Topock Project Executive Abstract

Document Title:

Compliance Monitoring Program 2015 Annual Groundwater Monitoring Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California (PGE20150116A)

Submitting Agency: DOI

Final Document? ☒ Yes ☐ No

Date of Document: January 15, 2016

Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) – PG&E

Priority Status: ☐ HIGH ☐ MED ☒ LOW
Is this time critical? ☐ Yes ☒ No

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☐ Draft ☒ Report ☐ Letter ☐ Memo

☐ Other / Explain:

Action Required:
☒ Information Only ☐ Review & Comment
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☐ Other / Explain:

What does this information pertain to?
☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)
☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)
☐ Corrective Measures Study (CMS)/Feasibility Study (FS)
☐ Corrective Measures Implementation (CMI)/Remedial Action
☐ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)
☒ Interim Measures
☐ Other / Explain:

Is this a Regulatory Requirement?
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If no, why is the document needed?

What is the consequence of NOT doing this item? What is the consequence of DOING this item?
Submittal of this report is a compliance requirement under DOI ARARs.

Other Justification/s:
☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

The purpose of the Topock Compliance Monitoring Program (CMP) is twofold: (1) to monitor changes in groundwater hydraulics and/or water quality of the aquifer in the injection well area, and (2) to ensure that the quality of the aquifer is not adversely affected by the injected water. The monitoring network consists of multiple observation wells (OW series) and compliance wells (CW series) screened in the shallow, middle, and/or deep zones of the Alluvial Aquifer. The injection of treated groundwater in the area began in 2005. As of 2015, the majority of the compliance and observation wells demonstrate a treated/injected water signature, with the exception of one shallow-zone observation well (OW-2S) which continues to show little to no water quality effects due to injection operations.

This report presents groundwater analytical results and water level data collected during the 2015 annual CMP monitoring event conducted in October 2015. During the 2015 annual monitoring event, no samples exceeded the water quality objectives for hexavalent chromium, chromium, pH, or total dissolved solids. The next CMP event is scheduled to occur in October 2015.

Written by: PG&E

Recommendations:
This report is for your information only.

How is this information related to the Final Remedy or Regulatory Requirements:

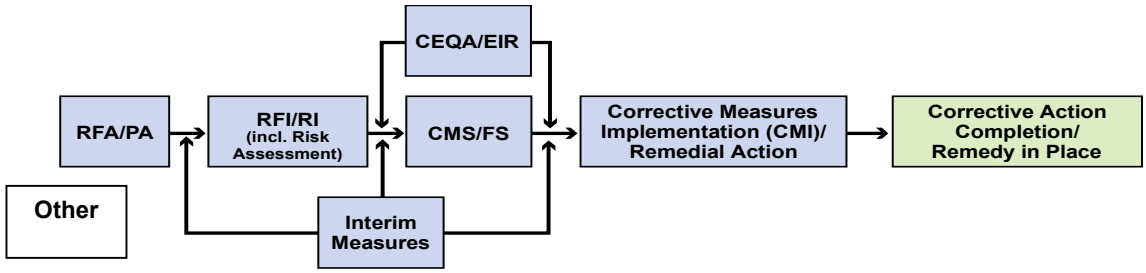
Submittal of this report is a compliance requirement under DOI ARARs beginning August 2011.

Other requirements of this information?

None.

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).



Version 9

Legend
RFA/PA – RCRA Facility Assessment/Preliminary Assessment
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

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January 15, 2016

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Subject: *Compliance Monitoring Program 2015 Annual Groundwater Monitoring Report, Interim Measures No. 3, PG&E Topock Compressor Station, Needles, California* (PGE20150116A)

Dear Ms. Innis:

Enclosed is the Compliance Monitoring Program (CMP) 2015 Annual Groundwater Monitoring Report for the Interim Measures No. 3 at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station site near Needles, California. This report presents the results of compliance monitoring activities conducted during the 2015 annual period (from January 1, 2015 through December 31, 2015) and has been prepared in accordance with the United States Department of the Interior's (DOI's) August 18, 2011 letter stating that the Interim Measures No. 3 Waste Discharge Requirements are applicable or relevant and appropriate requirements.

The current contingency plan specifies the water quality objectives/action levels for hexavalent chromium (Cr[VI]), chromium, total dissolved solids (TDS), and pH, which are used to determine whether contingency plan actions are necessary based on sample results. These threshold concentrations, used to trigger the contingency plan, are as follows: Cr(VI) greater than 32 micrograms per liter (µg/L), chromium greater than 28 µg/L, TDS greater than 10,800 milligrams per liter, and pH outside of the range of 6.2 to 9.2. No samples exceeded the water quality objectives for Cr(VI), chromium, pH, or TDS during the 2015 annual monitoring event.

The enclosed is the first annual report being submitted for the CMP following the reduction in reporting frequency that was approved by the DOI in the letter dated March 20, 2015. For consistency with historical reporting practice, groundwater elevation maps for both the second and fourth quarters of 2015 are provided herein. However, because the potentiometric mounding associated with injection operations has been stable with no significant variation due to seasonal water level fluctuations, PG&E proposes to eliminate redundant groundwater elevation maps from future CMP reports. Future annual CMP reports will include a single set of groundwater elevation maps generated using the fourth quarter water level measurements.

The next Compliance Monitoring Program event is scheduled to occur in October 2016.

Please contact me at (805) 234-2257 if you have any questions regarding the CMP or any concerns with the proposed streamlining of the groundwater elevation map figures.

Sincerely,

Yvonne Meeks

Yvonne Meeks
Topock Remediation Project Manager

Cc: Robert Perdue, Water Board
Jose Cortez, Water Board
Aaron Yue, DTSC
Christopher Guerre, DTSC

Enclosure

ARCADIS Design & Consultancy for natural and built assets

Pacific Gas and Electric Company

COMPLIANCE MONITORING PROGRAM 2015 ANNUAL GROUNDWATER MONITORING REPORT

Interim Measures No. 3
PG&E Topock Compressor Station
Needles, California
Document ID: PGE20150116A

January 15, 2016

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CMP 2015 ANNUAL GROUNDWATER MONITORING REPORT

Interim Measures No. 3
PG&E Topock Compressor Station
Needles, California

Document ID: PGE20150116A

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CONTENTS

Acronyms and Abbreviations iv
1 Introduction 1-1
2 Summary of 2015 Activities 2-1
3 Summary of 2015 Results 3-1
3.1 Analytical Results 3-1
3.1.1 Hexavalent Chromium and Chromium 3-1
3.1.2 Other Metals and General Chemistry 3-2
3.2 Analytical Data Quality Review 3-2
3.2.1 Matrix Interference 3-2
3.2.2 Matrix Spike Samples 3-2
3.2.3 Quantitation and Sensitivity 3-3
3.2.4 Holding-time Data Qualification 3-4
3.2.5 Field Duplicates 3-4
3.2.6 Method Blanks 3-4
3.2.7 Equipment Blanks 3-4
3.2.8 Laboratory Duplicates 3-4
3.2.9 Laboratory Control Sample 3-4
3.2.10 Calibration 3-4
3.2.11 Conclusion 3-4
3.3 Influence of Treated Water 3-4
3.4 Water Level Measurements 3-6
3.5 Field Parameter Data 3-7
3.6 ARAR Monitoring Requirements 3-7
4 Status of Monitoring Activities 4-1
5 References 5-1
6 Certification 6-1

EXHIBITS (IN TEXT)

Exhibit 1 Historical Modifications to the CMP

Exhibit 2 Matrix Spike Data Quality Review Results

TABLES

Table 1 Operational Status of Interim Measures No. 3 Injection Wells from July 2005 through December 2015

Table 2 Well Construction and Sampling Summary for Groundwater Samples, 2015

Table 3 Chromium Results for Groundwater Samples, 2015

Table 4 Metals Results for Groundwater Samples, 2015

Table 5 Other Inorganics Results for Groundwater Samples, 2015

Table 6 Treated Water Quality Compared to OW and CW Pre-injection Water Quality

Table 7 Treated Water Quality Compared to 2015 Annual Monitoring Event Water Quality

Table 8 Manual Water Level Measurements and Elevations, 2015

Table 9 Vertical Gradients within the OW and CW Clusters, 2015

Table 10 Field Parameters and Manual Water Level Measurements for Groundwater Samples, 2015

Table 11 ARAR Monitoring Information for Groundwater Samples, 2015

FIGURES

Figure 1 Site Location and Layout

Figure 2 Monitoring Locations for CMP

Figure 3A OW-1S, OW-2S, OW-5S Concentration versus Time Plots

Figure 3B OW-1M, OW-2M, OW-5M Concentration versus Time Plots

Figure 3C OW-1D, OW-2D, OW-5D Concentration versus Time Plots

Figure 3D CW-1M, CW-2M, CW-3M, CW-4M Concentration versus Time Plots

Figure 3E CW-1D, CW-2D, CW-3D, CW-4D Concentration versus Time Plots

Figure 4A OW-1S Groundwater Elevation Hydrograph

Figure 4B OW-2S Groundwater Elevation Hydrograph

Figure 4C OW-5 Groundwater Elevation Hydrographs

Figure 5A Groundwater Elevations for Shallow Wells, May 14, 2015

Figure 5B Groundwater Elevation Contours for Mid-Depth Wells, May 14, 2015

Figure 5C Groundwater Elevation Contours for Deep Wells, May 14, 2015

Figure 6A Groundwater Elevations for Shallow Wells, October 27, 2015

Figure 6B Groundwater Elevation Contours for Mid-Depth Wells, October 27, 2015

Figure 6C Groundwater Elevation Contours for Deep Wells, October 27, 2015

APPENDICES

Appendix A Laboratory Reports, 2015 (provided on CD-ROM only)

Appendix B Field Data Collection Sheets (provided on CD-ROM only)

ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
ARAR	applicable or relevant and appropriate requirement
CMP	Compliance Monitoring Program
Cr(VI)	hexavalent chromium
CW	compliance well
DOI	United States Department of the Interior
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
IM-3	Interim Measures No. 3
IW	injection well
LCL	lower quality control limit
mg/L	milligrams per liter
MRP	Monitoring and Reporting Program
MS	matrix spike
PG&E	Pacific Gas and Electric Company
OW	observation well
QAPP	Quality Assurance Project Plan
SD	matrix spike duplicate
TDS	total dissolved solids
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirement
WQO	water quality objective

1 INTRODUCTION

This Compliance Monitoring Program (CMP) 2015 Annual Groundwater Monitoring Report has been prepared on behalf of Pacific Gas and Electric Company (PG&E) to document the results of compliance monitoring activities conducted during the 2015 annual period (from January 1, 2015 through December 31, 2015) for the Interim Measures No. 3 (IM-3) injection well field area at the Topock Compressor Station site (the Site) near Needles, California. PG&E is currently implementing IM-3 to mitigate elevated chromium and hexavalent chromium (Cr[VI]) concentrations in groundwater at the Site. The components of IM-3 include groundwater extraction in the Colorado River floodplain, ex-situ treatment of the extracted groundwater, and discharge of the treated groundwater via an onsite injection well field located in the East Mesa Injection Area (Figure 1). Figure 1 shows the locations of the groundwater extraction, conveyance, treatment, and injection facilities associated with the IM-3 system.

The objectives, proposed sampling plan and data evaluation methods, and reporting requirements for monitoring of the IM-3 injection well field were documented in the Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area, Topock Compressor Station, Needles, California (CH2M HILL 2005a; Compliance Monitoring Plan), which was submitted to the California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) on June 17, 2005. An addendum to the Compliance Monitoring Plan was subsequently submitted on December 13, 2005 (Compliance Monitoring Plan Addendum; CH2M HILL 2005b). Several modifications to the CMP monitoring and reporting requirements have since been approved as summarized in Exhibit 1, below.

Exhibit 1. Historical Modifications to the CMP

Modification	Approval Date
Modification of reporting requirements	DTSC: June 9, 2006
Reduction of constituents analyzed during quarterly sampling of CMP observation wells	Water Board: January 23, 2007; DTSC: January 22, 2007
Change from laboratory pH to field collected pH for reporting	Water Board: October 16, 2007; DTSC: January 22, 2008
Modification of Cr(VI) analytical methods to extend hold time to 28 days	Water Board: November 13, 2007; DTSC: January 22, 2008
Modification of sampling and reporting frequency and the field pH trigger range for the CMP contingency plan	Water Board: August 28, 2008; DTSC: December 12, 2008 (pH), September 3, 2009
United States Department of the Interior (DOI) adopts waste discharge requirements (WDRs) as applicable or relevant and appropriate requirements (ARARs)	DOI: August 18, 2011; Water Board: July 26, 2011

Modification	Approval Date
Modification of sampling and reporting frequency to eliminate the first half semiannual monitoring event and report (DOI 2015)	DOI: March 20, 2015; Water Board: March 16, 2015

Note: Information above taken from the Combined Compliance Monitoring Program Semiannual Groundwater Monitoring Report, Second Half 2014, and Performance Assessment Report, Interim Measures No. 3, Injection Well Field, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2015a).

Prior to September 2011, PG&E operated the IM-3 injection system under Water Board WDR Order No. R7-2004-0103 (adopted on October 13, 2004), Order No. R7-2006-0060 (issued on September 20, 2006), and the revised Monitoring and Reporting Program (MRP; issued on August 28, 2008 under Order No. R7-2006-0060). After Order No. R7-2006-0060 expired on September 20, 2011, discharge compliance oversight and enforcement was transferred from the Water Board to the United States Department of the Interior (DOI). As documented in the August 18, 2011 letter from the DOI to the Water Board, the DOI confirmed the following (DOI 2011):

- WDRs are ARARs under the Comprehensive Environmental Response Compensation and Liability Act response action ongoing at the Site.
- DOI will enforce the WDRs pursuant to the Administrative Consent Agreement entered into by DOI and PG&E in 2005 (DOI 2005), in lieu of the Water Board's adoption of a new Order to replace the expiring Order (Order No. R7-2006-0060) that originally established the WDRs.
- DOI concurred with the division of roles and responsibilities between DOI and the Water Board for monitoring and enforcing compliance with the WDRs.

Currently, PG&E operates the IM-3 injection system under the DOI waste discharge ARARs, which specify effluent limitations, prohibitions, specifications, and provisions for subsurface injection. The MRP set forth in the ARARs specifies the requirements for monitoring of the area around the IM-3 injection well field (East Mesa Injection Area) to ensure that the injection of treated groundwater does not adversely impact aquifer water quality.

The IM-3 injection system comprises two injection wells (IWs): IW-2 and IW-3 (Figure 2). Operation of the treatment system was conditionally approved on July 15, 2005 (DTSC 2005), and injection into IW-2 began on July 31, 2005 (CH2M HILL 2015a). Table 1 provides a chronological summary of injection activities implemented for IM-3 through 2015.

The observation wells (OWs) and compliance wells (CWs) that make up the CMP monitoring well network are shown on Figure 2, along with the locations of the IWs. Table 2 provides a summary of well construction and sampling method information for the wells in the CMP network.

Currently, samples are collected from OWs and CWs according to the following schedule:

- Nine OWs (OW-1S, OW-1M, OW-1D, OW-2S, OW-2M, OW-2D, OW-5S, OW-5M, and OW-5D) in the East Mesa Injection Area are sampled annually during the fourth quarter for a limited suite of constituents.

- In addition, six of the OWs (OW-1M, OW-1D, OW-2M, OW-2D, OW-5M, and OW-5D) are sampled for a full suite of constituents one cluster at a time on a triennial (once every 3 years) schedule. By the end of each 3-year period, all middle and deep zone OWs are sampled for a full suite of constituents. The triennial sampling occurs during the fourth quarter, with the annual sampling.
- Eight CWs are sampled annually during the fourth quarter for a full suite of constituents.

The full suite of constituents includes Cr(VI), chromium, metals, specific conductance, total dissolved solids (TDS), turbidity, alkalinity, ammonia, and major inorganic cations and anions. The limited suite of constituents is similar to the full suite except several metals/cations, total alkalinity, and ammonia are omitted.

Groundwater elevation data and field water quality data—including specific conductance, temperature, pH, oxidation reduction potential, dissolved oxygen, and turbidity—are also measured during each monitoring event.

2 SUMMARY OF 2015 ACTIVITIES

This section provides an overview of activities completed for the 2015 annual monitoring event, which was conducted between October 26 and 29, 2015. Field activities included the following:

- Manual water level measurements and field water quality parameter data were collected prior to sampling.
- Water quality samples were collected from nine OWs and eight CWs.
- Field duplicate samples were collected at wells CW-3M and OW-2S to assess field sampling and analytical quality control.

In addition, groundwater elevation data were collected continuously using pressure transducers installed in five of the 17 CMP wells: OW-1S, OW-2S, OW-5S, OW-5M, and OW-5D. Data from the transducers were downloaded approximately monthly during the 2015 annual period. Manual water level measurements were also collected from the 17 CMP wells on a quarterly basis.

Field activities were performed in accordance with existing standard operating procedures for the Site, which are available in the Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California (CH2M HILL 2015b).

CMP groundwater samples were analyzed by Asset Laboratories in Las Vegas, Nevada and Truesdail Laboratories, Inc. in Tustin, California, both California-certified analytical laboratories. Analytical methods, sample volumes and containers, sample preservation, and quality control sample requirements were in accordance with the PG&E Program Quality Assurance Project Plan, Revision 2 (QAPP; CH2M HILL 2012) and QAPP Addendum (CH2M HILL 2008). Moreover, data validation and management were conducted in accordance with the quality assurance and quality control requirements in the QAPP and QAPP Addendum.

3 SUMMARY OF 2015 RESULTS

This section summarizes the results of the CMP groundwater sampling activities conducted in 2015. Nine OWs and eight CWs were sampled during the 2015 annual monitoring event. Locations of the CMP groundwater monitoring well clusters are shown on Figure 2. Groundwater samples collected from these wells were analyzed for Cr(VI), chromium, specific conductance, metals, TDS, turbidity, alkalinity, ammonia, and/or major inorganic cations and anions. These results are presented in Section 3.1, and the findings from the laboratory data quality review are provided in Section 3.2. Water level measurement and field water quality parameter data are also presented herein, in Sections 3.4 and 3.5, respectively. Laboratory analytical reports and field data collection sheets for the 2015 annual monitoring event are included in Appendices A and B, respectively.

3.1 Analytical Results

Analytical results for Cr(VI), chromium, other metals, and general chemistry parameters are presented in Tables 3, 4, and 5, respectively, and are discussed below. Where applicable, these results have been compared to the water quality objectives (WQOs)/action levels that were set forth in the Compliance Monitoring Plan Addendum (CH2M HILL 2005b) and updated in the revised contingency plan flowchart submitted by PG&E on August 8, 2006 (PG&E 2006). The contingency plan and associated flowchart address groundwater quality changes potentially associated with the IM-3 injection system, and specify threshold concentrations for Cr(VI), chromium, TDS, and pH that would trigger contingency actions. The target pH range for the CMP contingency plan was updated again in 2008 with the approval of the Water Board and DTSC (Water Board 2008; DTSC 2008).

3.1.1 Hexavalent Chromium and Chromium

Table 3 summarizes the Cr(VI) and chromium analytical results for groundwater in the shallow, middle, and deep wells sampled during the 2015 annual monitoring event. These results are discussed below.

- For shallow wells:
  - Cr(VI) was reported at concentrations ranging up to 19 micrograms per liter (µg/L). The maximum detected Cr(VI) concentration was in OW-2S.
  - Chromium was reported at concentrations ranging up to 19 µg/L. The maximum detected chromium concentration was in OW-2S.
- For middle wells:
  - Cr(VI) was reported at concentrations ranging up to 6.3 µg/L. The maximum detected Cr(VI) concentration was in CW-3M.
  - Chromium was reported at concentrations ranging up to 6.0 µg/L. The maximum detected chromium concentration was in CW-3M.

- For deep wells:
  - Cr(VI) was reported at concentrations ranging up to 0.78 µg/L. The maximum detected Cr(VI) concentration was in CW-4D.
  - Chromium was not detected in deep well samples collected during the 2015 annual monitoring event.

Cr(VI) and chromium concentrations in samples collected during the 2015 annual monitoring event did not exceed the WQO trigger levels of 32 µg/L and 28 µg/L, respectively. Thus, the contingency plan was not triggered for these constituents.

3.1.2 Other Metals and General Chemistry

Other metals results for groundwater samples collected during the 2015 annual monitoring event are summarized in Table 4. Detected metals were arsenic, barium, manganese, molybdenum, selenium, vanadium, boron, calcium, total iron, potassium, magnesium, and sodium. In general, concentrations of these metals observed during the 2015 annual monitoring event were similar to those observed historically.

General chemistry results—including specific conductance, field pH, TDS, turbidity, alkalinity, ammonia, and major anions—for groundwater samples collected during the 2015 annual monitoring event are summarized in Table 5. TDS concentrations ranged from 1,300 milligrams per liter (mg/L; OW-2S) to 4,900 mg/L (CW-3M), while field pH measurements ranged from 7.04 (OW-1S) to 7.95 (CW-3D). During the 2015 annual monitoring event, analytical results for the sampled wells met the WQOs for TDS (i.e., less than 10,800 mg/L) and pH (i.e., between 6.2 and 9.2). Thus, the contingency plan was not triggered for these parameters.

3.2 Analytical Data Quality Review

The laboratory analytical data generated from the 2015 annual monitoring event were independently reviewed by project chemists to assess data quality and identify deviations from analytical requirements. The quality assurance and quality control requirements are outlined in the QAPP and QAPP Addendum (CH2M HILL 2008, 2012, respectively). A detailed discussion of data quality for CMP sampling data is presented in the data validation reports, which are maintained in the project file and available upon request.

3.2.1 Matrix Interference

Matrix interference can affect the sensitivity for Cr(VI) when using United States Environmental Protection Agency Method E218.6 and can result in elevated reporting limits. None of the associated samples exhibited matrix interference.

3.2.2 Matrix Spike Samples

Matrix spike and matrix spike duplicate recoveries are used to evaluate the effect of the sample matrix on the recovery of target analytes. A sample is fortified with a known quantity of a target analyte and is then

carried through the same preparation and analytical procedures as the samples that are not spiked. Matrix spike recoveries outside of quality control limits may indicate that the sample's matrix is affecting the method's ability to accurately quantify the target analyte in the associated samples or samples from similar locations. A low matrix spike recovery generally indicates a negative bias in the associated sample data, while a high matrix spike recovery indicates a potential positive bias in the associated sample data. If duplicate matrix spike analyses are performed, a relative percent difference greater than the quality control limit may further indicate that the sample matrix is affecting the precision of the method for the target analyte that did not meet criteria. Therefore, when the matrix spike does not meet criteria, results are usually considered estimated. Exhibit 2, below, lists the samples/analytes associated with matrix spike and/or matrix spike duplicate recoveries that did not meet quality control criteria. These results were qualified and flagged appropriately.

Exhibit 2. Matrix Spike Data Quality Review Results

Sample ID	Analyte	Result	Validation Flag	Units	Validation Reason
CW-01M-4Q15	Molybdenum, dissolved	15	J	µg/L	MS<LCL
CW-01M-4Q15	Selenium, dissolved	3	J	µg/L	MS<LCL
CW-01M-4Q15	Iron	110	J	µg/L	MS<LCL
CW-04D-4Q15	Magnesium, dissolved	7,900	J	µg/L	MS<LCL
OW-01D-4Q15	Molybdenum, dissolved	12	J	µg/L	MS<LCL, SD<LCL
OW-01D-4Q15	Selenium, dissolved	3.3	J	µg/L	MS<LCL, SD<LCL
OW-01D-4Q15	Iron	65	J	µg/L	MS<LCL, SD<LCL
CW-04D-4Q15	Boron, dissolved	1,100	J	µg/L	MS<LCL
CW-04D-4Q15	Iron, dissolved	20	UJ	µg/L	MS<LCL
OW-01D-4Q15	Cobalt, dissolved	0.5	UJ	µg/L	MS<LCL, SD<LCL
CW-04D-4Q15	Aluminum, dissolved	50	UJ	µg/L	MS<LCL
CW-01M-4Q15	Cobalt, dissolved	0.5	UJ	µg/L	MS<LCL

Notes:

J = estimated concentration;

UJ = estimated reporting limit

MS<LCL = Matrix spike recovery less than lower quality control limit.

SD<LCL = Matrix spike duplicate recovery less than lower quality control limit

3.2.3 Quantitation and Sensitivity

All method and analyte combinations met the project reporting limit objective, except for the following eight dissolved beryllium results: OW-01M-4Q15, CW-02D-4Q15, CW-02M-4Q15, CW-03D-4Q15, CW-04D-4Q15, CW-04M-4Q15, OW-070-4Q15, and CW-01D-4Q15. However, dissolved beryllium was not detected above the method detection limit.

3.2.4 Holding-time Data Qualification

All United States Environmental Protection Agency-recommended hold times were met.

3.2.5 Field Duplicates

Field duplicate samples were collected and all acceptance criteria were met.

3.2.6 Method Blanks

All method blank acceptance criteria were met.

3.2.7 Equipment Blanks

All equipment blank acceptance criteria were met.

3.2.8 Laboratory Duplicates

All laboratory duplicate acceptance criteria for the analytical methods were met.

3.2.9 Laboratory Control Sample

All laboratory control sample acceptance criteria for the analytical methods were met.

3.2.10 Calibration

Initial and continuing calibrations were performed, as required by the analytical methods. All calibration criteria were met.

3.2.11 Conclusion

Except as noted above, the analyses and data quality met the QAPP and laboratory method quality control criteria. The data are considered usable, as qualified during the data validation process, and are of adequate quantity and quality for the purpose of the CMP.

3.3 Influence of Treated Water

The influence of injection operations on aquifer water quality in the East Mesa Injection Area and vicinity is assessed through the comparison of groundwater chemistry measured in the OWs and CWs, both pre-injection (baseline) and post-injection, to chemistry of the injected water.

The subsurface injection of effluent water (treated groundwater) from the IM-3 groundwater treatment system was initiated on July 31, 2005. Since that time, PG&E has conducted routine sampling, including effluent sampling, of the IM-3 treatment system in compliance with the WDRs for the IM-3 facility, previously enforced under WDR Order No. R7-2006-0060 and currently enforced under ARARs. Analytical results from the effluent sampling are used to establish the baseline chemistry for treated water being injected into the IM-3 injection well field.

Table 6 provides selected treated water analytical results from system sampling events conducted on August 29, 2005; April 7, 2010; and October 6, 2015. As discussed in previous CMP reports, while some parameters have varying concentrations in the effluent samples, a number of constituents have demonstrated relatively consistent concentrations over the duration of injection operations—e.g., Cr(VI), chromium, fluoride, dissolved molybdenum, nitrate/nitrite as nitrogen, sulfate, and TDS (CH2M HILL 2015a). These seven constituents are used to characterize the injected water and serve as a basis for determining whether a given groundwater monitoring well is being affected by injection operations. Based on review of the August 2005 through October 2015 effluent sampling results, the injected water has the following general characteristics:

- Cr(VI): typically non-detect (or below 1.0 µg/L)
- Chromium: typically non-detect (or below 1.0 µg/L)
- Fluoride: approximately 2 mg/L
- Molybdenum: approximately 20 µg/L
- Nitrate/nitrite as nitrogen: approximately 3 mg/L
- Sulfate: approximately 500 mg/L
- TDS: approximately 4,000 mg/L.

These chemistry characteristics serve as a general basis for comparison, but should not be considered statistically representative of the effluent water quality over time.

Pre-injection conditions in the East Mesa Injection Area and vicinity were established based on the results of baseline sampling conducted for the OWs (July 27 and 28, 2005) and CWs (September 15, 2005). Analytical results for the baseline samples are presented in Table 6 and are considered representative of groundwater unaffected by injection operations. Comparison of pre-injection groundwater quality to the injected water profile shows that there are some similarities in constituent concentrations. For example, most of the baseline samples collected from deep wells (OW-1D, OW-2D, OW-5D, CW-3D, and CW-4D) contained no detectable Cr(VI) or chromium, similar to the injected water (CH2M HILL 2015a). However, other constituents are present at significantly different concentrations in the injected water versus pre-injection groundwater. Thus, when considering the entire suite of seven constituents, as shown in Table 6, it is evident that the injected water and pre-injection groundwater have distinct chemistries.

In contrast, Table 7 compares constituent concentrations in the injected water (treated groundwater) to those measured in the OWs and CWs during the most recent (2015 annual) monitoring event (i.e., more than 10 years following the initiation of injection operations). Unlike the pre-injection (July through September 2005) well monitoring results, the 2015 annual monitoring results demonstrate that water chemistry measured in a majority of the OWs and CWs either has shifted towards or been replaced by the chemistry of the injected treated water. This conclusion is supported by the concentration versus time plots presented on Figures 3A through 3E for all of the OWs and CWs. These plots, which include data from baseline through the 2015 annual monitoring event, illustrate shifts from baseline concentrations towards the injected treated water chemistry that indicate arrival of the injected water front.

In general, the following 12 wells currently display the characteristics of injected water and are considered to be representative of locations and depths where this water has largely displaced ambient groundwater:

OW-1M, OW-1D, OW-2M, OW-2D, OW-5M, OW-5D, CW-1M, CW-1D, CW-2M, CW-2D, CW-3D, and CW-4D. Three additional wells (OW-1S, CW-3M, and CW-4M) exhibit chemistries approaching that of the injected water. Moreover, slightly increasing concentrations of sulfate and TDS at OW-5S suggest the gradual arrival of the injected water front at this location. However, to date, shallow observation well OW-2S has shown little or no water quality effects due to injection operations. Concentrations of sodium, chloride, sulfate, and TDS in this well have remained relatively stable and consistent with baseline levels.

3.4 Water Level Measurements

Table 8 summarizes the manual water level measurements and calculated groundwater elevations from the quarterly well gauging events conducted in 2015. In compliance with Condition No. 2 of DTSC's 2009 conditional approval letter (DTSC 2009), confirmation was obtained from the IM-3 Plant Manager that the IM-3 system was operating normally both the day before and the day of manual water level collection, with no injection well backwashing events or unplanned shutdowns.

In addition to the manual water level measurements, water level data were collected continuously (with readings recorded every 30 minutes) using pressure transducers deployed in select wells: OW-1S, OW-2S, OW-5S, OW-5M, and OW-5D. Hydrographs produced using the transducer data are presented on Figures 4A through 4C, and illustrate groundwater elevation trends and vertical hydraulic gradients observed over the 2015 annual period for specific OWs.

Figures 5A (May 14, 2015) and 6A (October 27, 2015) show groundwater elevations for the three shallow wells, and the shallow zone water level elevations are not contoured due to an insufficient number of wells to satisfactorily illustrate a groundwater potentiometric surface under injection conditions. Groundwater elevation maps for the middle and deep wells are provided as Figures 5B and 6B, and Figures 5C and 6C, respectively. The data that were plotted and/or used for contouring were the May 14, 2015 (second quarter, Figure 5 series) and October 27, 2015 (fourth quarter, Figure 6 series) manual water level measurements collected within a 1-hour period. As shown on Figure 2, the IM-3 injection well field is located in the uplands (East Mesa) area of the Site. Based on site-wide groundwater elevation data, regional groundwater flow in the uplands portion of the Site is generally to the east/northeast (CH2M HILL 2015b). On a local scale, as shown on Figures 5B, 5C, 6B, and 6C, injections of treated water have resulted in a potentiometric mound in the middle and deep zones centered on the active IM-3 injections wells. Consistent with previous observations, the potentiometric mound is elliptical in shape, with the major axis running from approximately southwest to northeast (CH2M HILL 2015a). The potentiometric mound appears to be stable at a height of approximately 1 foot or less above the surrounding water level (based on the May 14, 2015 manual water level measurements [see Figures 5B and 5C] and October 27, 2015 manual water level measurements [see Figures 5B and 5C]), which is consistent with the information provided in previous CMP reports (CH2M HILL 2015a). Groundwater elevation maps for both the second and fourth quarters of 2015 are provided herein for consistency with historical reporting practice. However, because the potentiometric mounding associated with injection operations has been stable with no significant variation due to seasonal water level fluctuations, PG&E proposes to eliminate redundant groundwater elevation maps from future CMP reports. Quarterly water level data will continue to be provided in tabular format, and a single set of groundwater elevation maps will be generated based on the fourth quarter manual water level measurements.

