B	SAMP	5	0.83	82.8	65-125	PASS
N028744-005B	SAMP	100	0.85	85.1	65-125	PASS
N028775-001B	SAMP	25	0.86	85.79	65-125	PASS
N028775-002B	SAMP	25	0.86	85.55	65-125	PASS
N028775-003B	SAMP	25	0.85	85.39	65-125	PASS
CCV3	CCV	1	0.85	85.4	65-125	PASS
CCB3	CCB	1	0.85	85.35	65-125	PASS
N028744-004B	SAMP	250	0.00029	0.029	65-125	NR!
N028744-004B	SAMP	250	0.86	85.75	65-125	PASS
N028744-004B	SAMP	1250	0.85	85.43	65-125	PASS
N028744-004B-PS	PS	250	0.85	85.11	65-125	PASS
N028744-004B-MS2	MS	250	0.85	85.27	65-125	PASS
N028744-004B-MSD2	MSD	250	0.85	84.96	65-125	PASS
CCV4	CCV	1	0.85	85.16	65-125	PASS
CCB4	CCB	1	0.86	85.64	65-125	PASS
ICSA2	ICSA	1	0.85	84.98	65-125	PASS
ICSAB2	ICSAB	1	0.86	85.71	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028775
Test Method: EPA 200.7
Analysis Date: 27/2018 & 2/28/2018

Matrix: Groundwater
Batch No.: 66928

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028744-003B DT 5X	Calcium	ug/L	341951.3	PASS	343722.5	0.52%	10
N028744-003B DT 5X	Iron	ug/L	92.62328	NA	89.08093	3.98%	10
N028744-003B DT 5X	Magnesium	ug/L	37130.61	PASS	34076.97	8.96%	10
N028744-004B DT 1250X	Sodium	ug/L	5126309	PASS	5171055	0.87%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N028744-003B-PS	SampType:	PS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	122333
Client ID:	ZZZZZZ	Batch ID:	66928	TestNo:	EPA 200.7			Analysis Date:	2/27/2018	SeqNo:	2942672

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	365727.242	500	10000	343700	220	80	120				S
Iron	185.463	20	100.0	89.08	96.4	80	120				
Magnesium	44336.185	100	10000	34080	103	80	120				

Sample ID	N028744-004B-PS	SampType:	PS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	122371
Client ID:	ZZZZZZ	Batch ID:	66928	TestNo:	EPA 200.7			Analysis Date:	2/28/2018	SeqNo:	2944610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5155663.295	120000	20000	5171000	-77.0	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R122291
ASSET #: N028775

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 2/26/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/4/2018

2nd Level Reviewer RLB 03/08/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028775-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.3168 * 20$$

$$Cr^{+6}, \mu g/L = 146.3360$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 150}$$

rba 3/4/2018

ANALYSIS RUN LOG

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:25 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:36 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/26/18 9:46 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/26/18 9:55 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/26/18 10:04 AM	Reported
14	MB-R122291	MBLK	1	Hexavalent Chromium	02/26/18 10:14 AM	Reported
15	LCS-R122291	LCS	1	Hexavalent Chromium	02/26/18 10:23 AM	Reported
16	N028744-001A	SAMP	50	Hexavalent Chromium	02/26/18 10:33 AM	Reported
17	N028744-001AMS	MS	50	Hexavalent Chromium	02/26/18 10:42 AM	Reported
18	N028744-002A	SAMP	20	Hexavalent Chromium	02/26/18 10:52 AM	Reported
19	N028744-002AMS	MS	20	Hexavalent Chromium	02/26/18 11:01 AM	Reported
20	N028744-004A	SAMP	5	Hexavalent Chromium	02/26/18 11:15 AM	Reported
21	N028744-004AMS	MS	5	Hexavalent Chromium	02/26/18 11:40 AM	Reported
22	N028744-005A	SAMP	200	Hexavalent Chromium	02/26/18 11:51 AM	Reported
23	N028744-005AMS	MS	200	Hexavalent Chromium	02/26/18 12:01 PM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/26/18 12:10 PM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/26/18 12:20 PM	Reported
26	N028744-006A	SAMP	50	Hexavalent Chromium	02/26/18 12:29 PM	Reported
27	N028744-006AMS	MS	50	Hexavalent Chromium	02/26/18 12:38 PM	Reported
28	N028744-007A	SAMP	1	Hexavalent Chromium	02/26/18 12:48 PM	Reported
29	N028744-007AMS	MS	1	Hexavalent Chromium	02/26/18 12:57 PM	Reported
30	N028744-001AMSD	MSD	50	Hexavalent Chromium	02/26/18 1:07 PM	Reported
31	N028744-002ADUP	DUP	20	Hexavalent Chromium	02/26/18 1:16 PM	Reported
32	N028744-003A	SAMP	2000	Hexavalent Chromium	02/26/18 1:26 PM	Reported
33	N028744-003AMS	MS	2000	Hexavalent Chromium	02/26/18 1:35 PM	Reported
34	N028744-004A	SAMP	1	Hexavalent Chromium	02/26/18 1:45 PM	Not Reported
35	N028744-004AMS	MS	1	Hexavalent Chromium	02/26/18 1:54 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/26/18 2:04 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/26/18 2:13 PM	Reported
38	N028775-001A	SAMP	20	Hexavalent Chromium	02/26/18 2:40 PM	Reported
39	N028775-001AMS	MS	20	Hexavalent Chromium	02/26/18 2:51 PM	Reported
40	N028775-002A	SAMP	20	Hexavalent Chromium	02/26/18 3:00 PM	Reported
41	N028775-002AMS	MS	20	Hexavalent Chromium	02/26/18 3:10 PM	Reported
42	N028775-003A	SAMP	10	Hexavalent Chromium	02/26/18 3:19 PM	Reported

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028775-003AMS	MS	10	Hexavalent Chromium	02/26/18 3:29 PM	Reported
44	N028775-004A	SAMP	1	Hexavalent Chromium	02/26/18 3:40 PM	Reported
45	N028775-004AMS	MS	1	Hexavalent Chromium	02/26/18 3:51 PM	Reported
46	N028775-005A	SAMP	1	Hexavalent Chromium	02/26/18 4:01 PM	Reported
47	N028775-005AMS	MS	1	Hexavalent Chromium	02/26/18 4:10 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/26/18 4:20 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/26/18 4:29 PM	Reported
50	N028775-006A	SAMP	20	Hexavalent Chromium	02/26/18 4:39 PM	Reported
51	N028775-006AMS	MS	20	Hexavalent Chromium	02/26/18 4:48 PM	Reported
52	N028775-007A	SAMP	20	Hexavalent Chromium	02/26/18 4:58 PM	Reported
53	N028775-007AMS	MS	20	Hexavalent Chromium	02/26/18 5:07 PM	Reported
54	N028775-008A	SAMP	1	Hexavalent Chromium	02/26/18 5:17 PM	Reported
55	N028775-008AMS	MS	1	Hexavalent Chromium	02/26/18 5:26 PM	Reported
56	N028775-009A	SAMP	1	Hexavalent Chromium	02/26/18 5:35 PM	Reported
57	N028775-009AMS	MS	1	Hexavalent Chromium	02/26/18 5:45 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	02/26/18 5:54 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	02/26/18 6:04 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180226A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**26/Feb/18 18:34:41**
No. of Injections:	**62**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/26/2018 09:25	Finished	BLANK
10	BLANK	2	1000	Unknown		02/26/2018 09:36	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/26/2018 09:46	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/26/2018 09:55	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/26/2018 10:04	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/26/2018 10:14	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/26/2018 10:23	Finished	LCS, IWST-180129B
16	N028744-001A,SAMF	8	1000	Unknown		02/26/2018 10:33	Finished	SAMP,0.2>10mL
17	N028744-001AMS,MS	9	1000	Unknown		02/26/2018 10:42	Finished	MS (5ppb), IWST-180129B,0.2
18	N028744-002A,SAMF	10	1000	Unknown		02/26/2018 10:52	Finished	SAMP,0.5>10mL
19	N028744-002AMS,MS	11	1000	Unknown		02/26/2018 11:01	Finished	MS (5ppb), IWST-180129B,0.5
20	N028744-004A,SAMF	1	1000	Unknown		02/26/2018 11:15	Finished	SAMP,2>10mL
21	N028744-004AMS,MS	2	1000	Unknown		02/26/2018 11:40	Finished	MS (5ppb), IWST-180129B,2>1
22	N028744-005A,SAMF	3	1000	Unknown		02/26/2018 11:51	Finished	SAMP,0.05>10mL
23	N028744-005AMS,MS	4	1000	Unknown		02/26/2018 12:01	Finished	MS (5ppb), IWST-180129B,0.0
24	CCV-2,CCV1,1,	5	1000	Unknown		02/26/2018 12:10	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	6	1000	Unknown		02/26/2018 12:20	Finished	CCB R180214B
26	N028744-006A,SAMF	7	1000	Unknown		02/26/2018 12:29	Finished	SAMP,0.2>10mL
27	N028744-006AMS,MS	8	1000	Unknown		02/26/2018 12:38	Finished	MS (5ppb), IWST-180129B,0.2
28	N028744-007A,SAMF	9	1000	Unknown		02/26/2018 12:48	Finished	SAMP,10mL
29	N028744-007AMS,MS	10	1000	Unknown		02/26/2018 12:57	Finished	MS (1ppb), IWST-180129B,10
30	N028744-001AMSD,M	11	1000	Unknown		02/26/2018 13:07	Finished	MSD (5ppb), IWST-180129B,0.
31	N028744-002ADUP,D	12	1000	Unknown		02/26/2018 13:16	Finished	DUP,0.5>10mL
32	N028744-003A,SAMF	13	1000	Unknown		02/26/2018 13:26	Finished	SAMP,0.005>10mL
33	N028744-003AMS,MS	14	1000	Unknown		02/26/2018 13:35	Finished	MS (5ppb), IWST-180129B,0.0
34	N028744-004A,SAMF	15	1000	Unknown		02/26/2018 13:45	Finished	SAMP,10mL
35	N028744-004AMS,MS	16	1000	Unknown		02/26/2018 13:54	Finished	MS (1ppb), IWST-180129B,10
36	CCV-3,CCV,1,	17	1000	Unknown		02/26/2018 14:04	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	18	1000	Unknown		02/26/2018 14:13	Finished	CCB R180214B
38	N028775-001A,SAMF	1	1000	Unknown		02/26/2018 14:40	Finished	SAMP,0.5>10mL
39	N028775-001AMS,MS	2	1000	Unknown		02/26/2018 14:51	Finished	MS (5ppb), IWST-180129B,0.5
40	N028775-002A,SAMF	3	1000	Unknown		02/26/2018 15:00	Finished	SAMP,0.5>10mL
41	N028775-002AMS,MS	4	1000	Unknown		02/26/2018 15:10	Finished	MS (5ppb), IWST-180129B,0.5
42	N028775-003A,SAMF	5	1000	Unknown		02/26/2018 15:19	Finished	SAMP,1>10mL
43	N028775-003AMS,MS	6	1000	Unknown		02/26/2018 15:29	Finished	MS (5ppb), IWST-180129B,1>1
44	N028775-004A,SAMF	8	1000	Unknown		02/26/2018 15:40	Finished	SAMP,10mL
45	N028775-004AMS,MS	9	1000	Unknown		02/26/2018 15:51	Finished	MS (5ppb), IWST-180129B,10
46	N028775-005A,SAMF	10	1000	Unknown		02/26/2018 16:01	Finished	SAMP,10mL
47	N028775-005AMS,MS	11	1000	Unknown		02/26/2018 16:10	Finished	MS (5ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	12	1000	Unknown		02/26/2018 16:20	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	13	1000	Unknown		02/26/2018 16:29	Finished	CCB R180214B
50	N028775-006A,SAMF	14	1000	Unknown		02/26/2018 16:39	Finished	SAMP,0.5>10mL
51	N028775-006AMS,MS	15	1000	Unknown		02/26/2018 16:48	Finished	MS (5ppb), IWST-180129B,0.5
52	N028775-007A,SAMF	16	1000	Unknown		02/26/2018 16:58	Finished	SAMP,0.5>10mL
53	N028775-007AMS,MS	17	1000	Unknown		02/26/2018 17:07	Finished	MS (5ppb), IWST-180129B,0.5
54	N028775-008A,SAMF	18	1000	Unknown		02/26/2018 17:17	Finished	SAMP,10mL
55	N028775-008AMS,MS	19	1000	Unknown		02/26/2018 17:26	Finished	MS (1ppb), IWST-180129B,10
56	N028775-009A,SAMF	20	1000	Unknown		02/26/2018 17:35	Finished	SAMP,10mL
57	N028775-009AMS,MS	21	1000	Unknown		02/26/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
58	CCV-5,CCV,1,	22	1000	Unknown		02/26/2018 17:54	Finished	CCV @5ppb, IWST-180129A
59	CCB-5,CCB,1,	23	1000	Unknown		02/26/2018 18:04	Finished	CCB R180214B
60	SHUTDOWN	24	1000	Unknown		02/26/2018 18:13	Finished	

61	Eluent: R180226A	25	1000	Unknown		n.a.	Finished	Eluent
62	PCR: R180226B	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 2/24/18
Time Prepared: MB 0820H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CAN-171116A
NH4OH + NH4SO4 eluent: M80223A
NH4OH + NH4SO4 buffer: M802140

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NU28781-004B	7.70		~50 mL	~250 mL		
2)	↓ 9B	7.57		↓	↓		
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 2/26/18
Time Prepared: 1135H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CAN-171116A
NH4OH + NH4SO4 eluent: M80226A
NH4OH + NH4SO4 buffer: M802143

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NU28775-1A	9.32	-	~50 mL	~250 mL		
2)	↓ 2A	9.35	-	↓	↓		
3)	3A	9.38	-				
4)	4A	9.41	-				
5)	5A	9.42	-				
6)	6A	9.43	-				
7)	7A	9.39	-				
8)	8A	9.60	-				
9)	↓ 9A	9.59	-	↓	↓		
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 2/6/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0580	0.2698	1.2850	2.5074	3.7819	4.9494	0.9993 7

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ICV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2940692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.095	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2940693**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.231	0.20	0.2000	0	116	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.927	0.20	5.000	0	98.5	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.197	0.20	0.2000	0	98.5	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.937	0.20	10.00	0	99.4	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.876	0.20	5.000	0	97.5	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ZZZZZZ**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.846	0.20	10.00	0	98.5	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCV**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.870	0.20	5.000	0	97.4	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **ICB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/6/2018**	SeqNo: **2940694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122291**
Client ID: **CCB**	Batch ID: **R122291**	TestNo: **EPA 218.6**		Analysis Date: **2/26/2018**	SeqNo: **2940733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **122291**
Client ID: **CCB** Batch ID: **R122291** TestNo: **EPA 218.6** Analysis Date: **2/26/2018** SeqNo: **2940743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.156	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
Average	4.163	
Actual RT Window	4.083 - 4.243	
Applied RT Window	3.963 - 4.363	
MB-R122291	N.A.	N.A.
LCS-R122291	4.156	PASS
N028744-001A	4.156	PASS
N028744-001AMS	4.156	PASS
N028744-002A	4.156	PASS
N028744-002AMS	4.156	PASS
N028744-004A	N.A.	N.A.
N028744-004AMS	4.090	PASS
N028744-005A	4.156	PASS
N028744-005AMS	4.156	PASS
N028744-006A	4.156	PASS
N028744-006AMS	4.156	PASS
N028744-007A	N.A.	N.A.
N028744-007AMS	4.156	PASS
N028744-001AMSD	4.156	PASS
N028744-002ADUP	4.156	PASS
N028744-003A	4.156	PASS
N028744-003AMS	4.165	PASS
N028744-004A	N.A.	N.A.
N028744-004AMS	N.A.	N.A.
N028775-001A	4.156	PASS
N028775-001AMS	4.156	PASS
N028775-002A	4.165	PASS



03/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name	Retention Time	Evaluation
ICV	4.173	
CCV-1	4.165	
CCV-2	4.156	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.165	
Average	4.163	
Actual RT Window	4.083 - 4.243	
Applied RT Window	3.963 - 4.363	
N028775-002AMS	4.156	PASS
N028775-003A	4.156	PASS
N028775-003AMS	4.156	PASS
N028775-004A	4.148	PASS
N028775-004AMS	4.148	PASS
N028775-005A	4.148	PASS
N028775-005AMS	4.148	PASS
N028775-006A	4.156	PASS
N028775-006AMS	4.156	PASS
N028775-007A	4.156	PASS
N028775-007AMS	4.165	PASS
N028775-008A	4.148	PASS
N028775-008AMS	4.165	PASS
N028775-009A	N.A.	N.A.
N028775-009AMS	4.165	PASS

RLB 03/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	02/06/18 11:17 AM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/06/18 11:26 AM	Reported
11	ICB	ICB	1	Hexavalent Chromium	02/06/18 11:36 AM	Reported
12	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 11:48 AM	Not Reported
13	LCS-R121889	LCS	1	Hexavalent Chromium	02/06/18 12:00 PM	Reported
14	MB-R121889	MBLK	1	Hexavalent Chromium	02/06/18 12:24 PM	Reported
15	N028372-001A	SAMP	1	Hexavalent Chromium	02/06/18 12:35 PM	Reported
16	N028372-001AMS	MS	1	Hexavalent Chromium	02/06/18 12:44 PM	Reported
17	N028372-001AMSD	MSD	1	Hexavalent Chromium	02/06/18 12:54 PM	Reported
18	N028391-001A	SAMP	200	Hexavalent Chromium	02/06/18 1:03 PM	Reported
19	N028391-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:12 PM	Reported
20	N028420-001A	SAMP	1	Hexavalent Chromium	02/06/18 1:22 PM	Reported
21	N028420-002A	SAMP	1	Hexavalent Chromium	02/06/18 1:31 PM	Reported
22	CCV-1	CCV1	1	Hexavalent Chromium	02/06/18 1:41 PM	Reported
23	CCB-1	CCB	1	Hexavalent Chromium	02/06/18 1:50 PM	Reported
24	N028420-003A	SAMP	1	Hexavalent Chromium	02/06/18 2:00 PM	Reported
25	N028420-004A	SAMP	1	Hexavalent Chromium	02/06/18 2:09 PM	Reported
26	N028420-005A	SAMP	1	Hexavalent Chromium	02/06/18 2:19 PM	Reported
27	N028420-006A	SAMP	1	Hexavalent Chromium	02/06/18 2:28 PM	Reported
28	N028391-001ADUP	DUP	200	Hexavalent Chromium	02/06/18 2:38 PM	Reported
29	N028421-012A	SAMP	1	Hexavalent Chromium	02/06/18 2:47 PM	Reported
30	N028421-010A	SAMP	1	Hexavalent Chromium	02/06/18 2:57 PM	Reported
31	N028421-011A	SAMP	1	Hexavalent Chromium	02/06/18 3:06 PM	Reported
32	N028421-013A	SAMP	1	Hexavalent Chromium	02/06/18 3:15 PM	Reported
33	N028421-014A	SAMP	1	Hexavalent Chromium	02/06/18 3:25 PM	Reported
34	CCV-2	CCV	1	Hexavalent Chromium	02/06/18 3:34 PM	Reported
35	CCB-2	CCB	1	Hexavalent Chromium	02/06/18 3:44 PM	Reported
36	N028421-009A	SAMP	1	Hexavalent Chromium	02/06/18 3:53 PM	Reported
37	N028420-001AMS	MS	1	Hexavalent Chromium	02/06/18 4:03 PM	Reported
38	LCS-R121890	LCS	1	Hexavalent Chromium	02/06/18 4:19 PM	Reported
39	MB-R121890	MBLK	1	Hexavalent Chromium	02/06/18 4:30 PM	Reported
40	N028421-001A	SAMP	10	Hexavalent Chromium	02/06/18 4:39 PM	Reported
41	N028421-006A	SAMP	20	Hexavalent Chromium	02/06/18 4:49 PM	Reported
42	N028421-004A	SAMP	20	Hexavalent Chromium	02/06/18 4:58 PM	Reported

INJECTION LOG: 180206B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028421-002A	SAMP	1	Hexavalent Chromium	02/06/18 5:08 PM	Reported
44	N028421-001AMS	MS	10	Hexavalent Chromium	02/06/18 5:17 PM	Reported
45	N028421-001AMSD	MSD	10	Hexavalent Chromium	02/06/18 5:27 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	02/06/18 5:36 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	02/06/18 5:45 PM	Reported
48	N028421-006AMS	MS	20	Hexavalent Chromium	02/06/18 5:55 PM	Reported
49	N028421-002ADUP	DUP	1	Hexavalent Chromium	02/06/18 6:04 PM	Reported
50	N028421-003A	SAMP	1	Hexavalent Chromium	02/06/18 6:14 PM	Reported
51	N028421-005A	SAMP	1	Hexavalent Chromium	02/06/18 6:23 PM	Reported
52	N028421-007A	SAMP	20	Hexavalent Chromium	02/06/18 6:33 PM	Not Reported
53	N028421-008A	SAMP	5	Hexavalent Chromium	02/06/18 6:42 PM	Reported
54	N028448-001A	SAMP	1	Hexavalent Chromium	02/06/18 6:52 PM	Reported
55	N028448-002A	SAMP	1	Hexavalent Chromium	02/06/18 7:01 PM	Reported
56	N028448-003A	SAMP	1	Hexavalent Chromium	02/06/18 7:11 PM	Reported
57	N028448-004A	SAMP	1	Hexavalent Chromium	02/06/18 7:20 PM	Reported
58	CCV-4	CCV	1	Hexavalent Chromium	02/06/18 7:30 PM	Reported
59	CCB-4	CCB	1	Hexavalent Chromium	02/06/18 7:39 PM	Reported
60	N028448-005A	SAMP	1	Hexavalent Chromium	02/06/18 7:48 PM	Reported
61	N028448-006A	SAMP	1	Hexavalent Chromium	02/06/18 7:58 PM	Reported
62	N028448-007A	SAMP	1	Hexavalent Chromium	02/06/18 8:07 PM	Reported
63	N028448-008A	SAMP	1	Hexavalent Chromium	02/06/18 8:17 PM	Reported
64	N028448-009A	SAMP	1	Hexavalent Chromium	02/06/18 8:26 PM	Reported
65	N028448-010A	SAMP	1	Hexavalent Chromium	02/06/18 8:36 PM	Reported
66	N028448-011A	SAMP	1	Hexavalent Chromium	02/06/18 8:45 PM	Reported
67	N028449-001A	SAMP	500	Hexavalent Chromium	02/06/18 8:55 PM	Reported
68	N028449-001A	SAMP	1000	Hexavalent Chromium	02/06/18 9:04 PM	Not Reported
69	CCV-5	CCV1	1	Hexavalent Chromium	02/06/18 9:14 PM	Reported
70	CCB-5	CCB	1	Hexavalent Chromium	02/06/18 9:23 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180206B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/Feb/18 11:17:58**
No. of Injections:	**73**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	ICV,ICV,1,	9	1000	Unknown		02/06/2018 11:17	Finished	ICV @5ppb, IWST-180129B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		02/06/2018 11:26	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		02/06/2018 11:36	Finished	ICB R180115C
12	MB-H2O,MBLK,1,	12	1000	Unknown		02/06/2018 11:48	Finished	MB R180115C
13	LCS-H2O,LCS,1,	13	1000	Unknown		02/06/2018 12:00	Finished	LCS, IWST-180129B
14	MB-H2O,MBLK,1,	13	1000	Unknown		02/06/2018 12:24	Finished	MB R180115C
15	N028372-001A,SAMF	14	1000	Unknown		02/06/2018 12:35	Finished	SAMP,10mL
16	N028372-001AMS,MS	15	1000	Unknown		02/06/2018 12:44	Finished	MS (1ppb), IWST-180129B,10
17	N028372-001AMSD,M	16	1000	Unknown		02/06/2018 12:54	Finished	MSD (1ppb), IWST-180129B,1(
18	N028391-001A,SAMF	17	1000	Unknown		02/06/2018 13:03	Finished	SAMP,0.05>10mL
19	N028391-002A,SAMF	18	1000	Unknown		02/06/2018 13:12	Finished	SAMP,10mL
20	N028420-001A,SAMF	19	1000	Unknown		02/06/2018 13:22	Finished	SAMP,10mL
21	N028420-002A,SAMF	20	1000	Unknown		02/06/2018 13:31	Finished	SAMP,10mL
22	CCV-1,CCV1,1,	21	1000	Unknown		02/06/2018 13:41	Finished	CCV @10ppb, IWST-180129A
23	CCB-1,CCB,1,	22	1000	Unknown		02/06/2018 13:50	Finished	CCB R180115C
24	N028420-003A,SAMF	23	1000	Unknown		02/06/2018 14:00	Finished	SAMP,10mL
25	N028420-004A,SAMF	24	1000	Unknown		02/06/2018 14:09	Finished	SAMP,10mL
26	N028420-005A,SAMF	25	1000	Unknown		02/06/2018 14:19	Finished	SAMP,10mL
27	N028420-006A,SAMF	26	1000	Unknown		02/06/2018 14:28	Finished	SAMP,10mL
28	N028391-001ADUP,D	27	1000	Unknown		02/06/2018 14:38	Finished	DUP,0.05>10mL
29	N028421-012A,SAMF	28	1000	Unknown		02/06/2018 14:47	Finished	SAMP,10mL
30	N028421-010A,SAMF	29	1000	Unknown		02/06/2018 14:57	Finished	SAMP,10mL
31	N028421-011A,SAMF	30	1000	Unknown		02/06/2018 15:06	Finished	SAMP,10mL
32	N028421-013A,SAMF	31	1000	Unknown		02/06/2018 15:15	Finished	SAMP,10mL
33	N028421-014A,SAMF	32	1000	Unknown		02/06/2018 15:25	Finished	SAMP,10mL
34	CCV-2,CCV,1,	33	1000	Unknown		02/06/2018 15:34	Finished	CCV @5ppb, IWST-180129A
35	CCB-2,CCB,1,	34	1000	Unknown		02/06/2018 15:44	Finished	CCB R180115C
36	N028421-009A,SAMF	35	1000	Unknown		02/06/2018 15:53	Finished	SAMP,10mL
37	N028420-001AMS,MS	36	1000	Unknown		02/06/2018 16:03	Finished	MS (5ppb), IWST-180129B,10
38	LCS-2,LCS,1,	1	1000	Unknown		02/06/2018 16:19	Finished	LCS, IWST-180129B
39	MB-2,MBLK,1,	2	1000	Unknown		02/06/2018 16:30	Finished	MB R180115C
40	N028421-001A,SAMF	3	1000	Unknown		02/06/2018 16:39	Finished	SAMP,1>10mL
41	N028421-006A,SAMF	4	1000	Unknown		02/06/2018 16:49	Finished	SAMP,0.5>10mL
42	N028421-004A,SAMF	5	1000	Unknown		02/06/2018 16:58	Finished	SAMP,0.5>10mL
43	N028421-002A,SAMF	6	1000	Unknown		02/06/2018 17:08	Finished	SAMP,10mL
44	N028421-001AMS,MS	7	1000	Unknown		02/06/2018 17:17	Finished	MS (5ppb), IWST-180129B,1>1
45	N028421-001AMSD,M	8	1000	Unknown		02/06/2018 17:27	Finished	MSD (5ppb), IWST-180129B,1>
46	CCV-3,CCV1,1,	9	1000	Unknown		02/06/2018 17:36	Finished	CCV @10ppb, IWST-180129A
47	CCB-3,CCB,1,	10	1000	Unknown		02/06/2018 17:45	Finished	CCB R180115C
48	N028421-006AMS,MS	11	1000	Unknown		02/06/2018 17:55	Finished	MS (5ppb), IWST-180129B,0.5
49	N028421-002ADUP,D	12	1000	Unknown		02/06/2018 18:04	Finished	DUP,10mL
50	N028421-003A,SAMF	13	1000	Unknown		02/06/2018 18:14	Finished	SAMP,10mL
51	N028421-005A,SAMF	14	1000	Unknown		02/06/2018 18:23	Finished	SAMP,10mL
52	N028421-007A,SAMF	15	1000	Unknown		02/06/2018 18:33	Finished	SAMP,0.5>10mL
53	N028421-008A,SAMF	16	1000	Unknown		02/06/2018 18:42	Finished	SAMP,2>10mL
54	N028448-001A,SAMF	17	1000	Unknown		02/06/2018 18:52	Finished	SAMP,10mL
55	N028448-002A,SAMF	18	1000	Unknown		02/06/2018 19:01	Finished	SAMP,10mL
56	N028448-003A,SAMF	19	1000	Unknown		02/06/2018 19:11	Finished	SAMP,10mL
57	N028448-004A,SAMF	20	1000	Unknown		02/06/2018 19:20	Finished	SAMP,10mL
58	CCV-4,CCV,1,	21	1000	Unknown		02/06/2018 19:30	Finished	CCV @5ppb, IWST-180129A
59	CCB-4,CCB,1,	22	1000	Unknown		02/06/2018 19:39	Finished	CCB R180115C
60	N028448-005A,SAMF	23	1000	Unknown		02/06/2018 19:48	Finished	BLANK

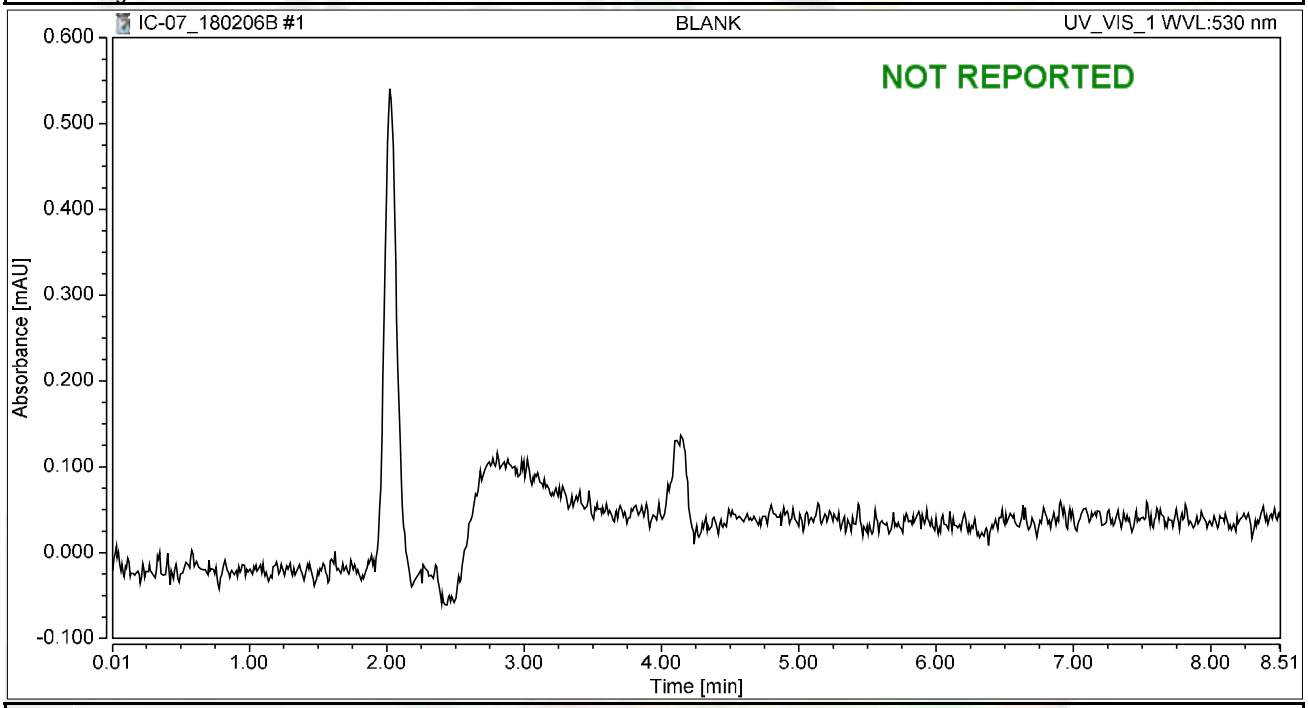
61	N028448-006A,SAMP	24	1000	Unknown		02/06/2018 19:58	Finished	SAMP,2>10mL
62	N028448-007A,SAMP	25	1000	Unknown		02/06/2018 20:07	Finished	SAMP,0.1>10mL
63	N028448-008A,SAMP	26	1000	Unknown		02/06/2018 20:17	Finished	SAMP,10mL
64	N028448-009A,SAMP	27	1000	Unknown		02/06/2018 20:26	Finished	SAMP,2>10mL
65	N028448-010A,SAMP	28	1000	Unknown		02/06/2018 20:36	Finished	REP,0.1>10mL
66	N028448-011A,SAMP	29	1000	Unknown		02/06/2018 20:45	Finished	REP,10mL
67	N028449-001A,SAMP	30	1000	Unknown		02/06/2018 20:55	Finished	REP,2>10mL
68	N028449-001A,SAMP	31	1000	Unknown		02/06/2018 21:04	Finished	SAMP,10mL
69	CCV-5,CCV1,1,	32	1000	Unknown		02/06/2018 21:14	Finished	CCV @10ppb, IWST-180129A
70	CCB-5,CCB,1,	33	1000	Unknown		02/06/2018 21:23	Finished	CCB R180115C
71	SHUTDOWN	34	1000	Unknown		02/06/2018 21:32	Finished	
72	Eluent: R180205B	35	1000	Unknown		n.a.	Finished	Eluent
73	PCR: R1800205C	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

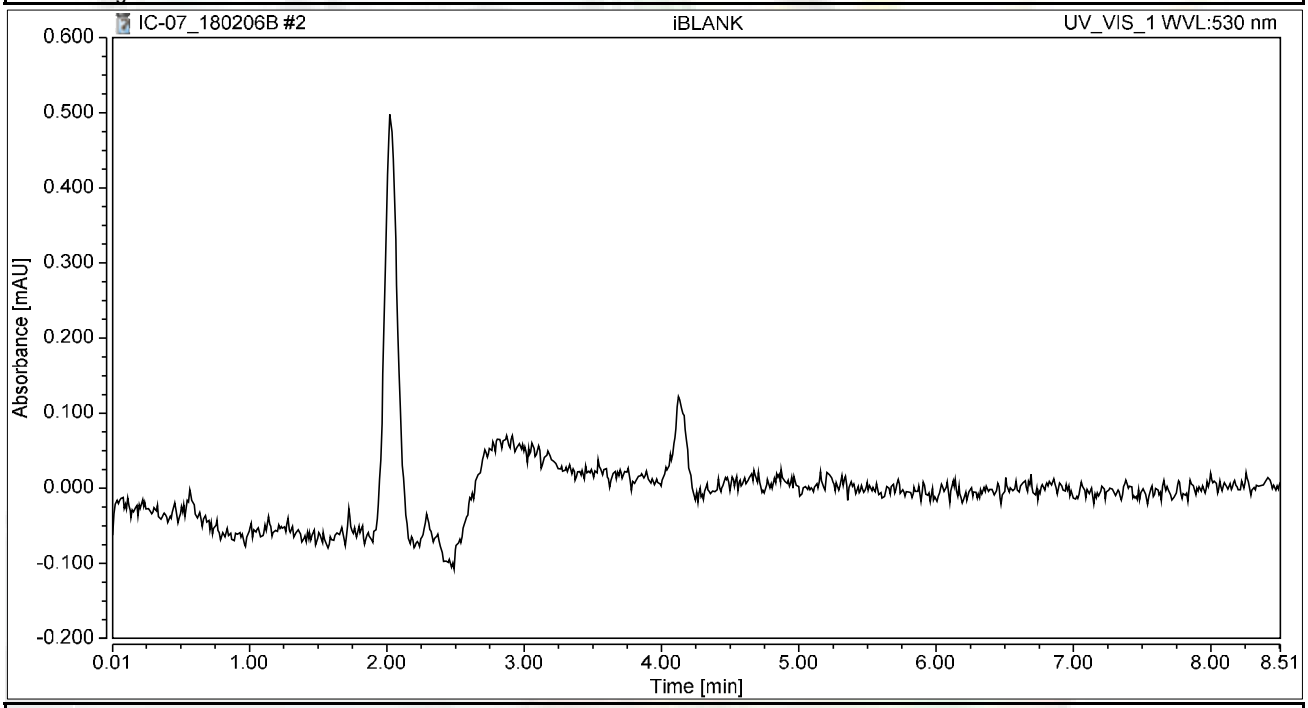
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

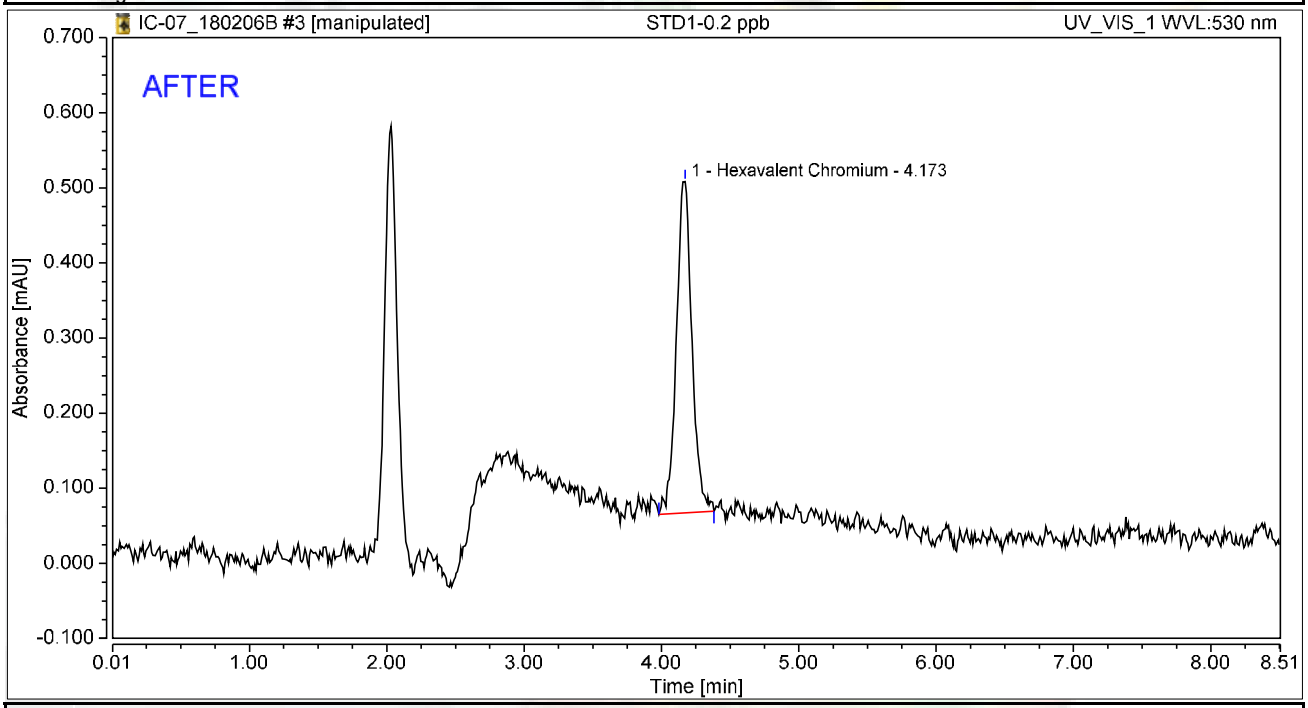
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.058	0.441	100.00	100.00	0.2322
Total:			**0.058**	**0.441**	**100.00**	**100.00**	

rba 2/8/2018

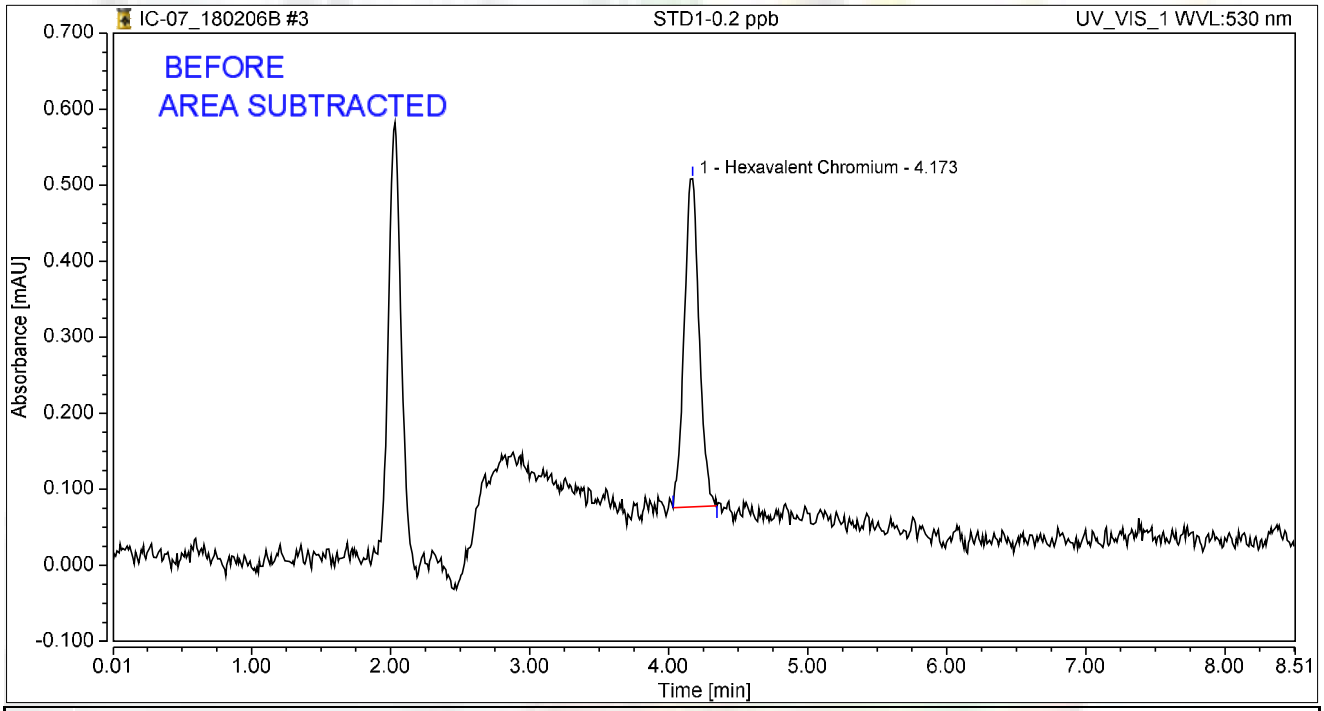
RB 02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.431	100.00	100.00	0.2146
Total:			**0.054**	**0.431**	**100.00**	**100.00**	

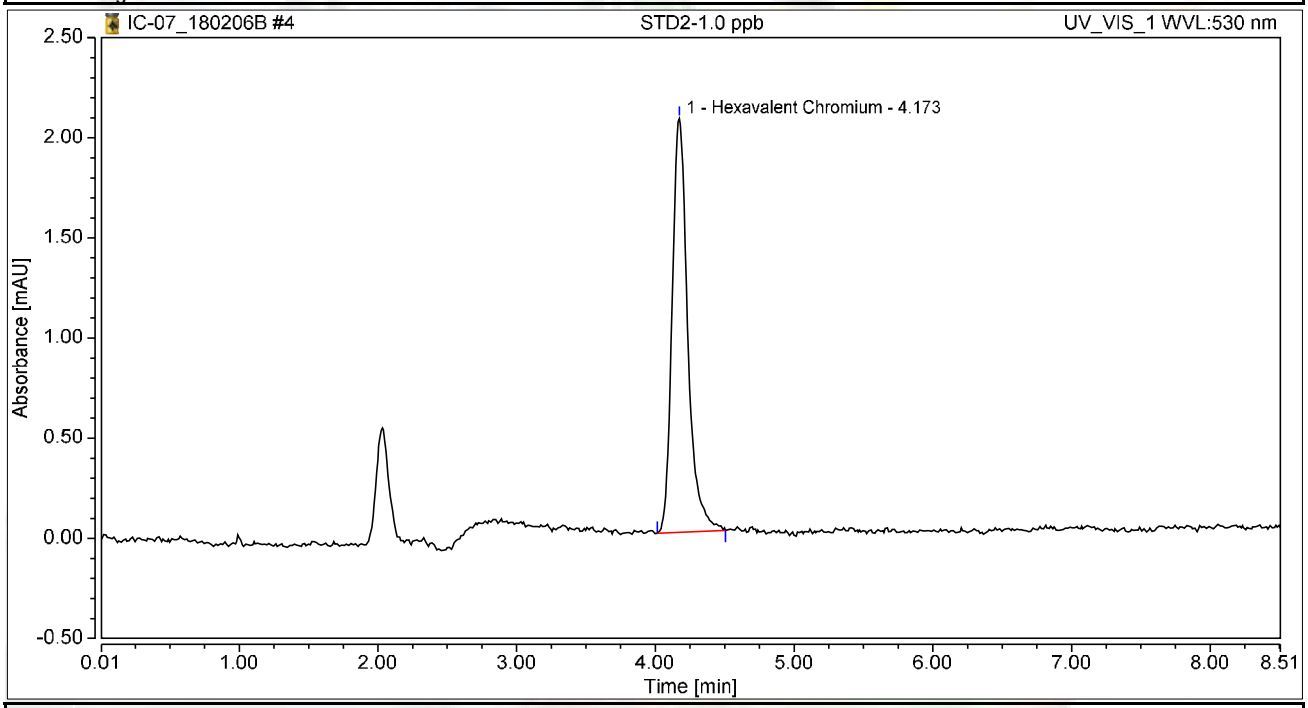
rba 2/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

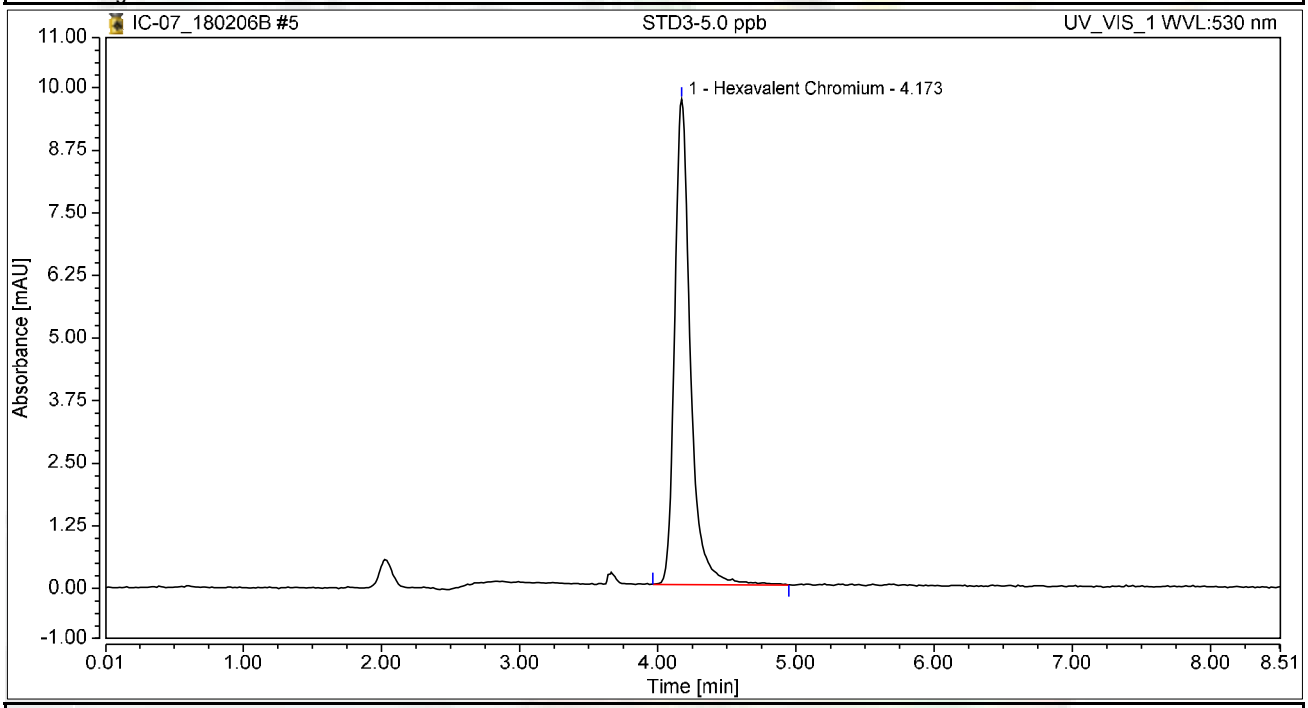
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.270	2.067	100.00	100.00	1.0807
Total:			**0.270**	**2.067**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

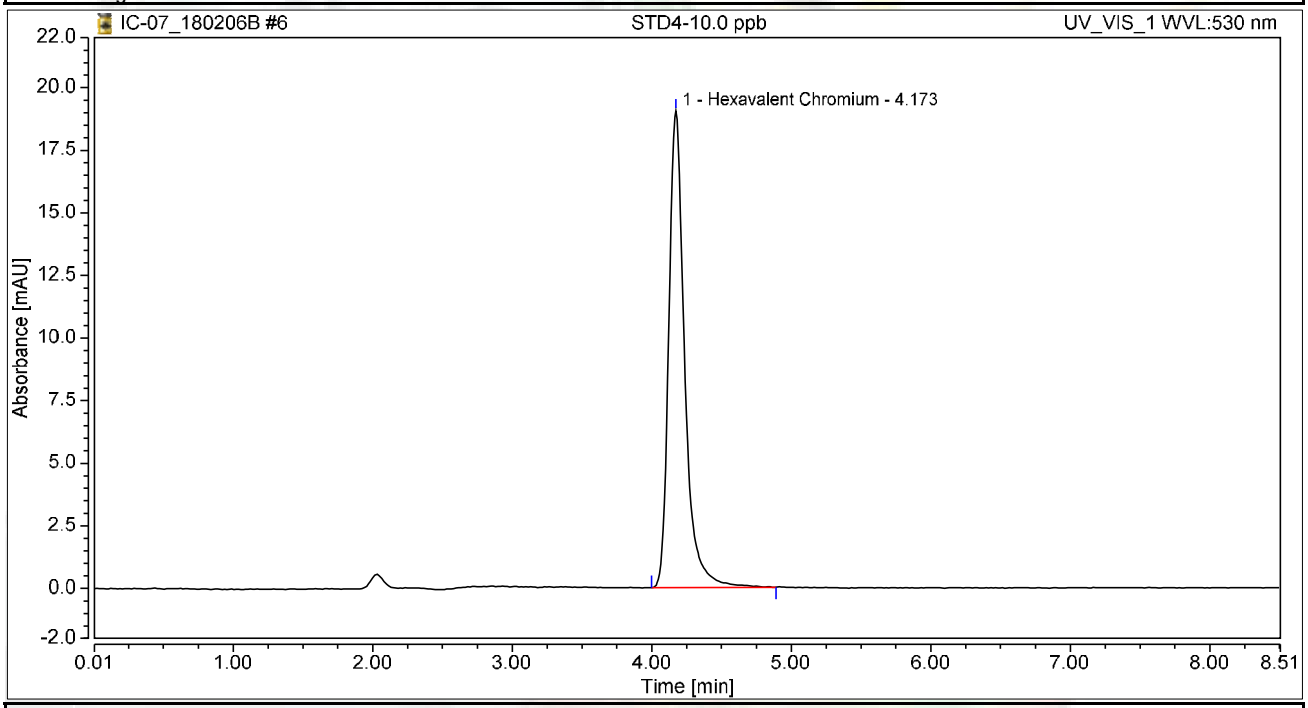
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.285	9.691	100.00	100.00	5.1471
Total:			**1.285**	**9.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

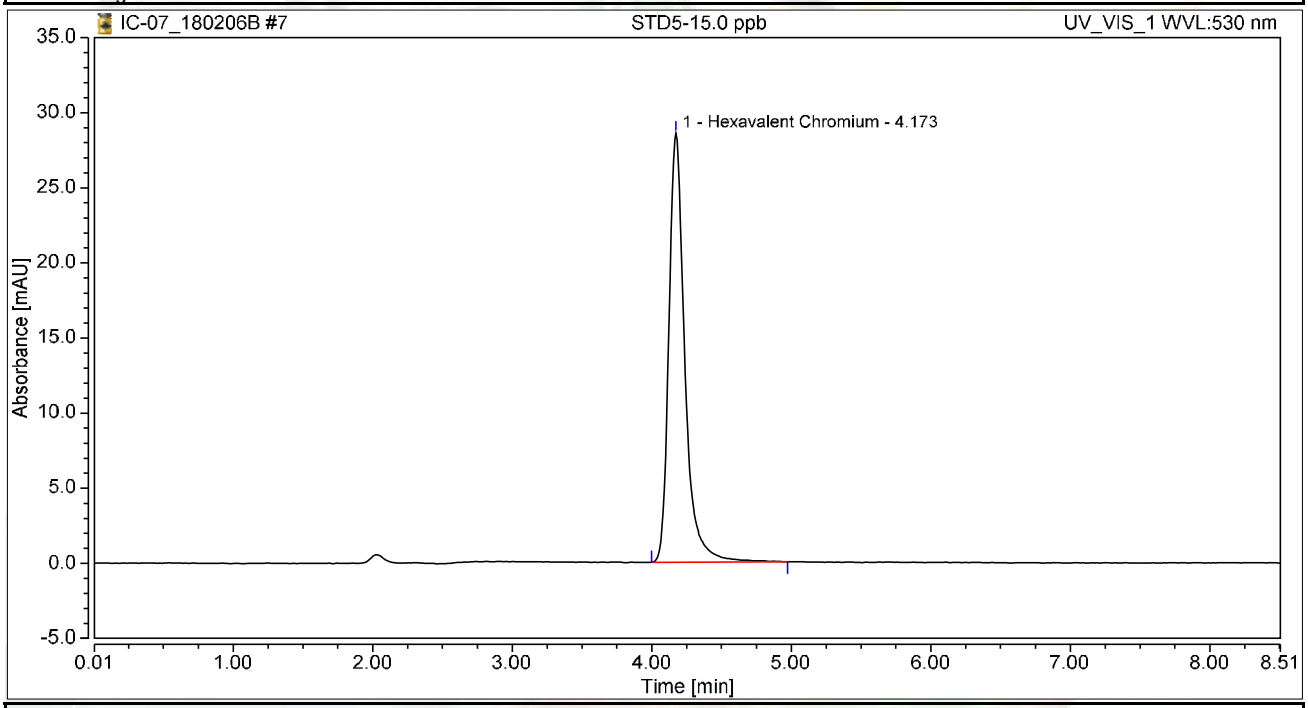
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.507	19.041	100.00	100.00	10.0437
Total:			**2.507**	**19.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

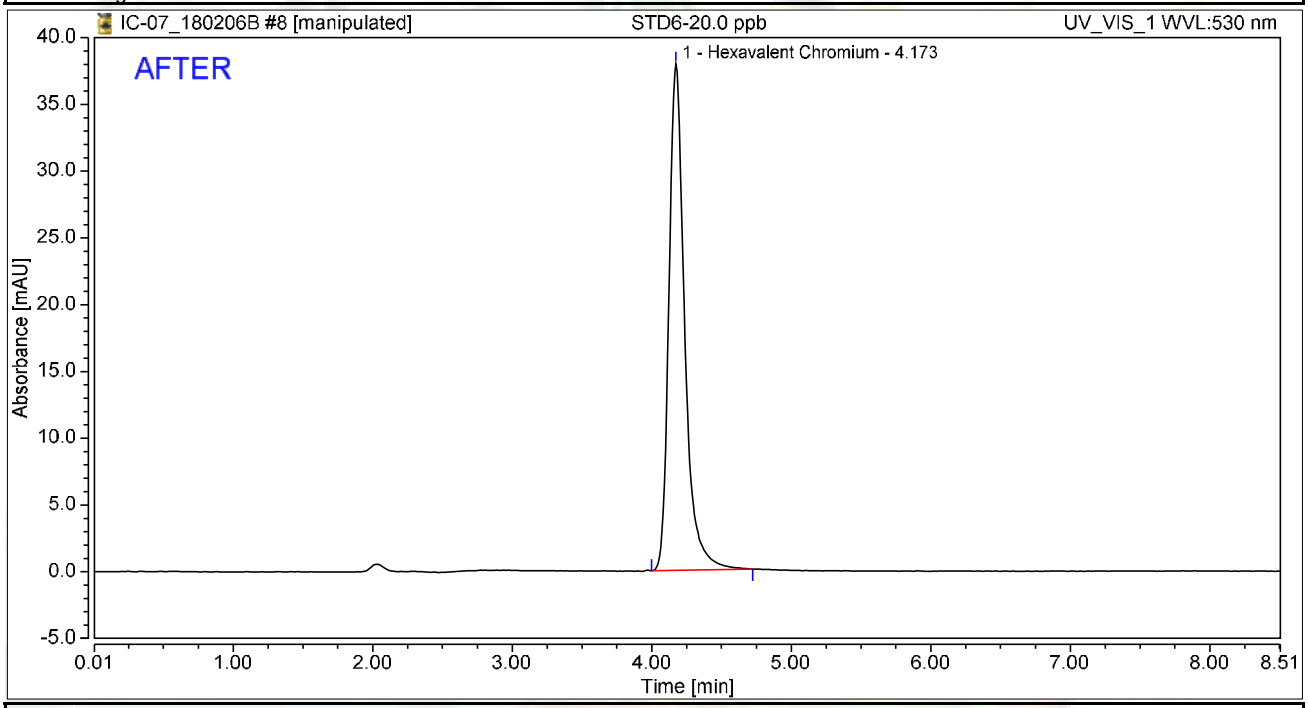
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.782	28.581	100.00	100.00	15.1489
Total:			**3.782**	**28.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.949	37.945	100.00	100.00	19.8254
Total:			**4.949**	**37.945**	**100.00**	**100.00**	

rba 2/8/2018

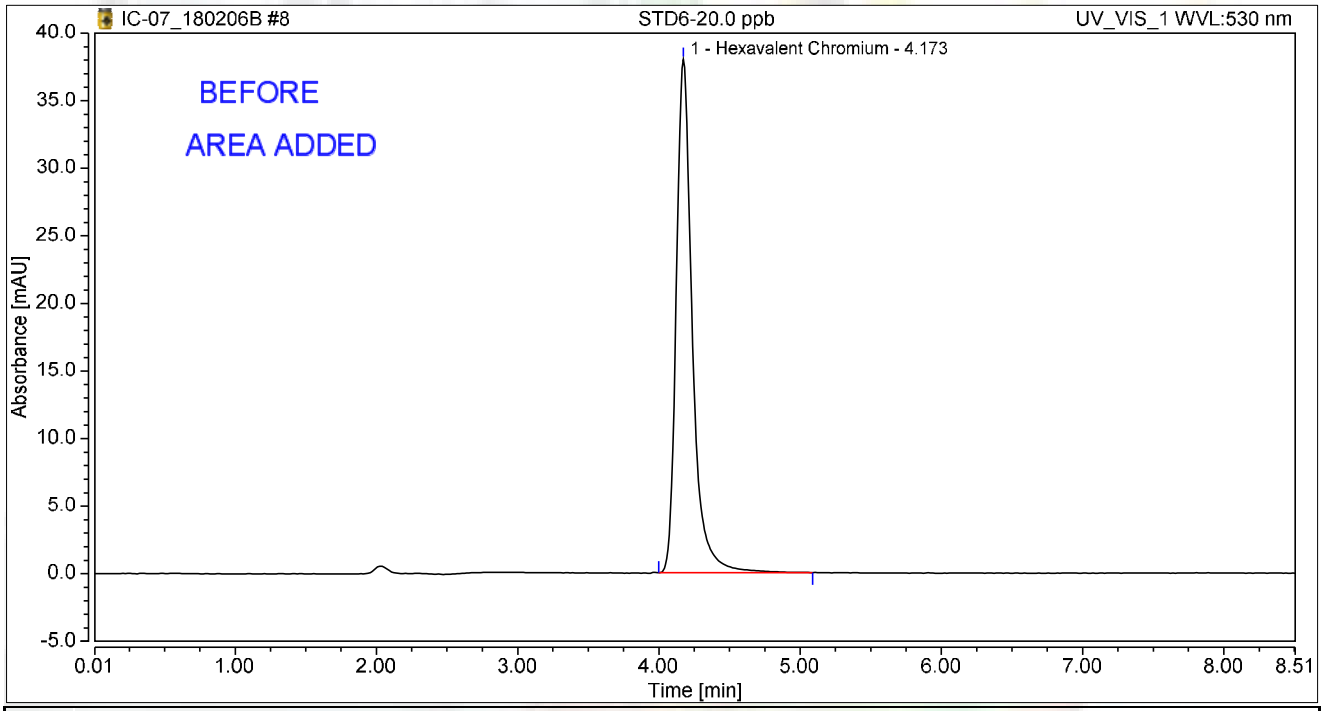
02/08/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

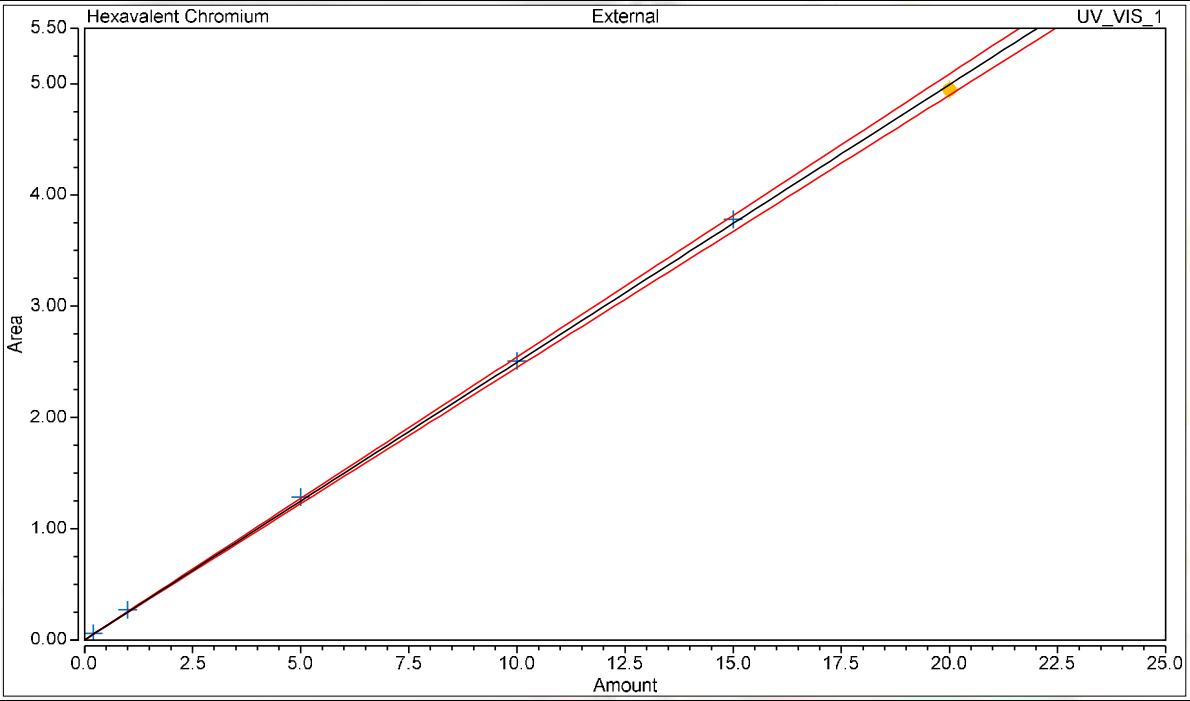
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	5.019	37.978	100.00	100.00	19.9570
Total:			**5.019**	**37.978**	**100.00**	**100.00**	

rba 2/8/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2497
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99973

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

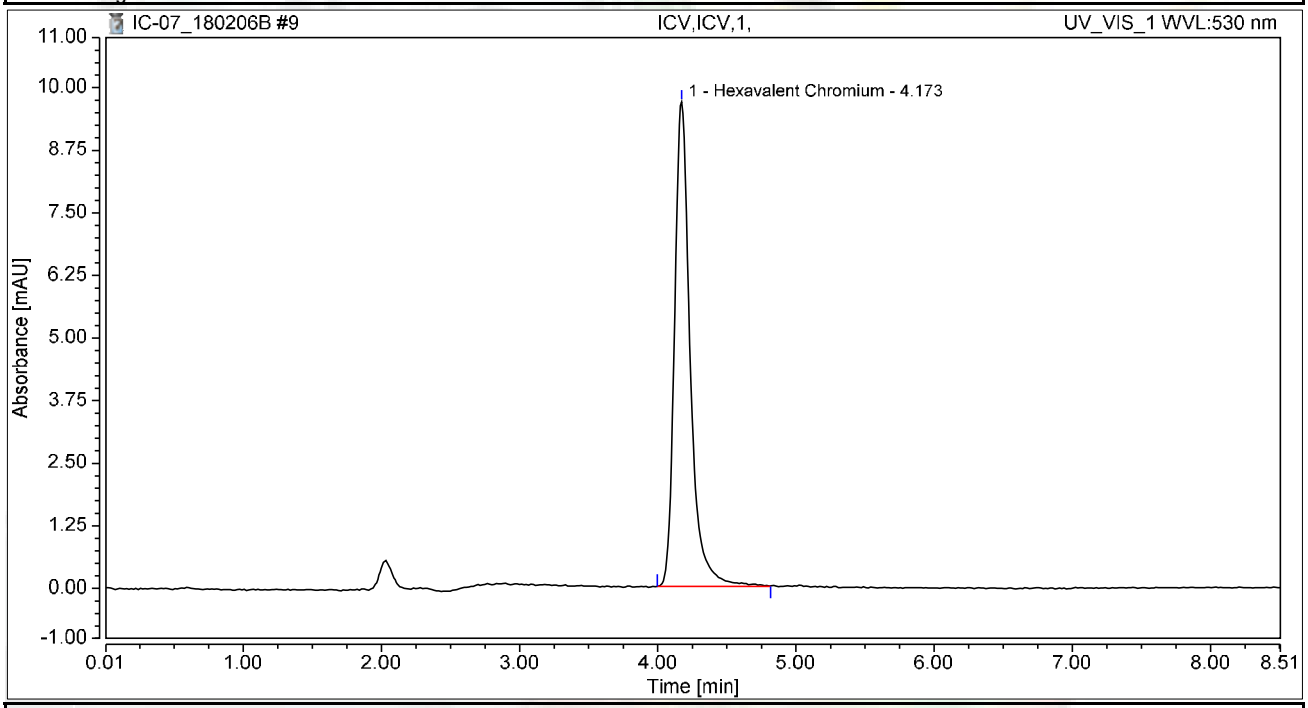
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0580	0.058	0.441
4	STD2-1.0 ppb	02	1.0000	0.2698	0.270	2.067
5	STD3-5.0 ppb	03	5.0000	1.2850	1.285	9.691
6	STD4-10.0 ppb	04	10.0000	2.5074	2.507	19.041
7	STD5-15.0 ppb	05	15.0000	3.7819	3.782	28.581
8	STD6-20.0 ppb	06	20.0000	4.9494	4.949	37.945

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

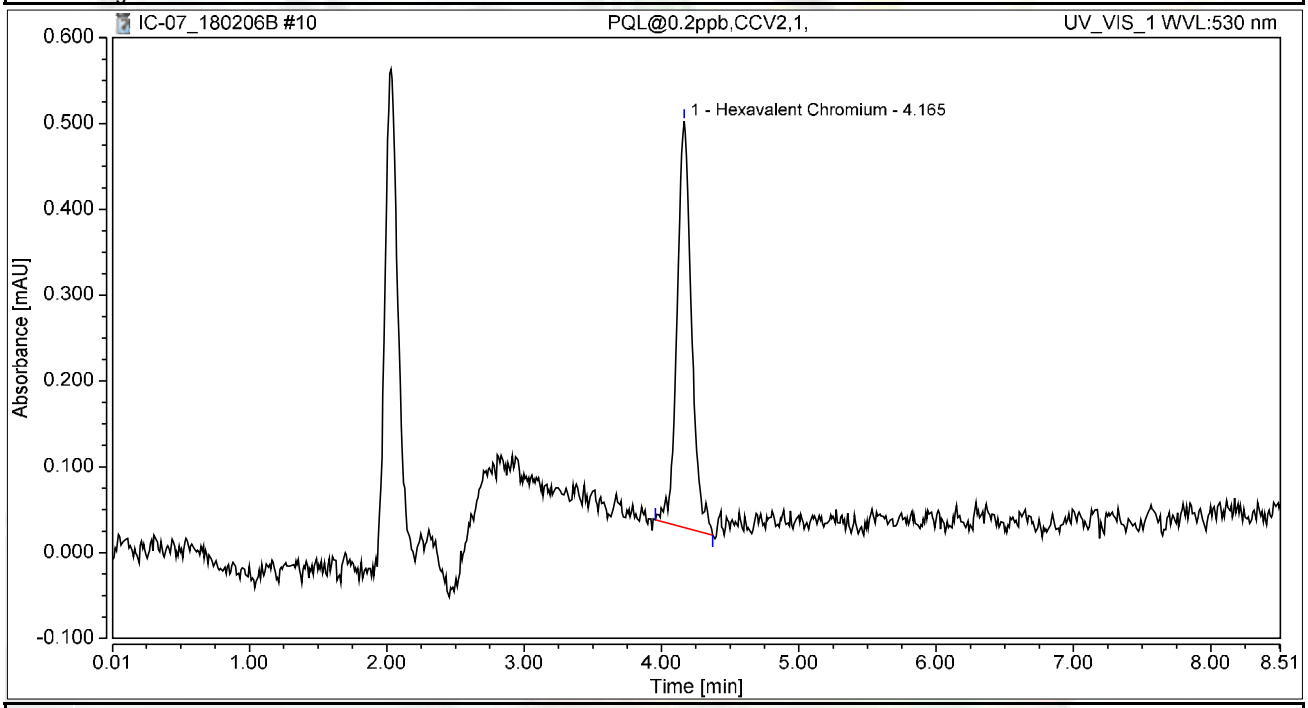
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.272	9.675	100.00	100.00	5.0954
Total:			**1.272**	**9.675**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

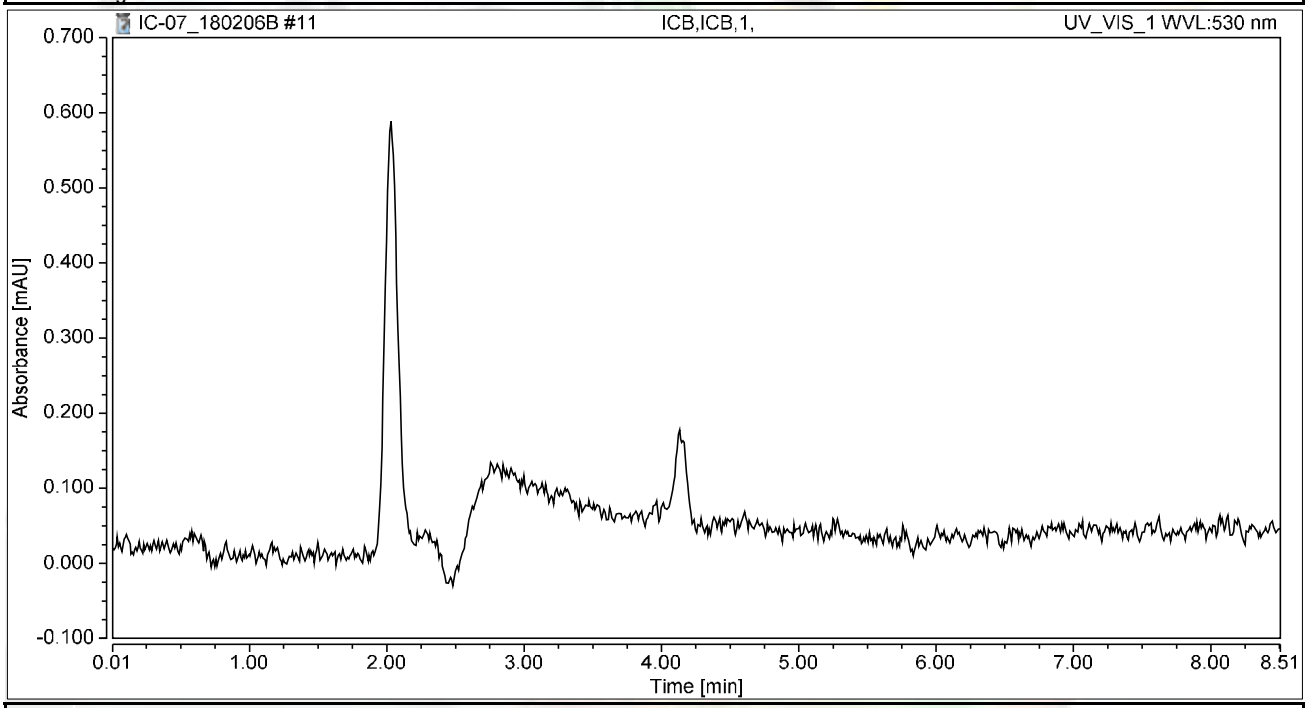
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.058	0.473	100.00	100.00	0.2314
Total:			**0.058**	**0.473**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**06/Feb/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	02/06/18 9:54 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	02/06/18 10:05 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:18 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:30 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:39 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:49 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 10:58 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	02/06/18 11:08 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:25 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	02/26/18 9:36 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	02/26/18 9:46 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	02/26/18 9:55 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	02/26/18 10:04 AM	Reported
14	MB-R122291	MBLK	1	Hexavalent Chromium	02/26/18 10:14 AM	Reported
15	LCS-R122291	LCS	1	Hexavalent Chromium	02/26/18 10:23 AM	Reported
16	N028744-001A	SAMP	50	Hexavalent Chromium	02/26/18 10:33 AM	Reported
17	N028744-001AMS	MS	50	Hexavalent Chromium	02/26/18 10:42 AM	Reported
18	N028744-002A	SAMP	20	Hexavalent Chromium	02/26/18 10:52 AM	Reported
19	N028744-002AMS	MS	20	Hexavalent Chromium	02/26/18 11:01 AM	Reported
20	N028744-004A	SAMP	5	Hexavalent Chromium	02/26/18 11:15 AM	Reported
21	N028744-004AMS	MS	5	Hexavalent Chromium	02/26/18 11:40 AM	Reported
22	N028744-005A	SAMP	200	Hexavalent Chromium	02/26/18 11:51 AM	Reported
23	N028744-005AMS	MS	200	Hexavalent Chromium	02/26/18 12:01 PM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	02/26/18 12:10 PM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	02/26/18 12:20 PM	Reported
26	N028744-006A	SAMP	50	Hexavalent Chromium	02/26/18 12:29 PM	Reported
27	N028744-006AMS	MS	50	Hexavalent Chromium	02/26/18 12:38 PM	Reported
28	N028744-007A	SAMP	1	Hexavalent Chromium	02/26/18 12:48 PM	Reported
29	N028744-007AMS	MS	1	Hexavalent Chromium	02/26/18 12:57 PM	Reported
30	N028744-001AMSD	MSD	50	Hexavalent Chromium	02/26/18 1:07 PM	Reported
31	N028744-002ADUP	DUP	20	Hexavalent Chromium	02/26/18 1:16 PM	Reported
32	N028744-003A	SAMP	2000	Hexavalent Chromium	02/26/18 1:26 PM	Reported
33	N028744-003AMS	MS	2000	Hexavalent Chromium	02/26/18 1:35 PM	Reported
34	N028744-004A	SAMP	1	Hexavalent Chromium	02/26/18 1:45 PM	Not Reported
35	N028744-004AMS	MS	1	Hexavalent Chromium	02/26/18 1:54 PM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	02/26/18 2:04 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	02/26/18 2:13 PM	Reported
38	N028775-001A	SAMP	20	Hexavalent Chromium	02/26/18 2:40 PM	Reported
39	N028775-001AMS	MS	20	Hexavalent Chromium	02/26/18 2:51 PM	Reported
40	N028775-002A	SAMP	20	Hexavalent Chromium	02/26/18 3:00 PM	Reported
41	N028775-002AMS	MS	20	Hexavalent Chromium	02/26/18 3:10 PM	Reported
42	N028775-003A	SAMP	10	Hexavalent Chromium	02/26/18 3:19 PM	Reported

INJECTION LOG: 180226A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028775-003AMS	MS	10	Hexavalent Chromium	02/26/18 3:29 PM	Reported
44	N028775-004A	SAMP	1	Hexavalent Chromium	02/26/18 3:40 PM	Reported
45	N028775-004AMS	MS	1	Hexavalent Chromium	02/26/18 3:51 PM	Reported
46	N028775-005A	SAMP	1	Hexavalent Chromium	02/26/18 4:01 PM	Reported
47	N028775-005AMS	MS	1	Hexavalent Chromium	02/26/18 4:10 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	02/26/18 4:20 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	02/26/18 4:29 PM	Reported
50	N028775-006A	SAMP	20	Hexavalent Chromium	02/26/18 4:39 PM	Reported
51	N028775-006AMS	MS	20	Hexavalent Chromium	02/26/18 4:48 PM	Reported
52	N028775-007A	SAMP	20	Hexavalent Chromium	02/26/18 4:58 PM	Reported
53	N028775-007AMS	MS	20	Hexavalent Chromium	02/26/18 5:07 PM	Reported
54	N028775-008A	SAMP	1	Hexavalent Chromium	02/26/18 5:17 PM	Reported
55	N028775-008AMS	MS	1	Hexavalent Chromium	02/26/18 5:26 PM	Reported
56	N028775-009A	SAMP	1	Hexavalent Chromium	02/26/18 5:35 PM	Reported
57	N028775-009AMS	MS	1	Hexavalent Chromium	02/26/18 5:45 PM	Reported
58	CCV-5	CCV	1	Hexavalent Chromium	02/26/18 5:54 PM	Reported
59	CCB-5	CCB	1	Hexavalent Chromium	02/26/18 6:04 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180226A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**26/Feb/18 18:34:41**
No. of Injections:	**62**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		02/06/2018 09:54	Finished	BLANK
2	iBLANK	2	1000	Unknown		02/06/2018 10:05	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	3	1000	Calibration Standard	01	02/06/2018 10:18	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	4	1000	Calibration Standard	02	02/06/2018 10:30	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	5	1000	Calibration Standard	03	02/06/2018 10:39	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	6	1000	Calibration Standard	04	02/06/2018 10:49	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	7	1000	Calibration Standard	05	02/06/2018 10:58	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	8	1000	Calibration Standard	06	02/06/2018 11:08	Finished	20 ppb, IWST-180129A
9	BLANK	1	1000	Unknown		02/26/2018 09:25	Finished	BLANK
10	BLANK	2	1000	Unknown		02/26/2018 09:36	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		02/26/2018 09:46	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		02/26/2018 09:55	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		02/26/2018 10:04	Finished	CCB R180214B
14	MB-H2O,MBLK,1,	6	1000	Unknown		02/26/2018 10:14	Finished	MB R180214B
15	LCS-H2O,LCS,1,	7	1000	Unknown		02/26/2018 10:23	Finished	LCS, IWST-180129B
16	N028744-001A,SAMF	8	1000	Unknown		02/26/2018 10:33	Finished	SAMP,0.2>10mL
17	N028744-001AMS,MS	9	1000	Unknown		02/26/2018 10:42	Finished	MS (5ppb), IWST-180129B,0.2
18	N028744-002A,SAMF	10	1000	Unknown		02/26/2018 10:52	Finished	SAMP,0.5>10mL
19	N028744-002AMS,MS	11	1000	Unknown		02/26/2018 11:01	Finished	MS (5ppb), IWST-180129B,0.5
20	N028744-004A,SAMF	1	1000	Unknown		02/26/2018 11:15	Finished	SAMP,2>10mL
21	N028744-004AMS,MS	2	1000	Unknown		02/26/2018 11:40	Finished	MS (5ppb), IWST-180129B,2>1
22	N028744-005A,SAMF	3	1000	Unknown		02/26/2018 11:51	Finished	SAMP,0.05>10mL
23	N028744-005AMS,MS	4	1000	Unknown		02/26/2018 12:01	Finished	MS (5ppb), IWST-180129B,0.0
24	CCV-2,CCV1,1,	5	1000	Unknown		02/26/2018 12:10	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	6	1000	Unknown		02/26/2018 12:20	Finished	CCB R180214B
26	N028744-006A,SAMF	7	1000	Unknown		02/26/2018 12:29	Finished	SAMP,0.2>10mL
27	N028744-006AMS,MS	8	1000	Unknown		02/26/2018 12:38	Finished	MS (5ppb), IWST-180129B,0.2
28	N028744-007A,SAMF	9	1000	Unknown		02/26/2018 12:48	Finished	SAMP,10mL
29	N028744-007AMS,MS	10	1000	Unknown		02/26/2018 12:57	Finished	MS (1ppb), IWST-180129B,10
30	N028744-001AMSD,M	11	1000	Unknown		02/26/2018 13:07	Finished	MSD (5ppb), IWST-180129B,0.
31	N028744-002ADUP,D	12	1000	Unknown		02/26/2018 13:16	Finished	DUP,0.5>10mL
32	N028744-003A,SAMF	13	1000	Unknown		02/26/2018 13:26	Finished	SAMP,0.005>10mL
33	N028744-003AMS,MS	14	1000	Unknown		02/26/2018 13:35	Finished	MS (5ppb), IWST-180129B,0.0
34	N028744-004A,SAMF	15	1000	Unknown		02/26/2018 13:45	Finished	SAMP,10mL
35	N028744-004AMS,MS	16	1000	Unknown		02/26/2018 13:54	Finished	MS (1ppb), IWST-180129B,10
36	CCV-3,CCV,1,	17	1000	Unknown		02/26/2018 14:04	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	18	1000	Unknown		02/26/2018 14:13	Finished	CCB R180214B
38	N028775-001A,SAMF	1	1000	Unknown		02/26/2018 14:40	Finished	SAMP,0.5>10mL
39	N028775-001AMS,MS	2	1000	Unknown		02/26/2018 14:51	Finished	MS (5ppb), IWST-180129B,0.5
40	N028775-002A,SAMF	3	1000	Unknown		02/26/2018 15:00	Finished	SAMP,0.5>10mL
41	N028775-002AMS,MS	4	1000	Unknown		02/26/2018 15:10	Finished	MS (5ppb), IWST-180129B,0.5
42	N028775-003A,SAMF	5	1000	Unknown		02/26/2018 15:19	Finished	SAMP,1>10mL
43	N028775-003AMS,MS	6	1000	Unknown		02/26/2018 15:29	Finished	MS (5ppb), IWST-180129B,1>1
44	N028775-004A,SAMF	8	1000	Unknown		02/26/2018 15:40	Finished	SAMP,10mL
45	N028775-004AMS,MS	9	1000	Unknown		02/26/2018 15:51	Finished	MS (5ppb), IWST-180129B,10
46	N028775-005A,SAMF	10	1000	Unknown		02/26/2018 16:01	Finished	SAMP,10mL
47	N028775-005AMS,MS	11	1000	Unknown		02/26/2018 16:10	Finished	MS (5ppb), IWST-180129B,10
48	CCV-4,CCV1,1,	12	1000	Unknown		02/26/2018 16:20	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	13	1000	Unknown		02/26/2018 16:29	Finished	CCB R180214B
50	N028775-006A,SAMF	14	1000	Unknown		02/26/2018 16:39	Finished	SAMP,0.5>10mL
51	N028775-006AMS,MS	15	1000	Unknown		02/26/2018 16:48	Finished	MS (5ppb), IWST-180129B,0.5
52	N028775-007A,SAMF	16	1000	Unknown		02/26/2018 16:58	Finished	SAMP,0.5>10mL
53	N028775-007AMS,MS	17	1000	Unknown		02/26/2018 17:07	Finished	MS (5ppb), IWST-180129B,0.5
54	N028775-008A,SAMF	18	1000	Unknown		02/26/2018 17:17	Finished	SAMP,10mL
55	N028775-008AMS,MS	19	1000	Unknown		02/26/2018 17:26	Finished	MS (1ppb), IWST-180129B,10
56	N028775-009A,SAMF	20	1000	Unknown		02/26/2018 17:35	Finished	SAMP,10mL
57	N028775-009AMS,MS	21	1000	Unknown		02/26/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
58	CCV-5,CCV,1,	22	1000	Unknown		02/26/2018 17:54	Finished	CCV @5ppb, IWST-180129A
59	CCB-5,CCB,1,	23	1000	Unknown		02/26/2018 18:04	Finished	CCB R180214B
60	SHUTDOWN	24	1000	Unknown		02/26/2018 18:13	Finished	

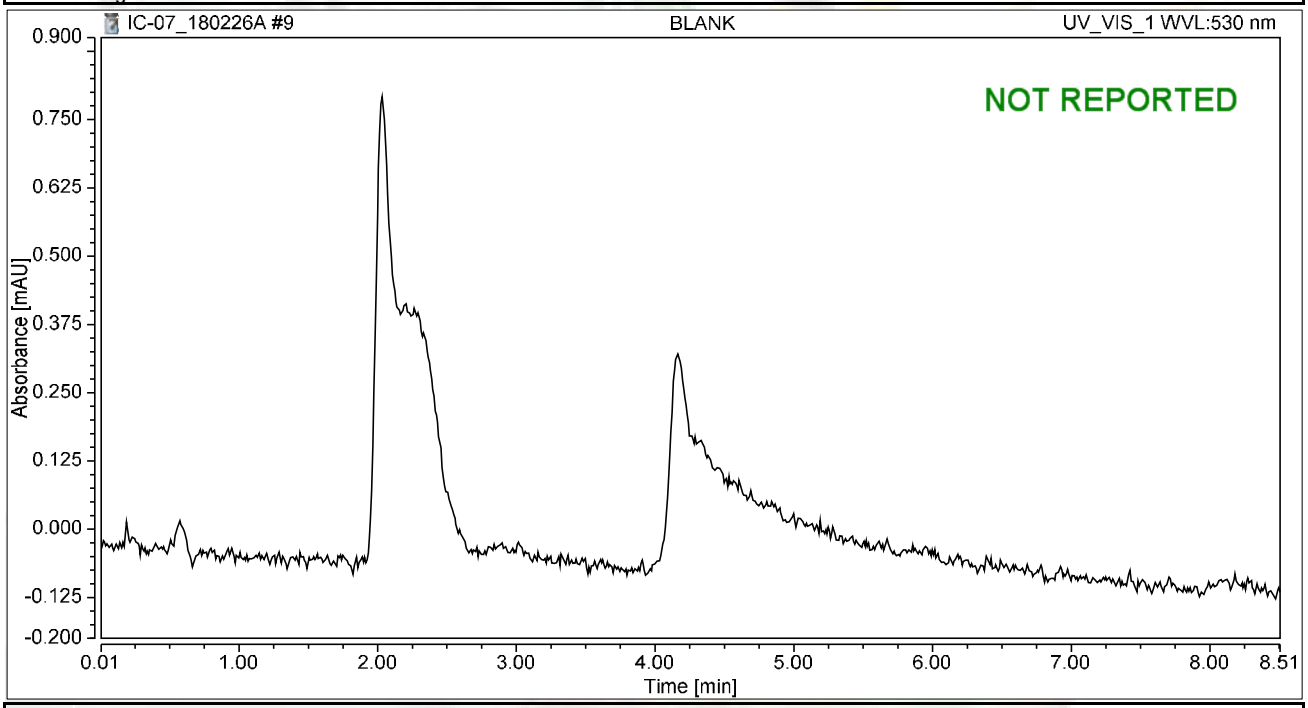
61	Eluent: R180226A	25	1000	Unknown		n.a.	Finished	Eluent
62	PCR: R180226B	26	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

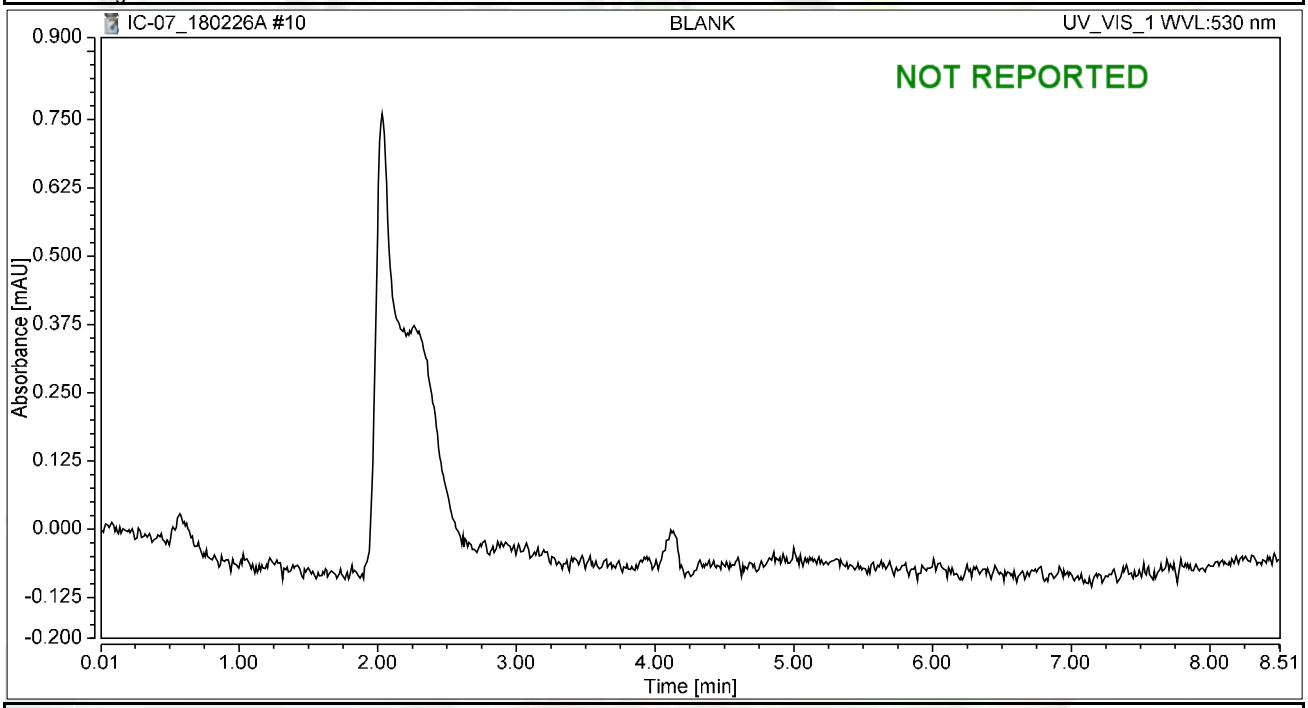
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