Table 9 summarizes the vertical gradients calculated using the October 27, 2015 manual groundwater elevation data. As shown in Table 9, and consistent with previous observations, upward vertical gradients have been observed at each well cluster, as well as between depth intervals (i.e., deep to middle and middle to shallow) in a given well cluster. Calculated vertical gradients were generally of the same order of magnitude between well clusters or between the different depth intervals, indicating that the vertical gradient is similar throughout the injection area. Vertical gradient values were slightly higher for the OW-1 and OW-2 clusters (between the middle and shallow zones), which could be due to their close proximity to the injection wells. Because the injection wells are screened in the deeper portions of the aquifer, the head increase resulting from the injection of treated groundwater is typically greater in the deep and middle zones compared to the shallow zone (CH2M HILL 2015a).

3.5 Field Parameter Data

Water level was measured at each well prior to purging and sampling. In addition, water quality parameters, including specific conductance, temperature, pH, oxidation reduction potential, dissolved oxygen, and turbidity, were measured during purging using a field water quality instrument and flow-through cell to determine sufficient well purging. Field water quality data collected during the 2015 annual monitoring event are summarized in Table 10. Field data collection sheets for the 2015 annual monitoring event are provided in Appendix B.

3.6 ARAR Monitoring Requirements

Table 11 identifies the laboratory that performed each analysis and lists the following information for the 2015 annual monitoring event, as required by the ARARs:

- Sample location
- Sample identification number
- Sampler name
- Sample date
- Sample time
- Laboratory performing analysis
- Analysis method
- Parameter
- Analysis date
- Laboratory technician
- Result unit
- Sample result
- Reporting limit
- Method detection limit.

4 STATUS OF MONITORING ACTIVITIES

The next annual CMP monitoring event will occur in October 2016. The groundwater monitoring report for this event will be submitted by January 15, 2017.

5 REFERENCES

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Water Board. 2008. Letter to PG&E. Revision of Monitoring and Reporting Program (MRP), Board Order No. R7-2006-0060 Revision 1, Topock Compressor Station, San Bernardino County. August 28.

6 CERTIFICATION

PG&E submitted a signature delegation letter to the DOI and the Water Board on February 27, 2013 (PG&E 2013). The letter delegated PG&E signature authority to Ms. Sheryl Bilbrey, Ms. Yvonne Meeks, and Mr. Curt Russell for correspondence regarding required ARARs.

Certification Statement:

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Signature: 

Name: Yvonne J. Meeks

Company: Pacific Gas and Electric Company

Title: Topock Environmental Remediation Project Manager

Date: January 15, 2016

TABLES

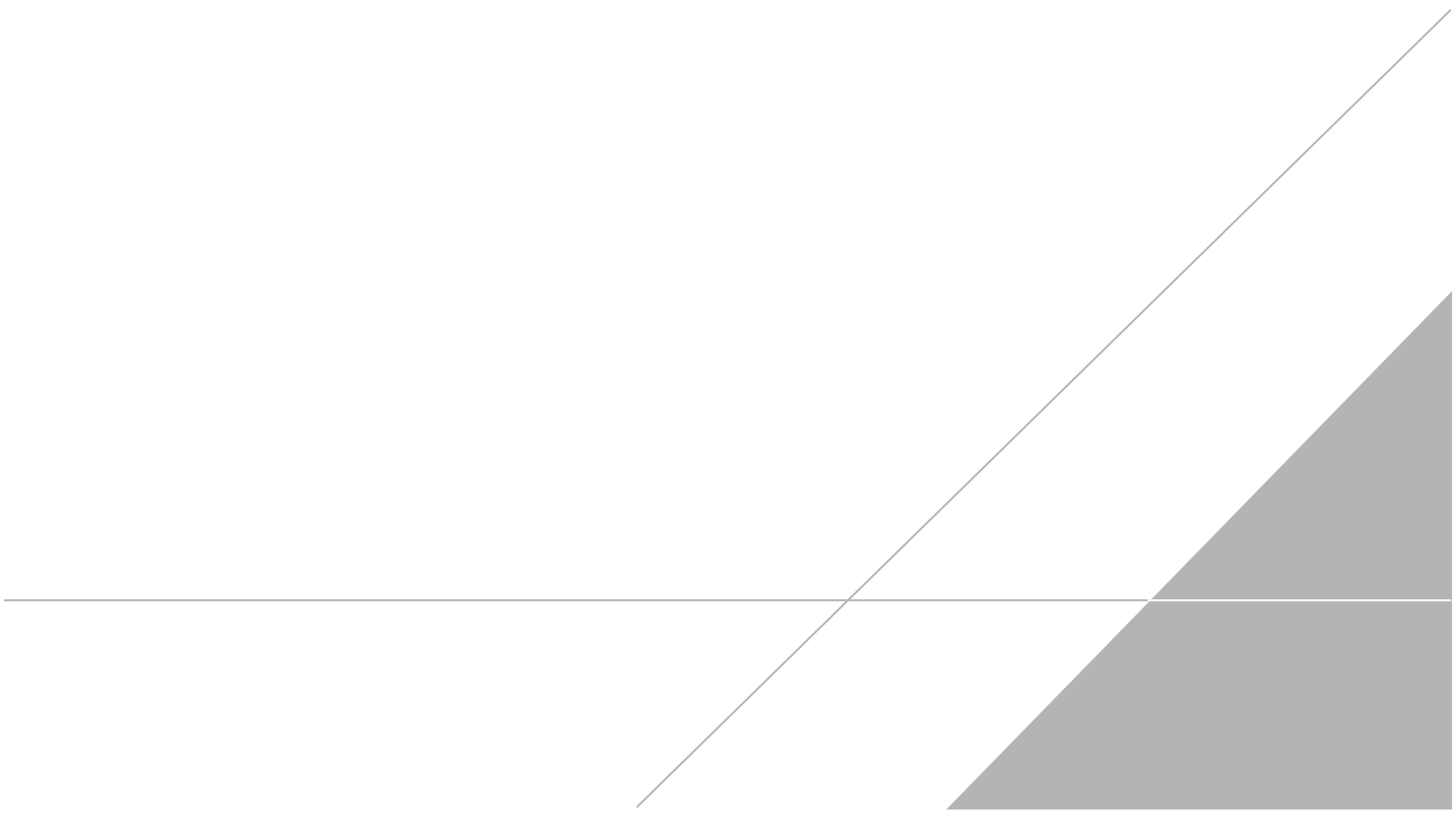

Table 1

Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2015

PG&E Topock Compliance Monitoring Program

Time Period	Injection Status
July 31, 2005 to Fourth Quarter 2005	Injection occurred at IW-2.
First Quarter 2006	Injection occurred primarily at IW-2 except during intervals of operational testing, when injection was divided equally between IW-2 and IW-3.
Second Quarter 2006	Injection occurred at IW-2.
Third Quarter 2006	In August 2006, IW-2 went offline for routine maintenance, and injection commenced at IW-3.
Fourth Quarter 2006	Injection occurred at IW-3, except during routine maintenance.
First Quarter 2007	Injection occurred at IW-3 and transitioned over to IW-2 on March 8.
Second Quarter 2007	Injection occurred at IW-3 from April 3 through June 20. Injection switched to IW-2 on June 20 and continued through July 20, 2007.
Third Quarter 2007	Injection occurred at IW-3 after July 20. Injection occurred at IW-2 on August 30 for an injection test and then returned to IW-3 after August 31.
Fourth Quarter 2007	Injection occurred at IW-3 and then switched to IW-2 on September 25 for routine maintenance. Injection returned to IW-3 after October 9.
First Quarter 2008	Injection occurred at IW-3 only. From February 5 through February 13, well maintenance activities were conducted at IW-2.
Second Quarter 2008	Injection occurred at IW-3 only. IM-3 system offline from April 21 through April 28 due to routine maintenance. Backwashing was performed at IW-3 on April 9, May 7, May 15, May 22, June 3, and June 4, 2008.
Third Quarter 2008	Injection occurred primarily at IW-3. Injection also occurred at IW-2 for short interval on July 25 and from August 12 - August 31, 2008. Backwashing was performed at IW-3 on June 17, June 27, July 9, July 15, July 17, July 18, August 12, August 13, September 2, and September 3, 2008. Backwashing was performed at IW-2 on September 9 - September 11, 2008.
Fourth Quarter 2008	Injection occurred at IW-3 and then switched to IW-2 on September 23. Injection returned to IW-3 on October 7 and switched back to IW-2 on October 21. Injection primarily occurred at IW-2 until November 11 when it switched to IW-3 until December 3, 2008. Injection continued at IW-2 until December 16, 2008 and occurred concurrently and continued at IW-3 on December 11, 2008.
First Quarter 2009	Injection switched to IW-2 on December 30, 2008. On January 13, 2009 injection transitioned to IW-3. Backwashing events were performed periodically during the intervals when each injection well was offline. Routine and scheduled maintenance occurred December 18, 2008 and January 21, 2009 at which time both wells were offline.
Second Quarter 2009	Injection continued at IW-3 until April 20, 2009. Injection ceased from April 20, 2009 to April 27, 2009 due to routine maintenance after which injection continued at IW-3 until May 26, 2009 when it transitioned to IW-2. Injection continued at IW-2 until June 9, 2009 when it switched to IW-3. Injection returned to IW-2 on June 24, 2009.
Third Quarter 2009	IM-3 injection alternates between the two wells approximately every two weeks. Injection continued at IW-2 until July 8, when it transitioned to IW-3. Injection ceased from July 23 to 27, 2009 when it continued at IW-3 until September 9, 2009. Unplanned downtime occurred from September 9 - 14, 2009. On September 16, 2009 injection continued at IW-2, except during times of routine maintenance or otherwise mentioned.
Fourth Quarter 2009	Injection occurred at IW-2 until November 25, 2009 when it switched to IW-3. Injection continued at IW-3, except during times of routine maintenance.
First Half 2010	Injection occurred mainly at IW-3 until March 3, 2010. Beginning March 3, 2010, IM-3 injection alternated between the two wells approximately every two weeks until April 20, 2010 for a planned shutdown. On April 22, 2010, injection resumed at IW-3 and alternated between the two wells approximately every two weeks. Backwashing was performed periodically during the intervals when each injection well was offline.
Second Half 2010	Injection occurred primarily at IW-2 with the exception of the following periods when it primarily occurred at IW-3: July 22 - August 25, August 30 - September 7, September 16 - October 15, November 5 - 18, and December 17 - 31, 2010.
First Half 2011	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: January 27 - February 10, February 23 - March 7, March 30 - April 20, May 6 - June 7, and June 22 - 28, 2011. Backwashing was performed periodically during the intervals when each injection well was offline. A planned shutdown occurred April 25 - 29 and June 28 - 30.

Table 1

Operational Status of Interim Measures No. 3 Injection Wells From July 2005 through December 2015

PG&E Topock Compliance Monitoring Program

Time Period	Injection Status
Second Half 2011	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: July 14 through August 3, August 10 through 13, September 11 through 22, October 6 through10; and October 27 through December 31. Backwashing was performed periodically during the intervals when each injection well was offline.
First Half 2012	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: January 1 through January 6, 2012; February 2 through February 16, 2012; March 2 through April 5, 2012; May 10 through May 21, 2012; May 29 through June 1, 2012; June 14, 2012; and June 21 through June 27, 2012.
Second Half 2012	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: July 18 through July 25, 2012; August 1 through August 13, 2012; August 17 through August 22, 2012; August 31 through September 26, 2012; and September 29 through October 9, 2012.
First Half 2013	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: March 5 through March 14, 2013; April 8 through May 22, 2013; June 24 through June 25, 2013; and June 29 through June 30, 2013.
Second Half 2013	Injection occurred primarily at IW-3 with the exception of the following periods when it primarily occurred at IW-2: July 1 - 9, 2013; July 31 through August 12, 2013; October 22 through November 6, 2013; November 26 through December 12, 2013; and December 28 - 31, 2013.
First Half 2014	Injection occurred primarily at IW-2 with the exception of the following periods when it primarily occurred at IW-3: January 6, 2014; January 16 through January 29, 2014; April 17 through 23, 2014; and May 10 through June 22, 2014, and June 25, 2014.
Second Half 2014	Injection occurred primarily at IW-2 with the exception of the following periods when it primarily occurred at IW-3: July 21 - 30, 2014; September 23 - 25, 2014; and November 19 - 24, 2014.
First Half 2015	Injection occurred primarily at IW-3 with the exception of the following periods when it occurred primarily at IW-2: January 1 - 14, 2015; March 5 - 31, 2015; April 7 and 8, 2015; June 11, 2015; and June 26, 2015. The system was shut down from April 28, 2015 to May 4, 2015 for scheduled semiannual facility maintenance.
Second Half 2015	Injection occurred primarily at IW-2 with the exception of the following periods when it occurred primarily at IW-3: July 1 - 19, 2015; August 31 - September 1, 2015; and September 26 - October 13, 2015.

Table 2

Well Construction and Sampling Summary for Groundwater Samples, 2015

PG&E Topock Compliance Monitoring Program

Well ID	Site Area	Measuring Point Elevation (feet amsl)	Screen Interval (feet bgs)	Well casing (inches)	Depth to Water (feet btoc)	Sampling System	Typical Purge Rate (gpm)	Typical Purge Volume (gallons)	Pump Depth (feet bgs)	Transducer Status
IM Compliance Wells										
CW-01M	East Mesa	566.07	140 - 190	2 (PVC)	108.99	Temp Redi-Flo AR	2	42	165.0	
CW-01D	East Mesa	566.46	250 - 300	2 (PVC)	109.10	Temp Redi-Flo AR	3	98	180.0	
CW-02M	East Mesa	549.45	152 - 202	2 (PVC)	92.59	Temp Redi-Flo AR	2	56	195.0	
CW-02D	East Mesa	549.43	285 - 335	2 (PVC)	92.17	Temp Redi-Flo AR	3	134	159.0	
CW-03M	East Mesa	534.10	172 - 222	2 (PVC)	77.44	Temp Redi-Flo AR	2	74	180.0	
CW-03D	East Mesa	534.14	270 - 320	2 (PVC)	76.86	Temp Redi-Flo AR	3	134	143.0	
CW-04M	East Mesa	518.55	119.5 - 169.5	2 (PVC)	61.43	Temp Redi-Flo AR	2	56	160.0	
CW-04D	East Mesa	518.55	233 - 283	2 (PVC)	61.29	Temp Redi-Flo AR	3	124	134.0	
IM Observation Wells										
OW-01S	East Mesa	550.21	83.5 - 113.5	2 (PVC)	93.43	Temp Redi-Flo AR	1	10.2	100.0	Active
OW-01M	East Mesa	550.36	165 - 185	2 (PVC)	92.99	Temp Redi-Flo AR	3	48	109.6	
OW-01D	East Mesa	550.36	257 - 277	2 (PVC)	92.66	Temp Redi-Flo AR	3	94	111.4	
OW-02S	East Mesa	548.88	71 - 101	2 (PVC)	92.09	Temp Redi-Flo AR	1	15	100.0	Active
OW-02M	East Mesa	548.52	190 - 210	2 (PVC)	90.92	Temp Redi-Flo AR	2	61	111.4	
OW-02D	East Mesa	549.01	310 - 330	2 (PVC)	91.02	Temp Redi-Flo AR	2	127	110.3	
OW-05S	East Mesa	551.83	70 - 110	2 (PVC)	94.92	Temp Redi-Flo AR	1	8	100.0	Active
OW-05M	East Mesa	551.81	210 - 250	2 (PVC)	94.31	Temp Redi-Flo AR	2	80	112.5	Active
OW-05D	East Mesa	552.41	300 - 320	2 (PVC)	94.88	Temp Redi-Flo AR	3	131	113.2	Active

Notes:
amsl = above mean sea level
bgs = below ground surface
btoc = below top of casing
gpm = gallons per minute
PVC = polyvinyl chloride
Temp Redi-Flo AR = temporary adjustable-rate electric submersible pump

Depth to water for each well was collected on October 27, 2015.
All wells were purged and sampled using 3 well-volume method.

Table 3
Chromium Results for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

			Method:	EPA 218.6	EPA 200.8
Location ID	**Sample Date**			**Hexavalent Chromium (µg/L)**	**Chromium (µg/L)**
CW-01M	10/29/2015			0.96	ND (1.0)
CW-01D	10/29/2015			0.38	ND (1.0)
CW-02M	10/28/2015			2.2	1.7
CW-02D	10/28/2015			0.50	ND (1.0)
CW-03M	10/28/2015			6.3	6.0
CW-03M	10/28/2015	(FD)		6.2	5.9
CW-03D	10/28/2015			0.59	ND (1.0)
CW-04M	10/28/2015			3.2	2.8
CW-04D	10/28/2015			0.78	ND (1.0)
OW-01S	10/26/2015			8.2	8.4
OW-01M	10/27/2015			1.2	ND (1.0)
OW-01D	10/27/2015			0.47	ND (1.0)
OW-02S	10/27/2015			19	19
OW-02S	10/27/2015	(FD)		19	19
OW-02M	10/27/2015			1.0	ND (1.0)
OW-02D	10/27/2015			0.43	ND (1.0)
OW-05S	10/28/2015			16	15
OW-05M	10/27/2015			0.55	1.1
OW-05D	10/27/2015			0.42	ND (1.0)

Notes:
µg/L = micrograms per liter
FD = field duplicate
ND = parameter not detected at the listed reporting limit

Hexavalent chromium and chromium samples are field filtered.

Table 4
Metals Results for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Method:		Dissolved USEPA 200.7, 200.8, 245.1, 6010B/6020																						
Location ID	**Sample Date**	**Aluminum**	**Antimony**	**Arsenic**	**Barium**	**Beryllium**	**Cadmium**	**Cobalt**	**Copper**	**Lead**	**Manganese**	**Mercury**	**Molybdenum**	**Nickel**	**Selenium**	**Silver**	**Thallium**	**Vanadium**	**Zinc**	**Boron**	**Calcium**	**Iron, total**	**Iron, dissolved**	**Potassium**	**Magnesium**	**Sodium**
		µg/L																		mg/L						
CW-01M	10/29/2015	ND (50)	ND (0.5)	1.1	81	ND (0.5)	ND (0.5)	ND (0.5 UJ)	ND (1.0)	ND (1.0)	0.54	ND (0.2)	15 J	ND (1.0)	3.0 J	ND (0.5)	ND (0.5)	2.3	ND (10)	1.0	180	0.110 J	ND (0.02)	13	13	1400
CW-01D	10/29/2015	ND (50)	ND (0.5)	1.1	19	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.2)	17	ND (1.0)	2.8	ND (0.5)	ND (0.5)	2.1	ND (10)	0.93	160	0.027	ND (0.02)	12	13	1300
CW-02M	10/28/2015	ND (50)	ND (0.5)	1.7	64	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	0.73	ND (0.2)	14	ND (1.0)	2.6	ND (0.5)	ND (0.5)	3.3	ND (10)	1.1	150	0.031	ND (0.02)	12	8.5	1400
CW-02D	10/28/2015	ND (50)	ND (0.5)	2.8	13	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	1.0	ND (0.2)	12	ND (1.0)	3.0	ND (0.5)	ND (0.5)	3.8	ND (10)	0.95	94	0.046	ND (0.02)	11	3.9	1500
CW-03M	10/28/2015	ND (50)	ND (0.5)	1.0	42	ND (0.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	0.76	ND (0.2)	21	ND (1.0)	1.5	ND (0.5)	ND (0.5)	2.3	ND (10)	1.1	210	0.071	ND (0.02)	14	12	1600
CW-03M	10/28/2015 (FD)	ND (50)	ND (0.5)	0.98	43	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	0.56	ND (0.2)	21	ND (1.0)	1.6	ND (0.5)	ND (0.5)	2.4	ND (10)	1.1	210	0.086	ND (0.02)	14	13	1600
CW-03D	10/28/2015	ND (50)	ND (0.5)	1.3	15	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	1.0	ND (0.2)	13	ND (1.0)	3.0	ND (0.5)	ND (0.5)	2.4	ND (10)	1.1	93	0.033	ND (0.02)	11	5.0	1500
CW-04M	10/28/2015	ND (50)	ND (0.5)	1.9	96	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.2)	8.7	ND (1.0)	2.4	ND (0.5)	ND (0.5)	3.1	ND (10)	0.93	210	0.036	ND (0.02)	13	13	1200
CW-04D	10/28/2015	ND (50 UJ)	ND (0.5)	2.7	18	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	0.78	ND (0.2)	17	ND (1.0)	2.9	ND (0.5)	ND (0.5)	3.0	ND (10)	1.1 J	150	0.063	ND (0.02 UJ)	13	7.9 J	1500
OW-01S	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	7.4	--	--	--	--	--	--	--	--	--	--	--	--	720
OW-01M	10/27/2015	ND (50)	ND (0.5)	1.6	62	ND (2.5)	ND (0.5)	ND (0.5)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.2)	11	ND (1.0)	2.7	ND (0.5)	ND (0.5)	2.8	ND (10)	0.98	140	0.037	ND (0.02)	13	20	1400
OW-01D	10/27/2015	ND (50)	ND (0.5)	1.1	27	ND (0.5)	ND (0.5)	ND (0.5 UJ)	ND (1.0)	ND (1.0)	ND (0.5)	ND (0.2)	12 J	ND (1.0)	3.3 J	ND (0.5)	ND (0.5)	2.6	ND (10)	1.1	160	0.065 J	ND (0.02)	13	14	1500
OW-02S	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	30	--	--	--	--	--	--	--	--	--	--	--	--	420
OW-02S	10/27/2015 (FD)	--	--	--	--	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--	--	--	--	--	430
OW-02M	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--	--	--	--	--	1400
OW-02D	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	25	--	--	--	--	--	--	--	--	--	--	--	--	1300
OW-05S	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--	500
OW-05M	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	19	--	--	--	--	--	--	--	--	--	--	--	--	1300
OW-05D	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	1300

Notes:
-- = data not collected or available
µg/L = micrograms per liter
FD = field duplicate
J = concentration estimated by laboratory or data validation
mg/L = milligrams per liter
ND = parameter not detected at the listed reporting limit
UJ = reporting limit estimated by laboratory or data validation
USEPA = United States Environmental Protection Agency

Table 5
Other Inorganics Results for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

		Method:	EPA 120.1	Field	SM2540C	SM2130B	EPA 300.0	EPA 300.0	EPA 300.0	SM4500-NO3F	SM2320B	SM4500-NH3C
Location ID	**Sample Date**		**Specific Conductance (µmhos/cm)**	**pH (pH units)**	**Total Dissolved Solids (mg/L)**	**Turbidity (NTU)**	**Chloride (mg/L)**	**Fluoride (mg/L)**	**Sulfate (mg/L)**	**Nitrate/Nitrite as Nitrogen (mg/L)**	**Alkalinity, total as $CaCO_3$ (mg/L)**	**Ammonia as Nitrogen (mg/L)**
CW-01M	10/29/2015		7300	7.55	4200	1.6	2000	1.9	460	2.8	69	ND (0.05)
CW-01D	10/29/2015		7000	7.58	4100	0.27	1900	2.1	450	2.7	65	ND (0.05)
CW-02M	10/28/2015		7200	7.73	4500	0.37	1900	2.5	480	2.8	49	ND (0.05)
CW-02D	10/28/2015		7300	7.93	4300	0.31	2000	1.7	460	2.8	51	ND (0.05)
CW-03M	10/28/2015		8000	7.60	4900	1.3	2300	2.7	460	2.0	47	ND (0.05)
CW-03M	10/28/2015	(FD)	8200	--	4800	1.4	2400	2.6	460	2.1	47	ND (0.05)
CW-03D	10/28/2015		7300	7.95	4400	0.29	2000	2.5	470	2.9	54	ND (0.05)
CW-04M	10/28/2015		7000	7.56	4200	0.49	1900	1.4	440	2.8	52	ND (0.05)
CW-04D	10/28/2015		7200	7.74	4300	0.45	2000	2.6	470	2.8	53	ND (0.05)
OW-01S	10/26/2015		5800	7.04	3800	1.2	1500	1.3	330	3.0	--	--
OW-01M	10/27/2015		6700	7.41	4100	0.29	2000	1.6	450	2.7	110	ND (0.05)
OW-01D	10/27/2015		6900	7.49	4300	0.97	2000	1.8	450	2.7	89	ND (0.05)
OW-02S	10/27/2015		2300	7.78	1300	3.6	610	3.3	97	3.3	74	--
OW-02S	10/27/2015	(FD)	2300	--	1300	5.5	610	3.4	100	3.3	71	--
OW-02M	10/27/2015		6700	7.46	4100	0.33	1900	1.8	450	2.7	89	--
OW-02D	10/27/2015		6600	7.58	4100	0.23	2000	2.2	460	2.6	45	--
OW-05S	10/28/2015		4100	7.37	2900	0.65	1200	1.3	210	2.8	--	--
OW-05M	10/27/2015		6900	7.62	4000	3.8	1900	1.7	450	2.6	78	--
OW-05D	10/27/2015		6900	7.71	4000	0.24	2000	1.8	450	2.5	67	--

Notes:
-- = data not collected or available
µmhos/cm = micro-mhos per centimeter
FD = field duplicate
mg/L = milligrams per liter
ND = parameter not detected at the listed reporting limit
NTU = Nephelometric Turbidity Unit

Table 6
Treated Water Quality Compared to OW and CW Pre-injection Water Quality
PG&E Topock Compliance Monitoring Program

Location ID	Sample Date		Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	8/29/2005		ND (1.0)	ND (2.1)	1.95	8.3	3.70	450	3620
Treated Water	4/7/2010		0.29	ND (1.0)	1.82	18.6	2.87	512	4270
Treated Water	10/6/2015		0.24	ND (1.0)	2.10	21.0	2.60	480	4200
OW-01S	7/28/2005		18.7	18.8 J	2.45	15.7	3.20	114	1320
OW-01S	7/28/2005	(FD)	19.4	23.5 J	2.44	17.2	3.15	114	1260
OW-01M	7/27/2005		16.3	18.9	2.31	27	1.01	311	3450 J
OW-01D	7/27/2005		ND (1.0)	ND (1.3)	1.14	46.1	0.321	441	6170 J
OW-02S	7/28/2005		15.3	14.8	3.79	35.6	3.81	126	1090
OW-02M	7/28/2005		5.4	5.7	2.19	32.4	0.735	342	4380
OW-02D	7/28/2005		ND (1.0)	ND (1.2)	0.966	51.2	ND (0.1)	616	9550
OW-05S	7/28/2005		23.4	25.6	2.30	17.1	3.55	105	1060
OW-05M	7/28/2005		8.6 J	8.8	2.74	35.4	0.621	417	5550
OW-05D	7/28/2005		ND (1.0)	ND (1.2)	1.11	57	0.151	480	8970
CW-01M	9/15/2005		18.1	17.8	2.34	21.6	1.11	318	2990
CW-01D	9/15/2005		ND (1.0)	1.6	0.951	32.1	0.972	379	6230
CW-02M	9/15/2005		15.6	15.5	2.30	23.1	0.908	342	3500
CW-02M	9/15/2005	(FD)	15.8	14.7	2.30	21.1	0.96	341	3440
CW-02D	9/15/2005		ND (1.0)	1.6	0.982	41.6	0.28	601	8770
CW-03M	9/16/2005		8.8	8.1	2.57	24.2	0.642	464	4740
CW-03D	9/16/2005		ND (1.0)	ND (1.0)	1.40	29.2	0.304	672	9550
CW-04M	9/13/2005		19.2	19	1.50	12.3	1.18	240	3310
CW-04D	9/13/2005		ND (1.0)	ND (1.0)	1.01	26	0.188	534	7470

Notes:
µg/L = micrograms per liter
FD = field duplicate
J = concentration estimated by laboratory or data validation
mg/L = milligrams per liter
ND = parameter not detected at the listed reporting limit

Table 7
Treated Water Quality Compared to 2015 Annual Monitoring Event Water Quality
PG&E Topock Compliance Monitoring Program

Location ID	Sample Date		Hexavalent Chromium (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Dissolved Molybdenum (µg/L)	Nitrate/Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Treated Water	10/1/2013		ND (0.2)	ND (1.0)	2.10	23.5	2.92	512	4410
Treated Water	10/7/2014		ND (0.2)	ND (1.0)	1.48	20.8	2.69	497	4440
Treated Water	10/6/2015		0.24	ND (1.0)	2.10	21.0	2.60	480	4200
OW-01S	10/26/2015		8.2	8.4	1.3	7.4	3.0	330	3800
OW-01M	10/27/2015		1.2	ND (1.0)	1.6	11	2.7	450	4100
OW-01D	10/27/2015		0.47	ND (1.0)	1.8	12 J	2.7	450	4300
OW-02S	10/27/2015		19	19	3.3	30	3.3	97	1300
OW-02S	10/27/2015	(FD)	19	19	3.4	32	3.3	100	1300
OW-02M	10/27/2015		1.0	ND (1.0)	1.8	18	2.7	450	4100
OW-02D	10/27/2015		0.43	ND (1.0)	2.2	25	2.6	460	4100
OW-05S	10/28/2015		16	15	1.3	12	2.8	210	2900
OW-05M	10/27/2015		0.55	1.1	1.7	19	2.6	450	4000
OW-05D	10/27/2015		0.42	ND (1.0)	1.8	20	2.5	450	4000
CW-01M	10/29/2015		0.96	ND (1.0)	1.9	15 J	2.8	460	4200
CW-01D	10/29/2015		0.38	ND (1.0)	2.1	17	2.7	450	4100
CW-02M	10/28/2015		2.2	1.7	2.5	14	2.8	480	4500
CW-02D	10/28/2015		0.50	ND (1.0)	1.7	12	2.8	460	4300
CW-03M	10/28/2015		6.3	6.0	2.7	21	2.0	460	4900
CW-03M	10/28/2015	(FD)	6.2	5.9	2.6	21	2.1	460	4800
CW-03D	10/28/2015		0.59	ND (1.0)	2.5	13	2.9	470	4400
CW-04M	10/28/2015		3.2	2.8	1.4	8.7	2.8	440	4200
CW-04D	10/28/2015		0.78	ND (1.0)	2.6	17	2.8	470	4300

Notes:
µg/L = micrograms per liter
FD = field duplicate
J = concentration estimated by laboratory or data validation
mg/L = milligrams per liter
ND = parameter not detected at the listed reporting limit

Table 8
Manual Water Level Measurements and Elevations, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet btoc)	Salinity (%)	Groundwater / Water Elevation Adjusted for Salinity and Temperature (feet amsl)
CW-01M	190.0	566.07	2/10/2015	10:33	109.94	0.50	456.07
			5/14/2015	9:28	108.42	0.50	457.59
			7/14/2015	7:50	108.67	0.50	457.34
			10/27/2015	8:04	108.99	0.50	457.08
CW-01D	300.2	566.46	2/10/2015	10:35	109.99	0.50	456.36
			5/14/2015	9:31	108.66	0.50	457.69
			7/14/2015	7:53	108.83	0.50	457.52
			10/27/2015	8:06	109.10	0.49	457.34
CW-02M	208.3	549.45	2/10/2015	10:40	93.50	0.50	455.87
			5/14/2015	9:35	91.94	0.50	457.42
			7/14/2015	7:57	92.22	0.50	457.14
			10/27/2015	8:15	92.59	0.49	456.82
CW-02D	355.0	549.43	2/10/2015	10:43	93.02	0.50	456.18
			5/14/2015	9:37	91.65	0.50	457.55
			7/14/2015	8:00	91.82	0.50	457.38
			10/27/2015	8:18	92.17	0.48	457.13
CW-03M	222.0	534.10	2/10/2015	10:47	78.32	0.58	455.76
			5/14/2015	9:41	76.78	0.58	457.30
			7/14/2015	8:04	77.04	0.58	457.04
			10/27/2015	8:12	77.44	0.56	456.69
CW-03D	340.0	534.14	2/10/2015	10:49	77.66	0.50	456.24
			5/14/2015	9:43	76.29	0.50	457.61
			7/14/2015	8:06	76.48	0.50	457.42
			10/27/2015	8:10	76.86	0.49	457.14
CW-04M	169.8	518.55	2/10/2015	10:55	62.24	0.49	456.23
			5/14/2015	9:51	60.74	0.49	457.73
			7/14/2015	8:15	60.96	0.49	457.51
			10/27/2015	7:57	61.43	0.47	457.07
CW-04D	303.0	518.55	2/10/2015	10:57	62.04	0.50	456.29
			5/14/2015	9:53	60.70	0.50	457.63
			7/14/2015	8:17	60.86	0.50	457.47
			10/27/2015	7:55	61.29	0.49	457.14
OW-01S	113.5	550.21	2/10/2015	11:03	94.44	0.42	455.75
			5/14/2015	10:01	92.85	0.42	457.34
			7/14/2015	8:25	93.13	0.42	457.05
			10/27/2015	8:22	93.43	0.25	456.74
OW-01M	185.8	550.36	2/10/2015	11:06	94.17	0.49	456.11
			5/14/2015	10:04	92.64	0.49	457.64
			7/14/2015	8:29	92.92	0.49	457.36
			10/27/2015	8:24	92.99	0.48	457.37
OW-01D	277.3	550.36	2/10/2015	11:08	93.78	0.50	456.44
			5/14/2015	10:06	92.47	0.50	457.75
			7/14/2015	8:31	92.70	0.50	457.52
			10/27/2015	8:26	92.66	0.48	457.71
OW-02S	103.6	548.88	2/10/2015	11:11	93.07	0.16	455.78
			5/14/2015	10:09	91.46	0.16	457.39
			7/14/2015	8:36	91.78	0.16	457.06
			10/27/2015	8:29	92.09	0.18	456.76
OW-02M	210.3	548.52	2/10/2015	11:13	92.30	0.49	456.11
			5/14/2015	10:11	90.80	0.49	457.61
			7/14/2015	8:39	91.09	0.49	457.32
			10/27/2015	8:31	90.92	0.50	457.62

Table 8
Manual Water Level Measurements and Elevations, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Well Depth (feet btoc)	Measuring Point Elevation (feet amsl)	Monitoring Date & Time		Water Level Measurement (feet btoc)	Salinity (%)	Groundwater / Water Elevation Adjusted for Salinity and Temperature (feet amsl)
OW-02D	340.0	549.01	2/10/2015	11:16	92.38	0.49	456.39
			5/14/2015	10:14	91.06	0.49	457.71
			7/14/2015	8:42	91.28	0.49	457.49
			10/27/2015	8:33	91.02	0.48	457.92
OW-05S	110.3	551.83	2/10/2015	11:19	95.90	0.37	455.92
			5/14/2015	10:18	94.35	0.37	457.45
			7/14/2015	8:47	94.62	0.37	457.18
			10/27/2015	8:40	94.92	0.33	456.89
OW-05M	250.3	551.81	2/10/2015	11:21	94.66	0.49	457.11
			5/14/2015	10:20	93.25	0.49	458.54
			7/14/2015	8:51	93.55	0.49	458.14
			10/27/2015	8:38	94.31	0.48	457.48
OW-05D	350.0	552.41	2/10/2015	11:23	95.50	0.49	456.85
			5/14/2015	10:22	94.32	0.49	458.06
			7/14/2015	8:55	94.49	0.49	457.69
			10/27/2015	8:36	94.88	0.48	457.50

Notes:
% = percent
amsl = above mean sea level
btoc = below top of casing
Salinity and temperature data used to adjust water level to freshwater equivalent.