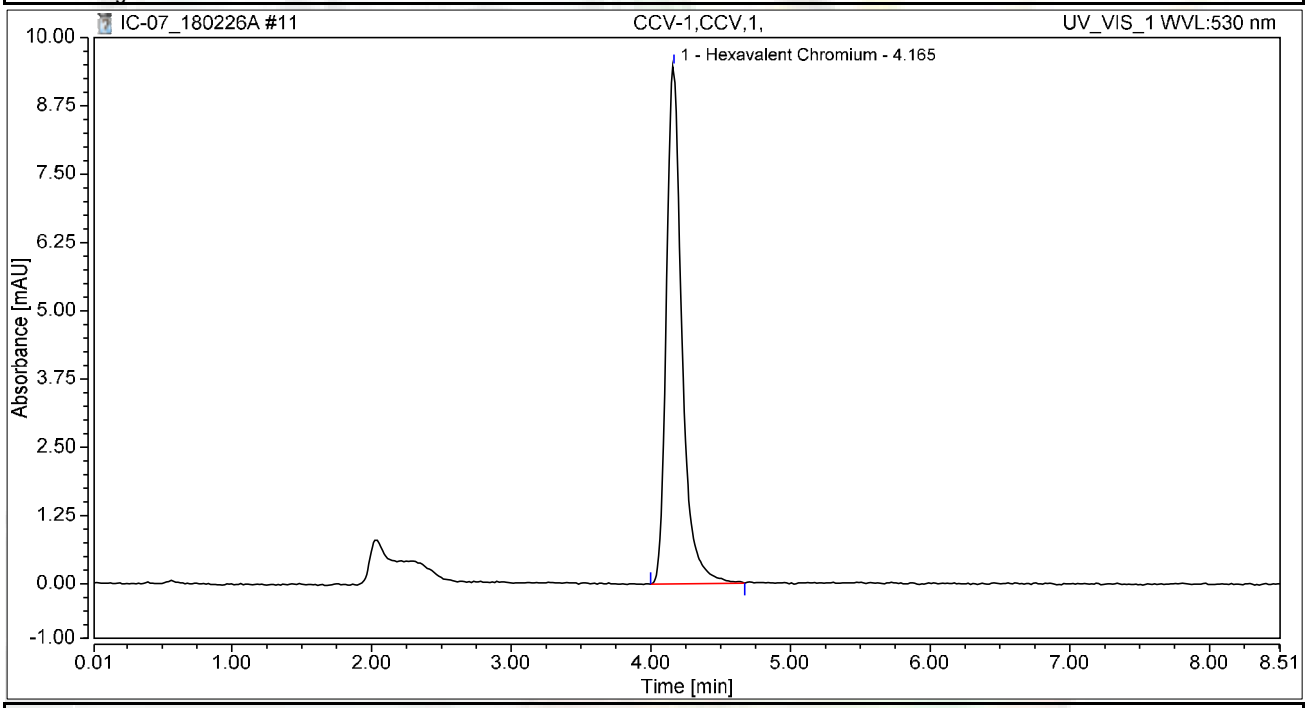
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

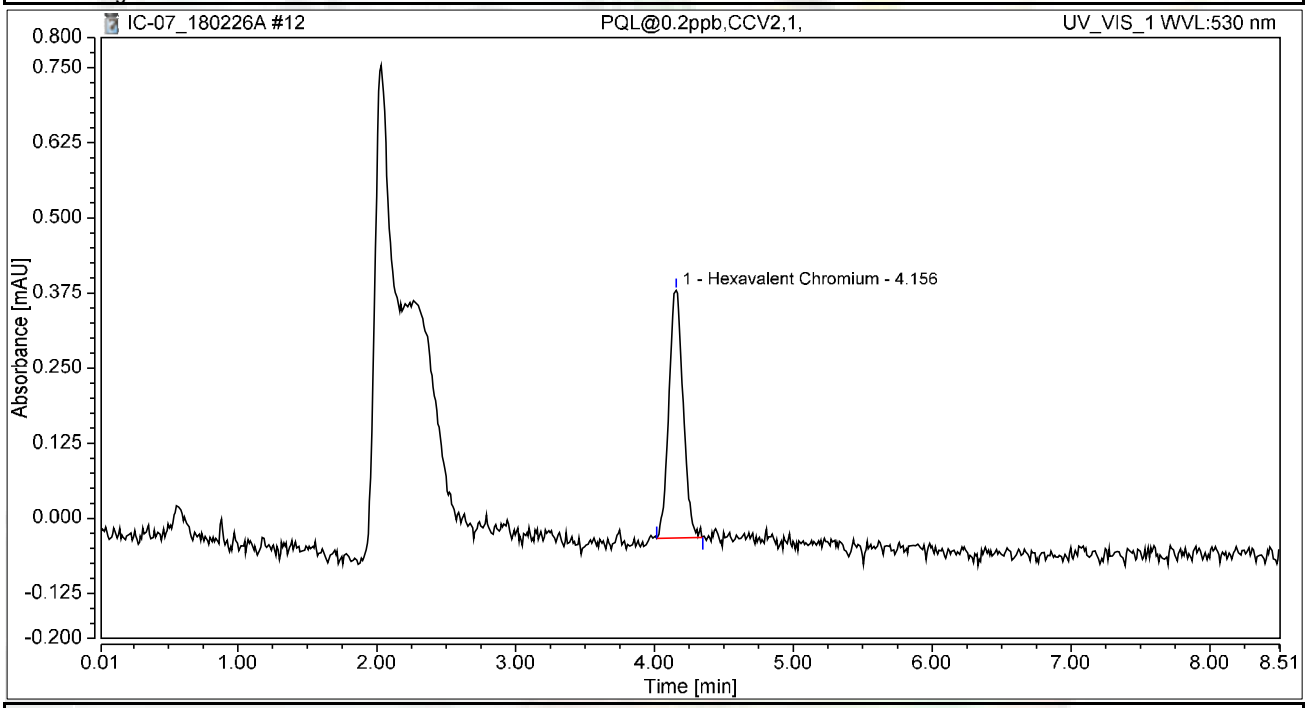
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.230	9.477	100.00	100.00	4.9274
Total:			**1.230**	**9.477**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

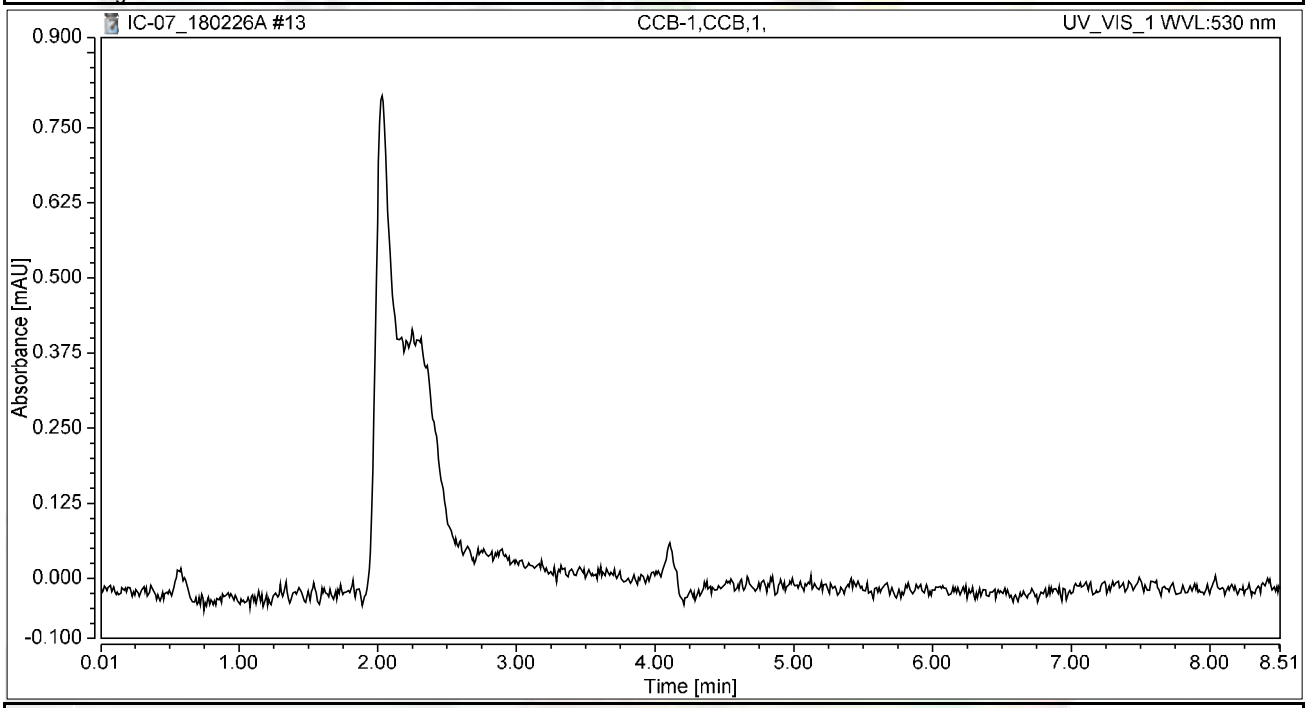
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.049	0.412	100.00	100.00	0.1970
Total:			**0.049**	**0.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

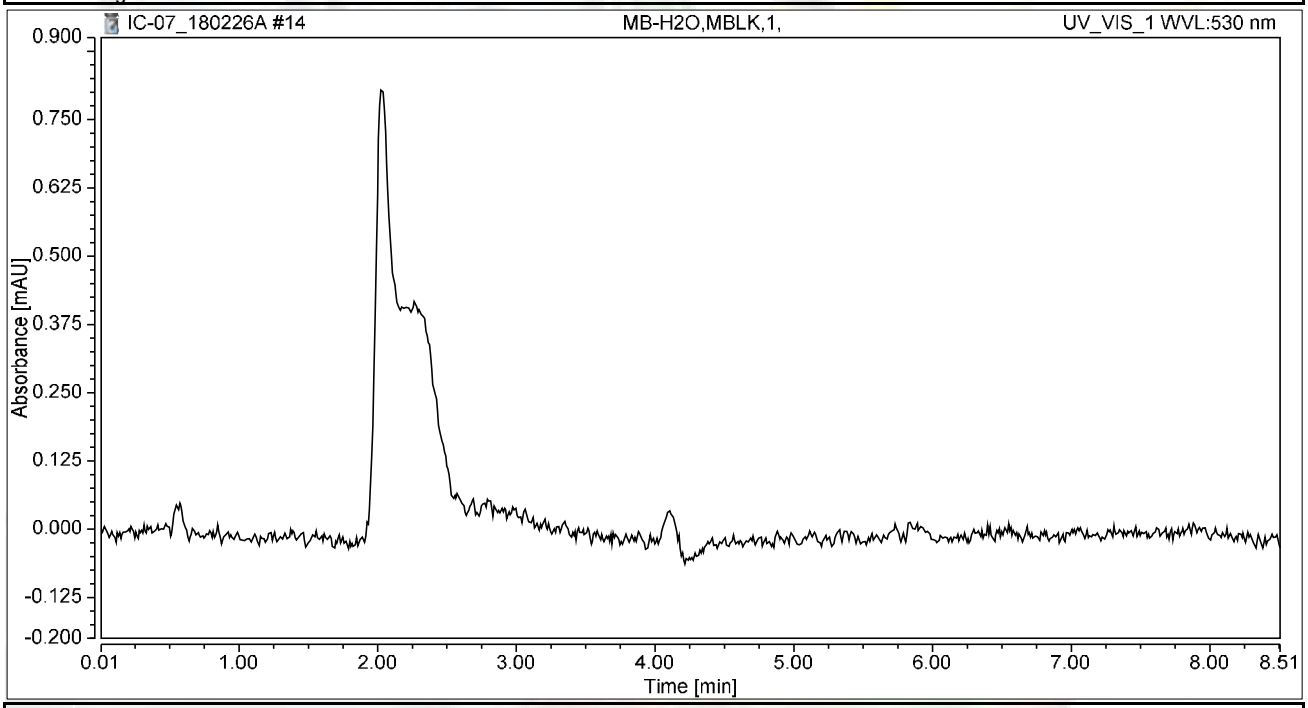
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

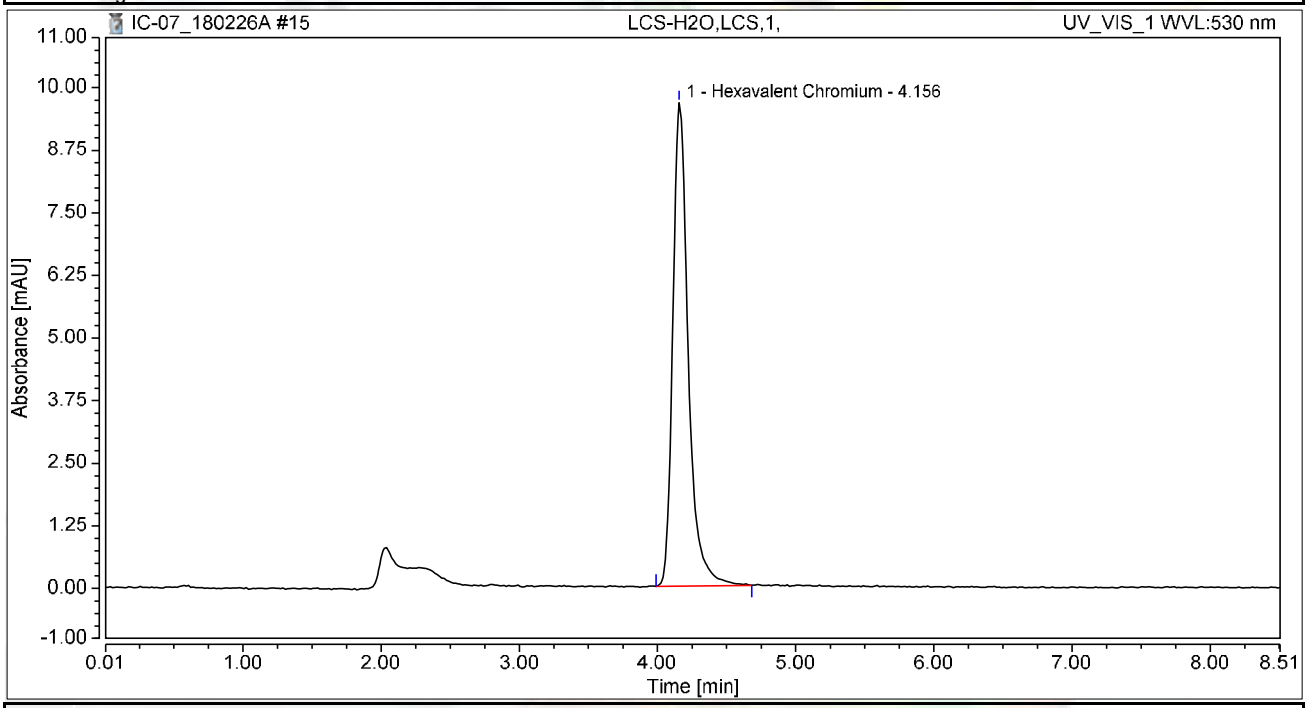
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

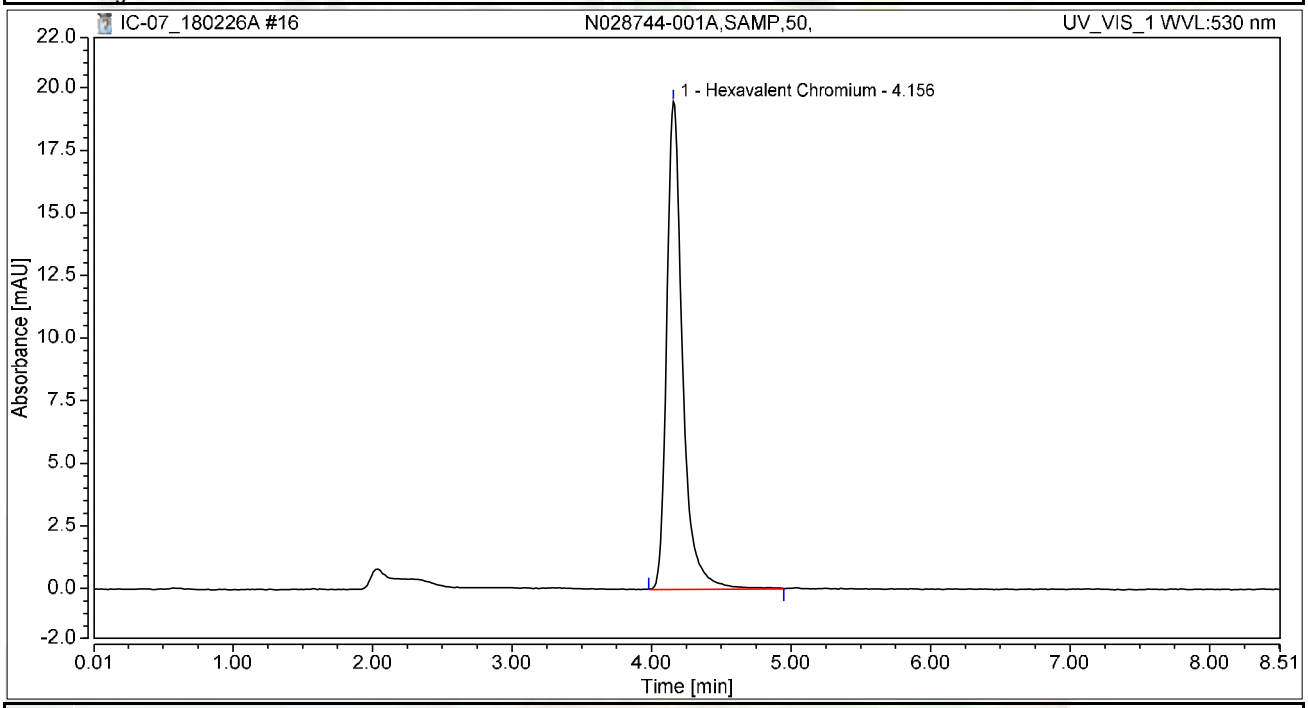
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.253	9.657	100.00	100.00	5.0208
Total:			**1.253**	**9.657**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-001A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

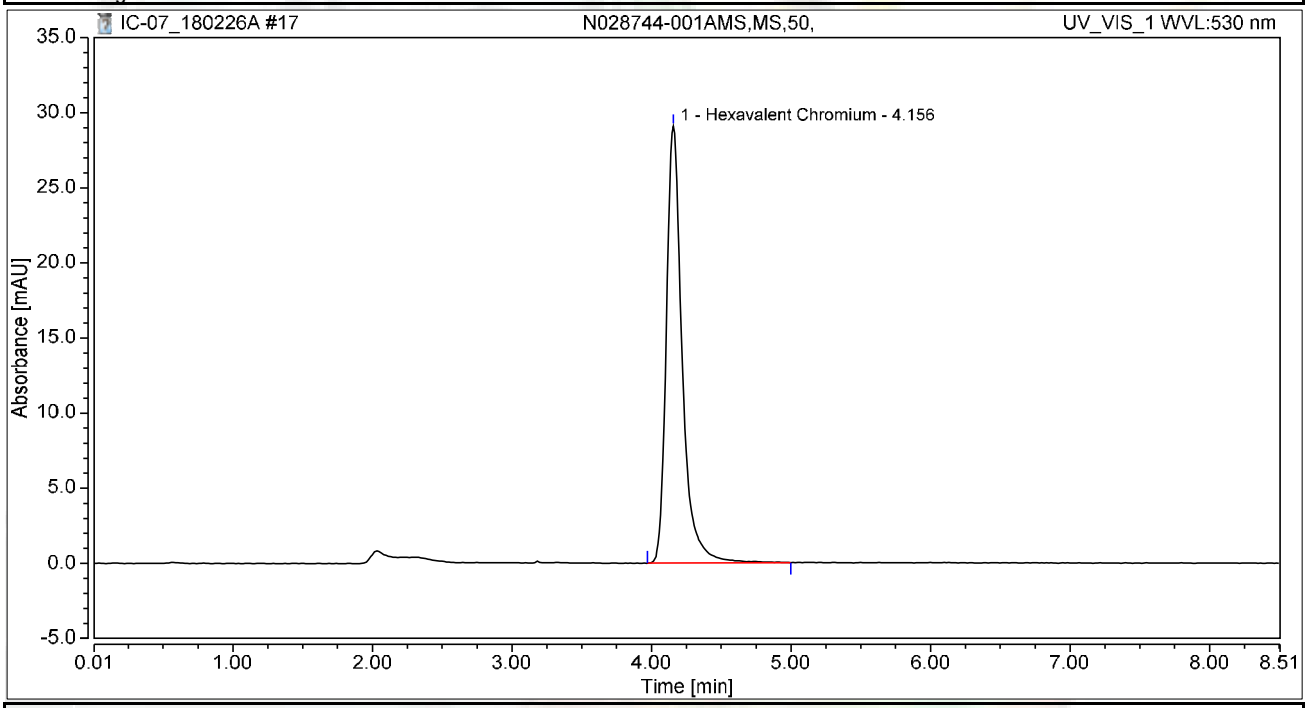
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.566	19.478	100.00	100.00	10.2777
Total:			**2.566**	**19.478**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-001AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

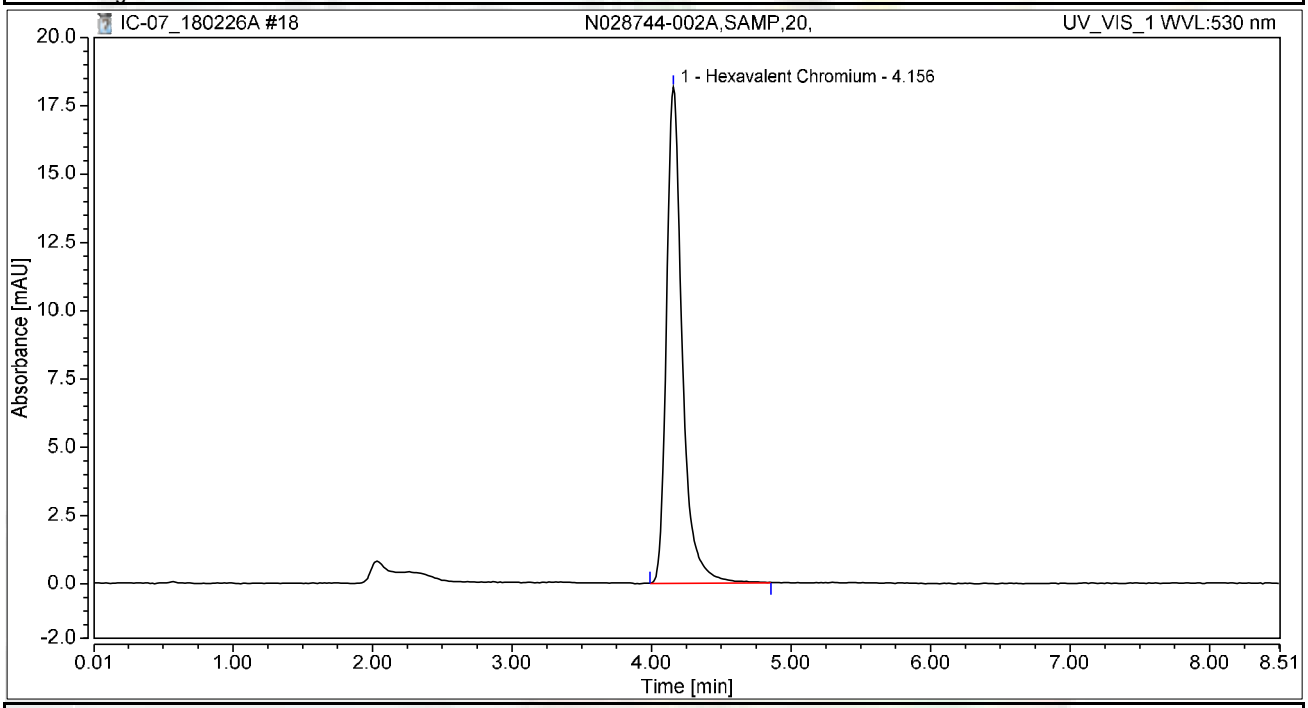
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.824	29.073	100.00	100.00	15.3178
Total:			**3.824**	**29.073**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-002A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

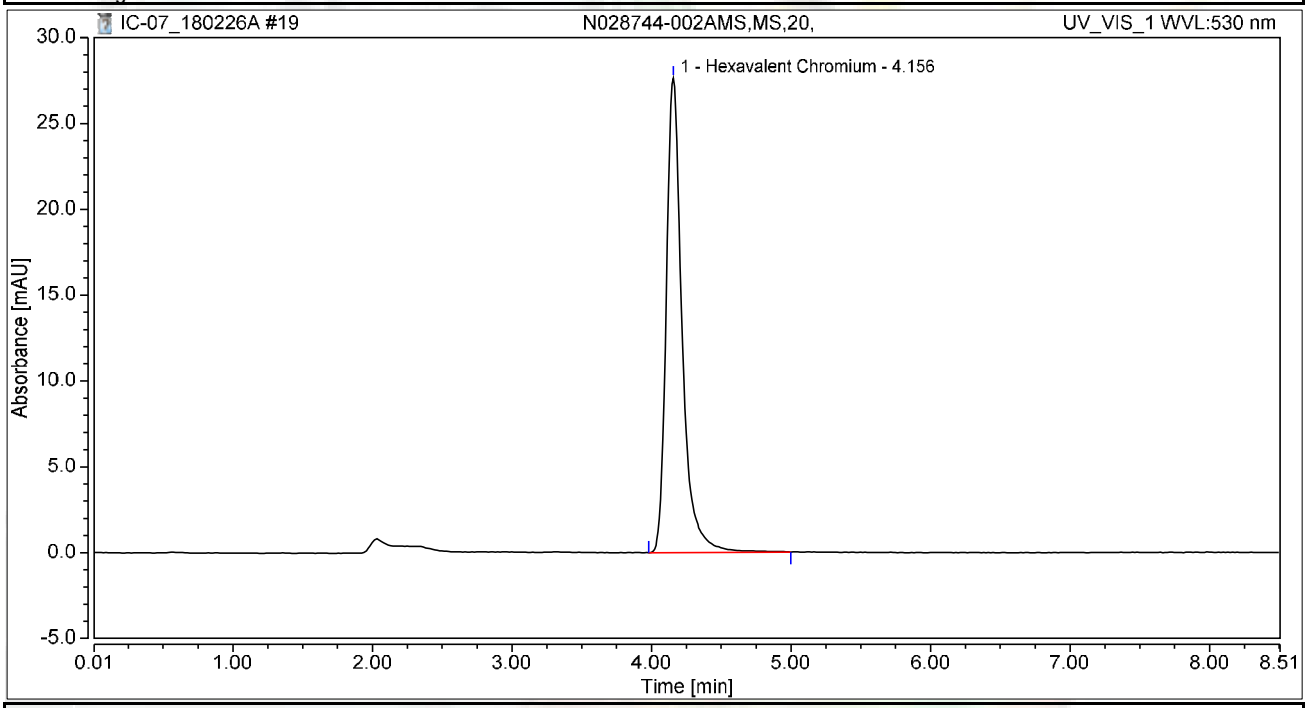
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.378	18.158	100.00	100.00	9.5272
Total:			**2.378**	**18.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-002AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

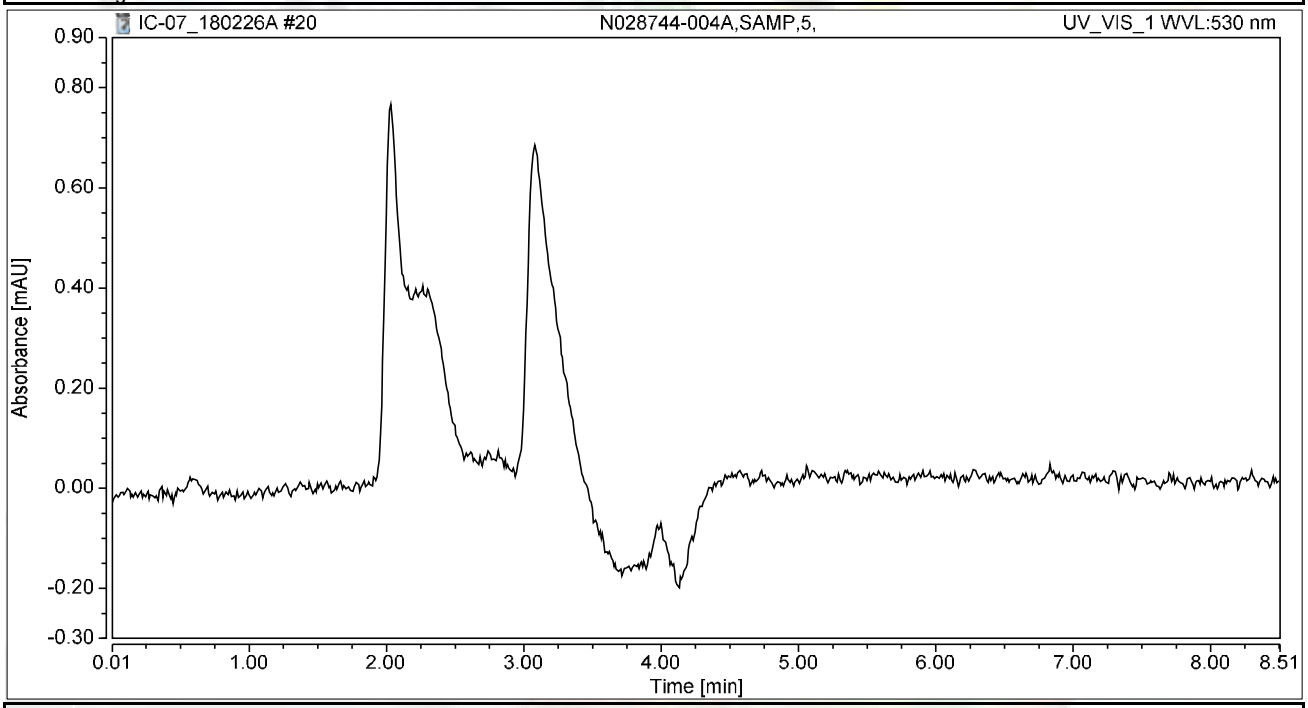
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.633	27.640	100.00	100.00	14.5528
Total:			**3.633**	**27.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

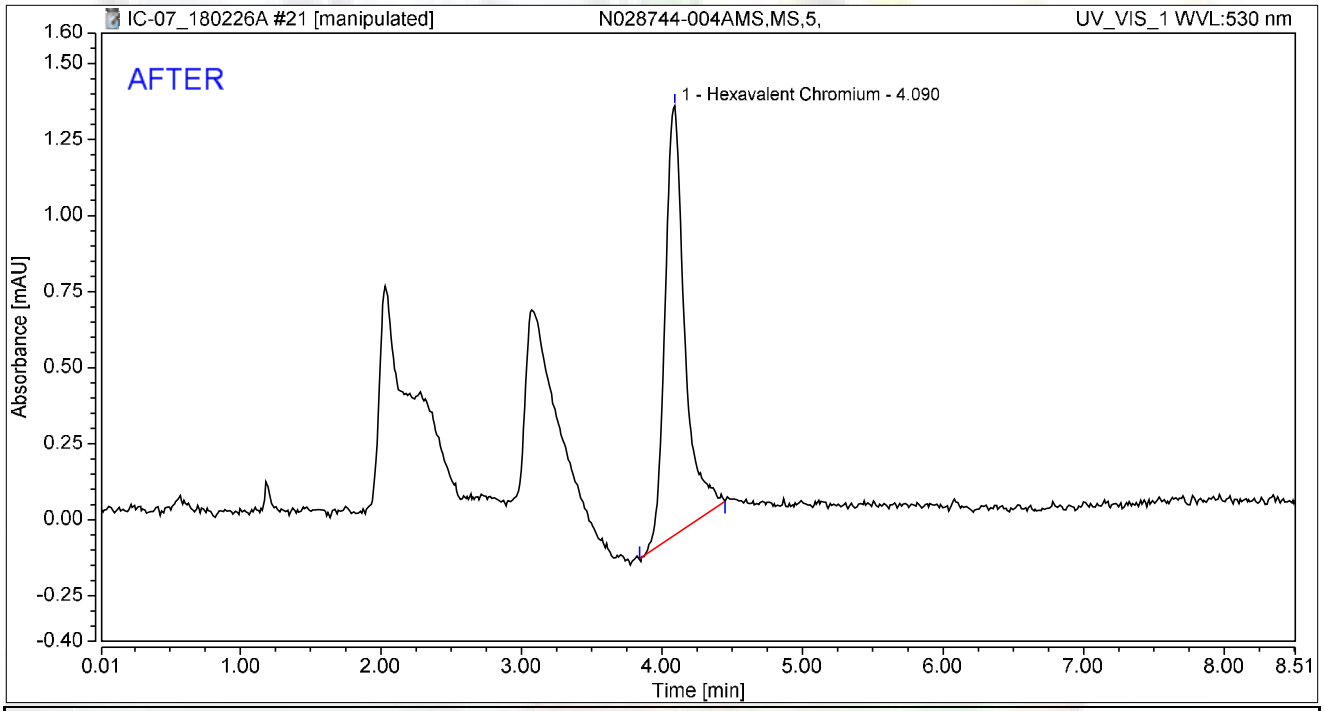
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.229	1.411	100.00	100.00	0.9165
Total:			**0.229**	**1.411**	**100.00**	**100.00**	

rba 3/4/2018

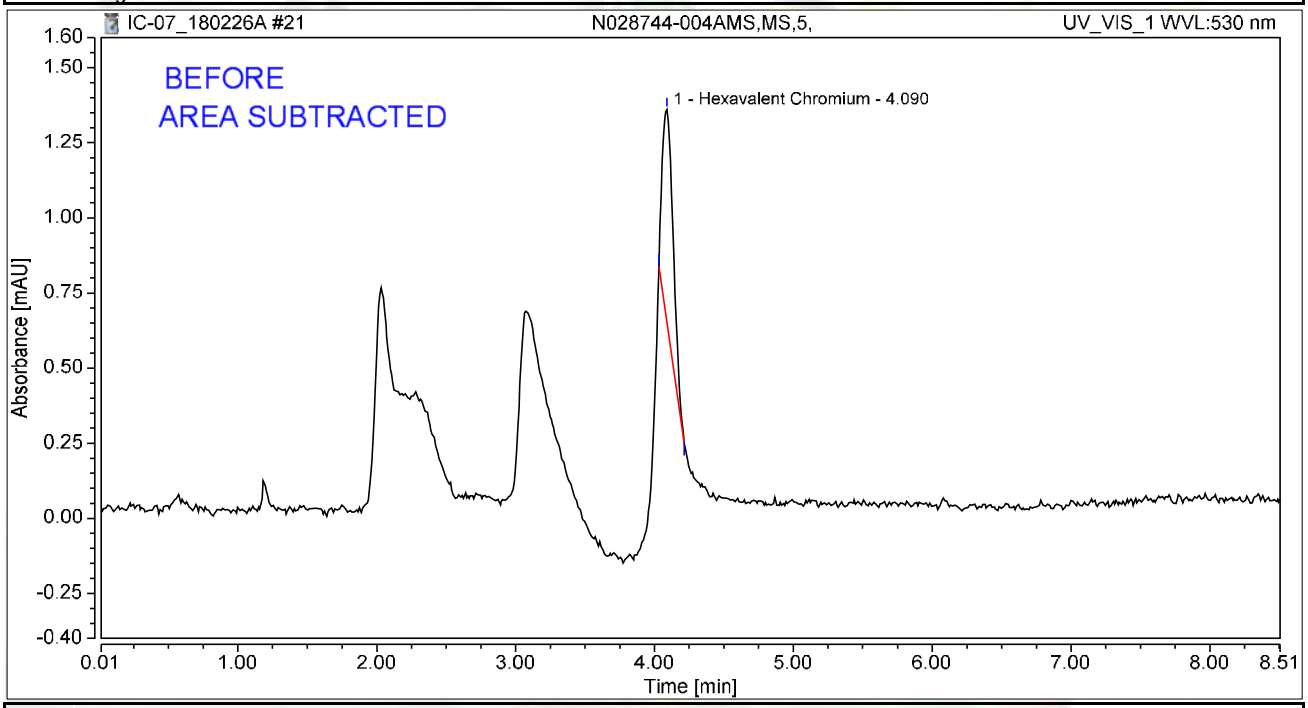
RB 03/07/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.064	0.709	100.00	100.00	0.2575
Total:			**0.064**	**0.709**	**100.00**	**100.00**	

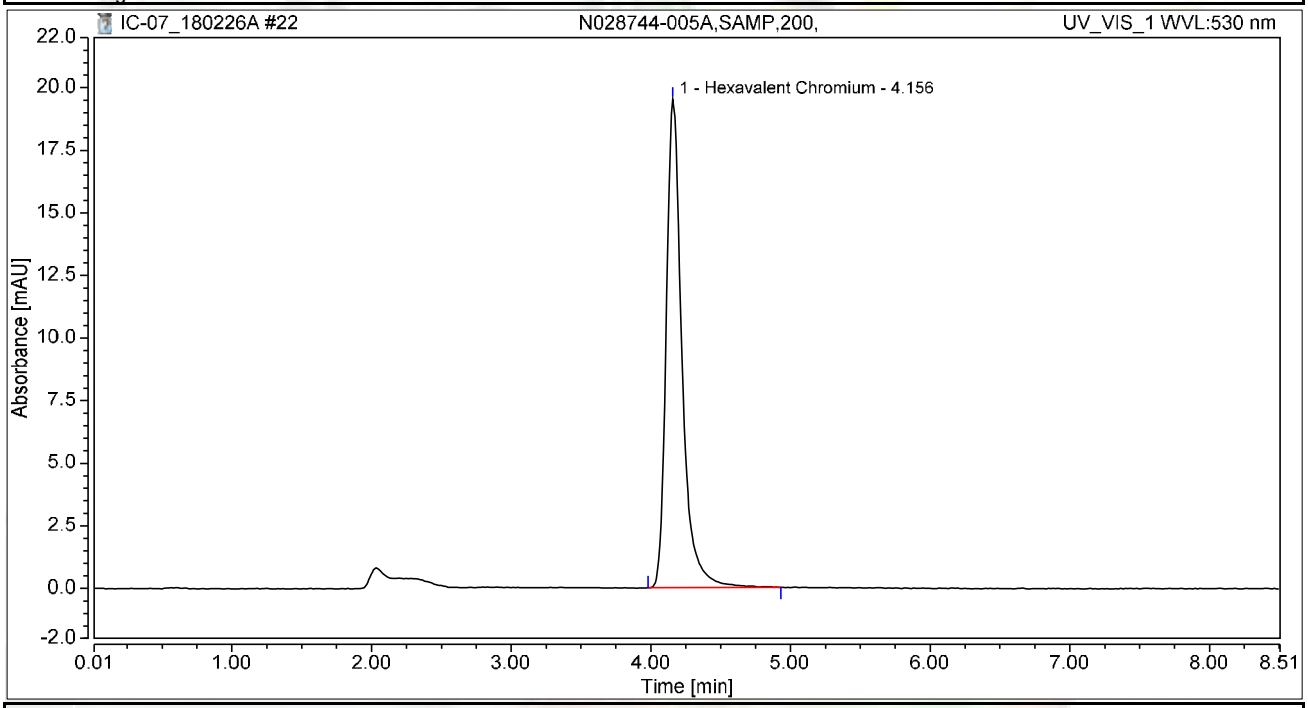
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028744-005A,SAMP,200,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

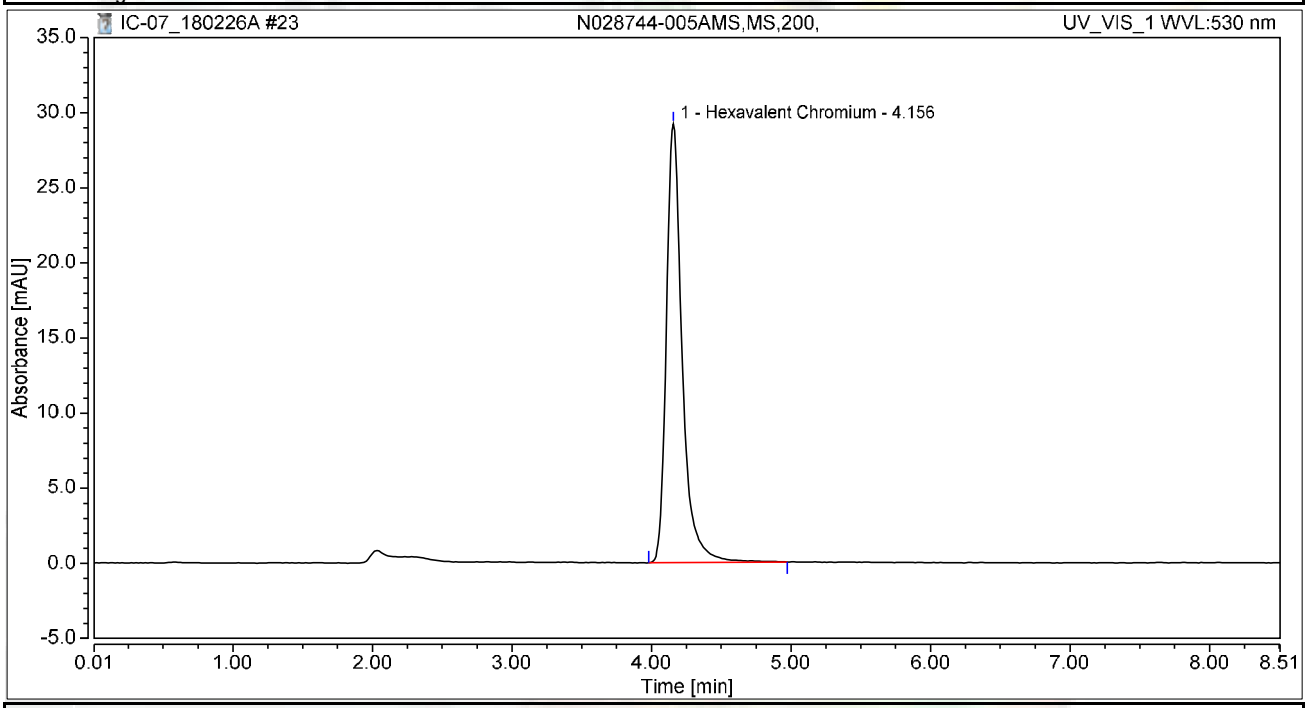
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.559	19.514	100.00	100.00	10.2508
Total:			**2.559**	**19.514**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-005AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

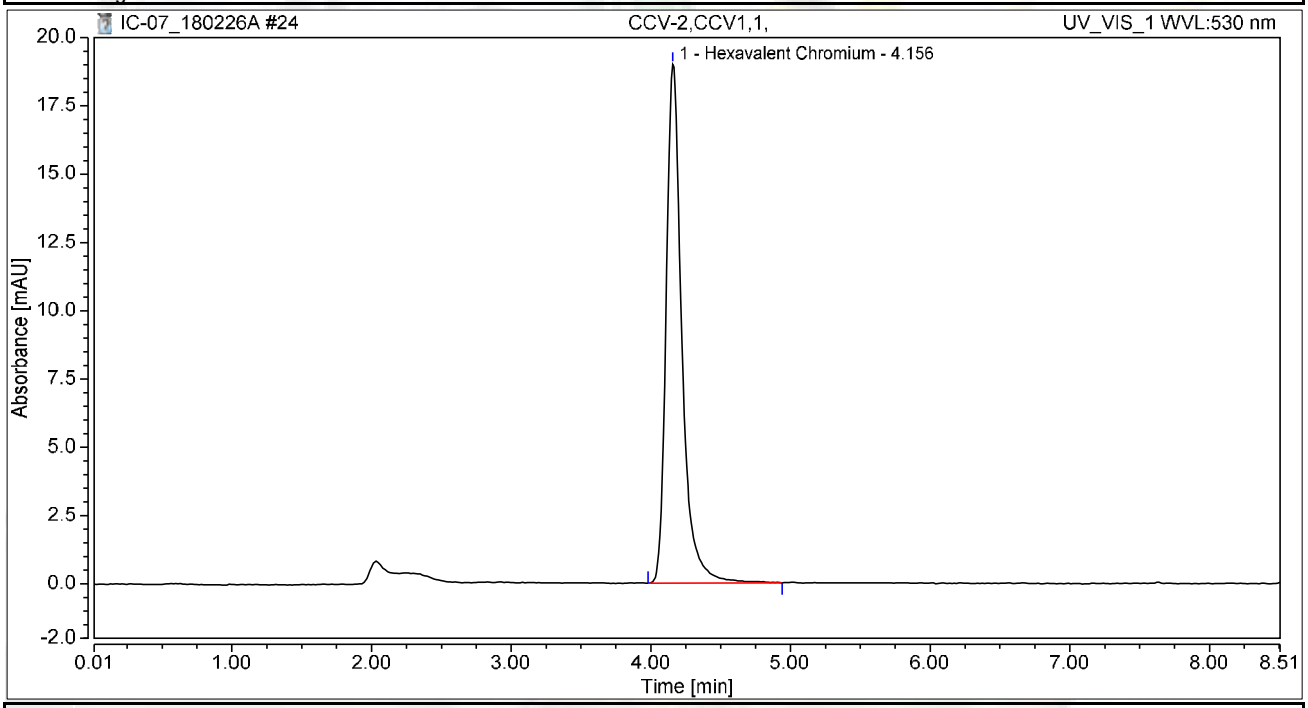
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.835	29.217	100.00	100.00	15.3603
Total:			**3.835**	**29.217**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

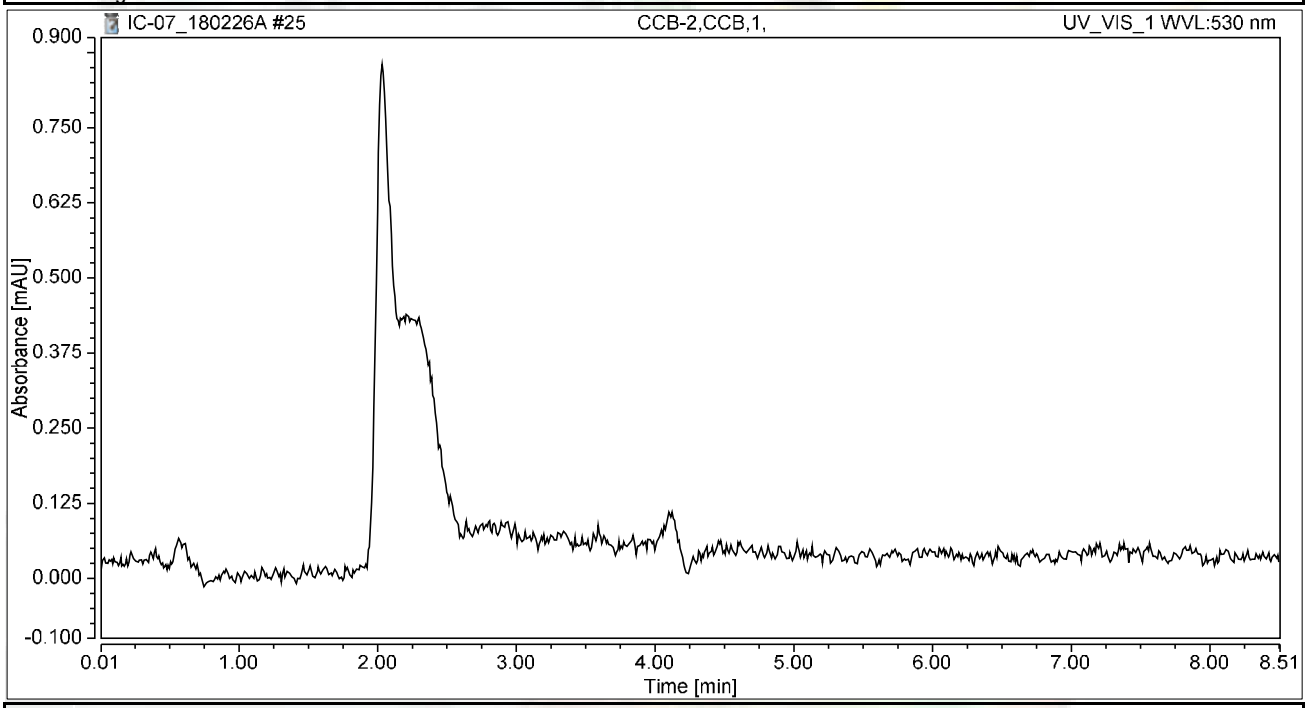
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.481	18.996	100.00	100.00	9.9365
Total:			**2.481**	**18.996**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

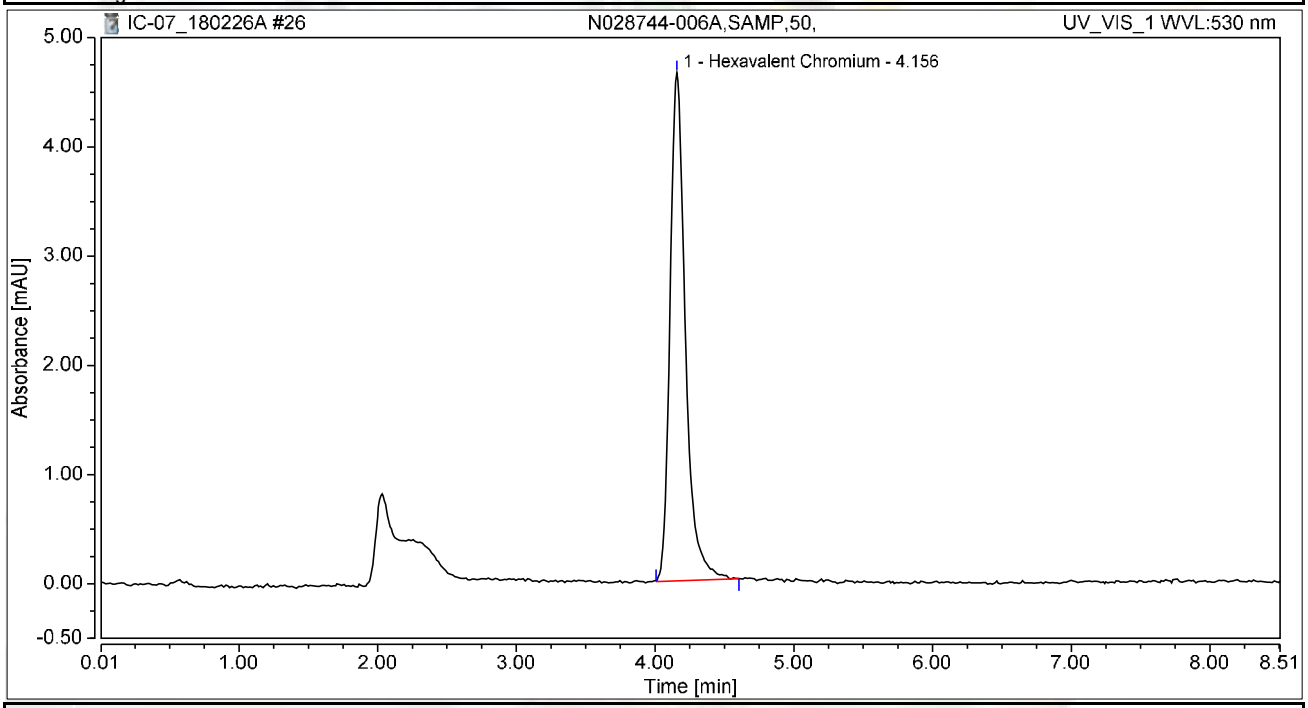
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-006A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

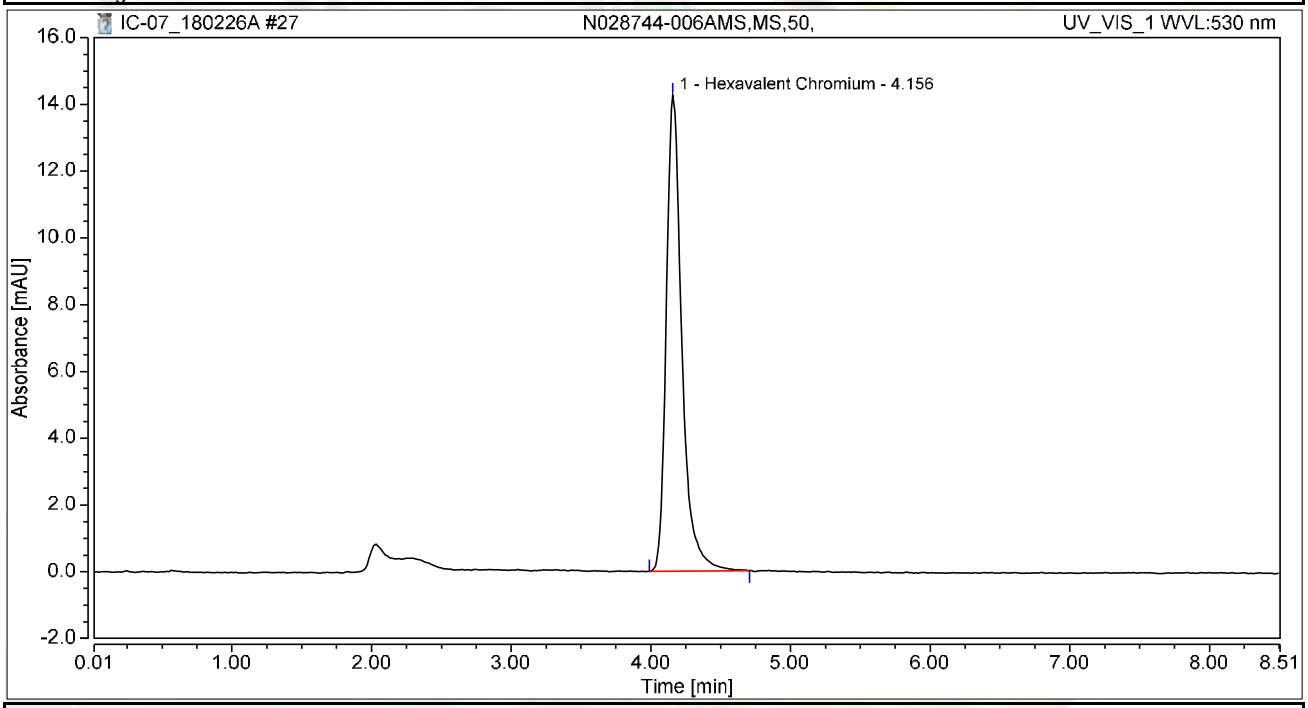
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.598	4.653	100.00	100.00	2.3964
Total:			**0.598**	**4.653**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-006AMS,MS,50,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

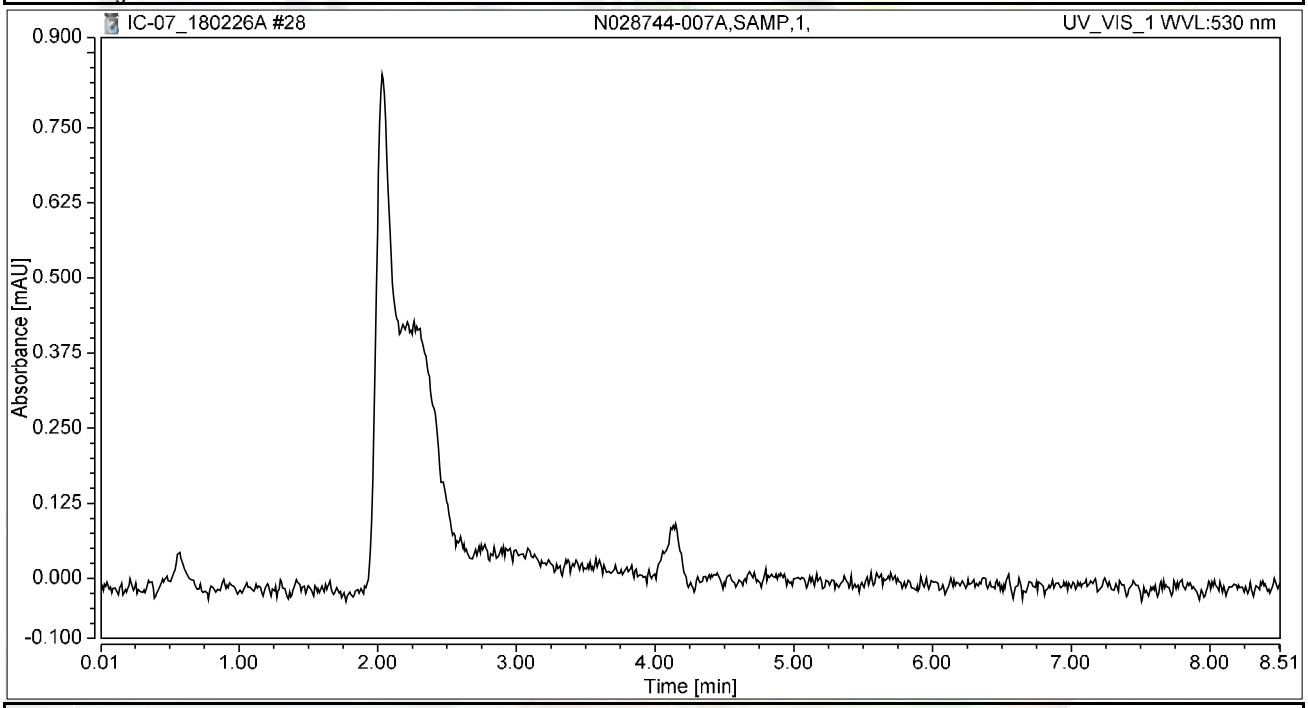
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.847	14.261	100.00	100.00	7.4000
Total:			**1.847**	**14.261**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

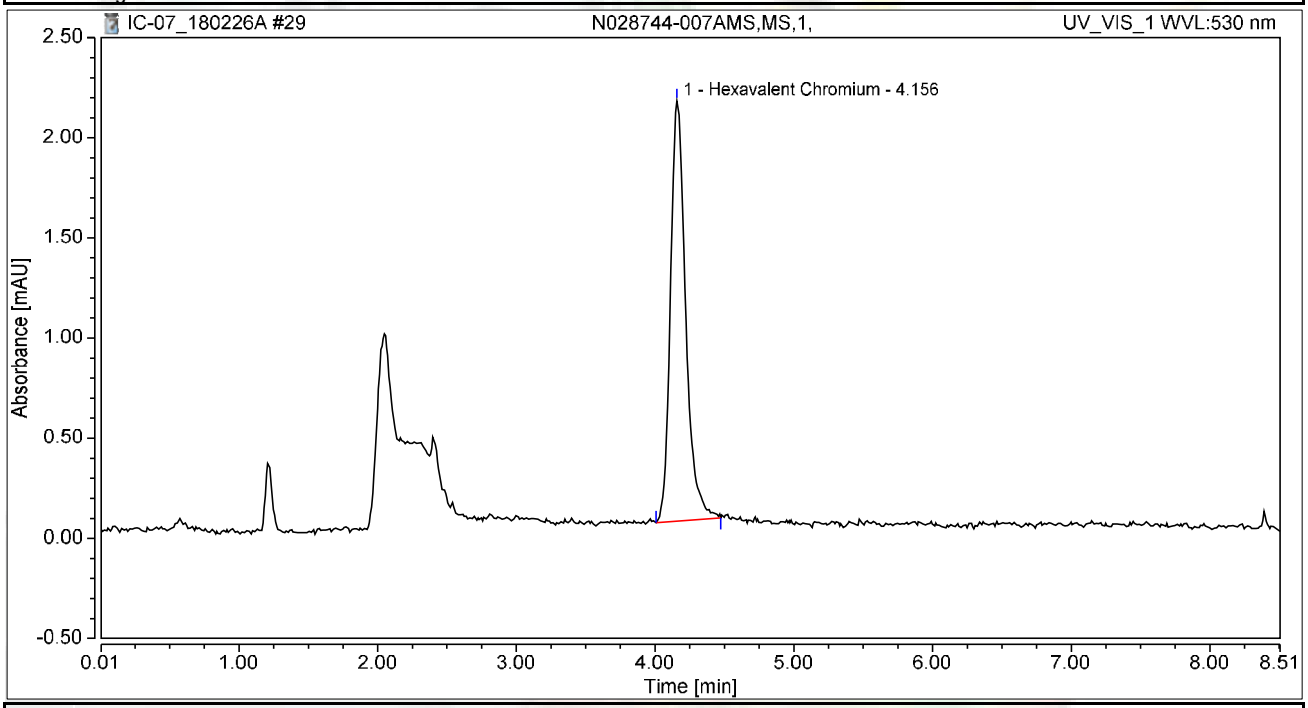
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

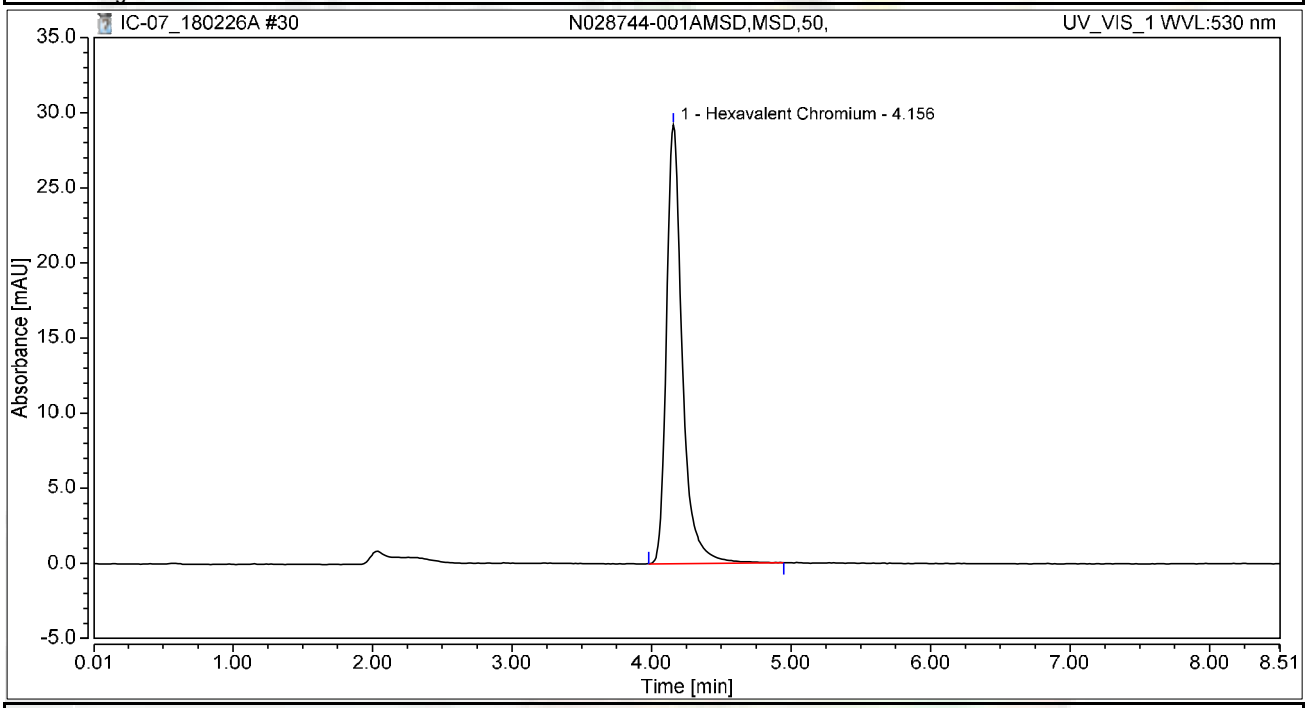
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.267	2.099	100.00	100.00	1.0684
Total:			**0.267**	**2.099**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-001AMSD,MSD,50,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

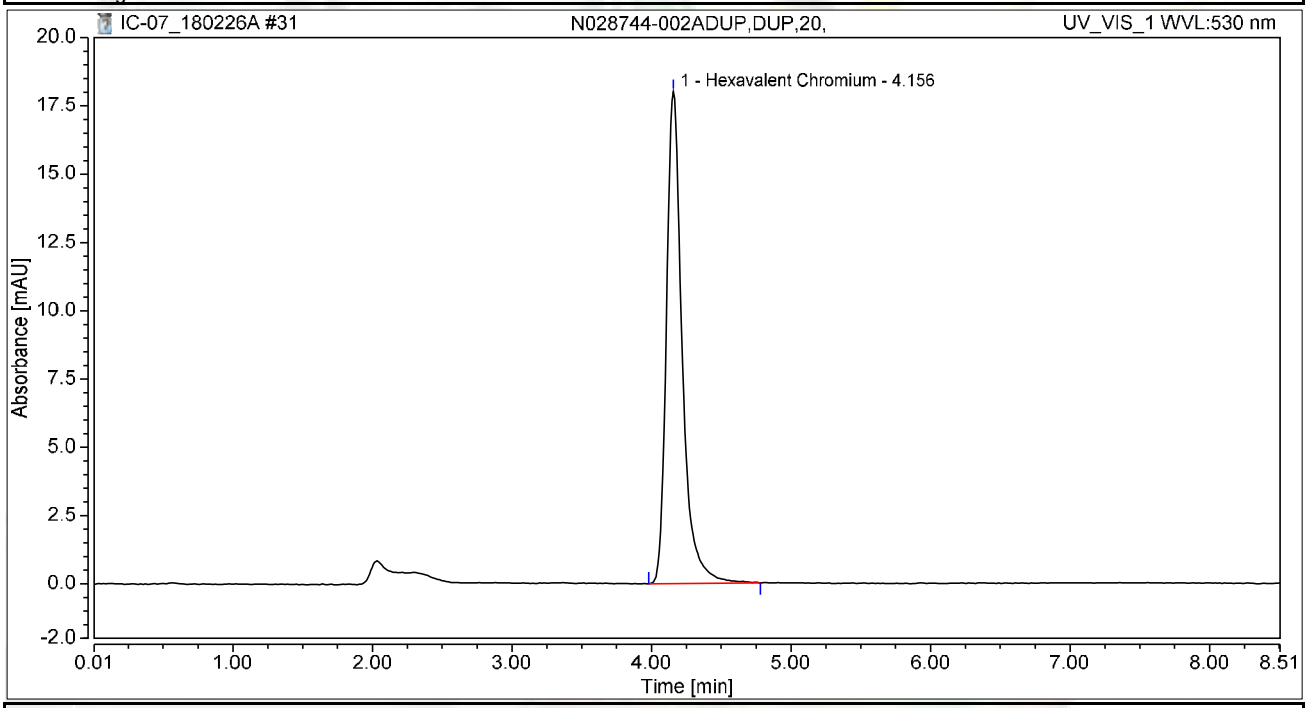
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.830	29.187	100.00	100.00	15.3424
Total:			**3.830**	**29.187**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-002ADUP,DUP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

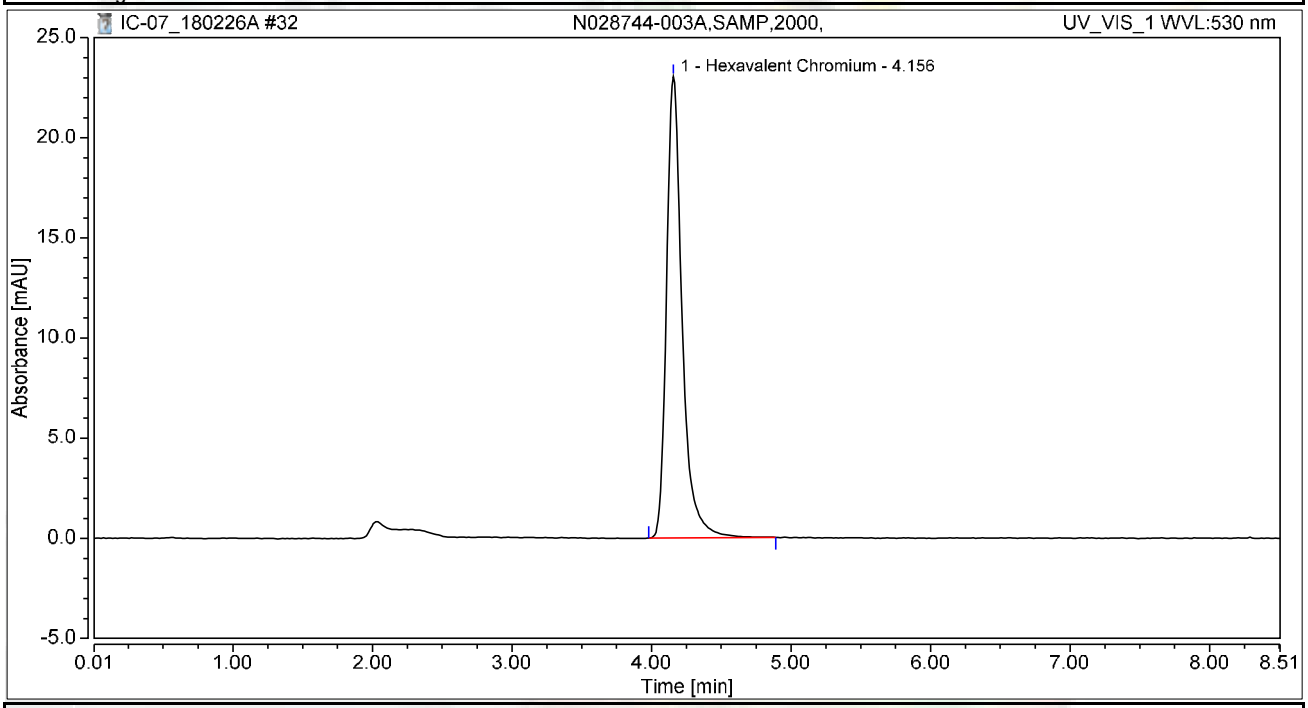
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.358	18.016	100.00	100.00	9.4443
Total:			**2.358**	**18.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-003A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

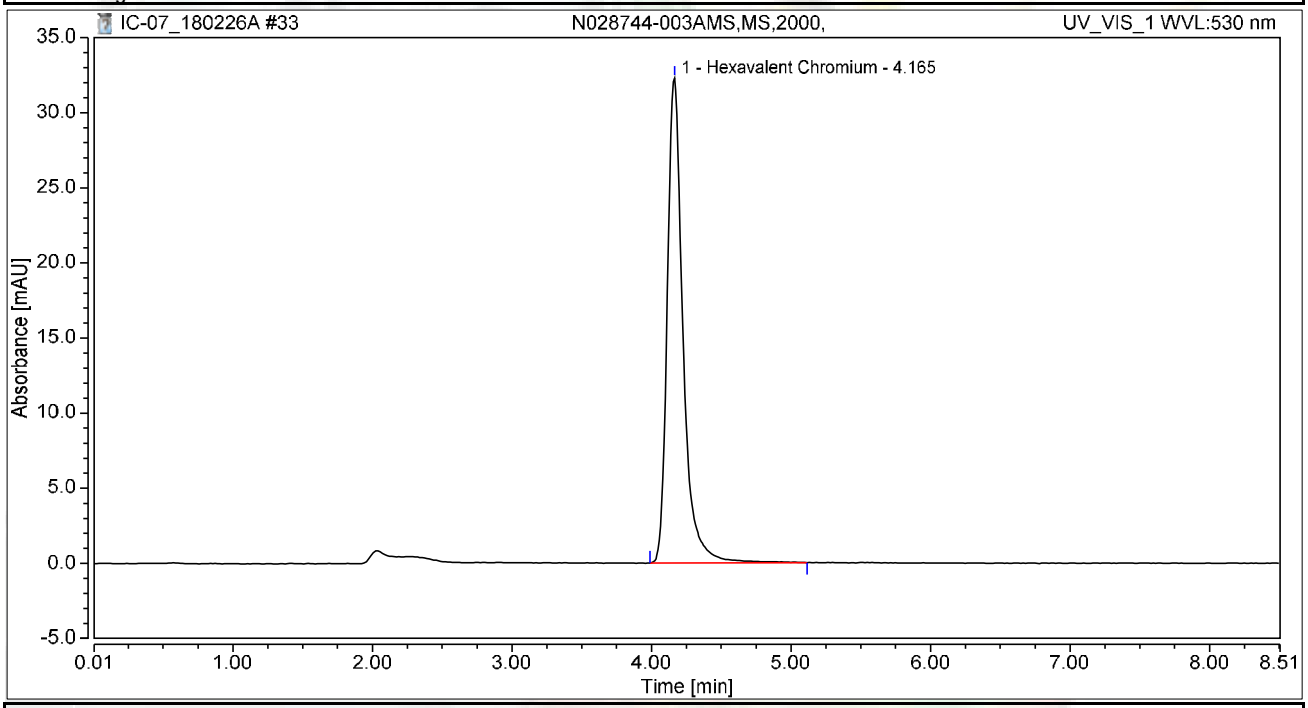
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.989	23.035	100.00	100.00	11.9747
Total:			**2.989**	**23.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-003AMS,MS,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

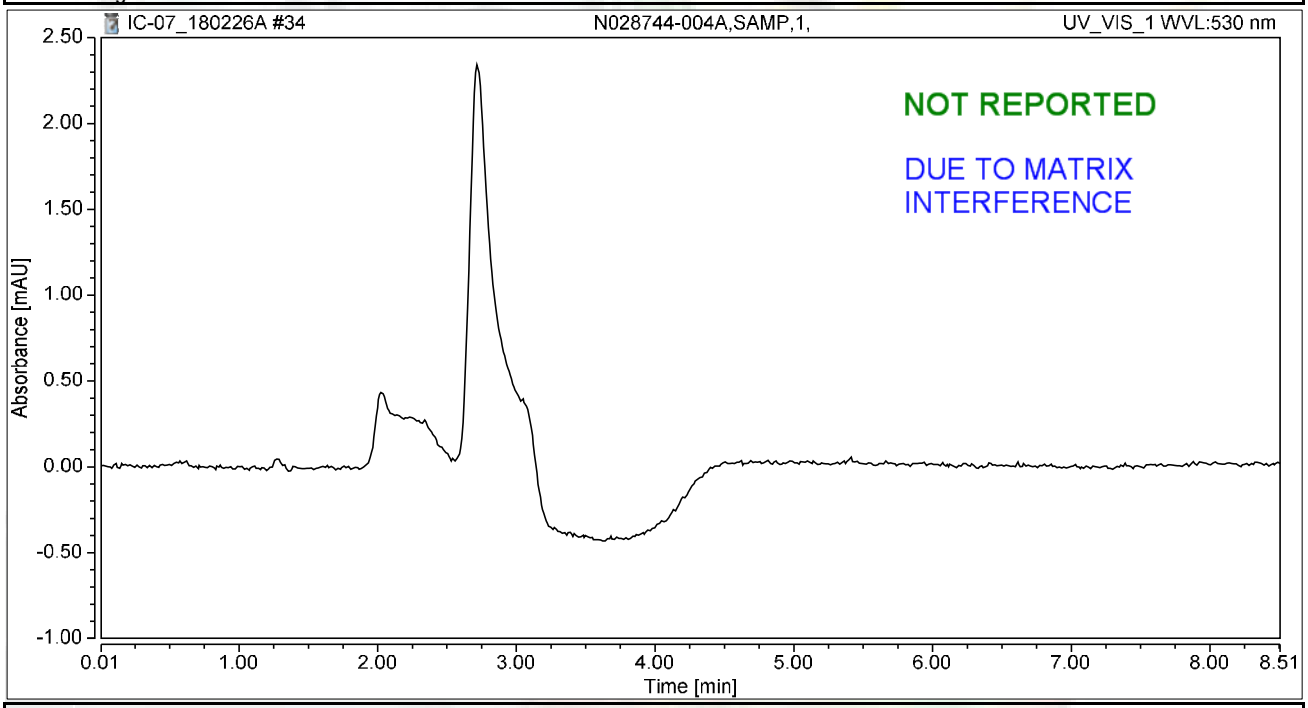
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	4.214	32.267	100.00	100.00	16.8779
Total:			**4.214**	**32.267**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

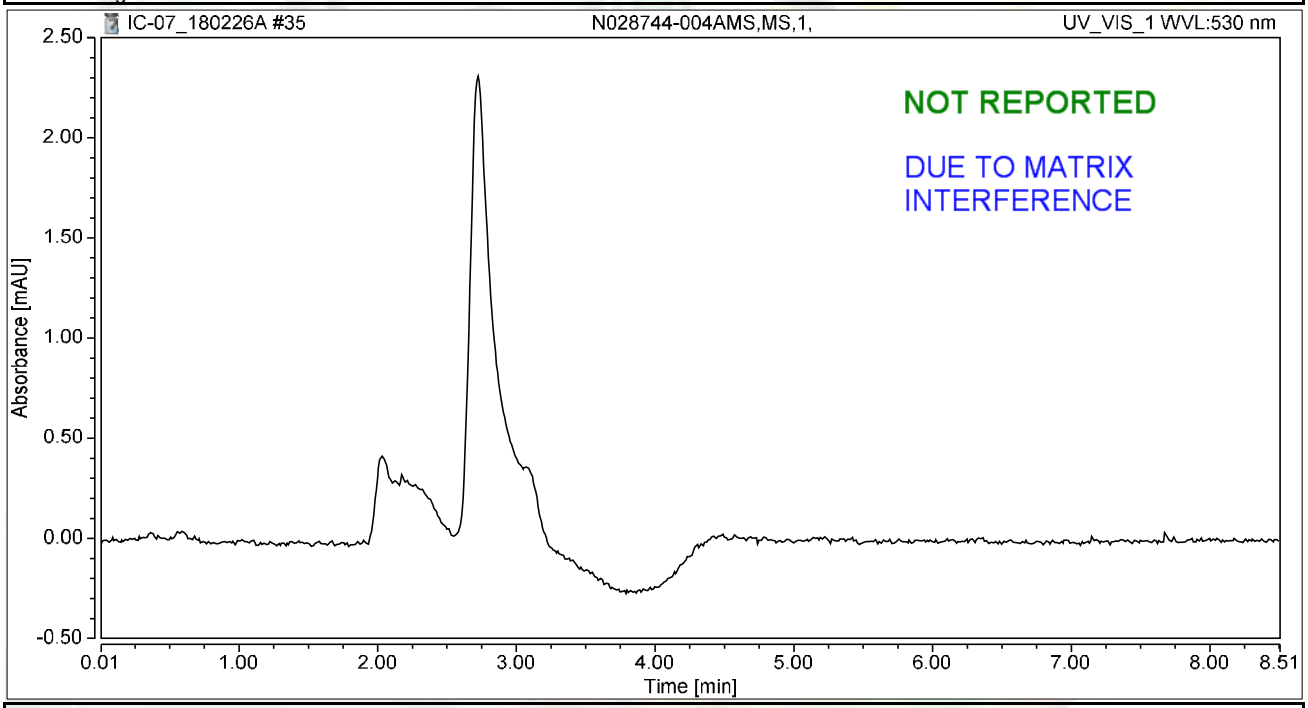
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028744-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

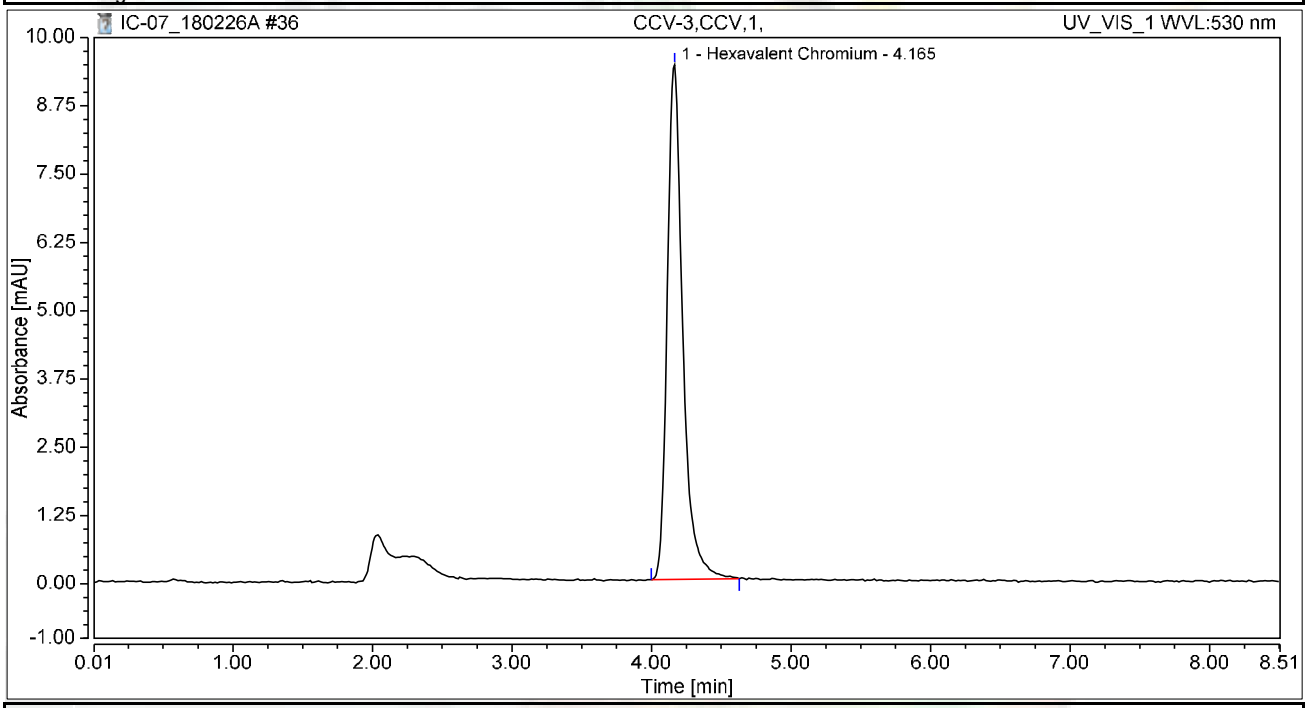
rba 3/4/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

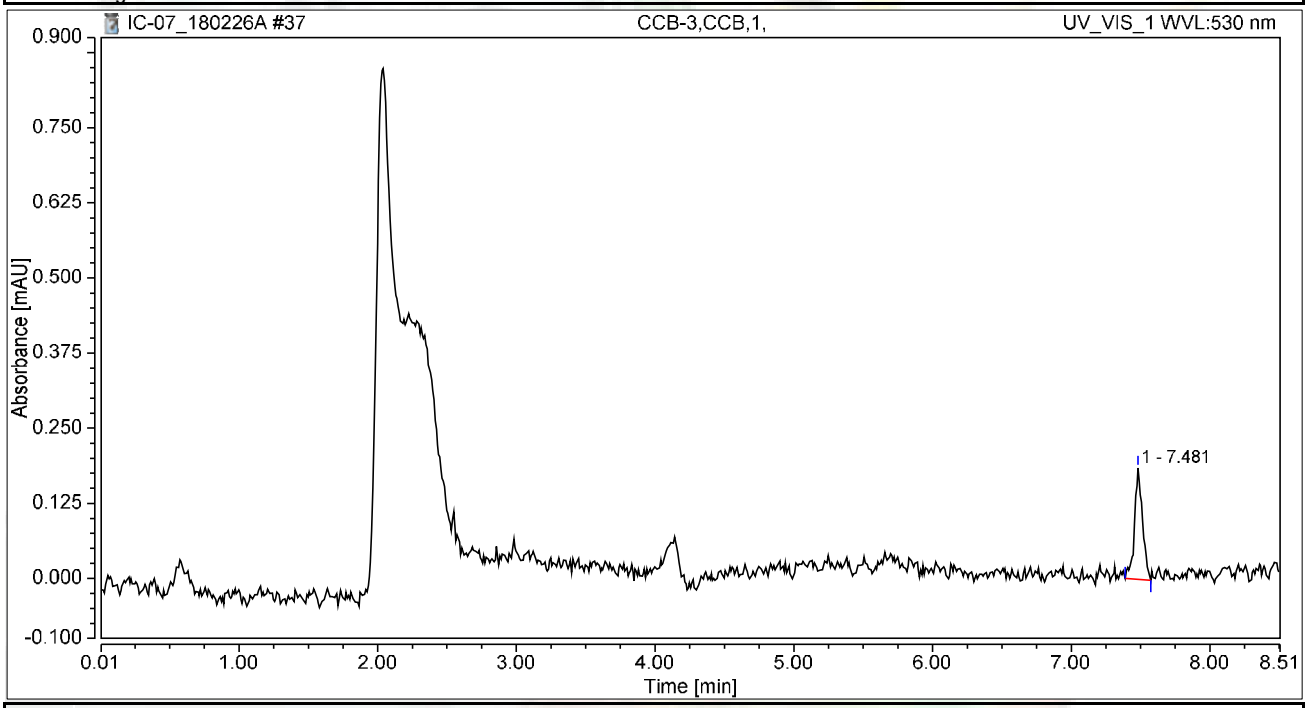
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.217	9.422	100.00	100.00	4.8756
Total:			**1.217**	**9.422**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

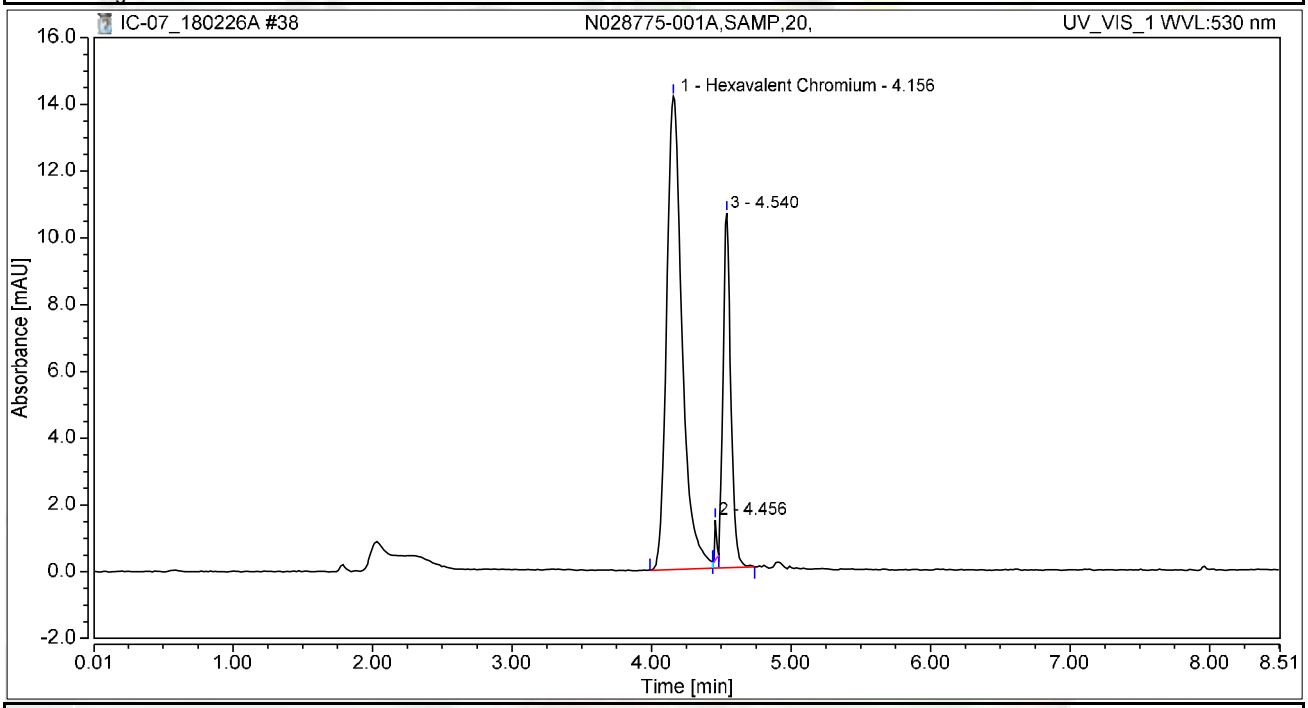
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.481	0.012	0.186	100.00	100.00	n.a.
Total:			**0.012**	**0.186**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

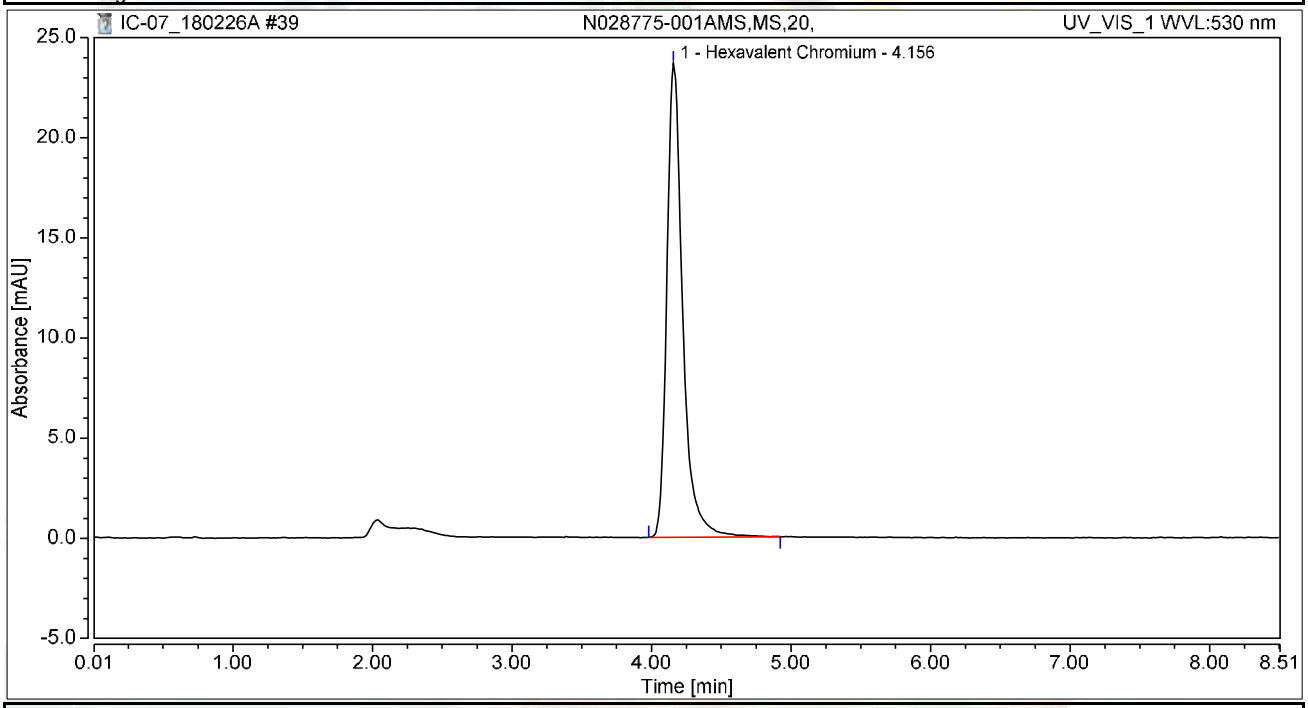
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.827	14.182	71.86	54.54	7.3168
2		4.456	0.018	1.196	0.72	4.60	n.a.
3		4.540	0.697	10.626	27.42	40.86	n.a.
Total:			**2.542**	**26.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-001AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 14:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

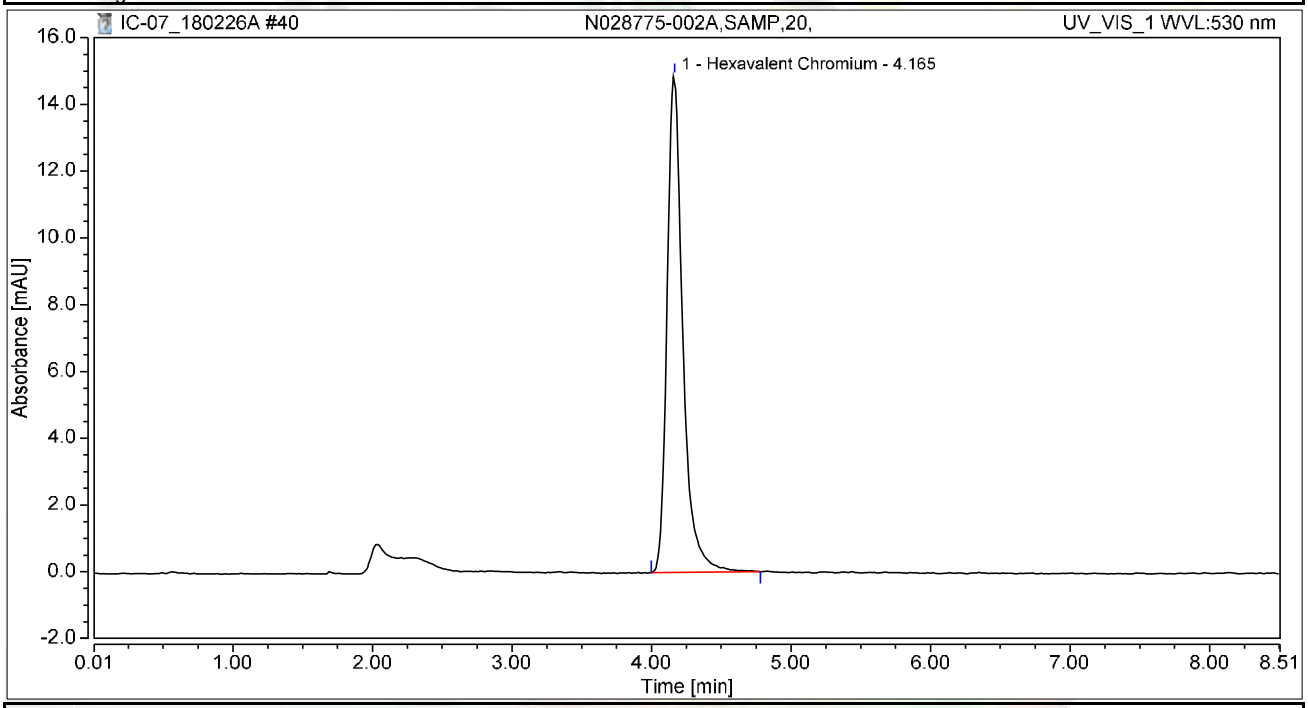
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.118	23.677	100.00	100.00	12.4911
Total:			**3.118**	**23.677**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-002A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

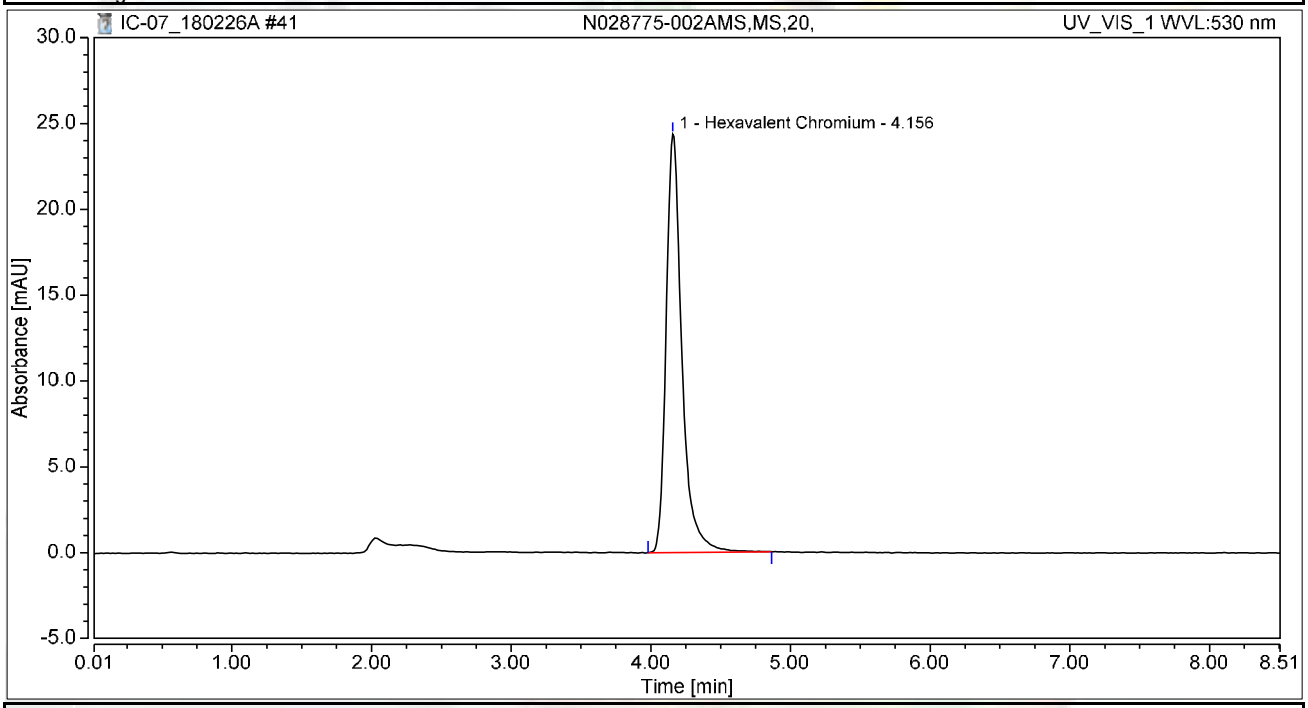
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.943	14.892	100.00	100.00	7.7838
Total:			**1.943**	**14.892**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-002AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

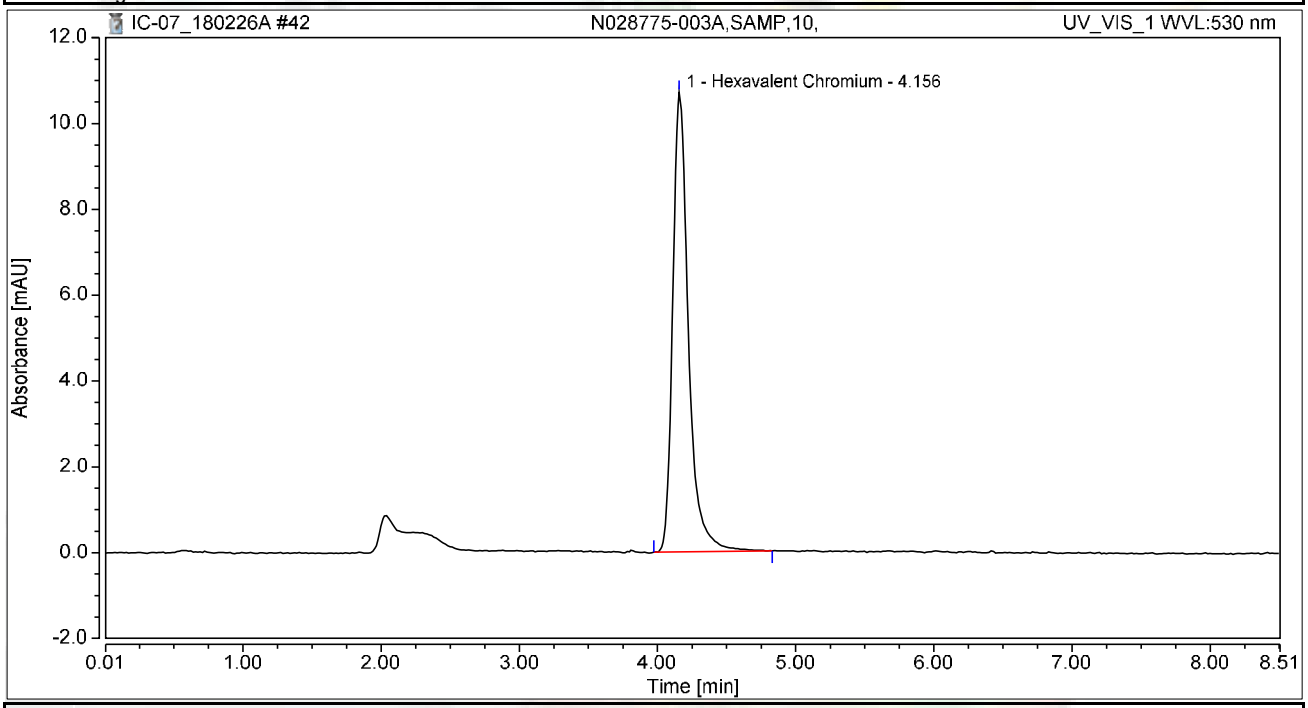
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	3.193	24.368	100.00	100.00	12.7879
Total:			**3.193**	**24.368**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

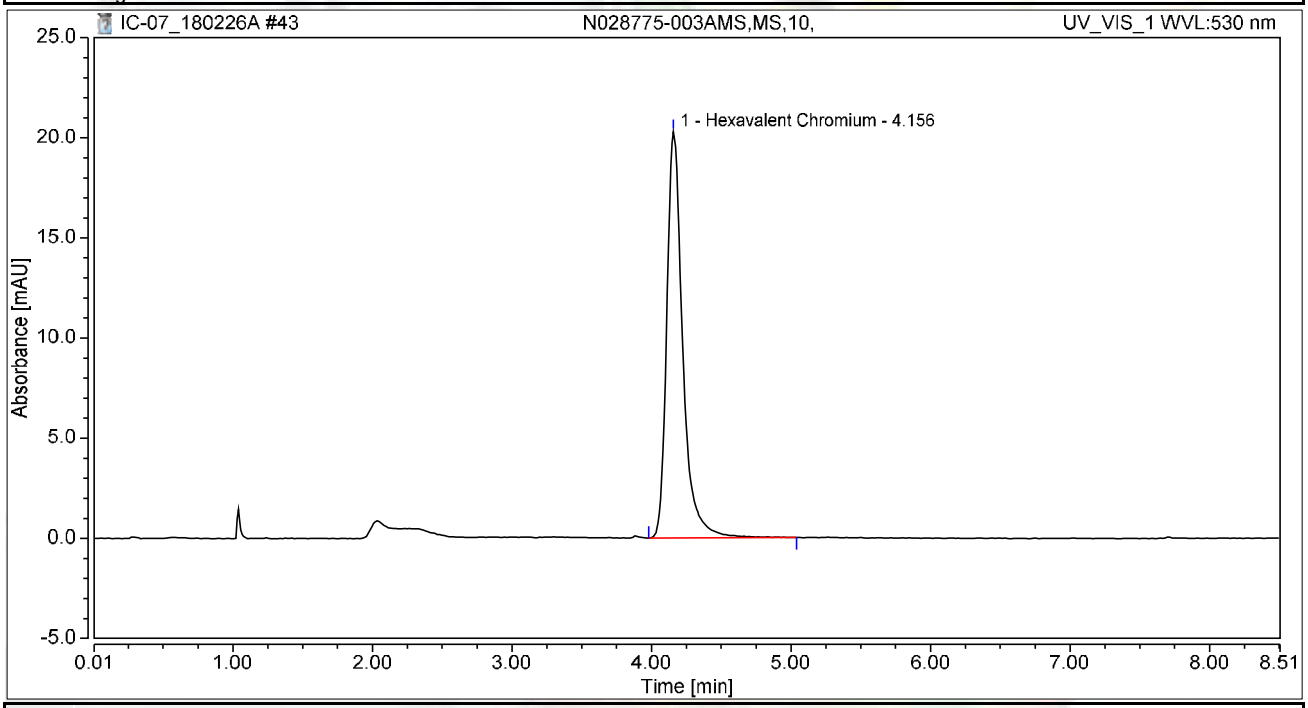
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.417	10.708	100.00	100.00	5.6760
Total:			**1.417**	**10.708**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-003AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

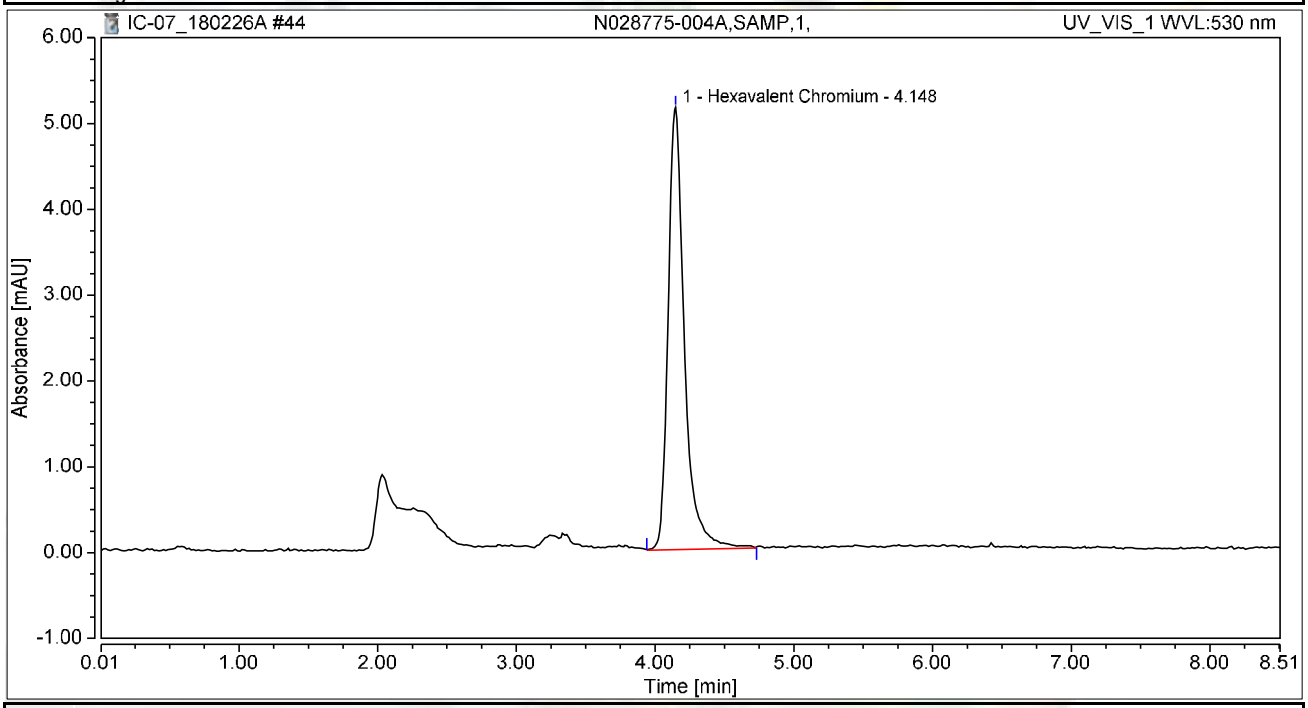
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.692	20.291	100.00	100.00	10.7849
Total:			**2.692**	**20.291**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

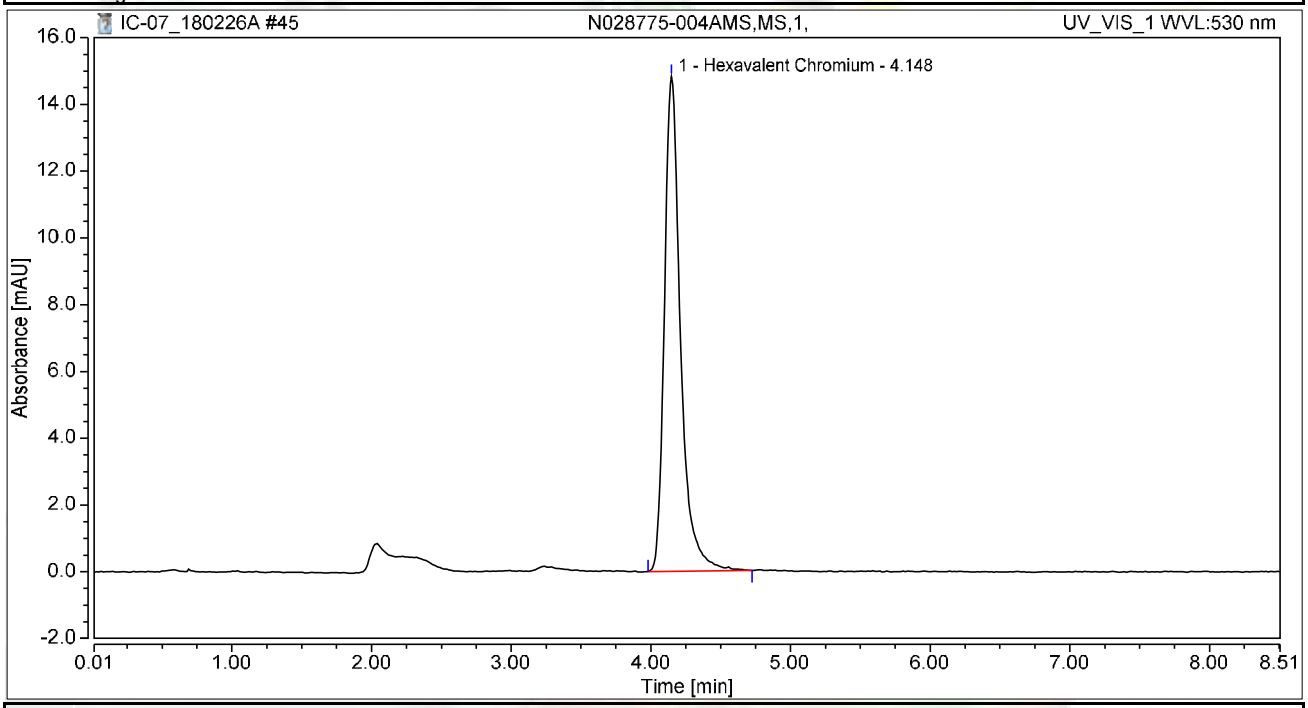
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.702	5.150	100.00	100.00	2.8109
Total:			**0.702**	**5.150**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 15:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

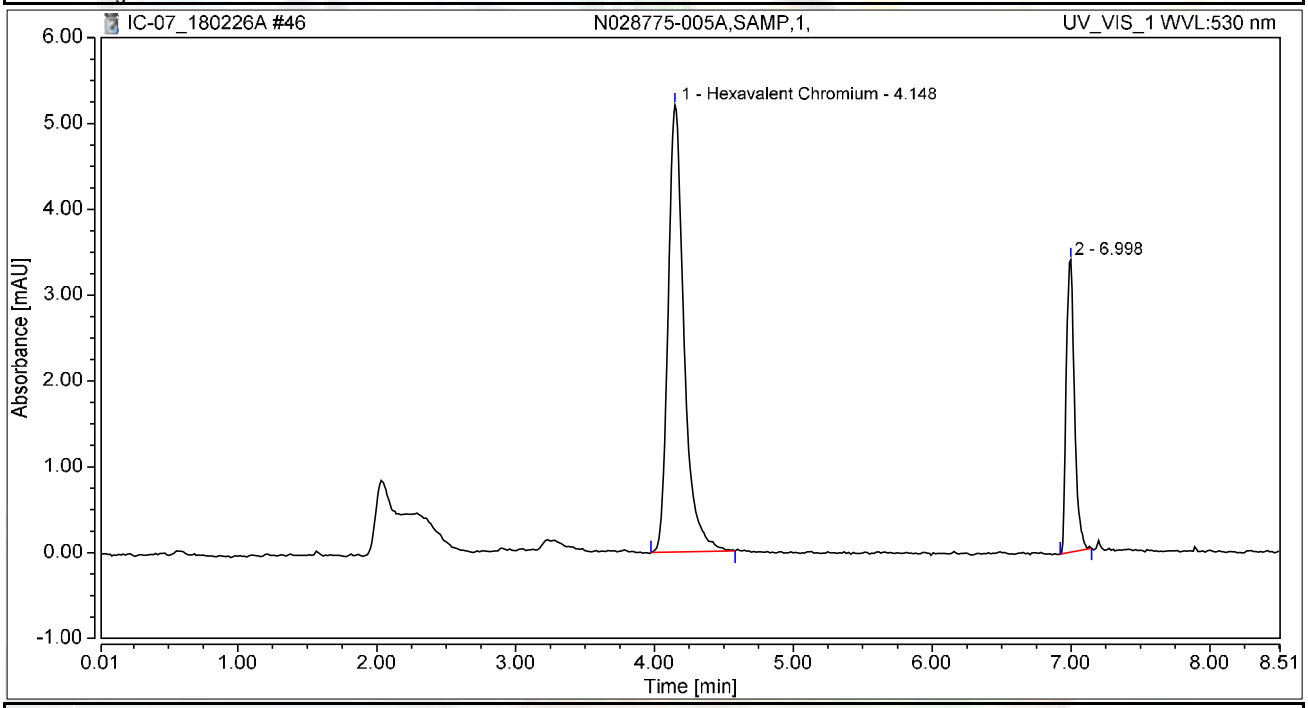
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.985	14.824	100.00	100.00	7.9520
Total:			**1.985**	**14.824**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

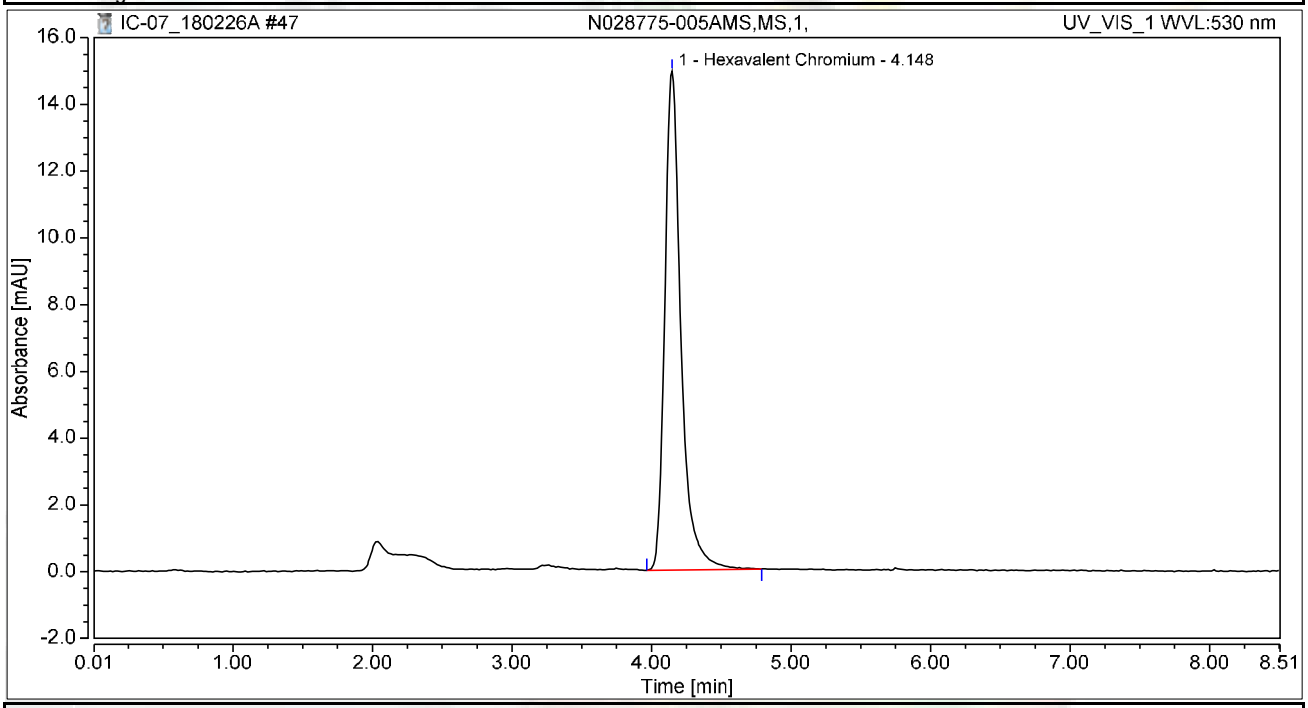
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.692	5.210	74.69	60.47	2.7731
2		6.998	0.235	3.406	25.31	39.53	n.a.
Total:			**0.927**	**8.616**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

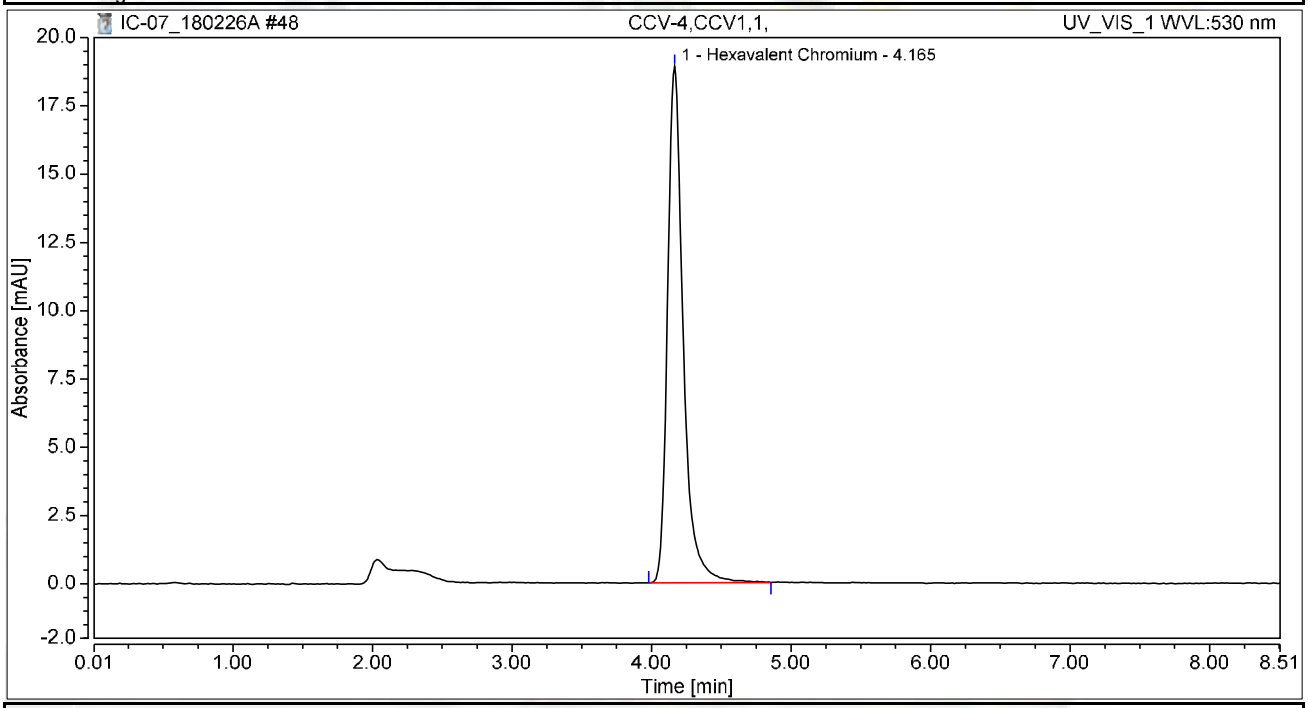
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.008	14.950	100.00	100.00	8.0438
Total:			**2.008**	**14.950**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

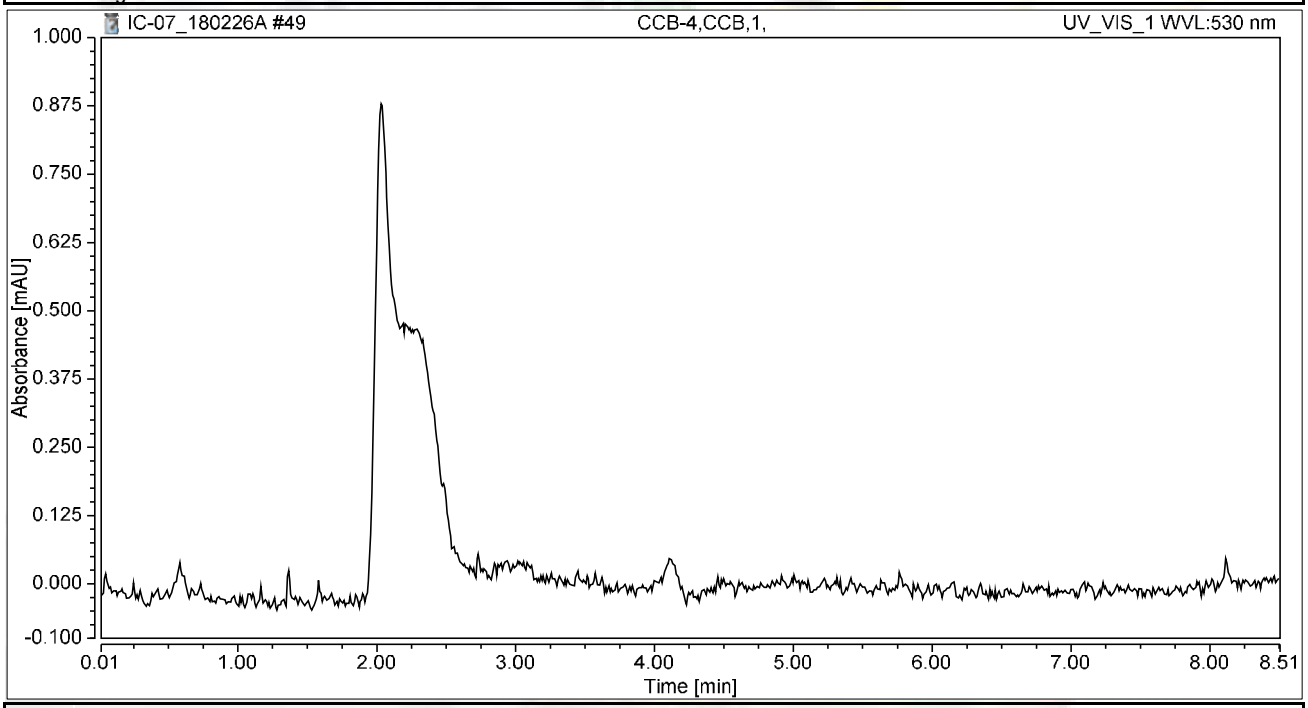
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.458	18.912	100.00	100.00	9.8455
Total:			**2.458**	**18.912**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

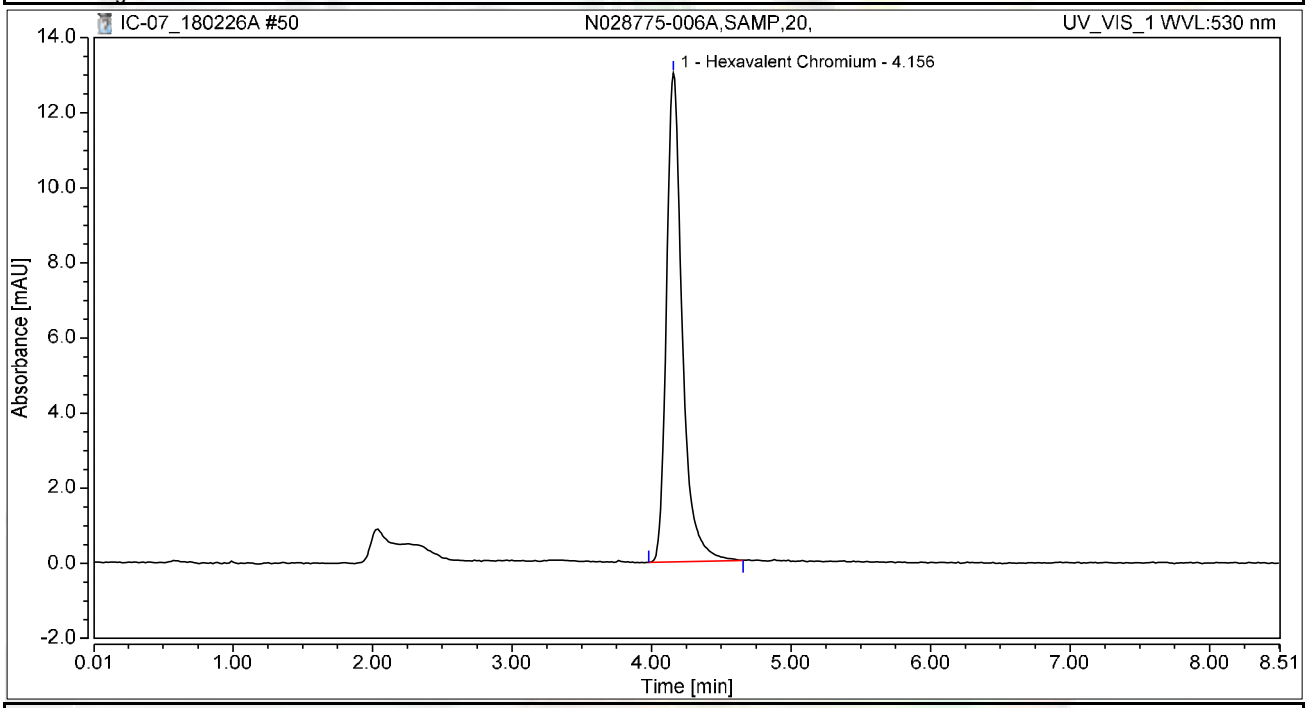
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-006A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

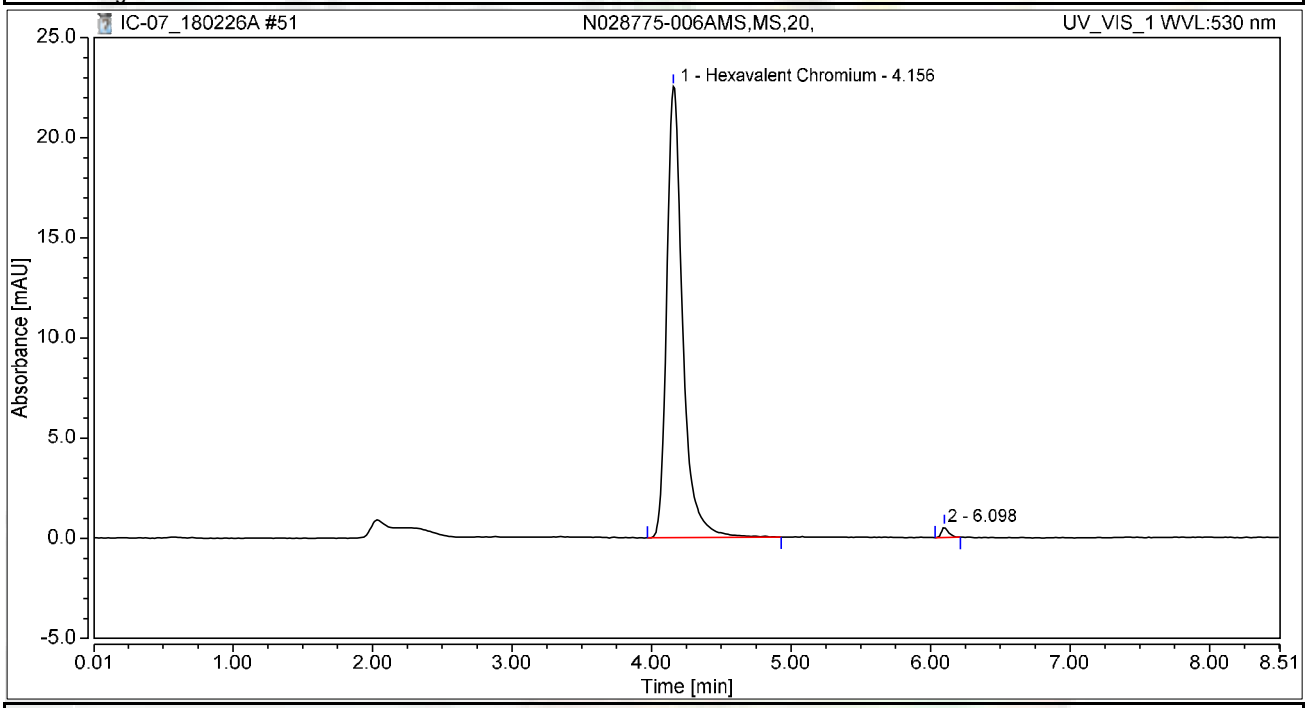
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.706	13.016	100.00	100.00	6.8320
Total:			**1.706**	**13.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-006AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

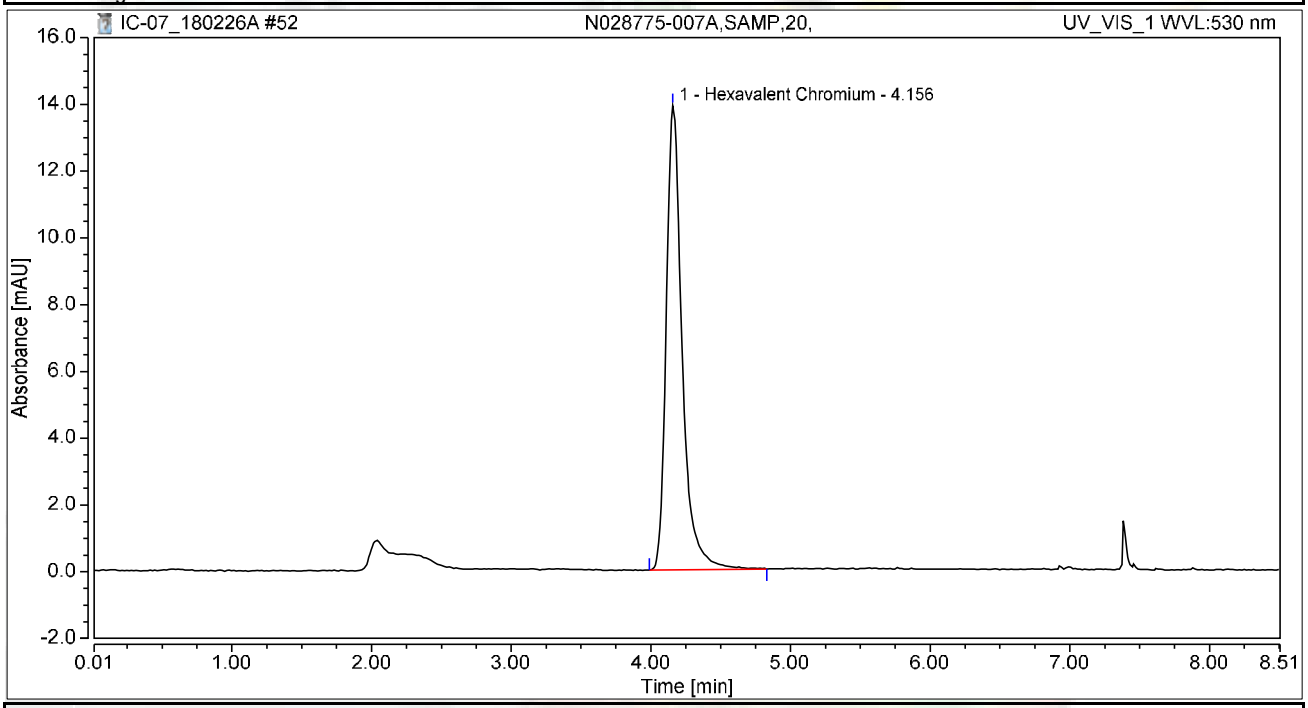
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.983	22.531	98.99	97.66	11.9480
2		6.098	0.030	0.540	1.01	2.34	n.a.
Total:			**3.013**	**23.071**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-007A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

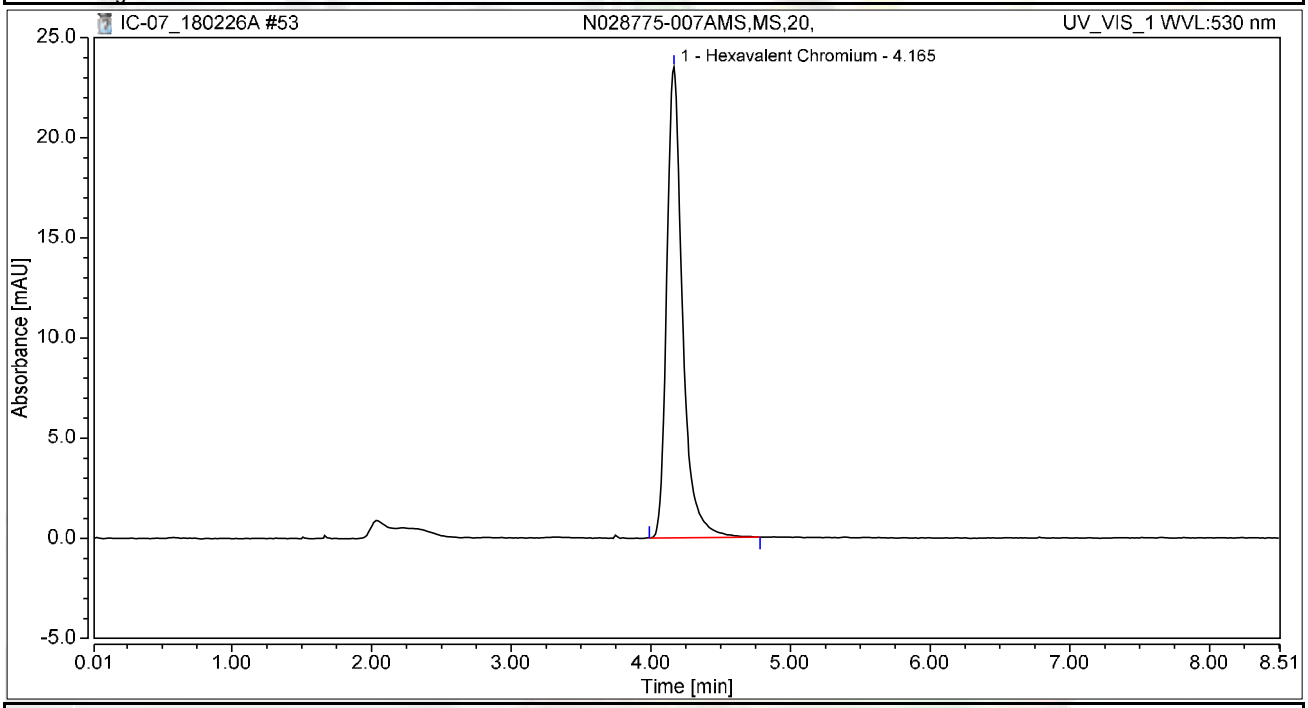
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.840	13.907	100.00	100.00	7.3699
Total:			**1.840**	**13.907**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-007AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

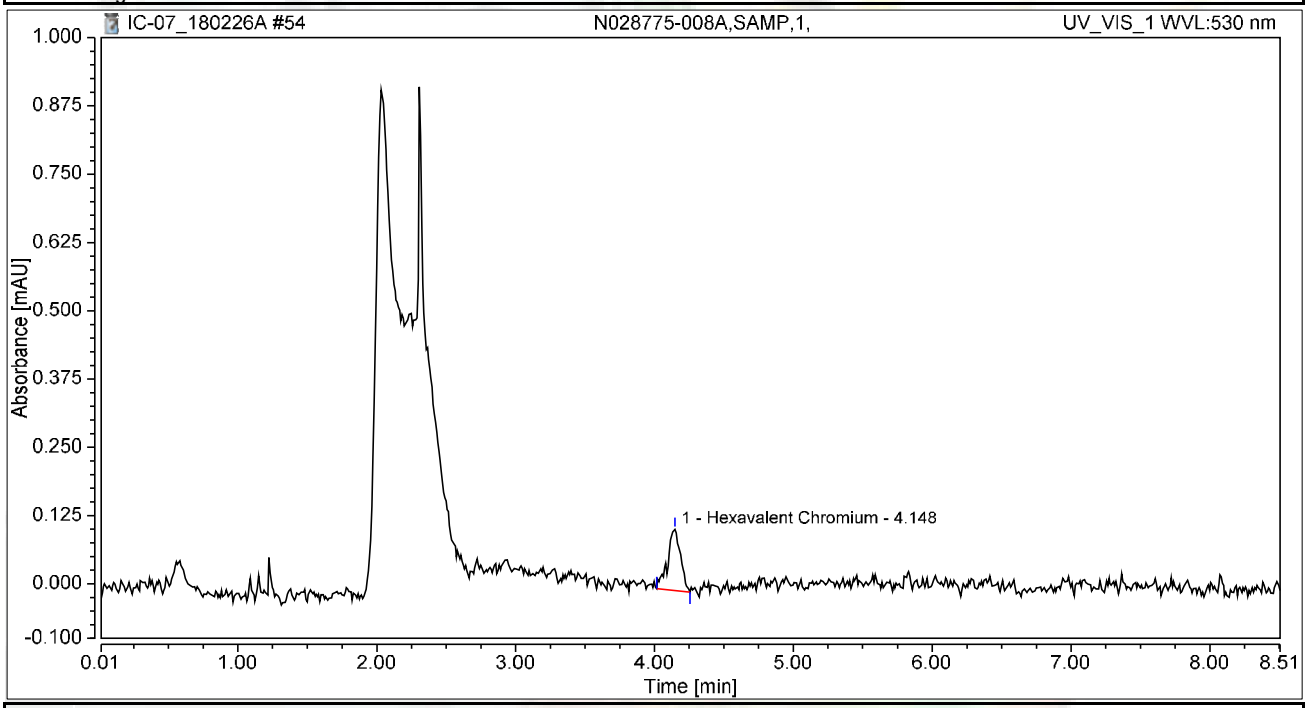
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	3.085	23.513	100.00	100.00	12.3568
Total:			**3.085**	**23.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

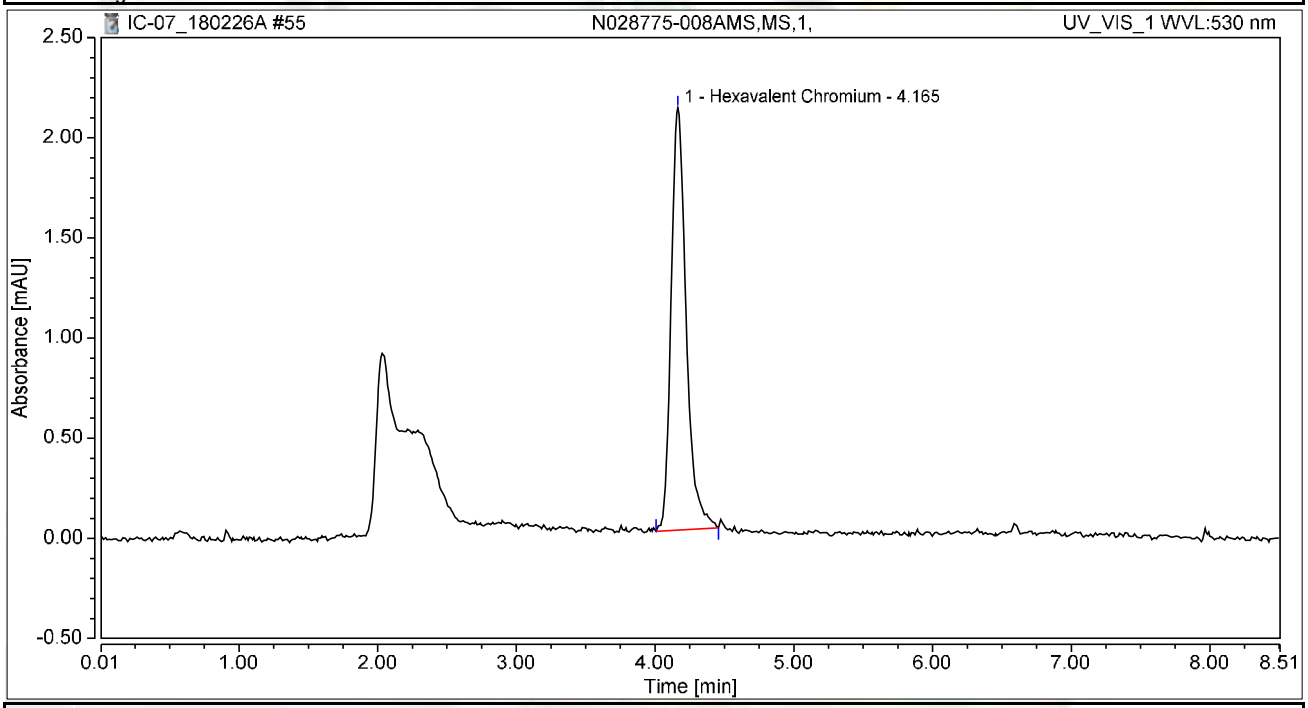
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.012	0.112	100.00	100.00	0.0489
Total:			**0.012**	**0.112**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

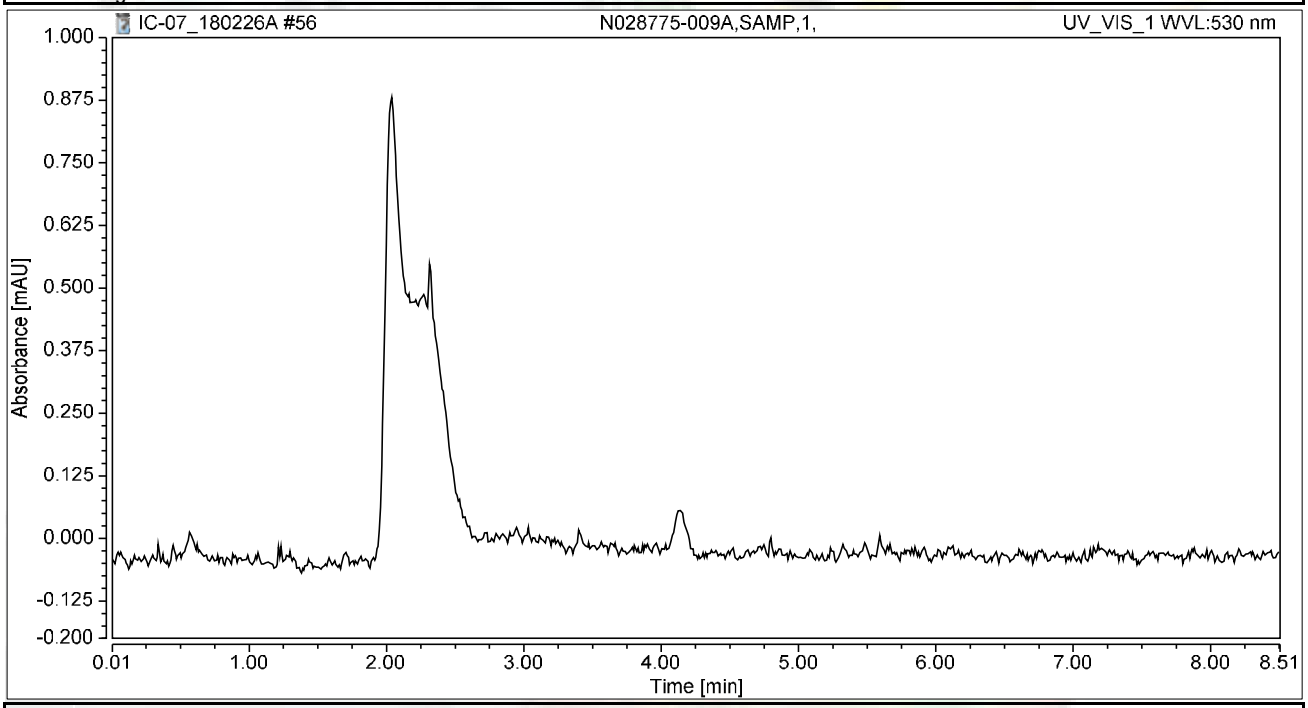
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.265	2.108	100.00	100.00	1.0604
Total:			**0.265**	**2.108**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

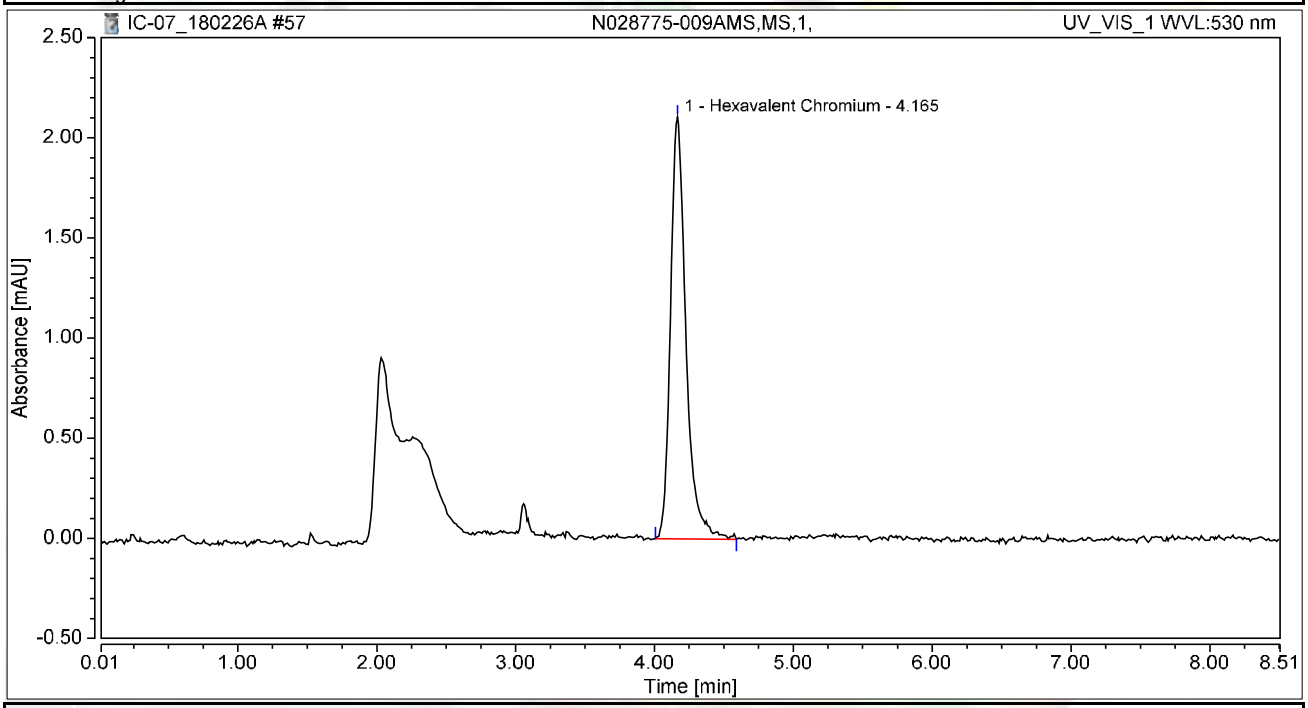
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028775-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

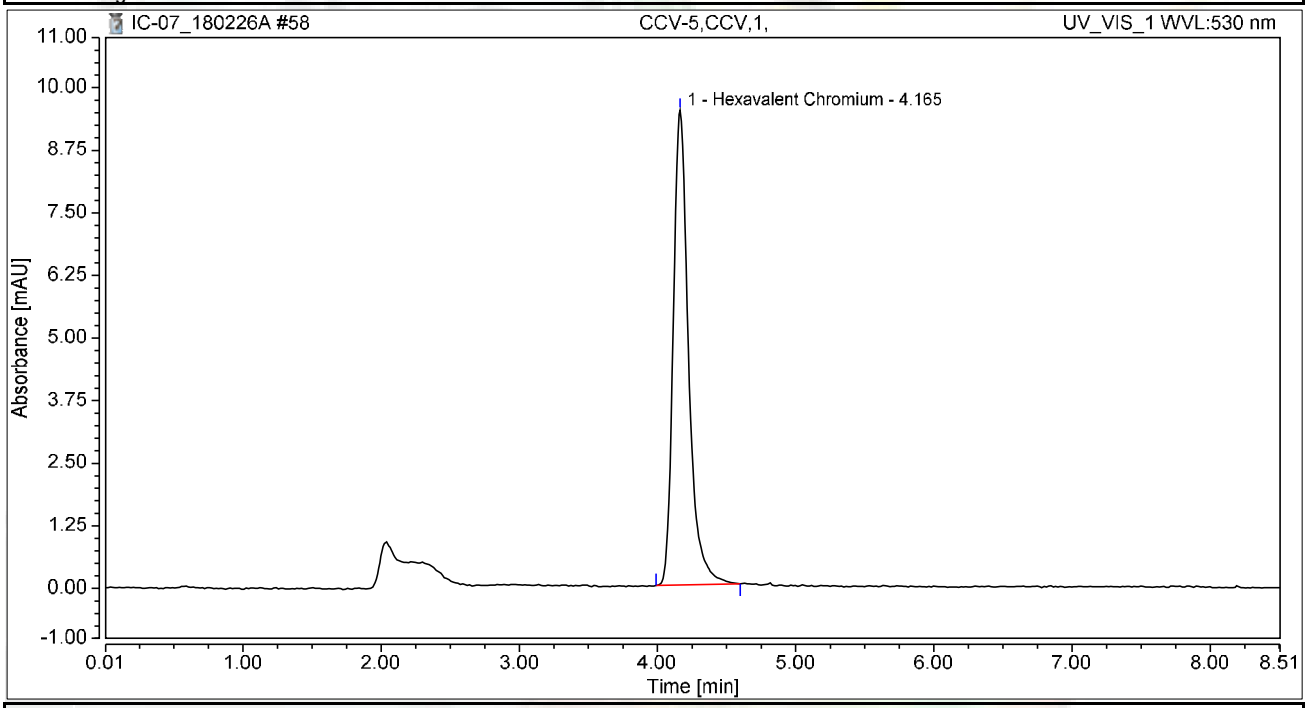
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.272	2.107	100.00	100.00	1.0885
Total:			**0.272**	**2.107**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

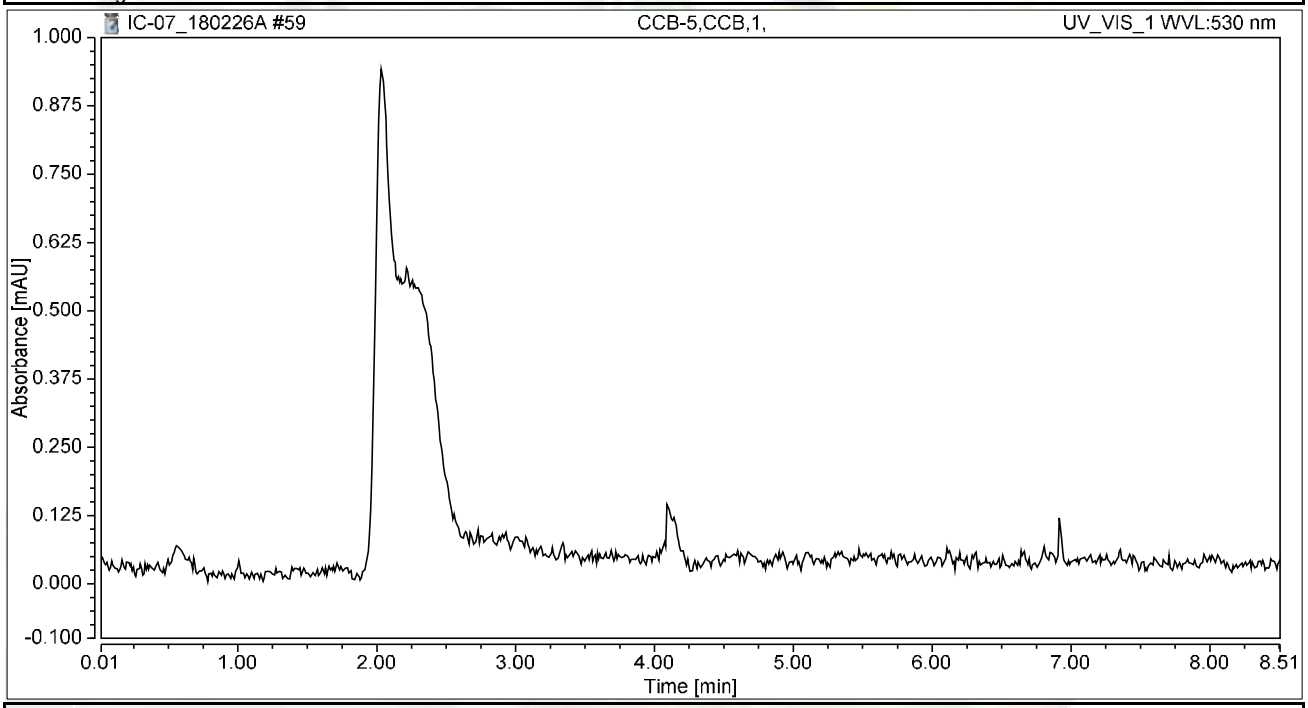
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.216	9.476	100.00	100.00	4.8700
Total:			**1.216**	**9.476**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180206_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Feb/18 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122315 **Analyst:** LSR

ASSET #: N028775 **Date Analyzed:** 2/27/2018

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 3/2/2018

2nd Level Reviewer: RB 03/08/2018 Date:

SAMPLE CALCULATION

Sample ID: **N028775-001D @ pH 7.67**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.80 mL)

= **0.02119 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (6.0) (0.02119 N) (1) * 1000

= 127.1400 mg**/L**

Reporting results in two significant figures,

= **130 mg/L** as CaCO3

Silvia Ramit 3/2/2018

RLB 03/08/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02119 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.0 mL) (0.02119) (1) * 1000

= 127.1400 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	OH Alkalinity as $CaCO_3$	CO_3 Alkalinity as $CaCO_3$	HCO_3 Alkalinity as $CaCO_3$
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 127.1400 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **130 mg/L**

Sirisha Ramit 3/2/2018

RLB 03/08/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.14	50	0.00	0.050	MBLK
LCS-1	8.71	50	0.10	4.70	LCS
N028775-001D	7.67	50	0.00	6.00	SAMP
N028775-002D	7.80	50	0.00	5.70	SAMP
N028775-003D	7.69	50	0.00	4.35	SAMP
N028775-006C	7.88	50	0.00	7.70	SAMP
N028775-007C	7.56	50	0.00	7.80	SAMP
N028775-001DDUP	7.75	50	0.00	5.90	DUP
N028775-003DMS	8.18	50	0.00	8.90	MS
N028775-003DMSD	8.18	50	0.00	8.85	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.800**	ml
N H2SO4	**0.02119**	Normal
Date Analyzed:	**2/27/18**	
Time:	**9:00 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R180108A**	

Julia Ramit 3/2/2018

RLB 03/08/2018

Date Analyzed:	2/27/18		Reagents:					Standardization:					P = 0
Time Started:	9:00 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.8	mL		P = 1/2 T
				Sulfuric Acid:		R180108A							P > 1/2 T
									N H2SO4	0.02119	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.14				0.02119	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.71				0.02119	0.10	4.60	4.70	1	2.12	99.58	
N028775-001D	50	7.67				0.02119	0.00	6.00	6.00	1	0.00	127.12	
N028775-002D	50	7.8				0.02119	0.00	5.70	5.70	1	0.00	120.76	
N028775-003D	50	7.69				0.02119	0.00	4.35	4.35	1	0.00	92.16	
N028775-006C	50	7.88				0.02119	0.00	7.70	7.70	1	0.00	163.14	
N028775-007C	50	7.56				0.02119	0.00	7.80	7.80	1	0.00	165.25	
N028775-001DDU	50	7.75				0.02119	0.00	5.90	5.90	1	0.00	125.00	
N028775-003DMS	50	8.18				0.02119	0.00	8.90	8.90	1	0.00	188.56	
N028775-003DMS	50	8.18				0.02119	0.00	8.85	8.85	1	0.00	187.50	

Sirisha Ramit 3/2/2018

RLB 03/08/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	2/27/18
Time:	9:00 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	4.24	95.34	99.58	99.58		P < 1/2 T
N028775-001D	0.00	0.00	127.12	127.12	127.12		P = 0
N028775-002D	0.00	0.00	120.76	120.76	120.76		P = 0
N028775-003D	0.00	0.00	92.16	92.16	92.16		P = 0
N028775-006C	0.00	0.00	163.14	163.14	163.14		P = 0
N028775-007C	0.00	0.00	165.25	165.25	165.25		P = 0
N028775-001DDUP	0.00	0.00	125.00	125.00	125.00		P = 0
N028775-003DMS	0.00	0.00	188.56	188.56	188.56		P = 0
N028775-003DMSD	0.00	0.00	187.50	187.50	187.50		P = 0

Julia Ramit 3/2/2018

RB 03/08/2018

Alkalinity Preparation and Titration

Matrix: H2O

Date Extracted: 2/27/18
Time Extracted: 1552
Extracted By: LR

Date Analyzed: 2/27/18
Time Analyzed: 900
Analyzed By: LR

Reagent Lot # / Reagent ID
Sodium Carbonate: CNW-161205A
Hydrochloric Acid: —
Sulfuric Acid: R181018A
Sodium Bicarbonate: CNW-150601A

pH meter calibration:
pH 7 - 7.01 — CNW 171215D
4 - 3.97 — R171208A
10 - 9.95 — 170822B
SLOPE: 96.6%

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARD/LCS ID											
	#1	50mL	10.74	IWST180222A	5mL	0.05N	—	—	4.80	50/50	$N_{H_2SO_4} = \frac{(2.65\ g/L)(5\ mL)}{(53)(V\ titrant)}$	= 0.02118644
	#2	↓	10.71	↓	↓	↓	↓	↓	4.80	↓		
1)	MBLK	50mL	5.14	—	—	—	0.02119	0	0.05	50/50		
2)	LCS		8.71	IWST180223B	1 mL	0.05N		0.10	4.60			
3)	NO28775-1D		7.67					0	6.0			
4)	2D		7.80					0	5.70			
5)	3D		7.69					0	4.35			
6)	6C		7.88					0	7.70			
7)	7C		7.56					0	7.80			
8)	1D DUP		7.75					0	5.90			
9)	3DMS		8.18	IWST180223B	1 mL	0.05N		0	8.90			
10)	3DMSD		8.18	↓	↓	↓		0	8.85			
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{Vsx}$								
17)												
18)												
19)				$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{Vsx}$								
20)												
	MS											
	MSD											
	LCS											

Julia Ramit 3/2/2018

RB 03/08/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R122307
ASSET #: N028775

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 2/26/2018

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Samples for Bromide were diluted due to formation of precipitate with the eluent.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 3/4/2018

2nd Level Reviewer: RB 03/08/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N028775-001D** concentration in mg/L is calculated as follows:

Chloride, mg/L = 3.8517 * 200

= 770.34

Reporting result in two significant values,

Chloride, mg/L = 770

rba 3/7/2018

RLB 03/08/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	ICB,ICB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028482-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028482-002C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028482-010C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028482-011C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028482-014C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028482-001CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028482-001CMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028482-014CDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028482-017C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028482-003C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028482-004C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028482-005C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028482-006C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028482-007C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028482-008C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028482-009C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028482-017CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028482-012C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	N028482-013C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	N028483-003D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	N028483-004D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
39	N028483-005D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
40	N028482-010C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
41	N028482-011C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	ICV,ICV,1	2/8/2018 10:31:41 AM	ICV
10	ICV,ICV,1	2/8/2018 11:00:04 AM	ICV
11	ICB,ICB,1	2/8/2018 11:15:22 AM	ICB
12	MB-H2O,MBLK,1	2/8/2018 11:30:40 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/8/2018 11:45:58 AM	LCS
14	N028482-001C,SAMP,1	2/8/2018 12:01:16 PM	SAMP,10mL
15	N028482-002C,SAMP,1	2/8/2018 12:16:34 PM	SAMP,10mL
16	N028482-010C,SAMP,1	2/8/2018 12:31:51 PM	SAMP,10mL
17	N028482-011C,SAMP,1	2/8/2018 12:47:09 PM	SAMP,10mL
18	N028482-014C,SAMP,1	2/8/2018 1:02:27 PM	SAMP,10mL
19	N028482-001CMS,MS,1	2/8/2018 1:17:45 PM	MS,10mL
20	N028482-001CMSD,MSD,1	2/8/2018 1:33:03 PM	MSD,10mL
21	N028482-014CDUP,DUP,1	2/8/2018 1:48:21 PM	DUP,10mL
22	CCV-1,CCV,1	2/8/2018 2:03:39 PM	CCV
23	CCB-1,CCB,1	2/8/2018 2:18:57 PM	CCB
24	N028482-017C,SAMP,1	2/8/2018 2:36:38 PM	SAMP,10mL
25	N028482-003C,SAMP,1	2/8/2018 2:51:56 PM	SAMP,10mL
26	N028482-004C,SAMP,5	2/8/2018 3:07:14 PM	SAMP,2>10mL
27	N028482-005C,SAMP,10	2/8/2018 3:22:32 PM	SAMP,1>10mL
28	N028482-006C,SAMP,10	2/8/2018 3:37:50 PM	SAMP,1>10mL
29	N028482-007C,SAMP,5	2/8/2018 3:53:08 PM	SAMP,2>10mL
30	N028482-008C,SAMP,5	2/8/2018 4:08:26 PM	SAMP,2>10mL
31	N028482-009C,SAMP,5	2/8/2018 4:23:43 PM	SAMP,2>10mL
32	N028482-017CMS,MS,1	2/8/2018 4:39:01 PM	MS,10mL
33	N028482-012C,SAMP,5	2/8/2018 4:54:19 PM	SAMP,2>10mL
34	CCV-2,CCV,1	2/8/2018 5:09:37 PM	CCV
35	CCB-2,CCB,1	2/8/2018 5:24:55 PM	CCB
36	N028482-013C,SAMP,1	2/8/2018 5:40:13 PM	SAMP,10mL
37	N028483-003D,SAMP,1	2/8/2018 5:55:31 PM	SAMP,10mL
38	N028483-004D,SAMP,1	2/8/2018 6:10:49 PM	SAMP,10mL
39	N028483-005D,SAMP,1	2/8/2018 6:26:08 PM	SAMP,10mL
40	N028482-010C,SAMP,2	2/8/2018 6:41:26 PM	SAMP,5>10mL
41	N028482-011C,SAMP,2	2/8/2018 6:56:44 PM	SAMP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N028482-004C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
43	N028469-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
44	N028469-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
45	N028469-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
46	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
47	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
48	N028469-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
49	N028469-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
50	N028469-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
51	N028482-010C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
52	N028482-011C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
53	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
54	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N028482-004C,SAMP,1	2/8/2018 7:12:02 PM	SAMP,10mL
43	N028469-001B,SAMP,50	2/8/2018 7:27:20 PM	SAMP,0.2>10mL
44	N028469-001BMS,MS,50	2/8/2018 7:42:39 PM	MS,0.2>10mL
45	N028469-001BMSD,MSD,50	2/8/2018 7:57:57 PM	MSD,0.2>10mL
46	CCV-3,CCV,1	2/8/2018 8:13:15 PM	CCV
47	CCB-3,CCB,1	2/8/2018 8:28:32 PM	CCB
48	N028469-001BDUP,DUP,50	2/8/2018 8:43:50 PM	DUP,0.2>10mL
49	N028469-002B,SAMP,500	2/8/2018 8:59:08 PM	SAMP,0.02>10mL
50	N028469-002B,SAMP,50	2/8/2018 9:14:26 PM	SAMP,0.2>10mL
51	N028482-010C,SAMP,10	2/8/2018 9:29:44 PM	SAMP,1>10mL
52	N028482-011C,SAMP,10	2/8/2018 9:45:02 PM	SAMP,1>10mL
53	CCV-4,CCV,1	2/8/2018 10:00:20 PM	CCV
54	CCB-4,CCB,1	2/8/2018 10:15:38 PM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 45
Created: 2/26/2018 8:46:54 AM by IC-05
Last Update: 2/26/2018 6:37:35 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028775-001D,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028775-002D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028775-003D,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028775-006C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028775-007C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028775-001DMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	N028775-001DMSD,MSD,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028775-002DDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028775-001D,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028775-001D,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028775-002D,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028775-002D,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028775-003D,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028775-003D,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028775-006C,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028775-006CMS,MS,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	N028775-006CMSD,MSD,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	N028775-006CDUP,DUP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	N028775-007C,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
39	N028775-006C,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
40	N028775-006CMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
41	N028775-006CMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 45
Created: 2/26/2018 8:46:54 AM by IC-05
Last Update: 2/26/2018 6:37:35 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	BLANK,BLANK,1	2/26/2018 8:47:18 AM	BLANK
10	BLANK,BLANK,1	2/26/2018 9:02:36 AM	BLANK
11	CCV-1,CCV,1	2/26/2018 9:23:31 AM	CCV
12	CCB-1,CCB,1	2/26/2018 9:38:48 AM	CCB
13	MB-H2O,MBLK,1	2/26/2018 9:54:06 AM	METHOD BLANK
14	LCS-H2O,LCS,1	2/26/2018 10:09:24 AM	LCS
15	LCS-H2O,LCS,1	2/26/2018 10:29:32 AM	LCS
16	N028775-001D,SAMP,2	2/26/2018 10:53:28 AM	SAMP,5>10mL
17	N028775-002D,SAMP,1	2/26/2018 11:08:46 AM	SAMP,10mL
18	N028775-003D,SAMP,2	2/26/2018 11:24:05 AM	SAMP,5>10mL
19	N028775-006C,SAMP,5	2/26/2018 11:42:07 AM	SAMP,2>10mL
20	N028775-007C,SAMP,5	2/26/2018 11:57:25 AM	SAMP,2>10mL
21	N028775-001DMS,MS,2	2/26/2018 12:12:43 PM	MS,5>10mL
22	N028775-001DMSD,MSD,2	2/26/2018 12:28:01 PM	MSD,5>10mL
23	CCV-2,CCV,1	2/26/2018 12:43:19 PM	CCV
24	CCB-2,CCB,1	2/26/2018 12:58:37 PM	CCB
25	N028775-002DDUP,DUP,1	2/26/2018 1:13:55 PM	DUP,10mL
26	N028775-001D,SAMP,200	2/26/2018 1:50:10 PM	SAMP,0.05>10mL
27	N028775-001D,SAMP,20	2/26/2018 2:05:29 PM	SAMP,0.5>10mL
28	N028775-002D,SAMP,200	2/26/2018 2:20:47 PM	SAMP,0.05>10mL
29	N028775-002D,SAMP,50	2/26/2018 2:36:05 PM	SAMP,0.2>10mL
30	N028775-003D,SAMP,200	2/26/2018 2:51:23 PM	SAMP,0.05>10mL
31	N028775-003D,SAMP,20	2/26/2018 3:10:38 PM	SAMP,0.5>10mL
32	N028775-006C,SAMP,500	2/26/2018 3:25:56 PM	SAMP,0.02>10mL
33	N028775-006CMS,MS,500	2/26/2018 3:41:14 PM	MS,0.02>10mL
34	N028775-006CMSD,MSD,500	2/26/2018 3:56:32 PM	MSD,0.02>10mL
35	CCV-3,CCV,1	2/26/2018 4:11:50 PM	CCV
36	CCB-3,CCB,1	2/26/2018 4:27:08 PM	CCB
37	N028775-006CDUP,DUP,500	2/26/2018 4:42:26 PM	DUP,0.02>10mL
38	N028775-007C,SAMP,500	2/26/2018 4:57:43 PM	SAMP,0.02>10mL
39	N028775-006C,SAMP,50	2/26/2018 5:13:01 PM	SAMP,0.2>10mL
40	N028775-006CMS,MS,50	2/26/2018 5:28:19 PM	MS,0.2>10mL
41	N028775-006CMSD,MSD,50	2/26/2018 5:43:37 PM	MSD,0.2>10mL

rba 3/4/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 45
Created: 2/26/2018 8:46:54 AM by IC-05
Last Update: 2/26/2018 6:37:35 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N028775-006CDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
43	N028775-007C,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
44	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
45	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 3/4/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 45
Created: 2/26/2018 8:46:54 AM by IC-05
Last Update: 2/26/2018 6:37:35 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N028775-006CDUP,DUP,50	2/26/2018 5:58:55 PM	DUP,0.2>10mL
43	N028775-007C,SAMP,50	2/26/2018 6:14:13 PM	SAMP,0.2>10mL
44	CCV-4,CCV,1	2/26/2018 6:37:38 PM	CCV
45	CCB-4,CCB,1	2/26/2018 6:52:56 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0042	0.0158	0.0293	0.0759	0.1534	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 03/08/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0718	0.1461	0.2992	0.7607	1.5900	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RLB 03/08/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0484	0.2152	0.4528	1.1684	2.4370	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



03/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **122307**
Client ID:	**ICV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date:	**2/8/2018**	SeqNo: **2941305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.236	0.50	1.250	0	98.9	90	110				

Sample ID	**CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **122307**
Client ID:	**CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date:	**2/26/2018**	SeqNo: **2941307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.249	0.50	1.250	0	99.9	90	110				

Sample ID	**CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **122307**
Client ID:	**CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date:	**2/26/2018**	SeqNo: **2941318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.259	0.50	1.250	0	101	90	110				

Sample ID	**CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **122307**
Client ID:	**CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date:	**2/26/2018**	SeqNo: **2941321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.245	0.50	1.250	0	99.6	90	110				

Sample ID	**CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **122307**
Client ID:	**CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date:	**2/26/2018**	SeqNo: **2941323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.259	0.50	1.250	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **ICV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2941285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.978	0.50	2.000	0	98.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.943	0.50	2.000	0	97.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.950	0.50	2.000	0	97.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.951	0.50	2.000	0	97.6	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.943	0.50	2.000	0	97.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **ICV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2941325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.841	0.50	4.000	0	96.0	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.782	0.50	4.000	0	94.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.888	0.50	4.000	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.918	0.50	4.000	0	97.9	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCV**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.911	0.50	4.000	0	97.8	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122307**
Client ID:	**ICB**	Batch ID:	**R122307**	TestNo:	**EPA 300.0**			Analysis Date:	**2/8/2018**	SeqNo:	**2941306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122307**
Client ID:	**CCB**	Batch ID:	**R122307**	TestNo:	**EPA 300.0**			Analysis Date:	**2/26/2018**	SeqNo:	**2941308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122307**
Client ID:	**CCB**	Batch ID:	**R122307**	TestNo:	**EPA 300.0**			Analysis Date:	**2/26/2018**	SeqNo:	**2941319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122307**
Client ID:	**CCB**	Batch ID:	**R122307**	TestNo:	**EPA 300.0**			Analysis Date:	**2/26/2018**	SeqNo:	**2941322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID	**CCB-4**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**122307**
Client ID:	**CCB**	Batch ID:	**R122307**	TestNo:	**EPA 300.0**			Analysis Date:	**2/26/2018**	SeqNo:	**2941324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **ICB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2941286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **ICB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2941326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122307**
Client ID: **CCB**	Batch ID: **R122307**	TestNo: **EPA 300.0**		Analysis Date: **2/26/2018**	SeqNo: **2941344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name		Retention Time	Evaluation
ICV	Bromide	5.740	
CCV-1	Bromide	5.694	
CCV-2	Bromide	5.667	
CCV-3	Bromide	5.677	
CCV-4	Bromide	5.667	
	Average	5.676	
	Applied RT Window	5.476 - 5.876	
MB-R122307_BR	Bromide	N.A.	N.A.
LCS-R122307_BR	Bromide	5.690	PASS
N028775-001D	Bromide	5.687	PASS
N028775-002D	Bromide	5.690	PASS
N028775-003D	Bromide	5.690	PASS
N028775-006C	Bromide	5.663	PASS
N028775-007C	Bromide	5.667	PASS
N028775-001DMS	Bromide	5.680	PASS
N028775-001DMSD	Bromide	5.670	PASS
N028775-002DDUP	Bromide	5.667	PASS

rba 3/7/2018

RB 03/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name		Retention Time	Evaluation
ICV	Chloride	4.207	
CCV-1	Chloride	4.190	
CCV-2	Chloride	4.173	
CCV-3	Chloride	4.177	
CCV-4	Chloride	4.170	

Average 4.178

Applied RT Window 3.978 - 4.378

MB-R122307_CL	Chloride	N.A.	N.A.
LCS-R122307_CL	Chloride	4.190	PASS
N028775-001D	Chloride	4.173	PASS
N028775-002D	Chloride	4.173	PASS
N028775-003D	Chloride	4.170	PASS
N028775-006C	Chloride	4.177	PASS
N028775-006CMS	Chloride	4.180	PASS
N028775-006CMSD	Chloride	4.180	PASS
N028775-006CDUP	Chloride	4.177	PASS
N028775-007C	Chloride	4.177	PASS

rba 3/7/2018

RLB 03/08/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 2/26/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	9.754	
CCV-1	Sulfate	9.564	
CCV-2	Sulfate	9.513	
CCV-3	Sulfate	9.534	
CCV-4	Sulfate	9.530	
	Average	9.535	
	Applied RT Window	9.335 - 9.735	
MB-R122307_SO4	Sulfate	N.A.	N.A.
LCS-R122307_SO4	Sulfate	9.550	PASS
N028775-001D	Sulfate	9.520	PASS
N028775-002D	Sulfate	9.510	PASS
N028775-003D	Sulfate	9.524	PASS
N028775-006C	Sulfate	9.534	PASS
N028775-006CMS	Sulfate	9.537	PASS
N028775-006CMSD	Sulfate	9.537	PASS
N028775-006CDUP	Sulfate	9.534	PASS
N028775-007C	Sulfate	9.533	PASS

rba 3/7/2018

RLB 03/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122394 **Analyst:** QBM

ASSET #: N028727, N028775 **Date Analyzed:** 3/1/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X	~~X~~				
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.		X			X	
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
Sample Information						
8. All samples are within linear range.	X			X		
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-2 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/8/2018

2nd Level Reviewer RB 03/08/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122395 **Analyst:** QBM

ASSET #: N028727, N028775 **Date Analyzed:** 3/1/2018

Method: **4500_NO3**

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X	~~X~~				
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/8/2018

2nd Level Reviewer RJB 03/08/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028775-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	1.1979	*	10
	=	11.979	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 12 mg/L

RJB 03/08/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

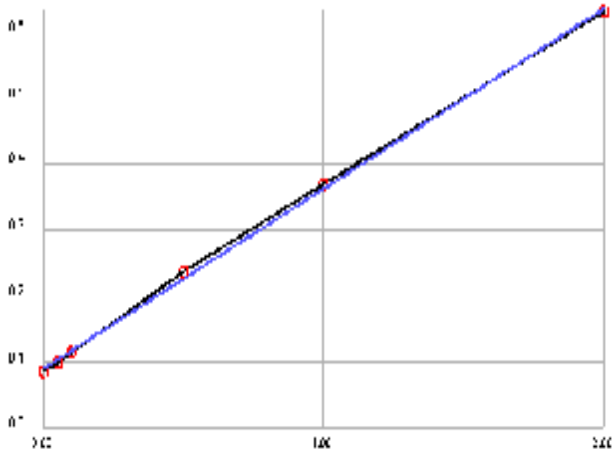
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2728x + 0.0894
Correlation	.999496

Calibrant	Energy	Set	Conc
1	0.0847	0.0000	-0.0171
2	0.0984	0.0500	0.0332
3	0.1146	0.1000	0.0925
4	0.2369	0.5000	0.5408
5	0.3676	1.0000	1.0199
6	0.6297	2.0000	1.9806

Notes:

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

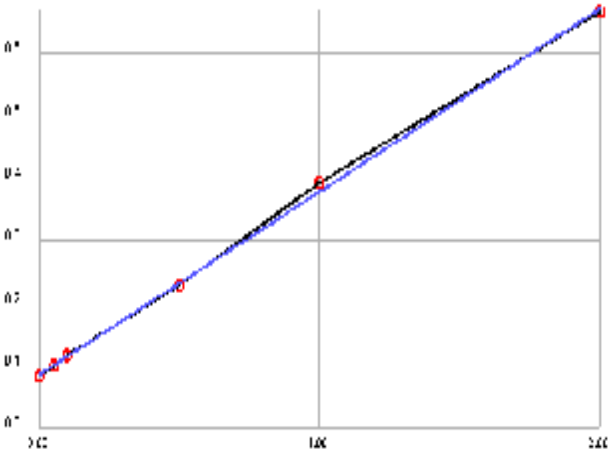
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2931x + 0.0855
Correlation	.999558

Calibrant	Energy	Set	Conc
1	0.0815	0.0000	-0.0135
2	0.0985	0.0500	0.0445
3	0.1155	0.1000	0.1025
4	0.2297	0.5000	0.4922
5	0.3916	1.0000	1.0447
6	0.6656	2.0000	1.9796

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ICV**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **CCV**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.475	0.050	0.5000	0	95.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ICV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.495	0.050	0.5000	0	99.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.455	0.050	0.5000	0	91.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCV**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.469	0.050	0.5000	0	93.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **ICB**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122394**
Client ID: **CCB**	Batch ID: **R122394**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **ICB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.024	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122395**
Client ID: **CCB**	Batch ID: **R122395**	TestNo: **SM4500-NO3**		Analysis Date: **3/1/2018**	SeqNo: **2945488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-01-2018 14:05
Time end: 03-01-2018 16:53

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	16:14:06	-0.0156		0.0851
2	<BLANK> NOT REPORTED	16:15:05	-0.0167		0.0848
3	<CAL1>	16:16:00	-0.0171	[0]	0.0847
4	<CAL2>	16:16:56	0.0332	[0.05]	0.0984
5	<CAL3>	16:17:57	0.0925	[0.1]	0.1146
6	<CAL4>	16:18:51	0.5408	[0.5]	0.2369
7	<CAL5>	16:19:53	1.0199	[1]	0.3676
8	<CAL6>	16:20:48	1.9806	[2]	0.6297
9	,BLANK,BLANK,1, NOT REPORTED	16:21:42	0.0453		0.1017
10	,ICV,ICV,1,	16:22:44	0.4994		0.2256
11	,ICB,ICB,1,	16:23:40	-0.0090		0.0869
12	,MB-H2O,MBLK,1,	16:24:35	-0.0273		0.0819
13	,LCS-H2O,LCS,1,	16:25:35	0.4884		0.2226
14	,N028727-002E,SAMP,1,	16:26:31	0.4862		0.2220
15	,N028727-003E,SAMP,1,	16:27:26	0.5027		0.2265
16	,N028727-004E,SAMP,1,	16:28:27	0.4675		0.2169
17	,N028727-004EDUP,DUP,1,	16:29:22	0.5056		0.2273
18	,N028775-003C,SAMP,10,	16:30:18	0.5309		0.2342
19	,N028775-003CMS,MS,10,	16:31:14	0.9986		0.3618
20	,N028775-003CMSD,MSD,10,	16:32:14	1.0195		0.3675
21	,BLANK, NOT REPORTED	16:33:09	0.0134		0.0930
22	,CCV-1,CCV,1, ~~NOT REPORTED~~	16:34:05	0.4752		0.2190
23	,CCB-1,CCB,1, ~~NOT REPORTED~~	16:35:05	-0.0119		0.0861
24	,N028727-005E,SAMP,1, NOT REPORTED	16:36:00	0.4331		0.2075
25	,N028727-006E,SAMP,1, NOT REPORTED	16:37:02	0.4767		0.2194
26	,N028727-007E,SAMP,1, NOT REPORTED	16:37:44	0.5089		0.2282

RJB 03/08/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028727-008E,SAMP,1, NOT REPORTED	16:38:34	0.4404		0.2095
28	,N028727-009E,SAMP,1, NOT REPORTED	16:39:17	0.4389		0.2091
29	,N028727-010E,SAMP,1, NOT REPORTED	16:40:05	0.4202		0.2040
30	,N028727-011E,SAMP,1, NOT REPORTED	16:40:49	0.4323		0.2073
31	,N028727-012E,SAMP,1, NOT REPORTED	16:41:31	0.4653		0.2163
32	,N028727-013E,SAMP,1, NOT REPORTED	16:42:20	0.4250		0.2053
33	,BLANK, NOT REPORTED	16:43:02	-0.0284		0.0816
34	,CCV-2,CCV,1, NOT REPORTED	16:43:46	0.4400		0.2094
35	,CCB-2,CCB,1, NOT REPORTED	16:44:35	-0.0383		0.0789
36	,N028847-003A,SAMP,1, NOT REPORTED	16:45:17	0.6721		0.2727
37	,N028775-001C,SAMP,10, NOT REPORTED	16:46:00	1.1676		0.4079
38	,N028775-002C,SAMP,10, NOT REPORTED	16:46:48	1.1258		0.3965
39	,N028775-004C,SAMP,5, NOT REPORTED	16:47:32	0.6867		0.2767
40	,N028775-005C,SAMP,5, NOT REPORTED	16:48:14	0.6724		0.2728
41	,BLANK, NOT REPORTED	16:49:03	-0.0332		0.0803
42	,CCV-3,CCV,1, NOT REPORTED	16:49:47	0.4540		0.2132
43	,CCV-3,CCV,1, NOT REPORTED	16:50:29	0.5056		0.2273
44	,CCB-3,CCB,1, NOT REPORTED	16:51:18	-0.0383		0.0789



Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/1/2018
Time Analyzed: 2:02 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028727-002E		7.91							
N028727-003E		6.73							
N028727-004E		7.88							
N028727-005E		7.94							
N028727-006E		8.31							
N028727-007E		7.87							
N028727-008E		7.57							
N028727-009E		7.03							
N028727-010E		7.92							
N028727-011E		8.44							
N028727-012E		7.31							
N028727-013E		8.09							
N028775-001C		8.26							
N028772-002C		8.07							
N028775-003C		7.72							
N028775-004C		7.51							
N028775-005C		8.05							
N028847-003A		8.69							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 03/08/2018

Advanced Technology Laboratories, Inc.