Table 9

Vertical Gradients within the OW and CW Clusters, 2015

PG&E Topock Compliance Monitoring Program

Well Pairs	Vertical Gradient[(a)] (foot/foot)
CW-01D to CW-01M	0.0024
CW-02D to CW-02M	0.0024
CW-03D to CW-03M	0.0046
CW-04D to CW-04M	0.0006
OW-01M to OW-01S	0.0081
OW-01D to OW-01M	0.0037
OW-02M to OW-02S	0.0074
OW-02D to OW-02M	0.0025
OW-05M to OW-05S	0.0042

Notes:

[(a)]Positive value signifies an upward gradient.

Gradients calculated using October 27, 2015 groundwater elevation data.

CW = compliance well

OW = observation well

Table 10

Field Parameters and Manual Water Level Measurements for Groundwater Samples, 2015

PG&E Topock Compliance Monitoring Program

Location ID	Sample Date	Specific Conductance (µS/cm)	Temperature (°C)	pH (pH units)	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Salinity (%)	Depth to Water (feet btoc)
CW-01M	10/29/2015	8141	29.1	7.55	57.7	6.60	6	0.53	108.93
CW-01D	10/29/2015	7885	28.8	7.58	73.3	6.07	2	0.51	109.04
CW-02M	10/28/2015	8223	30.1	7.73	33.6	7.09	3	0.53	93.43
CW-02D	10/28/2015	8343	30.3	7.93	21.6	7.14	2	0.54	92.04
CW-03M	10/28/2015	9366	30.1	7.60	25.1	4.53	4	0.61	77.42
CW-03D	10/28/2015	8324	30.6	7.95	30.6	6.85	2	0.54	76.84
CW-04M	10/28/2015	8005	29.8	7.56	50.1	7.94	4	0.52	61.41
CW-04D	10/28/2015	8296	30.3	7.74	53.6	6.9	2	0.54	61.27
OW-01S	10/26/2015	5757	29.3	7.04	56.3	7.15	3	0.37	93.29
OW-01M	10/27/2015	7672	27.9	7.41	48.9	7.41	1	0.50	92.91
OW-01D	10/27/2015	7758	27.6	7.49	37.6	7.34	4	0.50	92.93
OW-02S	10/27/2015	2580	29.6	7.78	40.1	8.83	3	0.17	91.97
OW-02M	10/27/2015	7634	29.1	7.46	57.3	7.58	2	0.49	90.82
OW-02D	10/27/2015	7630	28.7	7.58	50.5	7.71	2	0.49	90.97
OW-05S	10/28/2015	4734	29.4	7.37	40.0	6.13	3	0.31	94.61
OW-05M	10/27/2015	7502	29.0	7.62	25.8	7.38	23	0.49	94.14
OW-05D	10/27/2015	7585	29.6	7.71	26.1	6.52	1	0.49	94.81

Notes:
% = percent
°C = degrees Celsius
µmhos/cm = micro-Siemens per centimeter
btoc = below top of casing
mg/L = milligrams per liter
mV = millivolt
NTU = Nephelometric Turbidity Unit
ORP = oxidation reduction potential

Salinity is calculated using the specific conductance field measurement.

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-4Q15	Nara Tep	10/29/2015	08:32	ASSET	EPA 120.1	SC	10/30/2015	Lilia Ramit	µS/cm	7000	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	12000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1300000	25000	580
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	930	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	160000	500	31
					ASSET	SM 2130B	TRB	10/30/2015	Lilia Ramit	NTU	0.27	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/10/2015	Ryan Balilu	mg/L	2.7	0.25	0.11
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	27	20	17
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	11/2/2015	Lilia Ramit	mg/L	4100	50	50
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	1900	250	16
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	450	25	1.6
					ASSET	EPA 300.0	FL	11/1/2015	Quennie Manimtim	mg/L	2.1	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	0.38	0.2	0.015
					ASSET	SM 2320B	ALKB	10/30/2015	Lilia Ramit	mg/L	65	5	1.2
					ASSET	SM 2320B	ALKC	10/30/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/30/2015	Lilia Ramit	mg/L	65	5	1.2
					ASSET	SM 2320B	HYDX	10/30/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	17	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	PBD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	2.8	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.1	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	13000	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.1	0.1	0.016
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	19	1	0.072

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01D	CW-01D-4Q15	Nara Tep	10/29/2015	08:32	ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
CW-01M	CW-01M-4Q15	Nara Tep	10/29/2015	09:21	ASSET	SM 2130B	TRB	10/30/2015	Lilia Ramit	NTU	1.6	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/10/2015	Ryan Balilu	mg/L	2.8	0.25	0.11
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	460	25	1.6
					ASSET	EPA 300.0	FL	11/1/2015	Quennie Manimtim	mg/L	1.9	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	110 J	20	17
					ASSET	SM 2320B	ALKC	10/30/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/30/2015	Lilia Ramit	mg/L	69	5	1.2
					ASSET	SM 2320B	HYDX	10/30/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	11/2/2015	Lilia Ramit	mg/L	4200	50	50
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	3 J	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	0.96	0.2	0.015
					ASSET	SM 2320B	ALKB	10/30/2015	Lilia Ramit	mg/L	69	5	1.2
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	15 J	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	PBD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	81	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5 UJ)	0.5	0.013
					ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	0.54	0.5	0.023
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.3	1	0.025
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1000	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	180000	500	31
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	13000	100	86

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-01M	CW-01M-4Q15	Nara Tep	10/29/2015	09:21	ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.1	0.1	0.016
					ASSET	EPA 120.1	SC	10/30/2015	Lilia Ramit	µS/cm	7300	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	13000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1400000	25000	580
CW-02D	CW-02D-4Q15	Nara Tep	10/28/2015	14:11	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	0.31	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.8	0.25	0.11
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	46	20	17
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4300	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	460	25	1.6
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	1.7	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	0.5	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	51	5	1.2
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	51	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	12	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	3	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	1	0.5	0.023
					ASSET	EPA 200.8	PBD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	3.8	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	3900	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	2.8	0.1	0.016
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	13	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02D	CW-02D-4Q15	Nara Tep	10/28/2015	14:11	ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	7300	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	11000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1500000	25000	580
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	950	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	94000	500	31
CW-02M	CW-02M-4Q15	Nara Tep	10/28/2015	15:01	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	0.37	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.8	0.25	0.11
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	480	25	1.6
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	2.5	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	31	20	17
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	49	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4500	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	1900	250	16
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	2.6	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	2.2	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	49	5	1.2
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	3.3	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	14	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	64	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
					ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	1.7	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	0.73	0.5	0.023
					ASSET	EPA 200.8	PBD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12

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PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-02M	CW-02M-4Q15	Nara Tep	10/28/2015	15:01	ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1100	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	150000	500	31
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	8500	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.7	0.1	0.016
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	7200	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	12000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1400000	25000	580
CW-03D	CW-03D-4Q15	Nara Tep	10/28/2015	11:40	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	0.29	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.9	0.25	0.11
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	33	20	17
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4400	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	470	25	1.6
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	2.5	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	0.59	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	54	5	1.2
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	54	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	13	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	3	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	1	0.5	0.023
					ASSET	EPA 200.8	PBD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.4	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	5000	100	86

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ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03D	CW-03D-4Q15	Nara Tep	10/28/2015	11:40	ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.3	0.1	0.016
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	15	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	7300	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	11000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1500000	25000	580
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1100	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	93000	500	31
CW-03M	CW-03M-4Q15	Nara Tep	10/28/2015	12:37	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	1.3	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2	0.25	0.11
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	460	25	1.6
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	2.7	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	71	20	17
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	47	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4900	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	2300	250	16
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	1.5	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 200.8	CRTD	11/12/2015	Claire Ignacio	µg/L	6	1	0.086
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	6.3	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	47	5	1.2
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	21	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	42	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03M	CW-03M-4Q15	Nara Tep	10/28/2015	12:37	ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	0.76	0.5	0.023
					ASSET	EPA 200.8	PBD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.3	1	0.025
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1100	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	210000	500	31
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	12000	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1	0.1	0.016
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	8000	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	14000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1600000	25000	580
CW-03M	OW-070-4Q15	Nara Tep	10/28/2015	12:47	ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	86	20	17
					ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	1.4	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.1	0.25	0.11
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4800	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	2400	250	16
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	460	25	1.6
					ASSET	EPA 300.0	FL	11/9/2015	Quennie Manimtim	mg/L	2.6	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 200.8	CRTD	11/12/2015	Claire Ignacio	µg/L	5.9	1	0.086
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	6.2	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	47	5	1.2
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	47	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	PBD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	1.6	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	0.56	0.5	0.023
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.4	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-03M	OW-070-4Q15	Nara Tep	10/28/2015	12:47	ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	21	0.5	0.029
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	13000	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	0.98	0.1	0.016
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	43	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	8200	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	14000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1600000	25000	580
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1100	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	210000	500	31
CW-04D	CW-04D-4Q15	Nara Tep	10/28/2015	09:16	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	0.45	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.8	0.25	0.11
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	470	25	1.6
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	2.6	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	63	20	17
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	53	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4300	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	2.9	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	0.78	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	53	5	1.2
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	17	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04D	CW-04D-4Q15	Nara Tep	10/28/2015	09:16	ASSET	EPA 200.8	PBD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	18	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
					ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	0.78	0.5	0.023
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	3	1	0.025
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50 UJ)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1100 J	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	150000	500	31
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20 UJ)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	7900 J	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	2.7	0.1	0.016
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	7200	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	13000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1500000	25000	580
CW-04M	CW-04M-4Q15	Nara Tep	10/28/2015	10:10	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	0.49	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.8	0.25	0.11
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	36	20	17
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	4200	50	50
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	1900	250	16
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	440	25	1.6
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	1.4	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	3.2	0.2	0.015
					ASSET	SM 2320B	ALKB	10/29/2015	Lilia Ramit	mg/L	52	5	1.2
					ASSET	SM 2320B	ALKC	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/29/2015	Lilia Ramit	mg/L	52	5	1.2
					ASSET	SM 2320B	HYDX	10/29/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	8.7	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	PBD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	2.4	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034

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PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
CW-04M	CW-04M-4Q15	Nara Tep	10/28/2015	10:10	ASSET	EPA 200.8	CRTD	11/4/2015	Claire Ignacio	µg/L	2.8	1	0.086
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	3.1	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	13000	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.9	0.1	0.016
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	96	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	7000	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	13000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1200000	25000	580
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	930	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	210000	500	31
OW-01D	OW-01D-4Q15	Nara Tep	10/27/2015	09:49	ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	0.97	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.7	0.25	0.11
					ASSET	EPA 300.0	FL	10/31/2015	Quennie Manimtim	mg/L	1.8	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	65 J	20	17
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	89	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	4300	50	50
					ASSET	EPA 300.0	SO4	10/30/2015	Quennie Manimtim	mg/L	450	25	1.6
					ASSET	EPA 300.0	CL	10/30/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	3.3 J	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	0.47	0.2	0.015
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	89	5	1.2
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026

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ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-01D	OW-01D-4Q15	Nara Tep	10/27/2015	09:49	ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	12 J	0.5	0.029
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	27	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5 UJ)	0.5	0.013
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 200.8	PBD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.6	1	0.025
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	1100	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	160000	500	31
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	14000	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.1	0.1	0.016
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	6900	0.1	0.1
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	13000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1500000	25000	580
OW-01M	OW-01M-4Q15	Nara Tep	10/27/2015	10:49	ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.7	0.25	0.11
					ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	0.29	0.1	0.1
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	450	25	1.6
					ASSET	EPA 300.0	FL	10/31/2015	Quennie Manimtim	mg/L	1.6	0.5	0.062
					TLI	SM 4500	NH3N	11/3/2015	Alex Luna	mg/L	ND (0.05)	0.05	0.032
					ASSET	EPA 6010B	FE	11/3/2015	Claire Ignacio	µg/L	37	20	17
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	110	5	1.2
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	110	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	EPA 245.1	HGD	11/5/2015	Claire Ignacio	µg/L	ND (0.2)	0.2	0.025
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	4100	50	50
					ASSET	EPA 200.8	NID	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.038
					ASSET	EPA 200.8	SBD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.026
					ASSET	EPA 200.8	SED	11/10/2015	Claire Ignacio	µg/L	2.7	0.5	0.07
					ASSET	EPA 200.8	TLD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.034
					ASSET	EPA 200.8	AGD	11/10/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-01M	OW-01M-4Q15	Nara Tep	10/27/2015	10:49	ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	1.2	0.2	0.015
					ASSET	EPA 200.8	PBD	11/4/2015	Claire Ignacio	µg/L	ND (1)	1	0.053
					ASSET	EPA 200.8	VD	11/4/2015	Claire Ignacio	µg/L	2.8	1	0.025
					ASSET	EPA 200.8	ZND	11/4/2015	Claire Ignacio	µg/L	ND (10)	10	0.039
					ASSET	EPA 200.8	BED	11/10/2015	Claire Ignacio	µg/L	ND (2.5)	2.5	0.13
					ASSET	EPA 200.8	CUD	11/10/2015	Claire Ignacio	µg/L	ND (1)	1	0.26
					ASSET	EPA 200.8	MOD	11/10/2015	Claire Ignacio	µg/L	11	0.5	0.029
					ASSET	EPA 200.7	MGD	11/10/2015	Claire Ignacio	µg/L	20000	100	86
					ASSET	EPA 200.8	ASD	11/4/2015	Claire Ignacio	µg/L	1.6	0.1	0.016
					ASSET	EPA 200.8	BAD	11/4/2015	Claire Ignacio	µg/L	62	1	0.072
					ASSET	EPA 200.8	CDD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.01
					ASSET	EPA 200.8	COBD	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.013
					ASSET	EPA 200.8	MND	11/4/2015	Claire Ignacio	µg/L	ND (0.5)	0.5	0.023
					ASSET	EPA 200.7	KD	11/4/2015	Claire Ignacio	µg/L	13000	2500	360
					ASSET	EPA 200.7	NAD	11/4/2015	Claire Ignacio	µg/L	1400000	25000	580
					ASSET	EPA 200.7	ALD	11/10/2015	Claire Ignacio	µg/L	ND (50)	50	12
					ASSET	EPA 200.7	BD	11/10/2015	Claire Ignacio	µg/L	980	100	11
					ASSET	EPA 200.7	CAD	11/10/2015	Claire Ignacio	µg/L	140000	500	31
					ASSET	EPA 200.7	FETD	11/10/2015	Claire Ignacio	µg/L	ND (20)	20	17
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	6700	0.1	0.1
OW-01S	OW-01S-4Q15	Nara Tep	10/26/2015	15:40	ASSET	SM 2130B	TRB	10/27/2015	Lilia Ramit	NTU	1.2	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	3	0.25	0.11
					ASSET	EPA 300.0	FL	10/31/2015	Quennie Manimtim	mg/L	1.3	0.5	0.062
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	720000	12000	290
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	8.4	1	0.086
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	7.4	0.5	0.029
					ASSET	EPA 120.1	SC	10/27/2015	Lilia Ramit	umhos/cm	5800	0.1	0.1
					ASSET	EPA 218.6	CR6	10/27/2015	Ryan Balilu	µg/L	8.2	0.2	0.015
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	3800	50	50
					ASSET	EPA 300.0	SO4	10/30/2015	Quennie Manimtim	mg/L	330	25	1.6
					ASSET	EPA 300.0	CL	10/30/2015	Quennie Manimtim	mg/L	1500	250	16
OW-02D	OW-02D-4Q15	Nara Tep	10/27/2015	12:08	ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	0.23	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.6	0.25	0.11
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	25	0.5	0.029
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	4100	50	50
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	460	25	1.6

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02D	OW-02D-4Q15	Nara Tep	10/27/2015	12:08	ASSET	EPA 300.0	FL	10/31/2015	Quennie Manimtim	mg/L	2.2	0.5	0.062
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	1300000	50000	1200
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	6600	0.1	0.1
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	0.43	0.2	0.015
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	45	5	1.2
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	45	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
OW-02M	OW-02M-4Q15	Nara Tep	10/27/2015	13:37	ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	0.33	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.7	0.25	0.11
					ASSET	EPA 300.0	FL	10/31/2015	Quennie Manimtim	mg/L	1.8	0.5	0.062
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	1400000	50000	1200
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	18	0.5	0.029
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	89	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	4100	50	50
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	1900	250	16
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	450	25	1.6
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	6700	0.1	0.1
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	1	0.2	0.015
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	89	5	1.2
OW-02S	OW-02S-4Q15	Nara Tep	10/27/2015	12:44	ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	3.6	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	3.3	0.25	0.11
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	30	0.5	0.029
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	1300	17	17
					ASSET	EPA 300.0	SO4	10/30/2015	Quennie Manimtim	mg/L	97	10	0.65
					ASSET	EPA 300.0	CL	10/30/2015	Quennie Manimtim	mg/L	610	100	6.3
					ASSET	EPA 300.0	FL	11/1/2015	Quennie Manimtim	mg/L	3.3	0.2	0.025
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	420000	12000	290
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	19	1	0.086
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	2300	0.1	0.1
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	19	1	0.075
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	74	5	1.2
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-02S	OW-02S-4Q15	Nara Tep	10/27/2015	12:44	ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	74	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
OW-02S	OW-071-4Q15	Nara Tep	10/27/2015	12:54	ASSET	EPA 300.0	FL	11/1/2015	Quennie Manimtim	mg/L	3.4	0.1	0.012
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	430000	12000	290
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	19	1	0.086
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	32	0.5	0.029
					ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	5.5	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	3.3	0.25	0.11
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	71	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	1300	17	17
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	610	100	6.3
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	100	10	0.65
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	2300	0.1	0.1
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	19	1	0.075
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	71	5	1.2
OW-05D	OW-05D-4Q15	Nara Tep	10/27/2015	15:32	ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	0.24	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.5	0.25	0.11
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	20	0.5	0.029
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	4000	50	50
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	2000	250	16
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	450	25	1.6
					ASSET	EPA 300.0	FL	11/1/2015	Quennie Manimtim	mg/L	1.8	0.5	0.062
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	1300000	50000	1200
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	ND (1)	1	0.086
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	6900	0.1	0.1
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	0.42	0.2	0.015
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	67	5	1.2
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	67	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
OW-05M	OW-05M-4Q15	Nara Tep	10/27/2015	16:14	ASSET	SM 2130B	TRB	10/28/2015	Lilia Ramit	NTU	3.8	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.6	0.25	0.11
					ASSET	EPA 300.0	FL	11/1/2015	Quennie Manimtim	mg/L	1.7	0.5	0.062
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	1300000	50000	1200
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	1.1	1	0.086

Table 11
ARAR Monitoring Information for Groundwater Samples, 2015
PG&E Topock Compliance Monitoring Program

Location ID	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician	Units	Result	RL	MDL
OW-05M	OW-05M-4Q15	Nara Tep	10/27/2015	16:14	ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	19	0.5	0.029
					ASSET	SM 2320B	ALKC	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2320B	ALKT	10/28/2015	Lilia Ramit	mg/L	78	5	1.2
					ASSET	SM 2320B	HYDX	10/28/2015	Lilia Ramit	mg/L	ND (5)	5	1.2
					ASSET	SM 2540C	TDS	10/28/2015	Lilia Ramit	mg/L	4000	50	50
					ASSET	EPA 300.0	CL	10/31/2015	Quennie Manimtim	mg/L	1900	250	16
					ASSET	EPA 300.0	SO4	10/31/2015	Quennie Manimtim	mg/L	450	25	1.6
					ASSET	EPA 120.1	SC	10/28/2015	Lilia Ramit	µS/cm	6900	0.1	0.1
					ASSET	EPA 218.6	CR6	10/30/2015	Ryan Balilu	µg/L	0.55	0.2	0.015
					ASSET	SM 2320B	ALKB	10/28/2015	Lilia Ramit	mg/L	78	5	1.2
OW-05S	OW-05S-4Q15	Nara Tep	10/28/2015	15:51	ASSET	SM 2130B	TRB	10/29/2015	Lilia Ramit	NTU	0.65	0.1	0.1
					ASSET	SM 4500-NO3F	NO3NO2N	11/8/2015	Ryan Balilu	mg/L	2.8	0.25	0.11
					ASSET	EPA 6010B	NAD	11/4/2015	Claire Ignacio	µg/L	500000	12000	290
					ASSET	SW6020	CRTD	11/5/2015	Claire Ignacio	µg/L	15	1	0.086
					ASSET	SW6020	MOD	11/5/2015	Claire Ignacio	µg/L	12	0.5	0.029
					ASSET	EPA 120.1	SC	10/29/2015	Lilia Ramit	µS/cm	4100	0.1	0.1
					ASSET	EPA 218.6	CR6	11/4/2015	Ryan Balilu	µg/L	16	0.4	0.03
					ASSET	SM 2540C	TDS	10/29/2015	Lilia Ramit	mg/L	2900	33	33
					ASSET	EPA 300.0	SO4	11/2/2015	Quennie Manimtim	mg/L	210	25	1.6
					ASSET	EPA 300.0	CL	11/2/2015	Quennie Manimtim	mg/L	1200	100	6.3
					ASSET	EPA 300.0	FL	11/2/2015	Quennie Manimtim	mg/L	1.3	0.5	0.062

Notes:
µg/L = micrograms per liter
µS/cm = microSiemens per centimeter
ARAR = applicable or relevant and appropriate requirement
J = concentration estimated by laboratory or data validation
MDL = method detection limit corrected for sample dilution
mg/L = milligrams per liter
ND = parameter not detected at the listed reporting limit
NTU = Nephelometric Turbidity Unit
RL = reporting limit corrected for sample dilution
UJ = reporting limit estimated by laboratory or data validation

ASSET = Asset Laboratories
TLI = Truesdail Laboratories, Inc.

ALKC	alkalinity, as carbonate	COBD	cobalt, dissolved	MOD	molybdenum, dissolved	TRB	turbidity
ALKT	alkalinity, total as $CaCO_3$	CRTD	chromium, dissolved	NAD	sodium, dissolved	VD	vanadium, dissolved
ALKB	alkalinity, bicarbonate as $CaCO_3$	CR6	hexavalent chromium	NID	nickel, dissolved	ZND	zinc, dissolved
ALD	aluminum, dissolved	CUD	copper, dissolved	NH3N	ammonia (as nitrogen)		
AGD	silver, dissolved	FE	iron	NO3NO2N	nitrate/nitrite (as nitrogen)		
ASD	arsenic, dissolved	FETD	iron, dissolved	PBD	lead, dissolved		
BAD	barium, dissolved	FL	fluoride	SBD	antimony, dissolved		
BD	boron, dissolved	HGD	mercury, dissolved	SC	specific conductance		
BED	beryllium, dissolved	HYDX	alkalinity, hydroxide	SED	selenium, dissolved		
CAD	calcium, dissolved	KD	potassium, dissolved	SO4	sulfate		
CDD	cadmium, dissolved	MGD	magnesium, dissolved	TLD	thallium, dissolved		
CL	chloride	MND	manganese, dissolved	TDS	total dissolved solids		

FIGURES



LEGEND

- Existing IM Extraction Well
- Existing IM Injection Well
- Influent Treatment Facility Pipeline (below ground)
- Effluent Treatment Facility Pipeline (above ground)
- Property Line

Notes:
Location map shows Interim Measures No. 3 (IM-3) facilities as of of January 2006.
Aerial photography taken November 2011.

N

0 250 500
Feet

VICINITY MAP

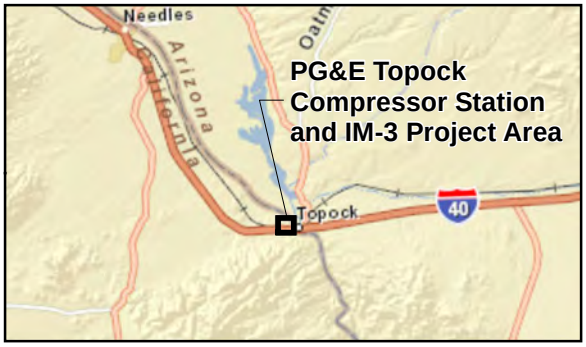
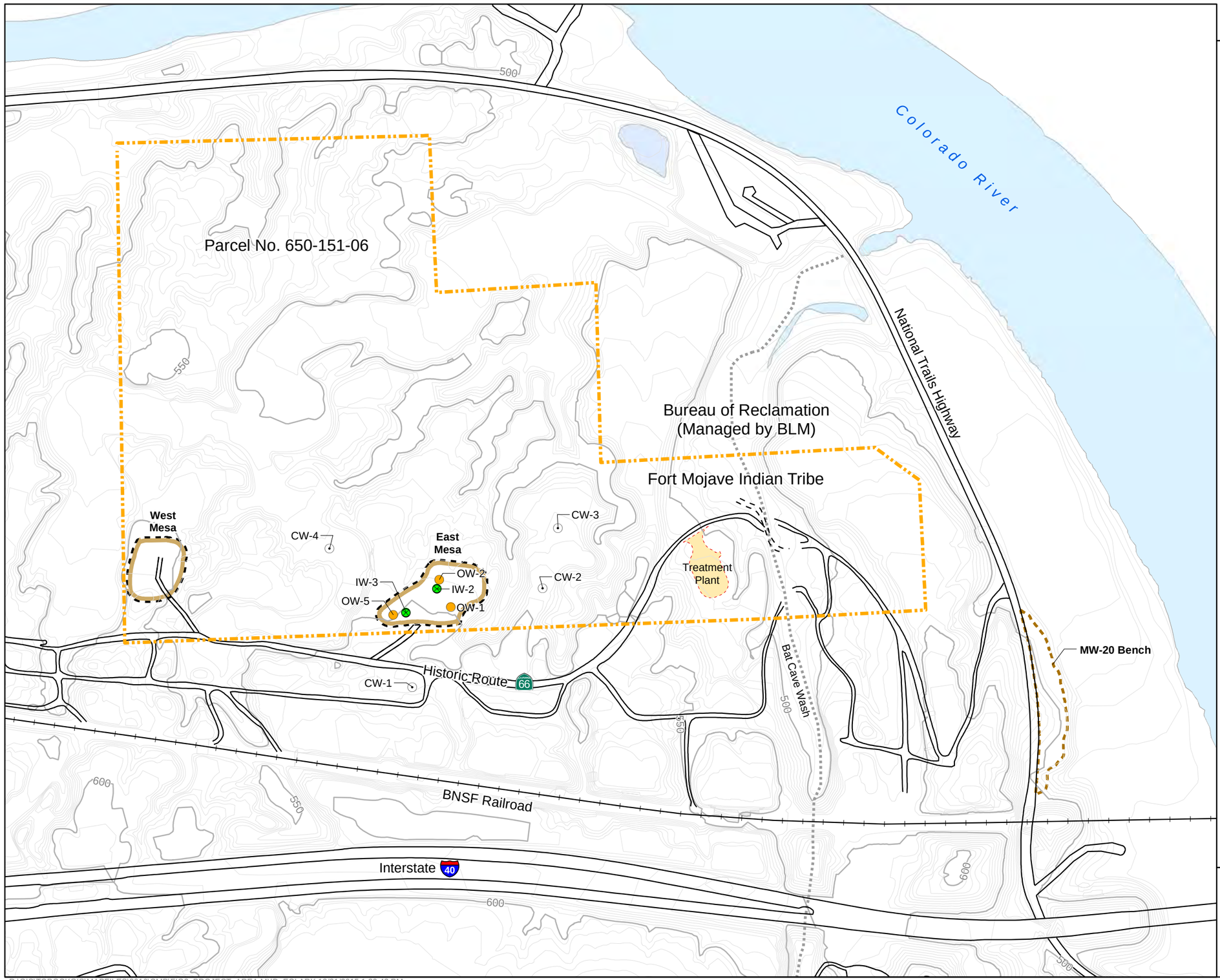


FIGURE 1
SITE LOCATION AND LAYOUT

IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



ARCADIS Design & Consultancy for natural and built assets

LEGEND

- IM-3 Injection Well
- Observation Well Cluster
- Compliance Monitoring Well Cluster
- Property Line