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702-307-2691
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Time start: 03-01-2018 17:30
Time end: 03-01-2018 20:08

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	19:31:53	0.1029		0.1156
2	<BLANK> NOT REPORTED	19:32:47	0.0169		0.0904
3	<CAL1>	19:33:48	-0.0135	[0]	0.0815
4	<CAL2>	19:34:43	0.0445	[0.05]	0.0985
5	<CAL3>	19:35:39	0.1025	[0.1]	0.1155
6	<CAL4>	19:36:39	0.4922	[0.5]	0.2297
7	<CAL5>	19:37:34	1.0447	[1]	0.3916
8	<CAL6>	19:38:30	1.9796	[2]	0.6656
9	,BLANK,BLANK,1, NOT REPORTED	19:39:32	0.0496		0.1000
10	,ICV,ICV,1,	19:40:26	0.5110		0.2352
11	,ICB,ICB,1,	19:41:21	0.0148		0.0898
12	,MB-H2O,MBLK,1,	19:42:23	0.0141		0.0896
13	,LCS-H2O,LCS,1,	19:43:17	0.4751		0.2247
14	,N028727-005E,SAMP,1,	19:44:12	0.5065		0.2339
15	,N028727-006E,SAMP,1,	19:45:14	0.4857		0.2278
16	,N028727-007E,SAMP,1,	19:46:10	0.4871		0.2282
17	,N028727-007EDUP,DUP,1,	19:47:04	0.4584		0.2198
18	,N028775-004C,SAMP,5,	19:48:05	0.7375		0.3016
19	,N028775-004CMS,MS,5,	19:49:01	1.4504		0.5105
20	,N028775-004CMSD,MSD,5,	19:49:55	1.3681		0.4864
21	,BLANK, NOT REPORTED	19:50:57	0.0404		0.0973
22	,CCV-1,CCV,1,	19:51:52	0.4953		0.2306
23	,CCB-1,CCB,1,	19:52:40	0.0244		0.0926
24	,N028727-008E,SAMP,1,	19:53:24	0.4625		0.2210
25	,N028727-009E,SAMP,1,	19:54:07	0.5321		0.2414
26	,N028727-010E,SAMP,1,	19:54:55	0.5123		0.2356

RB 03/08/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028727-011E,SAMP,1,	19:55:38	0.4768		0.2252
28	,N028727-012E,SAMP,1,	19:56:26	0.4850		0.2276
29	,N028727-013E,SAMP,1,	19:57:10	0.4803		0.2262
30	,N028847-003A,SAMP,1,	19:57:52	0.7601		0.3082
31	,N028775-001C,SAMP,10,	19:58:41	1.1979		0.4365
32	,N028775-002C,SAMP,10,	19:59:25	1.1027		0.4086
33	,BLANK, NOT REPORTED	20:00:07	0.0384		0.0967
34	,CCV-2,CCV,1, NOT REPORTED	20:00:56	0.4925		0.2298
35	,CCV-2,CCV,1,	20:01:38	0.4550		0.2188
36	,CCB-2,CCB,1,	20:02:22	0.0012		0.0858
37	,N028775-005C,SAMP,5,	20:03:10	0.6642		0.2801
38	,BLANK, NOT REPORTED	20:03:53	-0.0094		0.0827
39	,CCV-3,CCV,1, NOT REPORTED	20:04:42	0.4611		0.2206
40	,CCV-3,CCV,1,	20:05:24	0.4690		0.2229
41	,CCB-3,CCB,1,	20:06:08	-0.0128		0.0817

RLB 03/08/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/1/2018
Time Analyzed: 5:27 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180216C
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028727-005E		7.94							
N028727-006E		8.31							
N028727-007E		7.87							
N028727-008E		7.57							
N028727-009E		7.03							
N028727-010E		7.92							
N028727-011E		8.44							
N028727-012E		7.31							
N028727-013E		8.09							
N028775-001C		8.26							
N028775-002C		8.07							
N028775-004C		7.51							
N028775-005C		8.05							
N028847-003A		8.69							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 03/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66954
ASSET #: N028775

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 2/28/2018

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X		X	X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in LLICV failed >15%. Se is for rerun.
%Rec of Cr in N028775-001BMS/MSD/PS failed. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/8/18

2nd Level Reviewer 3/8/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 66954
ASSET #: N028775

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 3/5/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in LLICV failed. However, %Rec of Se in LLICV passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/8/18

2nd Level Reviewer 3/8/2018 Date: -

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028775-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 152.71 * 1 * (25/25)

Chromium , ug/L = 152.71

Reporting results in two significant figures,

Chromium , ug/L = 150

% RSD SUMMARY

PERCENT RSD SUMMARY: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	31.29	15	<PQL	0.12	16.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	6.058	15	PASS	0.57	6.77	15	PASS
Std3-5/50 ppb	ICAL	1	5.28	1.12	15	PASS	5.29	1.78	15	PASS
Std4-10/100 ppb	ICAL	1	10.48	3.34	15	PASS	10.3	1.14	15	PASS
Std5-20/200 ppb	ICAL	1	21.13	0.27	15	PASS	20.82	0.17	15	PASS
Std6-40/400 ppb	ICAL	1	41.82	1.34	15	PASS	40.85	2.3	15	PASS
Std7-100/1000 ppb	ICAL	1	100.99	0.77	15	PASS	99.45	0.45	15	PASS
Std8-200/2000 ppb	ICAL	1	198.99	2.32	15	PASS	195.62	2.56	15	PASS
ICV	ICV	1	10.026	1.62	15	PASS	96	1.46	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.96	4.12	20	PASS	0.59	8.18	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.38	2.64	15	PASS	22.65	1.17	15	PASS
LLICV	CCV1	1	0.87	2.89	20	PASS	0.5	4.6	20	PASS
CCV1	CCV	1	20.85	1.68	15	PASS	20.49	1.18	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	21.0026	1.95	15	PASS	21	1.55	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-66954	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-66954	LCS	1	9.63	3.16	15	PASS	96.64	2.38	15	PASS
N028775-001B	SAMP	1	152.71	1.16	15	PASS	0.3	24.23	15	<PQL
N028775-001B	SAMP	5	33.24	2.36	15	PASS	0.074	26.71	15	<PQL
N028775-001B	SAMP	25	6.46	1.072	15	PASS	<0.000	N/A	15	<PQL
N028775-001B-PS	PS	1	156.68	1.81	15	PASS	97.95	1.64	15	PASS
N028775-001B-PS	PS	5	33.59	0.95	15	PASS	21.23	2.048	15	PASS
N028775-001B-MS	MS	1	156.21	0.55	15	PASS	98.64	1.49	15	PASS
N028775-001B-MS	MS	5	33.9	1.83	15	PASS	21.58	0.44	15	PASS
N028775-001B-MSD	MSD	1	156.9	1.27	15	PASS	99.7	1.2	15	PASS
CCV3	CCV	1	20.97	1.26	15	PASS	20.69	0.64	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028775-001B-MSD	MSD	5	33.54	3.012	15	PASS	21.33	2.87	15	PASS
N028775-002B	SAMP	1	163.79	0.094	15	PASS	14.38	0.81	15	PASS
N028775-002B	SAMP	5	34.91	0.88	15	PASS	3.063	2.76	15	PASS
N028775-003B	SAMP	1	56.47	1.57	15	PASS	<0.000	N/A	15	<PQL
N028775-003B	SAMP	5	12.12	2.39	15	PASS	<0.000	N/A	15	<PQL
N028775-004B	SAMP	1	2.43	3.44	15	PASS	36.79	0.47	15	PASS
N028775-004B	SAMP	5	0.36	15.76	15	<PQL	7.95	0.72	15	PASS
N028775-005B	SAMP	1	2.47	2.065	15	PASS	36.2	1.5	15	PASS
N028775-005B	SAMP	5	0.38	6.13	15	PASS	7.99	1.41	15	PASS
N028775-006B	SAMP	1	144.14	0.94	15	PASS	23.28	1.87	15	PASS

PERCENT RSD SUMMARY: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	21.3	0.96	15	PASS	21.049	1.81	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028775-006B	SAMP	5	30.69	2.35	15	PASS	4.54	4.94	15	PASS
N028775-007B	SAMP	1	137.4	0.4	15	PASS	19.65	0.1	15	PASS
N028775-007B	SAMP	5	29.13	0.56	15	PASS	4.41	3.51	15	PASS
N028800-001B	SAMP	1	41.96	1.22	15	PASS	4.27	3.042	15	PASS
N028800-001B	SAMP	5	8.97	1.16	15	PASS	0.93	4.78	15	PASS
N028800-002B	SAMP	1	49.16	2.012	15	PASS	17.62	2.33	15	PASS
N028800-002B	SAMP	5	10.43	1.45	15	PASS	3.69	0.69	15	PASS
N028800-003B	SAMP	1	43.12	0.82	15	PASS	10.63	1.89	15	PASS
N028800-003B	SAMP	5	9.19	3.18	15	PASS	2.3	1.17	15	PASS
CCV5	CCV	1	21.15	1.64	15	PASS	21.021	1.67	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.17	9.32	20	PASS	0.59	4.39	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.0064	1.74	15	PASS	23.13	0.94	15	PASS

PERCENT RSD SUMMARY: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.083	25.45	15	<PQL	0.083	77.86	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.5	10.069	15	PASS	0.45	30.88	15	<PQL
Std3-5/50 ppb	ICAL	1	5.19	2.42	15	PASS	5.059	7.41	15	PASS
Std4-10/100 ppb	ICAL	1	10.18	2.67	15	PASS	10.024	7.17	15	PASS
Std5-20/200 ppb	ICAL	1	19.83	0.66	15	PASS	19.5	0.54	15	PASS
Std6-40/400 ppb	ICAL	1	40.39	1.21	15	PASS	40.4	1.93	15	PASS
Std7-100/1000 ppb	ICAL	1	99.77	2.011	15	PASS	100.12	1.62	15	PASS
Std8-200/2000 ppb	ICAL	1	200.038	2.0056	15	PASS	199.9	0.97	15	PASS
ICV	ICV	1	9.51	5.011	15	PASS	9.36	9.13	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.023	173.21	15	<PQL
LLICV	CCV1	1	0.093	17.63	20	PASS	0.68	8.8	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.031	86.6	15	<PQL
ICSAB1	ICSAB	1	18.65	2.57	15	PASS	18.8	1	15	PASS
LLICV	CCV1	1	0.082	12.97	20	PASS	0.54	27.21	20	NR!
CCV1	CCV	1	20.015	1.74	15	PASS	19.49	2.79	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0071	173.21	15	<PQL
CCV2	CCV	1	19.72	2.19	15	PASS	20.38	7.29	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.048	132.14	15	<PQL
MB-66954	MBLK	1	<0.000	N/A	15	<PQL	0.0078	173.21	15	<PQL
LCS-66954	LCS	1	9.62	1.83	15	PASS	9.56	6.23	15	PASS
N028775-001B	SAMP	1	1.62	5.79	15	PASS	5.24	8.56	15	PASS
N028775-001B	SAMP	5	0.3	11.47	15	PASS	1.24	18.25	15	NR!
N028775-001B	SAMP	25	0.052	9.64	15	PASS	0.25	35.43	15	<PQL
N028775-001B-PS	PS	1	12.0024	0.76	15	PASS	14.47	5.6	15	PASS
N028775-001B-PS	PS	5	2.58	2.63	15	PASS	3.31	5.65	15	PASS
N028775-001B-MS	MS	1	12.29	0.92	15	PASS	14.8	8.96	15	PASS
N028775-001B-MS	MS	5	2.42	2.71	15	PASS	2.69	10.46	15	PASS
N028775-001B-MSD	MSD	1	12.015	0.93	15	PASS	14.99	6.98	15	PASS
CCV3	CCV	1	20.35	0.82	15	PASS	20.06	4.72	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.043	49.57	15	<PQL
N028775-001B-MSD	MSD	5	2.45	4.87	15	PASS	3.092	4.86	15	PASS
N028775-002B	SAMP	1	2.58	3.68	15	PASS	5.83	6.58	15	PASS
N028775-002B	SAMP	5	0.47	8.089	15	PASS	1.21	6.8	15	PASS
N028775-003B	SAMP	1	1.43	4.9	15	PASS	4.42	1.51	15	PASS
N028775-003B	SAMP	5	0.26	16.91	15	NR!	1.00048	13.73	15	PASS
N028775-004B	SAMP	1	6.78	1.67	15	PASS	2.15	11.17	15	PASS
N028775-004B	SAMP	5	1.3	1.15	15	PASS	0.45	22.002	15	<PQL
N028775-005B	SAMP	1	6.91	1.33	15	PASS	2.49	4.97	15	PASS
N028775-005B	SAMP	5	1.41	6.59	15	PASS	0.52	2.68	15	PASS
N028775-006B	SAMP	1	1.7	8.19	15	PASS	1.81	4.46	15	PASS

PERCENT RSD SUMMARY: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	19.75	1.59	15	PASS	20.7	3.96	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.02	100.029	15	<PQL
N028775-006B	SAMP	5	0.39	1.19	15	PASS	0.44	21.85	15	<PQL
N028775-007B	SAMP	1	1.88	5.76	15	PASS	2.12	7.57	15	PASS
N028775-007B	SAMP	5	0.33	8.92	15	PASS	0.48	7.37	15	PASS
N028800-001B	SAMP	1	1.48	1.68	15	PASS	0.12	60.37	15	<PQL
N028800-001B	SAMP	5	0.25	21.93	15	NR!	0.032	114.8	15	<PQL
N028800-002B	SAMP	1	1.15	3.018	15	PASS	0.17	19.62	15	<PQL
N028800-002B	SAMP	5	0.2	2.11	15	PASS	0	N/A	15	<PQL
N028800-003B	SAMP	1	1.24	2.87	15	PASS	0.074	17.12	15	<PQL
N028800-003B	SAMP	5	0.23	16.37	15	NR!	0	N/A	15	<PQL
CCV5	CCV	1	19.96	2.88	15	PASS	19.86	4.65	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.038	91.87	15	<PQL
LLCCV1	CCV2	1	0.077	49.48	20	<PQL	0.66	23.0054	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0079	173.21	15	<PQL
ICSAB2	ICSAB	1	19.051	2.81	15	PASS	17.89	3.6	15	PASS

PERCENT RSD SUMMARY: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	15.57	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.5	3.99	15	PASS
Std3-5/50 ppb	ICAL	1	4.93	1.55	15	PASS
Std4-10/100 ppb	ICAL	1	9.92	0.45	15	PASS
Std5-20/200 ppb	ICAL	1	19.77	0.64	15	PASS
Std6-40/400 ppb	ICAL	1	39.96	1.62	15	PASS
Std7-100/1000 ppb	ICAL	1	99.51	0.53	15	PASS
Std8-200/2000 ppb	ICAL	1	200.28	0.43	15	PASS
ICV	ICV	1	9.41	1.12	15	PASS
ICB	ICB	1	0.26	4.078	15	PASS
LLICV	CCV1	1	0.59	4.31	20	PASS
ICSA1	ICSA	1	0.078	24.24	15	<PQL
ICSAB1	ICSAB	1	19.68	0.43	15	PASS
LLICV	CCV1	1	0.58	5.9	20	PASS
CCV1	CCV	1	20.063	1.16	15	PASS
CCB1	CCB	1	0.11	10.075	15	PASS
CCV2	CCV	1	19.82	1.36	15	PASS
CCB2	CCB	1	0.1	8.2	15	PASS
MB-66954	MBLK	1	0.0018	501.93	15	<PQL
LCS-66954	LCS	1	9.27	2.18	15	PASS
N028775-001B	SAMP	1	4.17	1.11	15	PASS
N028775-001B	SAMP	5	0.82	1.12	15	PASS
N028775-001B	SAMP	25	0.14	7.41	15	PASS
N028775-001B-PS	PS	1	15.18	1.81	15	PASS
N028775-001B-PS	PS	5	3.068	1.65	15	PASS
N028775-001B-MS	MS	1	15.57	1.98	15	PASS
N028775-001B-MS	MS	5	3.21	3.63	15	PASS
N028775-001B-MSD	MSD	1	15.53	1.19	15	PASS
CCV3	CCV	1	19.96	0.019	15	PASS
CCB3	CCB	1	0.077	0.92	15	PASS
N028775-001B-MSD	MSD	5	3.2	2.32	15	PASS
N028775-002B	SAMP	1	21.74	0.42	15	PASS
N028775-002B	SAMP	5	4.4	1.82	15	PASS
N028775-003B	SAMP	1	4.69	1.63	15	PASS
N028775-003B	SAMP	5	0.93	3.4	15	PASS
N028775-004B	SAMP	1	31.95	0.84	15	PASS
N028775-004B	SAMP	5	6.41	1.85	15	PASS
N028775-005B	SAMP	1	34.076	0.99	15	PASS
N028775-005B	SAMP	5	6.93	1.4	15	PASS
N028775-006B	SAMP	1	11.68	0.89	15	PASS

PERCENT RSD SUMMARY: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.12	0.82	15	PASS
CCB4	CCB	1	0.1	3.68	15	PASS
N028775-006B	SAMP	5	2.25	3.21	15	PASS
N028775-007B	SAMP	1	11.51	2.041	15	PASS
N028775-007B	SAMP	5	2.24	6.61	15	PASS
N028800-001B	SAMP	1	5.58	1.12	15	PASS
N028800-001B	SAMP	5	1.1	4.093	15	PASS
N028800-002B	SAMP	1	7.027	1.26	15	PASS
N028800-002B	SAMP	5	1.31	4.072	15	PASS
N028800-003B	SAMP	1	5.8	1.35	15	PASS
N028800-003B	SAMP	5	1.066	1.75	15	PASS
CCV5	CCV	1	19.82	1.22	15	PASS
CCB5	CCB	1	0.086	5.23	15	PASS
LLCCV1	CCV2	1	0.47	6.54	20	PASS
ICSA2	ICSA	1	0.024	9.85	15	PASS
ICSAB2	ICSAB	1	20.1	0.7	15	PASS

PERCENT RSD SUMMARY: 180305A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.061	32.73	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.46	25.64	15	<PQL
Std3-5/50 ppb	ICAL	1	4.74	7.72	15	PASS
Std4-10/100 ppb	ICAL	1	10.17	3.41	15	PASS
Std5-20/200 ppb	ICAL	1	19.68	4.2	15	PASS
Std6-40/400 ppb	ICAL	1	39.94	2.16	15	PASS
Std7-100/1000 ppb	ICAL	1	101.08	1.65	15	PASS
Std8-200/2000 ppb	ICAL	1	199.5	0.85	15	PASS
ICV	ICV	1	9.27	9.89	15	PASS
ICB	ICB	1	0.021	170.11	15	<PQL
LLICV	CCV1	1	0.52	40.53	20	NR!
ICSA1	ICSA	1	0.022	94.78	15	<PQL
ICSAB1	ICSAB	1	17.53	2.26	15	PASS
LLICV	CCV1	1	0.59	16.93	20	PASS
CCV1	CCV	1	20.42	3.55	15	PASS
CCB1	CCB	1	0.017	77.35	15	<PQL
MB-66954	MBLK	1	<0.000	0	15	PASS
LCS-66954	LCS	1	9.99	4.0074	15	PASS
N028775-001B	SAMP	1	5.11	4.81	15	PASS
CCV2	CCV	1	19.24	2.36	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
N028775-001B	SAMP	5	1.015	18.00018	15	NR!
N028775-001B-PS	PS	1	15.21	2.71	15	PASS
N028775-001B-MS	MS	1	15.16	7.4	15	PASS
N028775-001B-MSD	MSD	1	14.46	1.011	15	PASS
N028775-002B	SAMP	1	6.33	1.62	15	PASS
N028775-003B	SAMP	1	5.23	5.93	15	PASS
N028775-004B	SAMP	1	2.31	10.68	15	PASS
N028775-005B	SAMP	1	2.48	3.33	15	PASS
N028775-006B	SAMP	1	1.85	7.47	15	PASS
N028775-007B	SAMP	1	1.45	13.27	15	PASS
CCV3	CCV	1	20.17	3.74	15	PASS
CCB3	CCB	1	0.033	144.9	15	<PQL
LLCCV1	CCV2	1	0.61	11.31	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.4	4.54	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180228A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0228001.D	RINSE	RINSE	1	02/28/18 10:39 AM
A0228002.D	Cal Blank	IBLK	1	02/28/18 10:44 AM
A0228003.D	Std1-0.1/1 ppb	ICAL	1	02/28/18 10:50 AM
A0228004.D	Std2-0.5/5 ppb	ICAL	1	02/28/18 10:55 AM
A0228005.D	Std3-5/50 ppb	ICAL	1	02/28/18 11:01 AM
A0228006.D	Std4-10/100 ppb	ICAL	1	02/28/18 11:07 AM
A0228007.D	Std5-20/200 ppb	ICAL	1	02/28/18 11:12 AM
A0228008.D	Std6-40/400 ppb	ICAL	1	02/28/18 11:18 AM
A0228009.D	Std7-100/1000 ppb	ICAL	1	02/28/18 11:24 AM
A0228010.D	Std8-200/2000 ppb	ICAL	1	02/28/18 11:29 AM
A0228011.D	ICV	ICV	1	02/28/18 11:35 AM
A0228012.D	ICB	ICB	1	02/28/18 11:41 AM
A0228013.D	LLICV	CCV1	1	02/28/18 11:46 AM
A0228014.D	ICSA1	ICSA	1	02/28/18 11:52 AM
A0228015.D	ICSAB1	ICSAB	1	02/28/18 11:58 AM
A0228016.D	LLICV	CCV1	1	02/28/18 12:04 PM
A0228017.D	N028717-001C	SAMP	25	02/28/18 12:32 PM
A0228018.D	MB-66961	MBLK	1	02/28/18 12:38 PM
A0228019.D	LCS-66961	LCS	1	02/28/18 12:44 PM
A0228020.D	N028824-006C	SAMP	1	02/28/18 12:50 PM
A0228021.D	N028824-006C	SAMP	5	02/28/18 12:56 PM
A0228022.D	N028824-006C-DUP	DUP	1	02/28/18 1:02 PM
A0228023.D	N028824-006C-PS	PS	1	02/28/18 1:07 PM
A0228024.D	N028824-006C-MS	MS	1	02/28/18 1:13 PM
A0228025.D	N028824-006C-MSD	MSD	1	02/28/18 1:18 PM
A0228026.D	N028807-003C	SAMP	1	02/28/18 1:24 PM
A0228027.D	CCV1	CCV	1	02/28/18 1:30 PM
A0228028.D	CCB1	CCB	1	02/28/18 1:35 PM
A0228029.D	N028825-001C	SAMP	1	02/28/18 1:41 PM
A0228030.D	N028825-002C	SAMP	1	02/28/18 1:47 PM
A0228031.D	N028825-003C	SAMP	1	02/28/18 1:52 PM
A0228032.D	N028825-004C	SAMP	1	02/28/18 1:58 PM
A0228033.D	N028828-002A	SAMP	1	02/28/18 2:03 PM
A0228034.D	N028825-001C	SAMP	5	02/28/18 2:09 PM
A0228035.D	N028825-002C	SAMP	5	02/28/18 2:14 PM
A0228036.D	N028825-003C	SAMP	5	02/28/18 2:20 PM
A0228037.D	N028825-004C	SAMP	5	02/28/18 2:25 PM
A0228038.D	N028828-002A	SAMP	5	02/28/18 2:31 PM
A0228039.D	CCV2	CCV	1	02/28/18 2:37 PM
A0228040.D	CCB2	CCB	1	02/28/18 2:42 PM
A0227041.D	MB-66954	MBLK	1	02/28/18 2:49 PM
A0228042.D	LCS-66954	LCS	1	02/28/18 2:54 PM

INJECTION LOG: 180228A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0228043.D	N028775-001B	SAMP	1	02/28/18 3:09 PM
A0228044.D	N028775-001B	SAMP	5	02/28/18 3:15 PM
A0228045.D	N028775-001B	SAMP	25	02/28/18 3:21 PM
A0228046.D	N028775-001B-PS	PS	1	02/28/18 3:26 PM
A0228047.D	N028775-001B-PS	PS	5	02/28/18 3:32 PM
A0228048.D	N028775-001B-MS	MS	1	02/28/18 3:38 PM
A0228049.D	N028775-001B-MS	MS	5	02/28/18 3:43 PM
A0228050.D	N028775-001B-MSD	MSD	1	02/28/18 3:49 PM
A0228051.D	CCV3	CCV	1	02/28/18 3:54 PM
A0228052.D	CCB3	CCB	1	02/28/18 4:01 PM
A0228053.D	N028775-001B-MSD	MSD	5	02/28/18 4:06 PM
A0228054.D	N028775-002B	SAMP	1	02/28/18 4:12 PM
A0228055.D	N028775-002B	SAMP	5	02/28/18 4:18 PM
A0228056.D	N028775-003B	SAMP	1	02/28/18 4:23 PM
A0228057.D	N028775-003B	SAMP	5	02/28/18 4:29 PM
A0228058.D	N028775-004B	SAMP	1	02/28/18 4:35 PM
A0228059.D	N028775-004B	SAMP	5	02/28/18 4:40 PM
A0228060.D	N028775-005B	SAMP	1	02/28/18 4:46 PM
A0228061.D	N028775-005B	SAMP	5	02/28/18 4:51 PM
A0228062.D	N028775-006B	SAMP	1	02/28/18 4:57 PM
A0228063.D	CCV4	CCV	1	02/28/18 5:03 PM
A0228064.D	CCB4	CCB	1	02/28/18 5:08 PM
A0228065.D	N028775-006B	SAMP	5	02/28/18 5:14 PM
A0228066.D	N028775-007B	SAMP	1	02/28/18 5:20 PM
A0228067.D	N028775-007B	SAMP	5	02/28/18 5:25 PM
A0228068.D	N028800-001B	SAMP	1	02/28/18 5:31 PM
A0228069.D	N028800-001B	SAMP	5	02/28/18 5:36 PM
A0228070.D	N028800-002B	SAMP	1	02/28/18 5:42 PM
A0228071.D	N028800-002B	SAMP	5	02/28/18 5:48 PM
A0228072.D	N028800-003B	SAMP	1	02/28/18 5:53 PM
A0228073.D	N028800-003B	SAMP	5	02/28/18 5:59 PM
A0228074.D	CCV5	CCV	1	02/28/18 6:05 PM
A0228075.D	CCB5	CCB	1	02/28/18 6:10 PM
A0228076.D	LLCCV1	CCV2	1	02/28/18 6:16 PM
A0228077.D	ICSA2	ICSA	1	02/28/18 6:21 PM
A0228078.D	ICSAB2	ICSAB	1	02/28/18 6:27 PM
A0228079.D	RINSE	RINSE	1	02/28/18 6:33 PM
A0228080.D	RINSE	RINSE	1	02/28/18 6:38 PM

INJECTION LOG: 180305A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0305001.D	RINSE	RINSE	1	03/05/18 12:10 PM
A0305002.D	Cal Blank	IBLK	1	03/05/18 12:16 PM
A0305003.D	Std1-0.1/1 ppb	ICAL	1	03/05/18 12:22 PM
A0305004.D	Std2-0.5/5 ppb	ICAL	1	03/05/18 12:27 PM
A0305005.D	Std3-5/50 ppb	ICAL	1	03/05/18 12:33 PM
A0305006.D	Std4-10/100 ppb	ICAL	1	03/05/18 12:38 PM
A0305007.D	Std5-20/200 ppb	ICAL	1	03/05/18 12:44 PM
A0305008.D	Std6-40/400 ppb	ICAL	1	03/05/18 12:50 PM
A0305009.D	Std7-100/1000 ppb	ICAL	1	03/05/18 12:55 PM
A0305010.D	Std8-200/2000 ppb	ICAL	1	03/05/18 1:01 PM
A0305011.D	ICV	ICV	1	03/05/18 1:07 PM
A0305012.D	ICB	ICB	1	03/05/18 1:12 PM
A0305013.D	LLICV	CCV1	1	03/05/18 1:18 PM
A0305014.D	ICSA1	ICSA	1	03/05/18 1:23 PM
A0305015.D	ICSAB1	ICSAB	1	03/05/18 1:29 PM
A0305016.D	LLICV	CCV1	1	03/05/18 1:34 PM
A0305017.D	N028726-002B	SAMP	1	03/05/18 1:40 PM
A0305018.D	N028726-002A	SAMP	1	03/05/18 1:46 PM
A0305019.D	N028726-004B	SAMP	1	03/05/18 1:51 PM
A0305020.D	N028726-004A	SAMP	1	03/05/18 1:57 PM
A0305021.D	N028726-005B	SAMP	1	03/05/18 2:02 PM
A0305022.D	N028726-005A	SAMP	1	03/05/18 2:08 PM
A0305023.D	MB-67009	MBLK	1	03/05/18 2:13 PM
A0305024.D	LCS-67009	LCS	1	03/05/18 2:19 PM
A0305025.D	N028867-001A	SAMP	1	03/05/18 2:24 PM
A0305026.D	N028867-001A	SAMP	5	03/05/18 2:29 PM
A0305027.D	CCV1	CCV	1	03/05/18 2:35 PM
A0305028.D	CCB1	CCB	1	03/05/18 2:41 PM
A0305029.D	N028867-001A-PS	PS	1	03/05/18 2:46 PM
A0305030.D	N028867-001A-MS	MS	1	03/05/18 2:55 PM
A0305031.D	N028867-001A-MSD	MSD	1	03/05/18 3:00 PM
A0305032.D	N028874-001A	SAMP	1	03/05/18 3:06 PM
A0305033.D	N028874-002A	SAMP	1	03/05/18 3:12 PM
A0305034.D	N028874-003A	SAMP	1	03/05/18 3:17 PM
A0305035.D	N028874-004A	SAMP	1	03/05/18 3:23 PM
A0305036.D	MB-66954	MBLK	1	03/05/18 3:29 PM
A0305037.D	LCS-66954	LCS	1	03/05/18 3:34 PM
A0305038.D	N028775-001B	SAMP	1	03/05/18 3:40 PM
A0305039.D	CCV2	CCV	1	03/05/18 3:45 PM
A0305040.D	CCB2	CCB	1	03/05/18 3:51 PM
A0305041.D	N028775-001B	SAMP	5	03/05/18 3:57 PM
A0305042.D	N028775-001B-PS	PS	1	03/05/18 4:02 PM

INJECTION LOG: 180305A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0305043.D	N028775-001B-MS	MS	1	03/05/18 4:08 PM
A0305044.D	N028775-001B-MSD	MSD	1	03/05/18 4:13 PM
A0305045.D	N028775-002B	SAMP	1	03/05/18 4:19 PM
A0305046.D	N028775-003B	SAMP	1	03/05/18 4:24 PM
A0305047.D	N028775-004B	SAMP	1	03/05/18 4:30 PM
A0305048.D	N028775-005B	SAMP	1	03/05/18 4:36 PM
A0305049.D	N028775-006B	SAMP	1	03/05/18 4:41 PM
A0305050.D	N028775-007B	SAMP	1	03/05/18 4:47 PM
A0305051.D	CCV3	CCV	1	03/05/18 4:52 PM
A0305052.D	CCB3	CCB	1	03/05/18 4:58 PM
A0305053.D	LLCCV1	CCV2	1	03/05/18 5:04 PM
A0305054.D	ICSA2	ICSA	1	03/05/18 5:09 PM
A0305055.D	ICSAB2	ICSAB	1	03/05/18 5:15 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **2/27/2018 9:48:16**
Prep End Date: **2/27/2018 2:00:00**
Reviewed/ Date: 3/8/2018
Initials/ Date: 3/8/2018

Prep Batch **66954** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-12**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-66954	Aqueous		25	☐	0	0	25	1.000		
MB-66954	Aqueous		25	☐	0	0	25	1.000		
N028775-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N028775-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N028800-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N028800-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N028800-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 28 Feb 2018 10:27:53 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	67754.30	0.00	
24 Mg	347685.00	0.00	
25 Mg	45279.50	0.00	
26 Mg	51701.60	0.00	
59 Co	327145.00	0.00	
115 In	653342.00	0.00	
206 Pb	197509.00	0.00	
207 Pb	171956.00	0.00	
208 Pb	425513.00	0.00	

RSD (%)

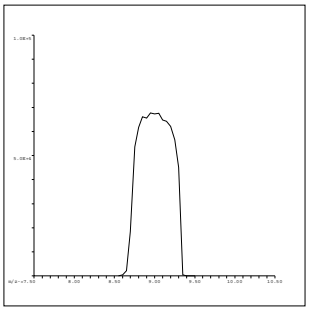
Element	Actual	Required	Flag
9 Be	0.77	5.00	
24 Mg	0.75	5.00	
25 Mg	0.74	5.00	
26 Mg	0.81	5.00	
59 Co	0.26	5.00	
115 In	0.52	5.00	
206 Pb	0.53	5.00	
207 Pb	0.80	5.00	
208 Pb	0.77	5.00	

Ion Ratio

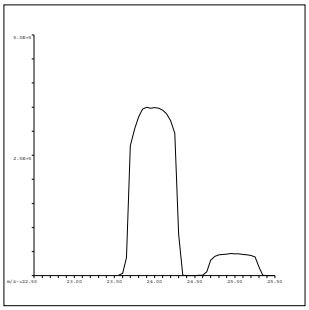
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

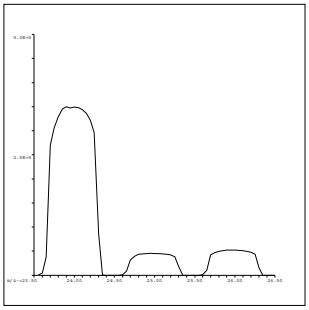
Element	Actual	Required	Flag



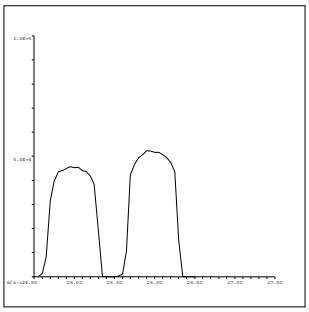
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



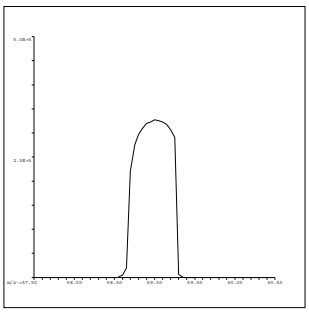
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



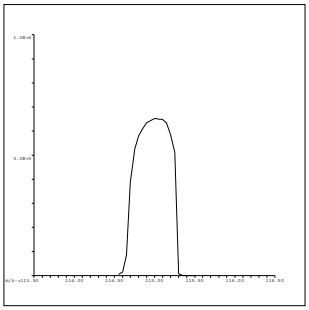
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



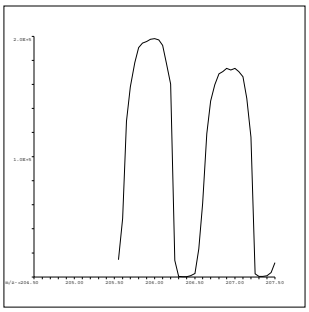
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



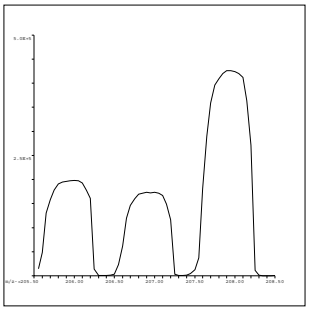
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



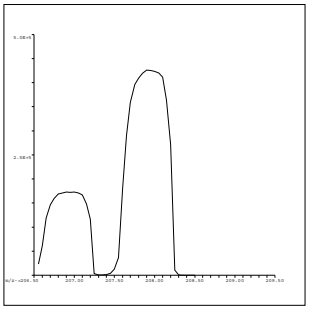
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Mar 2018 09:14:56 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	68553.40	0.00	
24 Mg	389635.00	0.00	
25 Mg	51010.50	0.00	
26 Mg	59093.50	0.00	
59 Co	403461.00	0.00	
115 In	840919.00	0.00	
206 Pb	246436.00	0.00	
207 Pb	218714.00	0.00	
208 Pb	532095.00	0.00	

RSD (%)

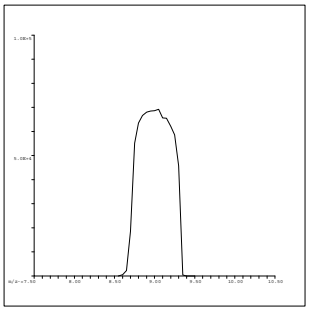
Element	Actual	Required	Flag
9 Be	1.26	5.00	
24 Mg	0.49	5.00	
25 Mg	0.56	5.00	
26 Mg	0.86	5.00	
59 Co	0.47	5.00	
115 In	0.43	5.00	
206 Pb	0.77	5.00	
207 Pb	0.38	5.00	
208 Pb	0.27	5.00	

Ion Ratio

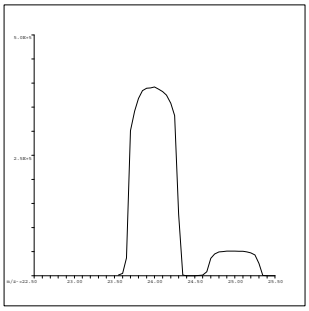
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

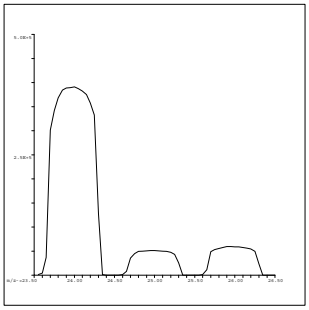
Element	Actual	Required	Flag



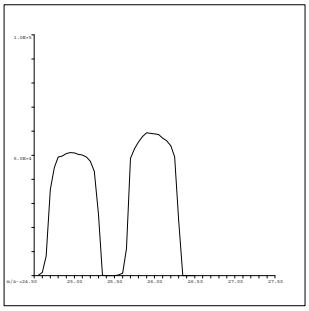
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



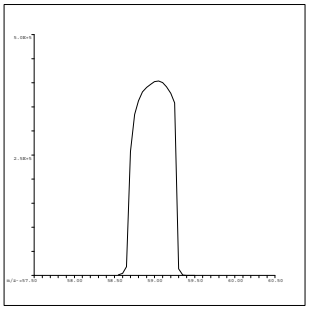
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



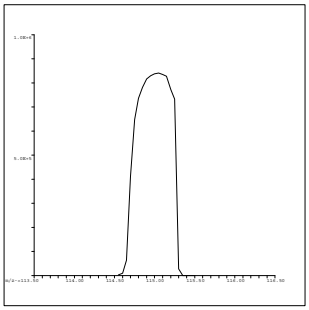
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



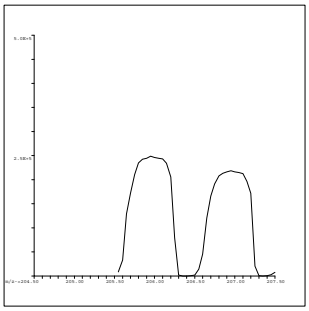
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



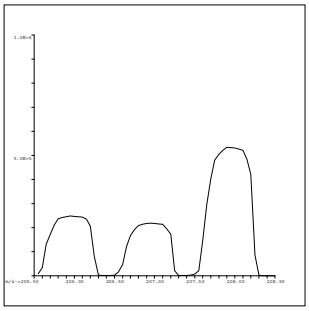
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



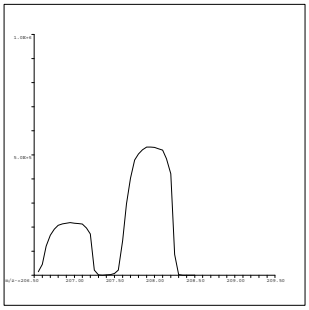
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180228A

Instrument ID: ICPMS-02

Analyte	Data File	A0228002.D	A0228003.D	A0228004.D	A0228005.D	A0228006.D	A0228007.D	A0228008.D	A0228009.D	A0228010.D	
	Acq. Date-Time	02/28/2018 10:44 AM	02/28/2018 10:50 AM	02/28/2018 10:55 AM	02/28/2018 11:01 AM	02/28/2018 11:07 AM	02/28/2018 11:12 AM	02/28/2018 11:18 AM	02/28/2018 11:24 AM	02/28/2018 11:29 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	50899.6		51975.3	52133.4	52097.8	51892.8	52827	53710.5	53435.4	
55 Mn [2]	CPS	140.2		1332.6	11212.2	21674.2	43498	86720.2	214489.1	419408.7	0.9999
52 Cr [2]	CPS	1487.6		3630.3	23087.3	44243.5	87397.4	174512.2	426278.9	833793.2	0.9999
72 Ge (ISTD) [1]	CPS	42562.9		43216.9	44040.3	43992.4	43406.3	44037.9	43928.7	43377.4	
78 Se [1]	CPS	0		65.6	757.8	1500.1	2880.4	6053.6	14964	29506.5	1.0000
72 Ge (ISTD) [2]	CPS	37024.9	37991.7	38510.5	38600.9	38170.8	38805.7	38923.8	38705.5	37660.8	
75 As [2]	CPS	28.9	66.2	254.7	2360.6	4546.5	8979	18314.3	44940.1	87617.5	1.0000
103 Rh (ISTD) [2]	CPS	1124472.5		1149906.8	1151141.5	1148630.9	1153313.5	1160884.1	1148790.5	1134001.7	
95 Mo [2]	CPS	108.9		1474.6	13681.9	27342.9	54601.4	110960	273262.8	542777.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180305A

Instrument ID: ICPMS-02

Analyte	Data File	A0305002.D	A0305003.D	A0305004.D	A0305005.D	A0305006.D	A0305007.D	A0305008.D	A0305009.D	A0305010.D	
	Acq. Date-Time	03/05/2018 12:16 PM	03/05/2018 12:22 PM	03/05/2018 12:27 PM	03/05/2018 12:33 PM	03/05/2018 12:38 PM	03/05/2018 12:44 PM	03/05/2018 12:50 PM	03/05/2018 12:55 PM	03/05/2018 01:01 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	46926.9	47360.5	47192.2	47740.5	47309.3	47225.7	47715	47384	46481.3	
78 Se [1]	CPS	3.3	13.3	78.9	785.6	1666.8	3216	6592.7	16563.4	32065.7	1.0000

Std1 not used/ for As only

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

3/8/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **ICV** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.514	0.10	10.00	0	95.1	90	110				
Manganese	95.996	0.50	100.0	0	96.0	90	110				
Molybdenum	9.411	0.50	10.00	0	94.1	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **ZZZZZZ** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	93.4	80	120				
Manganese	0.591	0.50	0.5000	0	118	80	120				
Molybdenum	0.592	0.50	0.5000	0	118	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **CCV** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.015	0.10	20.00	0	100	90	110				
Manganese	20.485	0.50	20.00	0	102	90	110				
Molybdenum	20.063	0.50	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **CCV** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.718	0.10	20.00	0	98.6	90	110				
Manganese	20.995	0.50	20.00	0	105	90	110				
Molybdenum	19.824	0.50	20.00	0	99.1	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **CCV** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.353	0.10	20.00	0	102	90	110				
Manganese	20.689	0.50	20.00	0	103	90	110				
Molybdenum	19.963	0.50	20.00	0	99.8	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **CCV** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.747	0.10	20.00	0	98.7	90	110				
Manganese	21.049	0.50	20.00	0	105	90	110				
Molybdenum	20.115	0.50	20.00	0	101	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **CCV** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.959	0.10	20.00	0	99.8	90	110				
Manganese	21.021	0.50	20.00	0	105	90	110				
Molybdenum	19.817	0.50	20.00	0	99.1	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **122392**
Client ID: **ZZZZZZ** Batch ID: **R122392** TestNo: **EPA 6020** Analysis Date: **2/28/2018** SeqNo: **2945342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.077 ND	0.10	0.1000	0	77 0	70	130				~~S~~
Manganese	0.593	0.50	0.5000	0	119	70	130				
Molybdenum	0.473	0.50	0.5000	0	94.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

3/8/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ICV**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.265	0.50	10.00	0	92.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ZZZZZZ**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.524	0.50	0.5000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **CCV**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.421	0.50	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **CCV**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.237	0.50	20.00	0	96.2	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **CCV**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.165	0.50	20.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ZZZZZZ**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.610	0.50	0.5000	0	122	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICV**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.026	1.0	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.959	1.0	1.000	0	95.9	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCV**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.847	1.0	20.00	0	104	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCV**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.003	1.0	20.00	0	105	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCV**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.971	1.0	20.00	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCV**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.304	1.0	20.00	0	107	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCV**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.148	1.0	20.00	0	106	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ZZZZZZ**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.173	1.0	1.000	0	117	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.255	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ICB**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **CCB**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **CCB**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **CCB**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **CCB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSA**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSAB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	18.651	0.10	20.00	0	93.3	80	120				
Manganese	22.650	0.50	20.00	0	113	80	120				
Molybdenum	19.677	0.50	20.00	0	98.4	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSA**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSAB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.051	0.10	20.00	0	95.3	80	120				
Manganese	23.130	0.50	20.00	0	116	80	120				
Molybdenum	20.104	0.50	20.00	0	101	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ICSA**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ICSAB**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	17.532	0.50	20.00	0	87.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ICSA**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **122487**
Client ID: **ICSAB**	Batch ID: **R122487**	TestNo: **EPA 6020**		Analysis Date: **3/5/2018**	SeqNo: **2948648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.400	0.50	20.00	0	92.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSA**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSAB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.379	1.0	20.00	0	96.9	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSA**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **122392**
Client ID: **ICSAB**	Batch ID: **R122392**	TestNo: **EPA 6020**		Analysis Date: **2/28/2018**	SeqNo: **2945412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.006	1.0	20.00	0	95.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	50899.6	50899.6	100	PASS	70-125	37024.9	37024.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	51519.2	50899.6	101.22	PASS	70-125	37991.7	37024.9	102.61	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	51975.3	50899.6	102.11	PASS	70-125	38510.5	37024.9	104.01	PASS	70-125
Std3-5/50 ppb	ICAL	1	52133.4	50899.6	102.42	PASS	70-125	38600.9	37024.9	104.26	PASS	70-125
Std4-10/100 ppb	ICAL	1	52097.8	50899.6	102.35	PASS	70-125	38170.8	37024.9	103.1	PASS	70-125
Std5-20/200 ppb	ICAL	1	51892.8	50899.6	101.95	PASS	70-125	38805.7	37024.9	104.81	PASS	70-125
Std6-40/400 ppb	ICAL	1	52827	50899.6	103.79	PASS	70-125	38923.8	37024.9	105.13	PASS	70-125
Std7-100/1000 ppb	ICAL	1	53710.5	50899.6	105.52	PASS	70-125	38705.5	37024.9	104.54	PASS	70-125
Std8-200/2000 ppb	ICAL	1	53435.4	50899.6	104.98	PASS	70-125	37660.8	37024.9	101.72	PASS	70-125
ICV	ICV	1	53380.6	50899.6	104.87	PASS	70-125	38910.5	37024.9	105.09	PASS	70-125
ICB	ICB	1	49991.3	50899.6	98.22	PASS	70-125	37526.2	37024.9	101.35	PASS	70-125
LLICV	CCV1	1	51318.8	50899.6	100.82	PASS	70-125	38624.3	37024.9	104.32	PASS	70-125
ICSA1	ICSA	1	51929.5	50899.6	102.02	PASS	70-125	37623.1	37024.9	101.62	PASS	70-125
ICSAB1	ICSAB	1	47199.9	50899.6	92.73	PASS	70-125	33543	37024.9	90.6	PASS	70-125
LLICV	CCV1	1	58769.9	50899.6	115.46	PASS	70-125	42718.9	37024.9	115.38	PASS	70-125
CCV1	CCV	1	55803.1	50899.6	109.63	PASS	70-125	41393.2	37024.9	111.8	PASS	70-125
CCB1	CCB	1	53675	50899.6	105.45	PASS	70-125	39926.2	37024.9	107.84	PASS	70-125
CCV2	CCV	1	46627.2	50899.6	91.61	PASS	70-125	35542.8	37024.9	96	PASS	70-125
CCB2	CCB	1	45723.5	50899.6	89.83	PASS	70-125	35080.6	37024.9	94.75	PASS	70-125
MB-66954	MBLK	1	46655	50899.6	91.66	PASS	70-125	35647.5	37024.9	96.28	PASS	70-125
LCS-66954	LCS	1	54395	50899.6	106.87	PASS	70-125	40072.1	37024.9	108.23	PASS	70-125
N028775-001B	SAMP	1	41896.9	50899.6	82.31	PASS	70-125	30700.7	37024.9	82.92	PASS	70-125
N028775-001B	SAMP	5	42975.1	50899.6	84.43	PASS	70-125	32348.3	37024.9	87.37	PASS	70-125
N028775-001B	SAMP	25	45752.7	50899.6	89.89	PASS	70-125	34864.6	37024.9	94.17	PASS	70-125
N028775-001B-PS	PS	1	47017.1	50899.6	92.37	PASS	70-125	33633.1	37024.9	90.84	PASS	70-125
N028775-001B-PS	PS	5	47778.2	50899.6	93.87	PASS	70-125	35775.6	37024.9	96.63	PASS	70-125
N028775-001B-MS	MS	1	48158	50899.6	94.61	PASS	70-125	34937.1	37024.9	94.36	PASS	70-125
N028775-001B-MS	MS	5	48162.7	50899.6	94.62	PASS	70-125	35788.9	37024.9	96.66	PASS	70-125
N028775-001B-MSD	MSD	1	48396.7	50899.6	95.083	PASS	70-125	35223.1	37024.9	95.13	PASS	70-125
CCV3	CCV	1	53525.6	50899.6	105.16	PASS	70-125	38993.9	37024.9	105.32	PASS	70-125
CCB3	CCB	1	51737.6	50899.6	101.65	PASS	70-125	39191.1	37024.9	105.85	PASS	70-125
N028775-001B-MSD	MSD	5	47784.8	50899.6	93.88	PASS	70-125	35777.8	37024.9	96.63	PASS	70-125
N028775-002B	SAMP	1	49704.8	50899.6	97.65	PASS	70-125	35830	37024.9	96.77	PASS	70-125
N028775-002B	SAMP	5	48866.8	50899.6	96.006	PASS	70-125	36348	37024.9	98.17	PASS	70-125
N028775-003B	SAMP	1	49258.1	50899.6	96.78	PASS	70-125	35752.1	37024.9	96.56	PASS	70-125
N028775-003B	SAMP	5	48603.8	50899.6	95.49	PASS	70-125	36188.6	37024.9	97.74	PASS	70-125
N028775-004B	SAMP	1	50578.6	50899.6	99.37	PASS	70-125	36958.2	37024.9	99.82	PASS	70-125
N028775-004B	SAMP	5	49552.5	50899.6	97.35	PASS	70-125	38351.4	37024.9	103.58	PASS	70-125
N028775-005B	SAMP	1	52592.6	50899.6	103.33	PASS	70-125	37797.9	37024.9	102.09	PASS	70-125
N028775-005B	SAMP	5	49853.2	50899.6	97.94	PASS	70-125	37583	37024.9	101.51	PASS	70-125
N028775-006B	SAMP	1	49828.7	50899.6	97.9	PASS	70-125	35919.3	37024.9	97.014	PASS	70-125

INTERNAL STANDARD: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	56230.1	50899.6	110.47	PASS	70-125	41725.3	37024.9	112.7	PASS	70-125
CCB4	CCB	1	54484.2	50899.6	107.04	PASS	70-125	40906.6	37024.9	110.48	PASS	70-125
N028775-006B	SAMP	5	51267.5	50899.6	100.72	PASS	70-125	37721	37024.9	101.88	PASS	70-125
N028775-007B	SAMP	1	50316.7	50899.6	98.85	PASS	70-125	35920.3	37024.9	97.017	PASS	70-125
N028775-007B	SAMP	5	48765.7	50899.6	95.81	PASS	70-125	36415.9	37024.9	98.36	PASS	70-125
N028800-001B	SAMP	1	52094.4	50899.6	102.35	PASS	70-125	38408.2	37024.9	103.74	PASS	70-125
N028800-001B	SAMP	5	45924.1	50899.6	90.22	PASS	70-125	35516.1	37024.9	95.92	PASS	70-125
N028800-002B	SAMP	1	50106.3	50899.6	98.44	PASS	70-125	37605.2	37024.9	101.57	PASS	70-125
N028800-002B	SAMP	5	43758.3	50899.6	85.97	PASS	70-125	33574.1	37024.9	90.68	PASS	70-125
N028800-003B	SAMP	1	51937.2	50899.6	102.04	PASS	70-125	38744.6	37024.9	104.64	PASS	70-125
N028800-003B	SAMP	5	43238.1	50899.6	84.95	PASS	70-125	33231.3	37024.9	89.75	PASS	70-125
CCV5	CCV	1	51872.7	50899.6	101.91	PASS	70-125	38469.5	37024.9	103.9	PASS	70-125
CCB5	CCB	1	49022.9	50899.6	96.31	PASS	70-125	36938.2	37024.9	99.77	PASS	70-125
LLCCV1	CCV2	1	47828.3	50899.6	93.97	PASS	70-125	36476	37024.9	98.52	PASS	70-125
ICSA2	ICSA	1	51539.5	50899.6	101.26	PASS	70-125	38091.9	37024.9	102.88	PASS	70-125
ICSAB2	ICSAB	1	54622.3	50899.6	107.31	PASS	70-125	39421.8	37024.9	106.47	PASS	70-125

INTERNAL STANDARD: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	42562.9	42562.9	100	PASS	70-125	1124472.5	1124472.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	43210.1	42562.9	101.52	PASS	70-125	1145974.4	1124472.5	101.91	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	43216.9	42562.9	101.54	PASS	70-125	1149906.8	1124472.5	102.26	PASS	70-125
Std3-5/50 ppb	ICAL	1	44040.3	42562.9	103.47	PASS	70-125	1151141.5	1124472.5	102.37	PASS	70-125
Std4-10/100 ppb	ICAL	1	43992.4	42562.9	103.36	PASS	70-125	1148630.9	1124472.5	102.15	PASS	70-125
Std5-20/200 ppb	ICAL	1	43406.3	42562.9	101.98	PASS	70-125	1153313.5	1124472.5	102.56	PASS	70-125
Std6-40/400 ppb	ICAL	1	44037.9	42562.9	103.47	PASS	70-125	1160884.1	1124472.5	103.24	PASS	70-125
Std7-100/1000 ppb	ICAL	1	43928.7	42562.9	103.21	PASS	70-125	1148790.5	1124472.5	102.16	PASS	70-125
Std8-200/2000 ppb	ICAL	1	43377.4	42562.9	101.91	PASS	70-125	1134001.7	1124472.5	100.85	PASS	70-125
ICV	ICV	1	42037.2	42562.9	98.76	PASS	70-125	1230138.9	1124472.5	109.4	PASS	70-125
ICB	ICB	1	42767.8	42562.9	100.48	PASS	70-125	1134269.9	1124472.5	100.87	PASS	70-125
LLICV	CCV1	1	43983.4	42562.9	103.34	PASS	70-125	1168531.4	1124472.5	103.92	PASS	70-125
ICSA1	ICSA	1	42064.9	42562.9	98.83	PASS	70-125	1050358.5	1124472.5	93.41	PASS	70-125
ICSAB1	ICSAB	1	34846.9	42562.9	81.87	PASS	70-125	970470.5	1124472.5	86.3	PASS	70-125
LLICV	CCV1	1	49257.3	42562.9	115.73	PASS	70-125	1292440	1124472.5	114.94	PASS	70-125
CCV1	CCV	1	47262.5	42562.9	111.04	PASS	70-125	1198403.4	1124472.5	106.57	PASS	70-125
CCB1	CCB	1	46304.2	42562.9	108.79	PASS	70-125	1166952.1	1124472.5	103.78	PASS	70-125
CCV2	CCV	1	40353.9	42562.9	94.81	PASS	70-125	1060671.6	1124472.5	94.33	PASS	70-125
CCB2	CCB	1	40756	42562.9	95.75	PASS	70-125	1058457.4	1124472.5	94.13	PASS	70-125
MB-66954	MBLK	1	41920.1	42562.9	98.49	PASS	70-125	1078166.7	1124472.5	95.88	PASS	70-125
LCS-66954	LCS	1	46342	42562.9	108.88	PASS	70-125	1234227.8	1124472.5	109.76	PASS	70-125
N028775-001B	SAMP	1	31747.1	42562.9	74.59	PASS	70-125	862866.9	1124472.5	76.74	PASS	70-125
N028775-001B	SAMP	5	34761.1	42562.9	81.67	PASS	70-125	934939.3	1124472.5	83.14	PASS	70-125
N028775-001B	SAMP	25	39548.7	42562.9	92.92	PASS	70-125	1013476.4	1124472.5	90.13	PASS	70-125
N028775-001B-PS	PS	1	37363.5	42562.9	87.78	PASS	70-125	942934.6	1124472.5	83.86	PASS	70-125
N028775-001B-PS	PS	5	40984.4	42562.9	96.29	PASS	70-125	999558	1124472.5	88.89	PASS	70-125
N028775-001B-MS	MS	1	39001.8	42562.9	91.63	PASS	70-125	951457.4	1124472.5	84.61	PASS	70-125
N028775-001B-MS	MS	5	41565.9	42562.9	97.66	PASS	70-125	1005666.5	1124472.5	89.43	PASS	70-125
N028775-001B-MSD	MSD	1	39536.5	42562.9	92.89	PASS	70-125	957881.1	1124472.5	85.18	PASS	70-125
CCV3	CCV	1	45248.9	42562.9	106.31	PASS	70-125	1151276.2	1124472.5	102.38	PASS	70-125
CCB3	CCB	1	45276.9	42562.9	106.38	PASS	70-125	1138775.8	1124472.5	101.27	PASS	70-125
N028775-001B-MSD	MSD	5	40676.9	42562.9	95.57	PASS	70-125	988678	1124472.5	87.92	PASS	70-125
N028775-002B	SAMP	1	39624.4	42562.9	93.096	PASS	70-125	968912.1	1124472.5	86.17	PASS	70-125
N028775-002B	SAMP	5	41584.6	42562.9	97.7	PASS	70-125	1009525.2	1124472.5	89.78	PASS	70-125
N028775-003B	SAMP	1	40161.1	42562.9	94.36	PASS	70-125	975381.6	1124472.5	86.74	PASS	70-125
N028775-003B	SAMP	5	42089.6	42562.9	98.89	PASS	70-125	1016961.6	1124472.5	90.44	PASS	70-125
N028775-004B	SAMP	1	41137.1	42562.9	96.65	PASS	70-125	1007408.8	1124472.5	89.59	PASS	70-125
N028775-004B	SAMP	5	43892.1	42562.9	103.12	PASS	70-125	1058794.3	1124472.5	94.16	PASS	70-125
N028775-005B	SAMP	1	42793.6	42562.9	100.54	PASS	70-125	1033971.9	1124472.5	91.95	PASS	70-125
N028775-005B	SAMP	5	44050.1	42562.9	103.49	PASS	70-125	1056091.1	1124472.5	93.92	PASS	70-125
N028775-006B	SAMP	1	39009.5	42562.9	91.65	PASS	70-125	944429.8	1124472.5	83.99	PASS	70-125

INTERNAL STANDARD: 180228A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	47789.5	42562.9	112.28	PASS	70-125	1202200.5	1124472.5	106.91	PASS	70-125
CCB4	CCB	1	47736	42562.9	112.15	PASS	70-125	1208394.6	1124472.5	107.46	PASS	70-125
N028775-006B	SAMP	5	43371.6	42562.9	101.9	PASS	70-125	1031771.3	1124472.5	91.76	PASS	70-125
N028775-007B	SAMP	1	39093.1	42562.9	91.85	PASS	70-125	952161.3	1124472.5	84.68	PASS	70-125
N028775-007B	SAMP	5	41179.3	42562.9	96.75	PASS	70-125	1015336.4	1124472.5	90.29	PASS	70-125
N028800-001B	SAMP	1	44992.7	42562.9	105.71	PASS	70-125	1033304.2	1124472.5	91.89	PASS	70-125
N028800-001B	SAMP	5	40545.5	42562.9	95.26	PASS	70-125	1024678.6	1124472.5	91.13	PASS	70-125
N028800-002B	SAMP	1	43217.9	42562.9	101.54	PASS	70-125	1013455.8	1124472.5	90.13	PASS	70-125
N028800-002B	SAMP	5	38038.5	42562.9	89.37	PASS	70-125	991924.7	1124472.5	88.21	PASS	70-125
N028800-003B	SAMP	1	44045.6	42562.9	103.48	PASS	70-125	1040588.1	1124472.5	92.54	PASS	70-125
N028800-003B	SAMP	5	36823.3	42562.9	86.52	PASS	70-125	980655.9	1124472.5	87.21	PASS	70-125
CCV5	CCV	1	45254.5	42562.9	106.32	PASS	70-125	1129727	1124472.5	100.47	PASS	70-125
CCB5	CCB	1	42478.4	42562.9	99.8	PASS	70-125	1087327.3	1124472.5	96.7	PASS	70-125
LLCCV1	CCV2	1	39474	42562.9	92.74	PASS	70-125	1120864.4	1124472.5	99.68	PASS	70-125
ICSA2	ICSA	1	41087.8	42562.9	96.53	PASS	70-125	1026756.1	1124472.5	91.31	PASS	70-125
ICSAB2	ICSAB	1	45204.4	42562.9	106.21	PASS	70-125	1072589.1	1124472.5	95.39	PASS	70-125

INTERNAL STANDARD: 180305A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46926.9	46926.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	47360.5	46926.9	100.92	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	47192.2	46926.9	100.57	PASS	70-125
Std3-5/50 ppb	ICAL	1	47740.5	46926.9	101.73	PASS	70-125
Std4-10/100 ppb	ICAL	1	47309.3	46926.9	100.81	PASS	70-125
Std5-20/200 ppb	ICAL	1	47225.7	46926.9	100.64	PASS	70-125
Std6-40/400 ppb	ICAL	1	47715	46926.9	101.68	PASS	70-125
Std7-100/1000 ppb	ICAL	1	47384	46926.9	100.97	PASS	70-125
Std8-200/2000 ppb	ICAL	1	46481.3	46926.9	99.05	PASS	70-125
ICV	ICV	1	41117	46926.9	87.62	PASS	70-125
ICB	ICB	1	46086.8	46926.9	98.21	PASS	70-125
LLICV	CCV1	1	50796.4	46926.9	108.25	PASS	70-125
ICSA1	ICSA	1	52447	46926.9	111.76	PASS	70-125
ICSAB1	ICSAB	1	52040.2	46926.9	110.9	PASS	70-125
LLICV	CCV1	1	60958.7	46926.9	129.9	NR!	70-125
CCV1	CCV	1	42529.3	46926.9	90.63	PASS	70-125
CCB1	CCB	1	42530.5	46926.9	90.63	PASS	70-125
MB-66954	MBLK	1	41955.7	46926.9	89.41	PASS	70-125
LCS-66954	LCS	1	41671.7	46926.9	88.8	PASS	70-125
N028775-001B	SAMP	1	37581.8	46926.9	80.086	PASS	70-125
CCV2	CCV	1	43945.4	46926.9	93.65	PASS	70-125
CCB2	CCB	1	43956.7	46926.9	93.67	PASS	70-125
N028775-001B	SAMP	5	39986.4	46926.9	85.21	PASS	70-125
N028775-001B-PS	PS	1	38361.3	46926.9	81.75	PASS	70-125
N028775-001B-MS	MS	1	39495.2	46926.9	84.16	PASS	70-125
N028775-001B-MSD	MSD	1	40235.9	46926.9	85.74	PASS	70-125
N028775-002B	SAMP	1	40770.5	46926.9	86.88	PASS	70-125
N028775-003B	SAMP	1	41651.7	46926.9	88.76	PASS	70-125
N028775-004B	SAMP	1	37703.2	46926.9	80.34	PASS	70-125
N028775-005B	SAMP	1	41191.7	46926.9	87.78	PASS	70-125
N028775-006B	SAMP	1	33580.9	46926.9	71.56	PASS	70-125
N028775-007B	SAMP	1	37054	46926.9	78.96	PASS	70-125
CCV3	CCV	1	44168.2	46926.9	94.12	PASS	70-125
CCB3	CCB	1	42003.7	46926.9	89.51	PASS	70-125
LLCCV1	CCV2	1	52473.8	46926.9	111.82	PASS	70-125
ICSA2	ICSA	1	42159.6	46926.9	89.84	PASS	70-125
ICSAB2	ICSAB	1	40589	46926.9	86.49	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028775
Test Method: EPA 6020
Analysis Date: 2/28/2018

Matrix: Groundwater
Batch No.: 66954

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028775-001B DT 5X	Arsenic	ug/L	1.519032	NA	1.616742	6.04%	10
N028775-001B DT 5X	Chromium	ug/L	166.2222	PASS	152.7097	8.85%	10
N028775-001B DT 5X	Manganese	ug/L	0	NA	0.297666	100.00%	10
N028775-001B DT 5X	Molybdenum	ug/L	4.099721	NA	4.167628	1.63%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028775
Test Method: EPA 6020
Analysis Date: 3/5/2018

Matrix: Groundwater
Batch No.: 66954

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028775-001B DT 5X	Selenium	ug/L	5.07535	NA	5.112904	0.73%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N028775-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122392
Client ID:	ZZZZZZ	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/28/2018	SeqNo:	2945312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.002	0.10	10.00	1.617	104	80	120				
Manganese	97.950	0.50	100.0	0.2977	97.7	80	120				
Molybdenum	15.177	0.50	10.00	4.168	110	80	120				

Sample ID	N028775-001B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	122487
Client ID:	ZZZZZZ	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	3/5/2018	SeqNo:	2948635

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	15.212	0.50	10.00	5.113	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028775
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N028775-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	122392
Client ID:	ZZZZZZ	Batch ID:	66954	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	2/28/2018	SeqNo:	2945380

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	156.676	1.0	10.00	152.7	39.7	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

March 21, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028966

RE: PG&E Topock - PMP

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 07, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Samples for Total Suspended Solids (TSS) were not reported. Please see attached correspondence.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028966-002D-MS2 and N028966-002D-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N028966-001D-MS1 and N028966-001D-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *21-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP
Lab Order: N028966
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028966-001A	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-001B	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-001C	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-001D	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-002A	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018
N028966-002B	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018
N028966-002C	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018
N028966-002D	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:11:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180308B**	QC Batch: **R122535**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	3/8/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180308B**	QC Batch: **R122535**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	3/8/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N028968-001BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:					RunNo: **122535**		
Client ID: **ZZZZZZ**	Batch ID: **R122535**	TestNo: **EPA 120.1**		Analysis Date: **3/8/2018**					SeqNo: **2950653**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7970.000	0.10						7950	0.251	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180308A**	QC Batch: **R122534**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	3/8/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	3/8/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180308A**	QC Batch: **R122534**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	3/8/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	3/8/2018 09:20 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028966-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122534**
Client ID: **ZZZZZZ** Batch ID: **R122534** TestNo: **SM4500-H+B** Analysis Date: **3/8/2018** SeqNo: **2950646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.410	0.10						7.390	0.270	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:11:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180308E**	QC Batch: **67086**				PrepDate	**3/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	33	33		mg/L	1	3/8/2018 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180308E**	QC Batch: **67086**				PrepDate	**3/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	3/8/2018 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	**LCS-67086**	SampType:	**LCS**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**3/8/2018**	RunNo:	**122538**
Client ID:	**LCSW**	Batch ID:	**67086**	TestNo:	**SM2540C**			Analysis Date:	**3/8/2018**	SeqNo:	**2951727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	954.000	10	1000	0	95.4	80	120				

Sample ID	**MB-67086**	SampType:	**MBLK**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**3/8/2018**	RunNo:	**122538**
Client ID:	**PBW**	Batch ID:	**67086**	TestNo:	**SM2540C**			Analysis Date:	**3/8/2018**	SeqNo:	**2951728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	**N028968-001BDUP**	SampType:	**DUP**	TestCode:	**160.1_2540C**	Units:	**mg/L**	Prep Date:	**3/8/2018**	RunNo:	**122538**
Client ID:	**ZZZZZZ**	Batch ID:	**67086**	TestNo:	**SM2540C**			Analysis Date:	**3/8/2018**	SeqNo:	**2951732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4335.000	50						4395	1.37	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180313C**	QC Batch: **67104**				PrepDate	**3/9/2018**	Analyst: **CEI**
Calcium	170000	85	500		µg/L	1	3/13/2018 03:11 PM
Iron	ND	18	20		µg/L	1	3/13/2018 03:11 PM
Magnesium	37000	48	100		µg/L	1	3/13/2018 03:11 PM
Sodium	730000	660	12000		µg/L	25	3/13/2018 12:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180313C**	QC Batch: **67104**				PrepDate	**3/9/2018**	Analyst: **CEI**
Calcium	230000	85	500		µg/L	1	3/13/2018 03:53 PM
Iron	ND	18	20		µg/L	1	3/13/2018 03:53 PM
Magnesium	29000	48	100		µg/L	1	3/13/2018 03:53 PM
Sodium	1500000	1300	25000		µg/L	50	3/13/2018 12:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-67104**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **PBW**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-67104**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **LCSW**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20996.770	500	20000	0	105	85	115				

Sample ID **N028966-002D-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **ZZZZZZ**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1616319.696	25000	20000	1505000	554	75	125				S

Sample ID **N028966-002D-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **ZZZZZZ**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1591089.760	25000	20000	1505000	428	75	125	1616000	1.57	20	S

Sample ID **MB-67104**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122645**
Client ID: **PBW**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954820**

Analyte	Result	PQL
Calcium	ND	500
Iron	ND	20
Magnesium	ND	100

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	LCS1-67104	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122645
Client ID:	LCSW	Batch ID:	67104	TestNo:	EPA 200.7			Analysis Date:	3/13/2018	SeqNo:	2954821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9667.443	500	10000	0	96.7	85	115				
Iron	106.773	20	100.0	0	107	85	115				
Magnesium	9826.104	100	10000	0	98.3	85	115				

Sample ID	N028966-001D-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122645
Client ID:	ZZZZZZ	Batch ID:	67104	TestNo:	EPA 200.7			Analysis Date:	3/13/2018	SeqNo:	2954825

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	168043.375	500	10000	165900	21.2	75	125				S
Iron	103.156	20	100.0	0	103	75	125				
Magnesium	43782.662	100	10000	36730	70.6	75	125				S

Sample ID	N028966-001D-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122645
Client ID:	ZZZZZZ	Batch ID:	67104	TestNo:	EPA 200.7			Analysis Date:	3/13/2018	SeqNo:	2954826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	166331.244	500	10000	165900	4.07	75	125	168000	1.02	20	S
Iron	101.855	20	100.0	0	102	75	125	103.2	1.27	20	
Magnesium	43689.523	100	10000	36730	69.6	75	125	43780	0.213	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:11:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180313D** QC Batch: **67105**				PrepDate		**3/9/2018**	Analyst: **CEI**
Manganese	5.1	0.26	0.50		µg/L	1	3/13/2018 07:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180313D** QC Batch: **67105**				PrepDate		**3/9/2018**	Analyst: **CEI**
Manganese	13	0.26	0.50		µg/L	1	3/13/2018 08:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-67105**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **PBW**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-67105**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **LCSW**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	100.673	0.50	100.0	0	101	85	115				

Sample ID **N028966-001D-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.028	0.50	100.0	5.084	90.9	75	125				

Sample ID **N028966-001D-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.582	0.50	100.0	5.084	91.5	75	125	96.03	0.575	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180308A** QC Batch: **R122570**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.033	0.20		µg/L	1	3/8/2018 01:51 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180313D** QC Batch: **67105**				PrepDate	**3/9/2018**		Analyst: **CEI**
Chromium	2.0	0.13	1.0		µg/L	1	3/13/2018 07:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180308A** QC Batch: **R122570**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	530	3.3	20		µg/L	100	3/8/2018 12:54 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180313D** QC Batch: **67105**				PrepDate	**3/9/2018**		Analyst: **CEI**
Chromium	520	0.65	5.0		µg/L	5	3/13/2018 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-67105	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	PBW	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956290

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-67105	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	LCSW	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956291

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.010	1.0	10.00	0	100	85	115				

Sample ID	N028966-001D-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.226	1.0	10.00	1.964	92.6	75	125				

Sample ID	N028966-001D-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956299

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.429	1.0	10.00	1.964	94.7	75	125	11.23	1.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R122570	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	PBW	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951920	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		ND	0.20											

Sample ID	LCS-R122570	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	LCSW	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951921	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		5.065	0.20	5.000	0	101	90	110						

Sample ID	N028966-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951937	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		1038.470	20	500.0	534.0	101	90	110						

Sample ID	N028966-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951938	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		1037.260	20	500.0	534.0	101	90	110	1038	0.117	20			

Sample ID	N028970-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951939	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		0.870	0.20						0.8838	1.53	20			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028966-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122570
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018	SeqNo:	2951943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.305	0.20	1.000	2.322	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:11:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180309A**	QC Batch: **R122566**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	240	1.2	5.0		mg/L	1	3/9/2018 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180309A**	QC Batch: **R122566**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	3/9/2018 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R122566**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **LCSW**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.665	5.0	100.0	0	97.7	85	115				

Sample ID **MB-R122566**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **PBW**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028966-001BDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **ZZZZZZ**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	237.792	5.0						237.8	0	30	

Sample ID **N028966-002BMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **ZZZZZZ**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	248.408	5.0	100.0	157.1	91.3	75	125				

Sample ID **N028966-002BMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **ZZZZZZ**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	252.654	5.0	100.0	157.1	95.5	75	125	248.4	1.69	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:11:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Chloride	1000	1.8	100		mg/L	200	3/8/2018 01:43 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Sulfate	380	1.1	25		mg/L	50	3/8/2018 01:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	3/8/2018 02:14 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Sulfate	510	1.1	25		mg/L	50	3/8/2018 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R122553_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	PBW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R122553_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	LCSW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.996	0.50	2.000	0	99.8	90	110				

Sample ID	N028966-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1036.100	100						1040	0.408	20	

Sample ID	N028966-001BMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1449.260	100	400.0	1040	102	80	120				

Sample ID	N028966-001BMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1452.200	100	400.0	1040	103	80	120	1449	0.203	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R122553_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	PBW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951265

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R122553_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	LCSW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.946	0.50	4.000	0	98.7	90	110				

Sample ID	N028966-001BMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951272

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	579.130	25	200.0	377.3	101	80	120				

Sample ID	N028966-001BMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	574.995	25	200.0	377.3	98.8	80	120	579.1	0.717	20	

Sample ID	N028966-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951276

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	380.730	25						377.3	0.897	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:11:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180309D**	QC Batch: **R122576**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.28	0.032	0.050		mg/L	1	3/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180309D**	QC Batch: **R122576**		PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.16	0.25		mg/L	5	3/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122576	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	PBW	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952065

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122576	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	LCSW	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.2	85	115				

Sample ID	N028800-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	ZZZZZZ	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952068

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.725	0.25						3.049	11.2	20	

Sample ID	N028800-003CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	ZZZZZZ	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952070

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.237	0.25	2.500	3.292	118	75	125				

Sample ID	N028800-003CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	ZZZZZZ	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.818	0.25	2.500	3.292	101	75	125	6.236	6.94	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Lisa Kellog	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address: 1410 Rocky Ridge Dr. #330	**Company:** Arcadis	**Address:** 2999 Oak Road, Suite 300	Excel EDD ☐	RTNE ☐	Y N
Address: Roseville, CA 95661	**Email:** dan.bush@arcadis.com; daniel.moore@critigen.com	Walnut Creek, CA 94597	Geotracker ☐	RWQCB ☐	1. Chilled ☑ ☐
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr. #330	**Email to:** lisa.kellog@arcadis.com **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By:	Roseville, CA 95661	**Phone:** 951.677.0577 **Fax:**	Others ☐	Level III ☐	3. Container Intact ☐ ☐
Title:	**Phone:** 916.786.3302 **Fax:**		Specify:	LEVEL IV ☑	4. Seal Present ☐ ☐
Signature: **Date:**	**Sampled By:** Jed DiCamillo		Global ID:	Regulatory ☐	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling ice
Project Name: PG&E Topock - PMP	*Signature:*	*Date*			Sample Temp: 3.7°C
Project Number:		3-7-18			

Matrix

Ground	☑	Sediment	☐
Potable	☐	Soil	☐
NPDES	☐	Other Solid	☐
Surface	☐		

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr+6 by SM3500	Alkalinity	pH	Chloride	Specific Conductance	Sulfate	TDS	NO2/NO3 by SM 4500	Ca, Fe, Mg, Na by EPA 200.7	Cr, Mn by 200.8	Total & Dis Solids	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N028966 - 01	PE-01-0318	3.7.18	811	X			X	X	X	X	X	X	X	X	X	X	X	E	5	P	N/S	
2	- 02	TW-03D-0318	3.7.18	823	X			X	X	X	X	X	X	X	X	X	X	X	E	5	P	N/S	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

Courier:

Tracking No.

Relinquished by (Signature and Printed Name): Jed DiCamillo	Date / Time 3.7.18 1230	Received by (Signature and Printed Name):	Date / Time 3/7/18 1800
Relinquished by (Signature and Printed Name):	Date / Time 3/7/18 1947	Received by (Signature and Printed Name):	Date / Time 3/7/18 1947
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☑ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratrories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

T = Tube	V = VOA	P = Pint
J = Jar	B = Tedlar	G = Glass
M = Metal	P = Plastic	C = Can

White = Laboratory Copy

Yellow = Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/7/2018	Workorder:	N028966
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH received past holding time

Checklist Completed B DA 3/16/2018

Reviewed By: 03/20/2018

SampleControlLV

From: Madsen, Laura <Laura.Madsen@arcadis.com>
Sent: Monday, March 12, 2018 9:10 AM
To: ASSET LV Sample Control; 'Marlon B. Cartin'; 'Fernando Rivera'; nancy@assetlaboratories.com
Cc: Tina Rice; Madsen, Laura
Subject: RE: N028966 COC and Work Order Summary for Samples Received 3/7/2018

Hi Marlon,
It looks like the lab accidentally logged in TSS for analysis on both samples for this SDG. We only wanted TDS. I think the Tech didn't see the TDS and wrote in TDS again on the COC which may have confused the lab login person. Can you Stop the analysis on the TSS and not report it?

Thanks!
Laura

From: ASSET LV Sample Control <samplecontrol.lv@assetlaboratories.com>
Sent: Thursday, March 8, 2018 9:01 AM
To: Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>
Cc: Madsen, Laura <Laura.Madsen@arcadis.com>; Sean.Maurel@arcadis.com; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Vadpey, Nick <Nicholas.Vadpey@arcadis.com>; Harmon, Alison <Ali.Harmon@arcadis.com>; Serna, Erica <Erica.Serna@arcadis.com>; jmahn@blainetech.com; Bloes, Marty <mbloes@pivox.com>; Borelis, Mariah <Mariah.Borelis@arcadis.com>
Subject: N028966 COC and Work Order Summary for Samples Received 3/7/2018

Hi Dan Bush:

Enclosed are COC and WO Summary for samples received 3/7/2018. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

Sincerely,
Andrea Fe M. Gallardo
Sample Control Officer

ASSET Laboratories

WORK ORDER Summary

12-Mar-18

WorkOrder: N028966

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 3/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028966-001A	PE-01-0318	3/7/2018 8:11:00 AM	3/21/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028966-001B			3/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/21/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☑	☐	☐	LSR
			3/21/2018			Total Suspended Solids Prep	☑	☐	☐	LSR
			3/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028966-001C			3/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028966-001D			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
N028966-002A	TW-03D-0318	3/7/2018 8:23:00 AM	3/21/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028966-002B			3/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/21/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☑	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

12-Mar-18

WorkOrder: N028966

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 3/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028966-002B	TW-03D-0318	3/7/2018 8:23:00 AM	3/21/2018	Groundwater		Total Suspended Solids Prep	☑	☐	☐	LSR
			3/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028966-002C			3/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028966-002D			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
N028966-003A	FOLDER	3/21/2018	3/21/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/21/2018		Folder	Folder	☐	☐	☐	LAB
			3/21/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

ASSET Laboratories Work Order:
N028966

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N028966

Item	Page
Cover Page	1-5
Analytical Result/QC Summary Reports	6-36
Sample Receiving Items	37-42
List of Analysts	43
Raw Data	
EPA 120.1	44-47
SM 4500-H+B	48-51
SM 2540C	52-61
EPA 200.7_Dissolved	62-105
EPA 200.8_Dissolved	106-152
EPA 218.6	153-248
SM 2320 B	249-258
EPA 300.0	259-284
SM 4500-NO3F	285-300

March 21, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N028966

RE: PG&E Topock - PMP

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 07, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Samples for Total Suspended Solids (TSS) were not reported. Please see attached correspondence.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N028966-002D-MS2 and N028966-002D-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N028966-001D-MS1 and N028966-001D-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *21-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP
Lab Order: N028966
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028966-001A	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-001B	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-001C	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-001D	PE-01-0318	Groundwater	3/7/2018 8:11:00 AM	3/7/2018	3/21/2018
N028966-002A	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018
N028966-002B	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018
N028966-002C	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018
N028966-002D	TW-03D-0318	Groundwater	3/7/2018 8:23:00 AM	3/7/2018	3/21/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180308B**	QC Batch: **R122535**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	3/8/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180308B**	QC Batch: **R122535**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	3/8/2018 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N028968-001BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:					RunNo: **122535**		
Client ID: **ZZZZZZ**	Batch ID: **R122535**	TestNo: **EPA 120.1**		Analysis Date: **3/8/2018**					SeqNo: **2950653**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7970.000	0.10						7950	0.251	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180308A**	QC Batch: **R122534**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	3/8/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	3/8/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180308A**	QC Batch: **R122534**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	3/8/2018 09:20 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	3/8/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N028966-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **122534**
Client ID: **ZZZZZZ** Batch ID: **R122534** TestNo: **SM4500-H+B** Analysis Date: **3/8/2018** SeqNo: **2950646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.410	0.10						7.390	0.270	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180308E**	QC Batch: **67086**				PrepDate	**3/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	33	33		mg/L	1	3/8/2018 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180308E**	QC Batch: **67086**				PrepDate	**3/8/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	3/8/2018 01:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-67086	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	3/8/2018	RunNo:	122538
Client ID:	LCSW	Batch ID:	67086	TestNo:	SM2540C			Analysis Date:	3/8/2018	SeqNo:	2951727

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	954.000	10	1000	0	95.4	80	120				

Sample ID	MB-67086	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	3/8/2018	RunNo:	122538
Client ID:	PBW	Batch ID:	67086	TestNo:	SM2540C			Analysis Date:	3/8/2018	SeqNo:	2951728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N028968-001BDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	3/8/2018	RunNo:	122538
Client ID:	ZZZZZZ	Batch ID:	67086	TestNo:	SM2540C			Analysis Date:	3/8/2018	SeqNo:	2951732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4335.000	50						4395	1.37	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180313C**	QC Batch: **67104**				PrepDate	**3/9/2018**	Analyst: **CEI**
Calcium	170000	85	500		µg/L	1	3/13/2018 03:11 PM
Iron	ND	18	20		µg/L	1	3/13/2018 03:11 PM
Magnesium	37000	48	100		µg/L	1	3/13/2018 03:11 PM
Sodium	730000	660	12000		µg/L	25	3/13/2018 12:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180313C**	QC Batch: **67104**				PrepDate	**3/9/2018**	Analyst: **CEI**
Calcium	230000	85	500		µg/L	1	3/13/2018 03:53 PM
Iron	ND	18	20		µg/L	1	3/13/2018 03:53 PM
Magnesium	29000	48	100		µg/L	1	3/13/2018 03:53 PM
Sodium	1500000	1300	25000		µg/L	50	3/13/2018 12:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-67104**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **PBW**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-67104**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **LCSW**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20996.770	500	20000	0	105	85	115				

Sample ID **N028966-002D-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **ZZZZZZ**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1616319.696	25000	20000	1505000	554	75	125				S

Sample ID **N028966-002D-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122640**
Client ID: **ZZZZZZ**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1591089.760	25000	20000	1505000	428	75	125	1616000	1.57	20	S

Sample ID **MB-67104**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122645**
Client ID: **PBW**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954820**

Analyte	Result	PQL
Calcium	ND	500
Iron	ND	20
Magnesium	ND	100

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	LCS1-67104	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122645
Client ID:	LCSW	Batch ID:	67104	TestNo:	EPA 200.7			Analysis Date:	3/13/2018	SeqNo:	2954821

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9667.443	500	10000	0	96.7	85	115				
Iron	106.773	20	100.0	0	107	85	115				
Magnesium	9826.104	100	10000	0	98.3	85	115				

Sample ID	N028966-001D-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122645
Client ID:	ZZZZZZ	Batch ID:	67104	TestNo:	EPA 200.7			Analysis Date:	3/13/2018	SeqNo:	2954825

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	168043.375	500	10000	165900	21.2	75	125				S
Iron	103.156	20	100.0	0	103	75	125				
Magnesium	43782.662	100	10000	36730	70.6	75	125				S

Sample ID	N028966-001D-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122645
Client ID:	ZZZZZZ	Batch ID:	67104	TestNo:	EPA 200.7			Analysis Date:	3/13/2018	SeqNo:	2954826

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	166331.244	500	10000	165900	4.07	75	125	168000	1.02	20	S
Iron	101.855	20	100.0	0	102	75	125	103.2	1.27	20	
Magnesium	43689.523	100	10000	36730	69.6	75	125	43780	0.213	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180313D** QC Batch: **67105** PrepDate **3/9/2018** Analyst: **CEI**							
Manganese	5.1	0.26	0.50		µg/L	1	3/13/2018 07:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180313D** QC Batch: **67105** PrepDate **3/9/2018** Analyst: **CEI**							
Manganese	13	0.26	0.50		µg/L	1	3/13/2018 08:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-67105**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **PBW**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-67105**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **LCSW**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956417**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	100.673	0.50	100.0	0	101	85	115				

Sample ID **N028966-001D-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.028	0.50	100.0	5.084	90.9	75	125				

Sample ID **N028966-001D-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **3/9/2018**	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **67105**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.582	0.50	100.0	5.084	91.5	75	125	96.03	0.575	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180308A** QC Batch: **R122570**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.3	0.033	0.20		µg/L	1	3/8/2018 01:51 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180313D** QC Batch: **67105**				PrepDate	**3/9/2018**		Analyst: **CEI**
Chromium	2.0	0.13	1.0		µg/L	1	3/13/2018 07:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180308A** QC Batch: **R122570**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	530	3.3	20		µg/L	100	3/8/2018 12:54 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180313D** QC Batch: **67105**				PrepDate	**3/9/2018**		Analyst: **CEI**
Chromium	520	0.65	5.0		µg/L	5	3/13/2018 08:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-67105	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	PBW	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956290

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-67105	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	LCSW	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956291

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.010	1.0	10.00	0	100	85	115				

Sample ID	N028966-001D-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956297

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.226	1.0	10.00	1.964	92.6	75	125				

Sample ID	N028966-001D-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	3/9/2018	RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956299

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.429	1.0	10.00	1.964	94.7	75	125	11.23	1.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R122570	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	PBW	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951920	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		ND	0.20											

Sample ID	LCS-R122570	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	LCSW	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951921	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		5.065	0.20	5.000	0	101	90	110						

Sample ID	N028966-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951937	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		1038.470	20	500.0	534.0	101	90	110						

Sample ID	N028966-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951938	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		1037.260	20	500.0	534.0	101	90	110	1038	0.117	20			

Sample ID	N028970-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:				RunNo:	122570	
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018			SeqNo:	2951939	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium		0.870	0.20						0.8838	1.53	20			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N028966-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	122570
Client ID:	ZZZZZZ	Batch ID:	R122570	TestNo:	EPA 218.6			Analysis Date:	3/8/2018	SeqNo:	2951943

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.305	0.20	1.000	2.322	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180309A**	QC Batch: **R122566**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	240	1.2	5.0		mg/L	1	3/9/2018 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0318
Lab Order:	N028966	**Collection Date:**	3/7/2018 8:23:00 AM
Project:	PG&E Topock - PMP	**Matrix:**	GROUNDWATER
Lab ID:	N028966-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180309A**	QC Batch: **R122566**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	3/9/2018 01:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R122566**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **LCSW**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951756**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.665	5.0	100.0	0	97.7	85	115				

Sample ID **MB-R122566**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **PBW**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N028966-001BDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **ZZZZZZ**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	237.792	5.0						237.8	0	30	

Sample ID **N028966-002BMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **ZZZZZZ**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	248.408	5.0	100.0	157.1	91.3	75	125				

Sample ID **N028966-002BMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **122566**
Client ID: **ZZZZZZ**	Batch ID: **R122566**	TestNo: **SM 2320 B**		Analysis Date: **3/9/2018**	SeqNo: **2951762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	252.654	5.0	100.0	157.1	95.5	75	125	248.4	1.69	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Chloride	1000	1.8	100		mg/L	200	3/8/2018 01:43 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Sulfate	380	1.1	25		mg/L	50	3/8/2018 01:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Chloride	2300	4.6	250		mg/L	500	3/8/2018 02:14 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180308A** QC Batch: **R122553**				PrepDate			Analyst: **RAB**
Sulfate	510	1.1	25		mg/L	50	3/8/2018 02:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R122553_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	PBW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R122553_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	LCSW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.996	0.50	2.000	0	99.8	90	110				

Sample ID	N028966-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1036.100	100						1040	0.408	20	

Sample ID	N028966-001BMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1449.260	100	400.0	1040	102	80	120				

Sample ID	N028966-001BMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1452.200	100	400.0	1040	103	80	120	1449	0.203	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R122553_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	PBW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951265

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R122553_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	LCSW	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951266

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.946	0.50	4.000	0	98.7	90	110				

Sample ID	N028966-001BMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951272

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	579.130	25	200.0	377.3	101	80	120				

Sample ID	N028966-001BMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	574.995	25	200.0	377.3	98.8	80	120	579.1	0.717	20	

Sample ID	N028966-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	122553
Client ID:	ZZZZZZ	Batch ID:	R122553	TestNo:	EPA 300.0			Analysis Date:	3/8/2018	SeqNo:	2951276

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	380.730	25						377.3	0.897	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-001

Client Sample ID: PE-01-0318
Collection Date: 3/7/2018 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180309D**	QC Batch: **R122576**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.28	0.032	0.050		mg/L	1	3/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N028966
Project: PG&E Topock - PMP
Lab ID: N028966-002

Client Sample ID: TW-03D-0318
Collection Date: 3/7/2018 8:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180309D**	QC Batch: **R122576**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	2.8	0.16	0.25		mg/L	5	3/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R122576	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	PBW	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952065

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R122576	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	LCSW	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.2	85	115				

Sample ID	N028800-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	ZZZZZZ	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952068

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.725	0.25						3.049	11.2	20	

Sample ID	N028800-003CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	ZZZZZZ	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952070

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	6.237	0.25	2.500	3.292	118	75	125				

Sample ID	N028800-003CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	122576
Client ID:	ZZZZZZ	Batch ID:	R122576	TestNo:	SM4500-NO3			Analysis Date:	3/9/2018	SeqNo:	2952071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.818	0.25	2.500	3.292	101	75	125	6.236	6.94	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Lisa Kellog	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address: 1410 Rocky Ridge Dr. #330	**Company:** Arcadis	**Address:** 2999 Oak Road, Suite 300	Excel EDD ☐	RTNE ☐	Y N
Address: Roseville, CA 95661	**Email:** dan.bush@arcadis.com; daniel.moore@critigen.com	Walnut Creek, CA 94597	Geotracker ☐	RWQCB ☐	1. Chilled ☑ ☐
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr. #330	**Email to:** lisa.kellog@arcadis.com **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By:	Roseville, CA 95661	**Phone:** 951.677.0577 **Fax:**	Others ☐	Level III ☐	3. Container Intact ☐ ☐
Title:	**Phone:** 916.786.3302 **Fax:**		Specify:	LEVEL IV ☑	4. Seal Present ☐ ☐
Signature: **Date:**	**Sampled By:** Jed DiCamillo		Global ID:	Regulatory ☐	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling ice
Project Name: PG&E Topock - PMP	*Signature:*	*Date* 3-7-18			Sample Temp: 3.7°C
Project Number:					

Matrix

Ground	☑	Sediment	☐
Potable	☐	Soil	☐
NPDES	☐	Other Solid	☐
Surface	☐		

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr+6 by SM3500	Alkalinity	pH	Chloride	Specific Conductance	Sulfate	TDS	NO2/NO3 by SM 4500	Ca, Fe, Mg, Na by EPA 200.7	Cr, Mn by 200.8	Total Dis Solids	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N028966 - 01	PE-01-0318	3.7.18	811	X			X	X	X	X	X	X	X	X	X	X	X	E	5	P	N/S	
2	- 02	TW-03D-0318	3.7.18	823	X			X	X	X	X	X	X	X	X	X	X	X	E	3	P	N/S	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

Courier:

Tracking No.

Relinquished by (Signature and Printed Name): Jed DiCamillo	Date / Time 3.7.18 1230	Received by (Signature and Printed Name):	Date / Time 3/7/18 1800
Relinquished by (Signature and Printed Name):	Date / Time 3/7/18 1947	Received by (Signature and Printed Name):	Date / Time 3/7/18 1947
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☑ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratrories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

T = Tube	V = VOA	P = Pint
J = Jar	B = Tedlar	G = Glass
M = Metal	P = Plastic	C = Can

White = Laboratory Copy

Yellow = Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	3/7/2018	Workorder:	N028966
Rep sample Temp (Deg C):	3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	N/A	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH received past holding time

Checklist Completed B DA 3/16/2018

Reviewed By: 03/20/2018

SampleControlLV

From: Madsen, Laura <Laura.Madsen@arcadis.com>
Sent: Monday, March 12, 2018 9:10 AM
To: ASSET LV Sample Control; 'Marlon B. Cartin'; 'Fernando Rivera'; nancy@assetlaboratories.com
Cc: Tina Rice; Madsen, Laura
Subject: RE: N028966 COC and Work Order Summary for Samples Received 3/7/2018

Hi Marlon,
It looks like the lab accidentally logged in TSS for analysis on both samples for this SDG. We only wanted TDS. I think the Tech didn't see the TDS and wrote in TDS again on the COC which may have confused the lab login person. Can you Stop the analysis on the TSS and not report it?