N

0 200 400

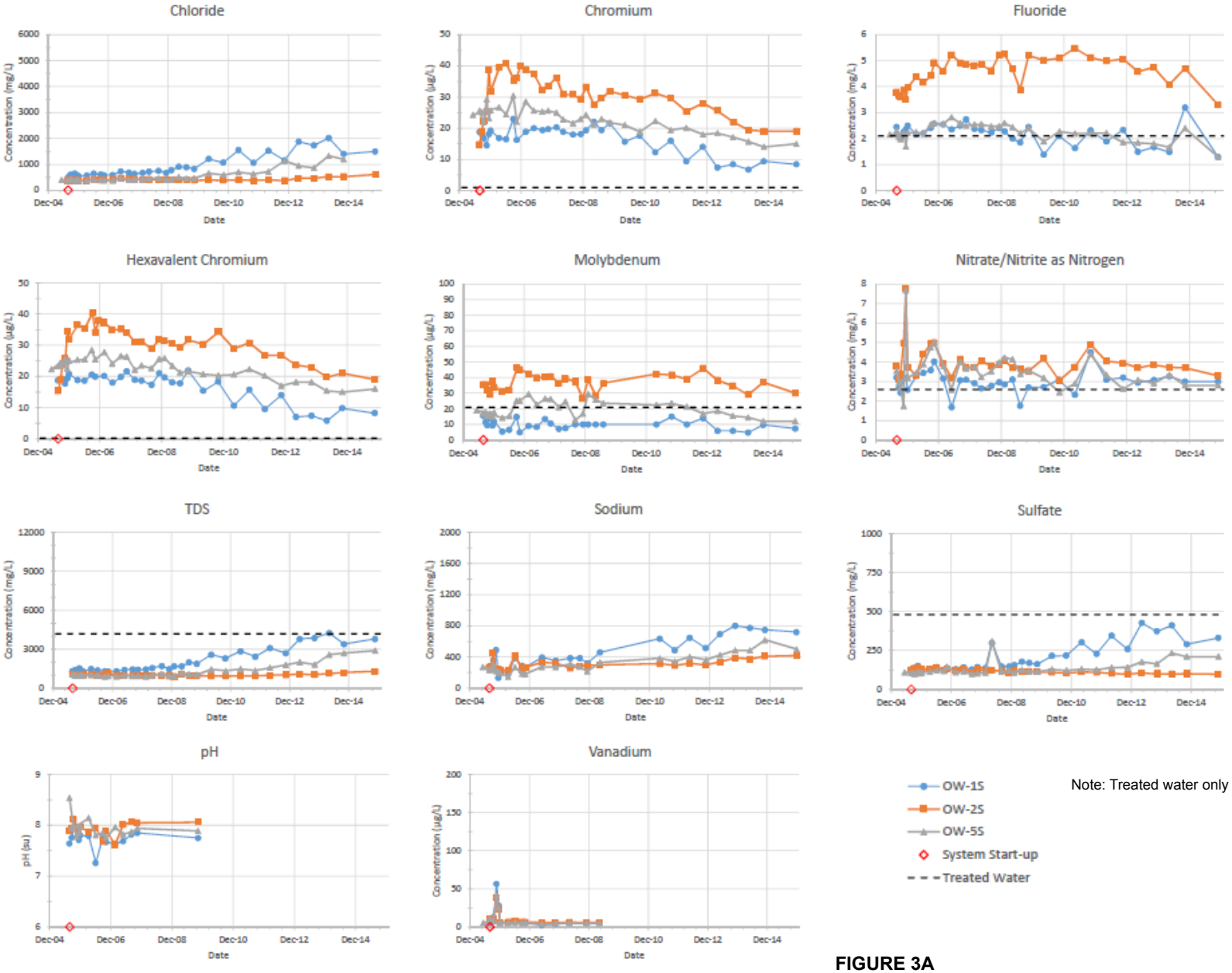
Feet

FIGURE 2
MONITORING LOCATIONS FOR CMP

IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

Created by: CRITIGEN

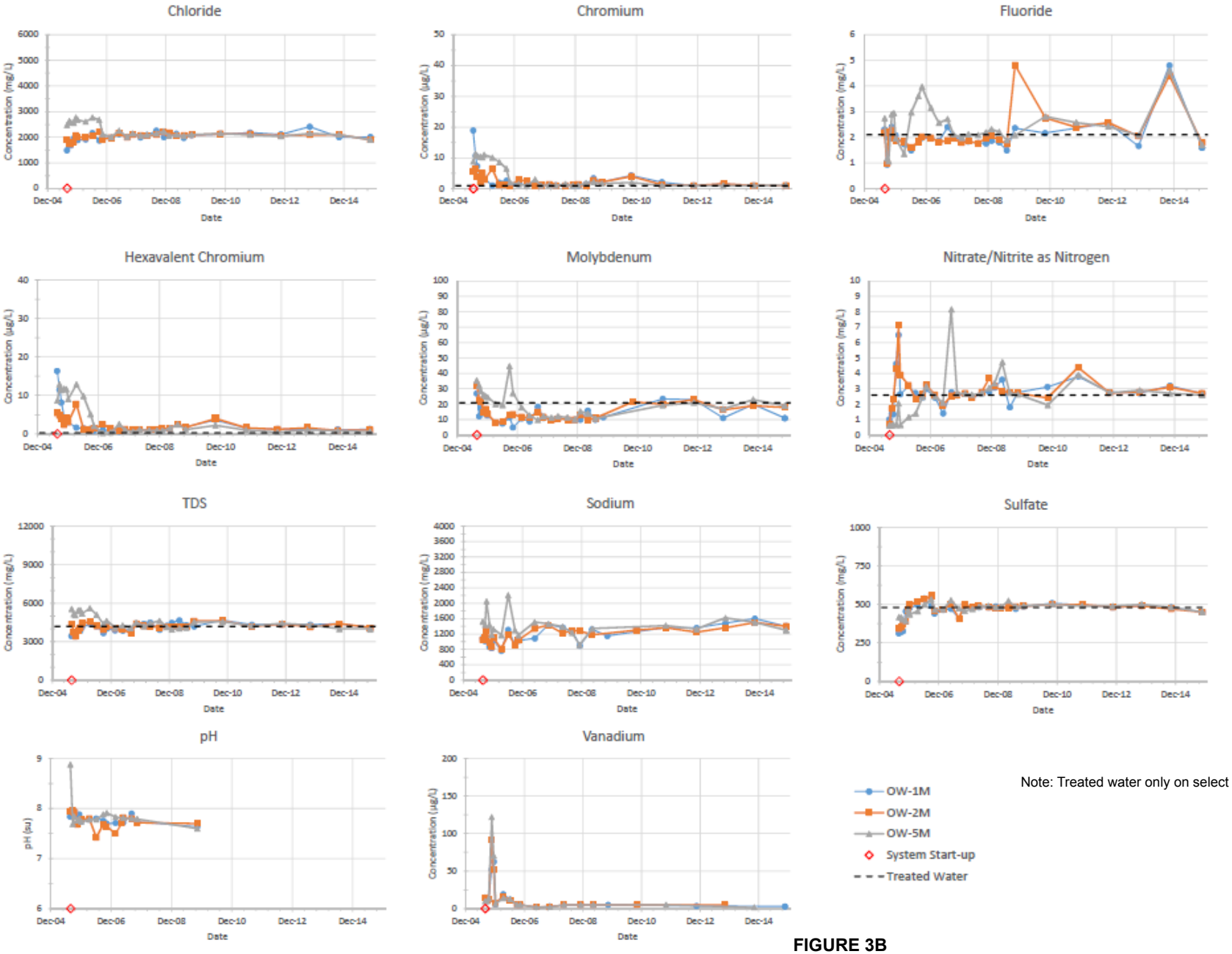
R:\GIS\TOPOCKGIS\MAPFILES\2016\CMP\FIG2_PROJECT_AREA.MXD ECLARK 12/21/2015 1:29:43 PM



Note: Treated water only on select analytes.

FIGURE 3A
OW-1S, OW-2S, OW-5S CONCENTRATION VERSUS TIME PLOTS

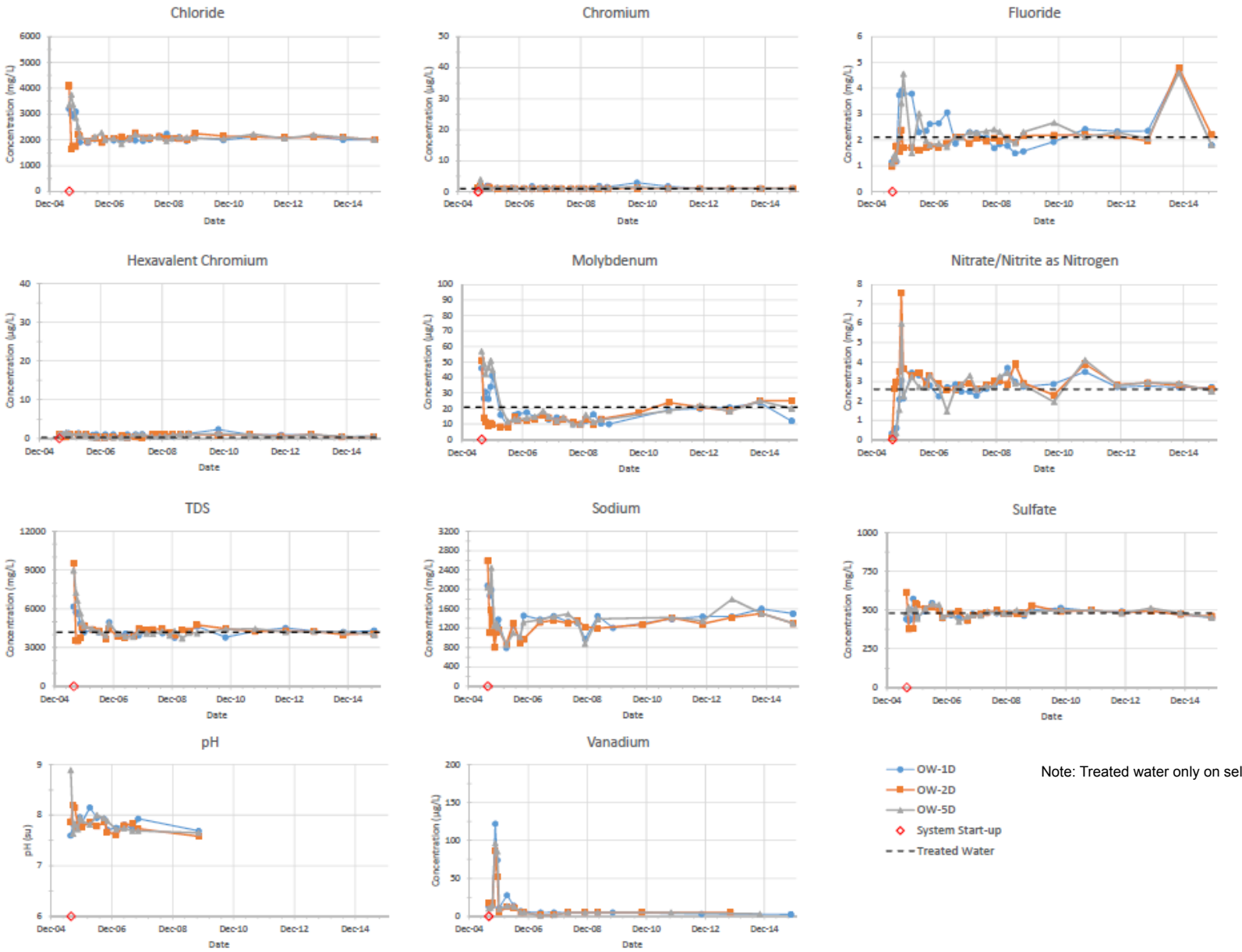
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Note: Treated water only on select analytes.

FIGURE 3B
OW-1M, OW-2M, OW-5M CONCENTRATION VERSUS TIME PLOTS

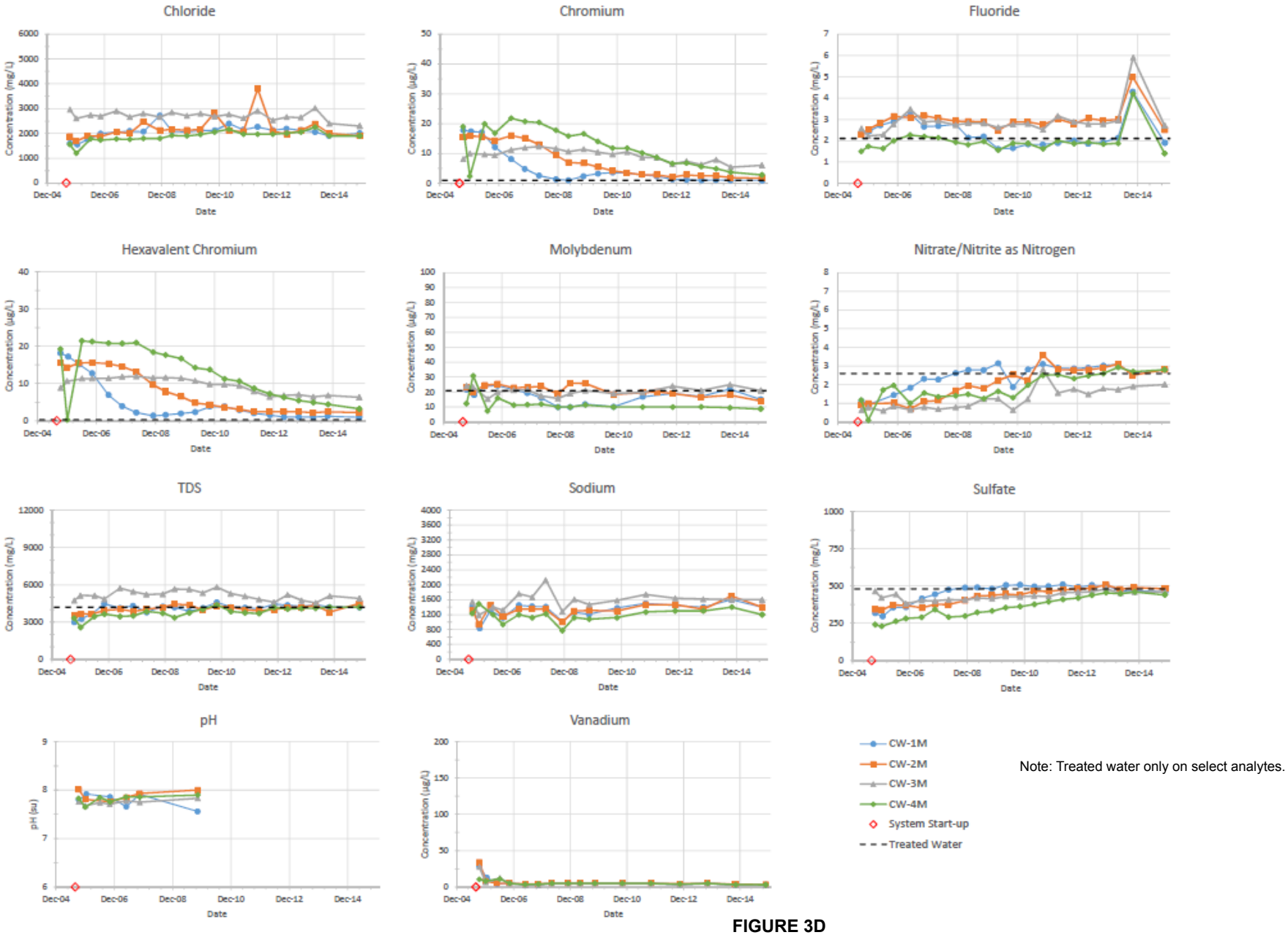
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Note: Treated water only on select analytes.

FIGURE 3C
OW-1D, OW-2D, OW-5D CONCENTRATION VERSUS TIME PLOTS

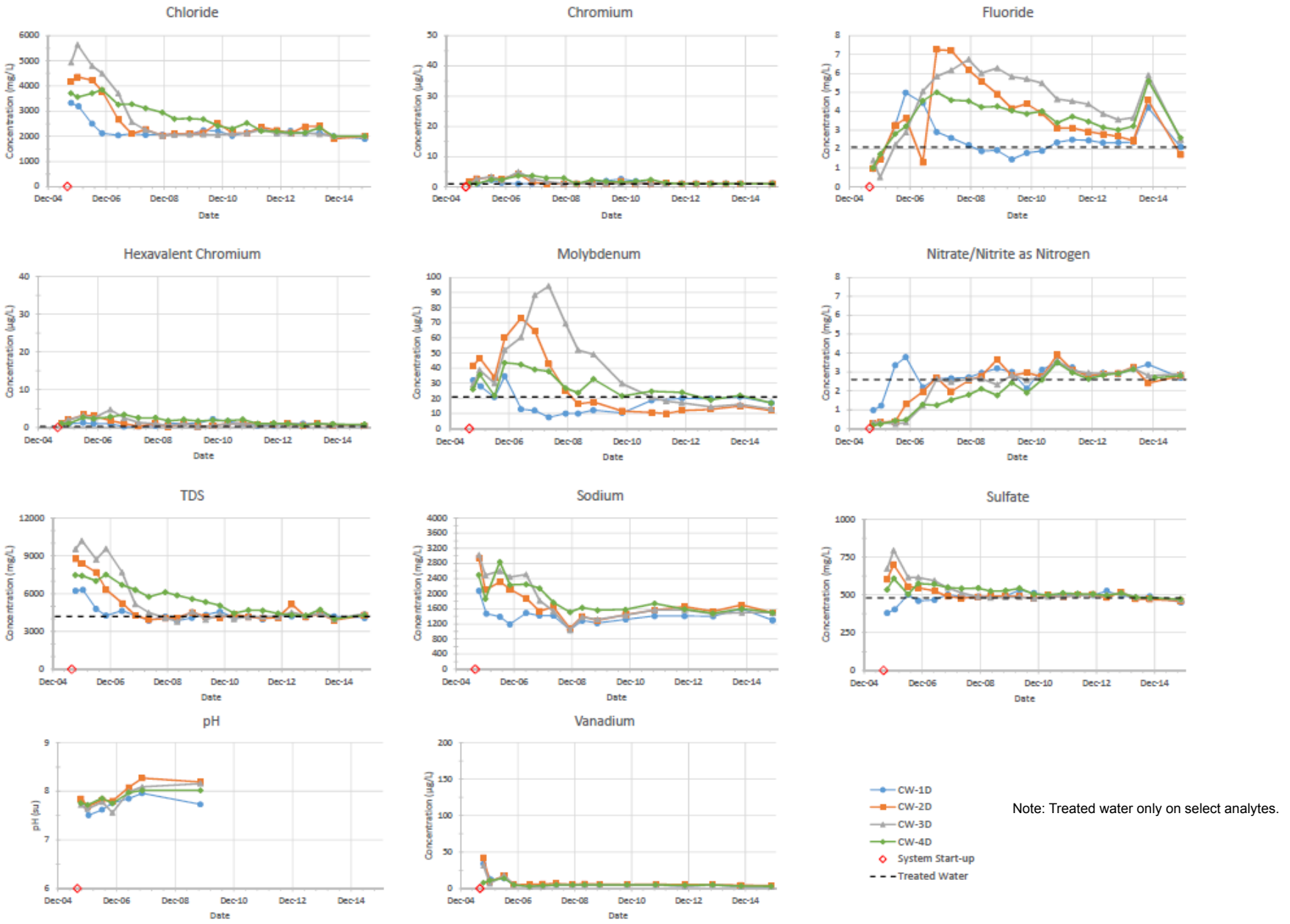
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Note: Treated water only on select analytes.

FIGURE 3D
CW-1M, CW-2M, CW-3M, CW-4M CONCENTRATION VERSUS TIME PLOTS

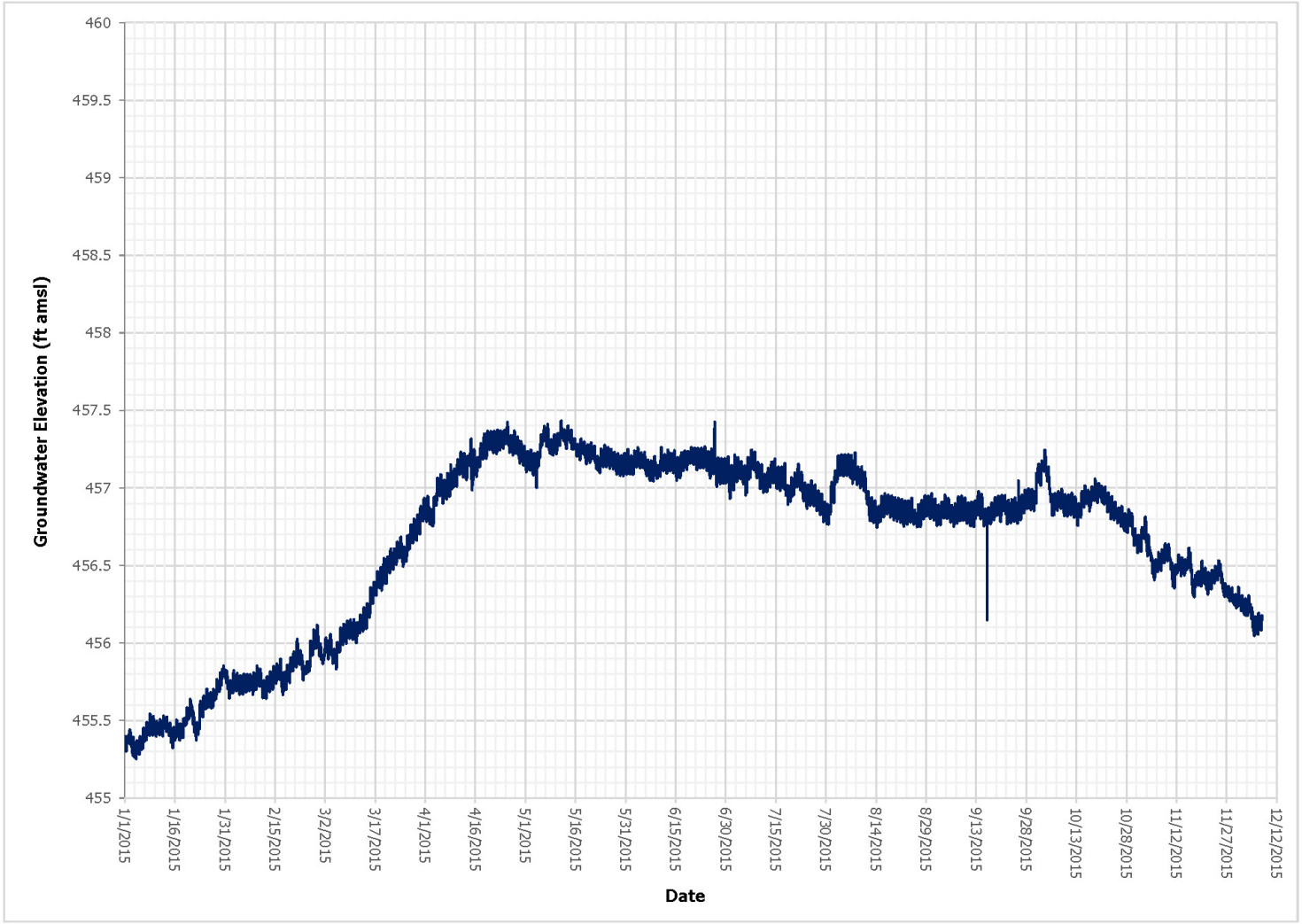
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Note: Treated water only on select analytes.

FIGURE 3E
CW-1D, CW-2D, CW-3D, CW-4D CONCENTRATION VERSUS TIME PLOTS

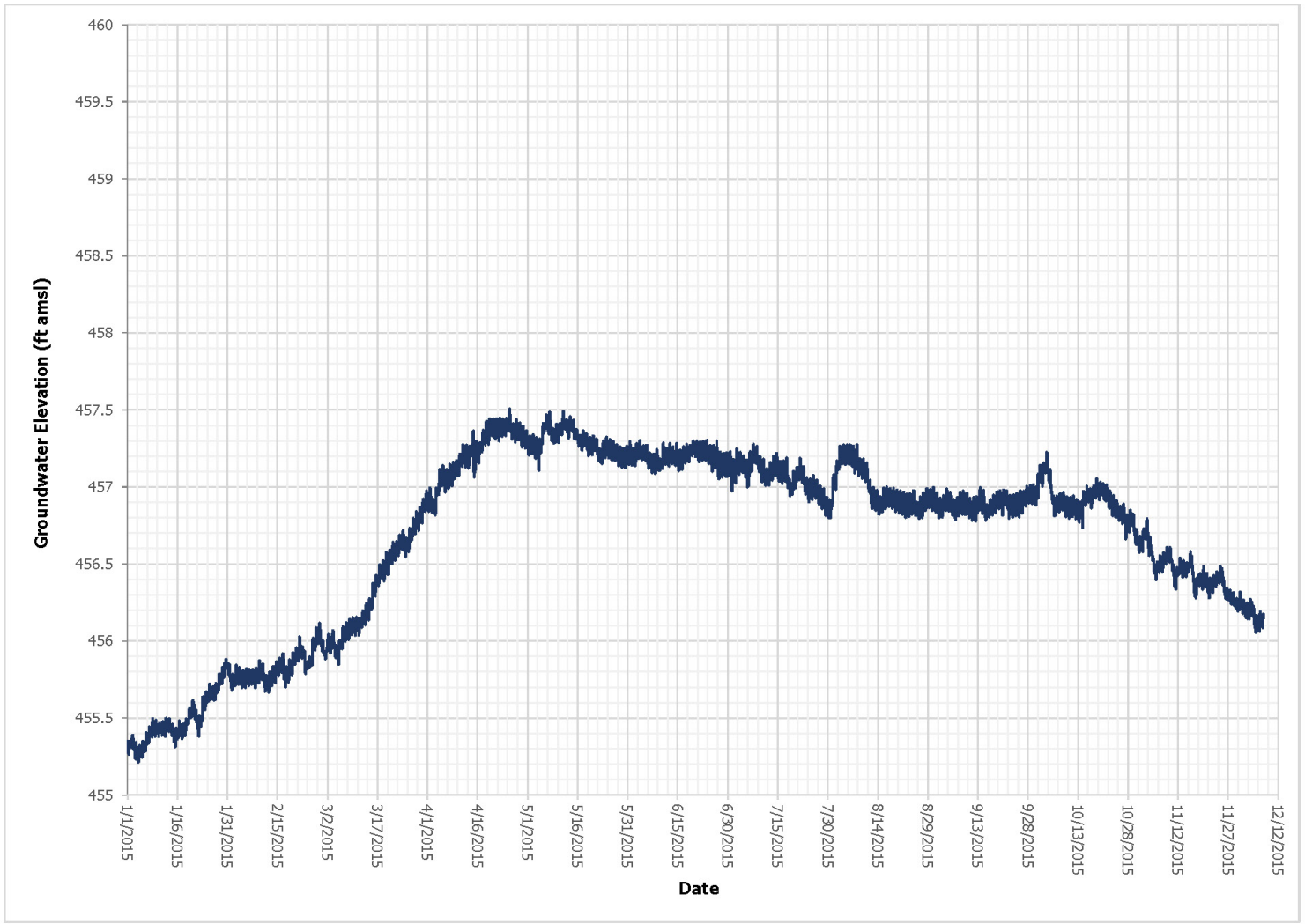
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:
ft amsl = feet above mean sea level

FIGURE 4A
OW-1S GROUNDWATER ELEVATION HYDROGRAPH

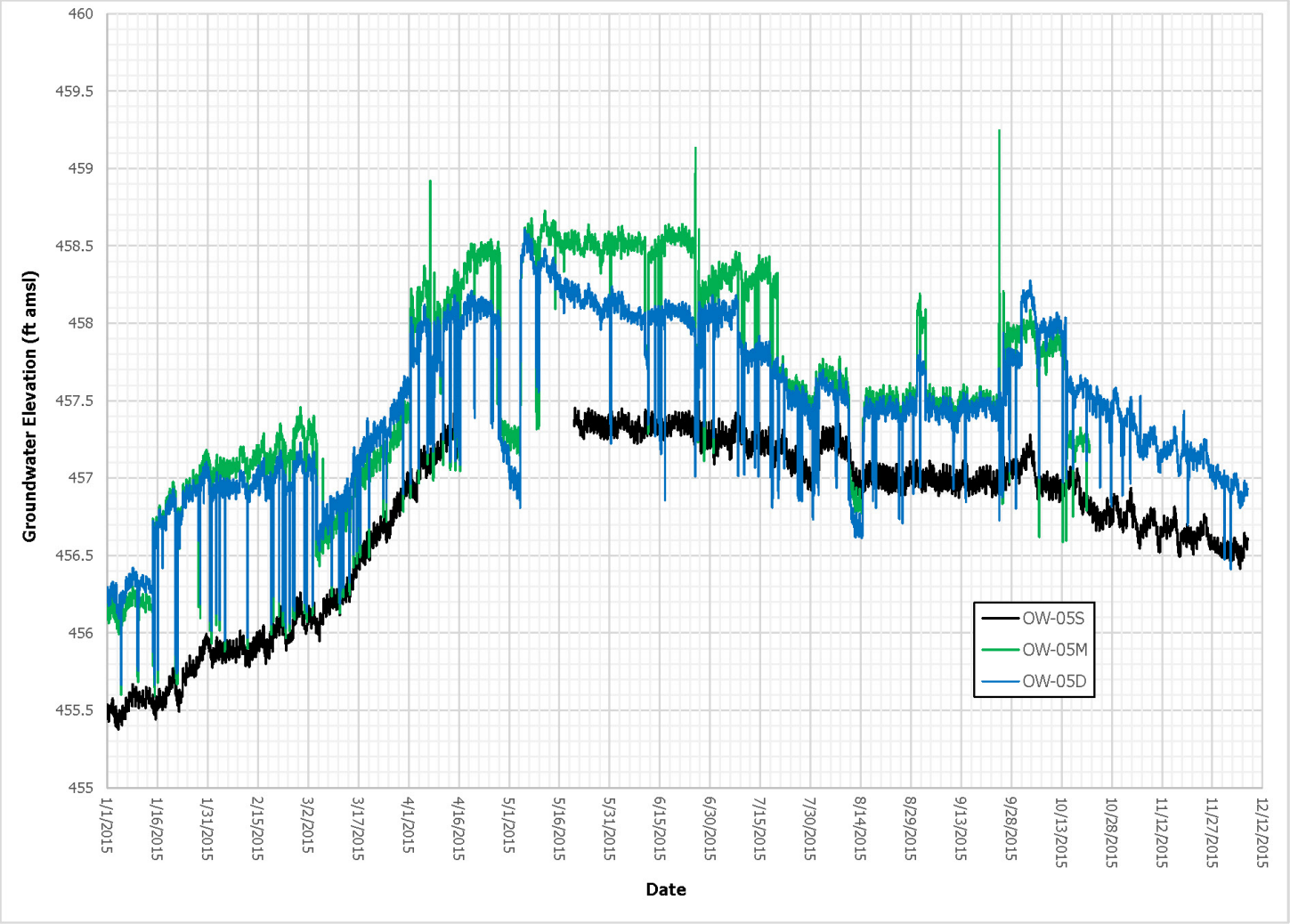
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



Notes:
ft amsl = feet above mean sea level

FIGURE 4B
OW-2S GROUNDWATER ELEVATION HYDROGRAPH

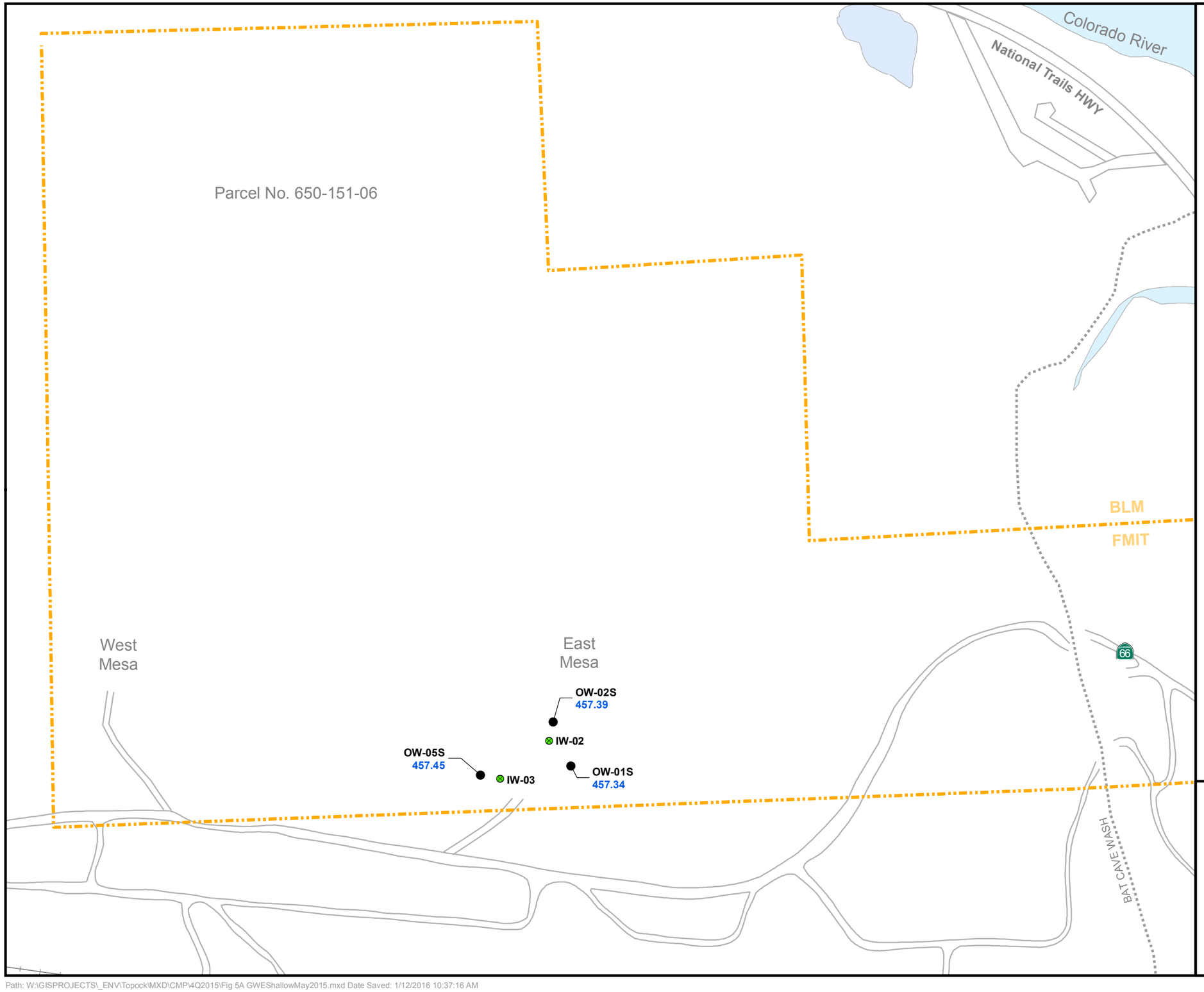
IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



ft amsl = feet above mean sea level
OW-5S data unavailable from April 16, 2015 until May 20, 2015 due to transducer failure.
OW-5M data unavailable from October 21, 2015 until December 7, 2015 due to transducer failure.