Thanks!
Laura

From: ASSET LV Sample Control <samplecontrol.lv@assetlaboratories.com>
Sent: Thursday, March 8, 2018 9:01 AM
To: Bush, Dan <Dan.Bush@arcadis.com>; Dan Moore <Daniel.Moore@critigen.com>
Cc: Madsen, Laura <Laura.Madsen@arcadis.com>; Sean.Maurel@arcadis.com; Tina Rice <Tina.Rice@critigen.com>; Kalib Sumter <Kalib.Sumter@critigen.com>; rsunjara@blainetech.com; Vadpey, Nick <Nicholas.Vadpey@arcadis.com>; Harmon, Alison <Ali.Harmon@arcadis.com>; Serna, Erica <Erica.Serna@arcadis.com>; jmahn@blainetech.com; Bloes, Marty <mbloes@pivox.com>; Borelis, Mariah <Mariah.Borelis@arcadis.com>
Subject: N028966 COC and Work Order Summary for Samples Received 3/7/2018

Hi Dan Bush:

Enclosed are COC and WO Summary for samples received 3/7/2018. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

Sincerely,
Andrea Fe M. Gallardo
Sample Control Officer

ASSET Laboratories

WORK ORDER Summary

12-Mar-18

WorkOrder: N028966

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 3/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028966-001A	PE-01-0318	3/7/2018 8:11:00 AM	3/21/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028966-001B			3/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/21/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☑	☐	☐	LSR
			3/21/2018			Total Suspended Solids Prep	☑	☐	☐	LSR
			3/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028966-001C			3/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028966-001D			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
N028966-002A	TW-03D-0318	3/7/2018 8:23:00 AM	3/21/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N028966-002B			3/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			3/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			3/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			3/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			3/21/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☑	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

12-Mar-18

WorkOrder: N028966

Client ID: ARCUS02

Project: PG&E Topock - PMP **QC Level:** Level IV **Date Received:** 3/7/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028966-002B	TW-03D-0318	3/7/2018 8:23:00 AM	3/21/2018	Groundwater		Total Suspended Solids Prep	☑	☐	☐	LSR
			3/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			3/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N028966-002C			3/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N028966-002D			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			3/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
N028966-003A	FOLDER	3/21/2018	3/21/2018		EDD	RWQCB	☐	☐	☐	LAB
			3/21/2018		Folder	Folder	☐	☐	☐	LAB
			3/21/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N028966

NAME	TEST METHOD
Claire Ignacio	EPA 200.7_Dissolved, EPA 200.8_Dissolved, SM 4500-NO3F
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122535 **Analyst:** LSR

ASSET #: N028966 **Date Analyzed:** 3/8/2018

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 3/14/2018

2nd Level Reviewer: RLB 03/20/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 2/23/18 1630
Analyst: LSR

	Standard	Std ID	Reading	Comments
	9.65 mS/cm	CINV-180108A	9.83 @ 19.3°C	% Rec: (90-110%)
	1412	171121A	1417 @ 19.4°C	
	9987	180108B	9970 @ 19.2°C	
	99672	171121B	99800 @ 19.3°C	

	Sample ID	Matrix	Reading	Comments
1	N028775-004D	H2O	1664 @ 19.7°C	
2	5D		1687 @ 19.7°C	
3	6C		5220 @ 19.3°C	
4	7C		5390 @ 19.4°C	
5	7CDUP		5350 @ 19.3°C	
6				
7				
8				
9	1413 mS/cm	CINV-171121C	1465 @ 19.7°C	
10	10000	170822F	10140 @ 19.7°C	
Dup	99672	171215A	99800 @ 19.5°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 3/8/18 1000
Analyst: LSR

	Standard	Std ID	Reading	Comments
	9.65 mS/cm	CINV-180108A	9.88 @ 19.3°C	% Rec: (90-110%)
	1412	171121A	1424 @ 19.2°C	
	9987	180108B	9990 @ 19.2°C	
	99672	171121B	100,000 @ 19.1°C	

	Sample ID	Matrix	Reading	Comments
1	N028968-001B	H2O	4190 @ 19.8°C	
2	2B		7820 @ 19.9°C	
3	N028968-001B		7950 @ 20.1°C	
4	1BDUP		7970 @ 19.8°C	
5	2B		7770 @ 19.9°C	
6				
7				Julia Ramit 3/14/2018
8	1413 mS/cm	CINV-171121C	1447 @ 19.7°C	RLB 03/20/2018
9	10,000	180108C	9980 @ 19.7°C	
10	99672	171215A	99900 @ 19.6°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122534 **Analyst:** LSR

ASSET #: N028966 **Date Analyzed:** 3/8/2018

Method: EPA 150.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.		X			X	
QC Items						
10. Method blank values are below the PQL .			X			X
11. LCS compounds within control limits.			X			X
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/14/2018

2nd Level Reviewer RB 03/20/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 3/8/18 920
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	QIW-171215D	7.00 @25.0°C	SLOPE: 96.9%
Buffer 4	171208A	4.03 @25.0C	
Buffer 10	170822B	10.02 @25.0°C	

	Sample ID	Matrix	pH	Comments
1	NO28966-001B	H2O	7.39 @25.0C	
2	1BDUP		7.41 @25.0C	
3	2B		7.24 @25.0°C	
4	NO28979-001D		7.77 @25.0C	
5	1DDUP		7.79 @25.0°C	
6				
7				
8				
9			Julia Ramit	3/14/2018
10			RLB	03/20/2018
Dup				Accept: 10% water, 20% soil
	Buffer (7) 4, 10 (Circle one)	QIW-171023A	7.03 @25.0°C	Accept: +/-0.1 pH units from expected value

Date: 3/8/18 1750
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	QIW-171215D	7.00 @25.0C	SLOPE: 96.9%
Buffer 4	171208A	4.03 @25.0C	
Buffer 10	170822B	10.02 @25.0C	

	Sample ID	Matrix	pH	Comments
1	NO28988-001A	H2O	7.57 @25.0C	
2	1ADUP		7.60 @25.0°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer (7) 4, 10 (Circle one)	QIW-171023A	6.96 @25.0C	Accept: +/-0.1 pH units from expected value

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SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67086 **Analyst:** LSR

ASSET #: N028966 **Date Analyzed:** 3/8/2018

Method: EPA 160.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/12/2018

2nd Level Reviewer RLB 03/20/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N028966-001B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(62.4895 - 62.4199)*1000000}{30}$$

= 2320 mg/L

Reporting result in two significant figures,

TDS = 2300 mg/L

Julia Ramit 3/12/2018

RLB 03/20/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/8/2018 1:05:41 P**
Prep End Date:

Reviewed/ Date: RB 03/20/2018
Initials/ Date: Lilia Ramit 3/12/2018

Prep Batch **67086** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67086	Water	INST 1802087	100	☐	0	0	100	1.000		
MB-67086	Water		100	☐	0	0	100	1.000		
N028966-001B	Groundwater	4190	100 /20	☐	0	0	100	1.000		
N028966-002B	Groundwater	7820	100 /20	☐	0	0	100	1.000		
N028968-001B	Water	7950	100 /20	☐	0	0	100	1.000		
N028968-001B-DU	Water	↓	100 /20	☐	0	0	100	1.000		
N028968-002B	Water	7770	100 /20	☐	0	0	100	1.000		

E - N028958-1A 2580 50
XX - ~~N028958-2~~ 2750 50
N029002-1A KR 3/8

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9700

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/8/2018 1:05:41 P**
Prep End Date: **3/9/2018 10:45:00 A**

Reviewed/ Date: RB 03/20/2018
Initials/ Date: Lilia Ramit 3/12/2018

Prep Batch **67086** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67086	Water		100	☐	0	0	100	1.000		
MB-67086	Water		100	☐	0	0	100	1.000		
N028966-001B	Groundwater		30	☐	0	0	100	3.333		
N028966-002B	Groundwater		20	☐	0	0	100	5.000		
N028968-001B	Water		20	☐	0	0	100	5.000		
N028968-001B-DU	Water		20	☐	0	0	100	5.000		
N028968-002B	Water		20	☐	0	0	100	5.000		
N028988-001A	Groundwater		50	☐	0	0	100	2.000		
N029002-001A	Groundwater		50	☐	0	0	100	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9700	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180208A	1000 ppm NaCl	LCS	100

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
3/8/18 1305 KK	MB 67056	100	70.7367 70.7371	70.7376 70.7375	
LL	LCS 67056	100	74.5100 74.5103	74.6055 74.6057	
A	NO28966-001B	30	62.4197 62.4199	62.4891 62.4895	
IF	2B	20	60.6408 60.6412	60.7261 60.7264	
S	NO28968-001B	20	45.7139 45.7143	45.8019 45.8022	
IS	1B DUP	20	48.8898 48.8903	48.9766 48.9770	
V	2B	20	48.8855 48.8860	48.9698 48.9701	
E	NO28988-001A	50	49.3752 49.3752	49.4996 49.4999	
XX	NO29052-001A 2A	50	49.5271 49.5274	49.6533 49.6538	
	Closing wt	: 49.9997	3/9/18 1048 LLK		

Julia Ramit 3/12/2018

03/20/2018

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TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
3/9/2018									
MB-67086	100	70.7371	70.7375	4	1	4			MBLK
LCS-67086	100	74.5103	74.6057	954	1	954			LCS
N028966-001B	30	62.4199	62.4895	696	3.33333333	2320	4190	0.554	SAMP
N028966-002B	20	60.6412	60.7264	852	5	4260	7820	0.545	SAMP
N028968-001B	20	45.7143	45.8022	879	5	4395	7950	0.553	SAMP
N028968-001BDUP	20	48.8903	48.977	867	5	4335	7950	0.545	DUP
N028968-002B	20	48.886	48.9701	841	5	4205	7770	0.541	SAMP
N028988-001A	50	49.3756	49.4999	1243	2	2486	2580	0.964	SAMP
N029002-001A	50	49.5274	49.6538	1264	2	2528	2750	0.919	SAMP

Julia Ramit 3/12/2018

RLB 03/20/2018

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67104
ASSET #: N028966

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 3/13/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		X
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		X
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
%Rec of Na in N028966-002D PS/MS/MSD failed. However, LCS and DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/21/18

2nd Level Reviewer 3/21/2018 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67104
ASSET #: N028966

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 3/13/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X	X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X	X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca and Mg in N028966-001D Ps/MS/MSD failed. However, LCS passed criteria.
Dilution test failed fo Mg.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/21/18

2nd Level Reviewer 3/21/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Gropundwater

FORMULA:

Calculate the Na concentration, in ug/L , in the original sample as follows:

Na , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N028966-001D** , the concentration ir ug/L is calculated as follows:

Na , ug/L = 29.2842 * 25 * (25/25) * 1000

Na , ug/L = 732105

Reporting results in two significant figures,

Na , ug/L = 730000

% RSD SUMMARY

RSD SUMMARY: 180313B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	18.24	15	<PQL
Standard1	ICAL	1	Na	0.1	5.86	15	PASS
Standard2	ICAL	1	Na	1	1.95	15	PASS
Standard3	ICAL	1	Na	5	0.15	15	PASS
Standard4	ICAL	1	Na	10	0.069	15	PASS
Standard5	ICAL	1	Na	20	0.31	15	PASS
Standard6	ICAL	1	Na	40	0.18	15	PASS
ICV	ICV	1	Na	10.011	0.23	15	PASS
ICB	ICB	1	Na	-0.039	13.87	15	PASS
ICSA1	ICSA	1	Na	-0.047	11.8	15	PASS
ICSAB1	ICSAB	1	Na	10.064	0.042	15	PASS
MB-67104	MBLK	1	Na	-0.052	3.11	15	PASS
LCS2-67104	LCS	1	Na	21	0.22	15	PASS
N028966-001D	SAMP	1	Na	696.8	0.97	15	PASS
N028966-002D	SAMP	1	Na	1306.3	1.19	15	PASS
N028966-001D	SAMP	25	Na	29.28	0.13	15	PASS
N028966-002D	SAMP	50	Na	30.11	0.32	15	PASS
N028966-002D	SAMP	250	Na	5.95	0.17	15	PASS
N028966-002D-PS	PS	50	Na	30.73	0.061	15	PASS
N028966-002D-MS2	MS	50	Na	32.33	0.039	15	PASS
N028966-002D-MSD2	MSD	50	Na	31.82	0.092	15	PASS
CCV1	CCV	1	Na	9.96	0.11	15	PASS
CCB1	CCB	1	Na	-0.025	34.75	15	<PQL
ICSA2	ICSA	1	Na	-0.036	8.21	15	PASS
ICSAB2	ICSAB	1	Na	9.97	0.17	15	PASS

RSD SUMMARY: 180313C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	2.78	15	PASS
Standard1	ICAL	1	Ca	0.2	14.29	15	PASS
Standard2	ICAL	1	Ca	1	1.95	15	PASS
Standard3	ICAL	1	Ca	2	2.64	15	PASS
Standard4	ICAL	1	Ca	5	1.42	15	PASS
Standard5	ICAL	1	Ca	7.5	0.55	15	PASS
Standard6	ICAL	1	Ca	10	0.38	15	PASS
Standard7	ICAL	1	Ca	20	0.3	15	PASS
ICV	ICV	1	Ca	10.01	0.64	15	PASS
ICB	ICB	1	Ca	-0.017	107.0004	15	<PQL
ICB	ICB	1	Ca	0.0054	250.98	15	<PQL
ICB	ICB	1	Ca	0.019	25.7	15	<PQL
LLICV1	CCV1	1	Ca	0.18	12.45	20	PASS
ICSA1	ICSA	1	Ca	479.69	0.11	15	PASS
ICSAB1	ICSAB	1	Ca	547.37	0.14	15	PASS
MB-67104	MBLK	1	Ca	0.014	199.72	15	<PQL
LCS1-67104	LCS	1	Ca	9.67	0.5	15	PASS
N028966-001D	SAMP	1	Ca	165.92	0.29	15	PASS
N028966-001D	SAMP	5	Ca	34.22	0.39	15	PASS
N028966-001D-PS	PS	1	Ca	168.96	0.21	15	PASS
N028966-001D-MS1	MS	1	Ca	168.04	0.68	15	PASS
N028966-001D-MSD1	MSD	1	Ca	166.33	0.6	15	PASS
N028966-002D	SAMP	1	Ca	230.32	0.46	15	PASS
N028968-002C	SAMP	1	Ca	148.65	0.96	15	PASS
CCV1	CCV	1	Ca	10.08	0.46	15	PASS
CCB1	CCB	1	Ca	0.03	70.51	15	<PQL
CCV2	CCV	1	Ca	10.011	1.22	15	PASS
CCB2	CCB	1	Ca	0.028	60.12	15	<PQL
LLCCV1	CCV2	1	Ca	0.21	15.29	20	PASS
ICSA2	ICSA	1	Ca	481.46	0.13	15	PASS
ICSAB2	ICSAB	1	Ca	550.32	0.12	15	PASS
CCV3	CCV	1	Ca	9.9	0.52	15	PASS
CCB3	CCB	1	Ca	0.0088	129.082	15	<PQL
CCV4	CCV	1	Ca	9.97	0.9	15	PASS
CCB4	CCB	1	Ca	0.0022	78.3	15	<PQL
LLCCV2	CCV2	1	Ca	0.23	20.58	20	<PQL
ICSA3	ICSA	1	Ca	479.15	0.22	15	PASS
ICSAB3	ICSAB	1	Ca	548.49	0.23	15	PASS
CCV5	CCV	1	Ca	9.91	0.57	15	PASS
CCB5	CCB	1	Ca	0.021	54.64	15	<PQL
LLCCV3	CCV2	1	Ca	0.2	3.049	20	PASS
ICSA4	ICSA	1	Ca	479.48	0.26	15	PASS

RSD SUMMARY: 180313C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB4	ICSAB	1	Ca	548.48	0.19	15	PASS
CalBlk	IBLK	1	Fe	0	10.82	15	PASS
Standard1	ICAL	1	Fe	0.02	1.74	15	PASS
Standard2	ICAL	1	Fe	0.05	0.47	15	PASS
Standard3	ICAL	1	Fe	2	0.6	15	PASS
Standard4	ICAL	1	Fe	5	0.48	15	PASS
Standard5	ICAL	1	Fe	7.5	0.56	15	PASS
Standard6	ICAL	1	Fe	10	0.074	15	PASS
Standard7	ICAL	1	Fe	20	0.082	15	PASS
ICV	ICV	1	Fe	10.14	0.1	15	PASS
ICB	ICB	1	Fe	0.0011	33.81	15	<PQL
ICB	ICB	1	Fe	0.00023	251.52	15	<PQL
ICB	ICB	1	Fe	0.00023	180.16	15	<PQL
LLICV1	CCV1	1	Fe	0.022	1.86	20	PASS
ICSA1	ICSA	1	Fe	195.46	0.41	15	PASS
ICSAB1	ICSAB	1	Fe	182.79	0.046	15	PASS
MB-67104	MBLK	1	Fe	0.0021	19.77	15	<PQL
LCS1-67104	LCS	1	Fe	0.11	0.83	15	PASS
N028966-001D	SAMP	1	Fe	0.0014	31.92	15	<PQL
N028966-001D	SAMP	5	Fe	0.00064	83.56	15	<PQL
N028966-001D-PS	PS	1	Fe	0.11	0.63	15	PASS
N028966-001D-MS1	MS	1	Fe	0.1	1.12	15	PASS
N028966-001D-MSD1	MSD	1	Fe	0.1	0.15	15	PASS
N028966-002D	SAMP	1	Fe	-0.00021	136.33	15	<PQL
N028968-002C	SAMP	1	Fe	0.02	2.98	15	PASS
CCV1	CCV	1	Fe	10.048	0.0018	15	PASS
CCB1	CCB	1	Fe	0.00071	51.77	15	<PQL
CCV2	CCV	1	Fe	10.024	0.038	15	PASS
CCB2	CCB	1	Fe	0.00052	47.12	15	<PQL
LLCCV1	CCV2	1	Fe	0.021	2.12	20	PASS
ICSA2	ICSA	1	Fe	194.47	0.29	15	PASS
ICSAB2	ICSAB	1	Fe	181.91	0.71	15	PASS
CCV3	CCV	1	Fe	10	0.082	15	PASS
CCB3	CCB	1	Fe	0.0011	49.97	15	<PQL
CCV4	CCV	1	Fe	9.96	0.11	15	PASS
CCB4	CCB	1	Fe	0.00075	26.49	15	<PQL
LLCCV2	CCV2	1	Fe	0.022	1.54	20	PASS
ICSA3	ICSA	1	Fe	194.17	0.33	15	PASS
ICSAB3	ICSAB	1	Fe	180.23	0.53	15	PASS
CCV5	CCV	1	Fe	9.95	0.042	15	PASS
CCB5	CCB	1	Fe	0.0011	67.48	15	<PQL
LLCCV3	CCV2	1	Fe	0.022	0.58	20	PASS

RSD SUMMARY: 180313C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA4	ICSA	1	Fe	192.44	0.35	15	PASS
ICSAB4	ICSAB	1	Fe	180.16	0.46	15	PASS
CalBlk	IBLK	1	Mg	0	7.47	15	PASS
Standard1	ICAL	1	Mg	0.1	0.57	15	PASS
Standard2	ICAL	1	Mg	1	0.65	15	PASS
Standard3	ICAL	1	Mg	2	0.55	15	PASS
Standard4	ICAL	1	Mg	5	0.62	15	PASS
Standard5	ICAL	1	Mg	7.5	0.42	15	PASS
Standard6	ICAL	1	Mg	10	0.12	15	PASS
Standard7	ICAL	1	Mg	20	0.075	15	PASS
ICV	ICV	1	Mg	10.12	0.054	15	PASS
ICB	ICB	1	Mg	0.00032	69.37	15	<PQL
ICB	ICB	1	Mg	-0.00004	1791.99	15	<PQL
ICB	ICB	1	Mg	0.00063	103.82	15	<PQL
LLICV1	CCV1	1	Mg	0.097	0.11	20	PASS
ICSA1	ICSA	1	Mg	419.4	0.36	15	PASS
ICSAB1	ICSAB	1	Mg	506.28	0.14	15	PASS
MB-67104	MBLK	1	Mg	0.0014	24.48	15	<PQL
LCS1-67104	LCS	1	Mg	9.83	0.11	15	PASS
N028966-001D	SAMP	1	Mg	36.73	0.22	15	PASS
N028966-001D	SAMP	5	Mg	8.14	0.7	15	PASS
N028966-001D-PS	PS	1	Mg	44.41	0.17	15	PASS
N028966-001D-MS1	MS	1	Mg	43.78	0.13	15	PASS
N028966-001D-MSD1	MSD	1	Mg	43.69	0.091	15	PASS
N028966-002D	SAMP	1	Mg	29.23	0.26	15	PASS
N028968-002C	SAMP	1	Mg	28.21	0.11	15	PASS
CCV1	CCV	1	Mg	10.008	0.14	15	PASS
CCB1	CCB	1	Mg	0.00057	39.86	15	<PQL
CCV2	CCV	1	Mg	10.007	0.11	15	PASS
CCB2	CCB	1	Mg	0.00056	163.65	15	<PQL
LLCCV1	CCV2	1	Mg	0.097	0.82	20	PASS
ICSA2	ICSA	1	Mg	416.9	0.31	15	PASS
ICSAB2	ICSAB	1	Mg	503.69	0.74	15	PASS
CCV3	CCV	1	Mg	10.003	0.084	15	PASS
CCB3	CCB	1	Mg	0.00096	38.4	15	<PQL
CCV4	CCV	1	Mg	9.99	0.19	15	PASS
CCB4	CCB	1	Mg	0.00054	22.18	15	<PQL
LLCCV2	CCV2	1	Mg	0.097	0.63	20	PASS
ICSA3	ICSA	1	Mg	419.14	0.36	15	PASS
ICSAB3	ICSAB	1	Mg	501.84	0.59	15	PASS
CCV5	CCV	1	Mg	9.96	0.074	15	PASS
CCB5	CCB	1	Mg	0.00084	59.56	15	<PQL

RSD SUMMARY: 180313C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV3	CCV2	1	Mg	0.097	1.18	20	PASS
ICSA4	ICSA	1	Mg	414.56	0.43	15	PASS
ICSAB4	ICSAB	1	Mg	500.52	0.62	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180313B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171201R,0.025<50mL
Standard2	MWST-171201R,0.25<50mL
Standard3	MWST-171201R,1.25<50mL
Standard4	MWST-171201R,2.5<50mL
Standard5	MWST-171201R,5<50mL
Standard6	MWST-171201R,10<50mL
ICV	MWST-171030L
CCV	MWST-171201R,2.5<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	03/13/2018	11:06:31 AM
26	Standard1	ICAL	1	03/13/2018	11:09:49 AM
27	Standard2	ICAL	1	03/13/2018	11:13:06 AM
28	Standard3	ICAL	1	03/13/2018	11:16:55 AM
29	Standard4	ICAL	1	03/13/2018	11:20:44 AM
30	Standard5	ICAL	1	03/13/2018	11:24:35 AM
31	Standard6	ICAL	1	03/13/2018	11:28:30 AM
32	ICV	ICV	1	03/13/2018	11:31:44 AM
1	ICB	ICB	1	03/13/2018	11:35:35 AM
33	ICSA1	ICSA	1	03/13/2018	11:38:53 AM
34	ICSAB1	ICSAB	1	03/13/2018	11:42:12 AM
38	MB-67104	MBLK	1	03/13/2018	11:46:05 AM
39	LCS2-67104	LCS	1	03/13/2018	11:49:23 AM
40	N028966-001D	SAMP	1	03/13/2018	11:53:19 AM
41	N028966-002D	SAMP	1	03/13/2018	11:58:45 AM
42	N028966-001D	SAMP	25	03/13/2018	12:03:44 PM
43	N028966-002D	SAMP	50	03/13/2018	12:07:03 PM
44	N028966-002D	SAMP	250	03/13/2018	12:10:21 PM
45	N028966-002D-PS	PS	50	03/13/2018	12:13:40 PM
46	N028966-002D-MS2	MS	50	03/13/2018	12:16:59 PM
47	N028966-002D-MSD2	MSD	50	03/13/2018	12:20:20 PM
29	CCV1	CCV	1	03/13/2018	12:23:40 PM
1	CCB1	CCB	1	03/13/2018	12:27:31 PM
33	ICSA2	ICSA	1	03/13/2018	12:32:49 PM
34	ICSAB2	ICSAB	1	03/13/2018	12:36:09 PM

INJECTION LOG: 180313C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-1~~71018~~A,0.5<50mL
Standard2	MWST-1~~71201O~~
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-180108A/ -171030F/-171201A/B

MWST-180228E
MWST-180228D

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	03/13/2018	01:19:58 PM
2	Standard1	ICAL	1	03/13/2018	01:25:23 PM
3	Standard2	ICAL	1	03/13/2018	01:30:43 PM
11	Standard3	ICAL	1	03/13/2018	01:36:04 PM
12	Standard4	ICAL	1	03/13/2018	01:41:25 PM
6	Standard5	ICAL	1	03/13/2018	01:48:47 PM
7	Standard6	ICAL	1	03/13/2018	01:56:09 PM
8	Standard7	ICAL	1	03/13/2018	02:03:03 PM
9	ICV	ICV	1	03/13/2018	02:09:58 PM
1	ICB	ICB	1	03/13/2018	02:17:05 PM
1	ICB	ICB	1	03/13/2018	02:22:04 PM
1	ICB	ICB	1	03/13/2018	02:31:36 PM
2	LLICV1	CCV1	1	03/13/2018	02:36:56 PM
4	ICSA1	ICSA	1	03/13/2018	02:42:15 PM
5	ICSAB1	ICSAB	1	03/13/2018	02:49:51 PM
38	MB-67104	MBLK	1	03/13/2018	02:59:14 PM
39	LCS1-67104	LCS	1	03/13/2018	03:04:35 PM
40	N028966-001D	SAMP	1	03/13/2018	03:11:57 PM
41	N028966-001D	SAMP	5	03/13/2018	03:19:18 PM
42	N028966-001D-PS	PS	1	03/13/2018	03:24:37 PM
43	N028966-001D-MS1	MS	1	03/13/2018	03:32:00 PM
44	N028966-001D-MSD1	MSD	1	03/13/2018	03:39:21 PM
45	N028966-002D	SAMP	1	03/13/2018	03:53:20 PM
46	N028968-002C	SAMP	1	03/13/2018	04:00:43 PM
47	MB-67121	MBLK	1	03/13/2018	04:08:04 PM
7	CCV1	CCV	1	03/13/2018	04:13:25 PM
1	CCB1	CCB	1	03/13/2018	04:20:21 PM
48	LCS-67121	LCS	1	03/13/2018	04:25:40 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
49	N028971-001B	SAMP	1	03/13/2018	04:33:03 PM
50	N028971-001B	SAMP	5	03/13/2018	04:38:25 PM
51	N028971-001B-PS	PS	1	03/13/2018	04:43:47 PM
52	N028971-001B-MS	MS	1	03/13/2018	04:53:18 PM
53	N028971-001B-MSD	MSD	1	03/13/2018	05:00:40 PM
54	N028972-001B	SAMP	1	03/13/2018	05:08:02 PM
55	N028999-001B	SAMP	1	03/13/2018	05:15:04 PM
56	N029000-001B	SAMP	1	03/13/2018	05:23:11 PM
57	N029000-002B	SAMP	1	03/13/2018	05:28:33 PM
7	CCV2	CCV	1	03/13/2018	05:33:54 PM
1	CCB2	CCB	1	03/13/2018	05:40:49 PM
2	LLCCV1	CCV2	1	03/13/2018	05:46:09 PM
4	ICSA2	ICSA	1	03/13/2018	05:51:28 PM
5	ICSAB2	ICSAB	1	03/13/2018	05:59:01 PM
58	MB-67137	MBLK	1	03/13/2018	06:09:13 PM
59	LCS-67137	LCS	1	03/13/2018	06:14:33 PM
60	N029068-001A	SAMP	1	03/13/2018	06:21:30 PM
61	N029068-001A	SAMP	5	03/13/2018	06:26:52 PM
62	N029068-001A-PS	PS	1	03/13/2018	06:32:15 PM
63	N029068-001A-MS	MS	1	03/13/2018	06:39:12 PM
64	N029068-001A-MSD	MSD	1	03/13/2018	06:46:10 PM
65	N029068-002A	SAMP	1	03/13/2018	06:53:08 PM
66	N029068-003A	SAMP	1	03/13/2018	06:58:30 PM
67	N029068-004A	SAMP	1	03/13/2018	07:03:52 PM
7	CCV3	CCV	1	03/13/2018	07:09:13 PM
1	CCB3	CCB	1	03/13/2018	07:16:08 PM
68	MB-67138	MBLK	1	03/13/2018	07:21:27 PM
69	LCS-67138	LCS	1	03/13/2018	07:26:48 PM
70	N029054-001F	SAMP	1	03/13/2018	07:33:45 PM
71	N029054-001F	SAMP	5	03/13/2018	07:41:08 PM
72	N029054-001F-PS	PS	1	03/13/2018	07:46:30 PM
73	N029054-001F-MS	MS	1	03/13/2018	07:53:28 PM
74	N029054-001F-MSD	MSD	1	03/13/2018	08:00:26 PM
75	N029054-002F	SAMP	1	03/13/2018	08:07:24 PM
76	N029054-003F	SAMP	1	03/13/2018	08:14:47 PM
77	N029054-004F	SAMP	1	03/13/2018	08:22:10 PM
7	CCV4	CCV	1	03/13/2018	08:29:34 PM
1	CCB4	CCB	1	03/13/2018	08:36:30 PM
2	LLCCV2	CCV2	1	03/13/2018	08:41:50 PM
4	ICSA3	ICSA	1	03/13/2018	08:47:10 PM
5	ICSAB3	ICSAB	1	03/13/2018	08:54:45 PM
78	N029054-005F	SAMP	1	03/13/2018	09:02:20 PM
79	N029054-006F	SAMP	1	03/13/2018	09:09:45 PM
80	N029054-007F	SAMP	1	03/13/2018	09:17:10 PM
7	CCV5	CCV	1	03/13/2018	09:24:33 PM
1	CCB5	CCB	1	03/13/2018	09:31:29 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV3	CCV2	1	03/13/2018	09:36:48 PM
4	ICSA4	ICSA	1	03/13/2018	09:42:08 PM
5	ICSAB4	ICSAB	1	03/13/2018	09:49:41 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/9/2018 11:20:59 A**
Prep End Date: **3/9/2018 2:00:00 P**
Prep Batch **67104** Prep Code: **200.7_PR**

Reviewed/ Date: 3/21/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-9**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-67104	Aqueous		25	☐	0	0	25	1.000		
LCS2-67104	Aqueous		25	☐	0	0	25	1.000		
MB-67104	Aqueous		25	☐	0	0	25	1.000		
N028966-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028968-002C	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9757	HYDROCHLORIC ACID
9768	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180313B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	03/13/2018	11:06:31 AM	Na	589.594	99	0.00	mg/L	
Standard1	03/13/2018	11:09:49 AM	Na	589.594	336	0.1000	mg/L	
Standard2	03/13/2018	11:13:06 AM	Na	589.594	2853	1.000	mg/L	
Standard3	03/13/2018	11:16:55 AM	Na	589.594	14497	5.000	mg/L	
Standard4	03/13/2018	11:20:44 AM	Na	589.594	28713	10.000	mg/L	
Standard5	03/13/2018	11:24:35 AM	Na	589.594	57650	20.000	mg/L	
Standard6	03/13/2018	11:28:30 AM	Na	589.594	115060	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 180313C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	03/13/2018	01:19:58 PM	Mg	279.079	239	0.00	mg/L	
Standard1	03/13/2018	01:25:23 PM	Mg	279.079	1709	0.1000	mg/L	
Standard2	03/13/2018	01:30:43 PM	Mg	279.079	17403	1.000	mg/L	
Standard3	03/13/2018	01:36:04 PM	Mg	279.079	35073	2.000	mg/L	
Standard4	03/13/2018	01:41:25 PM	Mg	279.079	92019	5.000	mg/L	
Standard5	03/13/2018	01:48:47 PM	Mg	279.079	140615	7.500	mg/L	
Standard6	03/13/2018	01:56:09 PM	Mg	279.079	179234	10.000	mg/L	
Standard7	03/13/2018	02:03:03 PM	Mg	279.079	351507	20.000	mg/L	0.9998
Calcium								
CalBlk	03/13/2018	01:19:58 PM	Ca	227.546	-125	0.00	mg/L	
Standard1	03/13/2018	01:25:23 PM	Ca	227.546	68	0.2000	mg/L	
Standard2	03/13/2018	01:30:43 PM	Ca	227.546	356	1.000	mg/L	
Standard3	03/13/2018	01:36:04 PM	Ca	227.546	707	2.000	mg/L	
Standard4	03/13/2018	01:41:25 PM	Ca	227.546	1858	5.000	mg/L	
Standard5	03/13/2018	01:48:47 PM	Ca	227.546	2815	7.500	mg/L	
Standard6	03/13/2018	01:56:09 PM	Ca	227.546	3672	10.000	mg/L	
Standard7	03/13/2018	02:03:03 PM	Ca	227.546	7384	20.000	mg/L	1.0000
Iron								
CalBlk	03/13/2018	01:19:58 PM	Fe	273.953	-153	0.00	mg/L	
Standard1	03/13/2018	01:25:23 PM	Fe	273.953	610	0.0200	mg/L	
Standard2	03/13/2018	01:30:43 PM	Fe	273.953	2016	0.050	mg/L	
Standard3	03/13/2018	01:36:04 PM	Fe	273.953	57740	2.000	mg/L	
Standard4	03/13/2018	01:41:25 PM	Fe	273.953	151453	5.000	mg/L	
Standard5	03/13/2018	01:48:47 PM	Fe	273.953	231493	7.500	mg/L	
Standard6	03/13/2018	01:56:09 PM	Fe	273.953	296001	10.000	mg/L	
Standard7	03/13/2018	02:03:03 PM	Fe	273.953	579009	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ICV**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10010.732	500	10000	0	100	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **CCV**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9959.207	500	10000	0	99.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICV**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10010.068	500	10000	0	100	90	110				
Iron	10136.289	20	10000	0	101	90	110				
Magnesium	10116.167	100	10000	0	101	90	110				

Sample ID **LLICV1**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ZZZZZZ**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	176.090	500	200.0	0	88.0	80	120				
Iron	21.822	20	20.00	0	109	80	120				
Magnesium	96.680	100	100.0	0	96.7	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **CCV**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10079.761	500	10000	0	101	90	110				
Iron	10047.887	20	10000	0	100	90	110				
Magnesium	10008.014	100	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **CCV**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10011.366	500	10000	0	100	90	110				
Iron	10024.077	20	10000	0	100	90	110				
Magnesium	10006.922	100	10000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ZZZZZZ**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	211.196	500	200.0	0	106	70	130				
Iron	21.414	20	20.00	0	107	70	130				
Magnesium	96.884	100	100.0	0	96.9	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ICB**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-38.654947	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **CCB**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-24.775752	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICB**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	18.986	500									
Iron	0.232	20									
Magnesium	0.627	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **CCB**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	29.728	500									
Iron	0.705	20									
Magnesium	0.572	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **CCB**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	27.506	500									
Iron	0.519	20									
Magnesium	0.563	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ICSA**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-47.288228	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ICSAB**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10064.201	500	10000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ICSA**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-35.878627	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ICSAB**	Batch ID: **R122640**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9972.950	500	10000	0	99.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICSA**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	443680.827	50	500000	0	88.7	80	120				
Calcium	479687.223	500	500000	0	95.9	80	120				
Iron	195459.477	20	200000	0	97.7	80	120				
Magnesium	419404.806	100	500000	0	83.9	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICSAB**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556124.479	50	500000	0	111	80	120				
Calcium	547374.937	500	500000	0	109	80	120				
Iron	182786.760	20	200000	0	91.4	80	120				
Magnesium	506281.570	100	500000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICSA**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	456773.687	50	500000	0	91.4	80	120				
Calcium	481463.234	500	500000	0	96.3	80	120				
Iron	194468.538	20	200000	0	97.2	80	120				
Magnesium	416897.178	100	500000	0	83.4	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICSAB**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556139.894	50	500000	0	111	80	120				
Calcium	550317.722	500	500000	0	110	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ICSAB**	Batch ID: **R122645**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	181911.256	20	200000	0	91.0	80	120				
Magnesium	503690.429	100	500000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180313B

Instrument ID: ICP-02

Sample Name	Type	DF	Sc, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.66	65-125	PASS
Standard2	ICAL	1	1.001	100.1	65-125	PASS
Standard3	ICAL	1	1.0042	100.42	65-125	PASS
Standard4	ICAL	1	0.99	99.02	65-125	PASS
Standard5	ICAL	1	0.97	97.46	65-125	PASS
Standard6	ICAL	1	0.96	96.37	65-125	PASS
ICV	ICV	1	0.99	98.56	65-125	PASS
ICB	ICB	1	0.99	99.041	65-125	PASS
ICSA1	ICSA	1	0.99	98.53	65-125	PASS
ICSAB1	ICSAB	1	0.99	99.076	65-125	PASS
MB-67104	MBLK	1	1	99.76	65-125	PASS
LCS2-67104	LCS	1	1.035	103.49	65-125	PASS
N028966-001D	SAMP	1	1	99.92	65-125	PASS
N028966-002D	SAMP	1	0.99	99.23	65-125	PASS
N028966-001D	SAMP	25	1.0015	100.15	65-125	PASS
N028966-002D	SAMP	50	0.99	99.47	65-125	PASS
N028966-002D	SAMP	250	1.0015	100.15	65-125	PASS
N028966-002D-PS	PS	50	1.0049	100.49	65-125	PASS
N028966-002D-MS2	MS	50	1.0079	100.79	65-125	PASS
N028966-002D-MSD2	MSD	50	1.0085	100.85	65-125	PASS
CCV1	CCV	1	1.02	101.97	65-125	PASS
CCB1	CCB	1	1.016	101.57	65-125	PASS
ICSA2	ICSA	1	1.016	101.65	65-125	PASS
ICSAB2	ICSAB	1	1.014	101.36	65-125	PASS

INTERNAL STANDARD: 180313C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0024	100.24	65-125	PASS
Standard2	ICAL	1	1.05	104.99	65-125	PASS
Standard3	ICAL	1	1.01	101.03	65-125	PASS
Standard4	ICAL	1	0.99	99.48	65-125	PASS
Standard5	ICAL	1	1.061	106.12	65-125	PASS
Standard6	ICAL	1	1	99.67	65-125	PASS
Standard7	ICAL	1	0.99	98.7	65-125	PASS
ICV	ICV	1	0.99	99.37	65-125	PASS
ICB	ICB	1	1.002	100.2	65-125	PASS
ICB	ICB	1	1.0057	100.57	65-125	PASS
ICB	ICB	1	1.0053	100.53	65-125	PASS
LLICV1	CCV1	1	1.0062	100.62	65-125	PASS
ICSA1	ICSA	1	1.055	105.47	65-125	PASS
ICSAB1	ICSAB	1	0.87	87.11	65-125	PASS
MB-67104	MBLK	1	1.03	103	65-125	PASS
LCS1-67104	LCS	1	0.94	94.11	65-125	PASS
N028966-001D	SAMP	1	0.92	91.86	65-125	PASS
N028966-001D	SAMP	5	0.96	96.11	65-125	PASS
N028966-001D-PS	PS	1	0.92	91.78	65-125	PASS
N028966-001D-MS1	MS	1	0.92	92.29	65-125	PASS
N028966-001D-MSD1	MSD	1	0.92	92.35	65-125	PASS
N028966-002D	SAMP	1	0.87	86.53	65-125	PASS
N028968-002C	SAMP	1	0.89	88.52	65-125	PASS
CCV1	CCV	1	0.99	99.34	65-125	PASS
CCB1	CCB	1	1	99.63	65-125	PASS
CCV2	CCV	1	1.0007	100.07	65-125	PASS
CCB2	CCB	1	1	99.68	65-125	PASS
LLCCV1	CCV2	1	1.0041	100.41	65-125	PASS
ICSA2	ICSA	1	1.046	104.61	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.38	65-125	PASS
CCV3	CCV	1	0.99	98.6	65-125	PASS
CCB3	CCB	1	0.99	99.13	65-125	PASS
CCV4	CCV	1	0.98	98.43	65-125	PASS
CCB4	CCB	1	1	99.66	65-125	PASS
LLCCV2	CCV2	1	1	99.85	65-125	PASS
ICSA3	ICSA	1	1.039	103.94	65-125	PASS
ICSAB3	ICSAB	1	0.86	86.14	65-125	PASS
CCV5	CCV	1	0.99	98.88	65-125	PASS
CCB5	CCB	1	1.0017	100.17	65-125	PASS
LLCCV3	CCV2	1	1.0044	100.44	65-125	PASS

INTERNAL STANDARD: 180313C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSA4	ICSA	1	1.04	104.03	65-125	PASS
ICSAB4	ICSAB	1	0.86	85.72	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N028966
Test Method: EPA 200.7
Analysis Date: 3/13/2018

Matrix: Groundwater
Batch No.: 67104

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.
Dilution test failed for Mg.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028966-002D DT 5X	Calcium	ug/L	171092.6	PASS	165924.2	3.11%	10
N028966-002D DT 5X	Iron	ug/L	0	NA	0		10
N028966-002D DT 5X	Magnesium	ug/L	40696.51	FAIL	36725.51	10.81%	10
N028966-002D DT 250X	Sodium	ug/L	1486743	PASS	1505481	1.24%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N028966-002D-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122640**
Client ID: **ZZZZZZ**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1536377.866	25000	20000	1505000	154	80	120				S

Sample ID **N028966-001D-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **122645**
Client ID: **ZZZZZZ**	Batch ID: **67104**	TestNo: **EPA 200.7**		Analysis Date: **3/13/2018**	SeqNo: **2954824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	168958.789	500	10000	165900	30.3	80	120				S
Iron	105.557	20	100.0	0	106	80	120				
Magnesium	44412.665	100	10000	36730	76.9	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67105
ASSET #: N028966

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 3/13/2018

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X	X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 3/20/18

2nd Level Reviewer 3/20/2018 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N028966-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.96372 * 1 * (25/25)

Chromium , ug/L = 1.96372

Reporting results in two significant figures,

Chromium , ug/L = 2.0

% RSD SUMMARY

PERCENT RSD SUMMARY: 180313A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.073	18.11	15	<PQL	0.14	25.18	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	3.84	15	PASS	0.54	11.76	15	PASS
Std3-5/50 ppb	ICAL	1	5.079	0.98	15	PASS	5.22	3.92	15	PASS
Std4-10/100 ppb	ICAL	1	10.36	1.21	15	PASS	10.63	2.32	15	PASS
Std5-20/200 ppb	ICAL	1	20.59	0.72	15	PASS	20.71	0.74	15	PASS
Std6-40/400 ppb	ICAL	1	41.11	1.02	15	PASS	41.11	1.32	15	PASS
Std7-100/1000 ppb	ICAL	1	101.63	1.4	15	PASS	101.36	1.17	15	PASS
Std8-200/2000 ppb	ICAL	1	198.89	0.6	15	PASS	198.99	0.46	15	PASS
ICV	ICV	1	10.24	2.47	15	PASS	102.43	1.79	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.0066	4.01	20	PASS	0.56	2.48	20	PASS
ICSA1	ICSA	1	0.043	11.53	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.34	2.64	15	PASS	21.96	2.084	15	PASS
LLICV	CCV1	1	1.0073	4.47	20	PASS	0.56	2.84	20	PASS
CCV1	CCV	1	20.31	1.099	15	PASS	20.23	0.89	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.96	1.031	15	PASS	20.34	1.28	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.99	0.16	15	PASS	20.3	2.27	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.012	30.95	15	<PQL
CCV4	CCV	1	20.4	2.018	15	PASS	20.64	2.4	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.024	4.47	20	PASS	0.6	2.19	20	PASS
ICSA2	ICSA	1	0.019	102.28	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.93	0.37	15	PASS	22.58	1.38	15	PASS
CCV5	CCV	1	20.27	0.92	15	PASS	20.53	1.19	15	PASS
CCB5	CCB	1	0.078	9.31	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.034	0.52	15	PASS	20.16	0.41	15	PASS
CCB6	CCB	1	0.025	55.037	15	<PQL	<0.000	N/A	15	<PQL
MB-67105	MBLK	1	0.0088	23.13	15	<PQL	<0.000	N/A	15	<PQL
LCS-67105	LCS	1	10.01	1.34	15	PASS	100.67	1.8	15	PASS
N028966-001D	SAMP	1	1.96	0.71	15	PASS	5.084	1.072	15	PASS
N028966-001D	SAMP	5	0.42	5.54	15	PASS	1.13	6.3	15	PASS
N028966-001D	SAMP	25	0.1	22.13	15	<PQL	0.24	13.21	15	PASS
N028966-001D-PS	PS	1	11.5	0.38	15	PASS	97.26	0.19	15	PASS
N028966-001D-PS	PS	5	2.48	3.93	15	PASS	21.12	0.86	15	PASS
N028966-001D-MS	MS	1	11.23	0.5	15	PASS	96.028	0.94	15	PASS
N028966-001D-MS	MS	5	2.9	3.99	15	PASS	21.35	0.73	15	PASS
N028966-001D-MSD	MSD	1	11.43	1.58	15	PASS	96.58	1.012	15	PASS
CCV7	CCV	1	20.55	0.89	15	PASS	20.33	1.28	15	PASS

PERCENT RSD SUMMARY: 180313A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N028966-001D-MSD	MSD	5	2.49	1.23	15	PASS	21.45	2.088	15	PASS
N028966-002D	SAMP	1	507.82	2.33	15	PASS	13.35	1.98	15	PASS
N028966-002D	SAMP	5	103.38	0.22	15	PASS	2.89	2.21	15	PASS
N028968-001C	SAMP	1	519.84	1.012	15	PASS	7.27	1.27	15	PASS
N028968-001C	SAMP	5	109.19	0.61	15	PASS	1.62	0.15	15	PASS
N028968-002C	SAMP	1	0.39	4.23	15	PASS	6.77	2.4	15	PASS
N028968-002C	SAMP	5	0.085	21.59	15	<PQL	1.45	1.52	15	PASS
CCV8	CCV	1	20.59	0.21	15	PASS	20.084	0.94	15	PASS
CCB8	CCB	1	0.00032	1989.64	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.03	6.46	20	PASS	0.56	11.93	20	PASS
ICSA3	ICSA	1	0.046	39.37	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.7	0.89	15	PASS	21.82	0.37	15	PASS
CCV9	CCV	1	20.15	0.41	15	PASS	19.69	0.17	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV10	CCV	1	20.38	0.6	15	PASS	19.86	1.36	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	0.96	4.32	20	PASS	0.53	3.62	20	PASS
ICSA4	ICSA	1	0.037	29.64	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	19.49	2.55	15	PASS	22.34	2.58	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180313A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0313001.D	RINSE	RINSE	1	03/13/18 10:40 AM
A0313002.D	Cal Blank	IBLK	1	03/13/18 10:45 AM
A0313003.D	Std1-0.1/1 ppb	ICAL	1	03/13/18 10:51 AM
A0313004.D	Std2-0.5/5 ppb	ICAL	1	03/13/18 10:57 AM
A0313005.D	Std3-5/50 ppb	ICAL	1	03/13/18 11:02 AM
A0313006.D	Std4-10/100 ppb	ICAL	1	03/13/18 11:08 AM
A0313007.D	Std5-20/200 ppb	ICAL	1	03/13/18 11:13 AM
A0313008.D	Std6-40/400 ppb	ICAL	1	03/13/18 11:19 AM
A0313009.D	Std7-100/1000 ppb	ICAL	1	03/13/18 11:25 AM
A0313010.D	Std8-200/2000 ppb	ICAL	1	03/13/18 11:30 AM
A0313011.D	ICV	ICV	1	03/13/18 11:36 AM
A0313012.D	ICB	ICB	1	03/13/18 11:42 AM
A0313013.D	LLICV	CCV1	1	03/13/18 11:47 AM
A0313014.D	ICSA1	ICSA	1	03/13/18 11:53 AM
A0313015.D	ICSAB1	ICSAB	1	03/13/18 11:58 AM
A0313016.D	LLICV	CCV1	1	03/13/18 12:04 PM
A0313017.D	MB-67120	MBLK	1	03/13/18 12:09 PM
A0313018.D	LCS-67120	LCS	1	03/13/18 12:15 PM
A0313019.D	N028918-010A	SAMP	1	03/13/18 12:21 PM
A0313020.D	N028918-010A	SAMP	5	03/13/18 12:26 PM
A0313021.D	N028918-010A-PS	PS	1	03/13/18 12:32 PM
A0313022.D	N028918-010A-MS	MS	1	03/13/18 12:38 PM
A0313023.D	N028918-010A-MSD	MSD	1	03/13/18 12:43 PM
A0313024.D	N028918-015A	SAMP	1	03/13/18 12:49 PM
A0313025.D	N028918-020A	SAMP	1	03/13/18 12:54 PM
A0313026.D	N028918-025A	SAMP	1	03/13/18 1:00 PM
A0313027.D	CCV1	CCV	1	03/13/18 1:06 PM
A0313028.D	CCB1	CCB	1	03/13/18 1:11 PM
A0313029.D	N028918-030A	SAMP	1	03/13/18 1:17 PM
A0313030.D	N028918-035A	SAMP	1	03/13/18 1:23 PM
A0313031.D	N028918-040A	SAMP	1	03/13/18 1:29 PM
A0313032.D	MB-67076	MBLK	1	03/13/18 1:38 PM
A0313033.D	LCS-67076	LCS	1	03/13/18 1:43 PM
A0313034.D	N028923-001B	SAMP	1	03/13/18 1:49 PM
A0313035.D	N028923-001B	SAMP	5	03/13/18 1:54 PM
A0313036.D	N028923-001B-PS	PS	1	03/13/18 2:00 PM
A0313037.D	N028923-001B-MS	MS	1	03/13/18 2:06 PM
A0313038.D	N028923-001B-MSD	MSD	1	03/13/18 2:12 PM
A0313039.D	CCV2	CCV	1	03/13/18 2:17 PM
A0313040.D	CCB2	CCB	1	03/13/18 2:23 PM
A0313041.D	N028923-002B	SAMP	1	03/13/18 2:29 PM
A0313042.D	N028923-003B	SAMP	1	03/13/18 2:34 PM

INJECTION LOG: 180313A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0313043.D	N028923-004B	SAMP	1	03/13/18 2:40 PM
A0313044.D	N028924-001B	SAMP	1	03/13/18 2:45 PM
A0313045.D	N028925-001B	SAMP	5	03/13/18 2:51 PM
A0313046.D	N028925-002B	SAMP	1	03/13/18 2:57 PM
A0313047.D	N028925-003B	SAMP	5	03/13/18 3:02 PM
A0313048.D	N028952-001B	SAMP	1	03/13/18 3:08 PM
A0313049.D	N028952-002B	SAMP	1	03/13/18 3:13 PM
A0313050.D	N028952-003B	SAMP	1	03/13/18 3:19 PM
A0313051.D	CCV3	CCV	1	03/13/18 3:25 PM
A0313052.D	CCB3	CCB	1	03/13/18 3:30 PM
A0313053.D	N028952-004B	SAMP	1	03/13/18 3:36 PM
A0313054.D	N028952-005B	SAMP	1	03/13/18 3:41 PM
A0313055.D	N028952-006B	SAMP	1	03/13/18 3:47 PM
A0313056.D	N028952-007B	SAMP	1	03/13/18 3:53 PM
A0313057.D	N028952-008B	SAMP	1	03/13/18 3:58 PM
A0313058.D	N028923-004B	SAMP	1	03/13/18 4:05 PM
A0313059.D	MB-67096	MBLK	1	03/13/18 4:10 PM
A0313060.D	LCS-67096	LCS	1	03/13/18 4:16 PM
A0313061.D	N028969-001B	SAMP	1	03/13/18 4:21 PM
A0313062.D	N028969-001B	SAMP	5	03/13/18 4:27 PM
A0313063.D	CCV4	CCV	1	03/13/18 4:32 PM
A0313064.D	CCB4	CCB	1	03/13/18 4:38 PM
A0313065.D	LLCCV1	CCV2	1	03/13/18 4:46 PM
A0313066.D	ICSA2	ICSA	1	03/13/18 4:53 PM
A0313067.D	ICSAB2	ICSAB	1	03/13/18 4:58 PM
A0313068.D	N028969-001B-PS	PS	1	03/13/18 5:04 PM
A0313069.D	N028969-001B-MS	MS	1	03/13/18 5:10 PM
A0313070.D	N028969-001B-MSD	MSD	1	03/13/18 5:15 PM
A0313071.D	N028969-002B	SAMP	1	03/13/18 5:22 PM
A0313072.D	N028969-003B	SAMP	1	03/13/18 5:27 PM
A0313073.D	N028969-004B	SAMP	1	03/13/18 5:33 PM
A0313074.D	N028969-005B	SAMP	1	03/13/18 5:39 PM
A0313075.D	N028969-006B	SAMP	1	03/13/18 5:44 PM
A0313076.D	N028970-001B	SAMP	1	03/13/18 5:50 PM
A0313077.D	N028970-002B	SAMP	1	03/13/18 5:56 PM
A0313078.D	CCV5	CCV	1	03/13/18 6:01 PM
A0313079.D	CCB5	CCB	1	03/13/18 6:07 PM
A0313080.D	N028971-001B	SAMP	1	03/13/18 6:12 PM
A0313081.D	N028972-001B	SAMP	1	03/13/18 6:18 PM
A0313082.D	N028991-001B	SAMP	1	03/13/18 6:24 PM
A0313083.D	N028992-001B	SAMP	1	03/13/18 6:29 PM
A0313084.D	N028992-002B	SAMP	1	03/13/18 6:35 PM

INJECTION LOG: 180313A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0313085.D	N028993-001B	SAMP	1	03/13/18 6:40 PM
A0313086.D	N028993-002B	SAMP	1	03/13/18 6:46 PM
A0313087.D	N028999-001B	SAMP	1	03/13/18 6:52 PM
A0313088.D	N029000-001B	SAMP	1	03/13/18 6:57 PM
A0313089.D	N029000-002B	SAMP	1	03/13/18 7:03 PM
A0313090.D	CCV6	CCV	1	03/13/18 7:08 PM
A0313091.D	CCB6	CCB	1	03/13/18 7:14 PM
A0313092.D	MB-67105	MBLK	1	03/13/18 7:20 PM
A0313093.D	LCS-67105	LCS	1	03/13/18 7:25 PM
A0313094.D	N028966-001D	SAMP	1	03/13/18 7:31 PM
A0313095.D	N028966-001D	SAMP	5	03/13/18 7:36 PM
A0313096.D	N028966-001D	SAMP	25	03/13/18 7:42 PM
A0313097.D	N028966-001D-PS	PS	1	03/13/18 7:48 PM
A0313098.D	N028966-001D-PS	PS	5	03/13/18 7:53 PM
A0313099.D	N028966-001D-MS	MS	1	03/13/18 7:59 PM
A0313100.D	N028966-001D-MS	MS	5	03/13/18 8:04 PM
A0313101.D	N028966-001D-MSD	MSD	1	03/13/18 8:10 PM
A0313102.D	CCV7	CCV	1	03/13/18 8:16 PM
A0313103.D	CCB7	CCB	1	03/13/18 8:21 PM
A0313104.D	N028966-001D-MSD	MSD	5	03/13/18 8:27 PM
A0313105.D	N028966-002D	SAMP	1	03/13/18 8:32 PM
A0313106.D	N028966-002D	SAMP	5	03/13/18 8:38 PM
A0313107.D	N028968-001C	SAMP	1	03/13/18 8:44 PM
A0313108.D	N028968-001C	SAMP	5	03/13/18 8:50 PM
A0313109.D	N028968-002C	SAMP	1	03/13/18 8:55 PM
A0313110.D	N028968-002C	SAMP	5	03/13/18 9:01 PM
A0313111.D	CCV8	CCV	1	03/13/18 9:07 PM
A0313112.D	CCB8	CCB	1	03/13/18 9:12 PM
A0313113.D	LLCCV2	CCV2	1	03/13/18 9:18 PM
A0313114.D	ICSA3	ICSA	1	03/13/18 9:23 PM
A0313115.D	ICSAB3	ICSAB	1	03/13/18 9:29 PM
A0313116.D	MB-67136	MBLK	1	03/13/18 9:35 PM
A0313117.D	LCS-67136	LCS	1	03/13/18 9:40 PM
A0313118.D	N029055-001A	SAMP	1	03/13/18 9:46 PM
A0313119.D	N029055-001A	SAMP	5	03/13/18 9:51 PM
A0313120.D	N029055-001A-PS	PS	1	03/13/18 9:57 PM
A0313121.D	N029055-001A-MS	MS	1	03/13/18 10:03 PM
A0313122.D	N029055-001A-MSD	MSD	1	03/13/18 10:08 PM
A0313123.D	N029055-002A	SAMP	1	03/13/18 10:14 PM
A0313124.D	N029056-007A	SAMP	1	03/13/18 10:20 PM
A0313125.D	N029057-007A	SAMP	1	03/13/18 10:25 PM
A0313126.D	CCV9	CCV	1	03/13/18 10:31 PM

INJECTION LOG: 180313A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0313127.D	CCB9	CCB	1	03/13/18 10:37 PM
A0313128.D	N029058-005A	SAMP	1	03/13/18 10:42 PM
A0313129.D	N029058-010A	SAMP	1	03/13/18 10:48 PM
A0313130.D	N029058-015A	SAMP	1	03/13/18 10:54 PM
A0313131.D	N029058-020A	SAMP	1	03/13/18 10:59 PM
A0313132.D	CCV10	CCV	1	03/13/18 11:05 PM
A0313133.D	CCB10	CCB	1	03/13/18 11:10 PM
A0313134.D	LLCCV3	CCV2	1	03/13/18 11:16 PM
A0313135.D	ICSA4	ICSA	1	03/13/18 11:22 PM
A0313136.D	ICSAB4	ICSAB	1	03/13/18 11:27 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/9/2018 11:25:56 A**
Prep End Date: **3/9/2018 4:00:00 P**
Prep Batch **67105** Prep Code: **200.8_PR**

Reviewed/ Date: 3/19/2018
Initials/ Date: 3/16/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67105	Aqueous		25	☐	0	0	25	1.000		
MB-67105	Aqueous		25	☐	0	0	25	1.000		
N028966-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N028966-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N028968-001C	Water	<2	25	☐	0	0	25	1.000		
N028968-002C	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9463	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-171009I	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-171009	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 Mar 2018 08:49:29 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	103091.00	0.00	
24 Mg	396000.00	0.00	
25 Mg	52272.30	0.00	
26 Mg	61179.80	0.00	
59 Co	521029.00	0.00	
115 In	976376.00	0.00	
206 Pb	289662.00	0.00	
207 Pb	253346.00	0.00	
208 Pb	622493.00	0.00	

RSD (%)

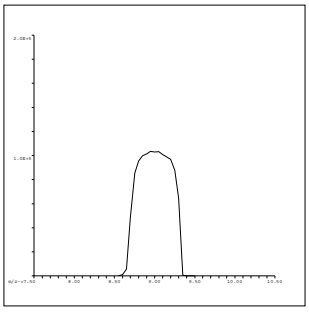
Element	Actual	Required	Flag
9 Be	1.22	5.00	
24 Mg	1.64	5.00	
25 Mg	1.64	5.00	
26 Mg	2.60	5.00	
59 Co	0.92	5.00	
115 In	0.60	5.00	
206 Pb	0.68	5.00	
207 Pb	0.54	5.00	
208 Pb	0.46	5.00	

Ion Ratio

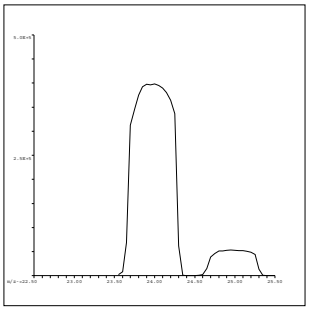
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

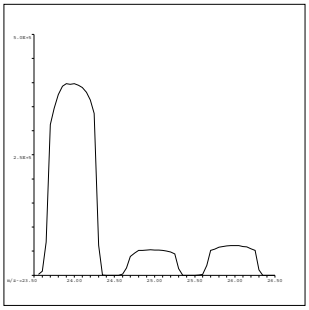
Element	Actual	Required	Flag



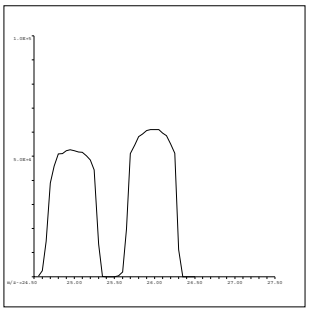
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



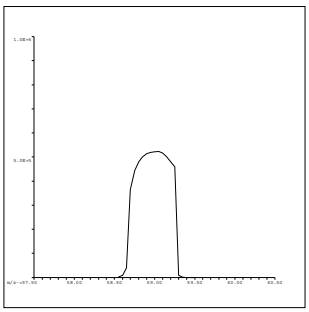
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



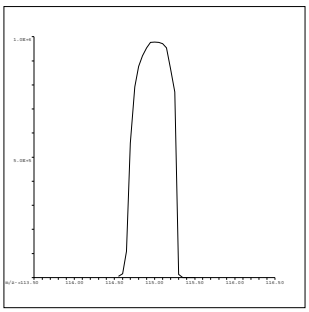
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



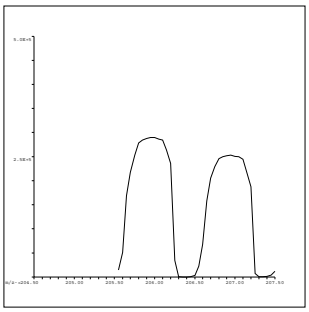
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



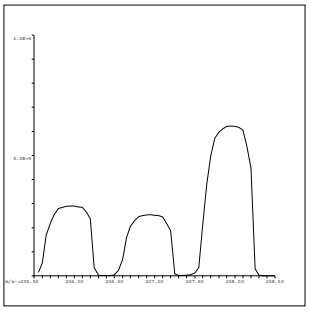
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



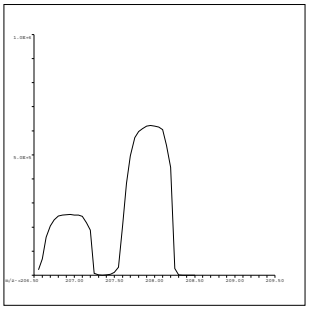
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180313A

Instrument ID: ICPMS-02

Analyte	Data File	A0313002.D	A0313004.D	A0313005.D	A0313006.D	A0313007.D	A0313008.D	A0313009.D	A0313010.D	
	Acq. Date-Time	03/13/2018 10:45 AM	03/13/2018 10:57 AM	03/13/2018 11:02 AM	03/13/2018 11:08 AM	03/13/2018 11:13 AM	03/13/2018 11:19 AM	03/13/2018 11:25 AM	03/13/2018 11:30 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	56691.6	57213.1	57689.6	56765.2	57351.4	57109.7	57847.6	57496.5	
55 Mn [2]	CPS	97.6	1364.5	12482.6	24899.7	48949.5	96643.2	241174.3	470568.2	1.0000
52 Cr [2]	CPS	516.7	2672.5	23463.6	46565.3	92956	184328.9	460720.9	895842	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.430	0.50	100.0	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.557	0.50	0.5000	0	111	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.229	0.50	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.336	0.50	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.299	0.50	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956387

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.638	0.50	20.00	0	103	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.598	0.50	0.5000	0	120	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956402

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.531	0.50	20.00	0	103	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956414

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.156	0.50	20.00	0	101	90	110				

Sample ID	CCV7	SampType:	CCV	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.334	0.50	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV8**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.084	0.50	20.00	0	100	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.559	0.50	0.5000	0	112	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.235	1.0	10.00	0	102	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.007	1.0	1.000	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.313	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.960	1.0	20.00	0	99.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.988	1.0	20.00	0	99.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.399	1.0	20.00	0	102	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956263

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.024	1.0	1.000	0	102	70	130				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956276

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.268	1.0	20.00	0	101	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956288

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.034	1.0	20.00	0	100	90	110				

Sample ID	CCV7	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCV	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956300

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.553	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCV**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.593	1.0	20.00	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ZZZZZZ**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.030	1.0	1.000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **CCB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ICB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956210

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956277

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB6	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956289

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB7	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956301

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB8	SampType:	CCB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	CCB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSA**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSAB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.961	0.50	20.00	0	110	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSA**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSAB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	22.581	0.50	20.00	0	113	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSA**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSAB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.825	0.50	20.00	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ICSA	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956212

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ICSAB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956213

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.344	1.0	20.00	0	96.7	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ICSA	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956264

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ICSAB	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956265

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.932	1.0	20.00	0	94.7	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ICSA	Batch ID:	R122661	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **122661**
Client ID: **ICSAB**	Batch ID: **R122661**	TestNo: **EPA 200.8**		Analysis Date: **3/13/2018**	SeqNo: **2956313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.701	1.0	20.00	0	98.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180313A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56691.6	56691.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	56710.5	56691.6	100.03	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	57213.1	56691.6	100.92	PASS	70-125
Std3-5/50 ppb	ICAL	1	57689.6	56691.6	101.76	PASS	70-125
Std4-10/100 ppb	ICAL	1	56765.2	56691.6	100.13	PASS	70-125
Std5-20/200 ppb	ICAL	1	57351.4	56691.6	101.16	PASS	70-125
Std6-40/400 ppb	ICAL	1	57109.7	56691.6	100.74	PASS	70-125
Std7-100/1000 ppb	ICAL	1	57847.6	56691.6	102.04	PASS	70-125
Std8-200/2000 ppb	ICAL	1	57496.5	56691.6	101.42	PASS	70-125
ICV	ICV	1	67723.1	56691.6	119.46	PASS	70-125
ICB	ICB	1	57516.5	56691.6	101.46	PASS	70-125
LLICV	CCV1	1	65736.8	56691.6	115.96	PASS	70-125
ICSA1	ICSA	1	64785.5	56691.6	114.28	PASS	70-125
ICSAB1	ICSAB	1	58177.9	56691.6	102.62	PASS	70-125
LLICV	CCV1	1	64210.9	56691.6	113.26	PASS	70-125
CCV1	CCV	1	65838.3	56691.6	116.13	PASS	70-125
CCB1	CCB	1	64165.2	56691.6	113.18	PASS	70-125
CCV2	CCV	1	64446.3	56691.6	113.68	PASS	70-125
CCB2	CCB	1	59021.8	56691.6	104.11	PASS	70-125
CCV3	CCV	1	64299.9	56691.6	113.42	PASS	70-125
CCB3	CCB	1	60529.5	56691.6	106.77	PASS	70-125
CCV4	CCV	1	57942.7	56691.6	102.21	PASS	70-125
CCB4	CCB	1	55377.3	56691.6	97.68	PASS	70-125
LLCCV1	CCV2	1	52720.9	56691.6	93	PASS	70-125
ICSA2	ICSA	1	67197	56691.6	118.53	PASS	70-125
ICSAB2	ICSAB	1	66353.5	56691.6	117.04	PASS	70-125
CCV5	CCV	1	61365.5	56691.6	108.24	PASS	70-125
CCB5	CCB	1	57866.6	56691.6	102.07	PASS	70-125
CCV6	CCV	1	56157.7	56691.6	99.058	PASS	70-125
CCB6	CCB	1	53156.8	56691.6	93.76	PASS	70-125
MB-67105	MBLK	1	51752.3	56691.6	91.29	PASS	70-125
LCS-67105	LCS	1	61089.3	56691.6	107.76	PASS	70-125
N028966-001D	SAMP	1	51906.2	56691.6	91.56	PASS	70-125
N028966-001D	SAMP	5	55170.9	56691.6	97.32	PASS	70-125
N028966-001D	SAMP	25	56018.2	56691.6	98.81	PASS	70-125
N028966-001D-PS	PS	1	55546.6	56691.6	97.98	PASS	70-125
N028966-001D-PS	PS	5	56455.2	56691.6	99.58	PASS	70-125
N028966-001D-MS	MS	1	57690.3	56691.6	101.76	PASS	70-125
N028966-001D-MS	MS	5	63474.6	56691.6	111.96	PASS	70-125
N028966-001D-MSD	MSD	1	63598.6	56691.6	112.18	PASS	70-125
CCV7	CCV	1	67981.2	56691.6	119.91	PASS	70-125

INTERNAL STANDARD: 180313A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCB7	CCB	1	64087.2	56691.6	113.05	PASS	70-125
N028966-001D-MSD	MSD	5	61653.7	56691.6	108.75	PASS	70-125
N028966-002D	SAMP	1	62457.7	56691.6	110.17	PASS	70-125
N028966-002D	SAMP	5	68145.2	56691.6	120.2	PASS	70-125
N028968-001C	SAMP	1	61246.6	56691.6	108.04	PASS	70-125
N028968-001C	SAMP	5	70179.2	56691.6	123.79	PASS	70-125
N028968-002C	SAMP	1	62794.6	56691.6	110.77	PASS	70-125
N028968-002C	SAMP	5	68980.8	56691.6	121.68	PASS	70-125
CCV8	CCV	1	67017.5	56691.6	118.21	PASS	70-125
CCB8	CCB	1	68831.5	56691.6	121.41	PASS	70-125
LLCCV2	CCV2	1	63382.5	56691.6	111.8	PASS	70-125
ICSA3	ICSA	1	70044.3	56691.6	123.55	PASS	70-125
ICSAB3	ICSAB	1	67306.4	56691.6	118.72	PASS	70-125
CCV9	CCV	1	66761.9	56691.6	117.76	PASS	70-125
CCB9	CCB	1	63766	56691.6	112.48	PASS	70-125
CCV10	CCV	1	62238.2	56691.6	109.78	PASS	70-125
CCB10	CCB	1	60967.8	56691.6	107.54	PASS	70-125
LLCCV3	CCV2	1	57103.2	56691.6	100.73	PASS	70-125
ICSA4	ICSA	1	56183.3	56691.6	99.1	PASS	70-125
ICSAB4	ICSAB	1	56602.4	56691.6	99.84	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N028966
Test Method: EPA 200.8
Analysis Date: 3/13/2018

Matrix: Groundwater
Batch No.: 67105

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N028966-001D DT 5X	Chromium	ug/L	2.109706	NA	1.963723	7.43%	10
N028966-001D DT 5X	Manganese	ug/L	5.668693	NA	5.084253	11.50%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N028966-001D-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **122661**
Client ID: **ZZZZZZ** Batch ID: **67105** TestNo: **EPA 200.8** Analysis Date: **3/13/2018** SeqNo: **2956421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	97.265	0.50	100.0	5.084	92.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N028966-001D-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	122661
Client ID:	ZZZZZZ	Batch ID:	67105	TestNo:	EPA 200.8			Analysis Date:	3/13/2018	SeqNo:	2956295

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.500	1.0	10.00	1.964	95.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R122570
ASSET #: N028966

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 3/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			X		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			X		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/12/2018

2nd Level Reviewer RLB 03/20/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N028966-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 2.3217 * 1$$

$$Cr^{+6}, \mu g/L = 2.3217$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 2.3}$$

rba 3/12/2018

ANALYSIS RUN LOG

INJECTION LOG: 180305A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 9:43 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	03/05/18 9:54 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:13 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:22 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:31 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:41 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:50 AM	Not Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:00 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:16 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	03/05/18 11:27 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/05/18 11:36 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	03/05/18 11:46 AM	Reported
13	MB-R122461	MBLK	1	Hexavalent Chromium	03/05/18 11:55 AM	Reported
14	LCS-R122461	LCS	1	Hexavalent Chromium	03/05/18 12:04 PM	Reported
15	N028831-001A	SAMP	1	Hexavalent Chromium	03/05/18 12:18 PM	Reported
16	N028831-002A	SAMP	1	Hexavalent Chromium	03/05/18 12:29 PM	Not Reported
17	N028831-003A	SAMP	1	Hexavalent Chromium	03/05/18 12:39 PM	Not Reported
18	N028831-004A	SAMP	1	Hexavalent Chromium	03/05/18 12:48 PM	Not Reported
19	N028831-001A	SAMP	2	Hexavalent Chromium	03/05/18 1:27 PM	Reported
20	N028831-002A	SAMP	5	Hexavalent Chromium	03/05/18 1:38 PM	Reported
21	N028831-003AMS	MS	5	Hexavalent Chromium	03/05/18 1:47 PM	Not Reported
22	N028831-004AMS	MS	5	Hexavalent Chromium	03/05/18 1:57 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	03/05/18 2:06 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	03/05/18 2:16 PM	Reported
25	N028831-002A	SAMP	1	Hexavalent Chromium	03/05/18 2:25 PM	Not Reported
26	N028831-004AMS	MS	10	Hexavalent Chromium	03/05/18 2:34 PM	Not Reported
27	N028831-003A	SAMP	5	Hexavalent Chromium	03/05/18 2:44 PM	Not Reported
28	N028831-001AMS	MS	2	Hexavalent Chromium	03/05/18 2:53 PM	Reported
29	N028831-001AMSD	MSD	2	Hexavalent Chromium	03/05/18 3:03 PM	Reported
30	N028831-002AMS	MS	5	Hexavalent Chromium	03/05/18 3:12 PM	Reported
31	N028831-004AMS	MS	20	Hexavalent Chromium	03/05/18 3:22 PM	Reported
32	N028831-004A	SAMP	20	Hexavalent Chromium	03/05/18 3:31 PM	Reported
33	N028829-001A	SAMP	1	Hexavalent Chromium	03/05/18 3:41 PM	Reported
34	N028829-002A	SAMP	1	Hexavalent Chromium	03/05/18 3:50 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	03/05/18 4:00 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	03/05/18 4:09 PM	Reported
37	N028829-003A	SAMP	1	Hexavalent Chromium	03/05/18 4:19 PM	Reported
38	N028829-004A	SAMP	1	Hexavalent Chromium	03/05/18 4:28 PM	Reported
39	N028829-005A	SAMP	1	Hexavalent Chromium	03/05/18 4:37 PM	Reported
40	N028829-006A	SAMP	1	Hexavalent Chromium	03/05/18 4:47 PM	Reported
41	N028829-007A	SAMP	1	Hexavalent Chromium	03/05/18 4:56 PM	Reported
42	N028829-008A	SAMP	1	Hexavalent Chromium	03/05/18 5:06 PM	Reported

jrba 3/7/2018

INJECTION LOG: 180305A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028829-002AMS	MS	2	Hexavalent Chromium	03/05/18 5:15 PM	Not Reported
44	N028831-001ADUP	DUP	2	Hexavalent Chromium	03/05/18 5:25 PM	Reported
45	N028829-002AMS	MS	1	Hexavalent Chromium	03/05/18 5:34 PM	Reported
46	N028829-002A	SAMP	2	Hexavalent Chromium	03/05/18 5:44 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	03/05/18 5:53 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	03/05/18 6:03 PM	Reported
49	N028831-003AMS	MS	1	Hexavalent Chromium	03/05/18 6:12 PM	Not Reported
50	N028831-004A	SAMP	10	Hexavalent Chromium	03/05/18 6:22 PM	Not Reported
51	N028831-004A	SAMP	5	Hexavalent Chromium	03/05/18 6:31 PM	Not Reported
52	N028831-003A	SAMP	2	Hexavalent Chromium	03/05/18 6:41 PM	Reported
53	N028831-004A	SAMP	2	Hexavalent Chromium	03/05/18 6:50 PM	Not Reported
54	N028831-002AMS	MS	1	Hexavalent Chromium	03/05/18 6:59 PM	Not Reported
55	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 7:09 PM	Not Reported
56	CCV-4	CCV	1	Hexavalent Chromium	03/05/18 7:18 PM	Reported
57	CCB-4	CCB	1	Hexavalent Chromium	03/05/18 7:28 PM	Reported
58	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 7:37 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180305A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**06/Mar/18 09:34:49**
No. of Injections:	**61**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/05/2018 09:43	Finished	BLANK
2	iBLANK	2	1000	Unknown		03/05/2018 09:54	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/05/2018 10:13	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/05/2018 10:22	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/05/2018 10:31	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/05/2018 10:41	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	8	1000	Unknown		03/05/2018 10:50	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/05/2018 11:00	Finished	20 ppb, IWST-180129A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	03/05/2018 11:16	Finished	15 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		03/05/2018 11:27	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		03/05/2018 11:36	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		03/05/2018 11:46	Finished	ICB R180302A
13	MB-H2O,MBLK,1,	13	1000	Unknown		03/05/2018 11:55	Finished	MB R180302A
14	LCS-H2O,LCS,1,	14	1000	Unknown		03/05/2018 12:04	Finished	LCS, IWST-180129B
15	N028831-001A,SAMF	15	1000	Unknown		03/05/2018 12:18	Finished	SAMP,10mL
16	N028831-002A,SAMF	16	1000	Unknown		03/05/2018 12:29	Finished	SAMP,10mL
17	N028831-003A,SAMF	17	1000	Unknown		03/05/2018 12:39	Finished	SAMP,10mL
18	N028831-004A,SAMF	18	1000	Unknown		03/05/2018 12:48	Finished	SAMP,10mL
19	N028831-001A,SAMF	1	1000	Unknown		03/05/2018 13:27	Finished	SAMP,5>10mL
20	N028831-002A,SAMF	2	1000	Unknown		03/05/2018 13:38	Finished	SAMP,2>10mL
21	N028831-003AMS,MS	3	1000	Unknown		03/05/2018 13:47	Finished	MS (1ppb), IWST-180129B,2>1
22	N028831-004AMS,MS	4	1000	Unknown		03/05/2018 13:57	Finished	MS (1ppb), IWST-180129B,2>1
23	CCV-1,CCV1,1,	5	1000	Unknown		03/05/2018 14:06	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	6	1000	Unknown		03/05/2018 14:16	Finished	CCB R180302A
25	N028831-002A,SAMF	7	1000	Unknown		03/05/2018 14:25	Finished	SAMP,10mL
26	N028831-004AMS,MS	8	1000	Unknown		03/05/2018 14:34	Finished	MS (1ppb), IWST-180129B,1>1
27	N028831-003A,SAMF	9	1000	Unknown		03/05/2018 14:44	Finished	SAMP,2>10mL
28	N028831-001AMS,MS	10	1000	Unknown		03/05/2018 14:53	Finished	MS (1ppb), IWST-180129B,5>1
29	N028831-001AMSD,M	11	1000	Unknown		03/05/2018 15:03	Finished	MSD (1ppb), IWST-180129B,5>
30	N028831-002AMS,MS	12	1000	Unknown		03/05/2018 15:12	Finished	MS (1ppb), IWST-180129B,2>1
31	N028831-004AMS,MS	13	1000	Unknown		03/05/2018 15:22	Finished	MS (1ppb), IWST-180129B,0.4
32	N028831-004A,SAMF	14	1000	Unknown		03/05/2018 15:31	Finished	SAMP,0.5>10mL
33	N028829-001A,SAMF	15	1000	Unknown		03/05/2018 15:41	Finished	SAMP,10mL
34	N028829-002A,SAMF	16	1000	Unknown		03/05/2018 15:50	Finished	SAMP,10mL
35	CCV-2,CCV,1,	17	1000	Unknown		03/05/2018 16:00	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	18	1000	Unknown		03/05/2018 16:09	Finished	CCB R180302A
37	N028829-003A,SAMF	19	1000	Unknown		03/05/2018 16:19	Finished	SAMP,10mL
38	N028829-004A,SAMF	20	1000	Unknown		03/05/2018 16:28	Finished	SAMP,10mL
39	N028829-005A,SAMF	21	1000	Unknown		03/05/2018 16:37	Finished	SAMP,10mL
40	N028829-006A,SAMF	22	1000	Unknown		03/05/2018 16:47	Finished	SAMP,10mL
41	N028829-007A,SAMF	23	1000	Unknown		03/05/2018 16:56	Finished	SAMP,10mL
42	N028829-008A,SAMF	24	1000	Unknown		03/05/2018 17:06	Finished	SAMP,10mL
43	N028829-002AMS,MS	25	1000	Unknown		03/05/2018 17:15	Finished	MS (1ppb), IWST-180129B,5>1
44	N028831-001ADUP,D	26	1000	Unknown		03/05/2018 17:25	Finished	DUP,5>10mL
45	N028829-002AMS,MS	27	1000	Unknown		03/05/2018 17:34	Finished	MS (1ppb), IWST-180129B,10
46	N028829-002A,SAMF	28	1000	Unknown		03/05/2018 17:44	Finished	SAMP,5>10mL
47	CCV-3,CCV1,1,	29	1000	Unknown		03/05/2018 17:53	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	30	1000	Unknown		03/05/2018 18:03	Finished	CCB R180302A
49	N028831-003AMS,MS	31	1000	Unknown		03/05/2018 18:12	Finished	MS (1ppb), IWST-180129B,10
50	N028831-004A,SAMF	32	1000	Unknown		03/05/2018 18:22	Finished	SAMP,1>10mL
51	N028831-004A,SAMF	33	1000	Unknown		03/05/2018 18:31	Finished	SAMP,2>10mL
52	N028831-003A,SAMF	34	1000	Unknown		03/05/2018 18:41	Finished	SAMP,5>10mL
53	N028831-004A,SAMF	35	1000	Unknown		03/05/2018 18:50	Finished	SAMP,5>10mL
54	N028831-002AMS,MS	36	1000	Unknown		03/05/2018 18:59	Finished	MS (1ppb), IWST-180129B,10
55	BLANK	37	1000	Unknown		03/05/2018 19:09	Finished	BLANK
56	CCV-4,CCV,1,	38	1000	Unknown		03/05/2018 19:18	Finished	CCV @5ppb, IWST-180129A
57	CCB-4,CCB,1,	39	1000	Unknown		03/05/2018 19:28	Finished	CCB R180302A
58	BLANK	40	1000	Unknown		03/05/2018 19:37	Finished	BLANK
59	SHUTDOWN	41	1000	Unknown		03/05/2018 19:47	Finished	
60	Eluent: R180305A	42	1000	Unknown		n.a.	Finished	Eluent

61	PCR: R180305B	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180308A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 9:43 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	03/05/18 9:54 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:13 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:22 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:31 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:41 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:50 AM	Not Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:00 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:16 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	03/08/18 9:15 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	03/08/18 9:27 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	03/08/18 9:36 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/08/18 9:45 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	03/08/18 9:55 AM	Reported
15	MB-R122570	MBLK	1	Hexavalent Chromium	03/08/18 10:04 AM	Reported
16	LCS-R122570	LCS	1	Hexavalent Chromium	03/08/18 10:14 AM	Reported
17	N028969-001A	SAMP	1	Hexavalent Chromium	03/08/18 10:23 AM	Reported
18	N028969-002A	SAMP	1	Hexavalent Chromium	03/08/18 10:33 AM	Reported
19	N028969-003A	SAMP	1	Hexavalent Chromium	03/08/18 10:42 AM	Reported
20	N028969-004A	SAMP	1	Hexavalent Chromium	03/08/18 10:51 AM	Reported
21	N028969-005A	SAMP	1	Hexavalent Chromium	03/08/18 11:01 AM	Reported
22	N028969-006A	SAMP	1	Hexavalent Chromium	03/08/18 11:10 AM	Reported
23	N028970-001A	SAMP	1	Hexavalent Chromium	03/08/18 11:20 AM	Reported
24	N028970-002A	SAMP	500	Hexavalent Chromium	03/08/18 11:29 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	03/08/18 11:39 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	03/08/18 11:48 AM	Reported
27	N028970-003A	SAMP	10	Hexavalent Chromium	03/08/18 11:58 AM	Not Reported
28	N028970-004A	SAMP	1	Hexavalent Chromium	03/08/18 12:07 PM	Reported
29	N028971-001A	SAMP	1	Hexavalent Chromium	03/08/18 12:17 PM	Reported
30	N028972-001A	SAMP	1	Hexavalent Chromium	03/08/18 12:26 PM	Not Reported
31	N028968-002A	SAMP	1	Hexavalent Chromium	03/08/18 12:36 PM	Reported
32	N028968-002AMS	MS	1	Hexavalent Chromium	03/08/18 12:45 PM	Reported
33	N028966-002A	SAMP	100	Hexavalent Chromium	03/08/18 12:54 PM	Reported
34	N028966-002AMS	MS	100	Hexavalent Chromium	03/08/18 1:04 PM	Reported
35	N028966-002AMSD	MSD	100	Hexavalent Chromium	03/08/18 1:13 PM	Reported
36	N028970-001ADUP	DUP	1	Hexavalent Chromium	03/08/18 1:23 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	03/08/18 1:32 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	03/08/18 1:42 PM	Reported
39	N028966-001A	SAMP	1	Hexavalent Chromium	03/08/18 1:51 PM	Reported
40	N028966-001AMS	MS	1	Hexavalent Chromium	03/08/18 2:01 PM	Reported
41	N028968-001A	SAMP	100	Hexavalent Chromium	03/08/18 2:10 PM	Reported
42	N028968-001AMS	MS	100	Hexavalent Chromium	03/08/18 2:20 PM	Reported

INJECTION LOG: 180308A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028972-001A	SAMP	20	Hexavalent Chromium	03/08/18 2:29 PM	Reported
44	N028970-003A	SAMP	1	Hexavalent Chromium	03/08/18 2:39 PM	Reported
45	LCS-R122572	LCS	1	Hexavalent Chromium	03/08/18 2:56 PM	Reported
46	MB-R122572	MBLK	1	Hexavalent Chromium	03/08/18 3:08 PM	Reported
47	N028984-001A	SAMP	1	Hexavalent Chromium	03/08/18 3:17 PM	Reported
48	N028984-002A	SAMP	2	Hexavalent Chromium	03/08/18 3:26 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	03/08/18 3:36 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	03/08/18 3:45 PM	Reported
51	N028984-003A	SAMP	50	Hexavalent Chromium	03/08/18 3:55 PM	Reported
52	N028984-013A	SAMP	200	Hexavalent Chromium	03/08/18 4:04 PM	Reported
53	N028984-007A	SAMP	100	Hexavalent Chromium	03/08/18 4:13 PM	Reported
54	N028984-013AMS	MS	200	Hexavalent Chromium	03/08/18 4:23 PM	Reported
55	N028984-013AMSD	MSD	200	Hexavalent Chromium	03/08/18 4:32 PM	Reported
56	N028984-003AMS	MS	50	Hexavalent Chromium	03/08/18 4:42 PM	Reported
57	N028984-007ADUP	DUP	100	Hexavalent Chromium	03/08/18 4:51 PM	Reported
58	N028984-004A	SAMP	20	Hexavalent Chromium	03/08/18 5:01 PM	Reported
59	N028984-005A	SAMP	100	Hexavalent Chromium	03/08/18 5:10 PM	Reported
60	N028984-006A	SAMP	10	Hexavalent Chromium	03/08/18 5:20 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	03/08/18 5:29 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	03/08/18 5:39 PM	Reported
63	N028984-008A	SAMP	10	Hexavalent Chromium	03/08/18 5:48 PM	Reported
64	N028984-009A	SAMP	1	Hexavalent Chromium	03/08/18 5:58 PM	Reported
65	N028984-010A	SAMP	20	Hexavalent Chromium	03/08/18 6:07 PM	Reported
66	N028984-011A	SAMP	500	Hexavalent Chromium	03/08/18 6:17 PM	Reported
67	N028984-012A	SAMP	200	Hexavalent Chromium	03/08/18 6:26 PM	Reported
68	N028984-014A	SAMP	200	Hexavalent Chromium	03/08/18 6:35 PM	Reported
69	N028984-015A	SAMP	500	Hexavalent Chromium	03/08/18 6:45 PM	Reported
70	N028984-016A	SAMP	1000	Hexavalent Chromium	03/08/18 6:54 PM	Reported
71	N028984-017A	SAMP	1000	Hexavalent Chromium	03/08/18 7:04 PM	Reported
72	N028984-018A	SAMP	2000	Hexavalent Chromium	03/08/18 7:13 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	03/08/18 7:23 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	03/08/18 7:32 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180308A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Mar/18 08:34:06**
No. of Injections:	**77**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/05/2018 09:43	Finished	BLANK
2	iBLANK	2	1000	Unknown		03/05/2018 09:54	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/05/2018 10:13	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/05/2018 10:22	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/05/2018 10:31	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/05/2018 10:41	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	8	1000	Unknown		03/05/2018 10:50	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/05/2018 11:00	Finished	20 ppb, IWST-180129A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	03/05/2018 11:16	Finished	15 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		03/08/2018 09:15	Finished	BLANK
11	BLANK	2	1000	Unknown		03/08/2018 09:27	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		03/08/2018 09:36	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		03/08/2018 09:45	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		03/08/2018 09:55	Finished	CCB R180302A
15	MB-H2O,MBLK,1,	6	1000	Unknown		03/08/2018 10:04	Finished	MB R180302A
16	LCS-H2O,LCS,1,	7	1000	Unknown		03/08/2018 10:14	Finished	LCS, IWST-180129B
17	N028969-001A,SAMP	8	1000	Unknown		03/08/2018 10:23	Finished	SAMP,10mL
18	N028969-002A,SAMP	9	1000	Unknown		03/08/2018 10:33	Finished	SAMP,10mL
19	N028969-003A,SAMP	10	1000	Unknown		03/08/2018 10:42	Finished	SAMP,10mL
20	N028969-004A,SAMP	11	1000	Unknown		03/08/2018 10:51	Finished	SAMP,10mL
21	N028969-005A,SAMP	12	1000	Unknown		03/08/2018 11:01	Finished	SAMP,10mL
22	N028969-006A,SAMP	13	1000	Unknown		03/08/2018 11:10	Finished	SAMP,10mL
23	N028970-001A,SAMP	14	1000	Unknown		03/08/2018 11:20	Finished	SAMP,10mL
24	N028970-002A,SAMP	15	1000	Unknown		03/08/2018 11:29	Finished	SAMP,0.02>10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		03/08/2018 11:39	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		03/08/2018 11:48	Finished	CCB R180302A
27	N028970-003A,SAMP	18	1000	Unknown		03/08/2018 11:58	Finished	SAMP,1>10mL
28	N028970-004A,SAMP	19	1000	Unknown		03/08/2018 12:07	Finished	SAMP,10mL
29	N028971-001A,SAMP	20	1000	Unknown		03/08/2018 12:17	Finished	SAMP,10mL
30	N028972-001A,SAMP	21	1000	Unknown		03/08/2018 12:26	Finished	SAMP,10mL
31	N028968-002A,SAMP	22	1000	Unknown		03/08/2018 12:36	Finished	SAMP,10mL
32	N028968-002AMS,MS	23	1000	Unknown		03/08/2018 12:45	Finished	MS (1ppb), IWST-180129B,10
33	N028966-002A,SAMP	24	1000	Unknown		03/08/2018 12:54	Finished	SAMP,0.1>10mL
34	N028966-002AMS,MS	25	1000	Unknown		03/08/2018 13:04	Finished	MS (5ppb), IWST-180129B,0.1
35	N028966-002AMSD,M	26	1000	Unknown		03/08/2018 13:13	Finished	MSD (5ppb), IWST-180129B,0.
36	N028970-001ADUP,D	27	1000	Unknown		03/08/2018 13:23	Finished	DUP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		03/08/2018 13:32	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	29	1000	Unknown		03/08/2018 13:42	Finished	CCB R180214B
39	N028966-001A,SAMP	30	1000	Unknown		03/08/2018 13:51	Finished	SAMP,10mL
40	N028966-001AMS,MS	31	1000	Unknown		03/08/2018 14:01	Finished	MS (1ppb), IWST-180129B,10
41	N028968-001A,SAMP	32	1000	Unknown		03/08/2018 14:10	Finished	SAMP,0.1>10mL
42	N028968-001AMS,MS	33	1000	Unknown		03/08/2018 14:20	Finished	MS (5ppb), IWST-180129B,0.1
43	N028972-001A,SAMP	34	1000	Unknown		03/08/2018 14:29	Finished	SAMP,0.5>10mL
44	N028970-003A,SAMP	35	1000	Unknown		03/08/2018 14:39	Finished	SAMP,10mL
45	LCS-2,LCS,1,	1	1000	Unknown		03/08/2018 14:56	Finished	LCS, IWST-180129B
46	MB-2,MBLK,1,	2	1000	Unknown		03/08/2018 15:08	Finished	MB R180302A
47	N028984-001A,SAMP	3	1000	Unknown		03/08/2018 15:17	Finished	SAMP,10mL
48	N028984-002A,SAMP	4	1000	Unknown		03/08/2018 15:26	Finished	SAMP,5>10mL
49	CCV-4,CCV1,1,	5	1000	Unknown		03/08/2018 15:36	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	6	1000	Unknown		03/08/2018 15:45	Finished	CCB R18214B
51	N028984-003A,SAMP	7	1000	Unknown		03/08/2018 15:55	Finished	SAMP,0.2>10mL
52	N028984-013A,SAMP	8	1000	Unknown		03/08/2018 16:04	Finished	SAMP,0.05>10mL
53	N028984-007A,SAMP	9	1000	Unknown		03/08/2018 16:13	Finished	SAMP,0.1>10mL
54	N028984-013AMS,MS	10	1000	Unknown		03/08/2018 16:23	Finished	MS (5ppb), IWST-180129B,0.0
55	N028984-013AMSD,M	11	1000	Unknown		03/08/2018 16:32	Finished	MSD (5ppb), IWST-180129B,0
56	N028984-003AMS,MS	12	1000	Unknown		03/08/2018 16:42	Finished	MS (5ppb), IWST-180129B,0.2
57	N028984-007ADUP,D	13	1000	Unknown		03/08/2018 16:51	Finished	DUP,0.1>10mL
58	N028984-004A,SAMP	14	1000	Unknown		03/08/2018 17:01	Finished	SAMP,10mL
59	N028984-005A,SAMP	15	1000	Unknown		03/08/2018 17:10	Finished	SAMP,10mL
60	N028984-006A,SAMP	16	1000	Unknown		03/08/2018 17:20	Finished	SAMP,10mL

61	CCV-5,CCV,1,	17	1000	Unknown		03/08/2018 17:29	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	18	1000	Unknown		03/08/2018 17:39	Finished	CCB R180302A
63	N028984-008A,SAMP	19	1000	Unknown		03/08/2018 17:48	Finished	SAMP,1>10mL
64	N028984-009A,SAMP	20	1000	Unknown		03/08/2018 17:58	Finished	SAMP,10mL
65	N028984-010A,SAMP	21	1000	Unknown		03/08/2018 18:07	Finished	SAMP,0.5>10mL
66	N028984-011A,SAMP	22	1000	Unknown		03/08/2018 18:17	Finished	SAMP,0.02>10mL
67	N028984-012A,SAMP	23	1000	Unknown		03/08/2018 18:26	Finished	SAMP,0.05>10mL
68	N028984-014A,SAMP	24	1000	Unknown		03/08/2018 18:35	Finished	SAMP,0.05>10mL
69	N028984-015A,SAMP	25	1000	Unknown		03/08/2018 18:45	Finished	SAMP,0.02>10mL
70	N028984-016A,SAMP	26	1000	Unknown		03/08/2018 18:54	Finished	SAMP,0.01>10mL
71	N028984-017A,SAMP	27	1000	Unknown		03/08/2018 19:04	Finished	SAMP,0.005>10mL
72	N028984-018A,SAMP	28	1000	Unknown		03/08/2018 19:13	Finished	SAMP,0.005>10mL
73	CCV-6,CCV1,1,	29	1000	Unknown		03/08/2018 19:23	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	30	1000	Unknown		03/08/2018 19:32	Finished	CCB R180302A
75	SHUTDOWN	31	1000	Unknown		03/08/2018 19:42	Finished	
76	Eluent: R180308A	32	1000	Unknown		n.a.	Finished	Eluent
77	PCR: R180307B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 3/8/18
Time Prepared: 0929H
Prepared By: MSA

Slope: 96.97
pH 4: 4.03 @ 25.0°C
7: 7.00 @ 25.0°C
10: 10.02 @ 25.0°C
LCS: 6.99 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: R180708A
NH4OH + NH4SO4 buffer: R180302A / R180214B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028966 - 001A	9.33	-	~250mL	~250mL		) R180214B
2)	2A	9.40	-				
3)	N028968 - 1A	7.58	9.64				
4)	2A	7.75	9.69				
5)	N028969 - 1A	9.42	-				
6)	2A	9.60	-				
7)	3A	9.48	-				R180302A
8)	4A	9.53	-				
9)	5A	9.61	-				
10)	6A	9.56	-				
11)	N028970 - 1A	9.66	-				
12)	2A	9.58	-				
13)	3A	9.68	-				
14)	4A	9.70	-				
15)	N028971 - 1A	9.55	-				
	N028972 - 1A	9.37	-				) R180214B

Sample Preparation

Date Prepared: 3/8/18
Time Prepared: 1525H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9754
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: R180708A
NH4OH + NH4SO4 buffer: R180302A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N028984-001A	8.12		~250mL			
2)	2A	8.05					
3)	3A	7.96					
4)	4A	7.95					
5)	5A	7.78					
6)	6A	8.02					
7)	7A	7.89					
8)	8A	7.95					
9)	9A	7.84					
10)	10A	7.91					
11)	11A	7.69					
12)	12A	7.66					
13)	13A	7.82					
14)	14A	7.83					
15)	15A	7.73					
	16A	7.76					
	17A	7.80					
	18A	7.70					

Logbook No. 14

rba 3/12/2018

03/20/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 3/5/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0492	0.2499	1.2669	2.5320	3.8267	5.0982	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/20/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **ICV**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/5/2018**	SeqNo: **2951914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **ZZZZZZ**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/5/2018**	SeqNo: **2951915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.203	0.20	0.2000	0	102	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **CCV**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.959	0.20	5.000	0	99.2	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **ZZZZZZ**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.206	0.20	0.2000	0	103	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **ZZZZZZ**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.987	0.20	10.00	0	99.9	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **CCV**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.904	0.20	5.000	0	98.1	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **ZZZZZZ**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.836	0.20	10.00	0	98.4	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **ICB**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/5/2018**	SeqNo: **2951916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **CCB**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **CCB**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **CCB**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **122570**
Client ID: **CCB**	Batch ID: **R122570**	TestNo: **EPA 218.6**		Analysis Date: **3/8/2018**	SeqNo: **2951949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 3/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.148	
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	

Average	4.140
Actual RT Window	4.060 - 4.220
Applied RT Window	3.940 - 4.340

MB-R122570	N.A.	N.A.
LCS-R122570	4.140	PASS
N028969-001A	4.123	PASS
N028969-002A	4.140	PASS
N028969-003A	N.A.	N.A.
N028969-004A	4.140	PASS
N028969-005A	4.140	PASS
N028969-006A	4.131	PASS
N028970-001A	4.140	PASS
N028970-002A	4.148	PASS
N028970-003A	4.140	PASS
N028970-004A	N.A.	N.A.
N028971-001A	4.131	PASS
N028972-001A	4.131	PASS
N028968-002A	N.A.	N.A.
N028968-002AMS	4.015	PASS
N028966-002A	4.148	PASS
N028966-002AMS	4.148	PASS
N028966-002AMSD	4.148	PASS
N028970-001ADUP	4.140	PASS
N028966-001A	4.090	PASS
N028966-001AMS	4.090	PASS

rba 3/12/2018

RLB 03/20/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 3/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.148	
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N028968-001A	4.140	PASS
N028968-001AMS	4.140	PASS
N028972-001A	4.131	PASS
N028970-003A	4.140	PASS
LCS-R122572	4.148	PASS
MB-R122572	N.A.	N.A.
N028984-001A	N.A.	N.A.
N028984-002A	4.040	PASS
N028984-003A	4.140	PASS
N028984-013A	4.140	PASS
N028984-007A	4.140	PASS
N028984-013AMS	4.140	PASS
N028984-013AMSD	4.140	PASS
N028984-003AMS	4.140	PASS
N028984-007ADUP	4.140	PASS
N028984-004A	4.140	PASS
N028984-005A	4.140	PASS
N028984-006A	4.123	PASS
N028984-008A	4.140	PASS
N028984-009A	N.A.	N.A.
N028984-010A	4.140	PASS
N028984-011A	4.140	PASS
N028984-012A	4.140	PASS

RB 03/20/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 3/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.148	
CCV-1	4.140	
CCV-2	4.140	
CCV-3	4.140	
CCV-4	4.140	
CCV-5	4.140	
CCV-6	4.140	
Average	4.140	
Actual RT Window	4.060 - 4.220	
Applied RT Window	3.940 - 4.340	
N028984-014A	4.140	PASS
N028984-015A	4.140	PASS
N028984-016A	4.140	PASS
N028984-017A	4.140	PASS
N028984-018A	4.140	PASS



03/20/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 Unit: ug/L
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

MDL/LOD & PQL Verification 2017

Method Name: **Hexavalent Chromium by IC**
Method Number: EPA Method 218.6
Analysis Date(s): 5/31/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: µg/L

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.103

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.194	**97**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180305A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 9:43 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	03/05/18 9:54 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:13 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:22 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:31 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:41 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:50 AM	Not Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:00 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:16 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	03/05/18 11:27 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/05/18 11:36 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	03/05/18 11:46 AM	Reported
13	MB-R122461	MBLK	1	Hexavalent Chromium	03/05/18 11:55 AM	Reported
14	LCS-R122461	LCS	1	Hexavalent Chromium	03/05/18 12:04 PM	Reported
15	N028831-001A	SAMP	1	Hexavalent Chromium	03/05/18 12:18 PM	Reported
16	N028831-002A	SAMP	1	Hexavalent Chromium	03/05/18 12:29 PM	Not Reported
17	N028831-003A	SAMP	1	Hexavalent Chromium	03/05/18 12:39 PM	Not Reported
18	N028831-004A	SAMP	1	Hexavalent Chromium	03/05/18 12:48 PM	Not Reported
19	N028831-001A	SAMP	2	Hexavalent Chromium	03/05/18 1:27 PM	Reported
20	N028831-002A	SAMP	5	Hexavalent Chromium	03/05/18 1:38 PM	Reported
21	N028831-003AMS	MS	5	Hexavalent Chromium	03/05/18 1:47 PM	Not Reported
22	N028831-004AMS	MS	5	Hexavalent Chromium	03/05/18 1:57 PM	Not Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	03/05/18 2:06 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	03/05/18 2:16 PM	Reported
25	N028831-002A	SAMP	1	Hexavalent Chromium	03/05/18 2:25 PM	Not Reported
26	N028831-004AMS	MS	10	Hexavalent Chromium	03/05/18 2:34 PM	Not Reported
27	N028831-003A	SAMP	5	Hexavalent Chromium	03/05/18 2:44 PM	Not Reported
28	N028831-001AMS	MS	2	Hexavalent Chromium	03/05/18 2:53 PM	Reported
29	N028831-001AMSD	MSD	2	Hexavalent Chromium	03/05/18 3:03 PM	Reported
30	N028831-002AMS	MS	5	Hexavalent Chromium	03/05/18 3:12 PM	Reported
31	N028831-004AMS	MS	20	Hexavalent Chromium	03/05/18 3:22 PM	Reported
32	N028831-004A	SAMP	20	Hexavalent Chromium	03/05/18 3:31 PM	Reported
33	N028829-001A	SAMP	1	Hexavalent Chromium	03/05/18 3:41 PM	Reported
34	N028829-002A	SAMP	1	Hexavalent Chromium	03/05/18 3:50 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	03/05/18 4:00 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	03/05/18 4:09 PM	Reported
37	N028829-003A	SAMP	1	Hexavalent Chromium	03/05/18 4:19 PM	Reported
38	N028829-004A	SAMP	1	Hexavalent Chromium	03/05/18 4:28 PM	Reported
39	N028829-005A	SAMP	1	Hexavalent Chromium	03/05/18 4:37 PM	Reported
40	N028829-006A	SAMP	1	Hexavalent Chromium	03/05/18 4:47 PM	Reported
41	N028829-007A	SAMP	1	Hexavalent Chromium	03/05/18 4:56 PM	Reported
42	N028829-008A	SAMP	1	Hexavalent Chromium	03/05/18 5:06 PM	Reported

rba 3/7/2018

Nancy 3/19/2018

INJECTION LOG: 180305A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028829-002AMS	MS	2	Hexavalent Chromium	03/05/18 5:15 PM	Not Reported
44	N028831-001ADUP	DUP	2	Hexavalent Chromium	03/05/18 5:25 PM	Reported
45	N028829-002AMS	MS	1	Hexavalent Chromium	03/05/18 5:34 PM	Reported
46	N028829-002A	SAMP	2	Hexavalent Chromium	03/05/18 5:44 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	03/05/18 5:53 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	03/05/18 6:03 PM	Reported
49	N028831-003AMS	MS	1	Hexavalent Chromium	03/05/18 6:12 PM	Not Reported
50	N028831-004A	SAMP	10	Hexavalent Chromium	03/05/18 6:22 PM	Not Reported
51	N028831-004A	SAMP	5	Hexavalent Chromium	03/05/18 6:31 PM	Not Reported
52	N028831-003A	SAMP	2	Hexavalent Chromium	03/05/18 6:41 PM	Reported
53	N028831-004A	SAMP	2	Hexavalent Chromium	03/05/18 6:50 PM	Not Reported
54	N028831-002AMS	MS	1	Hexavalent Chromium	03/05/18 6:59 PM	Not Reported
55	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 7:09 PM	Not Reported
56	CCV-4	CCV	1	Hexavalent Chromium	03/05/18 7:18 PM	Reported
57	CCB-4	CCB	1	Hexavalent Chromium	03/05/18 7:28 PM	Reported
58	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 7:37 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180305A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**06/Mar/18 09:34:49**
No. of Injections:	**61**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/05/2018 09:43	Finished	BLANK
2	iBLANK	2	1000	Unknown		03/05/2018 09:54	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/05/2018 10:13	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/05/2018 10:22	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/05/2018 10:31	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/05/2018 10:41	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	8	1000	Unknown		03/05/2018 10:50	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/05/2018 11:00	Finished	20 ppb, IWST-180129A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	03/05/2018 11:16	Finished	15 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		03/05/2018 11:27	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		03/05/2018 11:36	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		03/05/2018 11:46	Finished	ICB R180302A
13	MB-H2O,MBLK,1,	13	1000	Unknown		03/05/2018 11:55	Finished	MB R180302A
14	LCS-H2O,LCS,1,	14	1000	Unknown		03/05/2018 12:04	Finished	LCS, IWST-180129B
15	N028831-001A,SAMF	15	1000	Unknown		03/05/2018 12:18	Finished	SAMP,10mL
16	N028831-002A,SAMF	16	1000	Unknown		03/05/2018 12:29	Finished	SAMP,10mL
17	N028831-003A,SAMF	17	1000	Unknown		03/05/2018 12:39	Finished	SAMP,10mL
18	N028831-004A,SAMF	18	1000	Unknown		03/05/2018 12:48	Finished	SAMP,10mL
19	N028831-001A,SAMF	1	1000	Unknown		03/05/2018 13:27	Finished	SAMP,5>10mL
20	N028831-002A,SAMF	2	1000	Unknown		03/05/2018 13:38	Finished	SAMP,2>10mL
21	N028831-003AMS,MS	3	1000	Unknown		03/05/2018 13:47	Finished	MS (1ppb), IWST-180129B,2>1
22	N028831-004AMS,MS	4	1000	Unknown		03/05/2018 13:57	Finished	MS (1ppb), IWST-180129B,2>1
23	CCV-1,CCV1,1,	5	1000	Unknown		03/05/2018 14:06	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	6	1000	Unknown		03/05/2018 14:16	Finished	CCB R180302A
25	N028831-002A,SAMF	7	1000	Unknown		03/05/2018 14:25	Finished	SAMP,10mL
26	N028831-004AMS,MS	8	1000	Unknown		03/05/2018 14:34	Finished	MS (1ppb), IWST-180129B,1>1
27	N028831-003A,SAMF	9	1000	Unknown		03/05/2018 14:44	Finished	SAMP,2>10mL
28	N028831-001AMS,MS	10	1000	Unknown		03/05/2018 14:53	Finished	MS (1ppb), IWST-180129B,5>1
29	N028831-001AMSD,M	11	1000	Unknown		03/05/2018 15:03	Finished	MSD (1ppb), IWST-180129B,5>
30	N028831-002AMS,MS	12	1000	Unknown		03/05/2018 15:12	Finished	MS (1ppb), IWST-180129B,2>1
31	N028831-004AMS,MS	13	1000	Unknown		03/05/2018 15:22	Finished	MS (1ppb), IWST-180129B,0.4
32	N028831-004A,SAMF	14	1000	Unknown		03/05/2018 15:31	Finished	SAMP,0.5>10mL
33	N028829-001A,SAMF	15	1000	Unknown		03/05/2018 15:41	Finished	SAMP,10mL
34	N028829-002A,SAMF	16	1000	Unknown		03/05/2018 15:50	Finished	SAMP,10mL
35	CCV-2,CCV,1,	17	1000	Unknown		03/05/2018 16:00	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	18	1000	Unknown		03/05/2018 16:09	Finished	CCB R180302A
37	N028829-003A,SAMF	19	1000	Unknown		03/05/2018 16:19	Finished	SAMP,10mL
38	N028829-004A,SAMF	20	1000	Unknown		03/05/2018 16:28	Finished	SAMP,10mL
39	N028829-005A,SAMF	21	1000	Unknown		03/05/2018 16:37	Finished	SAMP,10mL
40	N028829-006A,SAMF	22	1000	Unknown		03/05/2018 16:47	Finished	SAMP,10mL
41	N028829-007A,SAMF	23	1000	Unknown		03/05/2018 16:56	Finished	SAMP,10mL
42	N028829-008A,SAMF	24	1000	Unknown		03/05/2018 17:06	Finished	SAMP,10mL
43	N028829-002AMS,MS	25	1000	Unknown		03/05/2018 17:15	Finished	MS (1ppb), IWST-180129B,5>1
44	N028831-001ADUP,D	26	1000	Unknown		03/05/2018 17:25	Finished	DUP,5>10mL
45	N028829-002AMS,MS	27	1000	Unknown		03/05/2018 17:34	Finished	MS (1ppb), IWST-180129B,10
46	N028829-002A,SAMF	28	1000	Unknown		03/05/2018 17:44	Finished	SAMP,5>10mL
47	CCV-3,CCV1,1,	29	1000	Unknown		03/05/2018 17:53	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	30	1000	Unknown		03/05/2018 18:03	Finished	CCB R180302A
49	N028831-003AMS,MS	31	1000	Unknown		03/05/2018 18:12	Finished	MS (1ppb), IWST-180129B,10
50	N028831-004A,SAMF	32	1000	Unknown		03/05/2018 18:22	Finished	SAMP,1>10mL
51	N028831-004A,SAMF	33	1000	Unknown		03/05/2018 18:31	Finished	SAMP,2>10mL
52	N028831-003A,SAMF	34	1000	Unknown		03/05/2018 18:41	Finished	SAMP,5>10mL
53	N028831-004A,SAMF	35	1000	Unknown		03/05/2018 18:50	Finished	SAMP,5>10mL
54	N028831-002AMS,MS	36	1000	Unknown		03/05/2018 18:59	Finished	MS (1ppb), IWST-180129B,10
55	BLANK	37	1000	Unknown		03/05/2018 19:09	Finished	BLANK
56	CCV-4,CCV,1,	38	1000	Unknown		03/05/2018 19:18	Finished	CCV @5ppb, IWST-180129A
57	CCB-4,CCB,1,	39	1000	Unknown		03/05/2018 19:28	Finished	CCB R180302A
58	BLANK	40	1000	Unknown		03/05/2018 19:37	Finished	BLANK
59	SHUTDOWN	41	1000	Unknown		03/05/2018 19:47	Finished	
60	Eluent: R180305A	42	1000	Unknown		n.a.	Finished	Eluent

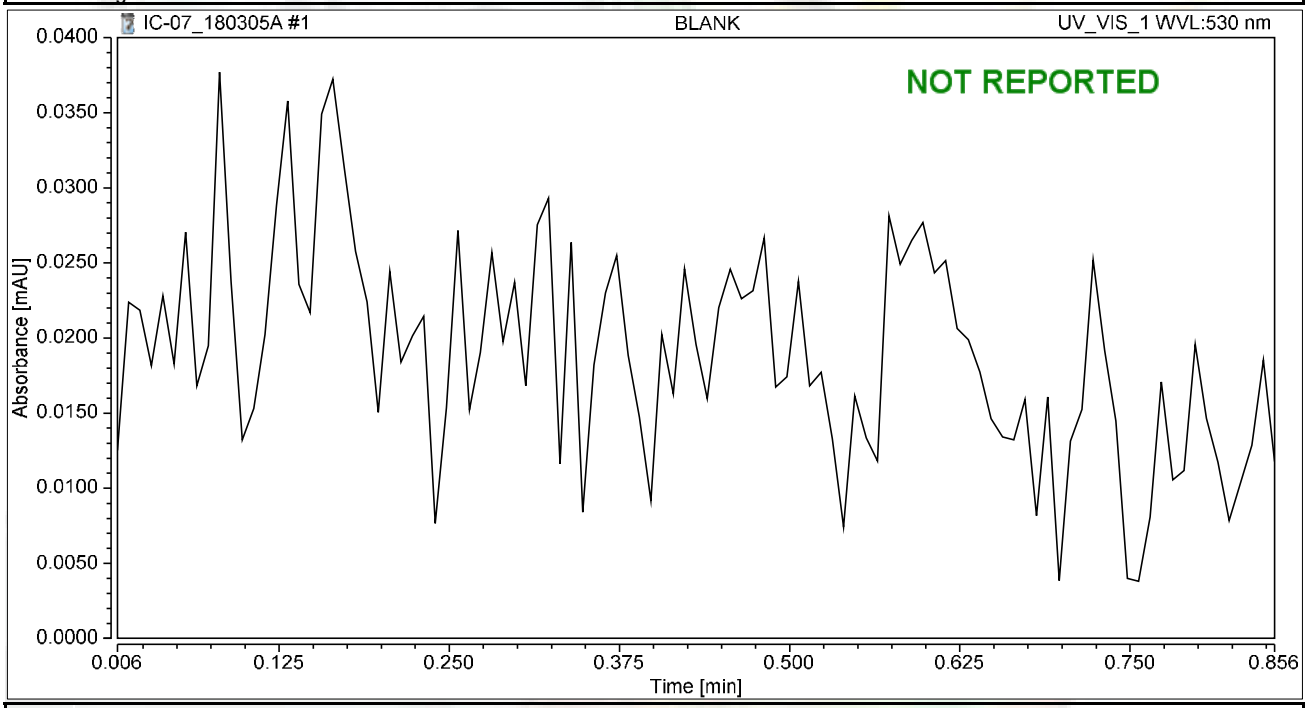
61	PCR: R180305B	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 09:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

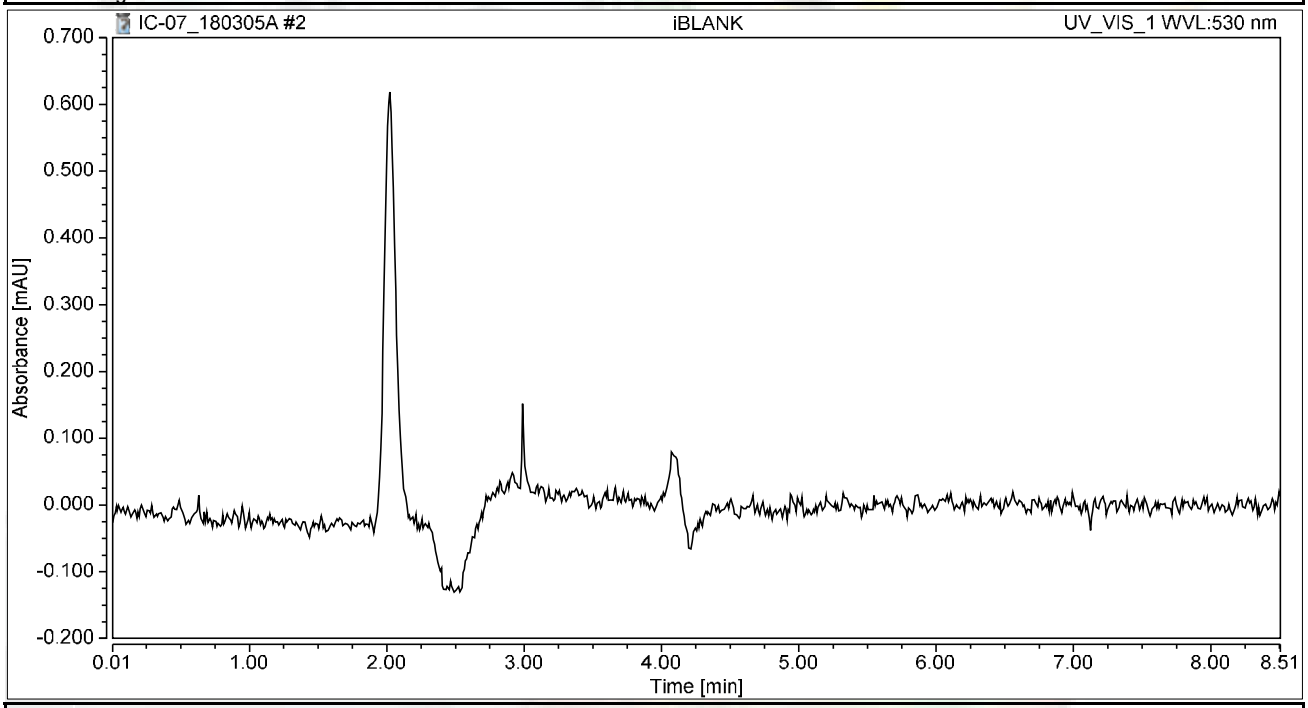
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

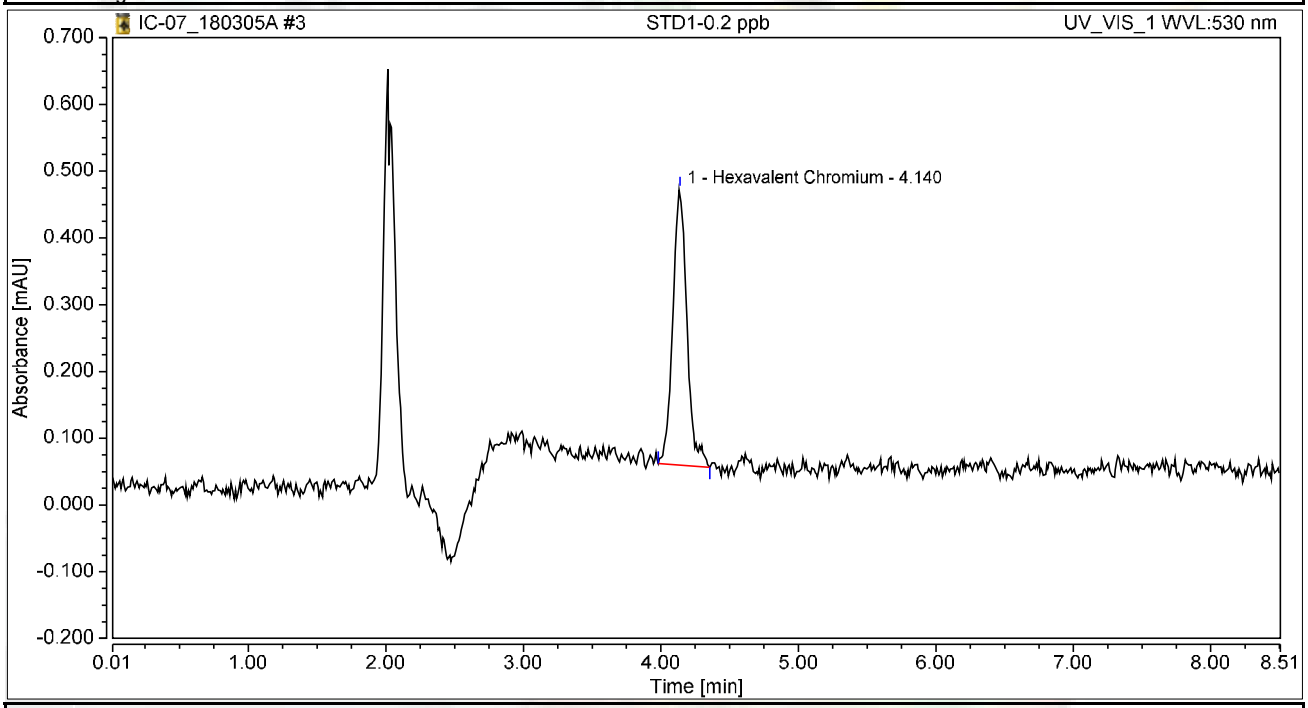
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

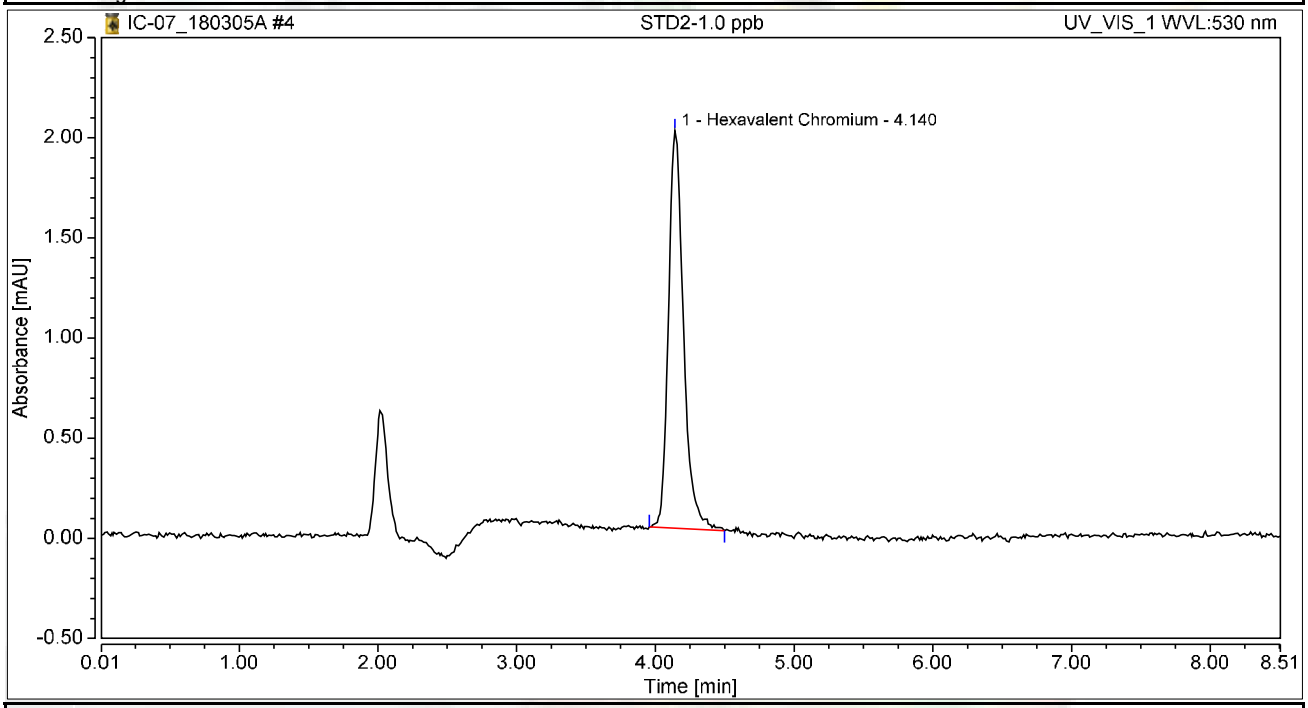
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.049	0.414	100.00	100.00	0.1930
Total:			**0.049**	**0.414**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

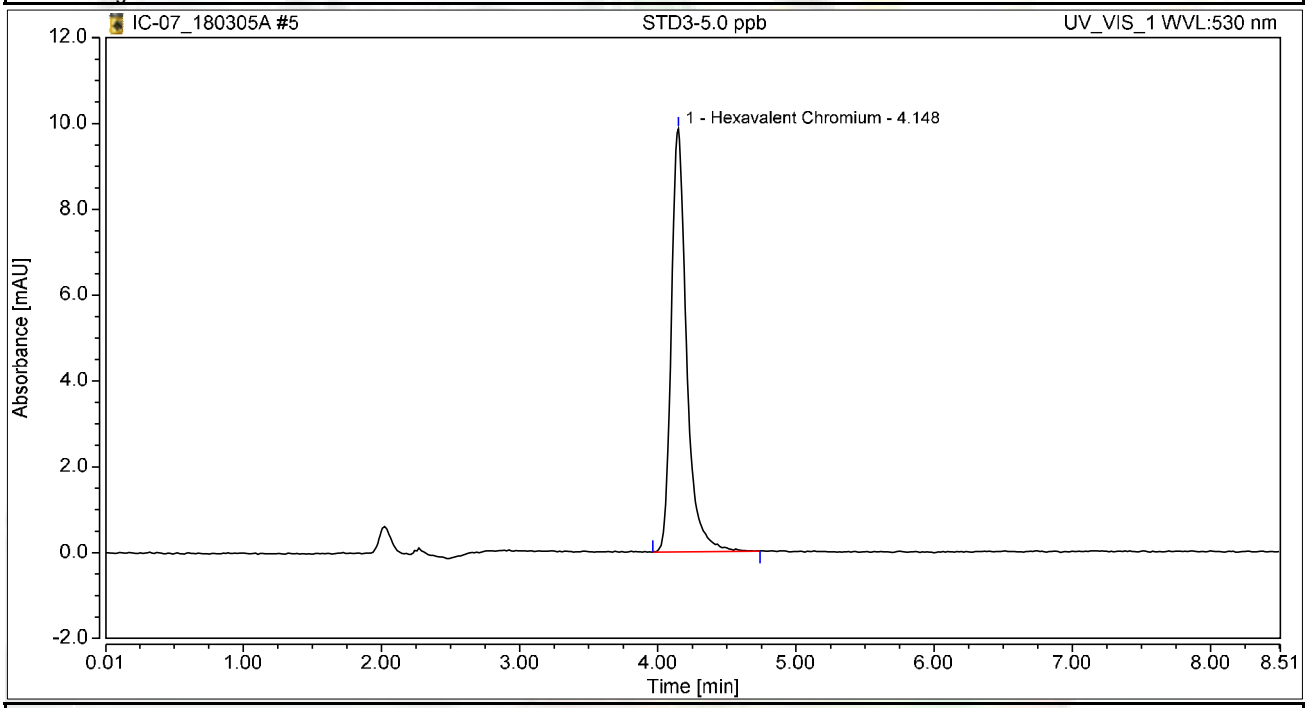
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.250	1.983	100.00	100.00	0.9813
Total:			**0.250**	**1.983**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

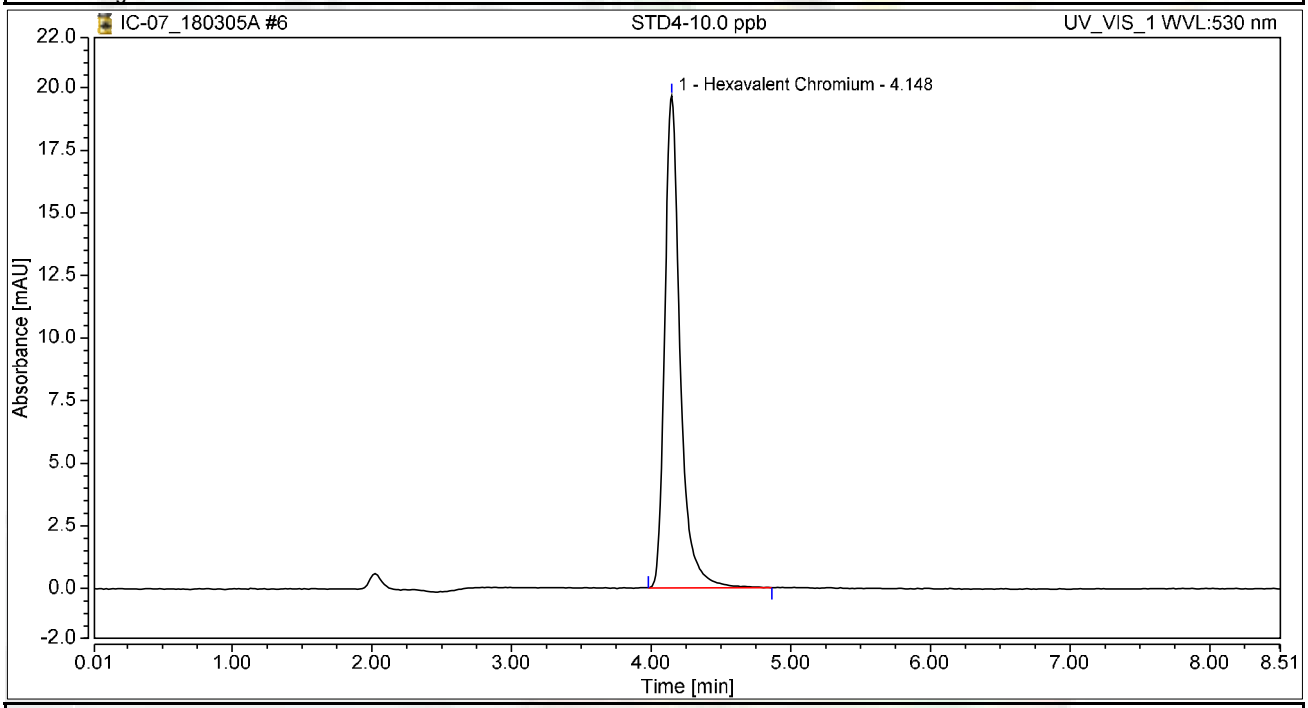
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.267	9.856	100.00	100.00	4.9746
Total:			**1.267**	**9.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

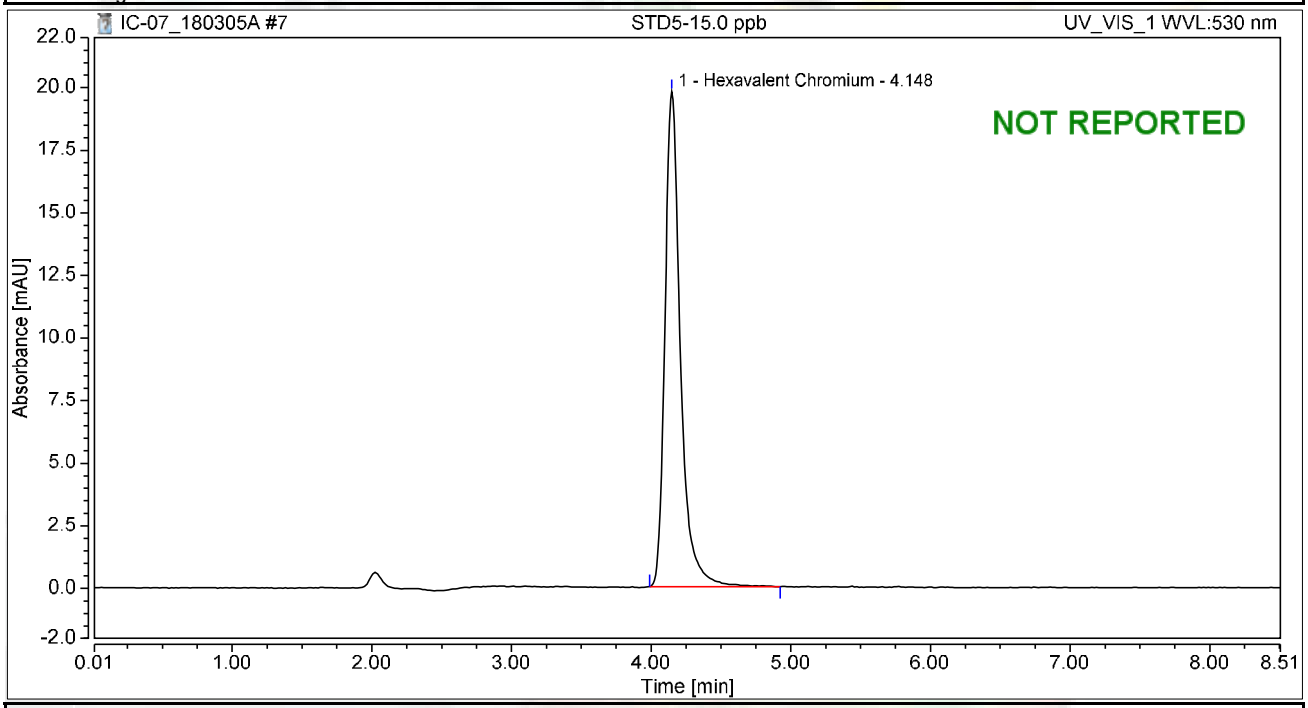
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.532	19.665	100.00	100.00	9.9416
Total:			**2.532**	**19.665**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

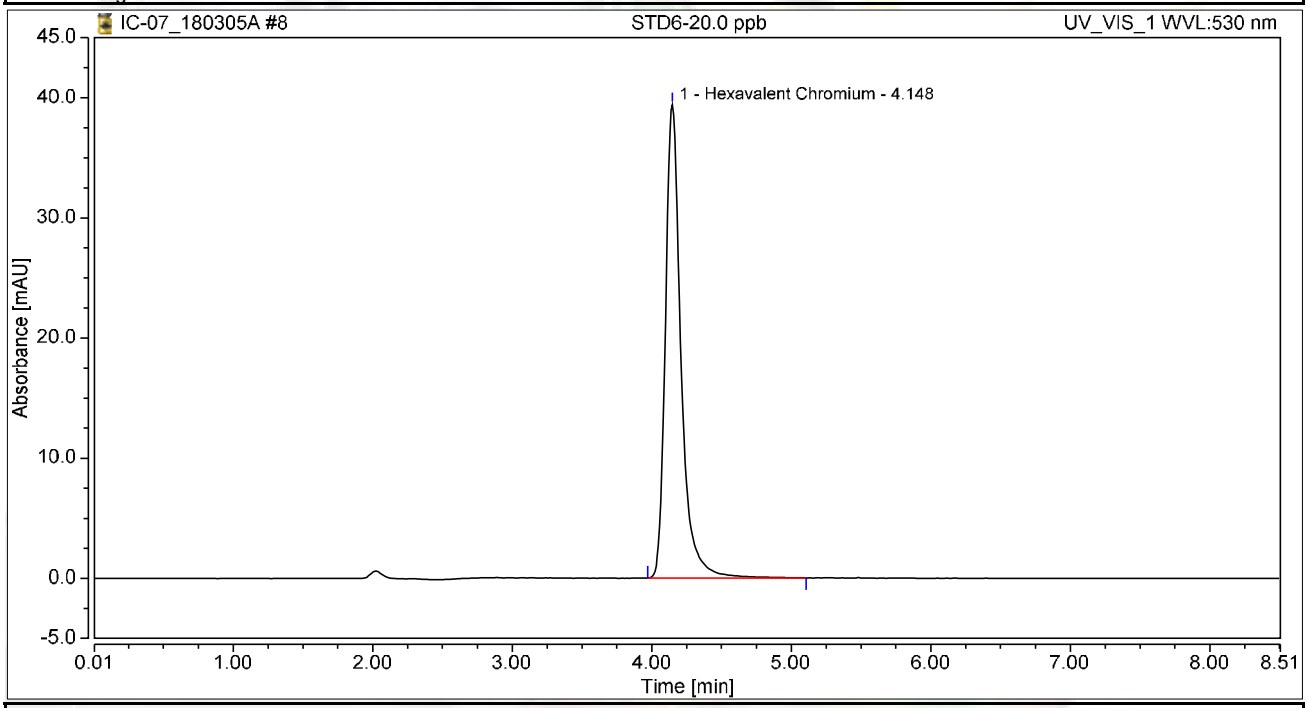
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.554	19.782	100.00	100.00	10.0277
Total:			**2.554**	**19.782**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

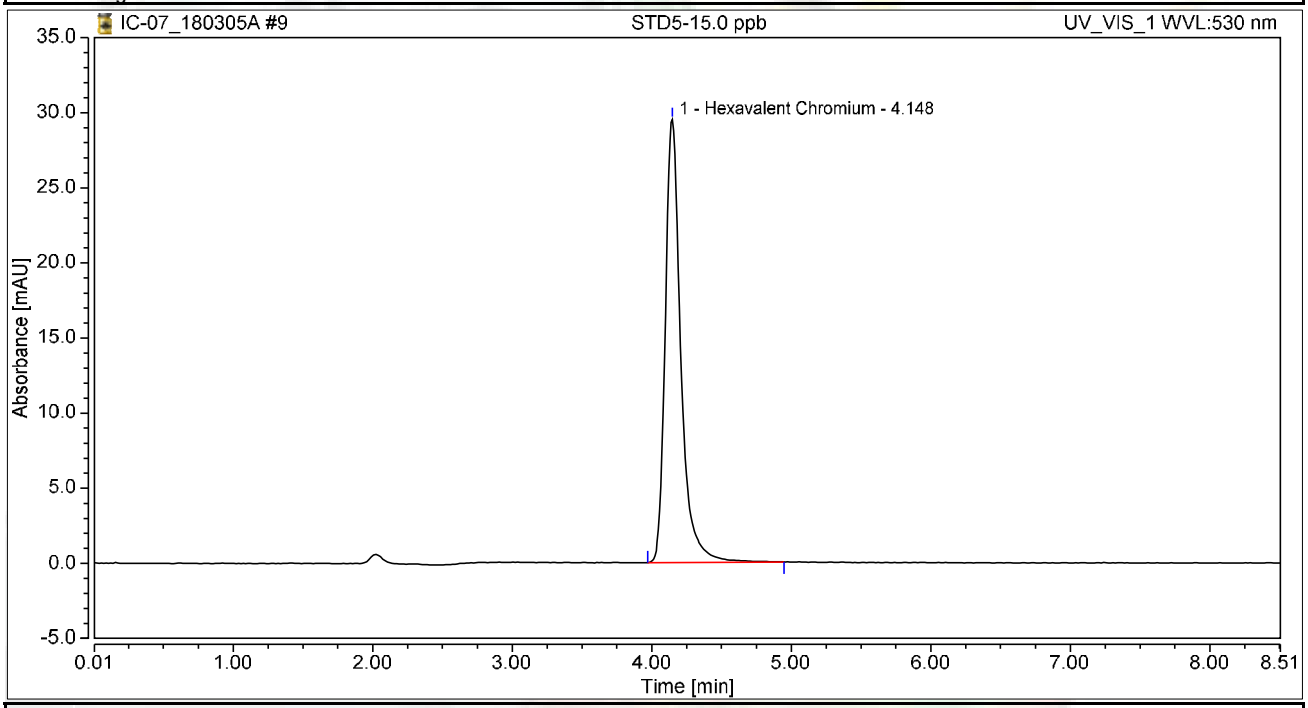
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	5.098	39.368	100.00	100.00	20.0178
Total:			**5.098**	**39.368**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



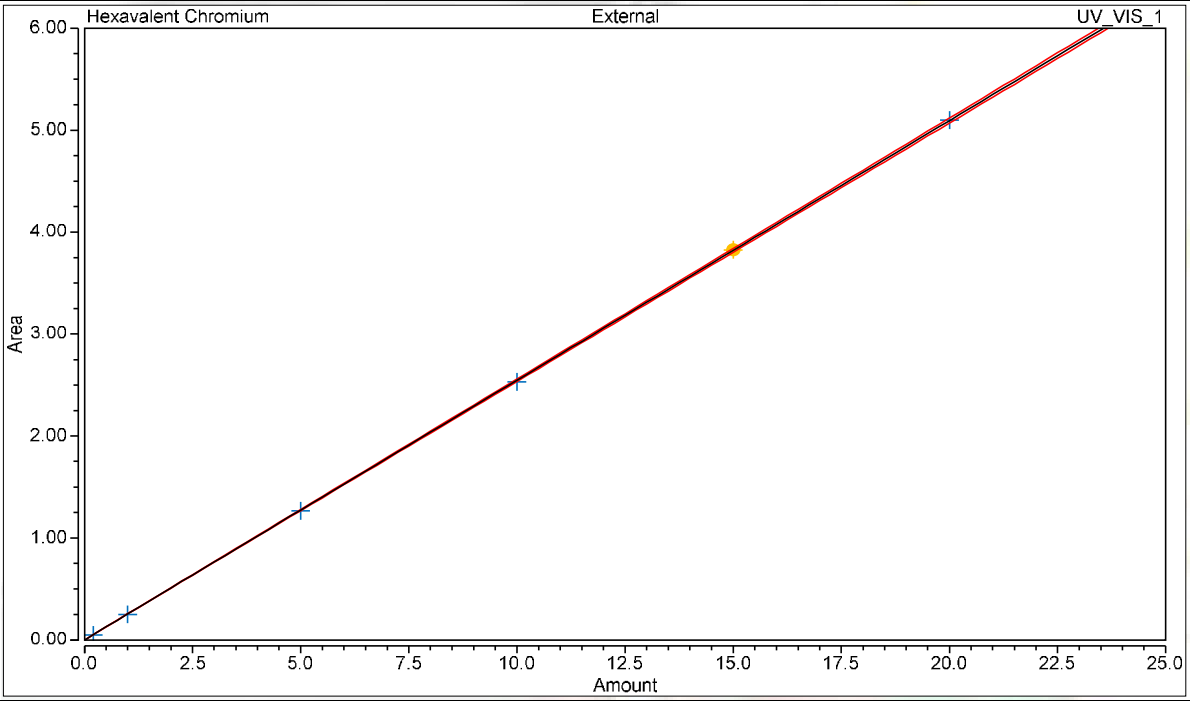
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	3.827	29.496	100.00	100.00	15.0251
Total:			**3.827**	**29.496**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2547
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

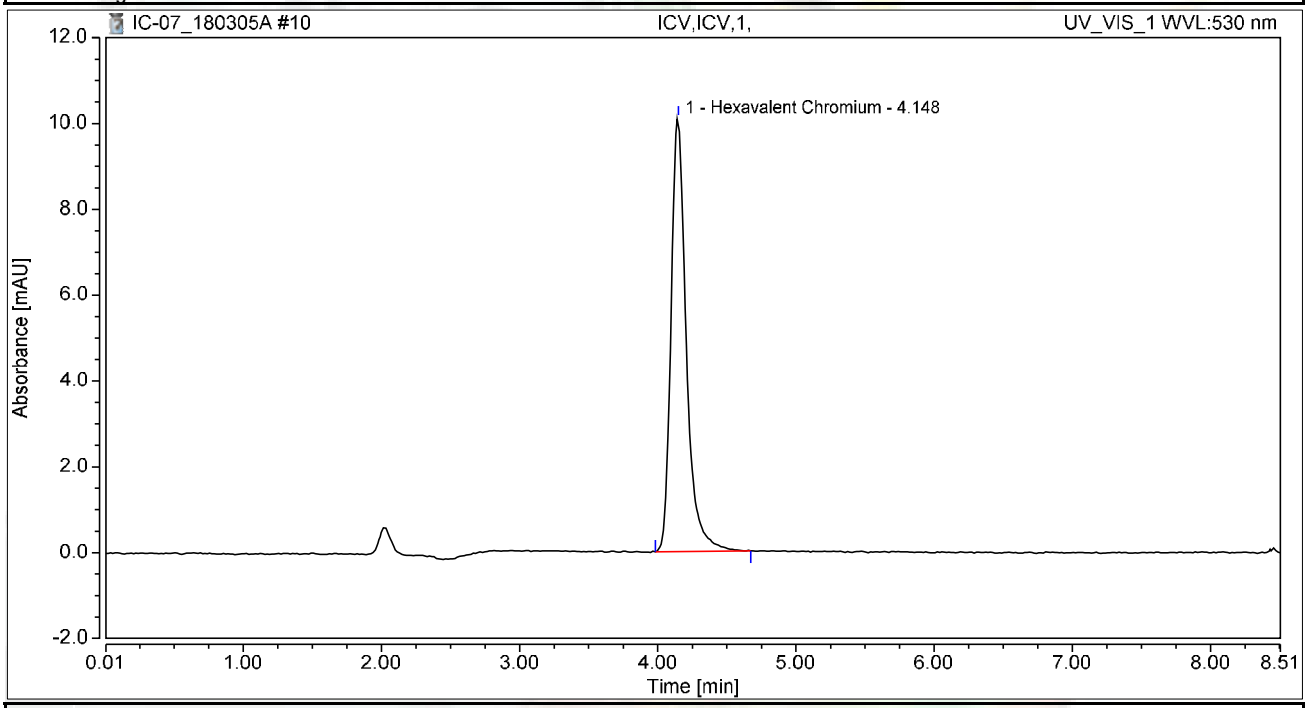
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	STD1-0.2 ppb	01	0.2000	0.0492	0.049	0.414
4	STD2-1.0 ppb	02	1.0000	0.2499	0.250	1.983
5	STD3-5.0 ppb	03	5.0000	1.2669	1.267	9.856
6	STD4-10.0 ppb	04	10.0000	2.5320	2.532	19.665
8	STD6-20.0 ppb	06	20.0000	5.0982	5.098	39.368
9	STD5-15.0 ppb	05	15.0000	3.8267	3.827	29.496

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

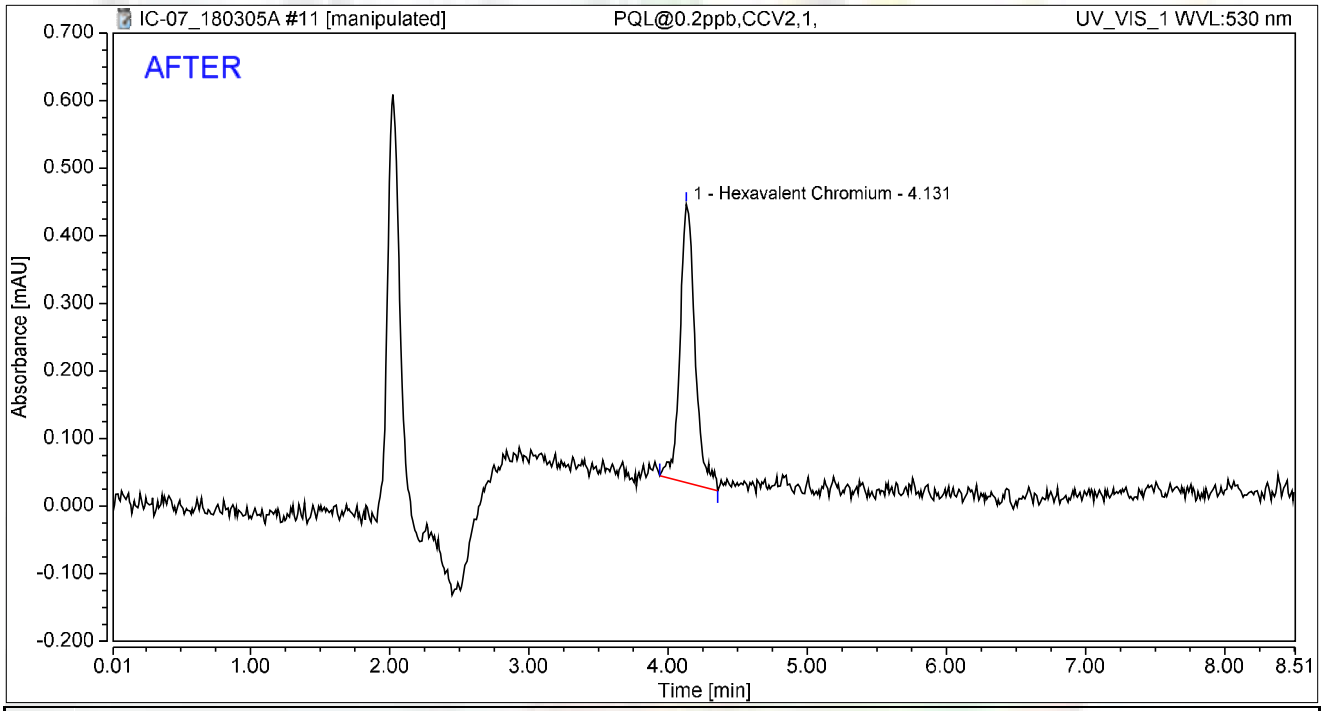
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.299	10.098	100.00	100.00	5.1019
Total:			**1.299**	**10.098**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.052	0.411	100.00	100.00	0.2030
Total:			**0.052**	**0.411**	**100.00**	**100.00**	

rba 3/7/2018

Reviewed by:
Nancy 3/19/2018

My first report/Integration

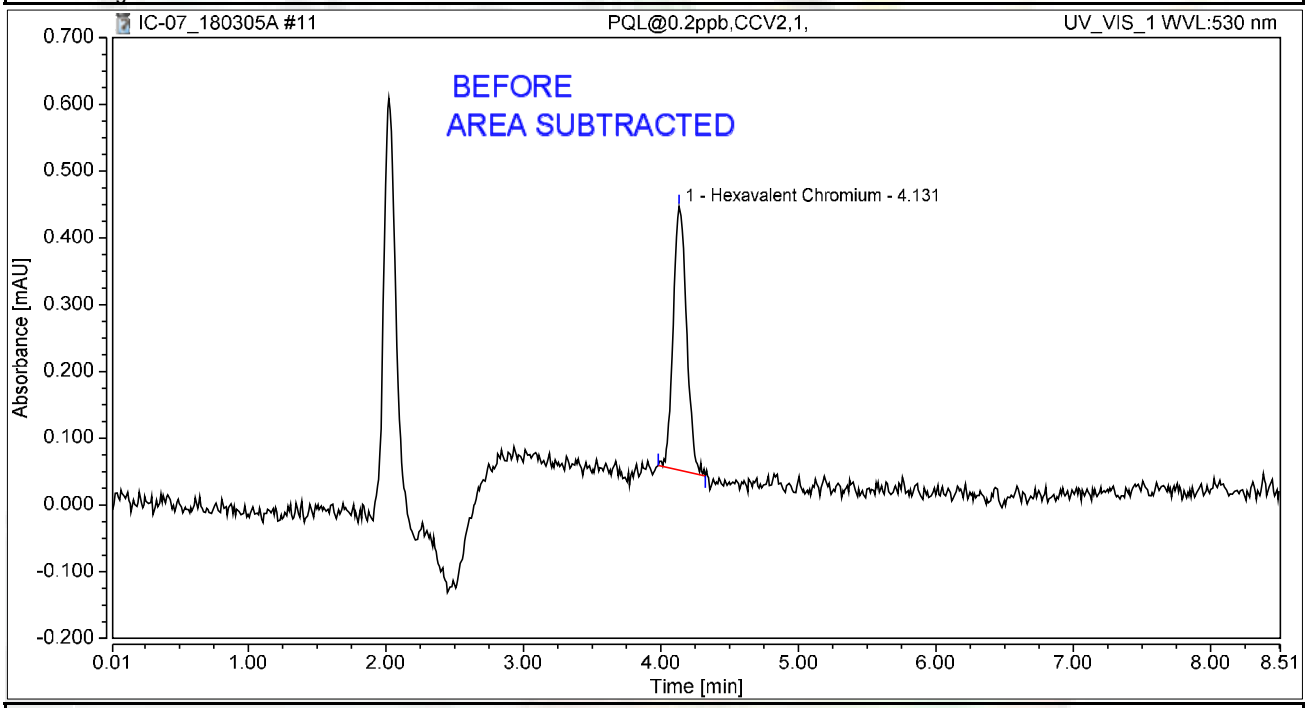
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.045	0.394	100.00	100.00	0.1762
Total:			**0.045**	**0.394**	**100.00**	**100.00**	

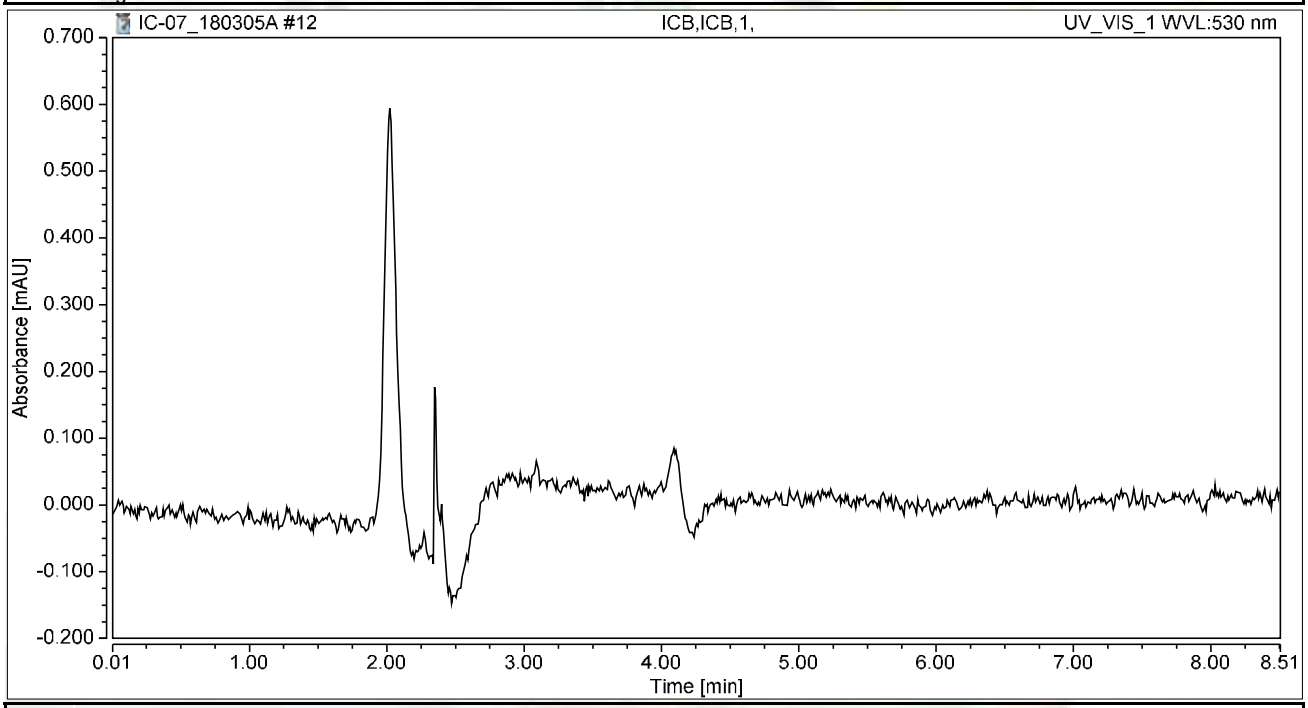
rba 3/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/Mar/18 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180308A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	03/05/18 9:43 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	03/05/18 9:54 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:13 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:22 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:31 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:41 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 10:50 AM	Not Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:00 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	03/05/18 11:16 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	03/08/18 9:15 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	03/08/18 9:27 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	03/08/18 9:36 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	03/08/18 9:45 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	03/08/18 9:55 AM	Reported
15	MB-R122570	MBLK	1	Hexavalent Chromium	03/08/18 10:04 AM	Reported
16	LCS-R122570	LCS	1	Hexavalent Chromium	03/08/18 10:14 AM	Reported
17	N028969-001A	SAMP	1	Hexavalent Chromium	03/08/18 10:23 AM	Reported
18	N028969-002A	SAMP	1	Hexavalent Chromium	03/08/18 10:33 AM	Reported
19	N028969-003A	SAMP	1	Hexavalent Chromium	03/08/18 10:42 AM	Reported
20	N028969-004A	SAMP	1	Hexavalent Chromium	03/08/18 10:51 AM	Reported
21	N028969-005A	SAMP	1	Hexavalent Chromium	03/08/18 11:01 AM	Reported
22	N028969-006A	SAMP	1	Hexavalent Chromium	03/08/18 11:10 AM	Reported
23	N028970-001A	SAMP	1	Hexavalent Chromium	03/08/18 11:20 AM	Reported
24	N028970-002A	SAMP	500	Hexavalent Chromium	03/08/18 11:29 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	03/08/18 11:39 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	03/08/18 11:48 AM	Reported
27	N028970-003A	SAMP	10	Hexavalent Chromium	03/08/18 11:58 AM	Not Reported
28	N028970-004A	SAMP	1	Hexavalent Chromium	03/08/18 12:07 PM	Reported
29	N028971-001A	SAMP	1	Hexavalent Chromium	03/08/18 12:17 PM	Reported
30	N028972-001A	SAMP	1	Hexavalent Chromium	03/08/18 12:26 PM	Not Reported
31	N028968-002A	SAMP	1	Hexavalent Chromium	03/08/18 12:36 PM	Reported
32	N028968-002AMS	MS	1	Hexavalent Chromium	03/08/18 12:45 PM	Reported
33	N028966-002A	SAMP	100	Hexavalent Chromium	03/08/18 12:54 PM	Reported
34	N028966-002AMS	MS	100	Hexavalent Chromium	03/08/18 1:04 PM	Reported
35	N028966-002AMSD	MSD	100	Hexavalent Chromium	03/08/18 1:13 PM	Reported
36	N028970-001ADUP	DUP	1	Hexavalent Chromium	03/08/18 1:23 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	03/08/18 1:32 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	03/08/18 1:42 PM	Reported
39	N028966-001A	SAMP	1	Hexavalent Chromium	03/08/18 1:51 PM	Reported
40	N028966-001AMS	MS	1	Hexavalent Chromium	03/08/18 2:01 PM	Reported
41	N028968-001A	SAMP	100	Hexavalent Chromium	03/08/18 2:10 PM	Reported
42	N028968-001AMS	MS	100	Hexavalent Chromium	03/08/18 2:20 PM	Reported

INJECTION LOG: 180308A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N028972-001A	SAMP	20	Hexavalent Chromium	03/08/18 2:29 PM	Reported
44	N028970-003A	SAMP	1	Hexavalent Chromium	03/08/18 2:39 PM	Reported
45	LCS-R122572	LCS	1	Hexavalent Chromium	03/08/18 2:56 PM	Reported
46	MB-R122572	MBLK	1	Hexavalent Chromium	03/08/18 3:08 PM	Reported
47	N028984-001A	SAMP	1	Hexavalent Chromium	03/08/18 3:17 PM	Reported
48	N028984-002A	SAMP	2	Hexavalent Chromium	03/08/18 3:26 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	03/08/18 3:36 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	03/08/18 3:45 PM	Reported
51	N028984-003A	SAMP	50	Hexavalent Chromium	03/08/18 3:55 PM	Reported
52	N028984-013A	SAMP	200	Hexavalent Chromium	03/08/18 4:04 PM	Reported
53	N028984-007A	SAMP	100	Hexavalent Chromium	03/08/18 4:13 PM	Reported
54	N028984-013AMS	MS	200	Hexavalent Chromium	03/08/18 4:23 PM	Reported
55	N028984-013AMSD	MSD	200	Hexavalent Chromium	03/08/18 4:32 PM	Reported
56	N028984-003AMS	MS	50	Hexavalent Chromium	03/08/18 4:42 PM	Reported
57	N028984-007ADUP	DUP	100	Hexavalent Chromium	03/08/18 4:51 PM	Reported
58	N028984-004A	SAMP	20	Hexavalent Chromium	03/08/18 5:01 PM	Reported
59	N028984-005A	SAMP	100	Hexavalent Chromium	03/08/18 5:10 PM	Reported
60	N028984-006A	SAMP	10	Hexavalent Chromium	03/08/18 5:20 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	03/08/18 5:29 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	03/08/18 5:39 PM	Reported
63	N028984-008A	SAMP	10	Hexavalent Chromium	03/08/18 5:48 PM	Reported
64	N028984-009A	SAMP	1	Hexavalent Chromium	03/08/18 5:58 PM	Reported
65	N028984-010A	SAMP	20	Hexavalent Chromium	03/08/18 6:07 PM	Reported
66	N028984-011A	SAMP	500	Hexavalent Chromium	03/08/18 6:17 PM	Reported
67	N028984-012A	SAMP	200	Hexavalent Chromium	03/08/18 6:26 PM	Reported
68	N028984-014A	SAMP	200	Hexavalent Chromium	03/08/18 6:35 PM	Reported
69	N028984-015A	SAMP	500	Hexavalent Chromium	03/08/18 6:45 PM	Reported
70	N028984-016A	SAMP	1000	Hexavalent Chromium	03/08/18 6:54 PM	Reported
71	N028984-017A	SAMP	1000	Hexavalent Chromium	03/08/18 7:04 PM	Reported
72	N028984-018A	SAMP	2000	Hexavalent Chromium	03/08/18 7:13 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	03/08/18 7:23 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	03/08/18 7:32 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180308A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/Mar/18 08:34:06**
No. of Injections:	**77**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		03/05/2018 09:43	Finished	BLANK
2	iBLANK	2	1000	Unknown		03/05/2018 09:54	Finished	INSTRUMENT BLANK
3	STD1-0.2 ppb	4	1000	Calibration Standard	01	03/05/2018 10:13	Finished	0.2 ppb, IWST-180129A
4	STD2-1.0 ppb	5	1000	Calibration Standard	02	03/05/2018 10:22	Finished	1.0 ppb, IWST-180129A
5	STD3-5.0 ppb	6	1000	Calibration Standard	03	03/05/2018 10:31	Finished	5.0 ppb, IWST-180129A
6	STD4-10.0 ppb	7	1000	Calibration Standard	04	03/05/2018 10:41	Finished	10 ppb, IWST-180129A
7	STD5-15.0 ppb	8	1000	Unknown		03/05/2018 10:50	Finished	15 ppb, IWST-180129A
8	STD6-20.0 ppb	9	1000	Calibration Standard	06	03/05/2018 11:00	Finished	20 ppb, IWST-180129A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	03/05/2018 11:16	Finished	15 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		03/08/2018 09:15	Finished	BLANK
11	BLANK	2	1000	Unknown		03/08/2018 09:27	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		03/08/2018 09:36	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		03/08/2018 09:45	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		03/08/2018 09:55	Finished	CCB R180302A
15	MB-H2O,MBLK,1,	6	1000	Unknown		03/08/2018 10:04	Finished	MB R180302A
16	LCS-H2O,LCS,1,	7	1000	Unknown		03/08/2018 10:14	Finished	LCS, IWST-180129B
17	N028969-001A,SAMP	8	1000	Unknown		03/08/2018 10:23	Finished	SAMP,10mL
18	N028969-002A,SAMP	9	1000	Unknown		03/08/2018 10:33	Finished	SAMP,10mL
19	N028969-003A,SAMP	10	1000	Unknown		03/08/2018 10:42	Finished	SAMP,10mL
20	N028969-004A,SAMP	11	1000	Unknown		03/08/2018 10:51	Finished	SAMP,10mL
21	N028969-005A,SAMP	12	1000	Unknown		03/08/2018 11:01	Finished	SAMP,10mL
22	N028969-006A,SAMP	13	1000	Unknown		03/08/2018 11:10	Finished	SAMP,10mL
23	N028970-001A,SAMP	14	1000	Unknown		03/08/2018 11:20	Finished	SAMP,10mL
24	N028970-002A,SAMP	15	1000	Unknown		03/08/2018 11:29	Finished	SAMP,0.02>10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		03/08/2018 11:39	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		03/08/2018 11:48	Finished	CCB R180302A
27	N028970-003A,SAMP	18	1000	Unknown		03/08/2018 11:58	Finished	SAMP,1>10mL
28	N028970-004A,SAMP	19	1000	Unknown		03/08/2018 12:07	Finished	SAMP,10mL
29	N028971-001A,SAMP	20	1000	Unknown		03/08/2018 12:17	Finished	SAMP,10mL
30	N028972-001A,SAMP	21	1000	Unknown		03/08/2018 12:26	Finished	SAMP,10mL
31	N028968-002A,SAMP	22	1000	Unknown		03/08/2018 12:36	Finished	SAMP,10mL
32	N028968-002AMS,MS	23	1000	Unknown		03/08/2018 12:45	Finished	MS (1ppb), IWST-180129B,10
33	N028966-002A,SAMP	24	1000	Unknown		03/08/2018 12:54	Finished	SAMP,0.1>10mL
34	N028966-002AMS,MS	25	1000	Unknown		03/08/2018 13:04	Finished	MS (5ppb), IWST-180129B,0.1
35	N028966-002AMSD,M	26	1000	Unknown		03/08/2018 13:13	Finished	MSD (5ppb), IWST-180129B,0.
36	N028970-001ADUP,D	27	1000	Unknown		03/08/2018 13:23	Finished	DUP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		03/08/2018 13:32	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	29	1000	Unknown		03/08/2018 13:42	Finished	CCB R180214B
39	N028966-001A,SAMP	30	1000	Unknown		03/08/2018 13:51	Finished	SAMP,10mL
40	N028966-001AMS,MS	31	1000	Unknown		03/08/2018 14:01	Finished	MS (1ppb), IWST-180129B,10
41	N028968-001A,SAMP	32	1000	Unknown		03/08/2018 14:10	Finished	SAMP,0.1>10mL
42	N028968-001AMS,MS	33	1000	Unknown		03/08/2018 14:20	Finished	MS (5ppb), IWST-180129B,0.1
43	N028972-001A,SAMP	34	1000	Unknown		03/08/2018 14:29	Finished	SAMP,0.5>10mL
44	N028970-003A,SAMP	35	1000	Unknown		03/08/2018 14:39	Finished	SAMP,10mL
45	LCS-2,LCS,1,	1	1000	Unknown		03/08/2018 14:56	Finished	LCS, IWST-180129B
46	MB-2,MBLK,1,	2	1000	Unknown		03/08/2018 15:08	Finished	MB R180302A
47	N028984-001A,SAMP	3	1000	Unknown		03/08/2018 15:17	Finished	SAMP,10mL
48	N028984-002A,SAMP	4	1000	Unknown		03/08/2018 15:26	Finished	SAMP,5>10mL
49	CCV-4,CCV1,1,	5	1000	Unknown		03/08/2018 15:36	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	6	1000	Unknown		03/08/2018 15:45	Finished	CCB R18214B
51	N028984-003A,SAMP	7	1000	Unknown		03/08/2018 15:55	Finished	SAMP,0.2>10mL
52	N028984-013A,SAMP	8	1000	Unknown		03/08/2018 16:04	Finished	SAMP,0.05>10mL
53	N028984-007A,SAMP	9	1000	Unknown		03/08/2018 16:13	Finished	SAMP,0.1>10mL
54	N028984-013AMS,MS	10	1000	Unknown		03/08/2018 16:23	Finished	MS (5ppb), IWST-180129B,0.0
55	N028984-013AMSD,M	11	1000	Unknown		03/08/2018 16:32	Finished	MSD (5ppb), IWST-180129B,0.
56	N028984-003AMS,MS	12	1000	Unknown		03/08/2018 16:42	Finished	MS (5ppb), IWST-180129B,0.2
57	N028984-007ADUP,D	13	1000	Unknown		03/08/2018 16:51	Finished	DUP,0.1>10mL
58	N028984-004A,SAMP	14	1000	Unknown		03/08/2018 17:01	Finished	SAMP,10mL
59	N028984-005A,SAMP	15	1000	Unknown		03/08/2018 17:10	Finished	SAMP,10mL
60	N028984-006A,SAMP	16	1000	Unknown		03/08/2018 17:20	Finished	SAMP,10mL

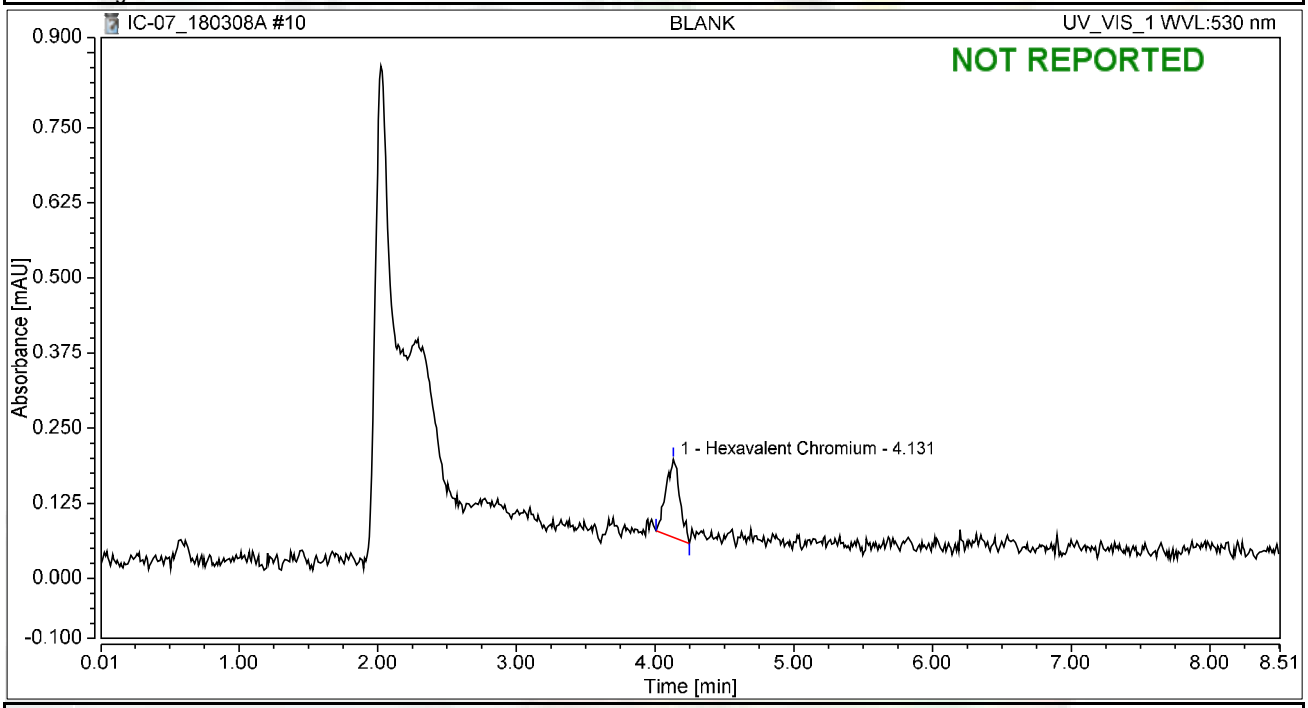
61	CCV-5,CCV,1,	17	1000	Unknown		03/08/2018 17:29	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	18	1000	Unknown		03/08/2018 17:39	Finished	CCB R180302A
63	N028984-008A,SAMP	19	1000	Unknown		03/08/2018 17:48	Finished	SAMP,1>10mL
64	N028984-009A,SAMP	20	1000	Unknown		03/08/2018 17:58	Finished	SAMP,10mL
65	N028984-010A,SAMP	21	1000	Unknown		03/08/2018 18:07	Finished	SAMP,0.5>10mL
66	N028984-011A,SAMP	22	1000	Unknown		03/08/2018 18:17	Finished	SAMP,0.02>10mL
67	N028984-012A,SAMP	23	1000	Unknown		03/08/2018 18:26	Finished	SAMP,0.05>10mL
68	N028984-014A,SAMP	24	1000	Unknown		03/08/2018 18:35	Finished	SAMP,0.05>10mL
69	N028984-015A,SAMP	25	1000	Unknown		03/08/2018 18:45	Finished	SAMP,0.02>10mL
70	N028984-016A,SAMP	26	1000	Unknown		03/08/2018 18:54	Finished	SAMP,0.01>10mL
71	N028984-017A,SAMP	27	1000	Unknown		03/08/2018 19:04	Finished	SAMP,0.005>10mL
72	N028984-018A,SAMP	28	1000	Unknown		03/08/2018 19:13	Finished	SAMP,0.005>10mL
73	CCV-6,CCV1,1,	29	1000	Unknown		03/08/2018 19:23	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	30	1000	Unknown		03/08/2018 19:32	Finished	CCB R180302A
75	SHUTDOWN	31	1000	Unknown		03/08/2018 19:42	Finished	
76	Eluent: R180308A	32	1000	Unknown		n.a.	Finished	Eluent
77	PCR: R180307B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 09:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

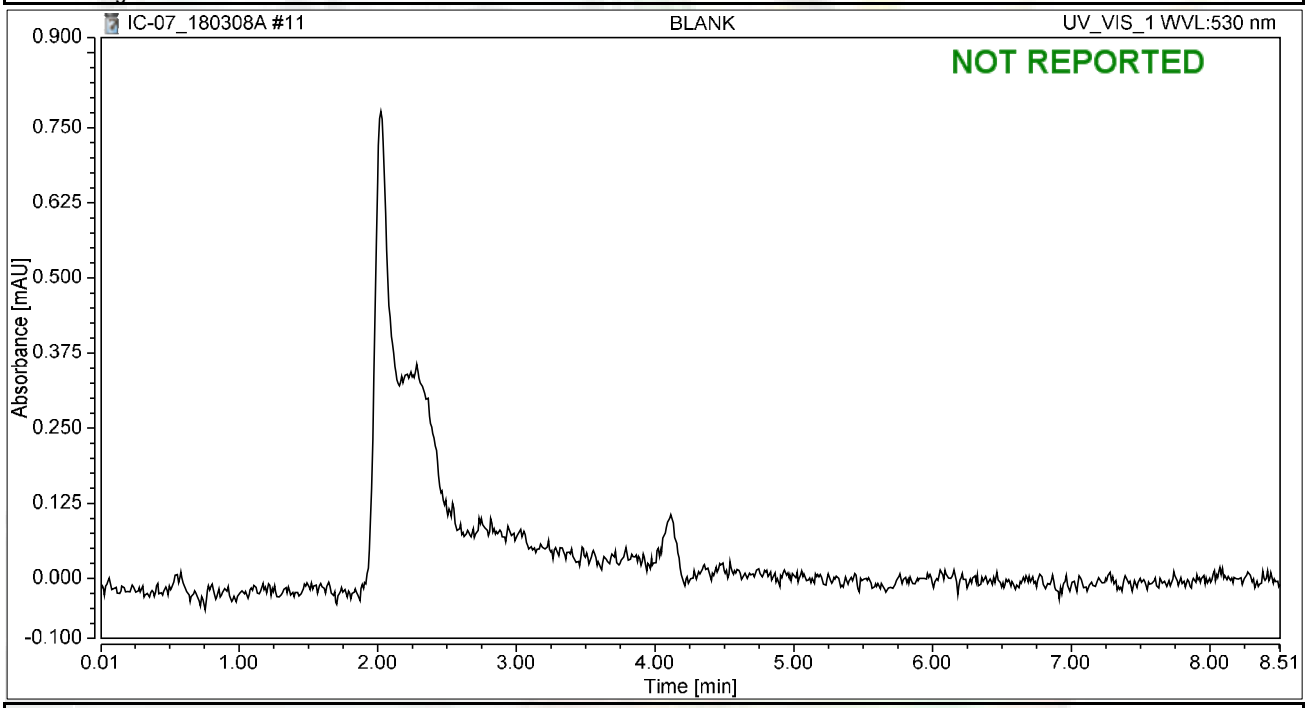
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.015	0.130	100.00	100.00	0.0587
Total:			**0.015**	**0.130**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

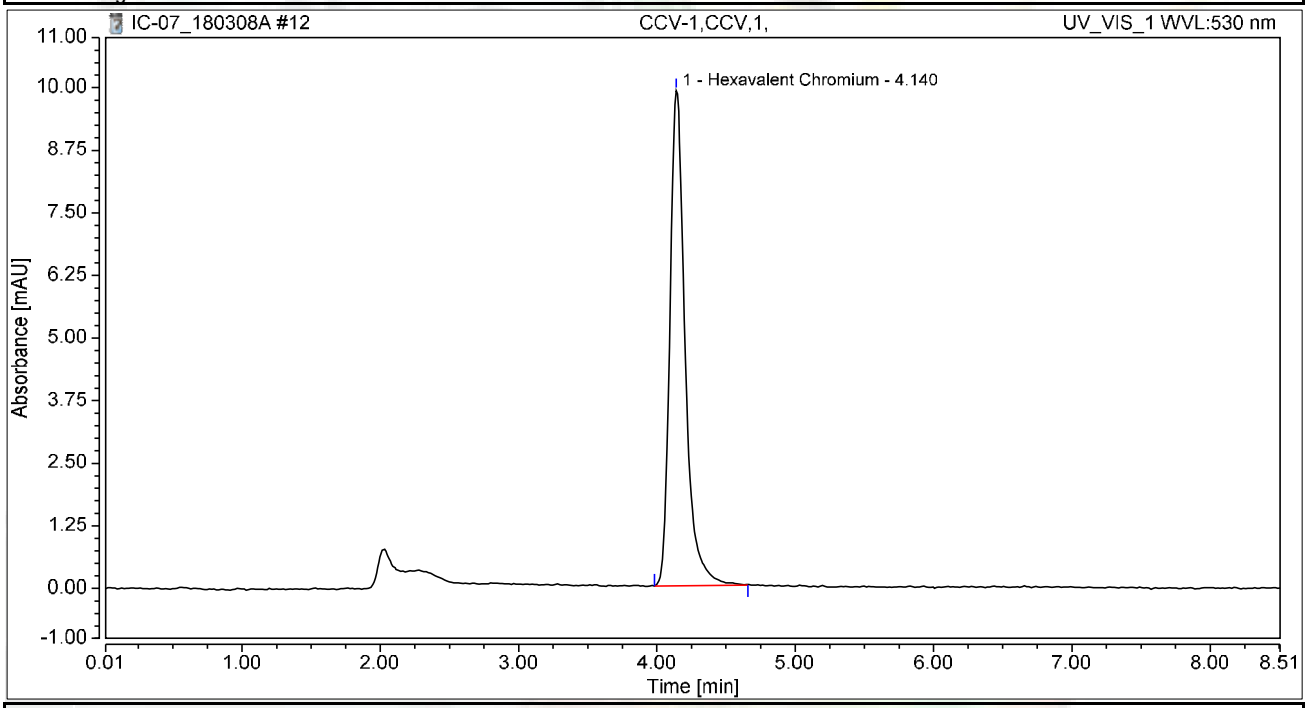
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

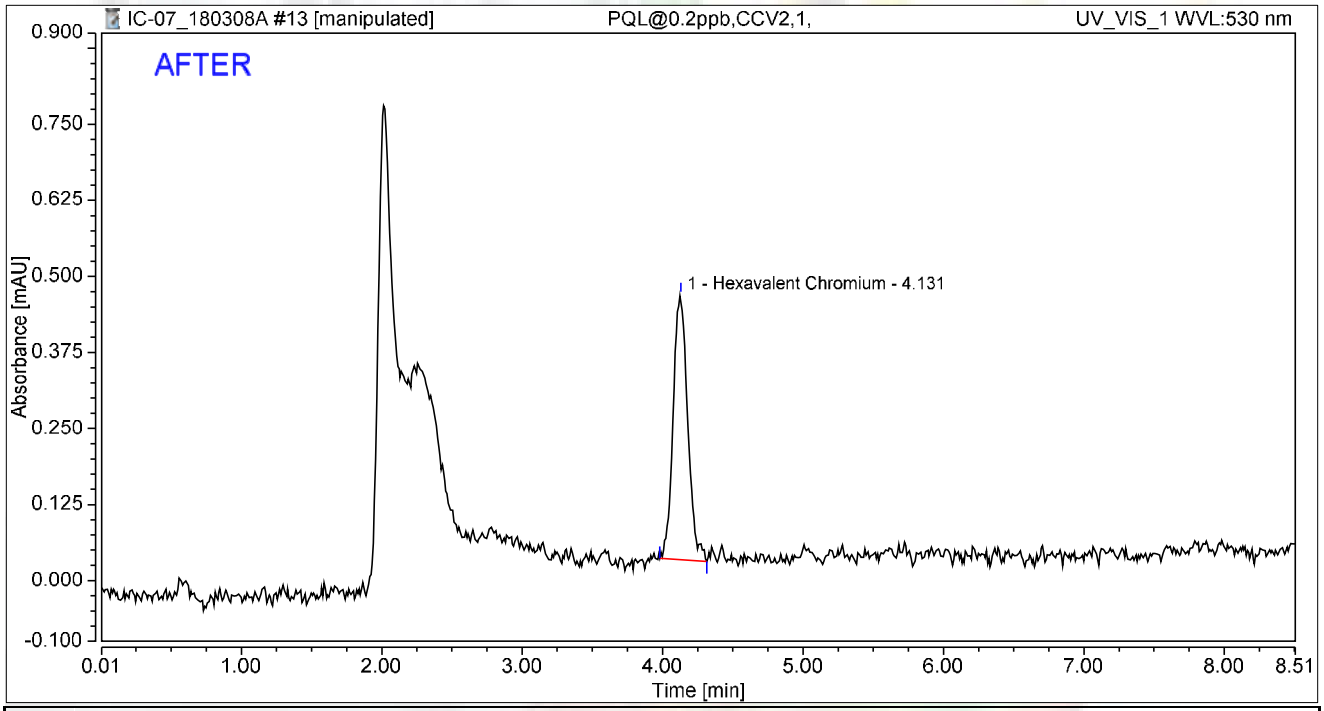
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.263	9.889	100.00	100.00	4.9590
Total:			**1.263**	**9.889**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.052	0.436	100.00	100.00	0.2057
Total:			**0.052**	**0.436**	**100.00**	**100.00**	

rba 3/12/2018

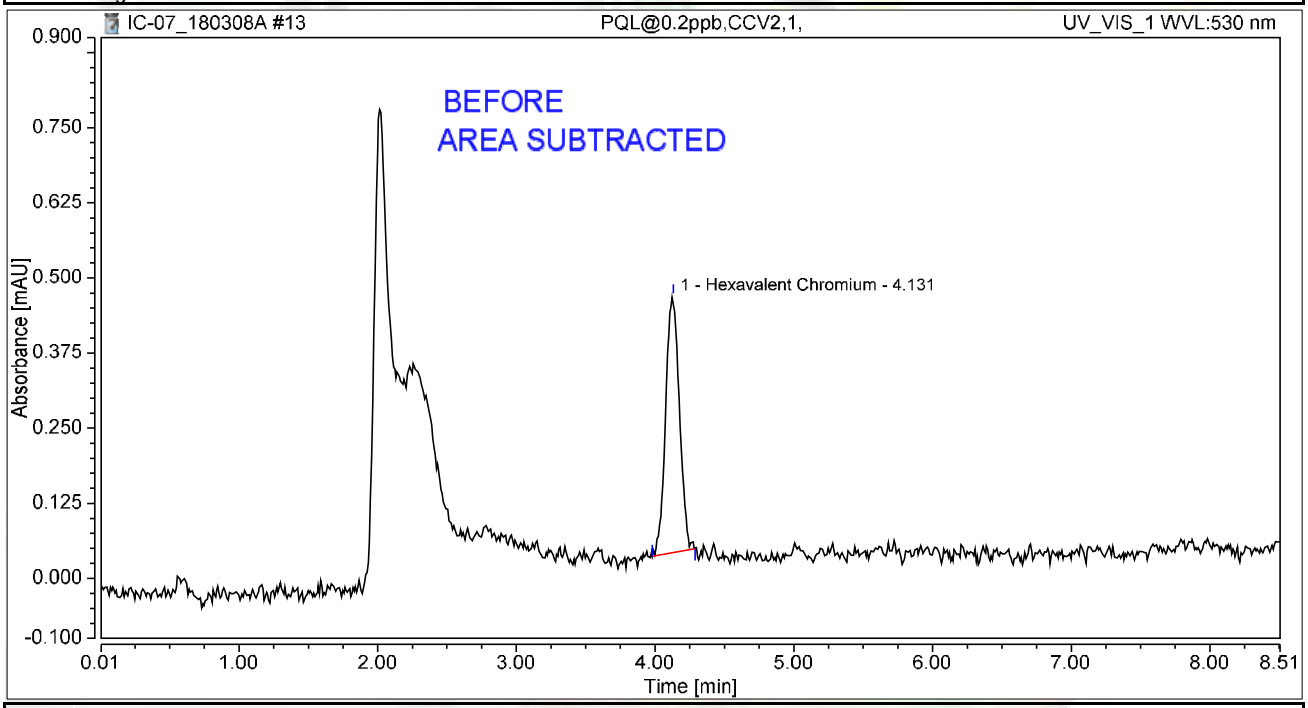
RB 03/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.049	0.427	100.00	100.00	0.1938
Total:			**0.049**	**0.427**	**100.00**	**100.00**	