FIGURE 4C
OW-5 GROUNDWATER ELEVATION HYDROGRAPHS

IM-3 COMPLIANCE MONITORING PROGRAM,
PG&E TOPOCK COMPRESSOR STATION, NEEDLES, CALIFORNIA



LEGEND

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Shallow Wells in IM-3 Injection Area

- **OW-05S** Salinity and temperature adjusted
  457.45 groundwater head elevation in feet above mean sea level (MSL).

Notes:
BLM = Bureau of Land Management
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from May 14, 2015 manual water level snapshot

N

0 250 500 Feet

1 inch = 250 feet

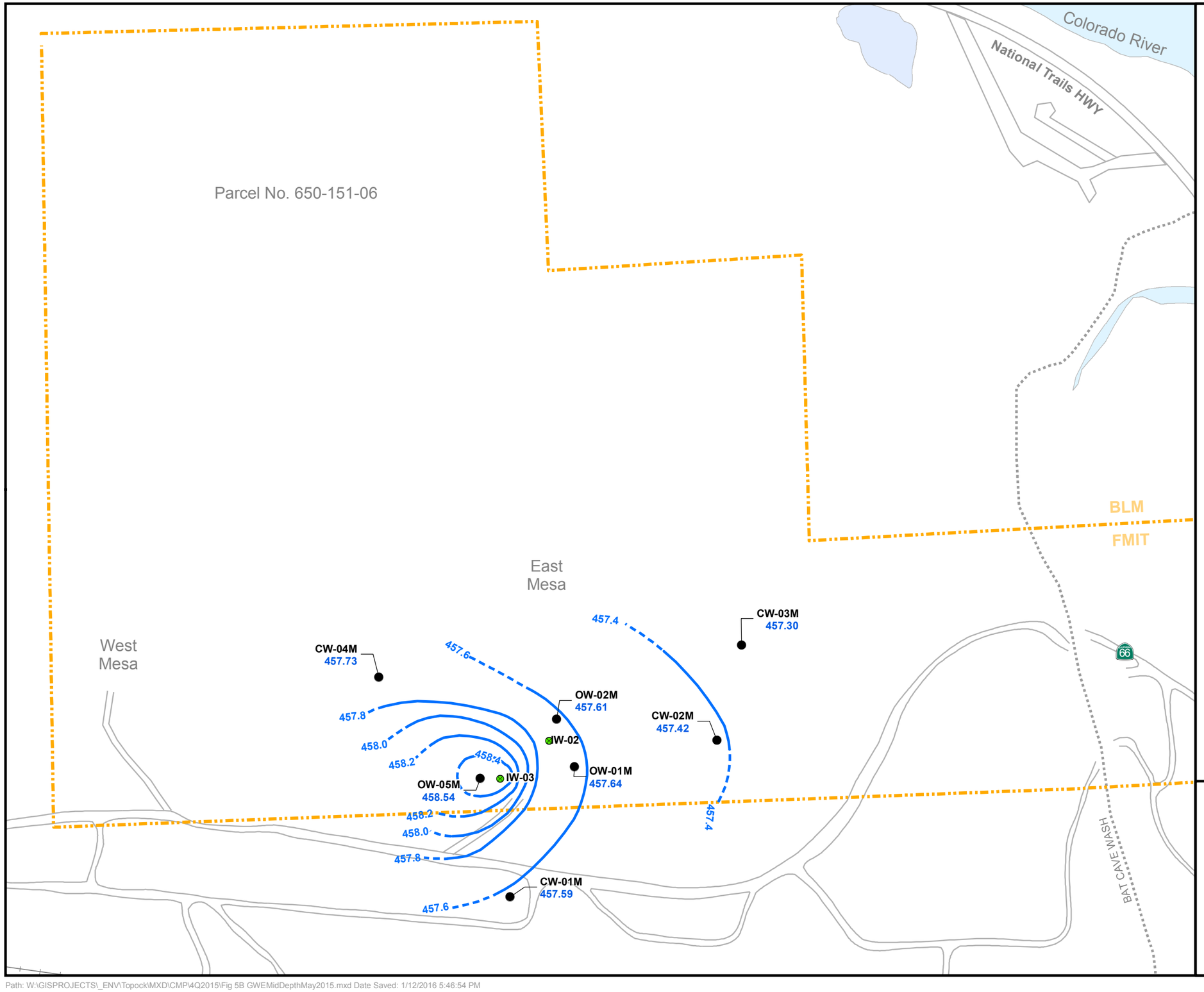
California State Plane NAD83 Zone 5 US Feet

FIGURE 5A
GROUNDWATER ELEVATIONS FOR SHALLOW WELLS, MAY 14, 2015

IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

ARCADIS

Path: W:\GISPROJECTS_ENV\Topock\MXD\CMP\4Q2015\Fig 5A GWEShallowMay2015.mxd Date Saved: 1/12/2016 10:37:16 AM



LEGEND

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Mid-Depth Wells in IM-3 Injection Area

OW-05M 458.54 Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).

Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
BLM = Bureau of Land Management
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from May 14, 2015 manual water level snapshot.

N

0 250 500 Feet

1 inch = 250 feet

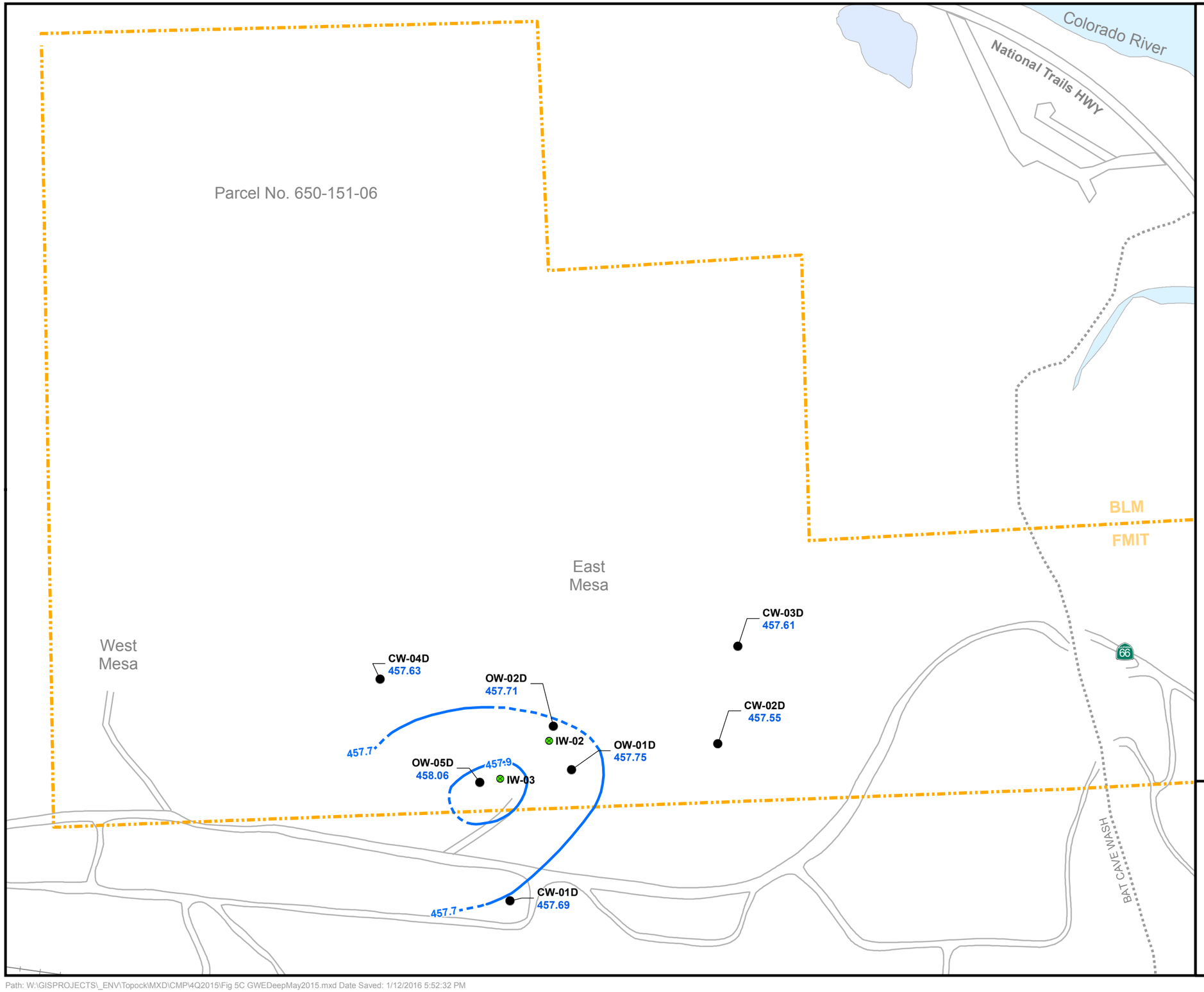
California State Plane NAD83 Zone 5 US Feet

FIGURE 5B
GROUNDWATER ELEVATION CONTOURS FOR MID-DEPTH WELLS, MAY 14, 2015

IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

ARCADIS

Path: W:\GISPROJECTS_ENV\Topock\MXD\CMP\4Q2015\Fig 5B GWEMidDepthMay2015.mxd Date Saved: 1/12/2016 5:46:54 PM



LEGEND

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Deep Wells in IM-3 Injection Area

OW-05D Salinity and temperature adjusted
458.06 groundwater head elevation in feet above mean sea level (MSL).

Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
BLM = Bureau of Land Management
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from May 14, 2015 manual water level snapshot.

N

0 250 500 Feet

1 inch = 250 feet

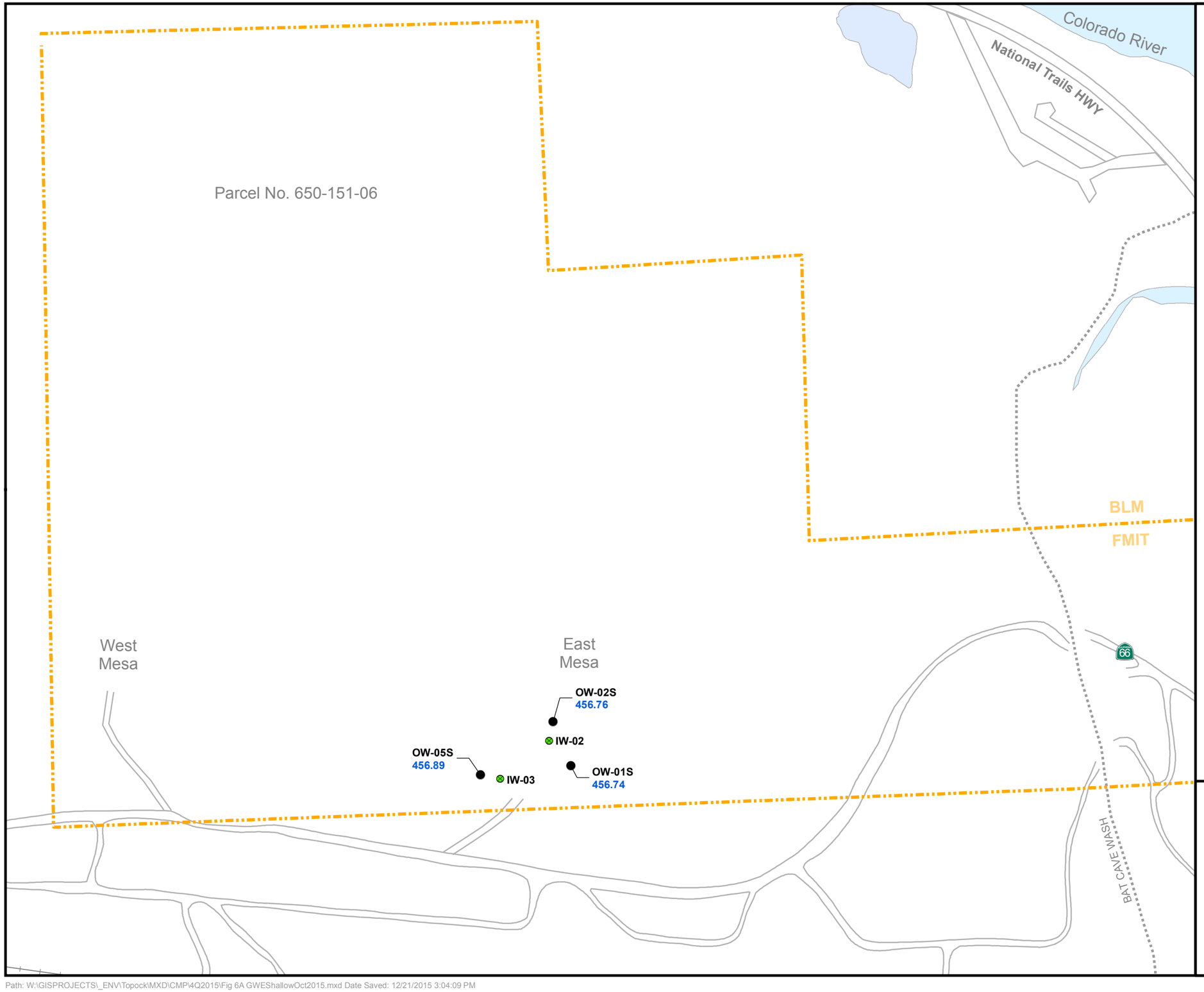
California State Plane NAD83 Zone 5 US Feet

FIGURE 5C
GROUNDWATER ELEVATION CONTOURS FOR DEEP WELLS, MAY 14, 2015

IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

ARCADIS

Path: W:\GISPROJECTS_ENV\Topock\MXD\CMP\4Q2015\Fig 5C GWEDeepMay2015.mxd Date Saved: 1/12/2016 5:52:32 PM



LEGEND

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Shallow Wells in IM-3 Injection Area

- **OW-05S** Salinity and temperature adjusted
  456.89 groundwater head elevation in feet above mean sea level (MSL).

Notes:
BLM = Bureau of Land Management
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from October 27, 2015 manual water level snapshot

N

0 250 500 Feet

1 inch = 250 feet

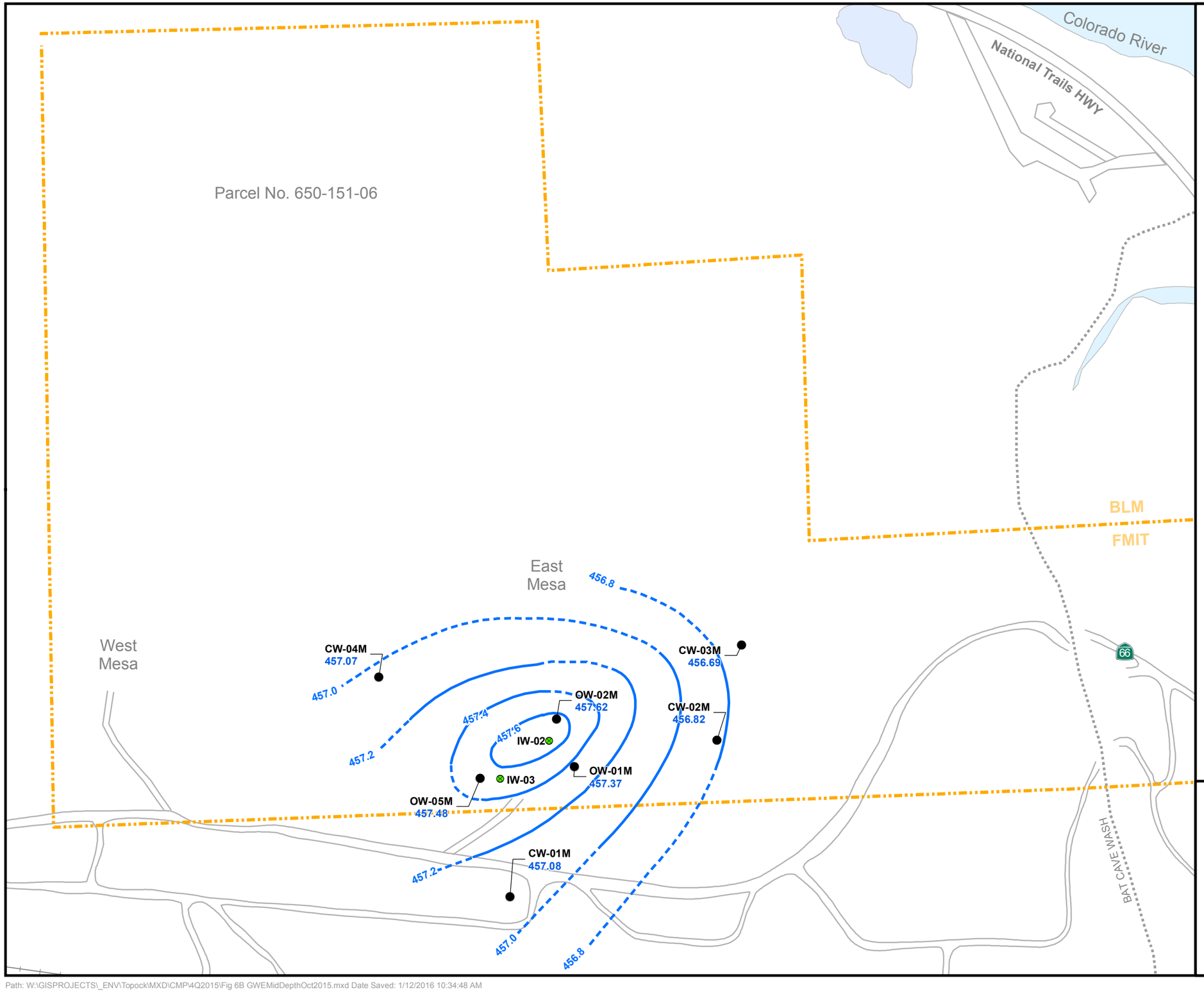
California State Plane NAD83 Zone 5 US Feet

FIGURE 6A
GROUNDWATER ELEVATIONS FOR SHALLOW WELLS, OCTOBER 27, 2015

IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

ARCADIS

Path: W:\GISPROJECTS_ENV\Topock\MXD\CMP\4Q2015\Fig 6A GWEShallowOct2015.mxd Date Saved: 12/21/2015 3:04:09 PM



LEGEND

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Mid-Depth Wells in IM-3 Injection Area

OW-05M Salinity and temperature adjusted groundwater head elevation in feet above mean sea level (MSL).
457.48

Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
BLM = Bureau of Land Management
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from October 27, 2015 manual water level snapshot.

N

0 250 500 Feet

1 inch = 250 feet

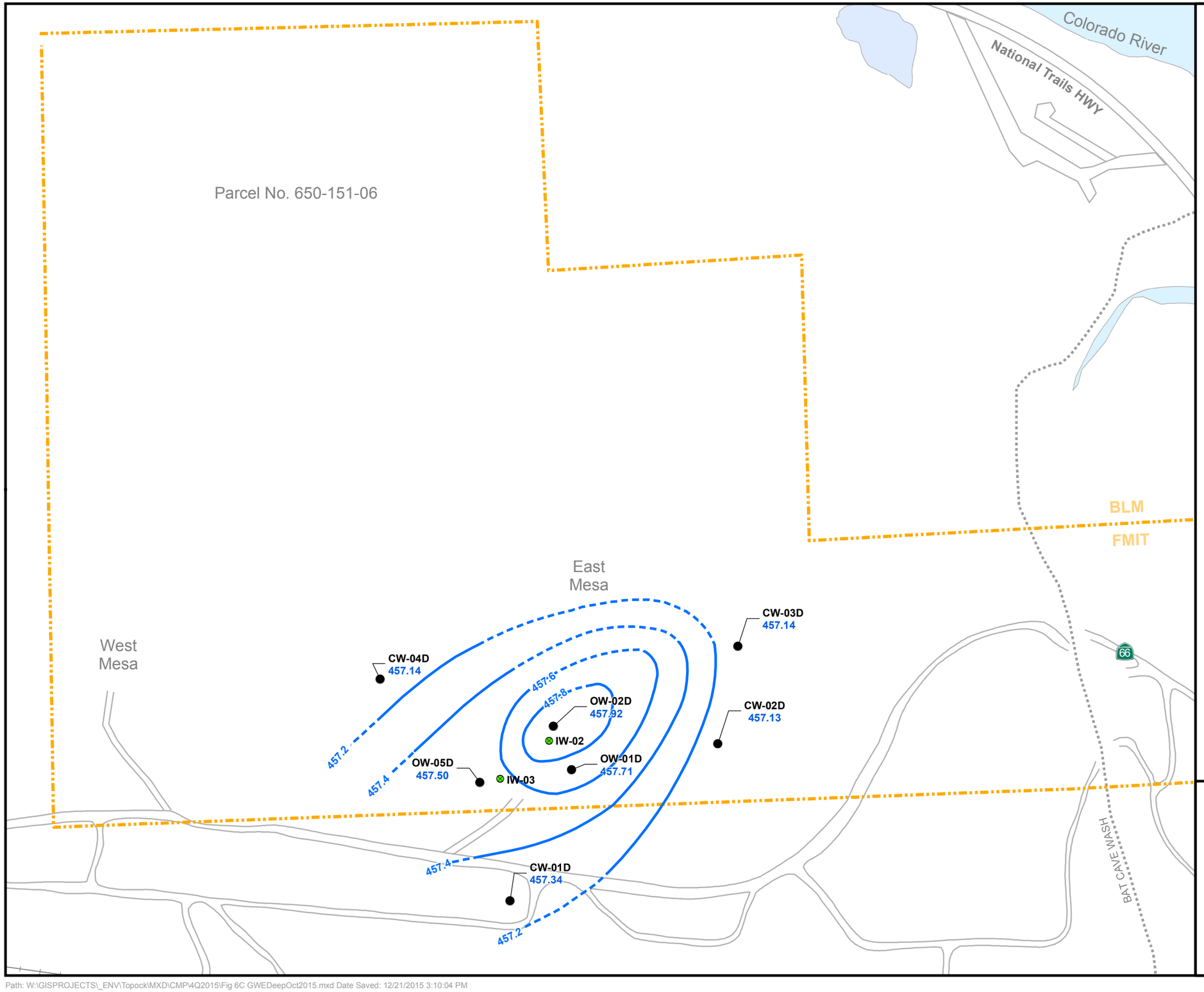
California State Plane NAD83 Zone 5 US Feet

FIGURE 6B
GROUNDWATER ELEVATION CONTOURS FOR MID-DEPTH WELLS, OCTOBER 27, 2015

IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

ARCADIS

Path: W:\GISPROJECTS_ENV\Topock\MXD\CMP\4Q2015\Fig 6B GWEMidDepthOct2015.mxd Date Saved: 1/12/2016 10:34:48 AM



LEGEND

- Groundwater Monitoring, Compliance, and Observation Well
- IM-3 Injection Well
- Property Line

Groundwater Elevations for Deep Wells in IM-3 Injection Area

OW-05D Salinity and temperature adjusted
457.50 groundwater head elevation in feet above mean sea level (MSL).

Groudwater elevation contour in feet above MSL (0.2 foot interval). Dashed where inferred.

Notes:
BLM = Bureau of Land Management
FMIT = Fort Mojave Indian Tribe

Data posted and contoured from October 27, 2015 manual water level snapshot.

N

0 250 500 Feet

1 inch = 250 feet

California State Plane NAD83 Zone 5 US Feet

FIGURE 6C
GROUNDWATER ELEVATION CONTOURS FOR DEEP WELLS, OCTOBER 27, 2015

IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

ARCADIS

Path: W:\GISPROJECTS_ENV\Topock\MXD\CMP\4Q2015\Fig 6C GWEDeepOct2015.mxd Date Saved: 12/21/2015 3:10:04 PM

APPENDIX A

Laboratory Reports, 2015 (provided on CD-ROM only)

ARCADIS

Project: PG&E TOPOCK - CMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N017390

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N017390

Item	Pages
Cover Page	1-5
Analytical Result / QC Summary Reports	6-26
Sample Receiving Items	27-30
Analyst list	31
Raw Data	
EPA 120.1	32-35
SM 2540C	36-45
SM 2130B	46-49
EPA 218.6	50-139
EPA 300.0	140-178
SM 4500-NO3F	179-192
EPA 6010B Dissolved	193-225
EPA 6020 Dissolved	226-265

November 10, 2015

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N017390

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 26, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Glen Gesmundo
QA Manager

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017390

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 300.0:

Dilution was necessary on sample N017390-001 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Sodium on QC sample N017400-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

Date: *10-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017390
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017390-001A	OW-01S-4Q15	Groundwater	10/26/2015 3:40:00 PM	10/26/2015	11/10/2015
N017390-001B	OW-01S-4Q15	Groundwater	10/26/2015 3:40:00 PM	10/26/2015	11/10/2015
N017390-001C	OW-01S-4Q15	Groundwater	10/26/2015 3:40:00 PM	10/26/2015	11/10/2015
N017390-001D	OW-01S-4Q15	Groundwater	10/26/2015 3:40:00 PM	10/26/2015	11/10/2015
N017390-002A	MW-201-4Q15	Groundwater	10/26/2015 3:55:00 PM	10/26/2015	11/10/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017390
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017390-001

Client Sample ID: OW-01S-4Q15
Collection Date: 10/26/2015 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151027B**	QC Batch: **R103801**			PrepDate			Analyst: **LR**
Specific Conductance	5800	0.10	0.10		umhos/cm	1	10/27/2015 10:50 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N017390-001C DUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **103801**
Client ID: **ZZZZZZ** Batch ID: **R103801** TestNo: **EPA 120.1** Analysis Date: **10/27/2015** SeqNo: **2118110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	5770.000	0.10						5760	0.173	10	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01S-4Q15
Lab Order:	N017390	**Collection Date:**	10/26/2015 3:40:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017390-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028E**	QC Batch: **52870**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3800	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-52870**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **10/28/2015**	RunNo: **103850**
Client ID: **PBW**	Batch ID: **52870**	TestNo: **SM2540C**		Analysis Date: **10/28/2015**	SeqNo: **2120219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-52870**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **10/28/2015**	RunNo: **103850**
Client ID: **LCSW**	Batch ID: **52870**	TestNo: **SM2540C**		Analysis Date: **10/28/2015**	SeqNo: **2120220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	976.000	10	1000	0	97.6	80	120				

Sample ID **N017390-001CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **10/28/2015**	RunNo: **103850**
Client ID: **ZZZZZZ**	Batch ID: **52870**	TestNo: **SM2540C**		Analysis Date: **10/28/2015**	SeqNo: **2120222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3785.000	50						3795	0.264	5	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01S-4Q15
Lab Order:	N017390	**Collection Date:**	10/26/2015 3:40:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017390-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151027A**	QC Batch: **R103800**			PrepDate			Analyst: **LR**
Turbidity	1.2	0.10	0.10		NTU	1	10/27/2015 11:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	**MB-R103800**	SampType:	**MBLK**	TestCode:	**2130_W**	Units:	**NTU**	Prep Date:		RunNo:	**103800**
Client ID:	**PBW**	Batch ID:	**R103800**	TestNo:	**SM 2130B**			Analysis Date:	**10/27/2015**	SeqNo:	**2118103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID	**N017390-001C DUP**	SampType:	**DUP**	TestCode:	**2130_W**	Units:	**NTU**	Prep Date:		RunNo:	**103800**
Client ID:	**ZZZZZZ**	Batch ID:	**R103800**	TestNo:	**SM 2130B**			Analysis Date:	**10/27/2015**	SeqNo:	**2118106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	1.220	0.10						1.210	0.823	30	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01S-4Q15
Lab Order:	N017390	**Collection Date:**	10/26/2015 3:40:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017390-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151027A**	QC Batch: **R103879**			PrepDate			Analyst: **RB**
Hexavalent Chromium	8.2	0.015	0.20		µg/L	1	10/27/2015 12:19 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A	**EPA 6020**				
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	8.4	0.086	1.0		µg/L	1	11/5/2015 06:09 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-201-4Q15
Lab Order:	N017390	**Collection Date:**	10/26/2015 3:55:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017390-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151027A**	QC Batch: **R103879**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	10/27/2015 12:38 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	**MB-R103879**	SampType:	**MBLK**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**103879**
Client ID:	**PBW**	Batch ID:	**R103879**	TestNo:	**EPA 218.6**			Analysis Date:	**10/27/2015**	SeqNo:	**2122126**

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

Sample ID	**LCS-R103879**	SampType:	**LCS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**103879**
Client ID:	**LCSW**	Batch ID:	**R103879**	TestNo:	**EPA 218.6**			Analysis Date:	**10/27/2015**	SeqNo:	**2122127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.907	0.20	5.000	0	98.1	90	110				

Sample ID	**N017382-005ADUP**	SampType:	**DUP**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**103879**
Client ID:	**ZZZZZZ**	Batch ID:	**R103879**	TestNo:	**EPA 218.6**			Analysis Date:	**10/27/2015**	SeqNo:	**2122129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1315.440	40						1334	1.43	20	

Sample ID	**N017382-005AMS**	SampType:	**MS**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**103879**
Client ID:	**ZZZZZZ**	Batch ID:	**R103879**	TestNo:	**EPA 218.6**			Analysis Date:	**10/27/2015**	SeqNo:	**2122130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2326.260	40	1000	1334	99.2	90	110				

Sample ID	**N017382-005AMSD**	SampType:	**MSD**	TestCode:	**218.6_WPGE**	Units:	**µg/L**	Prep Date:		RunNo:	**103879**
Client ID:	**ZZZZZZ**	Batch ID:	**R103879**	TestNo:	**EPA 218.6**			Analysis Date:	**10/27/2015**	SeqNo:	**2122131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2353.880	40	1000	1334	102	90	110	2326	1.18	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N017390-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103879
Client ID:	ZZZZZZ	Batch ID:	R103879	TestNo:	EPA 218.6			Analysis Date:	10/27/2015	SeqNo:	2122138

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.008	0.20	1.000	0	101	90	110				

Sample ID	N017390-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103879
Client ID:	ZZZZZZ	Batch ID:	R103879	TestNo:	EPA 218.6			Analysis Date:	10/27/2015	SeqNo:	2122139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.338	0.20	5.000	8.162	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-52955	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	PBW	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130510

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

Sample ID	LCS-52955	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	LCSW	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.424	1.0	10.00	0	94.2	85	115				

Sample ID	N017390-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	ZZZZZZ	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.236	1.0	10.00	8.428	88.1	75	125				

Sample ID	N017390-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	ZZZZZZ	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.889	1.0	10.00	8.428	84.6	75	125	17.24	2.03	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017390
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017390-001

Client Sample ID: OW-01S-4Q15
Collection Date: 10/26/2015 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151030A** QC Batch: **R103929**				PrepDate			Analyst: **QBM**
Chloride	1500	16	250		mg/L	500	10/30/2015 08:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.3	0.062	0.50		mg/L	5	10/31/2015 09:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151030A** QC Batch: **R103929**				PrepDate			Analyst: **QBM**
Sulfate	330	1.6	25		mg/L	50	10/30/2015 04:56 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R103929_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	PBW	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124204

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R103929_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	LCSW	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.487	0.50	2.500	0	99.5	90	110				

Sample ID	N017399-001BDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124211

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1000.800	100						1021	2.04	20	

Sample ID	N017399-002CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3402.500	250	1250	2154	99.8	80	120				

Sample ID	N017399-002CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3483.500	250	1250	2154	106	80	120	3402	2.35	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R103951_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R103951_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.413	0.10	2.500	0	96.5	90	110				

Sample ID	N017390-001CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.745	0.50	12.50	1.315	83.4	80	120				

Sample ID	N017390-001CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	12.100	0.50	12.50	1.315	86.3	80	120	11.74	2.98	20	

Sample ID	N017400-005CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	11/1/2015	SeqNo:	2125475

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.320	0.20						3.298	0.665	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R103929_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	PBW	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R103929_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	LCSW	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124244

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.961	0.50	5.000	0	99.2	90	110				

Sample ID	N017399-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124264

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	369.700	25						366.3	0.924	20	

Sample ID	N017399-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1009.900	50	500.0	488.4	104	80	120				

Sample ID	N017399-002CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124269

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	977.300	50	500.0	488.4	97.8	80	120	1010	3.28	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01S-4Q15
Lab Order:	N017390	**Collection Date:**	10/26/2015 3:40:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017390-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R104043	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	PBW	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131124

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

Sample ID	LCS-R104043	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	LCSW	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131125

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

Sample ID	N017390-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	ZZZZZZ	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131127

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.897	0.25						2.980	2.81	20	

Sample ID	N017390-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	ZZZZZZ	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.526	0.25	2.500	2.980	102	75	125				

Sample ID	N017390-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	ZZZZZZ	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.289	0.25	2.500	2.980	92.4	75	125	5.526	4.38	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017390
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017390-001

Client Sample ID: OW-01S-4Q15
Collection Date: 10/26/2015 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151104A**	QC Batch: **52882**				PrepDate	**10/29/2015**	Analyst: **CEI**
Sodium	720000	290	12000		ug/L	25	11/4/2015 01:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-52882	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	PBW	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2125956

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	139.838	500									

Sample ID	LCS2-52882	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	LCSW	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2125997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9627.679	500	10000	0	96.3	85	115				

Sample ID	N017400-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2126005

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1362631.918	50000	10000	1351000	118	75	125				

Sample ID	N017400-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2126006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1337800.448	50000	10000	1351000	-130	75	125	1363000	1.84	20	S

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01S-4Q15
Lab Order:	N017390	**Collection Date:**	10/26/2015 3:40:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017390-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_151105C**	QC Batch: **52955**				PrepDate	**11/5/2015**	Analyst: **CEI**
Molybdenum	7.4	0.029	0.50		µg/L	1	11/5/2015 06:09 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-52955**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **PBW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.053	0.50									

Sample ID **LCS-52955**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **LCSW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.494	0.50	10.00	0	94.9	85	115				

Sample ID **N017390-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.799	0.50	10.00	7.399	114	75	125				

Sample ID **N017390-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.430	0.50	10.00	7.399	110	75	125	18.80	1.98	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Marty Bloes	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address: 1410 Rocky Ridge Dr # 330	**Company:** Arcadis	**Address:**	Excel EDD ☐	RTNE ☐	Y N
Address: Roseville, CA 95661	**Email:** Dan.Bush@arcadis.com; Daniel.Moore@critigen.com		Geotracker ☐	RWQCB ☐	1. Chilled ☐ ☐
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	**Email to:** mbloes@pivox.com **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐ N
Submitted By: Jason Mahn		**Phone:** 949.727.1400, ext 200 **Fax:**	Others ☑	Level III ☐	3. Container Intact ☑ ☐
Title: Sample Tech	**Phone:** 916.786.3302 **Fax:**		Specify: EQ EDD	LEVEL IV ☑	4. Seal Present ☐ ☑
			Global ID:	Regulatory ☐	5. IR number 1
				Specify State:	6. Method of Cooling Ice
					Sample Temp: 2-6C

Signature: **Date:** 10/26/15

I hereby authorize ASSET Labs to perform the tests indicated below:

Project Name: PG&E Topock - CMP

Project Number: RC000753.0801

Sampled By: Nara Tep

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature: **Date** 10/26/15

Matrix: Ground ☑ Sediment ☐ Potable ☐ Soil ☐ NPDES ☐ Other Solid ☐ Surface ☐

Analyses Requested

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr(VI) (E218.6) (NH4)2, SO4, NH4, OH, 4°C, 250 ml Poly	Metals Dissolved (6010/Die) Cr, Mo, NA HNO3, 4°C; 500 ml Poly	Metals Dissolved (6020AFP) As,Cr,Mn; HNO3, 4°C; 500 ml Poly	Metals Dissolved (6020AFP) As,Mn; HNO3, 4°C; 500 ml Poly	Metals Dissolved (6020AFP) Cr,Mn; HNO3, 4°C; 500 ml Poly	Turbidity (SM2130); 4°C; 1000ml Poly	Specific Conductence (E120.1); 4°C; 1000ml Poly	Anions (E300.0) Chloride,Sulfate,Fluoride, 4°C; 1000ml	Anions (SM4500NO3E) Nitrate/Nitrite; H2SO4, 4°C; 125ml Poly	TDS (SM2540C); 4°C; 1000ml Poly	TOC (E5310); H2SO4, 4°C; 3X40 ml VOA	Ammonia (SM4500NH3); H2SO4, 4°C; 1 L poly	Gross Alpha/Beta (E900); HNO3; 2x1000ml Poly	Metals Dissolved (6020AFP) Cr; HNO3, 4°C; 500 ml Poly	Ortho-Phosphate (E300.0); 4°C; 1000ml Poly	Turn Around Time	No. of container	Remarks
1	N017390-1	OW-01S-4Q15	10/26/12	1540	X			X	X				X	X	X	X	X							10	4	
2	-2	MW-201-4Q15	10/26/12	1555	X			X																10	1	
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

Courier:

Tracking No.

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	10/26/15 1615		10/26/15 1615
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	10/26/15 1823		10/26/15 1823
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)

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

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

Special Instruction:

Terms

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

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

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

White = Laboratory Copy

Yellow = Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 10/26/2015 Workorder: N017390

Rep sample Temp (Deg C): 2.6 IR Gun ID: 1

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

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

Comments: In the COC the sampling date is 10/26/12 while in the label it is 10/26/15.

Checklist Completed B for MBC 10/27/2015

Reviewed By: 10/28/15

ASSET Laboratories

WORK ORDER Summary

27-Oct-15

WorkOrder: N017390

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/26/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017390-001A	OW-01S-4Q15	10/26/2015 3:40:00 PM	11/9/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017390-001B			11/9/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/9/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017390-001C			11/9/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/9/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/9/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/9/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/9/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/9/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/9/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017390-001D			11/9/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017390-002A	MW-201-4Q15	10/26/2015 3:55:00 PM	11/9/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017390-003A	FOLDER		11/9/2015		EDD	Client specific project	☐	☐	☐	LAB
			11/9/2015		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N017390

Item	Pages
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 6010B, EPA 6020
Ryan Balilu	EPA 218.6, SM 4500-NO3F
Lilia Ramit	EPA 120.1,SM 2540C,SM 2130

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103801 **Analyst:** LSR

ASSET #: N017390 **Date Analyzed:** 10/27/2015

Method: EPA 120.1_W

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MS~~D, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 10/27/2015

2nd Level Reviewer: 11/6/2015 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 10/27/15 1050

Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 µs/cm	CINV - 150619A	9.57 µs/cm @ 21.2°C	% Rec: (90-110%)
1414	- 150601B	1418 @ 21.2°C	
10009	- 150619B	10110 @ 21.2°C	
99996	- 150930A	101600 @ 21.2°C	

	Sample ID	Matrix	Reading	Comments
1	NO17390 -001C	Water	5760 µs/cm @ 22.1°C	
2	↓ - 001C DUP	↓	5770 ↓ @ 21.6°C	
3				
4				
5				Julia Ramit 10/27/2015
6				
7				
8	1413 µs/cm	CINV - 150527A	1419 µs/cm @ 21.7°C	
9	10000	- 141205A	10250 @ 21.5°C	
10	100061	- 150309G	103200 ↓ @ 21.5°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: _____

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52870 **Analyst:** LSR

ASSET #: N017390 **Date Analyzed:** 10/28/2015

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

MS/MSD failed however LCS/LCSD passed criteria.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/2/2015

2nd Level Reviewer: Nancy ~~11/6/2015~~ Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N017390-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(54.8484 - 54.7725)*1000000}{20}$$

= 3795 mg/L

Reporting result in two significant figures,

TDS =3800 mg/L

Divia Ramit 11/2/2015

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/28/2015 2:20:52**
Prep End Date: **10/29/2015 11:10:0**

Initials/ Date: Lilia Ramit 11/2/2015

Prep Batch **52870** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52870	Water		100	☐	0	0	100	1.000		
MB-52870	Water		100	☐	0	0	100	1.000		
N017390-001C	Groundwater		20	☐	0	0	100	5.000		
N017390-001C-DU	Groundwater		20	☐	0	0	100	5.000		
N017396-001C	Groundwater		100	☐	0	0	100	1.000		
N017396-002C	Groundwater		100	☐	0	0	100	1.000		
N017396-003C	Groundwater		100	☐	0	0	100	1.000		
N017396-004C	Groundwater		100	☐	0	0	100	1.000		
N017396-005C	Groundwater		100	☐	0	0	100	1.000		
N017396-006C	Groundwater		100	☐	0	0	100	1.000		
N017396-007C	Groundwater		100	☐	0	0	100	1.000		
N017396-008C	Groundwater		100	☐	0	0	100	1.000		
N017396-009C	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Spk ID	Spike Name	SampType	AmtAdd
IWST151026A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/28/2015**
Prep End Date:

Initials/ Date: Lilia Ramit 11/2/2015

Prep Batch **52870** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

	Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check	
L7	LCS-52870	Water	IW ST:151026 A	100	☐	0	0	100	1.000	77.2276 77.2274	77.3245 77.3250	776
AB	MB-52870	Water		100	☐	0	0	100	1.000	61.3333 61.3332	1429 61.3333 61.3336	4
AA	N017390-001C	Groundwater	5510	100/20	☐	0	0	100	1.000	54.7727 54.7725	54.8483 54.8487	3795
BB	N017390-001C-DUP	Groundwater	↓	100/20	☐	0	0	100	1.000	63.7630 63.7629	63.8382 63.8386	3785
1A	N017396-001C	Groundwater	932	100	☐	0	0	100	1.000	76.8031 76.8031	76.8623 76.8622	591
L3	N017396-002C	Groundwater	929	100	☐	0	0	100	1.000	75.7460 75.7457	75.8046 75.8050	593
L5	N017396-003C	Groundwater	971	100	☐	0	0	100	1.000	75.3381 75.3379	75.4010 75.4008	629
L8	N017396-004C	Groundwater	938	100	☐	0	0	100	1.000	74.8105 74.8102	74.8716 74.8713	611
L11	N017396-005C	Groundwater	923	100	☐	0	0	100	1.000	76.7611 76.7609	76.8209 76.8214	605
4	N017396-006C	Groundwater	934	100	☐	0	0	100	1.000	53.9887 53.9884	53.9701 53.9701	617
2	N017396-007C	Groundwater	928	100	☐	0	0	100	1.000	55.0715 55.0713	55.1323 55.1320	607
16	N017396-008C	Groundwater	918	100	☐	0	0	100	1.000	53.6301 53.6299	53.6895 53.6900	601
12	N017396-009C	Groundwater	945	100	☐	0	0	100	1.000	57.0253 57.0253	57.0862 57.0859	606

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TSS / TS / TDS Preparation and Runlog

Name of Test: TDS

QC Batch No.: 52870

Date Prepared: 10/28/15
Time Prepared: 1420 (Start Time)
Prepared By: LER

Date of Weighing: 10/29/15
Time of Reading: 915 (Start time)
Weighings performed by: LER

Oven Temperature: 180°C
Filter Paper Lot #: TS0410

	Sample ID	Sample Vol. (ml)	Crucible+Filter 1st Final Tare Wt.(g)	Crucible+Filter 2nd Final Tare Wt.(g)	Crucible+Filter+Sample 1st Final Wt(g)	Crucible+Filter+Sample 2nd Final Wt(g)	TSS/TS/(TDS) (mg/L)	Comments
	Blank MB-52870	100	61.3333	61.3332	61.3333	61.3336	4	TDS/COND RATIO
1	LCS-52870	100	77.2276	77.2274	77.3245	77.3250	976	
2	N017390-001C	20	54.7727	54.7725	54.8483	54.8484	3795	3795/5540 = 0.689
3	↓ -001C DUP	20	63.7630	63.7629	63.8382	63.8386	3785	3785/5510 = 0.687
4	N017396-001C	100	76.8031	76.8031	76.8623	76.8622	591	591/932 = 0.634
5	-002C	100	75.7460	75.7457	75.8046	75.8050	593	593/929 = 0.638
6	-003C	100	75.3381	75.3379	75.4010	75.4008	629	629/971 = 0.648
7	-004C	100	74.8103	74.8102	74.8716	74.8713	611	611/938 = 0.651
8	-005C	100	76.7611	76.7609	76.8209	76.8214	605	605/923 = 0.655
9	-006C	100	53.9087	53.9084	53.9701	~~53.9701~~ 9701 dup	617	617/934 = 0.661
10	-007C	100	55.0715	55.0713	55.1323	55.1320	607	607/928 = 0.654
11	-008C	100	53.6301	53.6299	53.6895	53.6900	601	601/918 = 0.655
12	-009C	100	57.0253	57.0253	57.0862	57.0859	606	606/945 = 0.641
13								
14								
15								
16								
17								
18								
19								KR2 10/29/15
20								
Dup								

Silvia Ramit 11/2/2015

Logbook #13

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO
Date Finished:10/29/15								
MB-52870	100	61.3332	61.3336	4	1	4		
LCS52870	100	77.2274	77.325	976	1	976		
N017390-001C	20	54.7725	54.8484	759	5	3795	5510	0.689
N017390-001CDUP	20	63.7629	63.8386	757	5	3785	5510	0.687
N017396-001C	100	76.8031	76.8622	591	1	591	932	0.634
N017396-002C	100	75.7457	75.805	593	1	593	929	0.638
N017396-003C	100	75.3379	75.4008	629	1	629	971	0.648
N017396-004C	100	74.8102	74.8713	611	1	611	938	0.651
N017396-005C	100	76.7609	76.8214	605	1	605	923	0.655
N017396-006C	100	53.9084	53.9701	617	1	617	934	0.661
N017396-007C	100	55.0713	55.132	607	1	607	928	0.654
N017396-008C	100	53.6299	53.69	601	1	601	918	0.655
N017396-009C	100	57.0253	57.0859	606	1	606	945	0.641

Silvia Ramit 11/2/2015

SM 2130B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103800 **Analyst:** LSR

ASSET #: N017390 **Date Analyzed:** 10/27/2015

Method: EPA 2130_W

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 10/27/2015

2nd Level Reviewer: 11/6/2015 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Turbidity Preparation and Runlog

Date Analyzed: 10/27/15
Time Analyzed: 1100
Analyzed By: LSR

	Sample ID.	Matrix	Sample Vol (ml)	Std Code	Dilution (F/I)	Reading	Calculations	Comments
	0.02 NTU			CINV-150528A		0.03 NTU		
	20			B		19.79		
	100			C		101		
	800			D		808		
1)	MB	H20	10		1	0 NTU		
2)	ND17390-001C					1.21		
3)	-001C DUP					1.22		
4)								
5)								
6)	5 NTU			CINV-150119A		5.12 NTU		
7)	20			-150530A		20.8		
8)	100			-150520B		101		
9)								
10)								
11)							Julia Ramit	
12)							10/27/2015	
13)								
14)								
15)								
16)								
17)								
18)								
19)								LSR 10/27/15
20)								

Advanced Technology laboratories - Las Vegas Book #2

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R103879
ASSET #: N017390

Instrument ID: IC-07
Analyst: REB
Date Analyzed: 10/27/2015

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/9/2015 Date: —

2nd Level Reviewer 11/10/201 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N017390-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 8.1624 * 1

= 8.1624

Reporting result in two significant figures,

Cr^{+6}, µg/L = 8.2



ANALYSIS RUN LOG

INJECTION LOG: 151002A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	10/02/15 12:02 PM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/02/15 12:13 PM	Reported
11	ICB	ICB	1	Hexavalent Chromium	10/02/15 12:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151002A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**07/Oct/15 19:21:29**
No. of Injections:	**14**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	ICV,ICV,1,	9	1000	Unknown		10/02/2015 12:02	Finished	ICV @ 5ppb, IWST 151002B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		10/02/2015 12:13	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		10/02/2015 12:22	Finished	ICB R150928A
12	SHUTDOWN	12	1000	Unknown		10/02/2015 12:37	Finished	BLANK
13	Eluent: R150924B	13	1000	Unknown		n.a.	Finished	Eluent
14	PCR: R150929A	14	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 151027A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	10/27/15 7:18 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	10/27/15 7:29 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	10/27/15 7:39 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/27/15 7:48 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	10/27/15 7:57 AM	Reported
14	MB-R103879	MBLK	1	Hexavalent Chromium	10/27/15 8:07 AM	Reported
15	LCS-R103879	LCS	1	Hexavalent Chromium	10/27/15 8:16 AM	Reported
16	N017229-001A	SAMP	1	Hexavalent Chromium	10/27/15 8:26 AM	Not Reported
17	N017229-001AMS	MS	1	Hexavalent Chromium	10/27/15 8:35 AM	Not Reported
18	N017232-005A	SAMP	1	Hexavalent Chromium	10/27/15 8:45 AM	Not Reported
19	N017232-005AMS	MS	1	Hexavalent Chromium	10/27/15 8:54 AM	Not Reported
20	N017382-005A	SAMP	200	Hexavalent Chromium	10/27/15 9:04 AM	Reported
21	N017382-005ADUP	DUP	200	Hexavalent Chromium	10/27/15 9:13 AM	Reported
22	N017382-005AMS	MS	200	Hexavalent Chromium	10/27/15 9:23 AM	Reported
23	N017382-005AMSD	MSD	200	Hexavalent Chromium	10/27/15 9:32 AM	Reported
24	CCV-2	CCV	1	Hexavalent Chromium	10/27/15 9:42 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	10/27/15 9:51 AM	Reported
26	N017249-007A	SAMP	1	Hexavalent Chromium	10/27/15 10:08 AM	Not Reported
27	N017249-007AMS	MS	1	Hexavalent Chromium	10/27/15 10:19 AM	Not Reported
28	N017249-008A	SAMP	1	Hexavalent Chromium	10/27/15 10:29 AM	Not Reported
29	N017249-008AMS	MS	1	Hexavalent Chromium	10/27/15 10:38 AM	Not Reported
30	N017250-005A	SAMP	1	Hexavalent Chromium	10/27/15 10:48 AM	Not Reported
31	N017250-005AMS	MS	1	Hexavalent Chromium	10/27/15 10:57 AM	Not Reported
32	N017250-012A	SAMP	1	Hexavalent Chromium	10/27/15 11:07 AM	Not Reported
33	N017250-012AMS	MS	1	Hexavalent Chromium	10/27/15 11:16 AM	Not Reported
34	N017266-013A	SAMP	1	Hexavalent Chromium	10/27/15 11:26 AM	Not Reported
35	N017266-013AMS	MS	1	Hexavalent Chromium	10/27/15 11:35 AM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	10/27/15 11:45 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	10/27/15 11:54 AM	Reported
38	N017382-003A	SAMP	1	Hexavalent Chromium	10/27/15 12:08 PM	Not Reported
39	N017390-001A	SAMP	1	Hexavalent Chromium	10/27/15 12:19 PM	Reported
40	N017390-001AMS	MS	1	Hexavalent Chromium	10/27/15 12:29 PM	Not Reported
41	N017390-002A	SAMP	1	Hexavalent Chromium	10/27/15 12:38 PM	Reported
42	N017390-002AMS	MS	1	Hexavalent Chromium	10/27/15 12:47 PM	Reported

INJECTION LOG: 151027A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N017390-001AMS	MS	1	Hexavalent Chromium	10/27/15 12:57 PM	Reported
44	CCV-4	CCV	1	Hexavalent Chromium	10/27/15 1:31 PM	Reported
45	CCB-4	CCB	1	Hexavalent Chromium	10/27/15 1:42 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151027A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**30/Oct/15 16:41:24**
No. of Injections:	**48**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	BLANK	1	1000	Unknown		10/27/2015 07:18	Finished	BLANK
10	BLANK	2	1000	Unknown		10/27/2015 07:29	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		10/27/2015 07:39	Finished	CCV @ 5ppb, IWST 151002A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		10/27/2015 07:48	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		10/27/2015 07:57	Finished	CCB R150928A
14	MB-H2O,MBLK,1,	6	1000	Unknown		10/27/2015 08:07	Finished	MB, R151005A
15	LCS-H2O,LCS,1,	7	1000	Unknown		10/27/2015 08:16	Finished	LCS@5ppb, IWST-151002B
16	N017229-001A,SAMF	8	1000	Unknown		10/27/2015 08:26	Finished	SAMP, 10mL
17	N017229-001AMS,MS	9	1000	Unknown		10/27/2015 08:35	Finished	MS(5ppb), IWST-151002B,10m
18	N017232-005A,SAMF	10	1000	Unknown		10/27/2015 08:45	Finished	SAMP, 10mL
19	N017232-005AMS,MS	11	1000	Unknown		10/27/2015 08:54	Finished	MS(5ppb), IWST-151002B,10m
20	N017382-005A,SAMF	12	1000	Unknown		10/27/2015 09:04	Finished	SAMP, 0.05mL to 10mL
21	N017382-005ADUP,D	13	1000	Unknown		10/27/2015 09:13	Finished	DUP, 0.05mL to 10mL
22	N017382-005AMS,MS	14	1000	Unknown		10/27/2015 09:23	Finished	MS(5ppb), IWST-151002B,10m
23	N017382-005AMSD,M	15	1000	Unknown		10/27/2015 09:32	Finished	MSD(1ppb), IWST-151002B,10
24	CCV-2,CCV,1	16	1000	Unknown		10/27/2015 09:42	Finished	CCV @ 10ppb, IWST 151002A
25	CCB-2,CCB,1	17	1000	Unknown		10/27/2015 09:51	Finished	CCB
26	N017249-007A,SAMF	18	1000	Unknown		10/27/2015 10:08	Finished	SAMP, 10mL
27	N017249-007AMS,MS	19	1000	Unknown		10/27/2015 10:19	Finished	MS(1ppb), IWST-151002B,10m
28	N017249-008A,SAMF	20	1000	Unknown		10/27/2015 10:29	Finished	SAMP, 10mL
29	N017249-008AMS,MS	21	1000	Unknown		10/27/2015 10:38	Finished	MS(1ppb), IWST-151002B,10m
30	N017250-005A,SAMF	22	1000	Unknown		10/27/2015 10:48	Finished	SAMP, 10mL
31	N017250-005AMS,MS	23	1000	Unknown		10/27/2015 10:57	Finished	MS(1ppb), IWST-151002B,10m
32	N017250-012A,SAMF	24	1000	Unknown		10/27/2015 11:07	Finished	SAMP, 10mL
33	N017250-012AMS,MS	25	1000	Unknown		10/27/2015 11:16	Finished	MS(1ppb), IWST-151002B,10m
34	N017266-013A,SAMF	26	1000	Unknown		10/27/2015 11:26	Finished	SAMP, 10mL
35	N017266-013AMS,MS	27	1000	Unknown		10/27/2015 11:35	Finished	MS(1ppb), IWST-151002B,10m
36	CCV-3,CCV,1	28	1000	Unknown		10/27/2015 11:45	Finished	CCV @ 5ppb, IWST 151002A
37	CCB-3,CCB,1	29	1000	Unknown		10/27/2015 11:54	Finished	CCB
38	N017382-003A,SAMF	30	1000	Unknown		10/27/2015 12:08	Finished	SAMP, 10mL
39	N017390-001A,SAMF	31	1000	Unknown		10/27/2015 12:19	Finished	SAMP, 10mL
40	N017390-001AMS,MS	32	1000	Unknown		10/27/2015 12:29	Finished	MS(1ppb), IWST-151002B,10m
41	N017390-002A,SAMF	33	1000	Unknown		10/27/2015 12:38	Finished	SAMP, 10mL
42	N017390-002AMS,MS	34	1000	Unknown		10/27/2015 12:47	Finished	MS(1ppb), IWST-151002B,10m
43	N017390-001AMS,MS	35	1000	Unknown		10/27/2015 12:57	Finished	MS(5ppb), IWST-151002B,10m
44	CCV-4,CCV,1	36	1000	Unknown		10/27/2015 13:31	Finished	CCV @ 10ppb, IWST 151002A
45	CCB-4,CCB,1	37	1000	Unknown		10/27/2015 13:42	Finished	CCB
46	SHUTDOWN	38	1000	Unknown		10/27/2015 13:52	Finished	BLANK
47	Eluent: R151026B	39	1000	Unknown		n.a.	Finished	Eluent
48	PCR: R151027B	40	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 10/24/15
Time Prepared: 12:30 PM
Prepared By: MEB

Reagent ID:
Sulfuric Acid: CMW-150915C
Diphenylcarbazide: CMW-150916B
NH4OH + NH4SO4 eluent: R151024A / R151026B / R151028A
NH4OH + NH4SO4 buffer: R150928A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO17381-010A	9.31	—	—	—	—	R150928A
2)	11A	9.08	9.33	~25mL	~25mL	+3drops 6MNaOH	
3)	~~12A~~	~~9.26~~	~~9.37~~			~~+2drops~~	
4)	13A	9.13	9.30			+3drops	
5)	NO17382-001A	8.69	9.31			+6drops	
6)	2A	8.81	9.33			+5drops	
7)	3A	8.90	9.37			+5drops	
8)	4A	8.94	9.61			+5drops	
9)	5A	8.98	9.32			+5drops	
10)	6A	9.15	9.34			+3drops	
11)	7A	8.96	9.33			+5drops	
12)	8A	8.97	9.38			+5drops	
13)	9A	8.96	9.33			+5drops	
14)	10A	9.25	9.34			+3drops	
15)							

Sample Preparation

Date Prepared: 10/27/15
Time Prepared: 10:40 PM
Prepared By: MEB

SWPE: 98.9%
pH4 = 4.01
7 = 7.00
10 = 10.03
LC = 6.98

Reagent ID:
Sulfuric Acid: CMW-150925C
Diphenylcarbazide: CMW-150916B
NH4OH + NH4SO4 eluent: R151024B
NH4OH + NH4SO4 buffer: R151018C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NO17390-001A	9.38	—	—	—	—	R151018C
2)	002A	9.54	—	—	—	—	1
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 9

REB 11/9/2015

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 10/2/2015

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0556	0.2482	1.1638	2.3278	3.5606	4.7147	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST151002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **ICV**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/2/2015**	SeqNo: **2122120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.075	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **ZZZZZZ**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/2/2015**	SeqNo: **2122121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCV**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.966	0.20	5.000	0	99.3	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **ZZZZZZ**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.207	0.20	0.2000	0	104	80	120				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCV**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.915	0.20	10.00	0	99.2	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCV**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	95	105				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCV**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.101	0.20	10.00	0	101	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **ICB**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/2/2015**	SeqNo: **2122122**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCB**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122125**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCB**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122133**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCB**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122135**

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

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103879**
Client ID: **CCB**	Batch ID: **R103879**	TestNo: **EPA 218.6**		Analysis Date: **10/27/2015**	SeqNo: **2122141**

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

Qualifiers:

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

Calculations are based on raw values

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 10/27/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.065	
CCV-2	5.048	
CCV-3	5.065	
CCV-4	5.065	
Average	5.061	
Actual RT Window	4.981 - 5.141	
Applied RT Window	4.861 - 5.261	
MB-R103879	N.A.	N.A.
LCS-R103879	5.073	PASS
N017229-001A	5.057	PASS
N017229-001AMS	5.057	PASS
N017232-005A	5.065	PASS
N017232-005AMS	5.065	PASS
N017382-005A	5.073	PASS
N017382-005ADUP	5.065	PASS
N017382-005AMS	5.065	PASS
N017382-005AMSD	5.065	PASS
N017249-007A	5.057	PASS
N017249-007AMS	5.065	PASS
N017249-008A	4.998	PASS
N017249-008AMS	5.007	PASS
N017250-005A	4.990	PASS
N017250-005AMS	5.007	PASS
N017250-012A	4.973	PASS
N017250-012AMS	4.982	PASS
N017266-013A	5.065	PASS
N017266-013AMS	5.073	PASS
N017382-003A	5.065	PASS
N017390-001A	4.990	PASS
N017390-001AMS	4.990	PASS
N017390-002A	N.A.	N.A.
N017390-002AMS	5.065	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 10/27/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.065	
CCV-2	5.048	
CCV-3	5.065	
CCV-4	5.065	
Average	5.061	
Actual RT Window	4.981 - 5.141	
Applied RT Window	4.861 - 5.261	
N017390-001AMS	4.990	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography**
Method Number: EPA 218.6 / EPA 7199
Analysis Date(s): 2/26/2015
Analyst: Ryan Balilu

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0329	0.0375	0.0281	0.0325	0.0403	0.0276	0.0265	0.0301	0.030	0.0049	2.998	**0.015**	**0.20**	OK,meets criteria