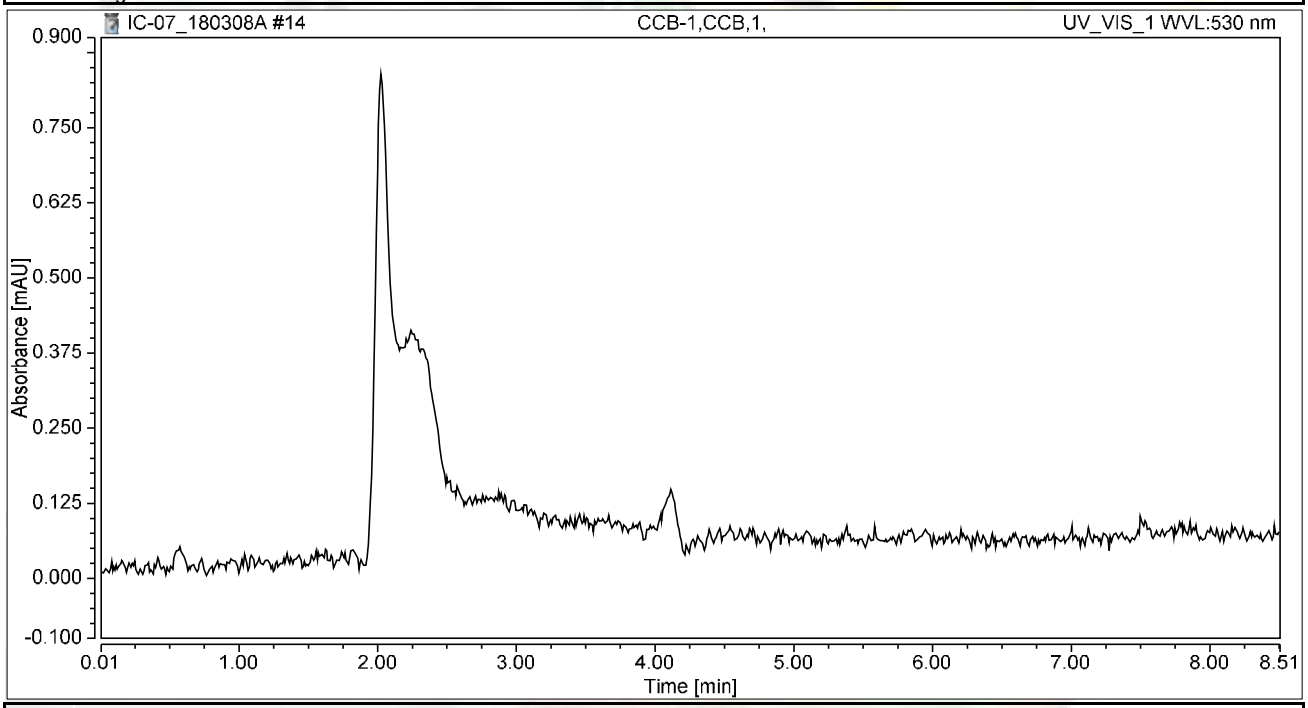
rba 3/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

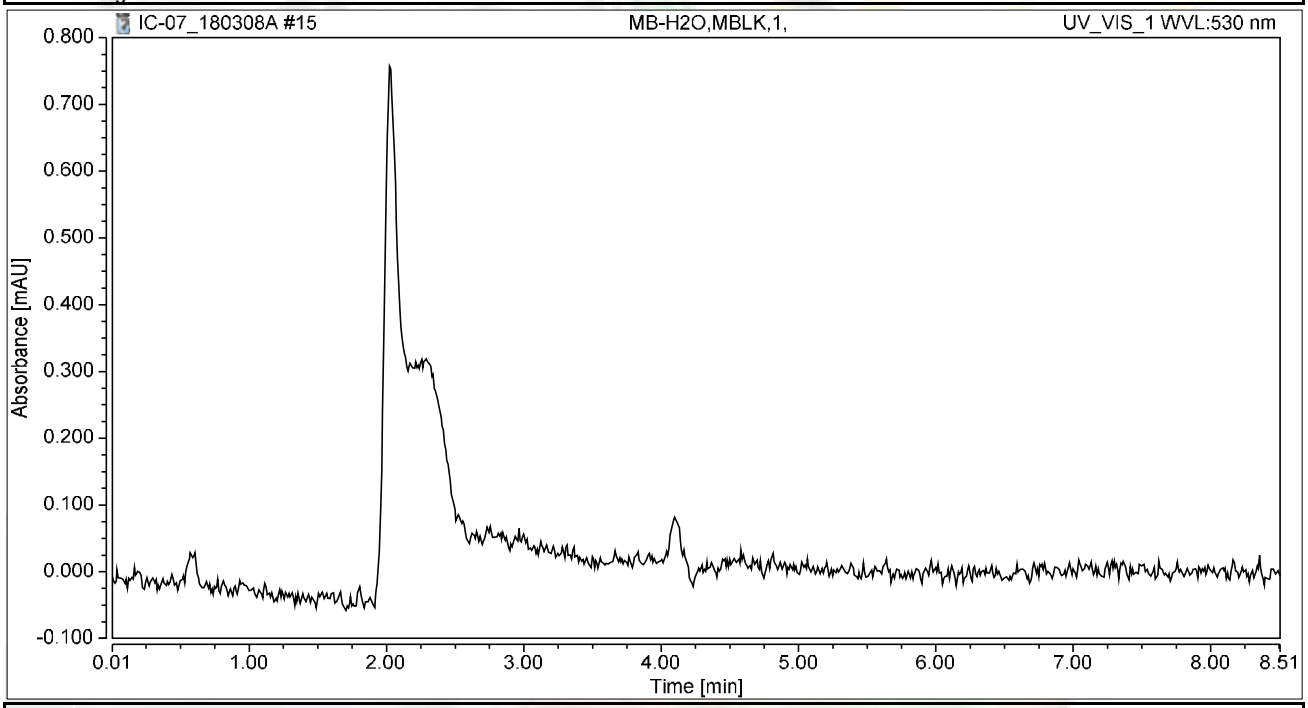
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

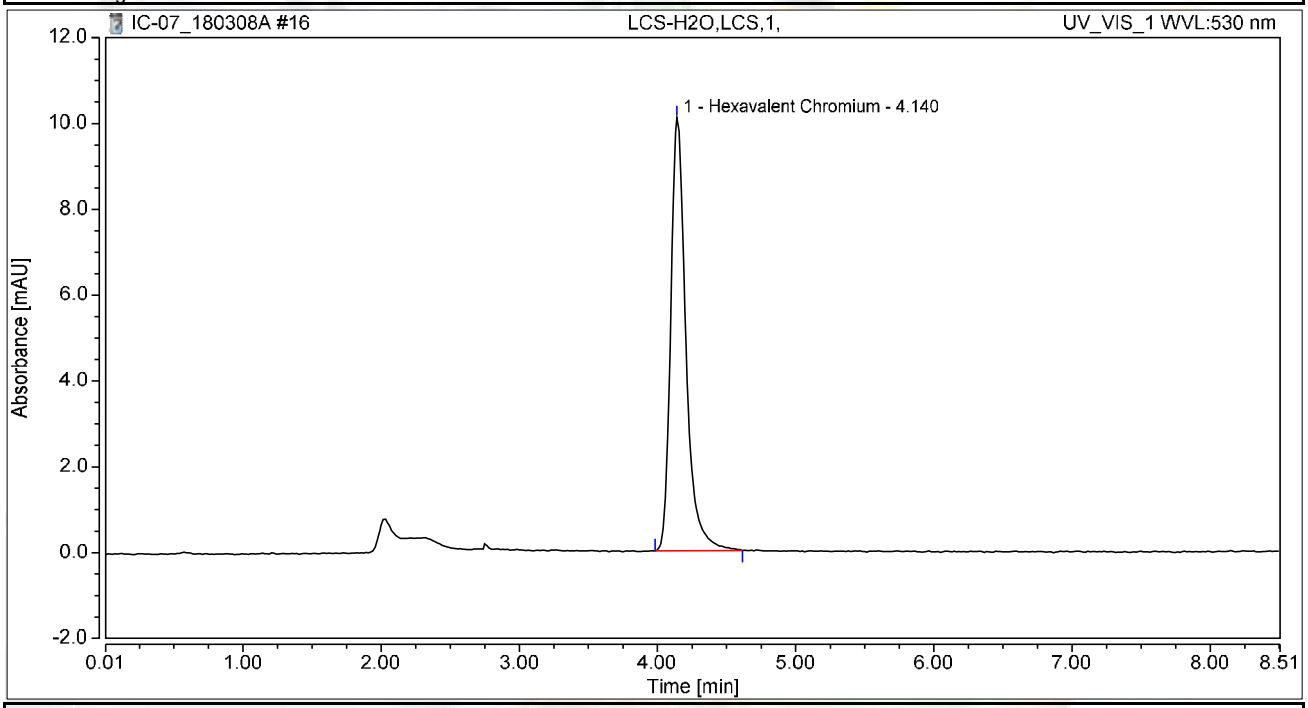
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

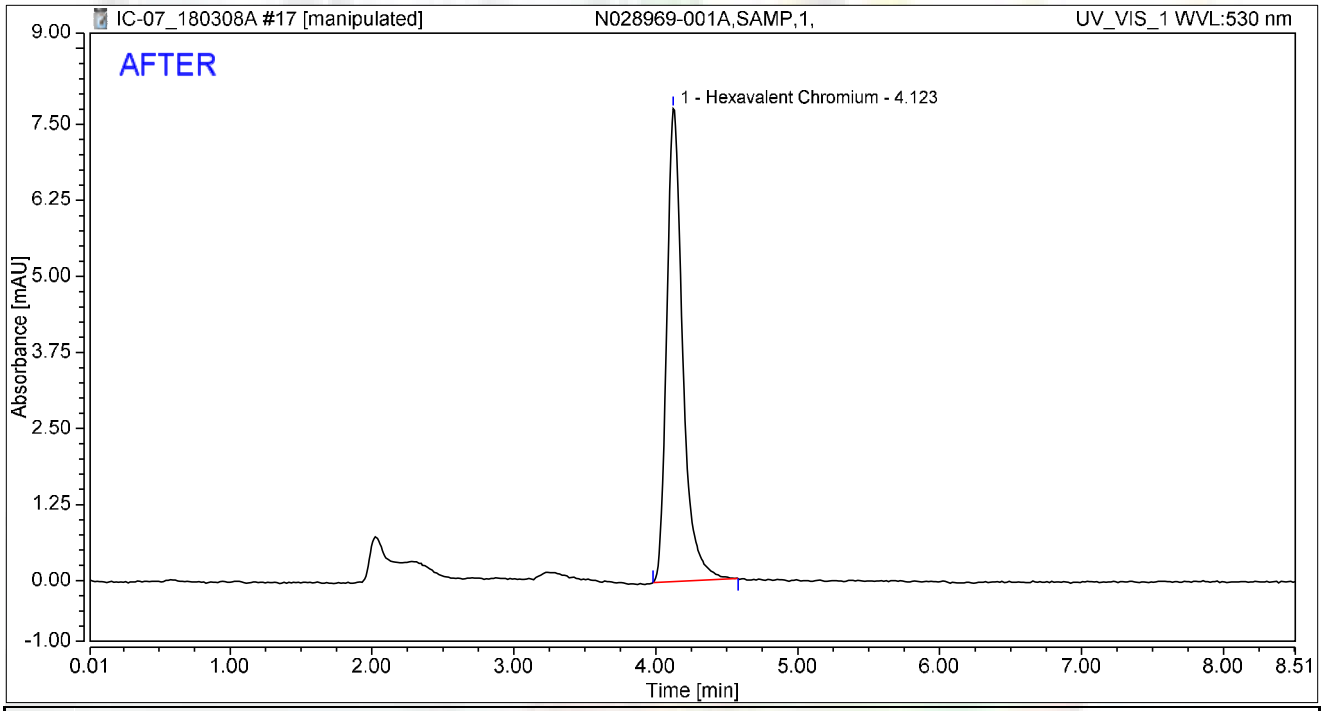
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.290	10.093	100.00	100.00	5.0650
Total:			**1.290**	**10.093**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028969-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.019	7.776	100.00	100.00	4.0012
Total:			**1.019**	**7.776**	**100.00**	**100.00**	

rba 3/12/2018

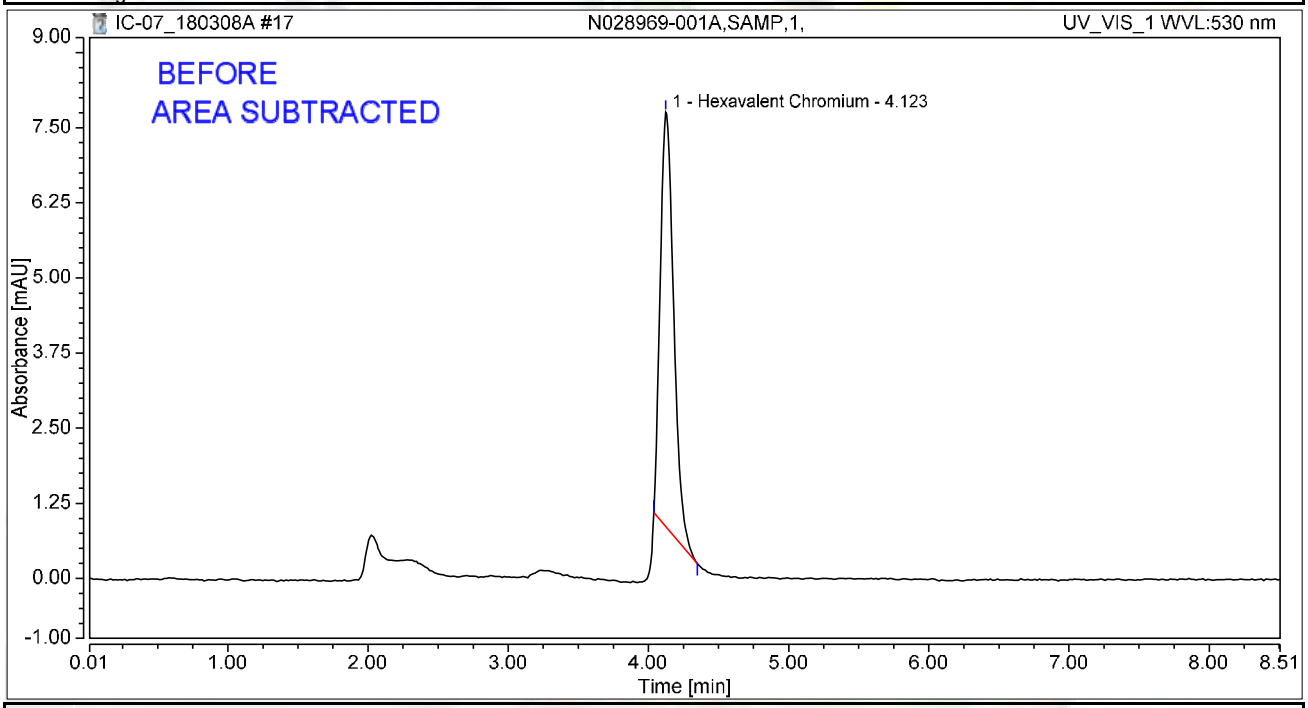
RB 03/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028969-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.772	6.891	100.00	100.00	3.0326
Total:			**0.772**	**6.891**	**100.00**	**100.00**	

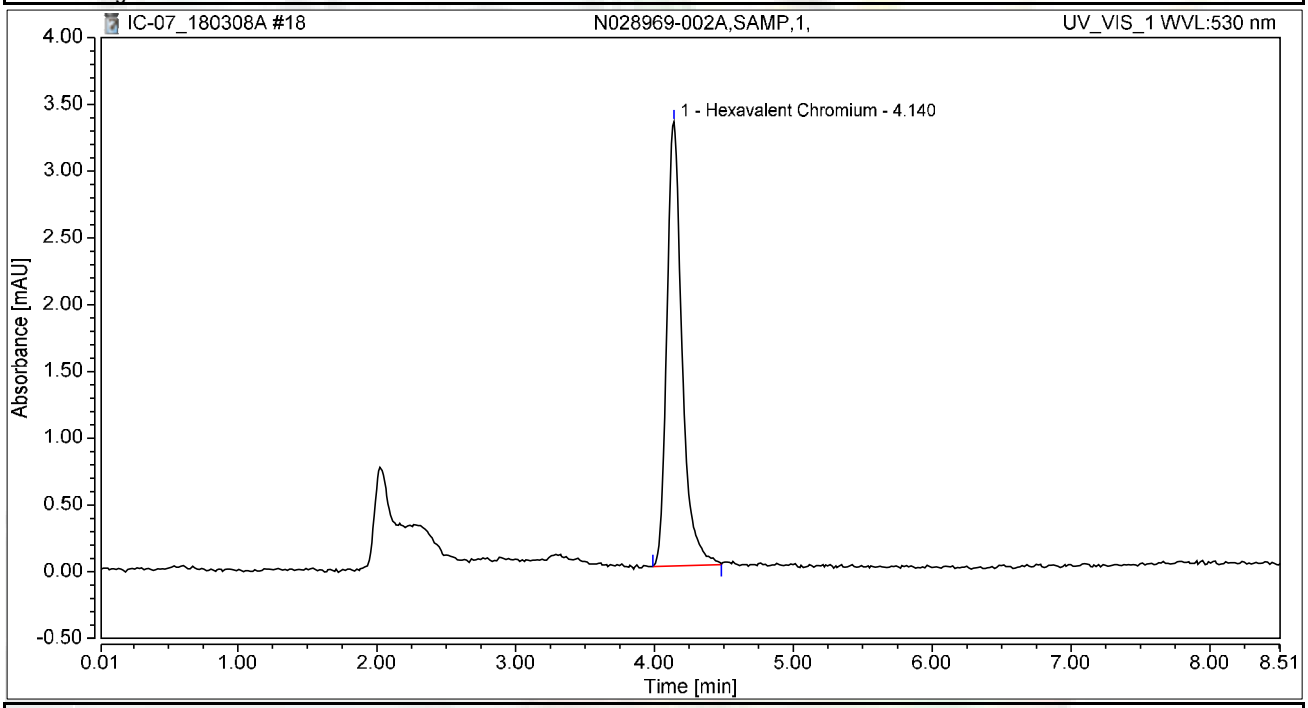
rba 3/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028969-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

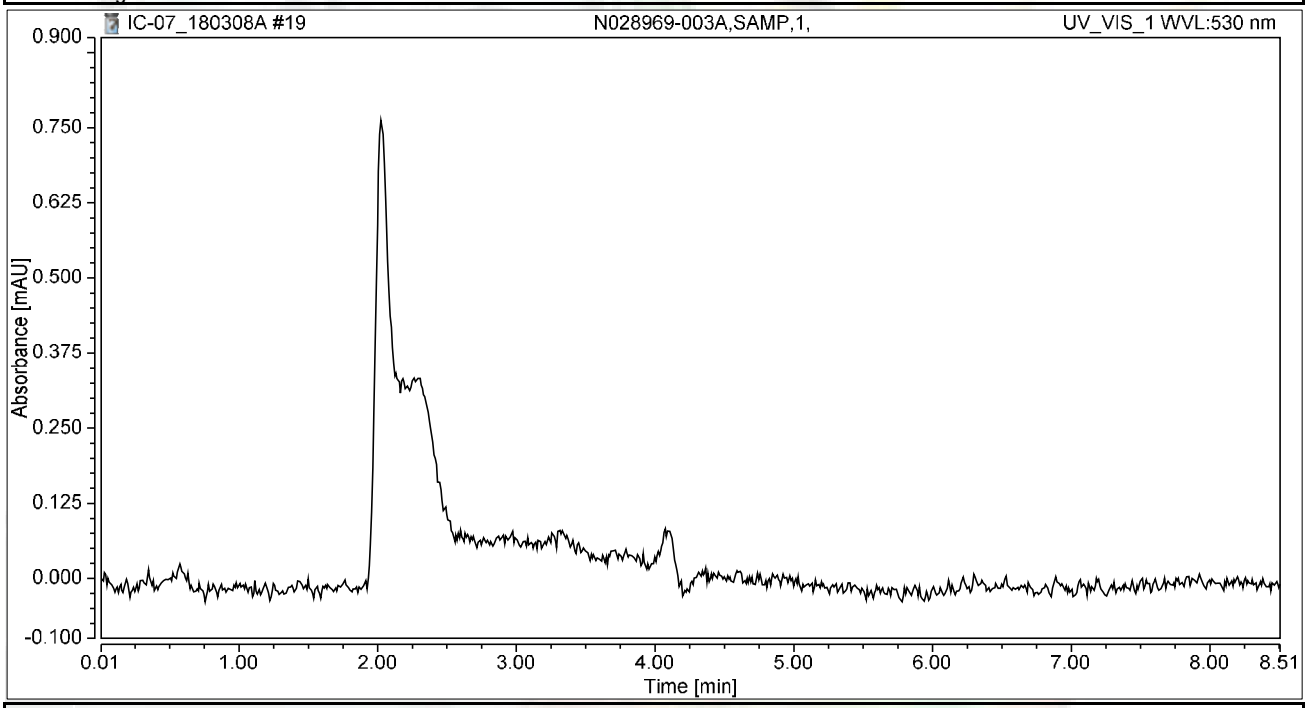
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.423	3.327	100.00	100.00	1.6608
Total:			**0.423**	**3.327**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028969-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

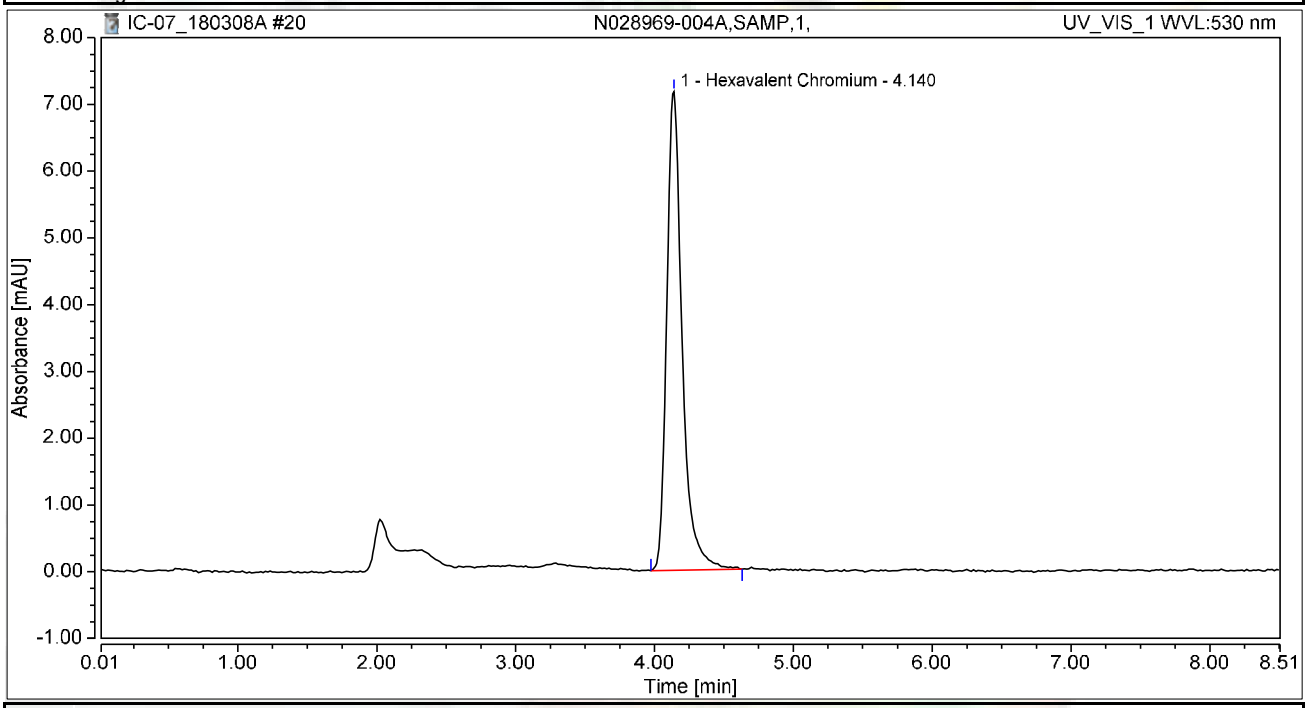
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028969-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

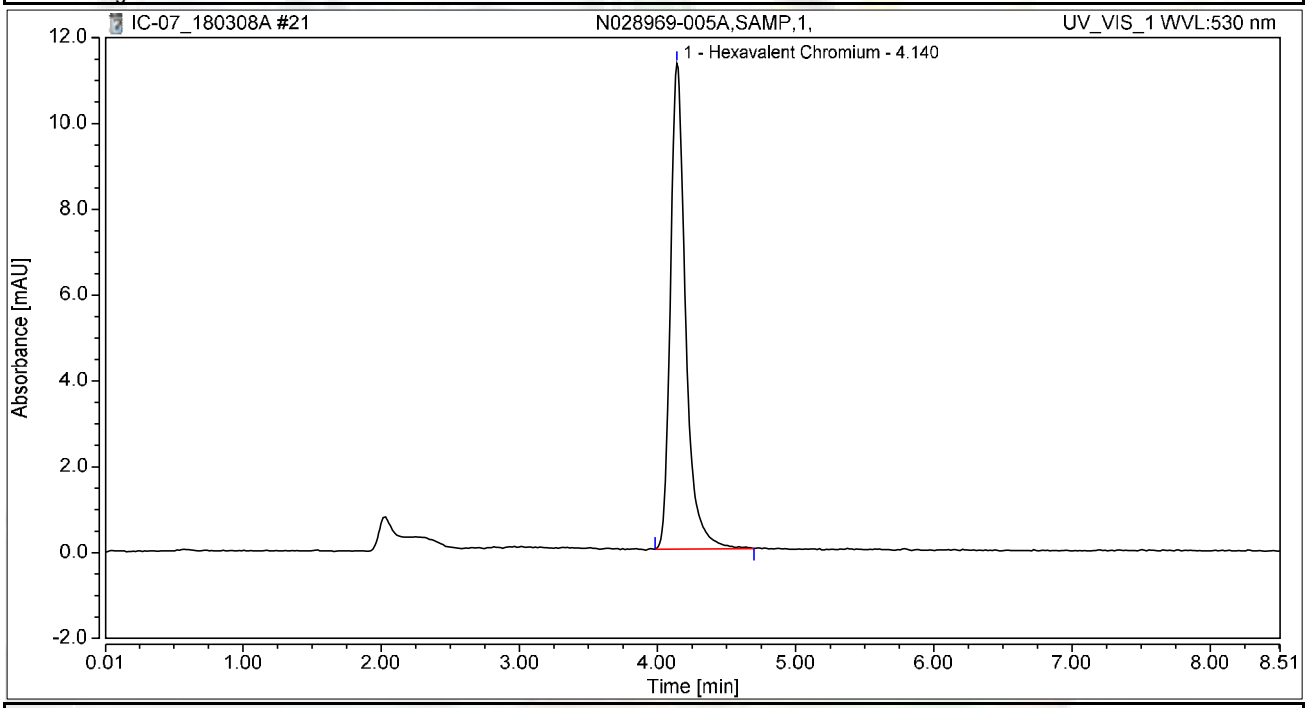
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.926	7.174	100.00	100.00	3.6345
Total:			**0.926**	**7.174**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028969-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

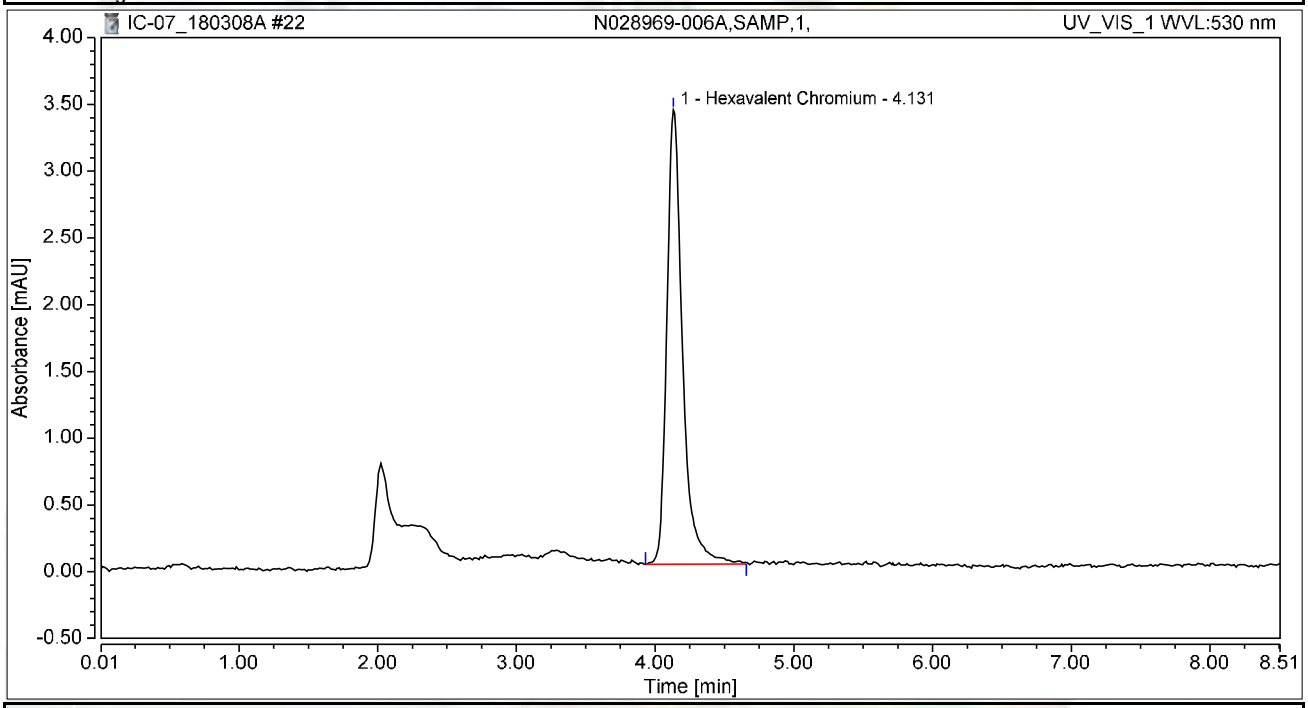
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.444	11.312	100.00	100.00	5.6706
Total:			**1.444**	**11.312**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028969-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

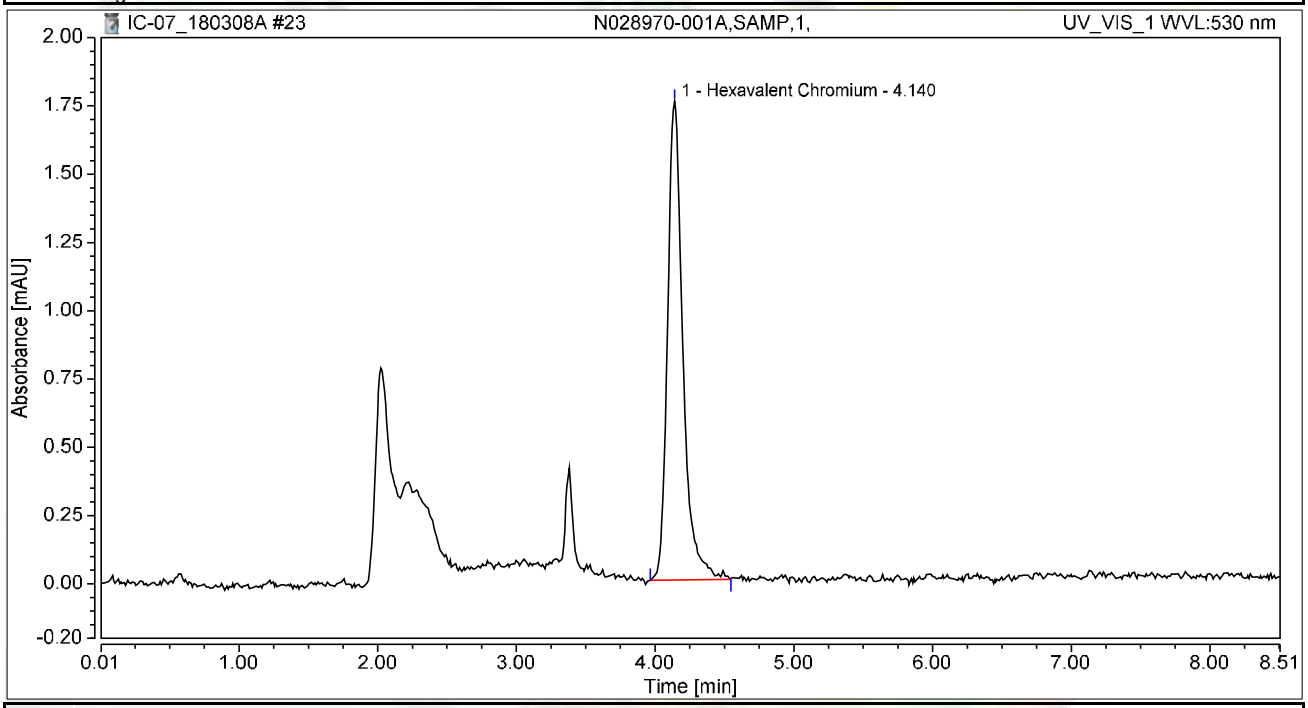
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.445	3.402	100.00	100.00	1.7490
Total:			**0.445**	**3.402**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028970-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

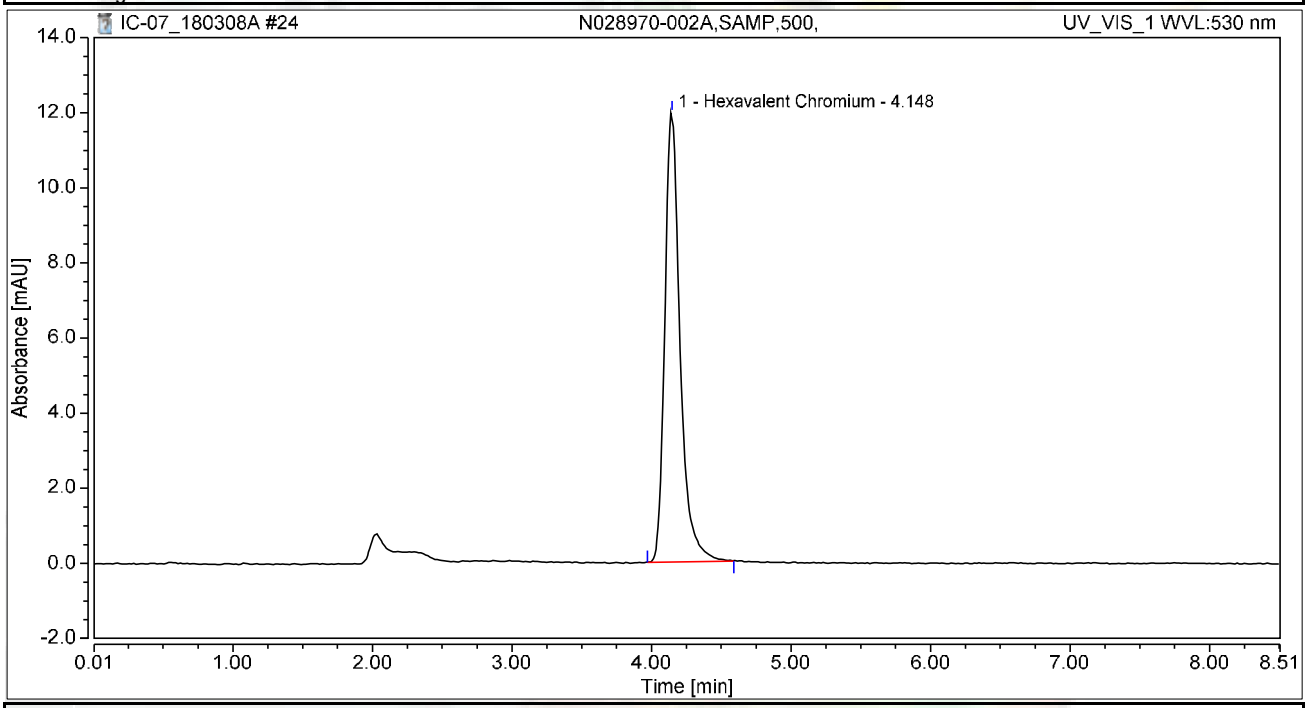
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.225	1.752	100.00	100.00	0.8838
Total:			**0.225**	**1.752**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028970-002A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

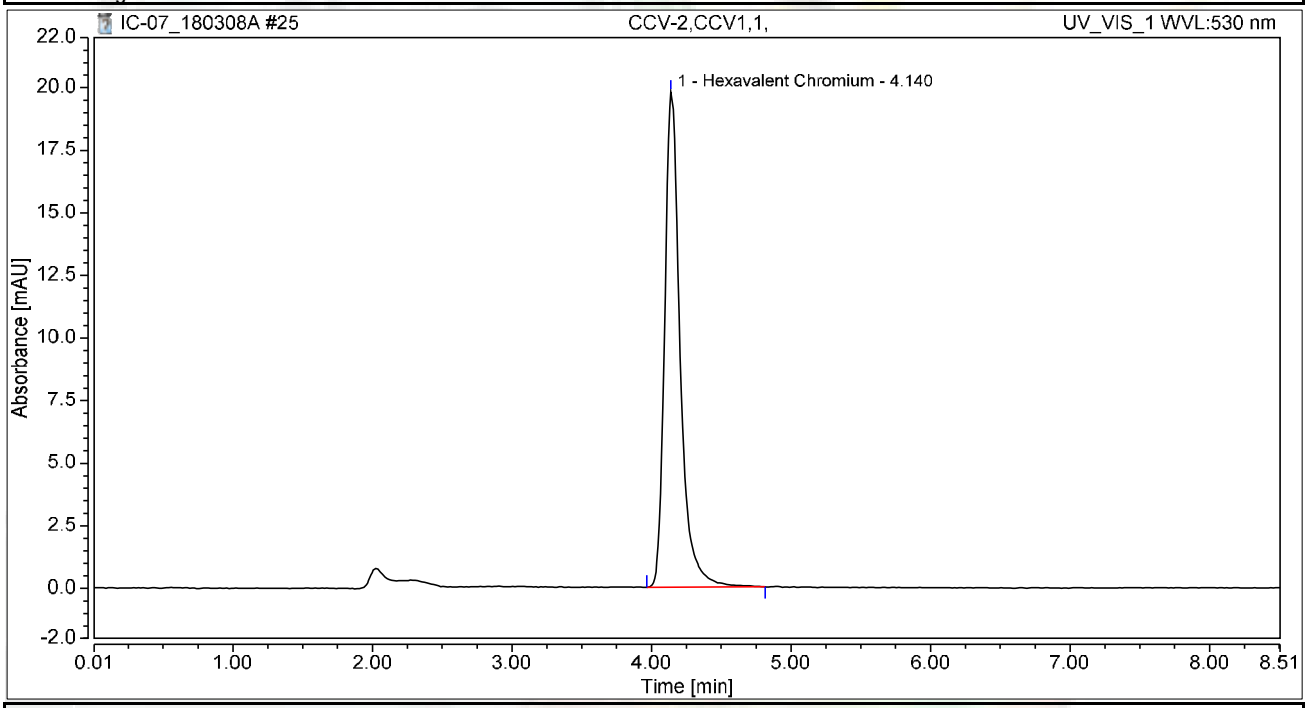
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.524	11.965	100.00	100.00	5.9827
Total:			**1.524**	**11.965**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

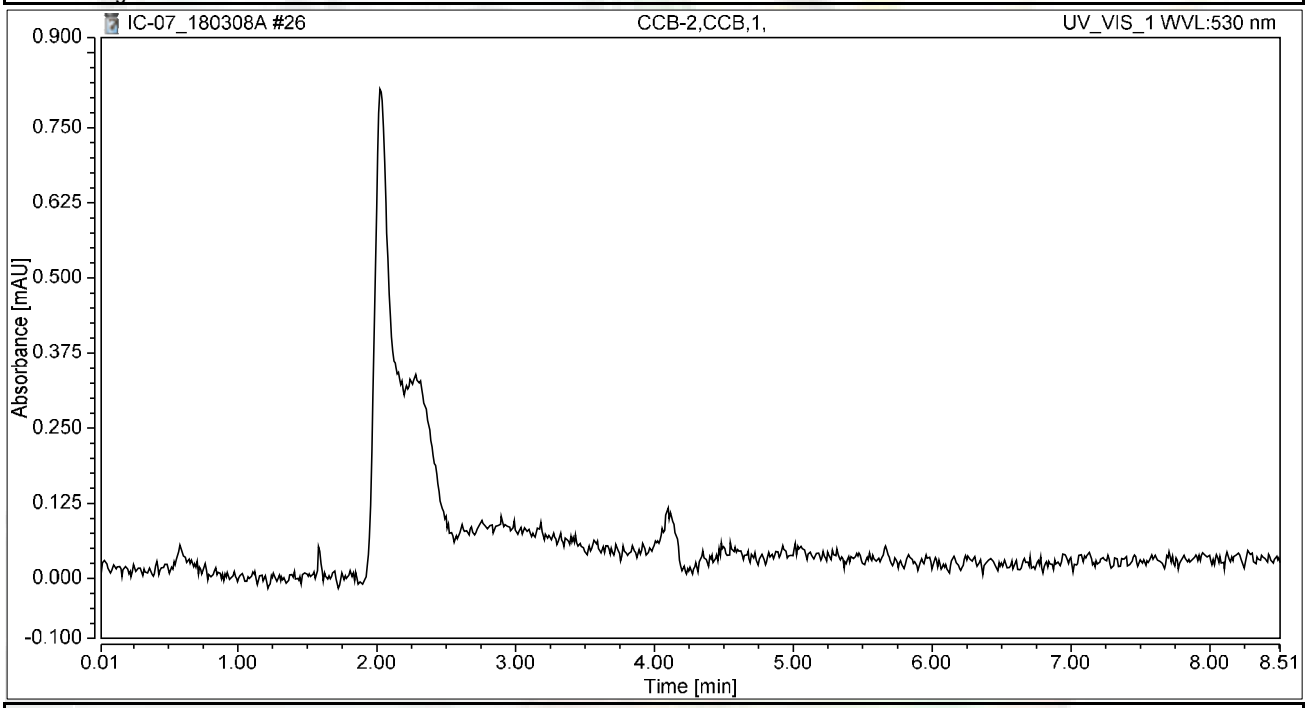
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.544	19.771	100.00	100.00	9.9871
Total:			**2.544**	**19.771**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

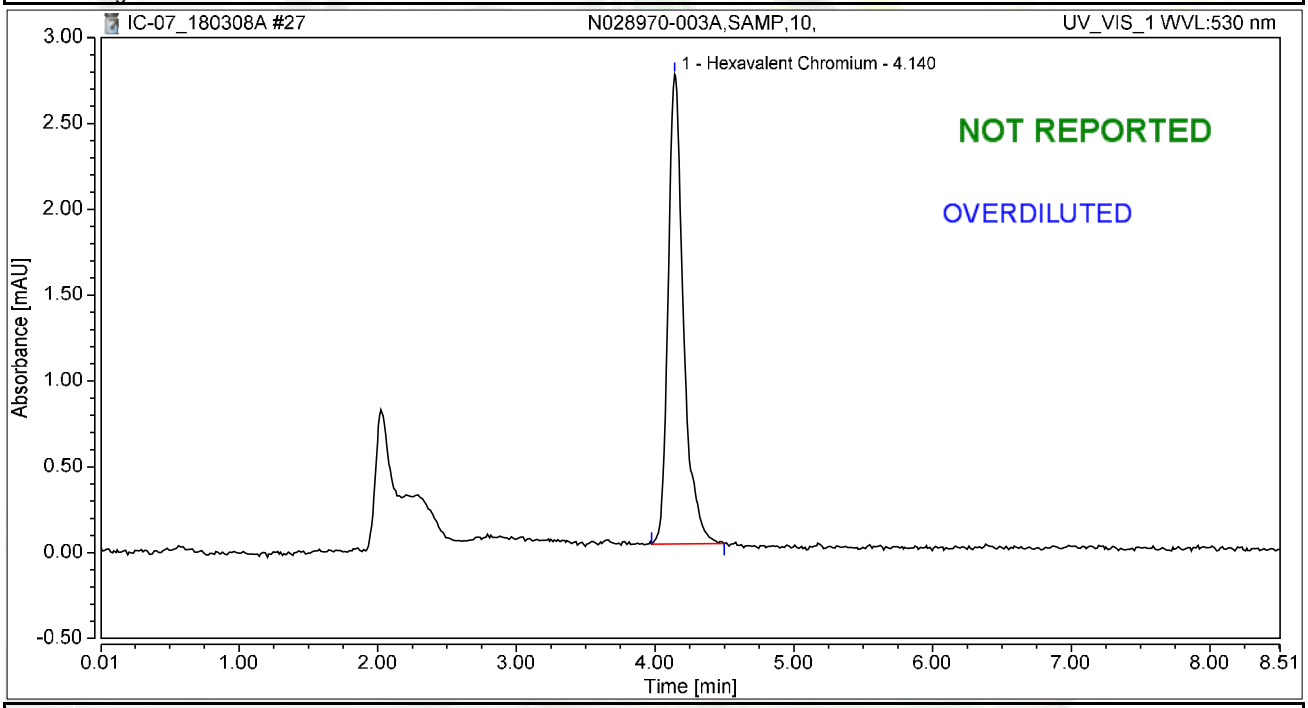
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028970-003A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

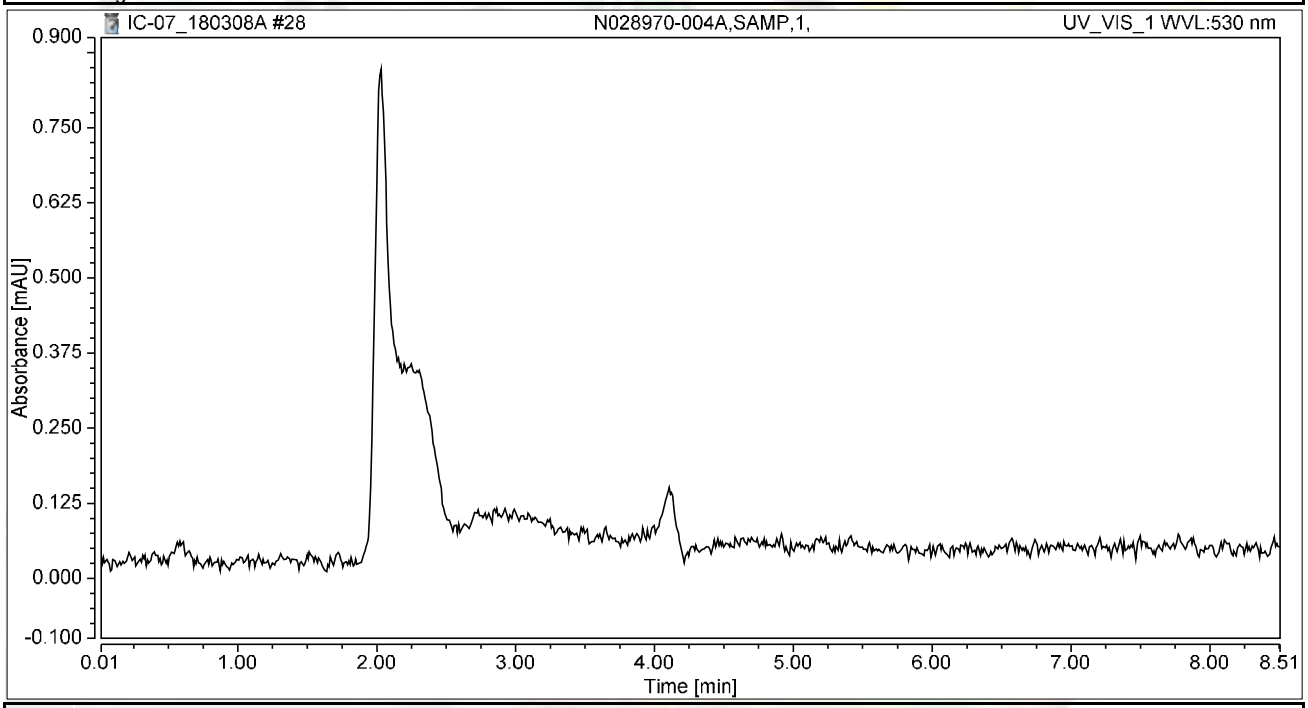
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.351	2.735	100.00	100.00	1.3793
Total:			**0.351**	**2.735**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028970-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

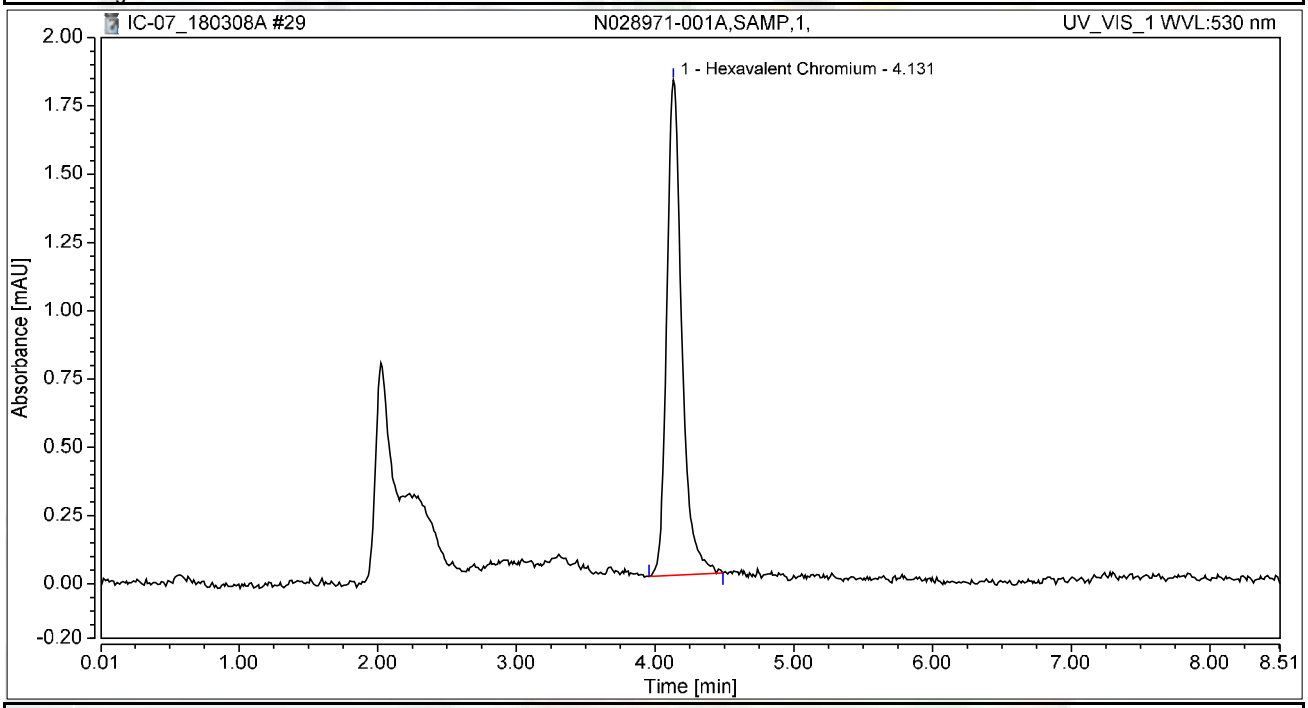
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028971-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

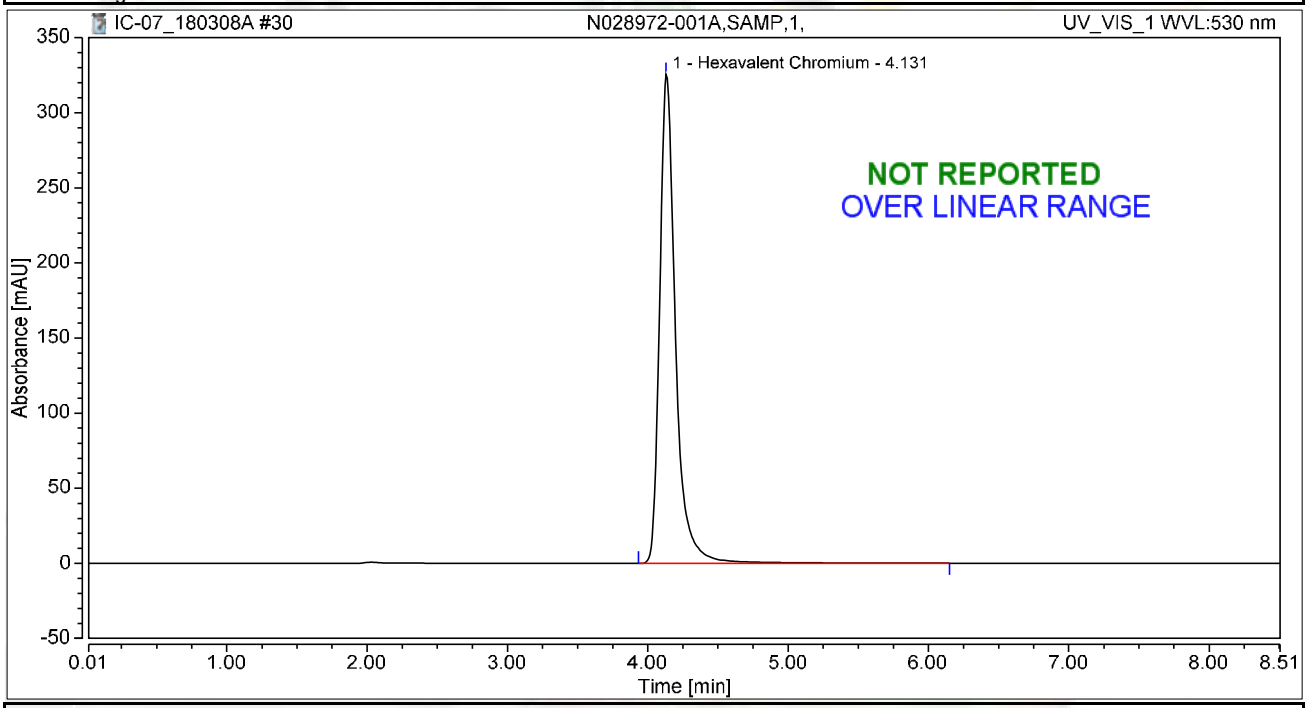
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.229	1.814	100.00	100.00	0.8996
Total:			**0.229**	**1.814**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028972-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

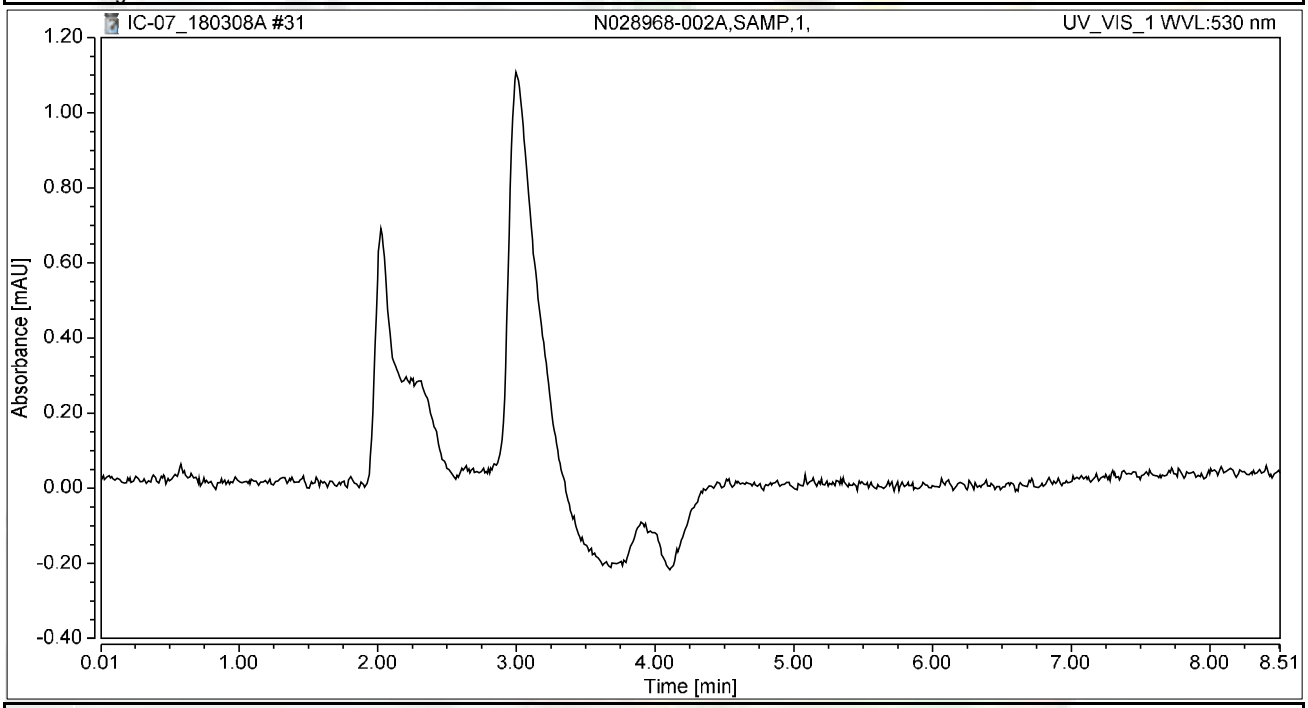
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	42.671	325.460	100.00	100.00	167.5463
Total:			**42.671**	**325.460**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028968-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

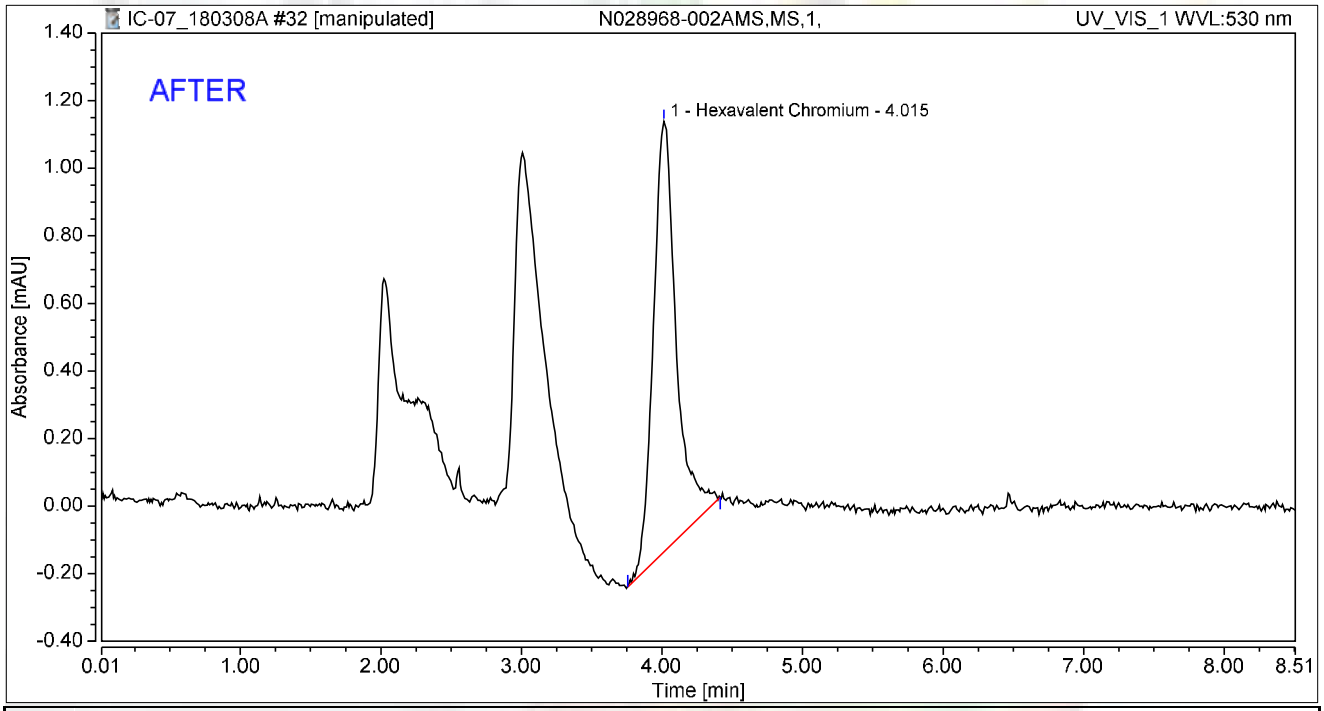
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028968-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.015	0.242	1.273	100.00	100.00	0.9500
Total:			**0.242**	**1.273**	**100.00**	**100.00**	

rba 3/12/2018

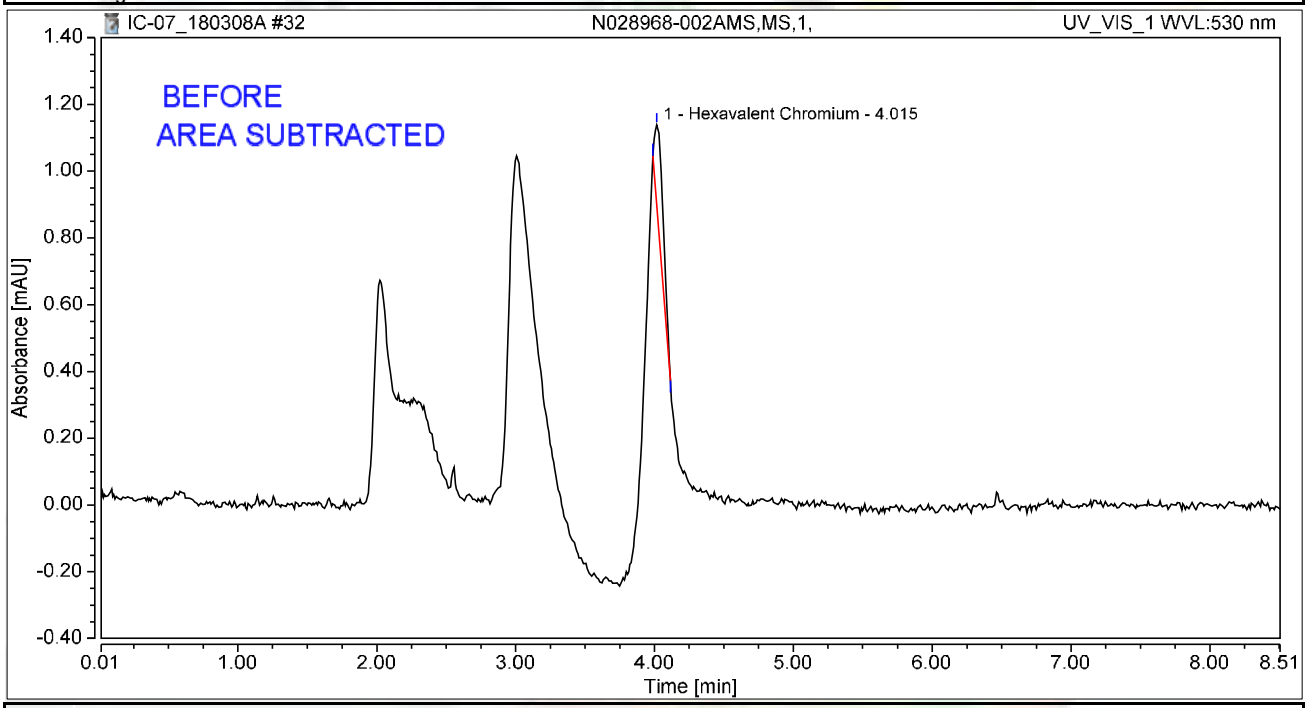
RB 03/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028968-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.015	0.020	0.227	100.00	100.00	0.0801
Total:			**0.020**	**0.227**	**100.00**	**100.00**	

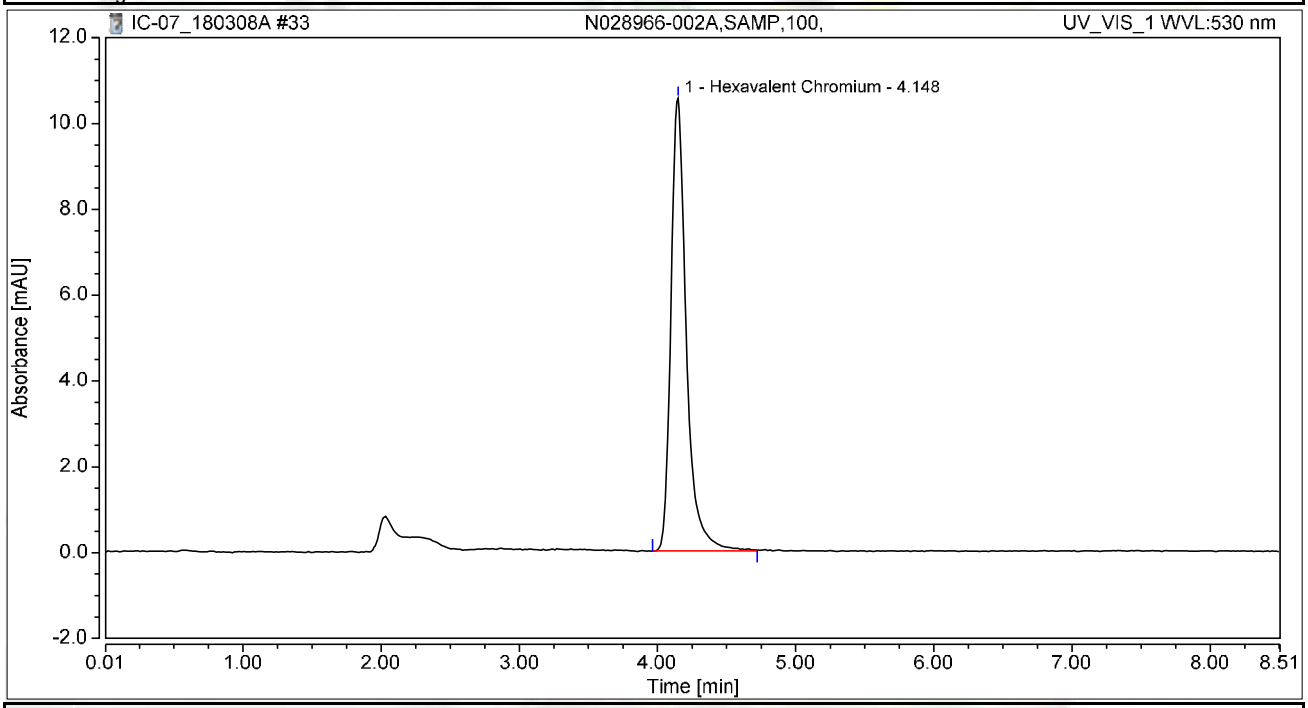
rba 3/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028966-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

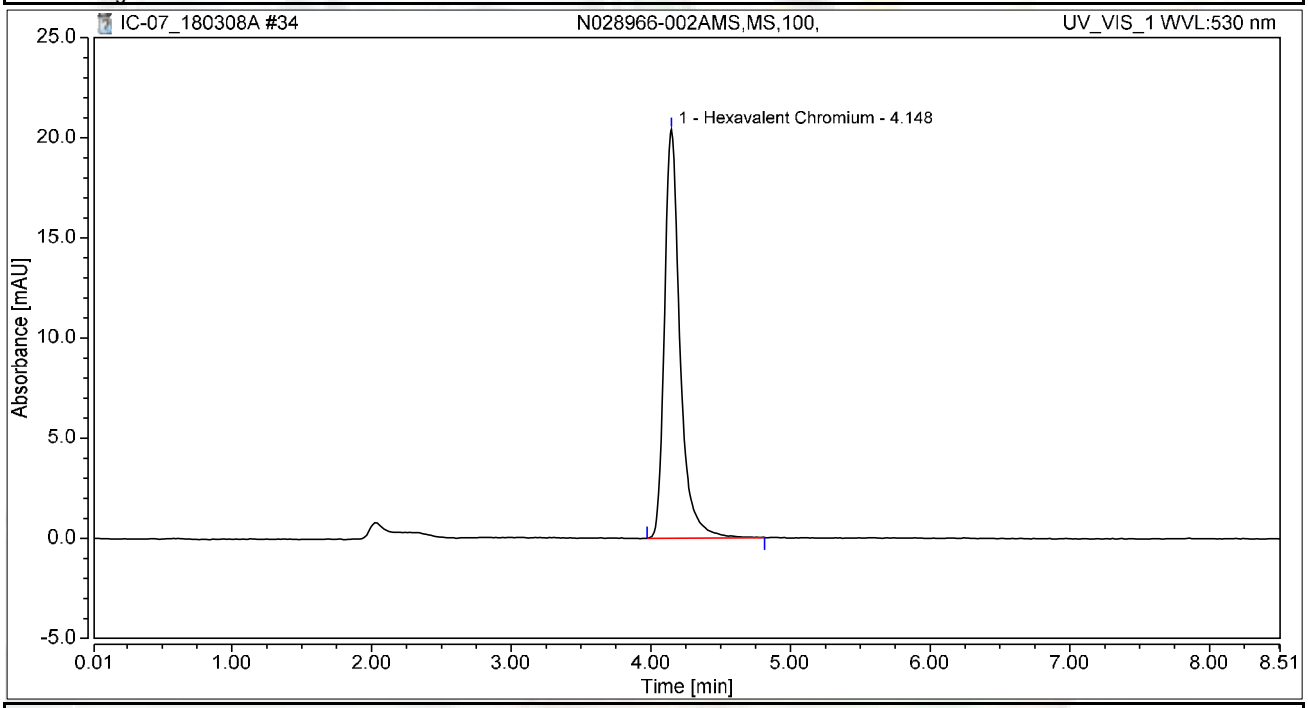
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.360	10.541	100.00	100.00	5.3400
Total:			**1.360**	**10.541**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028966-002AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

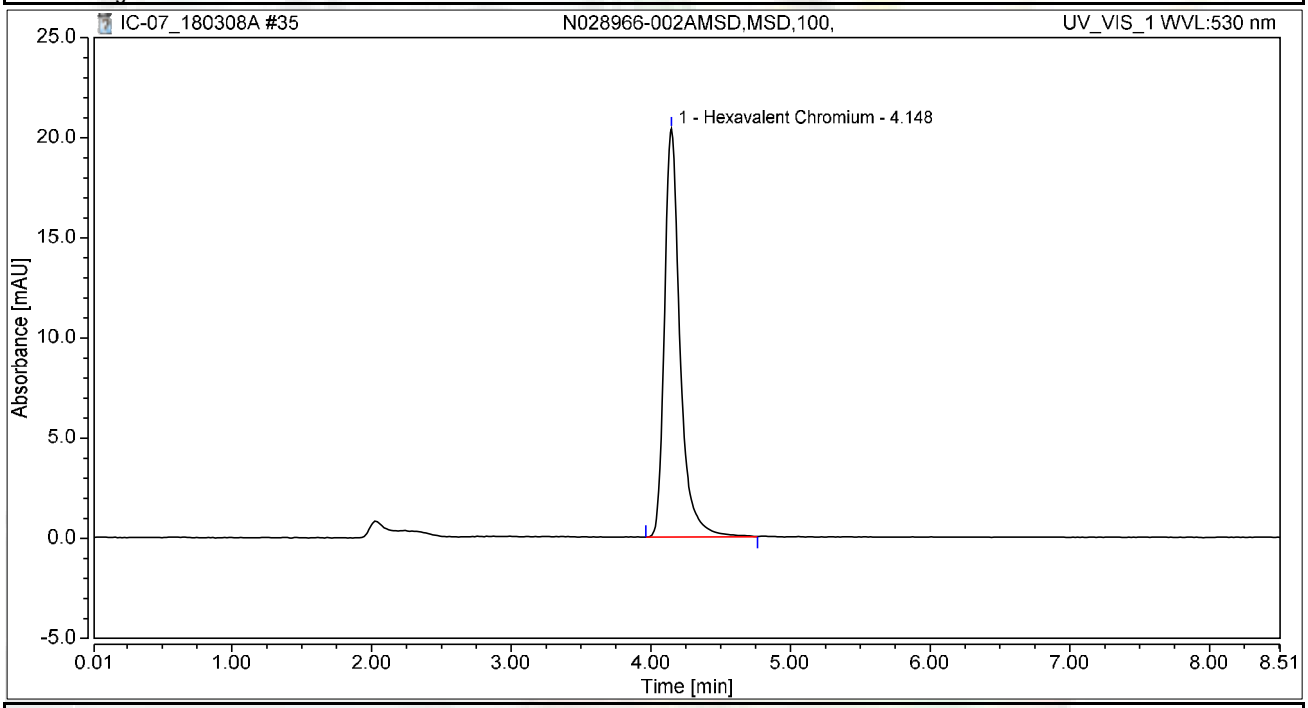
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.645	20.406	100.00	100.00	10.3847
Total:			**2.645**	**20.406**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028966-002AMSD,MSD,100,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

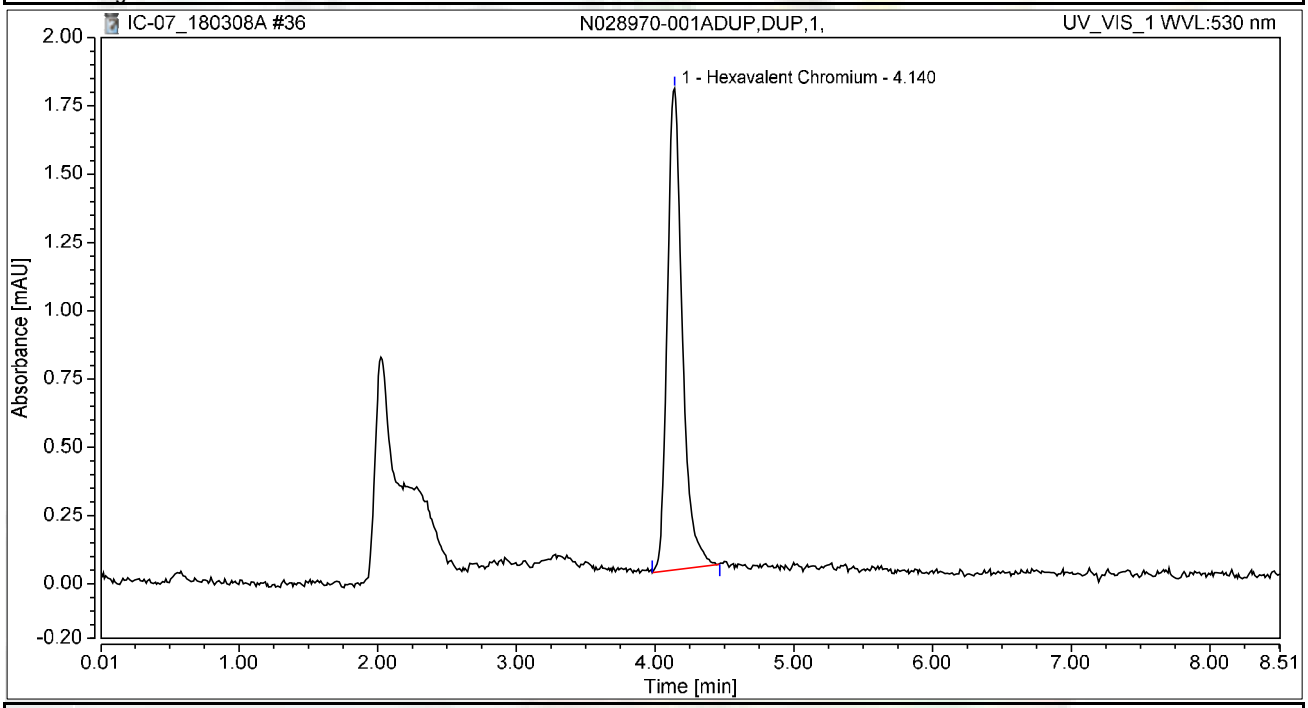
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.642	20.374	100.00	100.00	10.3726
Total:			**2.642**	**20.374**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028970-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

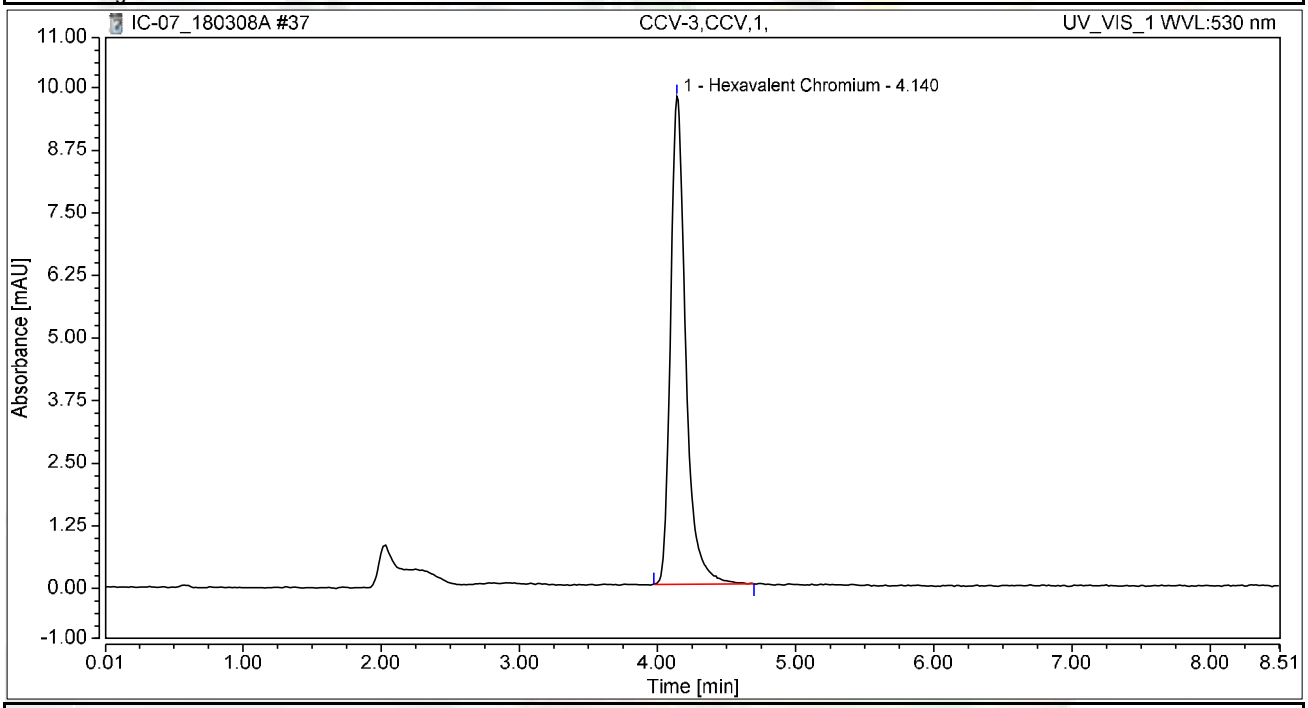
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.222	1.762	100.00	100.00	0.8704
Total:			**0.222**	**1.762**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

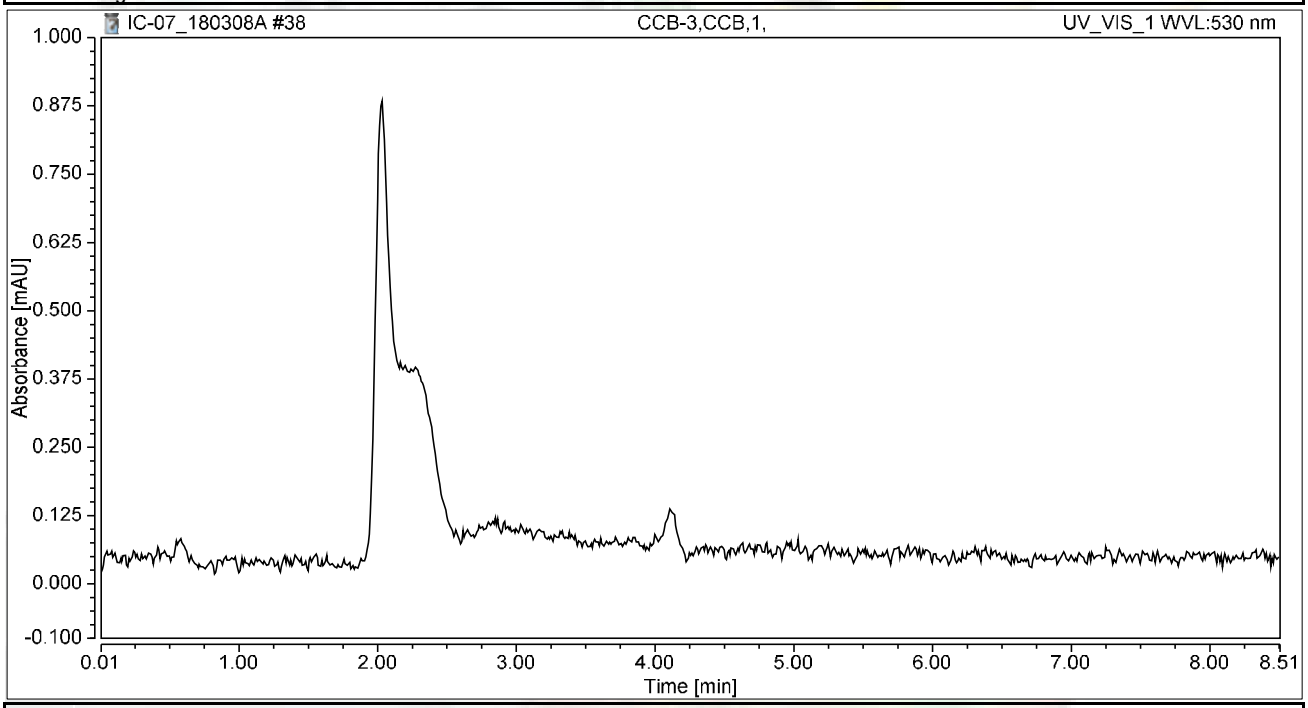
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.249	9.739	100.00	100.00	4.9038
Total:			**1.249**	**9.739**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

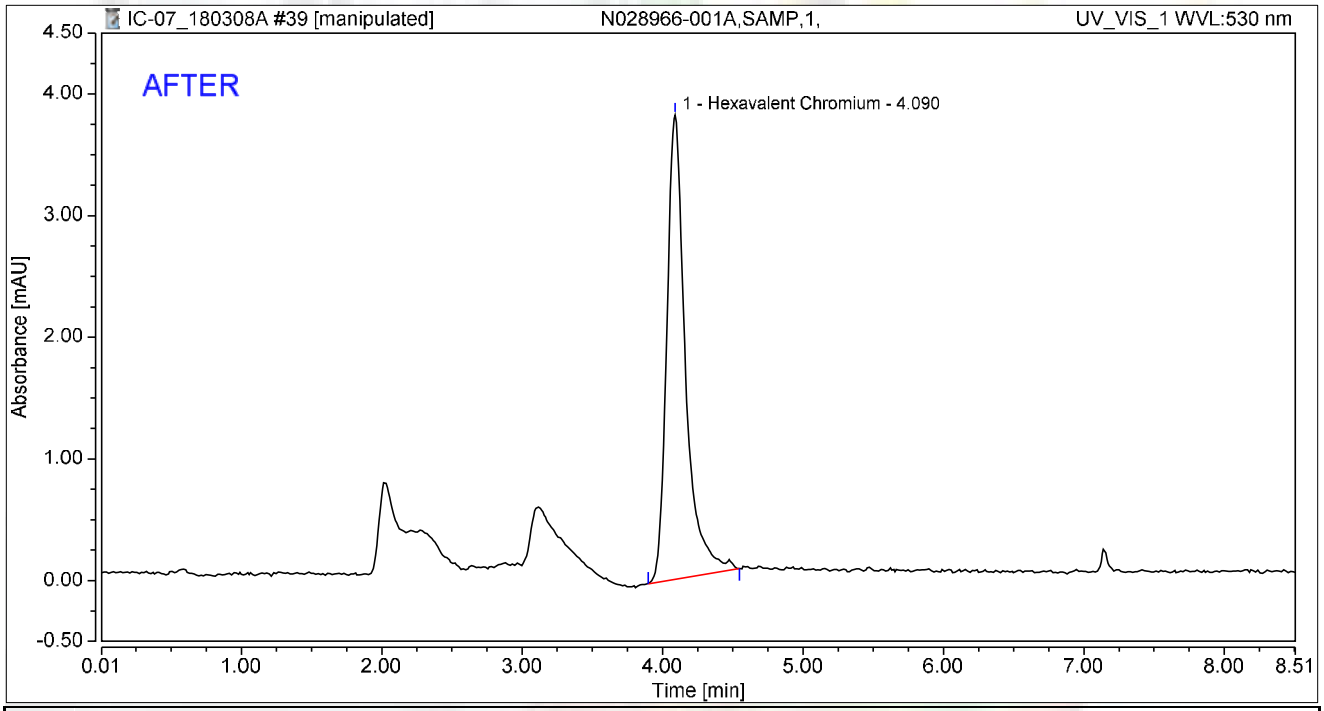
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028966-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.591	3.821	100.00	100.00	2.3217
Total:			**0.591**	**3.821**	**100.00**	**100.00**	

rba 3/12/2018

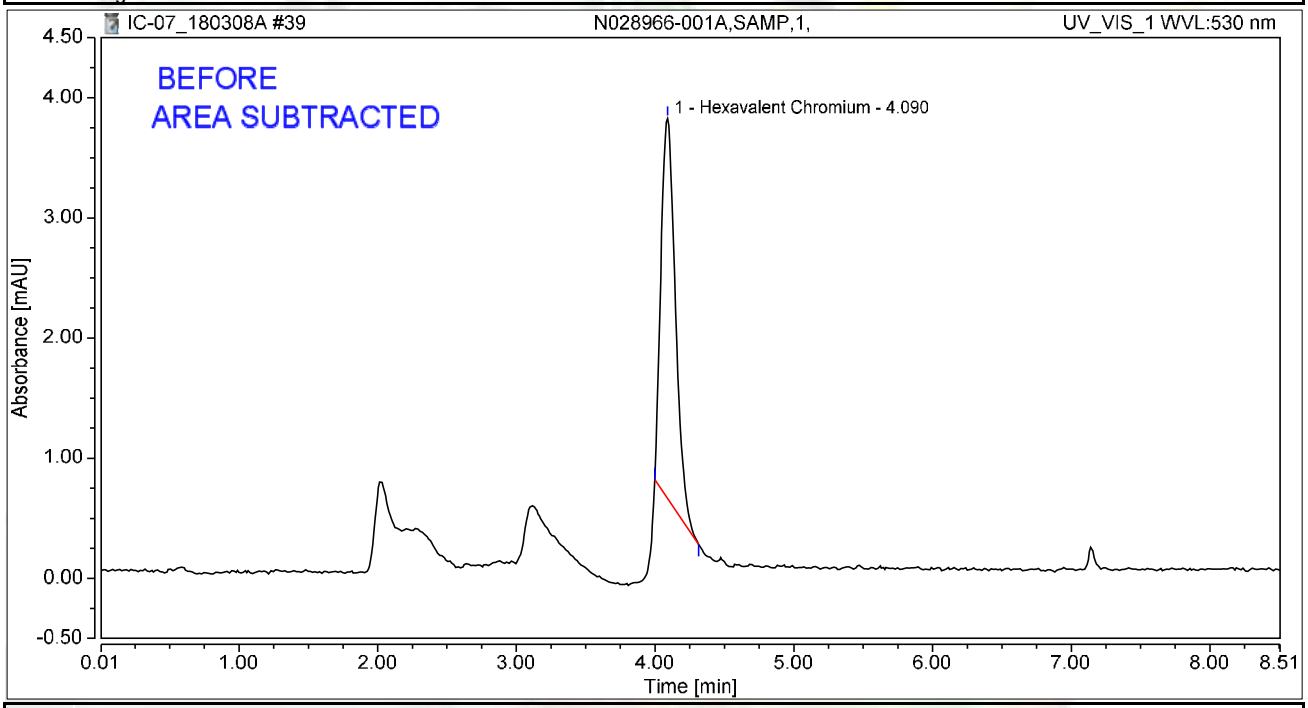
RB 03/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028966-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.381	3.162	100.00	100.00	1.4977
Total:			**0.381**	**3.162**	**100.00**	**100.00**	

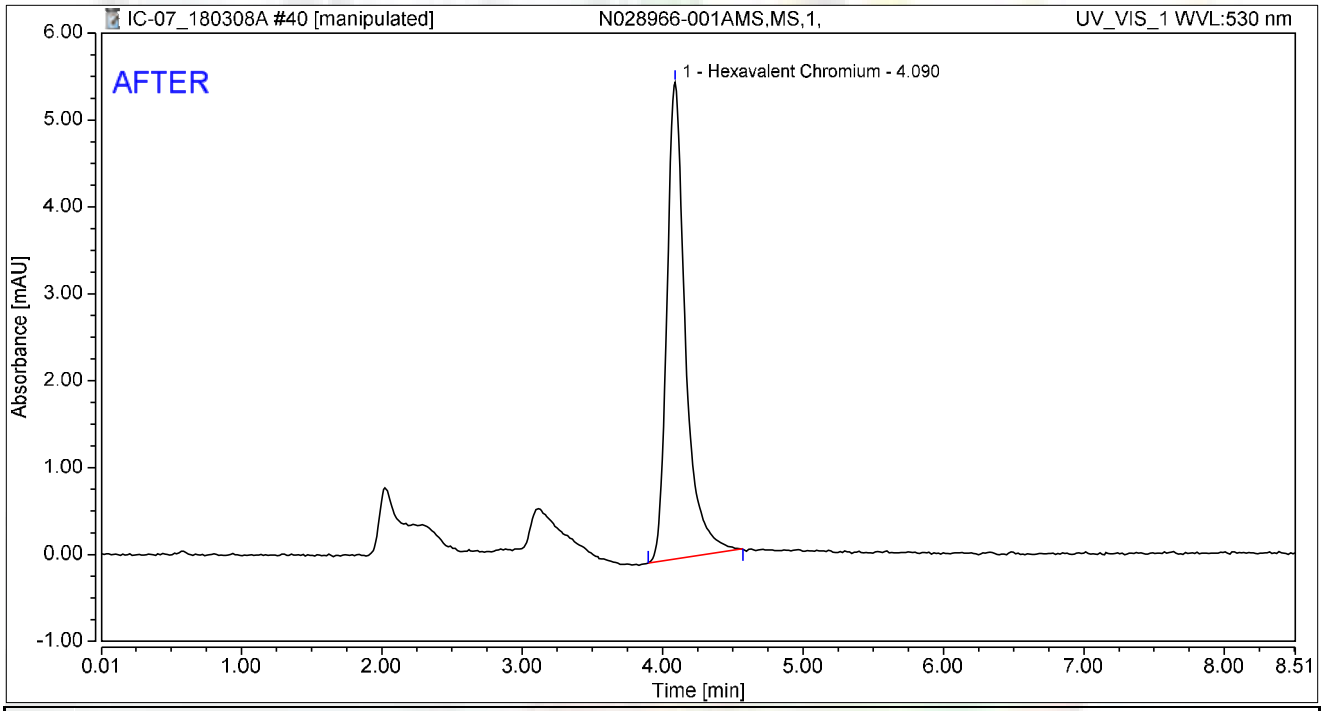
rba 3/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028966-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.842	5.484	100.00	100.00	3.3047
Total:			**0.842**	**5.484**	**100.00**	**100.00**	

rba 3/12/2018

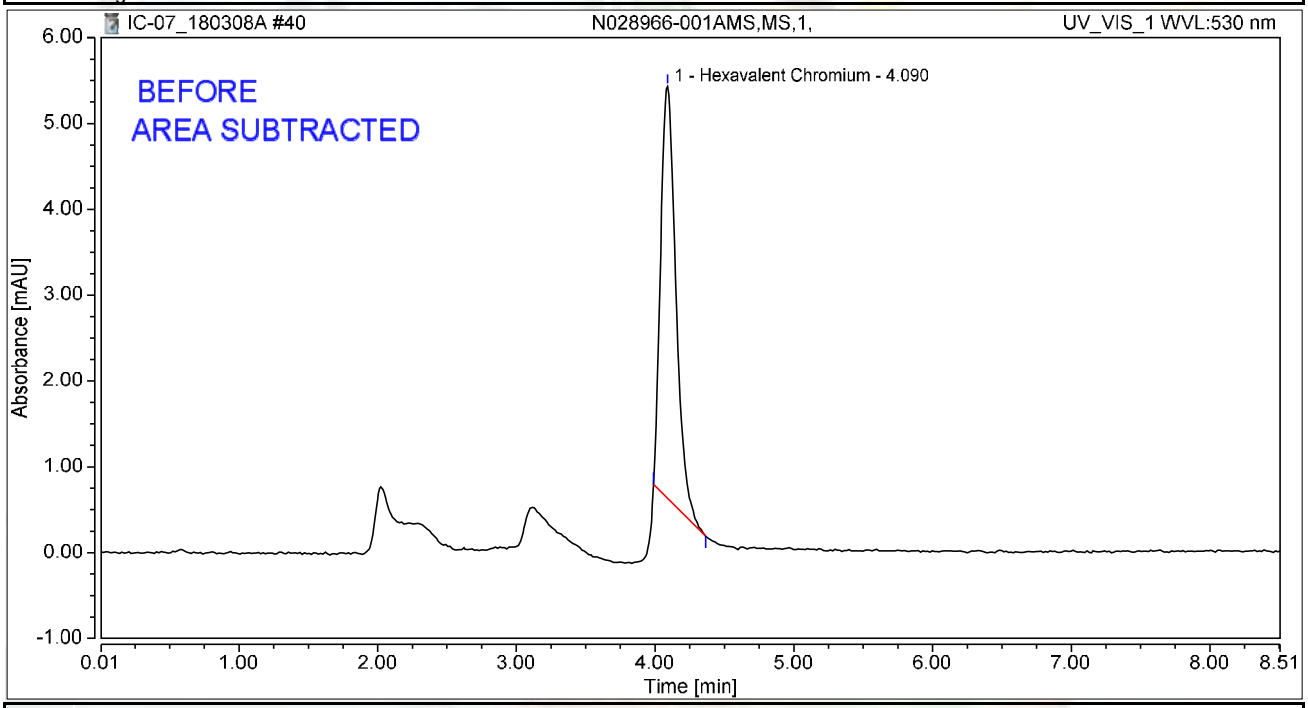
RB 03/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028966-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.612	4.796	100.00	100.00	2.4023
Total:			**0.612**	**4.796**	**100.00**	**100.00**	