Students't Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 / EPA 7199 Unit: ug/L
Analysis Date(s): 3/16/2015
Analyst: Ryan Balilu

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0617	0.0578	0.0592	0.0604	0.0606	0.0686	0.0567	0.050	0.0039	3.143	**0.012**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 / EPA 7199 Unit: ug/L
Analysis Date(s): 3/5/2015
Analyst: Ryan Balilu

Instrument Name: **IC-01** **Acceptance Criteria:** MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0672	0.0679	0.0615	0.0664	0.0620	0.0637	0.0610	0.050	0.0029	3.143	**0.0090**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 151002A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	10/02/15 12:02 PM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/02/15 12:13 PM	Reported
11	ICB	ICB	1	Hexavalent Chromium	10/02/15 12:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151002A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**07/Oct/15 19:21:29**
No. of Injections:	**14**	*Updated By:*	**ics 5000**

Injection Details

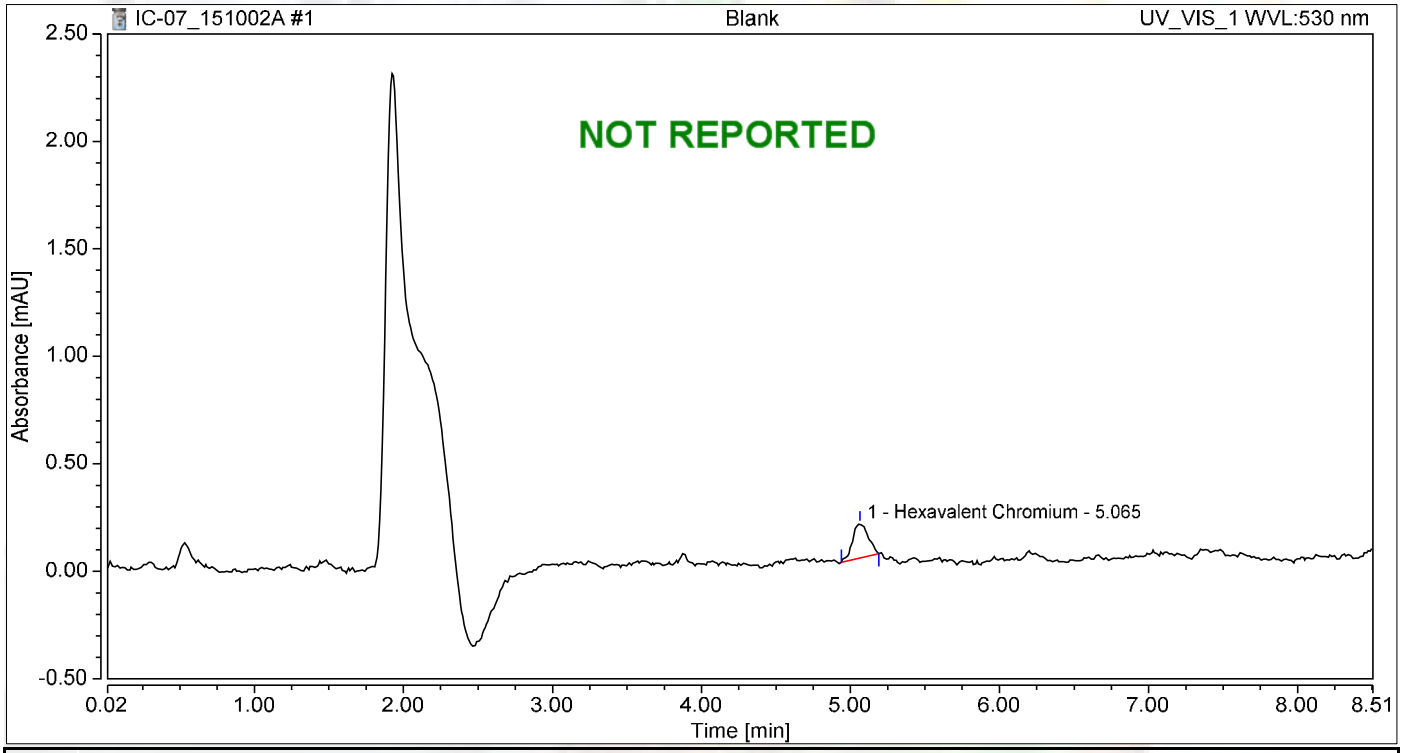
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	ICV,ICV,1,	9	1000	Unknown		10/02/2015 12:02	Finished	ICV @ 5ppb, IWST 151002B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		10/02/2015 12:13	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		10/02/2015 12:22	Finished	ICB R150928A
12	SHUTDOWN	12	1000	Unknown		10/02/2015 12:37	Finished	BLANK
13	Eluent: R150924B	13	1000	Unknown		n.a.	Finished	Eluent
14	PCR: R150929A	14	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**Blank**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

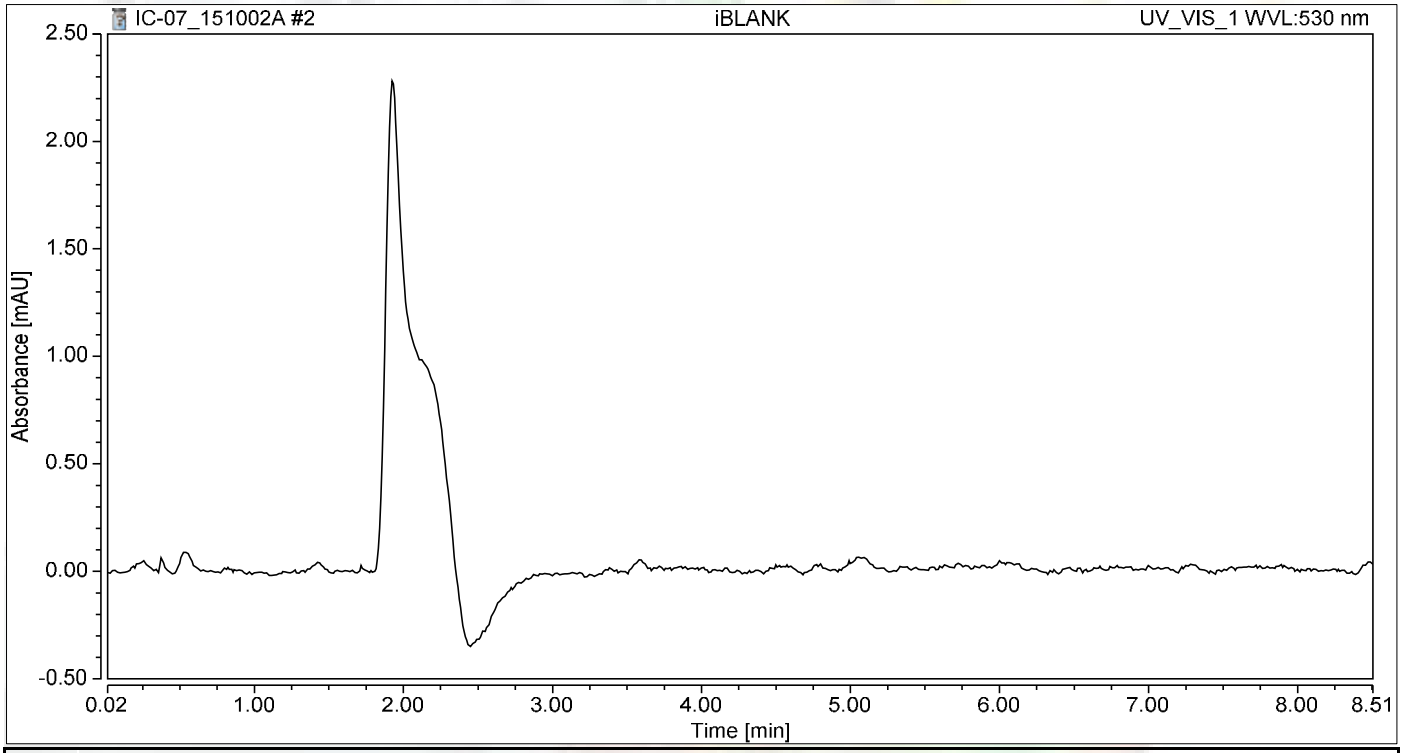
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.019	0.160	100.00	100.00	0.0827
Total:			**0.019**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

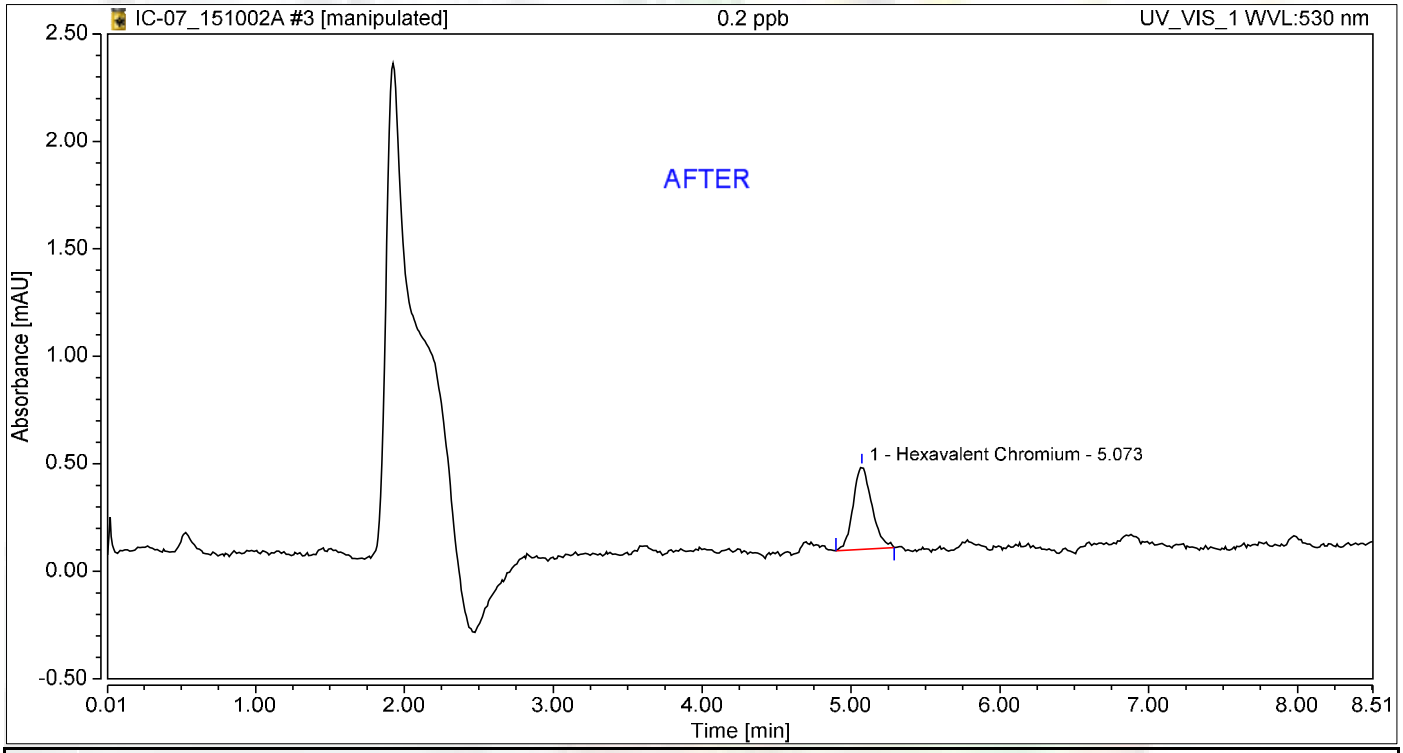
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.056	0.385	100.00	100.00	0.2357
Total:			**0.056**	**0.385**	**100.00**	**100.00**	

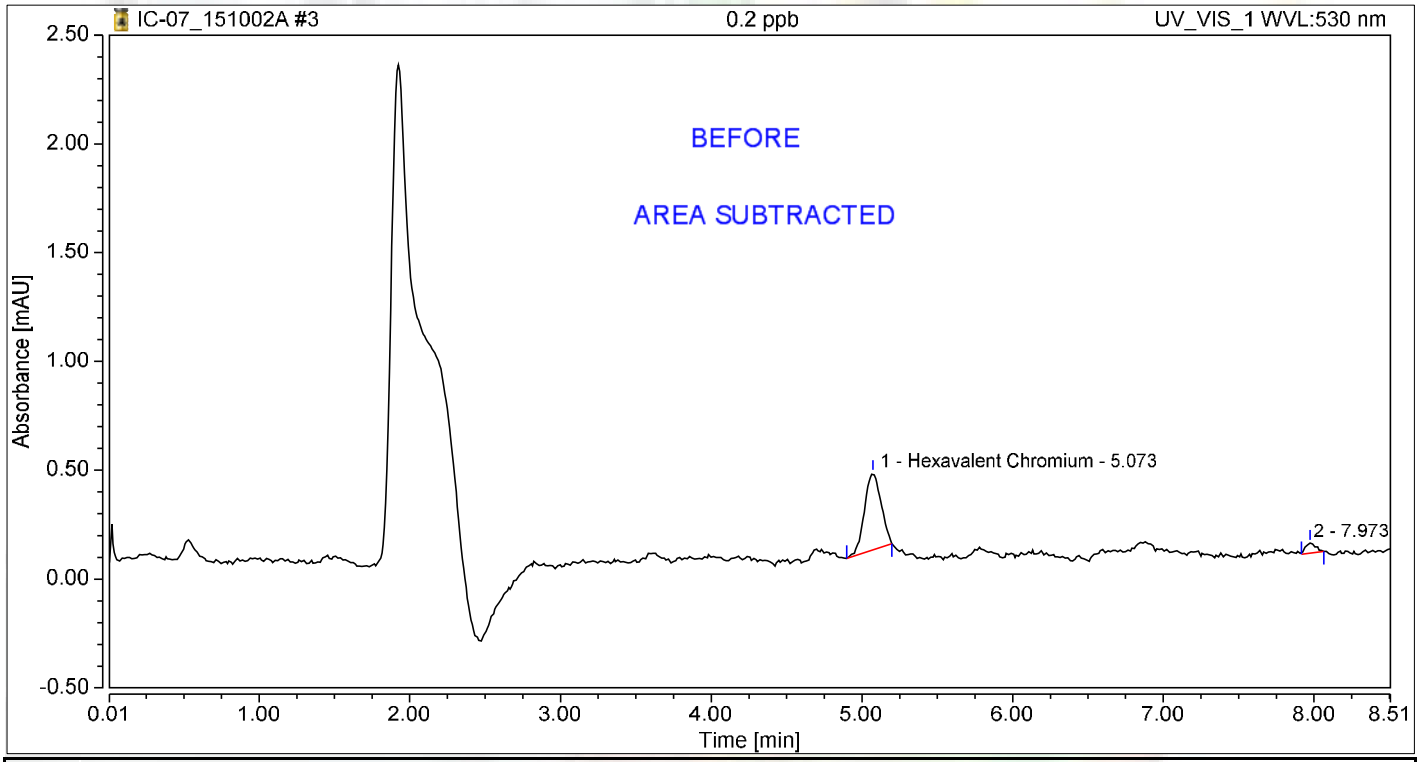
10/14/2015

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

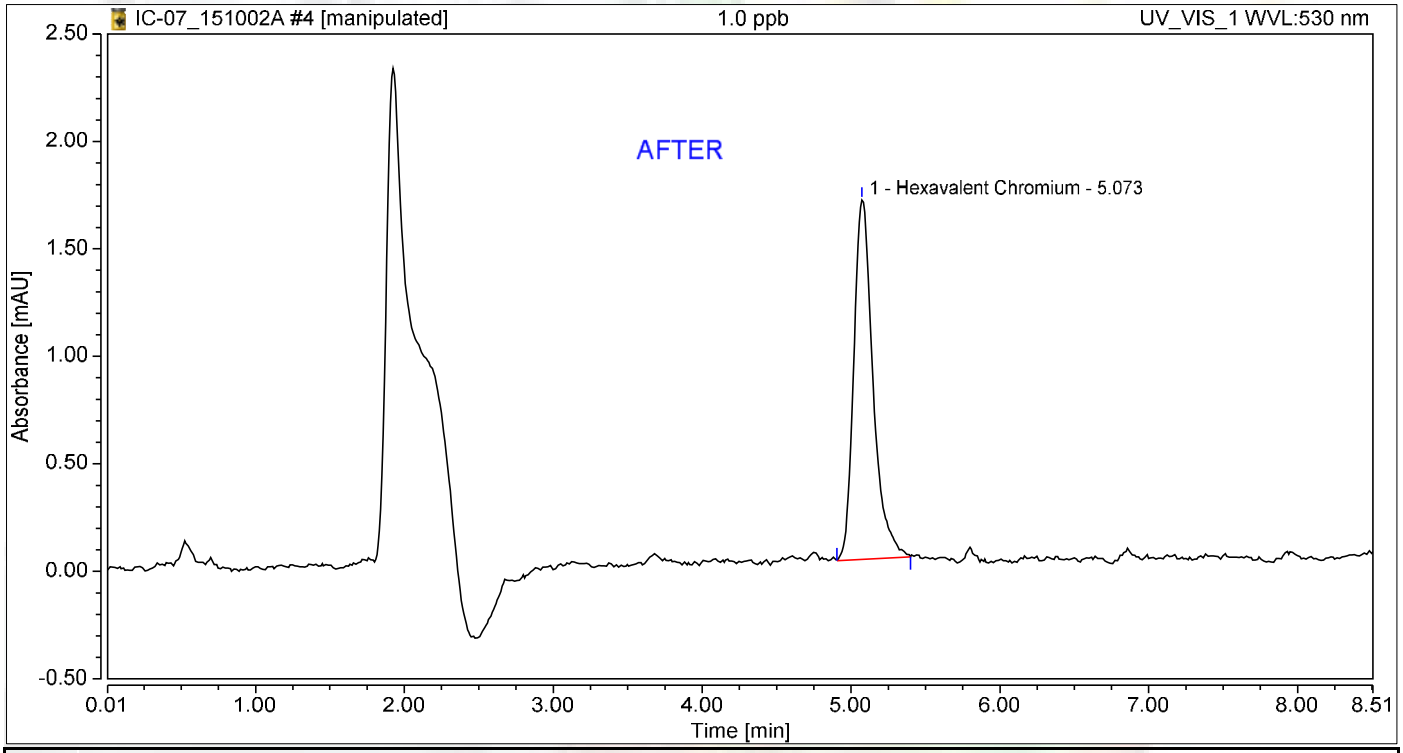
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.045	0.352	92.39	88.20	0.1899
2		7.973	0.004	0.047	7.61	11.80	n.a.
Total:			**0.048**	**0.400**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.248	1.672	100.00	100.00	1.0528
Total:			**0.248**	**1.672**	**100.00**	**100.00**	

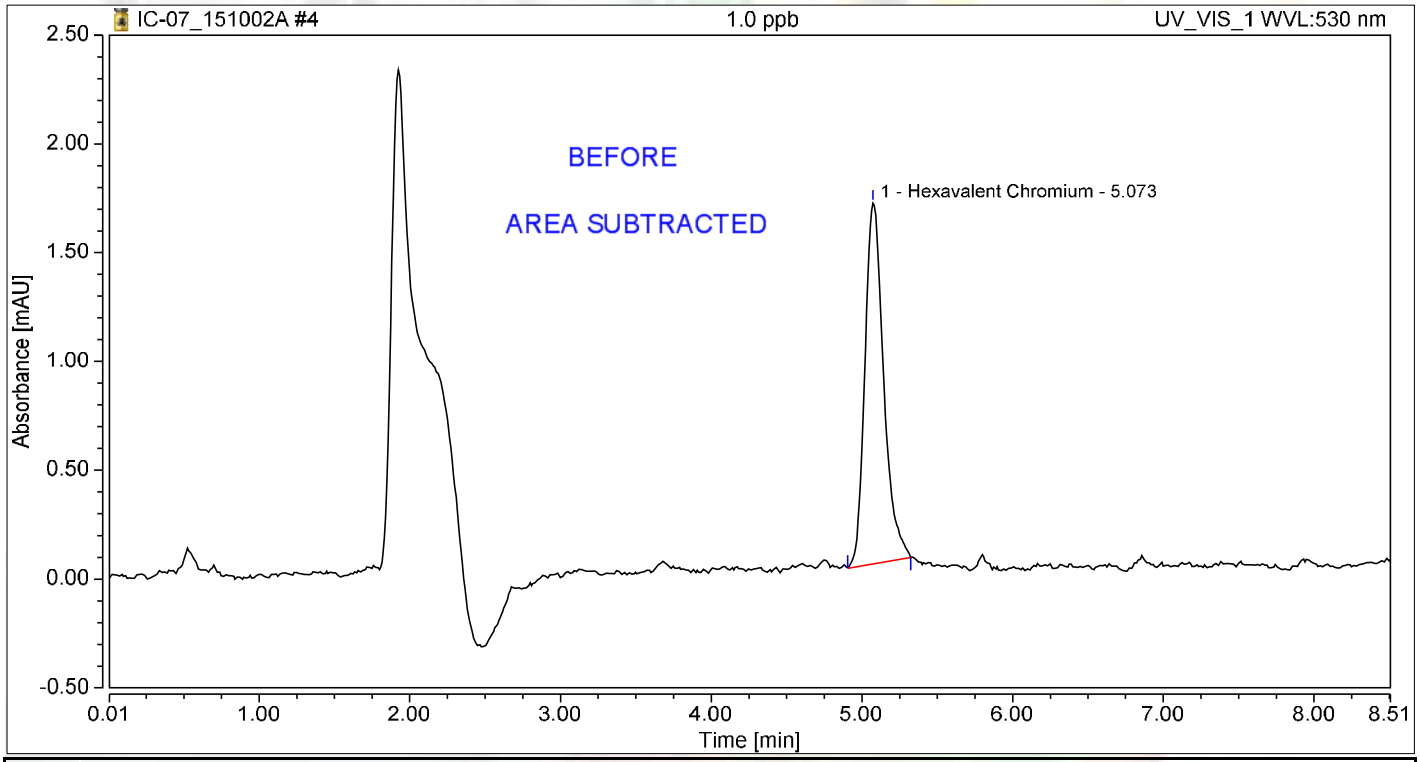
10/14/2015

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

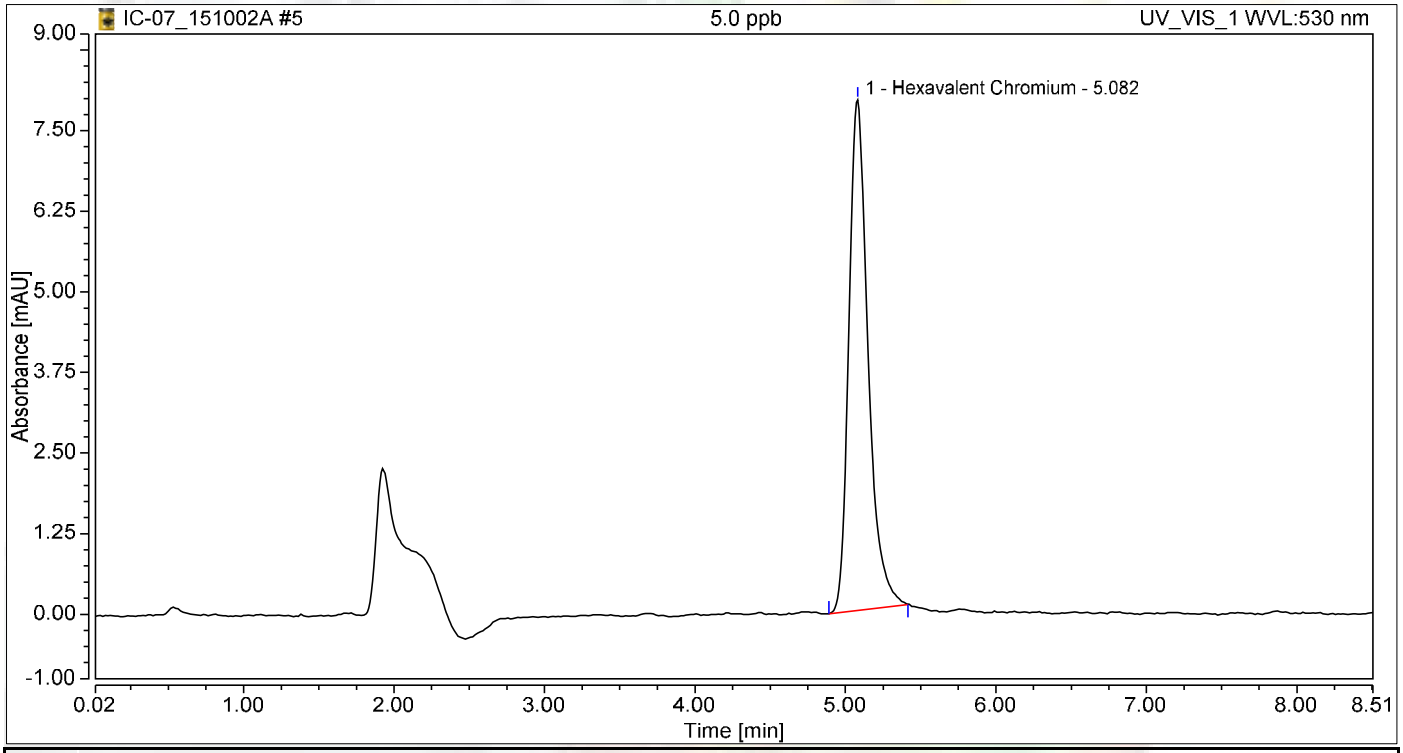
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.239	1.658	100.00	100.00	1.0140
Total:			**0.239**	**1.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

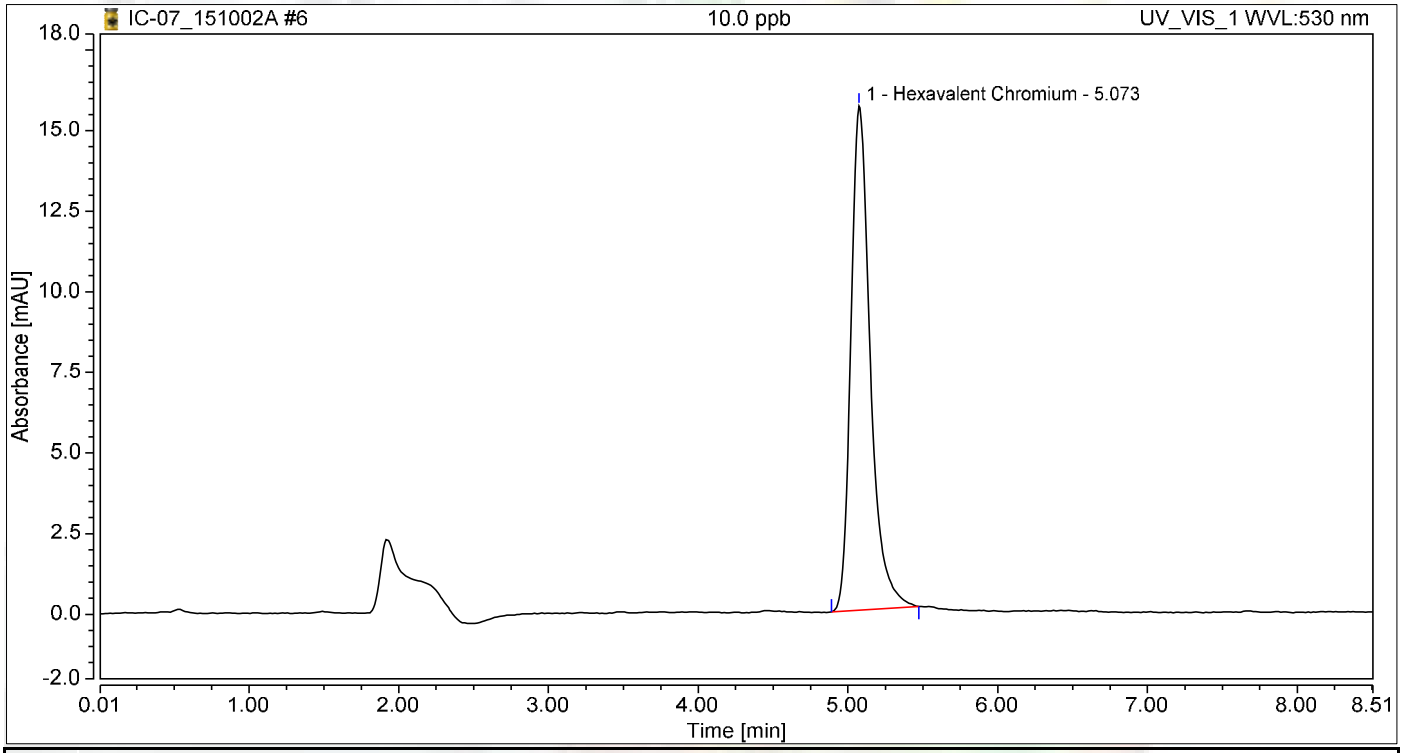
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.082	1.164	7.918	100.00	100.00	4.9363
Total:			**1.164**	**7.918**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

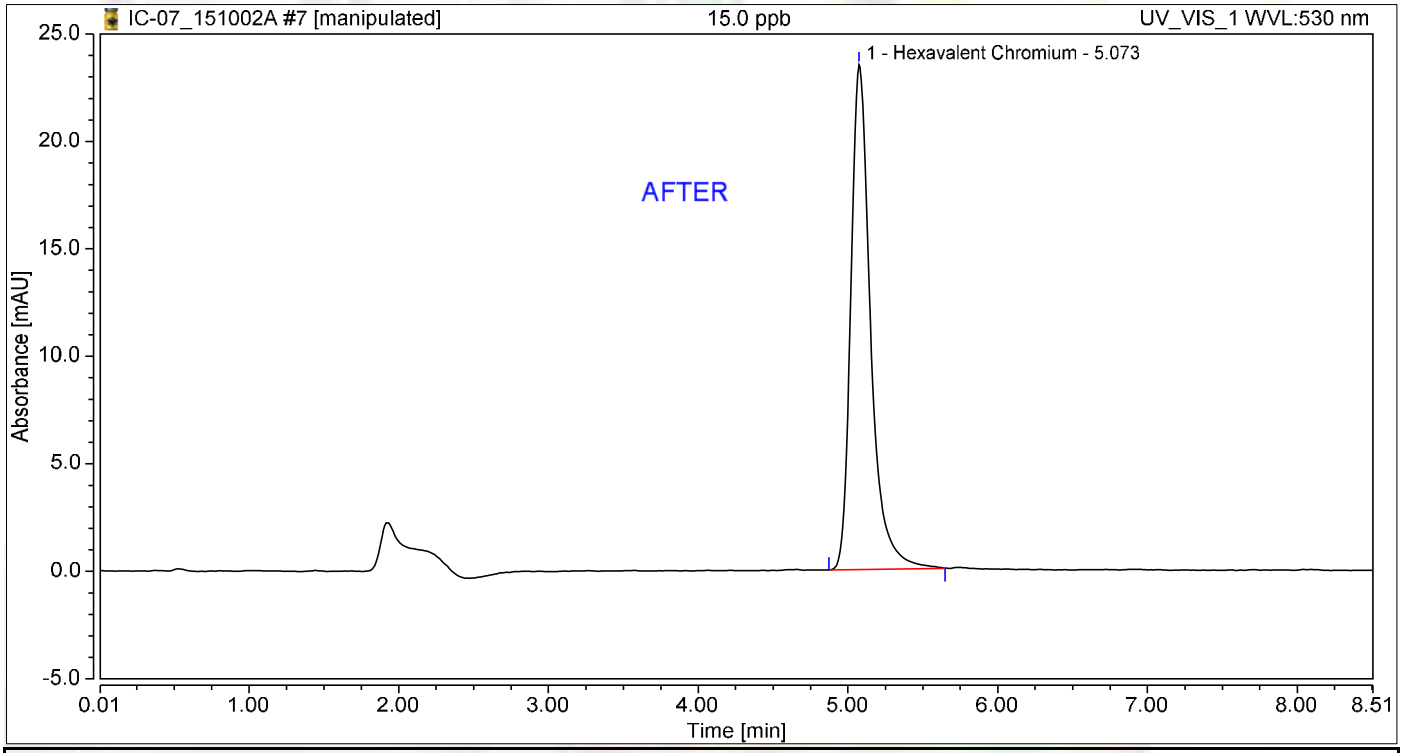
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.328	15.641	100.00	100.00	9.8740
Total:			**2.328**	**15.641**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.561	23.482	100.00	100.00	15.1032
Total:			**3.561**	**23.482**	**100.00**	**100.00**	