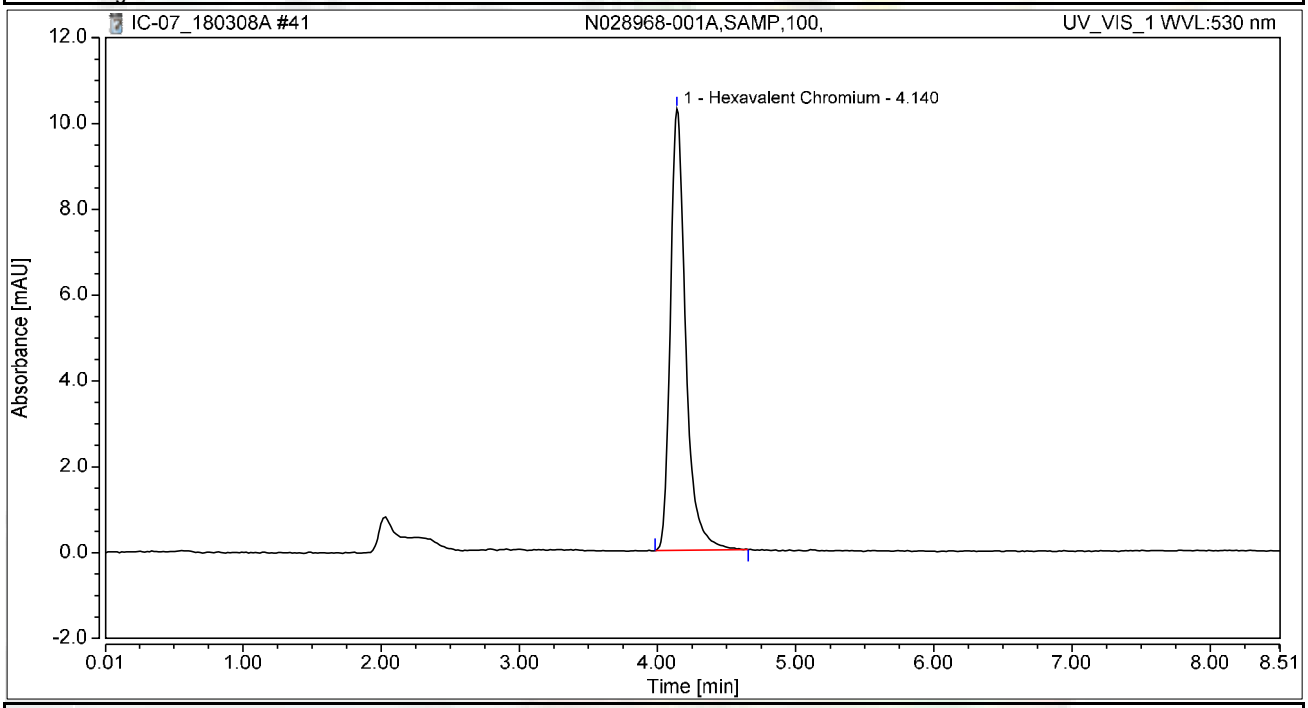
rba 3/12/2018

Chromatogram and Results

Injection Details

Injection Name:	**N028968-001A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

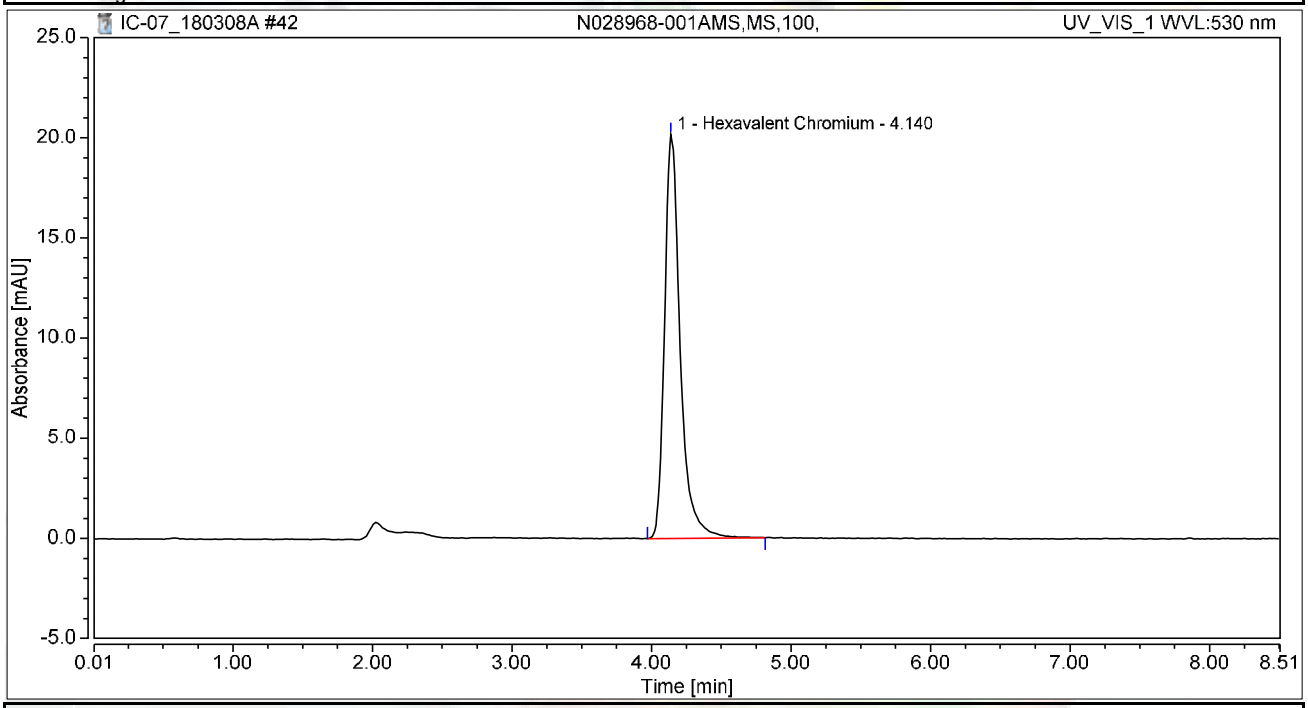
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.321	10.281	100.00	100.00	5.1870
Total:			**1.321**	**10.281**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028968-001AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

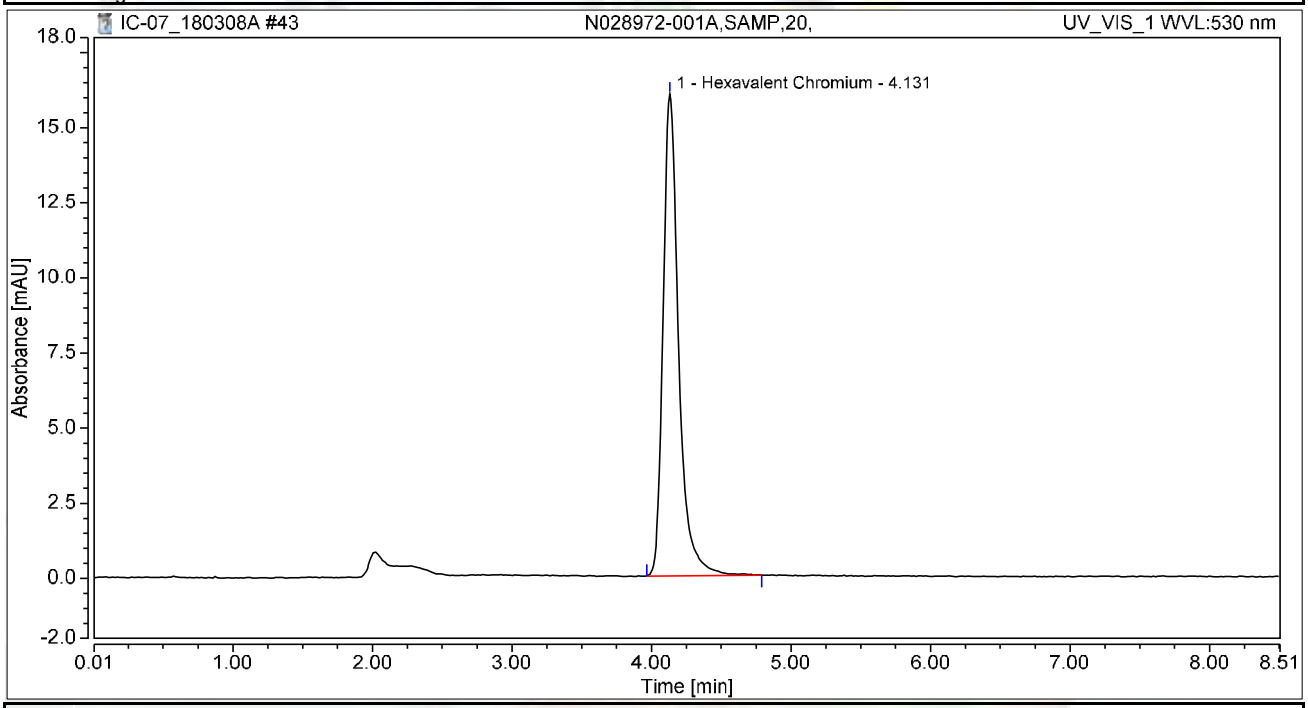
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.631	20.171	100.00	100.00	10.3317
Total:			**2.631**	**20.171**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028972-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

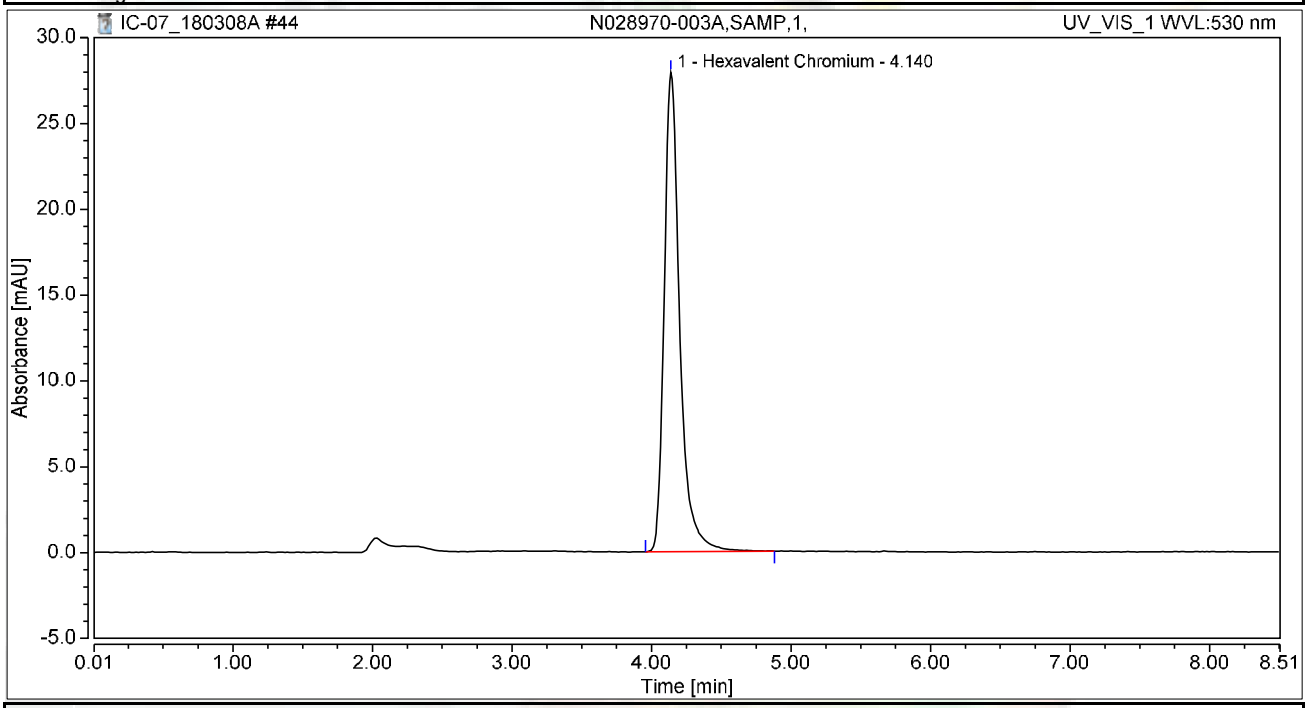
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.075	16.047	100.00	100.00	8.1472
Total:			**2.075**	**16.047**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N028970-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

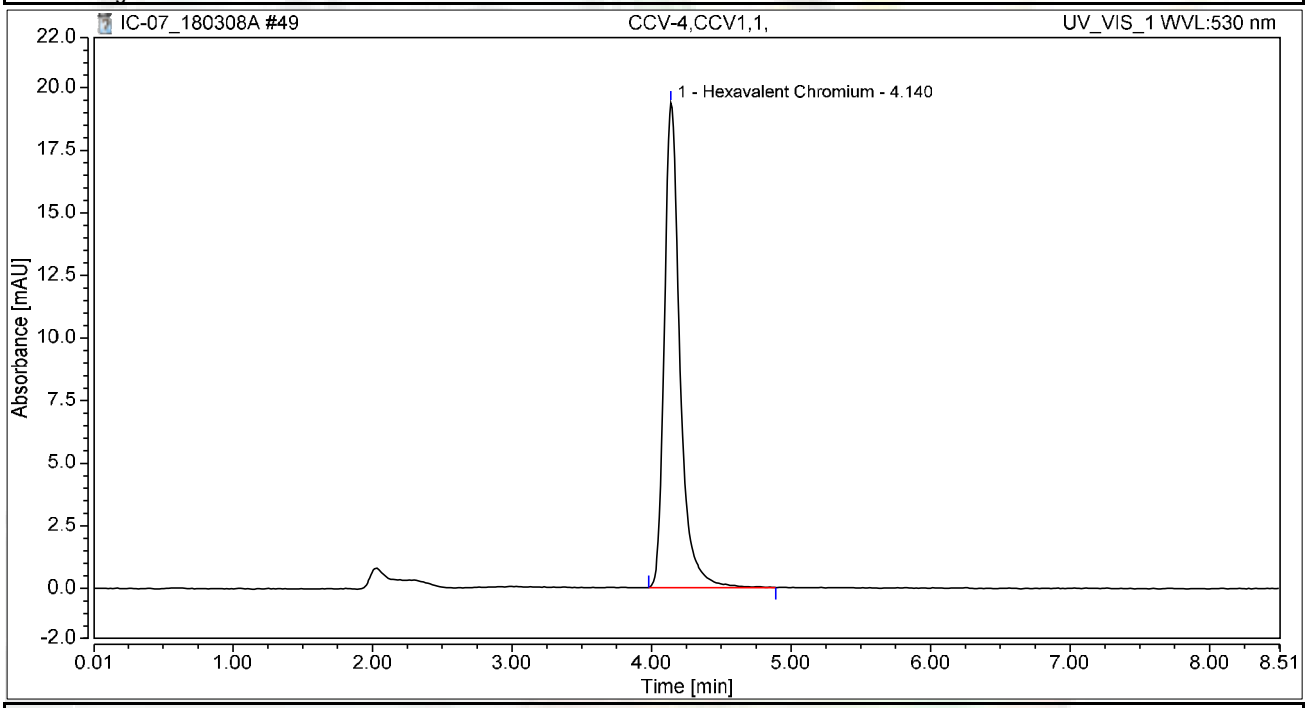
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.609	27.927	100.00	100.00	14.1724
Total:			**3.609**	**27.927**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

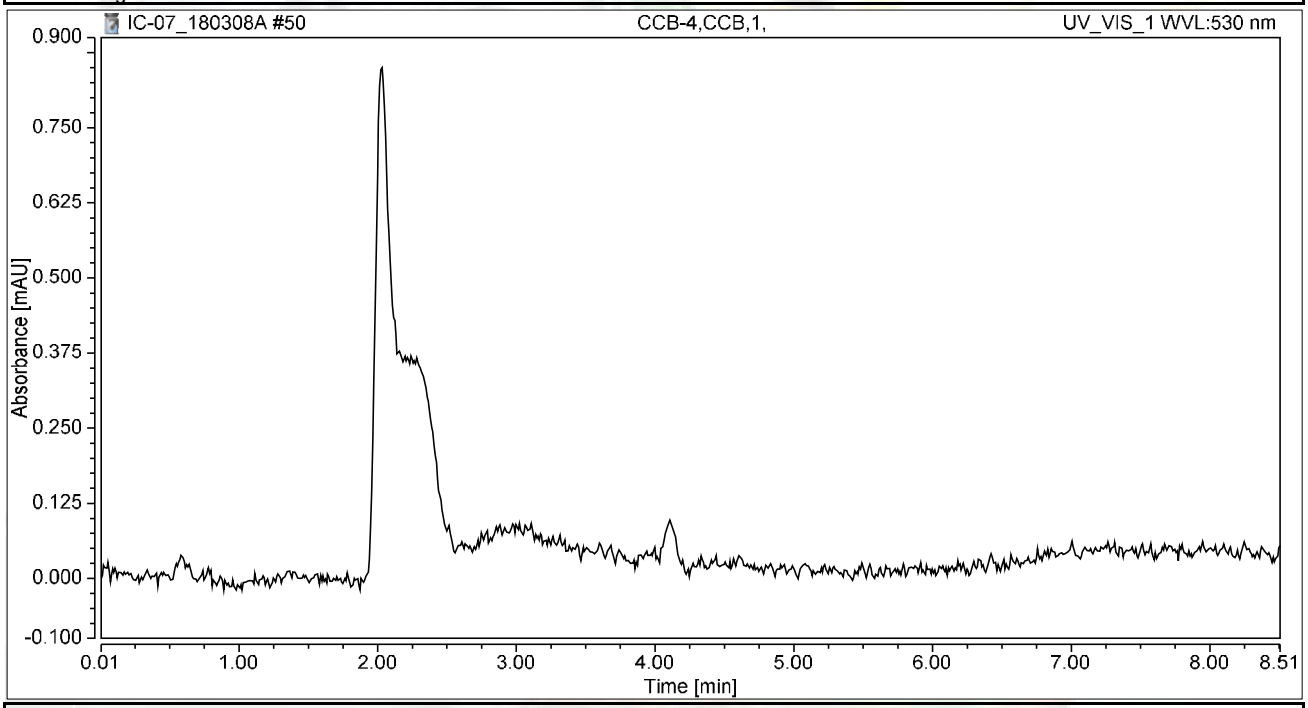
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.505	19.354	100.00	100.00	9.8364
Total:			**2.505**	**19.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180305_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Mar/18 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122566 **Analyst:** LSR

ASSET #: N028966 **Date Analyzed:** 3/9/2018

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 3/12/2018

2nd Level Reviewer RLB 03/20/2018 Date:

SAMPLE CALCULATION

Sample ID: **N028966-001B @ pH 7.99**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.775 mL)

= **0.02123 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (11.20) (0.02123 N) (1) * 1000

= 237.7760 mg**/L**

Reporting results in two significant figures,

= **240 mg/L** as CaCO3

Julia Ramit 3/12/2018

RB 03/20/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02123 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (11.20 mL) (0.02123) (1) * 1000

= 237.7760 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 237.7760 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **240 mg/L**

Silvia Ramit 3/12/2018

RLB 03/20/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.12	50	0.00	0.050	MBLK
LCS-1	8.18	50	0.00	4.60	LCS
N028966-001B	7.99	50	0.00	11.20	SAMP
N028966-002B	7.78	50	0.00	7.40	SAMP
N028966-001BDUP	7.87	50	0.00	11.20	DUP
N028966-002BMS	7.92	50	0.00	11.70	MS
N028966-002BMSD	7.89	50	0.00	11.90	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.775**	ml
N H2SO4	**0.02123**	Normal
Date Analyzed:	**3/9/18**	
Time:	**1:25 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R180108A**	

Silvia Ramit 3/12/2018

RB 03/20/2018

Date Analyzed:	3/9/18		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	1:25 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.775	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R180108A							**P > 1/2 T**
									N H2SO4	0.02123	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.12				0.02123	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.18				0.02123	0.00	4.60	4.60	1	0.00	97.66	
N028966-001B	50	7.99				0.02123	0.00	11.20	11.20	1	0.00	237.79	
N028966-002B	50	7.78				0.02123	0.00	7.40	7.40	1	0.00	157.11	
N028966-001BDU	50	7.87				0.02123	0.00	11.20	11.20	1	0.00	237.79	
N028966-002BMS	50	7.92				0.02123	0.00	11.70	11.70	1	0.00	248.41	
N028966-002BMS	50	7.89				0.02123	0.00	11.90	11.90	1	0.00	252.65	

Julia Ramit 3/12/2018

RB 03/20/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	3/9/18
Time:	1:25 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	0.00	97.66	97.66	97.66		P = 0
N028966-001B	0.00	0.00	237.79	237.79	237.79		P = 0
N028966-002B	0.00	0.00	157.11	157.11	157.11		P = 0
N028966-001BDUP	0.00	0.00	237.79	237.79	237.79		P = 0
N028966-002BMS	0.00	0.00	248.41	248.41	248.41		P = 0
N028966-002BMSD	0.00	0.00	252.65	252.65	252.65		P = 0

Divia Ramit 3/12/2018

RB 03/20/2018

Matrix: H2O

pH meter Calibration.

Date Extracted: 3/9/18
Time Extracted: LSR
Extracted By:

Date Analyzed: 3/9/18
Time Analyzed: 1325
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CNV-160205A
Hydrochloric Acid: -
Sulfuric Acid: R180108A
Sodium Bicarbonate: CNV-150601A

LSR
pH 7 · CNV 702 - CNV 171215D
4 · 3.98 | 171205A
10 · 9.99 | 170822B
SLOPE: 95.9%

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION									AR		
	#1	50mL	10.72	INST180309A	5mL	0.05N	-	-	11.80	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.021864Y
	#2	↓	10.74	↓	↓	↓	-	-	11.75	↓		- 0.021276595
1)	MBLK	50mL	5.12	-	-	-	0.02123	0	0.05	50/50		Ave: 0.021231517
2)	LCS	|	8.18	INST180309B	1mL	0.05N	|	0	4.60	|		
3)	N028906-1B	|	7.99	-	-	-	|	0	11.20	|		
4)	2B	|	7.78	-	-	-	|	0	7.40	|		
5)	1B DUP	|	7.87	-	-	-	|	0	11.20	|		
6)	2BMS	|	7.92	INST180309B	1mL	0.05N	|	0	11.70	|		
7)	2BMSD	↓	7.89	↓	↓	↓	↓	0	11.90	-		
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$								
17)												
18)				$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$								
19)												
20)												
	MS											
	MSD											
	LCS											

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R122553
ASSET #: N028970 / N028966

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 3/8/2018

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X		X	X	
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Detection of SO4 in CCB-1/2/3/4 are > 1/2PQL. However, N028966 samples affected are 10X the CCB detection.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 3/9/2018

2nd Level Reviewer RLB 03/20/2018 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N028966-001B** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.5466 * 50

= 377.33

Reporting result in two significant values,

Sulfate, mg/L = 380

rba 3/13/2018

03/20/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	ICV,ICV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	ICB,ICB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028482-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028482-002C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028482-010C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028482-011C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028482-014C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028482-001CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028482-001CMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028482-014CDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028482-017C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028482-003C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028482-004C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028482-005C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028482-006C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028482-007C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028482-008C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028482-009C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028482-017CMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028482-012C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	N028482-013C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	N028483-003D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	N028483-004D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
39	N028483-005D,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
40	N028482-010C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
41	N028482-011C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 2/12/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	ICV,ICV,1	2/8/2018 10:31:41 AM	ICV
10	ICV,ICV,1	2/8/2018 11:00:04 AM	ICV
11	ICB,ICB,1	2/8/2018 11:15:22 AM	ICB
12	MB-H2O,MBLK,1	2/8/2018 11:30:40 AM	METHOD BLANK
13	LCS-H2O,LCS,1	2/8/2018 11:45:58 AM	LCS
14	N028482-001C,SAMP,1	2/8/2018 12:01:16 PM	SAMP,10mL
15	N028482-002C,SAMP,1	2/8/2018 12:16:34 PM	SAMP,10mL
16	N028482-010C,SAMP,1	2/8/2018 12:31:51 PM	SAMP,10mL
17	N028482-011C,SAMP,1	2/8/2018 12:47:09 PM	SAMP,10mL
18	N028482-014C,SAMP,1	2/8/2018 1:02:27 PM	SAMP,10mL
19	N028482-001CMS,MS,1	2/8/2018 1:17:45 PM	MS,10mL
20	N028482-001CMSD,MSD,1	2/8/2018 1:33:03 PM	MSD,10mL
21	N028482-014CDUP,DUP,1	2/8/2018 1:48:21 PM	DUP,10mL
22	CCV-1,CCV,1	2/8/2018 2:03:39 PM	CCV
23	CCB-1,CCB,1	2/8/2018 2:18:57 PM	CCB
24	N028482-017C,SAMP,1	2/8/2018 2:36:38 PM	SAMP,10mL
25	N028482-003C,SAMP,1	2/8/2018 2:51:56 PM	SAMP,10mL
26	N028482-004C,SAMP,5	2/8/2018 3:07:14 PM	SAMP,2>10mL
27	N028482-005C,SAMP,10	2/8/2018 3:22:32 PM	SAMP,1>10mL
28	N028482-006C,SAMP,10	2/8/2018 3:37:50 PM	SAMP,1>10mL
29	N028482-007C,SAMP,5	2/8/2018 3:53:08 PM	SAMP,2>10mL
30	N028482-008C,SAMP,5	2/8/2018 4:08:26 PM	SAMP,2>10mL
31	N028482-009C,SAMP,5	2/8/2018 4:23:43 PM	SAMP,2>10mL
32	N028482-017CMS,MS,1	2/8/2018 4:39:01 PM	MS,10mL
33	N028482-012C,SAMP,5	2/8/2018 4:54:19 PM	SAMP,2>10mL
34	CCV-2,CCV,1	2/8/2018 5:09:37 PM	CCV
35	CCB-2,CCB,1	2/8/2018 5:24:55 PM	CCB
36	N028482-013C,SAMP,1	2/8/2018 5:40:13 PM	SAMP,10mL
37	N028483-003D,SAMP,1	2/8/2018 5:55:31 PM	SAMP,10mL
38	N028483-004D,SAMP,1	2/8/2018 6:10:49 PM	SAMP,10mL
39	N028483-005D,SAMP,1	2/8/2018 6:26:08 PM	SAMP,10mL
40	N028482-010C,SAMP,2	2/8/2018 6:41:26 PM	SAMP,5>10mL
41	N028482-011C,SAMP,2	2/8/2018 6:56:44 PM	SAMP,5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N028482-004C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
43	N028469-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
44	N028469-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
45	N028469-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
46	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
47	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
48	N028469-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
49	N028469-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
50	N028469-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
51	N028482-010C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
52	N028482-011C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
53	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
54	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 54
Created: 2/8/2018 8:26:30 AM by IC-05
Last Update: 2/9/2018 1:51:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N028482-004C,SAMP,1	2/8/2018 7:12:02 PM	SAMP,10mL
43	N028469-001B,SAMP,50	2/8/2018 7:27:20 PM	SAMP,0.2>10mL
44	N028469-001BMS,MS,50	2/8/2018 7:42:39 PM	MS,0.2>10mL
45	N028469-001BMSD,MSD,50	2/8/2018 7:57:57 PM	MSD,0.2>10mL
46	CCV-3,CCV,1	2/8/2018 8:13:15 PM	CCV
47	CCB-3,CCB,1	2/8/2018 8:28:32 PM	CCB
48	N028469-001BDUP,DUP,50	2/8/2018 8:43:50 PM	DUP,0.2>10mL
49	N028469-002B,SAMP,500	2/8/2018 8:59:08 PM	SAMP,0.02>10mL
50	N028469-002B,SAMP,50	2/8/2018 9:14:26 PM	SAMP,0.2>10mL
51	N028482-010C,SAMP,10	2/8/2018 9:29:44 PM	SAMP,1>10mL
52	N028482-011C,SAMP,10	2/8/2018 9:45:02 PM	SAMP,1>10mL
53	CCV-4,CCV,1	2/8/2018 10:00:20 PM	CCV
54	CCB-4,CCB,1	2/8/2018 10:15:38 PM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 38
Created: 3/8/2018 8:49:34 AM by IC-05
Last Update: 3/8/2018 2:44:09 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180208	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
14	N028970-003B,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
15	N028970-003BDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
16	N028970-003BMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
17	N028970-003BMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
18	N028968-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
19	N028968-002BDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
20	N028968-002BMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
21	N028968-002BMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
24	N028968-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
25	N028966-001B,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
26	N028966-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
27	N028966-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
28	N028966-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
29	N028966-001BDUP,DUP,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
30	N028966-001BMS,MS,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
31	N028966-001BMSD,MSD,200	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
32	N028966-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
33	N028966-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
34	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
35	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
36	N028966-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
37	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished
38	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180208	Finished

rba 3/9/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2017 Anions
Timebase: IC-08_ANIONS
#Samples: 38
Created: 3/8/2018 8:49:34 AM by IC-05
Last Update: 3/8/2018 2:44:09 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	2/8/2018 8:26:56 AM	BLANK
2	BLANK,BLANK,1	2/8/2018 8:42:14 AM	BLANK
3	Std - 0	2/8/2018 8:57:33 AM	IBLANK
4	Std - 1	2/8/2018 9:13:02 AM	STD-LOW
5	Std - 2	2/8/2018 9:30:28 AM	STD
6	Std - 3	2/8/2018 9:45:46 AM	STD
7	Std - 4	2/8/2018 10:01:04 AM	STD
8	Std - 5	2/8/2018 10:16:23 AM	STD-HIGH
9	BLANK,BLANK,1	3/8/2018 9:15:50 AM	BLANK
10	CCV-1,CCV,1	3/8/2018 9:31:08 AM	CCV
11	CCB-1,CCB,1	3/8/2018 9:46:25 AM	CCB
12	MB-H2O,MBLK,1	3/8/2018 10:01:43 AM	METHOD BLANK
13	LCS-H2O,LCS,1	3/8/2018 10:17:02 AM	LCS
14	N028970-003B,SAMP,1	3/8/2018 10:32:20 AM	SAMP,10mL
15	N028970-003BDUP,DUP,1	3/8/2018 10:50:45 AM	DUP,10mL
16	N028970-003BMS,MS,1	3/8/2018 11:06:02 AM	MS,10mL
17	N028970-003BMSD,MSD,1	3/8/2018 11:21:21 AM	MSD,10mL
18	N028968-002B,SAMP,5	3/8/2018 11:36:40 AM	SAMP,2>10mL
19	N028968-002BDUP,DUP,5	3/8/2018 11:51:57 AM	DUP,2>10mL
20	N028968-002BMS,MS,5	3/8/2018 12:07:15 PM	MS,2>10mL
21	N028968-002BMSD,MSD,5	3/8/2018 12:22:33 PM	MSD,2>10mL
22	CCV-2,CCV,1	3/8/2018 12:37:51 PM	CCV
23	CCB-2,CCB,1	3/8/2018 12:53:09 PM	CCB
24	N028968-002B,SAMP,50	3/8/2018 1:28:07 PM	SAMP,0.2>10mL
25	N028966-001B,SAMP,200	3/8/2018 1:43:25 PM	SAMP,0.05>10mL
26	N028966-001B,SAMP,50	3/8/2018 1:58:43 PM	SAMP,0.2>10mL
27	N028966-002B,SAMP,500	3/8/2018 2:14:01 PM	SAMP,0.02>10mL
28	N028966-002B,SAMP,50	3/8/2018 2:29:19 PM	SAMP,0.2>10mL
29	N028966-001BDUP,DUP,200	3/8/2018 2:44:37 PM	DUP,0.05>10mL
30	N028966-001BMS,MS,200	3/8/2018 2:59:55 PM	MS,0.05>10mL
31	N028966-001BMSD,MSD,200	3/8/2018 3:15:13 PM	MSD,0.05>10mL
32	N028966-001BMS,MS,50	3/8/2018 3:30:31 PM	MS,0.2>10mL
33	N028966-001BMSD,MSD,50	3/8/2018 3:45:49 PM	MSD,0.2>10mL
34	CCV-3,CCV,1	3/8/2018 4:01:07 PM	CCV
35	CCB-3,CCB,1	3/8/2018 4:16:25 PM	CCB
36	N028966-001BDUP,DUP,50	3/8/2018 4:31:43 PM	DUP,0.2>10mL
37	CCV-4,CCV,1	3/8/2018 4:47:01 PM	CCV
38	CCB-4,CCB,1	3/8/2018 5:02:19 PM	CCB

rba 3/9/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0718	0.1461	0.2992	0.7607	1.5900	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.



03/20/2018

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 2/8/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0484	0.2152	0.4528	1.1684	2.4370	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 03/20/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **ICV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2951244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.978	0.50	2.000	0	98.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.942	0.50	2.000	0	97.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.932	0.50	2.000	0	96.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.961	0.50	2.000	0	98.0	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.935	0.50	2.000	0	96.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **ICV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2951261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.841	0.50	4.000	0	96.0	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.963	0.50	4.000	0	99.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.950	0.50	4.000	0	98.8	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.038	0.50	4.000	0	101	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCV**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.963	0.50	4.000	0	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**122553**
Client ID:	**ICB**	Batch ID:	**R122553**	TestNo:	**EPA 300.0**			Analysis Date:	**2/8/2018**	SeqNo:	**2951245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**122553**
Client ID:	**CCB**	Batch ID:	**R122553**	TestNo:	**EPA 300.0**			Analysis Date:	**3/8/2018**	SeqNo:	**2951247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**122553**
Client ID:	**CCB**	Batch ID:	**R122553**	TestNo:	**EPA 300.0**			Analysis Date:	**3/8/2018**	SeqNo:	**2951251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.124	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**122553**
Client ID:	**CCB**	Batch ID:	**R122553**	TestNo:	**EPA 300.0**			Analysis Date:	**3/8/2018**	SeqNo:	**2951258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.158	0.50									

Sample ID	**CCB-4**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**122553**
Client ID:	**CCB**	Batch ID:	**R122553**	TestNo:	**EPA 300.0**			Analysis Date:	**3/8/2018**	SeqNo:	**2951260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.135	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **ICB**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **2/8/2018**	SeqNo: **2951262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCB**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.292	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCB**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.297	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCB**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.314	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **122553**
Client ID: **CCB**	Batch ID: **R122553**	TestNo: **EPA 300.0**		Analysis Date: **3/8/2018**	SeqNo: **2951278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.333	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 3/8/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	9.754	
CCV-1	Sulfate	9.467	
CCV-2	Sulfate	9.433	
CCV-3	Sulfate	9.434	
CCV-4	Sulfate	9.434	
	Average	9.442	
	Applied RT Window	9.242 - 9.642	
MB-R122553_SO4	Sulfate	N.A.	N.A.
LCS-R122553_SO4	Sulfate	9.430	PASS
N028966-001B	Sulfate	9.427	PASS
N028966-002B	Sulfate	9.430	PASS
N028966-001BMS	Sulfate	9.430	PASS
N028966-001BMSD	Sulfate	9.430	PASS
N028966-001BDUP	Sulfate	9.427	PASS

rba 3/13/2018

RB 03/20/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 3/8/2018

Sample Name		Retention Time	Evaluation
ICV	Chloride	4.207	
CCV-1	Chloride	4.167	
CCV-2	Chloride	4.153	
CCV-3	Chloride	4.154	
CCV-4	Chloride	4.154	
	Average	4.157	
	Applied RT Window	3.957 - 4.357	
MB-R122553_CL	Chloride	N.A.	N.A.
LCS-R122553_CL	Chloride	4.154	PASS
N028966-001B	Chloride	4.157	PASS
N028966-002B	Chloride	4.153	PASS
N028966-001BDUP	Chloride	4.154	PASS
N028966-001BMS	Chloride	4.157	PASS
N028966-001BMSD	Chloride	4.157	PASS

rba 3/13/2018

03/20/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2017

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 5/26/2017
Analyst: Ria Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.024	0.10	0.0906	**91**
Chloride	**0.0091**	0.020	0.130	0.50	0.5635	**113**
Nitrite	**0.0030**	0.010	0.023	0.05	0.0581	**116**
Bromide	**0.0196**	0.040	0.048	0.20	0.194	**97**
Nitrate	**0.0050**	0.010	0.023	0.05	0.0599	**120**
Phosphate	**0.0135**	0.030	0.043	0.10	0.1111	**111**
Sulfate	**0.0229**	0.050	0.195	0.50	0.6178	**124**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R122576 **Analyst:** QBM

ASSET #: N028800, 971, 966, 972, 925 **Date Analyzed:** 3/9/2018

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.		X				
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in ICV failed, high bias. However, LCS is within ICV criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 3/19/18

2nd Level Reviewer 3/19/2018 for RB Date: ——

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N028966-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.2817	*	1
	=	0.2817	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.28 mg/L

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

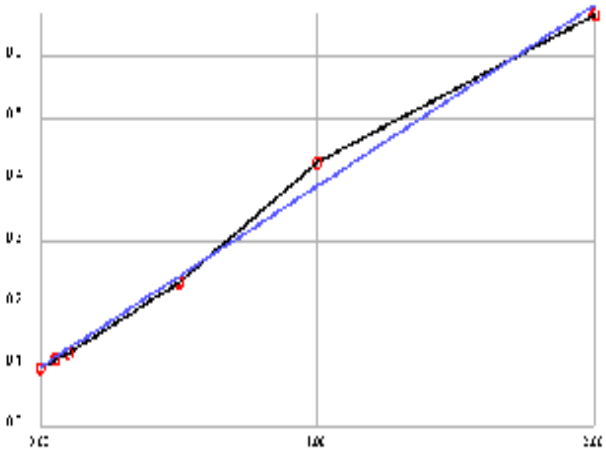
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2929x + 0.0971
Correlation	.996518

Calibrant	Energy	Set	Conc
1	0.0954	0.0000	-0.0058
2	0.1086	0.0500	0.0393
3	0.1188	0.1000	0.0741
4	0.2344	0.5000	0.4688
5	0.4276	1.0000	1.1284
6	0.6668	2.0000	1.9451

Notes:

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **ICV**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.554	0.050	0.5000	0	111	90	110				S

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **CCV**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.9	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **CCV**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **CCV**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N028966
Project: PG&E Topock - PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **ICB**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **CCB**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **CCB**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **122576**
Client ID: **CCB**	Batch ID: **R122576**	TestNo: **SM4500-NO3**		Analysis Date: **3/9/2018**	SeqNo: **2952095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 03-09-2018 16:03
Time end: 03-09-2018 18:58

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK> NOT REPORTED	18:17:12	-0.0191		0.0915
2	<BLANK> NOT REPORTED	18:18:13	-0.0143		0.0929
3	<CAL1>	18:19:09	-0.0058	[0]	0.0954
4	<CAL2>	18:20:04	0.0393	[0.05]	0.1086
5	<CAL3>	18:21:04	0.0741	[0.1]	0.1188
6	<CAL4>	18:22:00	0.4688	[0.5]	0.2344
7	<CAL5>	18:22:55	1.1284	[1]	0.4276
8	<CAL6>	18:23:56	1.9451	[2]	0.6668
9	,BLANK,BLANK,1, NOT REPORTED	18:24:51	0.0536		0.1128
10	,ICV,ICV,1,	18:25:47	0.5535		0.2592
11	,ICB,ICB,1,	18:26:48	0.0007		0.0973
12	,MB-H2O,MBLK,1,	18:27:42	-0.0222		0.0906
13	,LCS-H2O,LCS,1,	18:28:38	0.4610		0.2321
14	,N028800-001C,SAMP,5,	18:29:40	0.6098		0.2757
15	,N028800-001CDUP,DUP,5,	18:30:34	0.5449		0.2567
16	,N028800-003C,SAMP,5,	18:31:29	0.6583		0.2899
17	,N028800-003CMS,MS,5,	18:32:31	1.2473		0.4624
18	,N028800-003CMSD,MSD,5,	18:33:27	1.1636		0.4379
19	,N028800-002C,SAMP,5,	18:34:21	1.0462		0.4035
20	,N028968-002D,SAMP,5,	18:35:23	0.5835		0.2680
21	,BLANK, NOT REPORTED	18:36:18	0.0017		0.0976
22	,CCV-1,CCV,1,	18:37:12	0.4944		0.2419
23	,CCB-1,CCB,1,	18:38:14	-0.0164		0.0923
24	,N028928-001D,SAMP,1,	18:39:10	0.8683		0.3514
25	,N028928-002D,SAMP,1,	18:40:05	0.8509		0.3463
26	,N028928-003D,SAMP,1,	18:41:05	1.4658		0.5264

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N028928-004D,SAMP,1,	18:42:01	0.6955		0.3008
28	,N028929-001D,SAMP,1,	18:42:50	0.6187		0.2783
29	,N028929-002D,SAMP,1,	18:43:33	1.0318		0.3993
30	,N028929-003D,SAMP,1,	18:44:22	1.1271		0.4272
31	,N028929-004D,SAMP,1,	18:45:04	0.6115		0.2762
32	,N028971-001C,SAMP,10,	18:45:48	0.7116		0.3055
33	,BLANK, NOT REPORTED	18:46:37	0.0041		0.0983
34	,CCV-2,CCV,1, NOT REPORTED	18:47:19	0.4640		0.2330
35	,CCV-2,CCV,1,	18:48:03	0.4610		0.2321
36	,CCB-2,CCB,1,	18:48:51	-0.0351		0.0868
37	,N028966-001C,SAMP,1,	18:49:34	0.2817		0.1796
38	,N028966-002C,SAMP,5,	18:50:22	0.5641		0.2623
39	,N028972-001C,SAMP,10,	18:51:06	0.9745		0.3825
40	,N028925-001C,SAMP,2,	18:51:48	0.7600		0.3197
41	,N028925-002C,SAMP,2,	18:52:31	1.0359		0.4005
42	,N028925-003C,SAMP,2,	18:53:20	0.8072		0.3335
43	,BLANK, NOT REPORTED	18:54:03	-0.0239		0.0901
44	,CCV-3,CCV,1, NOT REPORTED	18:54:46	0.4306		0.2232
45	,CCV-3,CCV,1,	18:55:34	0.4790		0.2374
46	,CCB-3,CCB,1,	18:56:17	-0.0252		0.0897

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 3/9/2018
Time Analyzed: 3:55 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180216B
Color reagent: R180302B
2% Copper Sulfate: R180216A
Ammonium Hydroxide: CINV-180112B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N028800-001C		7.85							
N028800-002C		8.57							
N028800-003C		8.65							
N028925-001C		8.02							
N028925-002C		8.31							
N028925-003C		7.57							
N028928-001D		7.96							
N028928-002D		8.31							
N028928-003D		8.35							
N028928-004D		8.02							
N028929-001D		7.41							
N028929-002D		7.98							
N028929-003D		8.09							
N028929-004D		8.19							
N028966-001C		7.11							
N028966-002C		7.56							
N028968-002D		8.59							
N028971-001C		7.58							
N028972-001C		7.69							

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

March 30, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N029313

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029313

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

This is an addendum for N028775.

ASSET Laboratories

Date: *30-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029313
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029313-001A	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	3/23/2018	3/30/2018
N029313-002A	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	3/23/2018	3/30/2018
N029313-003A	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	3/23/2018	3/30/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q118
Lab Order:	N029313	**Collection Date:**	2/23/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029313-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**				PrepDate:	**3/23/2018**	Analyst: **CEI**
Boron	780	74	100		µg/L	1	3/29/2018 12:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q118
Lab Order:	N029313	**Collection Date:**	2/23/2018 12:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029313-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_180329A** QC Batch: **67300**					PrepDate: **3/23/2018**		Analyst: **CEI**
Boron	960	74	100		µg/L	1	3/29/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q118
Lab Order:	N029313	**Collection Date:**	2/23/2018 11:23:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029313-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**				PrepDate: **3/23/2018**		Analyst: **CEI**
Boron	470	74	100		µg/L	1	3/29/2018 01:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID: **MB-67300**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **PBW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									

Sample ID: **LCS-67300**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **LCSW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4868.541	100	5000	0	97.4	85	115				

Sample ID: **N029313-001A-MS**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5699.885	100	5000	782.7	98.3	75	125				

Sample ID: **N029313-001A-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5676.473	100	5000	782.7	97.9	75	125	5700	0.412	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Hanah Glodoviza

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Thursday, March 22, 2018 11:32 AM
To: 'Hanah Glodoviza'
Cc: nancy@assetlaboratories.com; quennie@assetlaboratories.com; 'ASSET LV Sample Control'; 'Yoandra Rodriguez'
Subject: FW: Boron Results for Topock

Importance: High

Hanah,

Please process additional and let the analyst know.

Yoandra – Please look for the samples and have it ready just in case we need to re-run.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421

From: Kalib Sumter [mailto:Kalib.Sumter@critigen.com]
Sent: Thursday, March 22, 2018 11:24 AM
To: nancy@assetlaboratories.com; 'Marlon Cartin'
Cc: Tina Rice; Laura.Madsen@arcadis.com; Tonya Russi (Tonya.Russi@arcadis.com); Daniel Moore; Cichy, Dan
Subject: FW: Boron Results for Topock
Importance: High

Nancy/Marlon,

Apparently there was a error on two chains for a few samples sent to you guys last month in SDGs

N028775
N028744

In addition to the metals we had requested, we had also intended to ask for Dissolved Boron analysis for those samples, but it was not selected on the COC.

MW-09	MW-09-Q118
MW-10	MW-10-Q118
MW-11	MW-11-Q118
MW-68-180	MW-68-180-Q118
MW-68-240	MW-68-240-Q118
MW-68BR-280	MW-68BR-280-Q118

(The second column is the sample code.)

Is it possible, via your laboratory magic, to run those samples or pull the Dissolved Boron data for us?

Please let us know if it's possible.

Thanks so much!
Kalib

Kalib Sumter
Environmental Data Manager

CRITIGEN

Kalib.Sumter@critigen.com
1 530 334 5588 Direct
1 530 351 1835 Mobile

critigen.com
critigen.co.uk

ASSET Laboratories

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Change Order Checklist

Client Name: **ARCUS02**

Date / Time Created: **3/23/2018 6:29:36 PM**

Work Order Number: **N029313**

Created by:

Checklist completed by:  3/23/2018
Signature | Date

Reviewed by:  3/26/2018
Initials | Date

1. All samples within holding time?	Yes ☑	No ☐
2. Refrigerator temperature in compliance?	Yes ☑	No ☐
3. Change Order documents present?	Yes ☑	No ☐

Comments:

ASSET Laboratories

WORK ORDER Summary

23-Mar-18

WorkOrder: N029313

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 3/23/2018

Comments: Addendum for N028775

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029313-001A	MW-09-Q118	2/23/2018 11:27:00 AM	3/30/2018	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029313-002A	MW-10-Q118	2/23/2018 12:46:00 PM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029313-003A	MW-11-Q118	2/23/2018 11:23:00 AM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029313-004A	FOLDER		3/30/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project Name: PG&E Topock
Project No.: GMP, RC000753.0801

ASSET Laboratories Work Order:
N029313

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N029313

Item	Pages
Cover Page	1-5
Analytical Result/QC Summary Reports	6-9
Sample Receiving Items	10-14
Lists of Analyst	15
Raw Data:	
EPA 200.7_Dissolved	16-44

March 30, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N029313

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Quennie Manimtim
Laboratory Director

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029313

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

This is an addendum for N028775.

ASSET Laboratories

Date: *30-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029313
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029313-001A	MW-09-Q118	Groundwater	2/23/2018 11:27:00 AM	3/23/2018	3/30/2018
N029313-002A	MW-10-Q118	Groundwater	2/23/2018 12:46:00 PM	3/23/2018	3/30/2018
N029313-003A	MW-11-Q118	Groundwater	2/23/2018 11:23:00 AM	3/23/2018	3/30/2018

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029313
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029313-001

Client Sample ID: MW-09-Q118
Collection Date: 2/23/2018 11:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_180329A** QC Batch: **67300** PrepDate: **3/23/2018** Analyst: **CEI**							
Boron	780	74	100		µg/L	1	3/29/2018 12:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029313
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029313-002

Client Sample ID: MW-10-Q118
Collection Date: 2/23/2018 12:46:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_180329A** QC Batch: **67300** PrepDate: **3/23/2018** Analyst: **CEI**							
Boron	960	74	100		µg/L	1	3/29/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029313
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029313-003

Client Sample ID: MW-11-Q118
Collection Date: 2/23/2018 11:23:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_180329A** QC Batch: **67300** PrepDate: **3/23/2018** Analyst: **CEI**							
Boron	470	74	100		µg/L	1	3/29/2018 01:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID: **MB-67300**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **PBW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									

Sample ID: **LCS-67300**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **LCSW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4868.541	100	5000	0	97.4	85	115				

Sample ID: **N029313-001A-MS**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5699.885	100	5000	782.7	98.3	75	125				

Sample ID: **N029313-001A-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5676.473	100	5000	782.7	97.9	75	125	5700	0.412	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

Hanah Glodoviza

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Thursday, March 22, 2018 11:32 AM
To: 'Hanah Glodoviza'
Cc: nancy@assetlaboratories.com; quennie@assetlaboratories.com; 'ASSET LV Sample Control'; 'Yoandra Rodriguez'
Subject: FW: Boron Results for Topock

Importance: High

Hanah,

Please process additional and let the analyst know.

Yoandra – Please look for the samples and have it ready just in case we need to re-run.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421

From: Kalib Sumter [mailto:Kalib.Sumter@critigen.com]
Sent: Thursday, March 22, 2018 11:24 AM
To: nancy@assetlaboratories.com; 'Marlon Cartin'
Cc: Tina Rice; Laura.Madsen@arcadis.com; Tonya Russi (Tonya.Russi@arcadis.com); Daniel Moore; Cichy, Dan
Subject: FW: Boron Results for Topock
Importance: High

Nancy/Marlon,

Apparently there was a error on two chains for a few samples sent to you guys last month in SDGs

N028775
N028744

In addition to the metals we had requested, we had also intended to ask for Dissolved Boron analysis for those samples, but it was not selected on the COC.

MW-09	MW-09-Q118
MW-10	MW-10-Q118
MW-11	MW-11-Q118
MW-68-180	MW-68-180-Q118
MW-68-240	MW-68-240-Q118
MW-68BR-280	MW-68BR-280-Q118

(The second column is the sample code.)

Is it possible, via your laboratory magic, to run those samples or pull the Dissolved Boron data for us?

Please let us know if it's possible.

Thanks so much!
Kalib

Kalib Sumter
Environmental Data Manager

CRITIGEN

Kalib.Sumter@critigen.com
1 530 334 5588 Direct
1 530 351 1835 Mobile

critigen.com
critigen.co.uk

ASSET Laboratories

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Change Order Checklist

Client Name: **ARCUS02** Date / Time Created: **3/23/2018 6:29:36 PM**

Work Order Number: **N029313** Created by:

Checklist completed by:  3/23/2018
Signature | Date

Reviewed by:  3/26/2018
Initials | Date

1. All samples within holding time?	Yes ☑	No ☐
2. Refrigerator temperature in compliance?	Yes ☑	No ☐
3. Change Order documents present?	Yes ☑	No ☐

Comments:

ASSET Laboratories

WORK ORDER Summary

23-Mar-18

WorkOrder: N029313

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 3/23/2018

Comments: Addendum for N028775

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029313-001A	MW-09-Q118	2/23/2018 11:27:00 AM	3/30/2018	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029313-002A	MW-10-Q118	2/23/2018 12:46:00 PM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029313-003A	MW-11-Q118	2/23/2018 11:23:00 AM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029313-004A	FOLDER		3/30/2018		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: N029313

Item	Pages
Claire Ignacio	EPA 200.7_Dissolved

EPA 200.7_Dissolved

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67300
ASSET #: N029313

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 3/29/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct	X		
3. Does batch meet QC requirements?	X		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	X		
5. Is first level review correct and complete?	X		

1st Level Reviewer CEI 03/30/18 Date: _____

2nd Level Reviewer _____ Date: 03/30/18

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 100.7
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N029313-001A** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 0.78266 * 1 * (25/25) * 1000

Boron , ug/L = 782.66

Reporting results in two significant figures,

Boron , ug/L = 780

% RSD SUMMARY

RSD SUMMARY: 180329A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.43	15	PASS
Standard1	ICAL	1	B	0.1	0.88	15	PASS
Standard3	ICAL	1	B	1	0.92	15	PASS
Standard4	ICAL	1	B	2.5	1.1	15	PASS
Standard5	ICAL	1	B	3.75	0.76	15	PASS
Standard6	ICAL	1	B	5	0.5	15	PASS
Standard7	ICAL	1	B	10	0.55	15	PASS
ICV	ICV	1	B	5.099	0.41	15	PASS
ICB	ICB	1	B	0.067	8.31	15	PASS
ICB	ICB	1	B	0.024	8.4	15	PASS
LLICV1	CCV1	1	B	0.11	2.025	20	PASS
ICSA1	ICSA	1	B	0.06	1.15	15	PASS
ICSAB1	ICSAB	1	B	1.11	0.37	15	PASS
MB-67300	MBLK	1	B	0.033	2.51	15	PASS
LCS-67300	LCS	1	B	4.87	0.77	15	PASS
N029313-001A	SAMP	1	B	0.78	0.1	15	PASS
N029313-001A	SAMP	5	B	0.18	0.081	15	PASS
N029313-001A-PS	PS	1	B	5.64	0.73	15	PASS
N029313-001A-MS	MS	1	B	5.7	0.63	15	PASS
N029313-001A-MSD	MSD	1	B	5.68	0.71	15	PASS
N029313-002A	SAMP	1	B	0.96	0.56	15	PASS
N029313-003A	SAMP	1	B	0.47	0.41	15	PASS
N029314-001A	SAMP	1	B	0.6	0.13	15	PASS
CCV1	CCV	1	B	4.83	0.57	15	PASS
CCB1	CCB	1	B	0.041	7.29	15	PASS
N029314-002A	SAMP	1	B	2.12	0.86	15	PASS
N029314-003A	SAMP	1	B	2.3	0.67	15	PASS
CCV2	CCV	1	B	4.85	0.17	15	PASS
CCB2	CCB	1	B	0.047	7.7	15	PASS
LLCCV1	CCV2	1	B	0.12	1.62	20	PASS
ICSA2	ICSA	1	B	0.072	0.9	15	PASS
ICSAB2	ICSAB	1	B	1.087	0.19	15	PASS
CCV3	CCV	1	B	4.82	0.58	15	PASS
CCB3	CCB	1	B	0.076	9.67	15	PASS
CCV4	CCV	1	B	4.82	0.73	15	PASS
CCB4	CCB	1	B	0.069	9.3	15	PASS
CCV5	CCV	1	B	4.74	0.68	15	PASS
CCB5	CCB	1	B	0.057	11.13	15	PASS
LLCCV2	CCV2	1	B	0.12	1.72	20	PASS
ICSA3	ICSA	1	B	0.079	12.47	15	PASS
ICSAB3	ICSAB	1	B	1.1	0.38	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180329A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-180108A/ -171030F/-171201A/B

MWST-180228E
MWST-180228D

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	03/29/2018	11:01:57 AM
2	Standard1	ICAL	1	03/29/2018	11:07:18 AM
3	Standard2	ICAL	1	03/29/2018	11:12:36 AM
11	Standard3	ICAL	1	03/29/2018	11:17:56 AM
12	Standard4	ICAL	1	03/29/2018	11:23:18 AM
6	Standard5	ICAL	1	03/29/2018	11:30:40 AM
7	Standard6	ICAL	1	03/29/2018	11:38:02 AM
8	Standard7	ICAL	1	03/29/2018	11:44:56 AM
9	ICV	ICV	1	03/29/2018	11:50:01 AM
1	ICB	ICB	1	03/29/2018	12:02:48 PM
1	ICB	ICB	1	03/29/2018	12:15:45 PM
2	LLICV1	CCV1	1	03/29/2018	12:21:14 PM
4	ICSA1	ICSA	1	03/29/2018	12:27:14 PM
5	ICSAB1	ICSAB	1	03/29/2018	12:36:07 PM
38	MB-67300	MBLK	1	03/29/2018	12:44:32 PM
39	LCS-67300	LCS	1	03/29/2018	12:50:32 PM
40	N029313-001A	SAMP	1	03/29/2018	12:59:12 PM
41	N029313-001A	SAMP	5	03/29/2018	01:08:11 PM
42	N029313-001A-PS	PS	1	03/29/2018	01:14:11 PM
43	N029313-001A-MS	MS	1	03/29/2018	01:22:53 PM
44	N029313-001A-MSD	MSD	1	03/29/2018	01:31:36 PM
45	N029313-002A	SAMP	1	03/29/2018	01:40:18 PM
46	N029313-003A	SAMP	1	03/29/2018	01:48:58 PM
47	N029314-001A	SAMP	1	03/29/2018	01:57:40 PM
7	CCV1	CCV	1	03/29/2018	02:05:56 PM
1	CCB1	CCB	1	03/29/2018	02:14:12 PM
48	N029314-002A	SAMP	1	03/29/2018	02:20:11 PM
49	N029314-003A	SAMP	1	03/29/2018	02:28:54 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV2	CCV	1	03/29/2018	02:38:11 PM
1	CCB2	CCB	1	03/29/2018	02:46:26 PM
2	LLCCV1	CCV2	1	03/29/2018	02:52:26 PM
4	ICSA2	ICSA	1	03/29/2018	02:58:25 PM
5	ICSAB2	ICSAB	1	03/29/2018	03:07:18 PM
50	MB-67289	MBLK	1	03/29/2018	03:19:34 PM
51	LCS-67289	LCS	1	03/29/2018	03:23:53 PM
52	N029248-001B	SAMP	1	03/29/2018	03:42:23 PM
53	N029248-001B	SAMP	5	03/29/2018	03:47:45 PM
54	N029248-001B-PS	PS	1	03/29/2018	03:52:05 PM
55	N029248-001B-MS	MS	1	03/29/2018	03:57:29 PM
56	N029248-001B-MSD	MSD	1	03/29/2018	04:02:52 PM
57	N029248-002B	SAMP	1	03/29/2018	04:08:15 PM
58	N029248-003B	SAMP	1	03/29/2018	04:12:37 PM
59	MB-67308	MBLK	1	03/29/2018	04:17:59 PM
7	CCV3	CCV	1	03/29/2018	04:22:21 PM
1	CCB3	CCB	1	03/29/2018	04:27:16 PM
60	LCS-67308	LCS	1	03/29/2018	04:31:35 PM
61	N029329-001B	SAMP	1	03/29/2018	04:36:58 PM
62	N029329-001B	SAMP	5	03/29/2018	04:42:21 PM
63	N029329-001B-PS	PS	1	03/29/2018	04:46:42 PM
64	N029329-001B-MS	MS	1	03/29/2018	04:52:05 PM
65	N029329-001B-MSD	MSD	1	03/29/2018	04:57:28 PM
66	N029329-002B	SAMP	1	03/29/2018	05:02:52 PM
67	N029329-003B	SAMP	1	03/29/2018	05:08:14 PM
68	N029346-001E	SAMP	1	03/29/2018	05:12:36 PM
69	N029346-002E	SAMP	1	03/29/2018	05:16:58 PM
7	CCV4	CCV	1	03/29/2018	05:22:25 PM
1	CCB4	CCB	1	03/29/2018	05:27:20 PM
70	N029346-003E	SAMP	1	03/29/2018	05:31:39 PM
71	N029346-004E	SAMP	1	03/29/2018	05:36:01 PM
72	N029347-001E	SAMP	1	03/29/2018	05:40:22 PM
73	N029347-002E	SAMP	1	03/29/2018	05:44:44 PM
74	N029347-003E	SAMP	1	03/29/2018	05:49:07 PM
75	N029347-004E	SAMP	1	03/29/2018	05:53:29 PM
7	CCV5	CCV	1	03/29/2018	05:57:51 PM
1	CCB5	CCB	1	03/29/2018	06:02:46 PM
2	LLCCV2	CCV2	1	03/29/2018	06:07:05 PM
4	ICSA3	ICSA	1	03/29/2018	06:11:25 PM
5	ICSAB3	ICSAB	1	03/29/2018	06:16:57 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/23/2018 10:07:11**
Prep End Date: **3/23/2018 3:30:00**
Prep Batch **67300** Prep Code: **200.7_PR**

Reviewed/ Date: 4/3/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67300	Aqueous		25	☐	0	0	25	1.000		
MB-67300	Aqueous		25	☐	0	0	25	1.000		
N029313-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-002A	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-003A	Groundwater	<2	25	☐	0	0	25	1.000		
N029314-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N029314-002A	Groundwater	<2	25	☐	0	0	25	1.000		
N029314-003A	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9758	HYDROCHLORIC ACID
9769	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180329A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	03/29/2018	11:01:57 AM	B	249.677	8196	0.00	mg/L	
Standard1	03/29/2018	11:07:18 AM	B	249.677	4867	0.1000	mg/L	
Standard3	03/29/2018	11:17:56 AM	B	249.677	52904	1.000	mg/L	
Standard4	03/29/2018	11:23:18 AM	B	249.677	134582	2.500	mg/L	
Standard5	03/29/2018	11:30:40 AM	B	249.677	198398	3.750	mg/L	
Standard6	03/29/2018	11:38:02 AM	B	249.677	274045	5.000	mg/L	
Standard7	03/29/2018	11:44:56 AM	B	249.677	551822	10.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICV**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.362	100	5000	0	102	90	110				

Sample ID **LLICV1**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	105.432	100	100.0	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCV**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4830.094	100	5000	0	96.6	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCV**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.941	100	5000	0	97.1	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	119.754	100	100.0	0	120	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.376	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	41.414	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	47.056	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICSA**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508800.571	50	500000	0	102	80	120				
Boron	59.991	100									
Calcium	504075.404	500	500000	0	101	80	120				
Iron	188721.864	20	200000	0	94.4	80	120				
Magnesium	472530.791	100	500000	0	94.5	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICSAB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533670.022	50	500000	0	107	80	120				
Boron	1108.627	100	1000	0	111	80	120				
Calcium	537463.774	500	500000	0	107	80	120				
Iron	180798.666	20	200000	0	90.4	80	120				
Magnesium	509497.103	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICSA**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	501022.766	50	500000	0	100	80	120				
Boron	71.760	100									
Calcium	497726.844	500	500000	0	99.5	80	120				
Iron	187761.273	20	200000	0	93.9	80	120				
Magnesium	476530.771	100	500000	0	95.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICSAB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525710.624	50	500000	0	105	80	120				
Boron	1086.833	100	1000	0	109	80	120				
Calcium	531969.715	500	500000	0	106	80	120				
Iron	180163.471	20	200000	0	90.1	80	120				
Magnesium	513918.888	100	500000	0	103	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180329A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.057	65-125	PASS
Standard2	ICAL	1	0.99	98.81	65-125	PASS
Standard3	ICAL	1	0.98	98.039	65-125	PASS
Standard4	ICAL	1	0.97	97.29	65-125	PASS
Standard5	ICAL	1	1.032	103.2	65-125	PASS
Standard6	ICAL	1	0.97	97.18	65-125	PASS
Standard7	ICAL	1	0.95	94.85	65-125	PASS
ICV	ICV	1	0.97	96.86	65-125	PASS
ICB	ICB	1	1	99.81	65-125	PASS
ICB	ICB	1	1	99.68	65-125	PASS
LLICV1	CCV1	1	0.99	99.2	65-125	PASS
ICSA1	ICSA	1	0.96	96.13	65-125	PASS
ICSAB1	ICSAB	1	0.89	89.17	65-125	PASS
MB-67300	MBLK	1	1.03	103.03	65-125	PASS
LCS-67300	LCS	1	0.91	91.23	65-125	PASS
N029313-001A	SAMP	1	0.97	96.63	65-125	PASS
N029313-001A	SAMP	5	0.96	96.39	65-125	PASS
N029313-001A-PS	PS	1	0.96	96.046	65-125	PASS
N029313-001A-MS	MS	1	0.95	94.81	65-125	PASS
N029313-001A-MSD	MSD	1	0.95	94.51	65-125	PASS
N029313-002A	SAMP	1	0.97	96.79	65-125	PASS
N029313-003A	SAMP	1	0.96	96.22	65-125	PASS
N029314-001A	SAMP	1	0.94	94.27	65-125	PASS
CCV1	CCV	1	0.97	96.77	65-125	PASS
CCB1	CCB	1	1.0005	100.05	65-125	PASS
N029314-002A	SAMP	1	0.81	81.11	65-125	PASS
N029314-003A	SAMP	1	0.76	76.36	65-125	PASS
CCV2	CCV	1	0.94	94.39	65-125	PASS
CCB2	CCB	1	0.98	98.32	65-125	PASS
LLCCV1	CCV2	1	0.98	98.14	65-125	PASS
ICSA2	ICSA	1	0.96	95.75	65-125	PASS
ICSAB2	ICSAB	1	0.88	88.36	65-125	PASS
CCV3	CCV	1	0.96	96.018	65-125	PASS
CCB3	CCB	1	0.99	99.12	65-125	PASS
CCV4	CCV	1	0.98	97.55	65-125	PASS
CCB4	CCB	1	1	99.85	65-125	PASS
CCV5	CCV	1	0.97	97.29	65-125	PASS
CCB5	CCB	1	0.99	98.82	65-125	PASS
LLCCV2	CCV2	1	1	99.84	65-125	PASS
ICSA3	ICSA	1	0.93	93.39	65-125	PASS

INTERNAL STANDARD: 180329A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB3	ICSAB	1	0.84	84.41	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N029313
Test Method: EPA 200.7
Analysis Date: 3/29/2018

Matrix: Groundwater
Batch No.: 67300

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029313-001A DT 5X	Boron	ug/L	922.038	NA	782.6572	17.81%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029313
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**N029313-001A-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID:	**ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5637.905	100	5000	782.7	97.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

March 30, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N029314

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029314

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

This is an addendum for N028744.

ASSET Laboratories

Date: *30-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029314
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029314-001A	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	3/23/2018	3/30/2018
N029314-002A	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	3/23/2018	3/30/2018
N029314-003A	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	3/23/2018	3/30/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Mar-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N029314	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029314-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**			PrepDate:	**3/23/2018**		Analyst: **CEI**
Boron	600	74	100		µg/L	1	3/29/2018 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q118
Lab Order:	N029314	**Collection Date:**	2/22/2018 12:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029314-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**			PrepDate:	**3/23/2018**		Analyst: **CEI**
Boron	2100	74	100		µg/L	1	3/29/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029314
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029314-003

Client Sample ID: MW-68BR-280-Q118
Collection Date: 2/22/2018 11:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**			PrepDate:	**3/23/2018**		Analyst: **CEI**
Boron	2300	74	100		µg/L	1	3/29/2018 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID: **MB-67300**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **PBW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									

Sample ID: **LCS-67300**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **LCSW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4868.541	100	5000	0	97.4	85	115				

Sample ID: **N029313-001A-MS**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5699.885	100	5000	782.7	98.3	75	125				

Sample ID: **N029313-001A-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5676.473	100	5000	782.7	97.9	75	125	5700	0.412	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Hanah Glodoviza

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Thursday, March 22, 2018 11:32 AM
To: 'Hanah Glodoviza'
Cc: nancy@assetlaboratories.com; quennie@assetlaboratories.com; 'ASSET LV Sample Control'; 'Yoandra Rodriguez'
Subject: FW: Boron Results for Topock

Importance: High

Hanah,

Please process additional and let the analyst know.

Yoandra – Please look for the samples and have it ready just in case we need to re-run.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421

From: Kalib Sumter [mailto:Kalib.Sumter@critigen.com]
Sent: Thursday, March 22, 2018 11:24 AM
To: nancy@assetlaboratories.com; 'Marlon Cartin'
Cc: Tina Rice; Laura.Madsen@arcadis.com; Tonya Russi (Tonya.Russi@arcadis.com); Daniel Moore; Cichy, Dan
Subject: FW: Boron Results for Topock
Importance: High

Nancy/Marlon,

Apparently there was a error on two chains for a few samples sent to you guys last month in SDGs

N028775
N028744

In addition to the metals we had requested, we had also intended to ask for Dissolved Boron analysis for those samples, but it was not selected on the COC.

MW-09	MW-09-Q118
MW-10	MW-10-Q118
MW-11	MW-11-Q118
MW-68-180	MW-68-180-Q118
MW-68-240	MW-68-240-Q118
MW-68BR-280	MW-68BR-280-Q118

(The second column is the sample code.)

Is it possible, via your laboratory magic, to run those samples or pull the Dissolved Boron data for us?

Please let us know if it's possible.

Thanks so much!
Kalib

Kalib Sumter
Environmental Data Manager

CRITIGEN

Kalib.Sumter@critigen.com
1 530 334 5588 Direct
1 530 351 1835 Mobile

critigen.com
critigen.co.uk

ASSET Laboratories

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Change Order Checklist

Client Name: **ARCUS02** Date / Time Created: **3/23/2018 6:30:17 PM**

Work Order Number: **N029314** Created by: **YR**

Checklist completed by:  3/23/2018
Signature | Date

Reviewed by: MBC 3/26/2018
Initials | Date

1. All samples within holding time?	Yes ☑	No ☐
2. Refrigerator temperature in compliance?	Yes ☑	No ☐
3. Change Order documents present?	Yes ☑	No ☐

Comments:

ASSET Laboratories

WORK ORDER Summary

23-Mar-18

WorkOrder: N029314

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 3/23/2018

Comments: Addendum for N028744

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029314-001A	MW-68-180-Q118	2/22/2018 11:51:00 AM	3/30/2018	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029314-002A	MW-68-240-Q118	2/22/2018 12:55:00 PM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029314-003A	MW-68BR-280-Q118	2/22/2018 11:03:00 AM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029314-004A	FOLDER		3/30/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project Name: PG&E Topock
Project No.: GMP, RC000753.0801

ASSET Laboratories Work Order:
N029314

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N029314

Item	Pages
Cover Page	1-5
Analytical Result/QC Summary Reports	6-9
Sample Receiving Items	10-14
Lists of Analyst	15
Raw Data:	
EPA 200.7_Dissolved	16-44

March 30, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N029314

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on March 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Quennie Manimtim
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

This is an addendum for N028744.

ASSET Laboratories

Date: *30-Mar-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029314
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029314-001A	MW-68-180-Q118	Groundwater	2/22/2018 11:51:00 AM	3/23/2018	3/30/2018
N029314-002A	MW-68-240-Q118	Groundwater	2/22/2018 12:55:00 PM	3/23/2018	3/30/2018
N029314-003A	MW-68BR-280-Q118	Groundwater	2/22/2018 11:03:00 AM	3/23/2018	3/30/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *30-Mar-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q118
Lab Order:	N029314	**Collection Date:**	2/22/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029314-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**			PrepDate:	**3/23/2018**		Analyst: **CEI**
Boron	600	74	100		µg/L	1	3/29/2018 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029314
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029314-002

Client Sample ID: MW-68-240-Q118
Collection Date: 2/22/2018 12:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**			PrepDate:	**3/23/2018**		Analyst: **CEI**
Boron	2100	74	100		µg/L	1	3/29/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029314
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029314-003

Client Sample ID: MW-68BR-280-Q118
Collection Date: 2/22/2018 11:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180329A**	QC Batch: **67300**			PrepDate:	**3/23/2018**		Analyst: **CEI**
Boron	2300	74	100		µg/L	1	3/29/2018 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID: **MB-67300**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **PBW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	100									

Sample ID: **LCS-67300**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **LCSW**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4868.541	100	5000	0	97.4	85	115				

Sample ID: **N029313-001A-MS**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5699.885	100	5000	782.7	98.3	75	125				

Sample ID: **N029313-001A-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **3/23/2018**	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5676.473	100	5000	782.7	97.9	75	125	5700	0.412	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

Hanah Glodoviza

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Thursday, March 22, 2018 11:32 AM
To: 'Hanah Glodoviza'
Cc: nancy@assetlaboratories.com; quennie@assetlaboratories.com; 'ASSET LV Sample Control'; 'Yoandra Rodriguez'
Subject: FW: Boron Results for Topock

Importance: High

Hanah,

Please process additional and let the analyst know.

Yoandra – Please look for the samples and have it ready just in case we need to re-run.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | **F:** 702.307.2691 | **M:** 702.439.0421

From: Kalib Sumter [mailto:Kalib.Sumter@critigen.com]
Sent: Thursday, March 22, 2018 11:24 AM
To: nancy@assetlaboratories.com; 'Marlon Cartin'
Cc: Tina Rice; Laura.Madsen@arcadis.com; Tonya Russi (Tonya.Russi@arcadis.com); Daniel Moore; Cichy, Dan
Subject: FW: Boron Results for Topock
Importance: High

Nancy/Marlon,

Apparently there was a error on two chains for a few samples sent to you guys last month in SDGs

N028775
N028744

In addition to the metals we had requested, we had also intended to ask for Dissolved Boron analysis for those samples, but it was not selected on the COC.

MW-09	MW-09-Q118
MW-10	MW-10-Q118
MW-11	MW-11-Q118
MW-68-180	MW-68-180-Q118
MW-68-240	MW-68-240-Q118
MW-68BR-280	MW-68BR-280-Q118

(The second column is the sample code.)

Is it possible, via your laboratory magic, to run those samples or pull the Dissolved Boron data for us?

Please let us know if it's possible.

Thanks so much!
Kalib

Kalib Sumter
Environmental Data Manager

CRITIGEN

Kalib.Sumter@critigen.com
1 530 334 5588 Direct
1 530 351 1835 Mobile

critigen.com
critigen.co.uk

ASSET Laboratories

Please review the checklist below. Any NO and/or NA signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Change Order Checklist

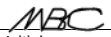
Client Name: **ARCUS02**

Date / Time Created: **3/23/2018 6:30:17 PM**

Work Order Number: **N029314**

Created by: **YR**

Checklist completed by:  3/23/2018
Signature | Date

Reviewed by:  3/26/2018
Initials | Date

1. All samples within holding time?	Yes ☑	No ☐
2. Refrigerator temperature in compliance?	Yes ☑	No ☐
3. Change Order documents present?	Yes ☑	No ☐

Comments:

ASSET Laboratories

WORK ORDER Summary

23-Mar-18

WorkOrder: N029314

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 3/23/2018

Comments: Addendum for N028744

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029314-001A	MW-68-180-Q118	2/22/2018 11:51:00 AM	3/30/2018	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029314-002A	MW-68-240-Q118	2/22/2018 12:55:00 PM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029314-003A	MW-68BR-280-Q118	2/22/2018 11:03:00 AM	3/30/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			3/30/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N029314-004A	FOLDER		3/30/2018		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: N029314

Item	Pages
Claire Ignacio	EPA 200.7_Dissolved

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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EPA 200.7_Dissolved

CALIFORNIA | P:562.219.7435 F:562.219.7436
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67300
ASSET #: N29314

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 3/29/2018

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct	X		
3. Does batch meet QC requirements?	X		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	X		
5. Is first level review correct and complete?	X		

1st Level Reviewer CEI 03/30/18 Date: _____

2nd Level Reviewer _____ Date: 03/30/18

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Boron concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N029314-001a** , the concentration ir ug/L is calculated as follows:

Boron , ug/L = 0.59583 * 1 * (25/25) * 1000

Boron , ug/L = 595.83

Reporting results in two significant figures,

Boron , ug/L = 600

% RSD SUMMARY

RSD SUMMARY: 180329A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.43	15	PASS
Standard1	ICAL	1	B	0.1	0.88	15	PASS
Standard3	ICAL	1	B	1	0.92	15	PASS
Standard4	ICAL	1	B	2.5	1.1	15	PASS
Standard5	ICAL	1	B	3.75	0.76	15	PASS
Standard6	ICAL	1	B	5	0.5	15	PASS
Standard7	ICAL	1	B	10	0.55	15	PASS
ICV	ICV	1	B	5.099	0.41	15	PASS
ICB	ICB	1	B	0.067	8.31	15	PASS
ICB	ICB	1	B	0.024	8.4	15	PASS
LLICV1	CCV1	1	B	0.11	2.025	20	PASS
ICSA1	ICSA	1	B	0.06	1.15	15	PASS
ICSAB1	ICSAB	1	B	1.11	0.37	15	PASS
MB-67300	MBLK	1	B	0.033	2.51	15	PASS
LCS-67300	LCS	1	B	4.87	0.77	15	PASS
N029313-001A	SAMP	1	B	0.78	0.1	15	PASS
N029313-001A	SAMP	5	B	0.18	0.081	15	PASS
N029313-001A-PS	PS	1	B	5.64	0.73	15	PASS
N029313-001A-MS	MS	1	B	5.7	0.63	15	PASS
N029313-001A-MSD	MSD	1	B	5.68	0.71	15	PASS
N029313-002A	SAMP	1	B	0.96	0.56	15	PASS
N029313-003A	SAMP	1	B	0.47	0.41	15	PASS
N029314-001A	SAMP	1	B	0.6	0.13	15	PASS
CCV1	CCV	1	B	4.83	0.57	15	PASS
CCB1	CCB	1	B	0.041	7.29	15	PASS
N029314-002A	SAMP	1	B	2.12	0.86	15	PASS
N029314-003A	SAMP	1	B	2.3	0.67	15	PASS
CCV2	CCV	1	B	4.85	0.17	15	PASS
CCB2	CCB	1	B	0.047	7.7	15	PASS
LLCCV1	CCV2	1	B	0.12	1.62	20	PASS
ICSA2	ICSA	1	B	0.072	0.9	15	PASS
ICSAB2	ICSAB	1	B	1.087	0.19	15	PASS
CCV3	CCV	1	B	4.82	0.58	15	PASS
CCB3	CCB	1	B	0.076	9.67	15	PASS
CCV4	CCV	1	B	4.82	0.73	15	PASS
CCB4	CCB	1	B	0.069	9.3	15	PASS
CCV5	CCV	1	B	4.74	0.68	15	PASS
CCB5	CCB	1	B	0.057	11.13	15	PASS
LLCCV2	CCV2	1	B	0.12	1.72	20	PASS
ICSA3	ICSA	1	B	0.079	12.47	15	PASS
ICSAB3	ICSAB	1	B	1.1	0.38	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180329A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171018A,0.5<50mL
Standard2	MWST-171201O
Standard3	MWST-171201K,5<50mL
Standard4	MWST-171201K,12.5<50mL
Standard5	MWST-171201K,15<40mL
Standard6	MWST-171201K,25<50mL
Standard7	MWST-171201K
ICV	MWST-171030E
CCV	MWST-171201K,25<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171018E
Int. Std. (Y)	MSST-171009C/B
PS Spike	MWST-180108A/ -171030F/-171201A/B

MWST-180228E
MWST-180228D

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	03/29/2018	11:01:57 AM
2	Standard1	ICAL	1	03/29/2018	11:07:18 AM
3	Standard2	ICAL	1	03/29/2018	11:12:36 AM
11	Standard3	ICAL	1	03/29/2018	11:17:56 AM
12	Standard4	ICAL	1	03/29/2018	11:23:18 AM
6	Standard5	ICAL	1	03/29/2018	11:30:40 AM
7	Standard6	ICAL	1	03/29/2018	11:38:02 AM
8	Standard7	ICAL	1	03/29/2018	11:44:56 AM
9	ICV	ICV	1	03/29/2018	11:50:01 AM
1	ICB	ICB	1	03/29/2018	12:02:48 PM
1	ICB	ICB	1	03/29/2018	12:15:45 PM
2	LLICV1	CCV1	1	03/29/2018	12:21:14 PM
4	ICSA1	ICSA	1	03/29/2018	12:27:14 PM
5	ICSAB1	ICSAB	1	03/29/2018	12:36:07 PM
38	MB-67300	MBLK	1	03/29/2018	12:44:32 PM
39	LCS-67300	LCS	1	03/29/2018	12:50:32 PM
40	N029313-001A	SAMP	1	03/29/2018	12:59:12 PM
41	N029313-001A	SAMP	5	03/29/2018	01:08:11 PM
42	N029313-001A-PS	PS	1	03/29/2018	01:14:11 PM
43	N029313-001A-MS	MS	1	03/29/2018	01:22:53 PM
44	N029313-001A-MSD	MSD	1	03/29/2018	01:31:36 PM
45	N029313-002A	SAMP	1	03/29/2018	01:40:18 PM
46	N029313-003A	SAMP	1	03/29/2018	01:48:58 PM
47	N029314-001A	SAMP	1	03/29/2018	01:57:40 PM
7	CCV1	CCV	1	03/29/2018	02:05:56 PM
1	CCB1	CCB	1	03/29/2018	02:14:12 PM
48	N029314-002A	SAMP	1	03/29/2018	02:20:11 PM
49	N029314-003A	SAMP	1	03/29/2018	02:28:54 PM

4/3/2018
for

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV2	CCV	1	03/29/2018	02:38:11 PM
1	CCB2	CCB	1	03/29/2018	02:46:26 PM
2	LLCCV1	CCV2	1	03/29/2018	02:52:26 PM
4	ICSA2	ICSA	1	03/29/2018	02:58:25 PM
5	ICSAB2	ICSAB	1	03/29/2018	03:07:18 PM
50	MB-67289	MBLK	1	03/29/2018	03:19:34 PM
51	LCS-67289	LCS	1	03/29/2018	03:23:53 PM
52	N029248-001B	SAMP	1	03/29/2018	03:42:23 PM
53	N029248-001B	SAMP	5	03/29/2018	03:47:45 PM
54	N029248-001B-PS	PS	1	03/29/2018	03:52:05 PM
55	N029248-001B-MS	MS	1	03/29/2018	03:57:29 PM
56	N029248-001B-MSD	MSD	1	03/29/2018	04:02:52 PM
57	N029248-002B	SAMP	1	03/29/2018	04:08:15 PM
58	N029248-003B	SAMP	1	03/29/2018	04:12:37 PM
59	MB-67308	MBLK	1	03/29/2018	04:17:59 PM
7	CCV3	CCV	1	03/29/2018	04:22:21 PM
1	CCB3	CCB	1	03/29/2018	04:27:16 PM
60	LCS-67308	LCS	1	03/29/2018	04:31:35 PM
61	N029329-001B	SAMP	1	03/29/2018	04:36:58 PM
62	N029329-001B	SAMP	5	03/29/2018	04:42:21 PM
63	N029329-001B-PS	PS	1	03/29/2018	04:46:42 PM
64	N029329-001B-MS	MS	1	03/29/2018	04:52:05 PM
65	N029329-001B-MSD	MSD	1	03/29/2018	04:57:28 PM
66	N029329-002B	SAMP	1	03/29/2018	05:02:52 PM
67	N029329-003B	SAMP	1	03/29/2018	05:08:14 PM
68	N029346-001E	SAMP	1	03/29/2018	05:12:36 PM
69	N029346-002E	SAMP	1	03/29/2018	05:16:58 PM
7	CCV4	CCV	1	03/29/2018	05:22:25 PM
1	CCB4	CCB	1	03/29/2018	05:27:20 PM
70	N029346-003E	SAMP	1	03/29/2018	05:31:39 PM
71	N029346-004E	SAMP	1	03/29/2018	05:36:01 PM
72	N029347-001E	SAMP	1	03/29/2018	05:40:22 PM
73	N029347-002E	SAMP	1	03/29/2018	05:44:44 PM
74	N029347-003E	SAMP	1	03/29/2018	05:49:07 PM
75	N029347-004E	SAMP	1	03/29/2018	05:53:29 PM
7	CCV5	CCV	1	03/29/2018	05:57:51 PM
1	CCB5	CCB	1	03/29/2018	06:02:46 PM
2	LLCCV2	CCV2	1	03/29/2018	06:07:05 PM
4	ICSA3	ICSA	1	03/29/2018	06:11:25 PM
5	ICSAB3	ICSAB	1	03/29/2018	06:16:57 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **3/23/2018 10:07:11**
Prep End Date: **3/23/2018 3:30:00**
Prep Batch **67300** Prep Code: **200.7_PR**

Reviewed/ Date: 4/3/2018
Initials/ Date: for
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67300	Aqueous		25	☐	0	0	25	1.000		
MB-67300	Aqueous		25	☐	0	0	25	1.000		
N029313-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-002A	Groundwater	<2	25	☐	0	0	25	1.000		
N029313-003A	Groundwater	<2	25	☐	0	0	25	1.000		
N029314-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N029314-002A	Groundwater	<2	25	☐	0	0	25	1.000		
N029314-003A	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9758	HYDROCHLORIC ACID
9769	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180329A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	03/29/2018	11:01:57 AM	B	249.677	8196	0.00	mg/L	
Standard1	03/29/2018	11:07:18 AM	B	249.677	4867	0.1000	mg/L	
Standard3	03/29/2018	11:17:56 AM	B	249.677	52904	1.000	mg/L	
Standard4	03/29/2018	11:23:18 AM	B	249.677	134582	2.500	mg/L	
Standard5	03/29/2018	11:30:40 AM	B	249.677	198398	3.750	mg/L	
Standard6	03/29/2018	11:38:02 AM	B	249.677	274045	5.000	mg/L	
Standard7	03/29/2018	11:44:56 AM	B	249.677	551822	10.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICV**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5099.362	100	5000	0	102	90	110				

Sample ID **LLICV1**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	105.432	100	100.0	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCV**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4830.094	100	5000	0	96.6	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCV**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4853.941	100	5000	0	97.1	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ZZZZZZ**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	119.754	100	100.0	0	120	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	24.376	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	41.414	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **CCB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	47.056	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123001**
Client ID: **ICSA** Batch ID: **R123001** TestNo: **EPA 200.7** Analysis Date: **3/29/2018** SeqNo: **2972571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508800.571	50	500000	0	102	80	120				
Boron	59.991	100									
Calcium	504075.404	500	500000	0	101	80	120				
Iron	188721.864	20	200000	0	94.4	80	120				
Magnesium	472530.791	100	500000	0	94.5	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123001**
Client ID: **ICSAB** Batch ID: **R123001** TestNo: **EPA 200.7** Analysis Date: **3/29/2018** SeqNo: **2972572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	533670.022	50	500000	0	107	80	120				
Boron	1108.627	100	1000	0	111	80	120				
Calcium	537463.774	500	500000	0	107	80	120				
Iron	180798.666	20	200000	0	90.4	80	120				
Magnesium	509497.103	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123001**
Client ID: **ICSA** Batch ID: **R123001** TestNo: **EPA 200.7** Analysis Date: **3/29/2018** SeqNo: **2972590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	501022.766	50	500000	0	100	80	120				
Boron	71.760	100									
Calcium	497726.844	500	500000	0	99.5	80	120				
Iron	187761.273	20	200000	0	93.9	80	120				
Magnesium	476530.771	100	500000	0	95.3	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID: **ICSAB**	Batch ID: **R123001**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	525710.624	50	500000	0	105	80	120				
Boron	1086.833	100	1000	0	109	80	120				
Calcium	531969.715	500	500000	0	106	80	120				
Iron	180163.471	20	200000	0	90.1	80	120				
Magnesium	513918.888	100	500000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180329A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.057	65-125	PASS
Standard2	ICAL	1	0.99	98.81	65-125	PASS
Standard3	ICAL	1	0.98	98.039	65-125	PASS
Standard4	ICAL	1	0.97	97.29	65-125	PASS
Standard5	ICAL	1	1.032	103.2	65-125	PASS
Standard6	ICAL	1	0.97	97.18	65-125	PASS
Standard7	ICAL	1	0.95	94.85	65-125	PASS
ICV	ICV	1	0.97	96.86	65-125	PASS
ICB	ICB	1	1	99.81	65-125	PASS
ICB	ICB	1	1	99.68	65-125	PASS
LLICV1	CCV1	1	0.99	99.2	65-125	PASS
ICSA1	ICSA	1	0.96	96.13	65-125	PASS
ICSAB1	ICSAB	1	0.89	89.17	65-125	PASS
MB-67300	MBLK	1	1.03	103.03	65-125	PASS
LCS-67300	LCS	1	0.91	91.23	65-125	PASS
N029313-001A	SAMP	1	0.97	96.63	65-125	PASS
N029313-001A	SAMP	5	0.96	96.39	65-125	PASS
N029313-001A-PS	PS	1	0.96	96.046	65-125	PASS
N029313-001A-MS	MS	1	0.95	94.81	65-125	PASS
N029313-001A-MSD	MSD	1	0.95	94.51	65-125	PASS
N029313-002A	SAMP	1	0.97	96.79	65-125	PASS
N029313-003A	SAMP	1	0.96	96.22	65-125	PASS
N029314-001A	SAMP	1	0.94	94.27	65-125	PASS
CCV1	CCV	1	0.97	96.77	65-125	PASS
CCB1	CCB	1	1.0005	100.05	65-125	PASS
N029314-002A	SAMP	1	0.81	81.11	65-125	PASS
N029314-003A	SAMP	1	0.76	76.36	65-125	PASS
CCV2	CCV	1	0.94	94.39	65-125	PASS
CCB2	CCB	1	0.98	98.32	65-125	PASS
LLCCV1	CCV2	1	0.98	98.14	65-125	PASS
ICSA2	ICSA	1	0.96	95.75	65-125	PASS
ICSAB2	ICSAB	1	0.88	88.36	65-125	PASS
CCV3	CCV	1	0.96	96.018	65-125	PASS
CCB3	CCB	1	0.99	99.12	65-125	PASS
CCV4	CCV	1	0.98	97.55	65-125	PASS
CCB4	CCB	1	1	99.85	65-125	PASS
CCV5	CCV	1	0.97	97.29	65-125	PASS
CCB5	CCB	1	0.99	98.82	65-125	PASS
LLCCV2	CCV2	1	1	99.84	65-125	PASS
ICSA3	ICSA	1	0.93	93.39	65-125	PASS

INTERNAL STANDARD: 180329A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB3	ICSAB	1	0.84	84.41	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N029314
Test Method: EPA 200.7
Analysis Date: 3/29/2018

Matrix: Groundwater
Batch No.: 67300

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to B. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029313-001A DT 5X	Boron	ug/L	922.038	NA	782.6572	17.81%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029314
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**N029313-001A-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123001**
Client ID:	**ZZZZZZ**	Batch ID: **67300**	TestNo: **EPA 200.7**		Analysis Date: **3/29/2018**	SeqNo: **2972577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5637.905	100	5000	782.7	97.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP** Matrix: **WATER**
Method Number: EPA 200.7/ 6010 Unit: mg/L
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01