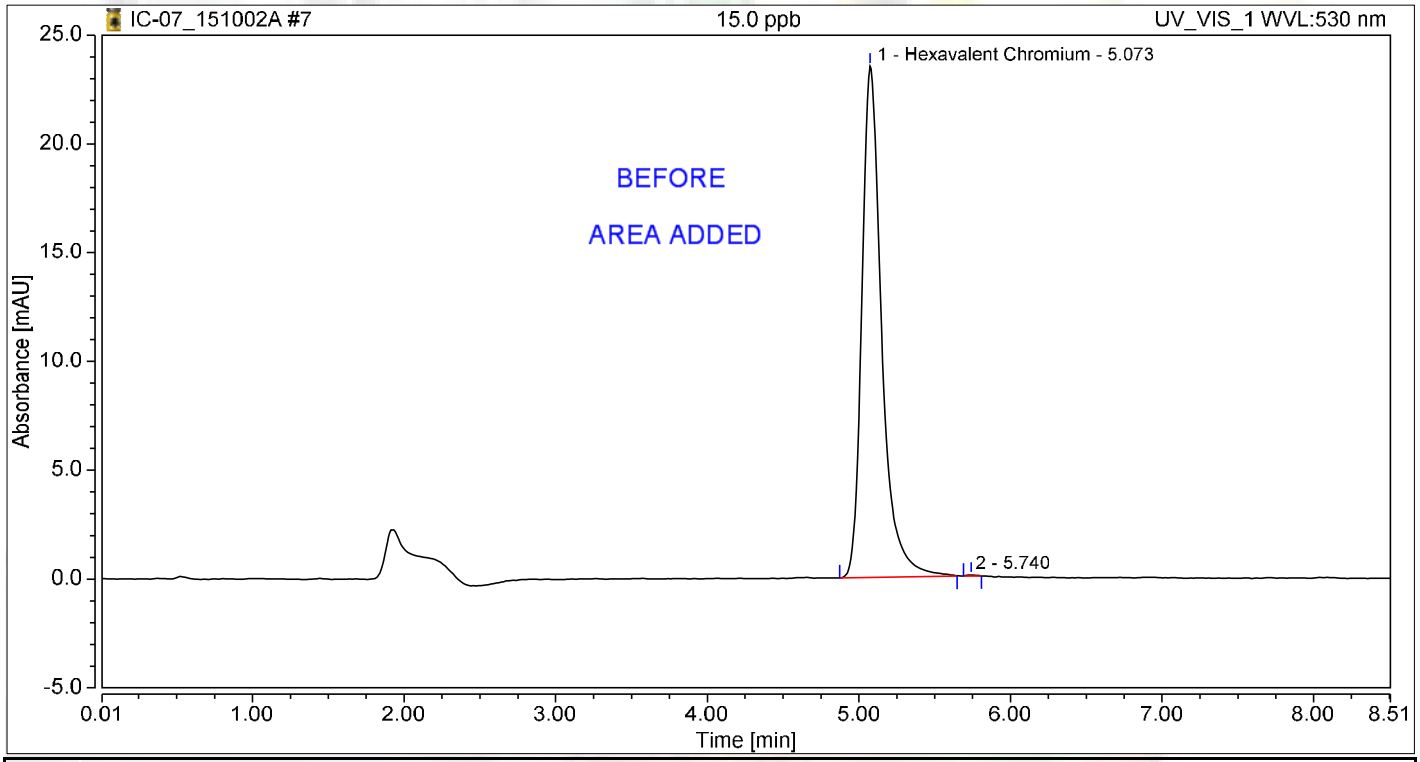
10/14/2015

Chromatogram and Results

Injection Details

Injection Name:	**15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

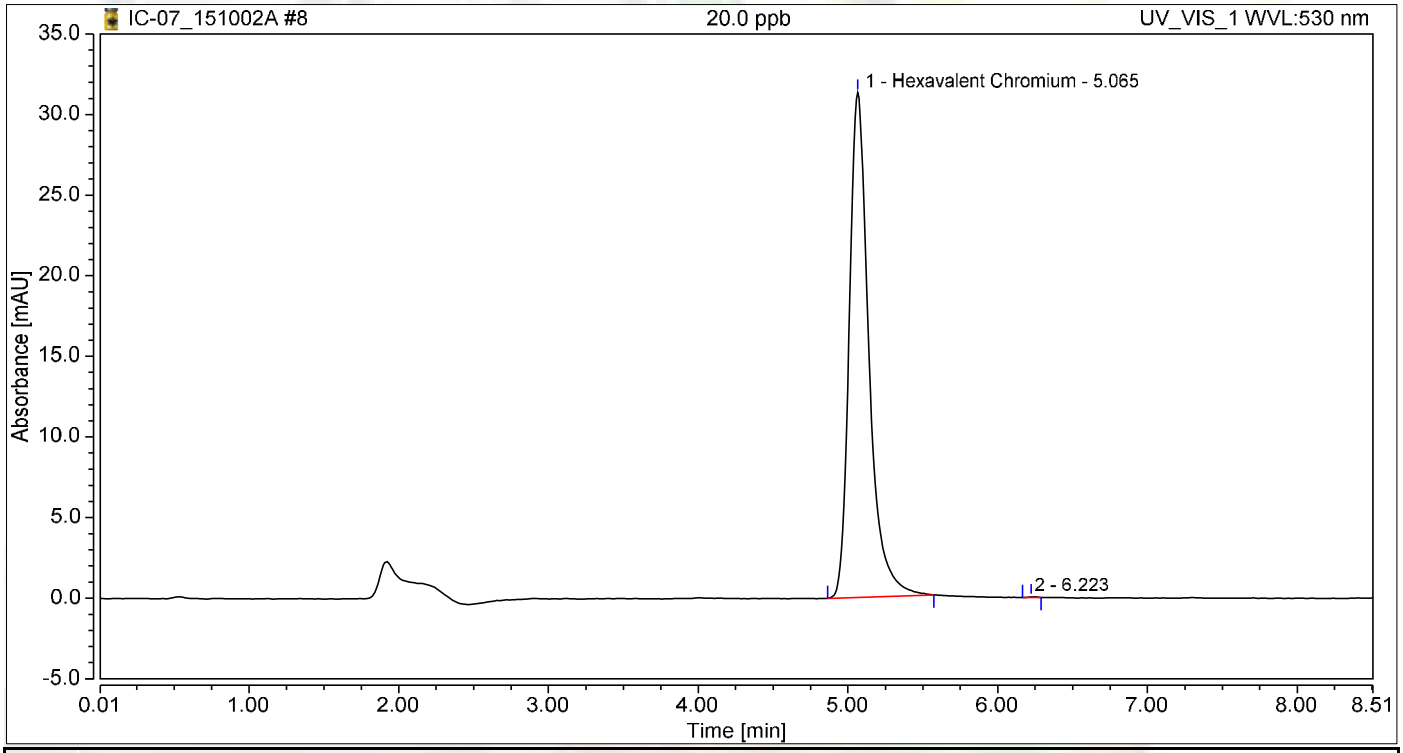
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.561	23.482	99.90	99.78	15.1039
2		5.740	0.004	0.052	0.10	0.22	n.a.
Total:			**3.564**	**23.534**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



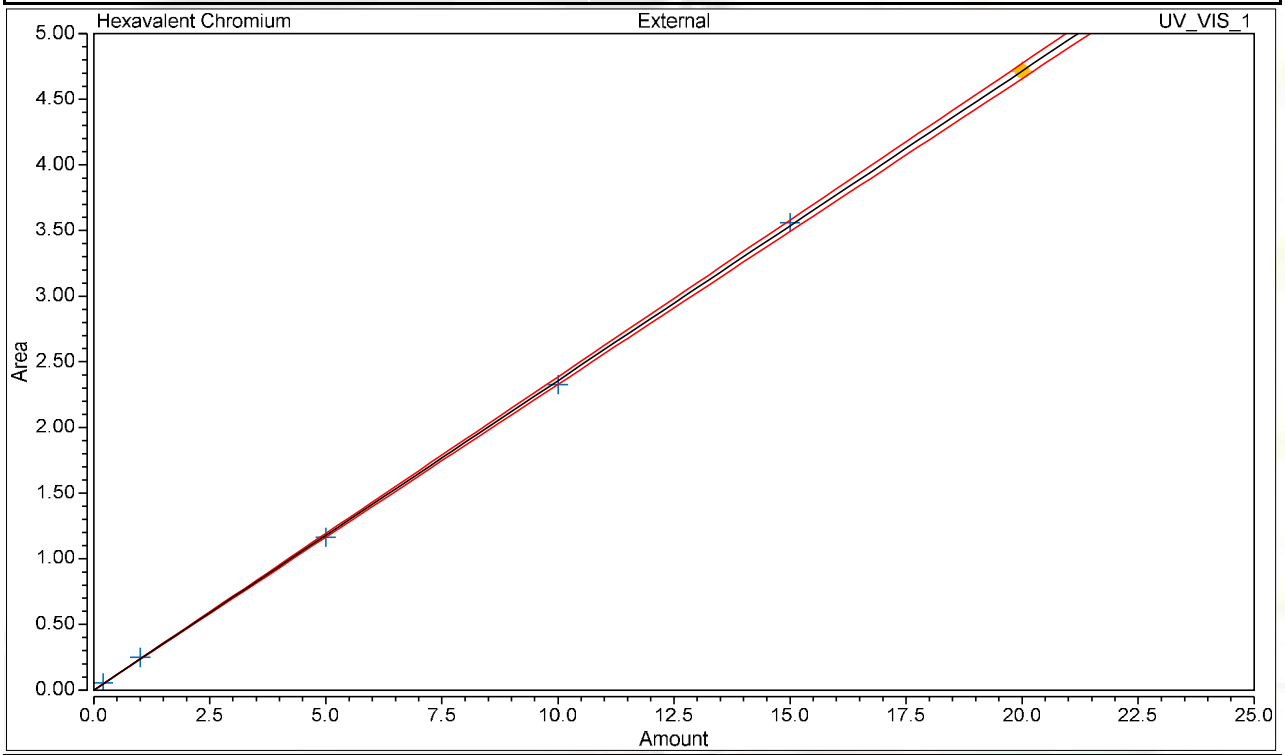
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.715	31.317	99.93	99.85	19.9985
2		6.223	0.003	0.047	0.07	0.15	n.a.
Total:			**4.718**	**31.364**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2358
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99989

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

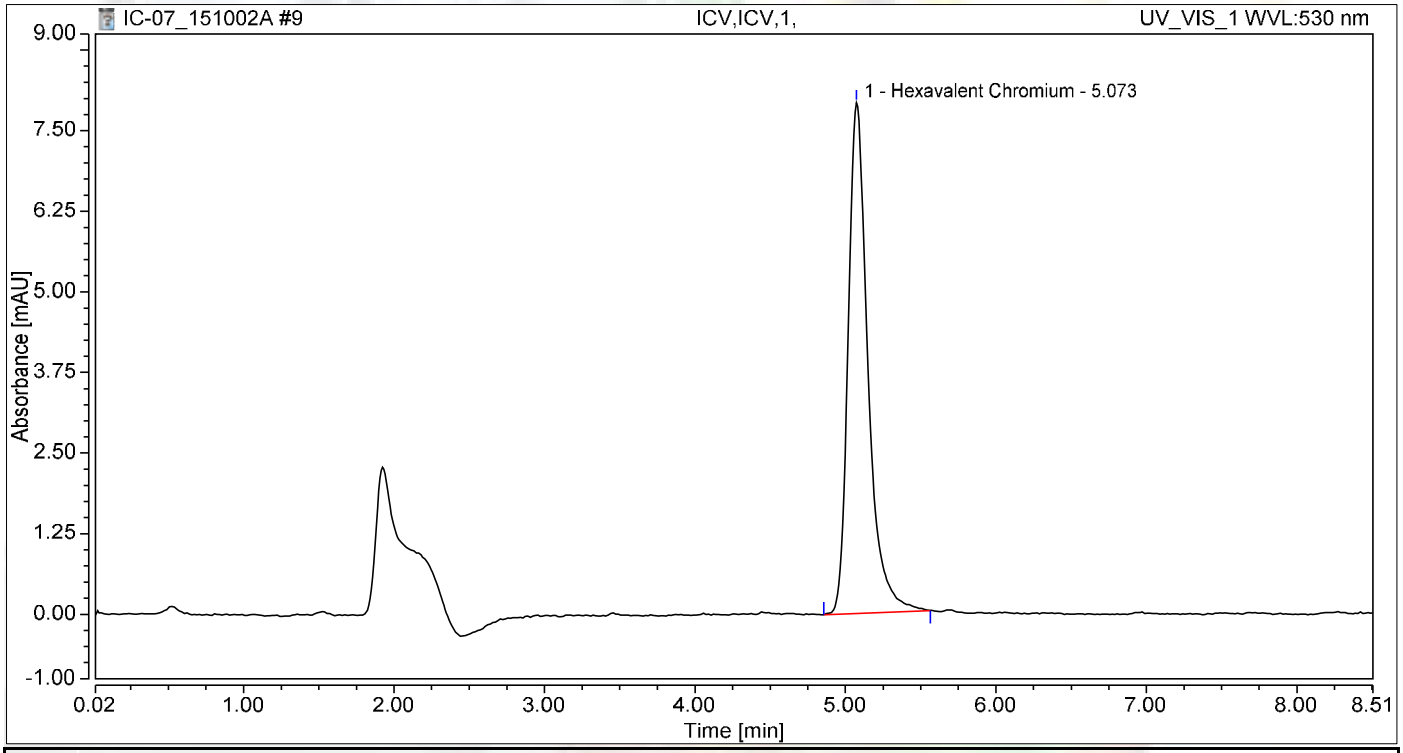
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	0.2 ppb	01	0.2000	0.0556	0.056	0.385
4	1.0 ppb	02	1.0000	0.2482	0.248	1.672
5	5.0 ppb	03	5.0000	1.1638	1.164	7.918
6	10.0 ppb	04	10.0000	2.3278	2.328	15.641
7	15.0 ppb	05	15.0000	3.5606	3.561	23.482
8	20.0 ppb	06	20.0000	4.7147	4.715	31.317

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

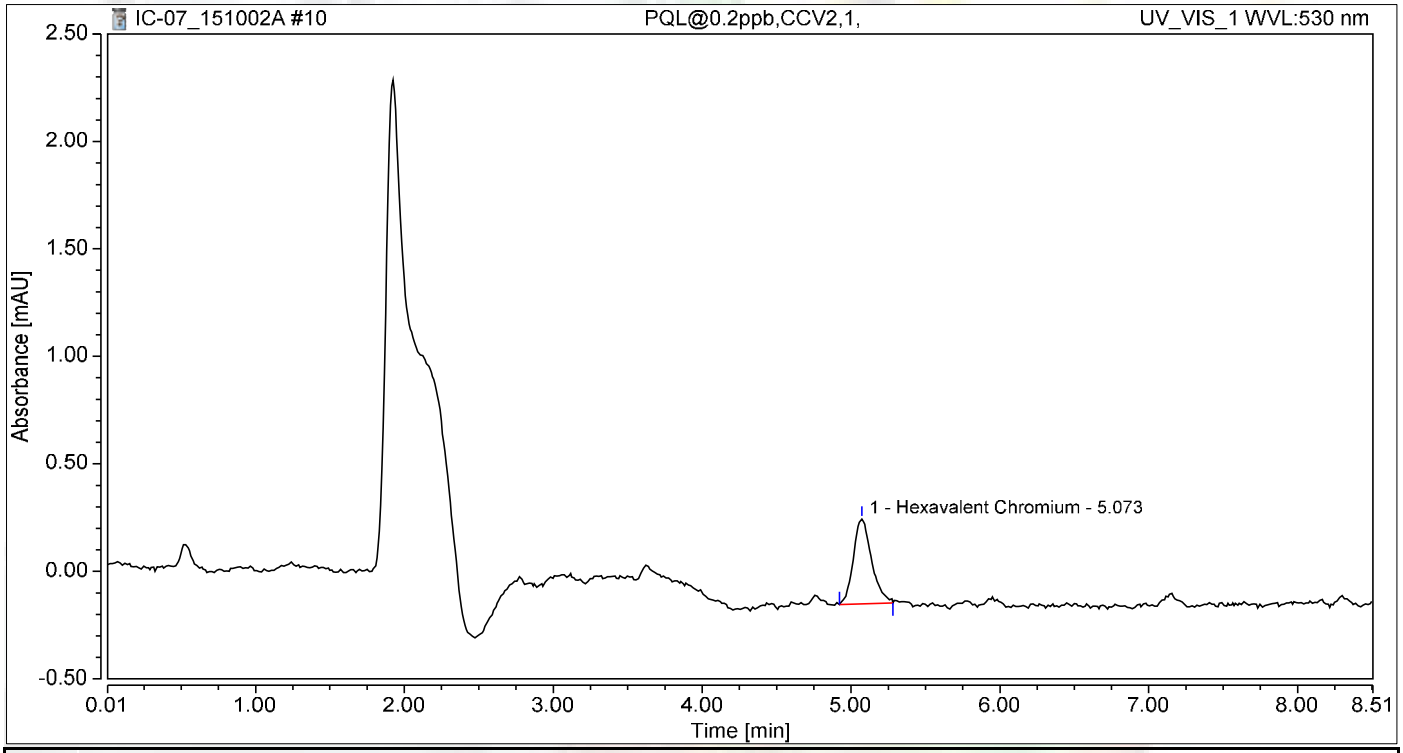
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.197	7.921	100.00	100.00	5.0753
Total:			**1.197**	**7.921**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

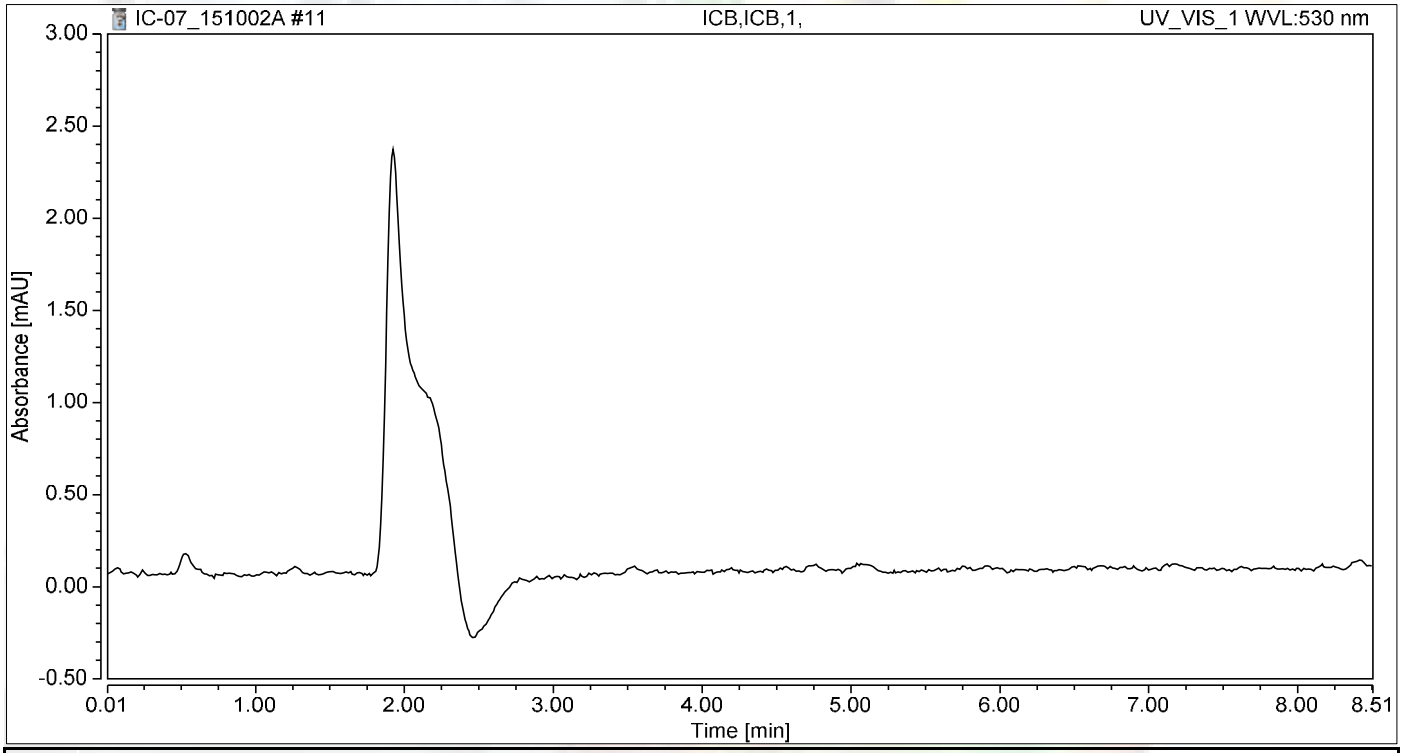
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.055	0.394	100.00	100.00	0.2350
Total:			**0.055**	**0.394**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 151027A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	10/27/15 7:18 AM	Not Reported
10	BLANK	BLANK	1	Hexavalent Chromium	10/27/15 7:29 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	10/27/15 7:39 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/27/15 7:48 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	10/27/15 7:57 AM	Reported
14	MB-R103879	MBLK	1	Hexavalent Chromium	10/27/15 8:07 AM	Reported
15	LCS-R103879	LCS	1	Hexavalent Chromium	10/27/15 8:16 AM	Reported
16	N017229-001A	SAMP	1	Hexavalent Chromium	10/27/15 8:26 AM	Not Reported
17	N017229-001AMS	MS	1	Hexavalent Chromium	10/27/15 8:35 AM	Not Reported
18	N017232-005A	SAMP	1	Hexavalent Chromium	10/27/15 8:45 AM	Not Reported
19	N017232-005AMS	MS	1	Hexavalent Chromium	10/27/15 8:54 AM	Not Reported
20	N017382-005A	SAMP	200	Hexavalent Chromium	10/27/15 9:04 AM	Reported
21	N017382-005ADUP	DUP	200	Hexavalent Chromium	10/27/15 9:13 AM	Reported
22	N017382-005AMS	MS	200	Hexavalent Chromium	10/27/15 9:23 AM	Reported
23	N017382-005AMSD	MSD	200	Hexavalent Chromium	10/27/15 9:32 AM	Reported
24	CCV-2	CCV	1	Hexavalent Chromium	10/27/15 9:42 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	10/27/15 9:51 AM	Reported
26	N017249-007A	SAMP	1	Hexavalent Chromium	10/27/15 10:08 AM	Not Reported
27	N017249-007AMS	MS	1	Hexavalent Chromium	10/27/15 10:19 AM	Not Reported
28	N017249-008A	SAMP	1	Hexavalent Chromium	10/27/15 10:29 AM	Not Reported
29	N017249-008AMS	MS	1	Hexavalent Chromium	10/27/15 10:38 AM	Not Reported
30	N017250-005A	SAMP	1	Hexavalent Chromium	10/27/15 10:48 AM	Not Reported
31	N017250-005AMS	MS	1	Hexavalent Chromium	10/27/15 10:57 AM	Not Reported
32	N017250-012A	SAMP	1	Hexavalent Chromium	10/27/15 11:07 AM	Not Reported
33	N017250-012AMS	MS	1	Hexavalent Chromium	10/27/15 11:16 AM	Not Reported
34	N017266-013A	SAMP	1	Hexavalent Chromium	10/27/15 11:26 AM	Not Reported
35	N017266-013AMS	MS	1	Hexavalent Chromium	10/27/15 11:35 AM	Not Reported
36	CCV-3	CCV	1	Hexavalent Chromium	10/27/15 11:45 AM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	10/27/15 11:54 AM	Reported
38	N017382-003A	SAMP	1	Hexavalent Chromium	10/27/15 12:08 PM	Not Reported
39	N017390-001A	SAMP	1	Hexavalent Chromium	10/27/15 12:19 PM	Reported
40	N017390-001AMS	MS	1	Hexavalent Chromium	10/27/15 12:29 PM	Not Reported
41	N017390-002A	SAMP	1	Hexavalent Chromium	10/27/15 12:38 PM	Reported
42	N017390-002AMS	MS	1	Hexavalent Chromium	10/27/15 12:47 PM	Reported

INJECTION LOG: 151027A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N017390-001AMS	MS	1	Hexavalent Chromium	10/27/15 12:57 PM	Reported
44	CCV-4	CCV	1	Hexavalent Chromium	10/27/15 1:31 PM	Reported
45	CCB-4	CCB	1	Hexavalent Chromium	10/27/15 1:42 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151027A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**30/Oct/15 16:41:24**
No. of Injections:	**48**	*Updated By:*	**ics 5000**

Injection Details

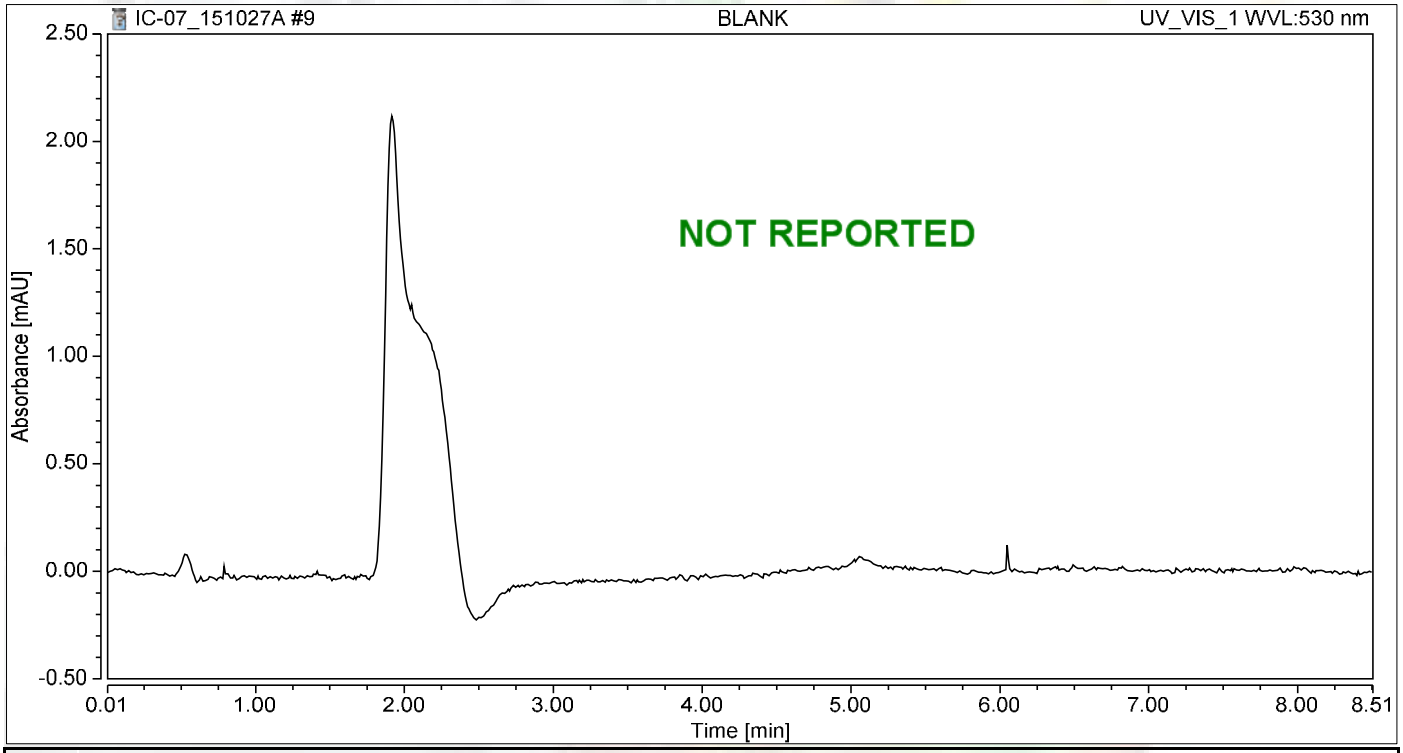
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	BLANK	1	1000	Unknown		10/27/2015 07:18	Finished	BLANK
10	BLANK	2	1000	Unknown		10/27/2015 07:29	Finished	BLANK
11	CCV-1,CCV,1,	3	1000	Unknown		10/27/2015 07:39	Finished	CCV @ 5ppb, IWST 151002A
12	PQL@0.2ppb,CCV2,1	4	1000	Unknown		10/27/2015 07:48	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	5	1000	Unknown		10/27/2015 07:57	Finished	CCB R150928A
14	MB-H2O,MBLK,1,	6	1000	Unknown		10/27/2015 08:07	Finished	MB, R151005A
15	LCS-H2O,LCS,1,	7	1000	Unknown		10/27/2015 08:16	Finished	LCS@5ppb, IWST-151002B
16	N017229-001A,SAMF	8	1000	Unknown		10/27/2015 08:26	Finished	SAMP, 10mL
17	N017229-001AMS,MS	9	1000	Unknown		10/27/2015 08:35	Finished	MS(5ppb), IWST-151002B,10m
18	N017232-005A,SAMF	10	1000	Unknown		10/27/2015 08:45	Finished	SAMP, 10mL
19	N017232-005AMS,MS	11	1000	Unknown		10/27/2015 08:54	Finished	MS(5ppb), IWST-151002B,10m
20	N017382-005A,SAMF	12	1000	Unknown		10/27/2015 09:04	Finished	SAMP, 0.05mL to 10mL
21	N017382-005ADUP,D	13	1000	Unknown		10/27/2015 09:13	Finished	DUP, 0.05mL to 10mL
22	N017382-005AMS,MS	14	1000	Unknown		10/27/2015 09:23	Finished	MS(5ppb), IWST-151002B,10m
23	N017382-005AMSD,M	15	1000	Unknown		10/27/2015 09:32	Finished	MSD(1ppb), IWST-151002B,10
24	CCV-2,CCV,1	16	1000	Unknown		10/27/2015 09:42	Finished	CCV @ 10ppb, IWST 151002A
25	CCB-2,CCB,1	17	1000	Unknown		10/27/2015 09:51	Finished	CCB
26	N017249-007A,SAMF	18	1000	Unknown		10/27/2015 10:08	Finished	SAMP, 10mL
27	N017249-007AMS,MS	19	1000	Unknown		10/27/2015 10:19	Finished	MS(1ppb), IWST-151002B,10m
28	N017249-008A,SAMF	20	1000	Unknown		10/27/2015 10:29	Finished	SAMP, 10mL
29	N017249-008AMS,MS	21	1000	Unknown		10/27/2015 10:38	Finished	MS(1ppb), IWST-151002B,10m
30	N017250-005A,SAMF	22	1000	Unknown		10/27/2015 10:48	Finished	SAMP, 10mL
31	N017250-005AMS,MS	23	1000	Unknown		10/27/2015 10:57	Finished	MS(1ppb), IWST-151002B,10m
32	N017250-012A,SAMF	24	1000	Unknown		10/27/2015 11:07	Finished	SAMP, 10mL
33	N017250-012AMS,MS	25	1000	Unknown		10/27/2015 11:16	Finished	MS(1ppb), IWST-151002B,10m
34	N017266-013A,SAMF	26	1000	Unknown		10/27/2015 11:26	Finished	SAMP, 10mL
35	N017266-013AMS,MS	27	1000	Unknown		10/27/2015 11:35	Finished	MS(1ppb), IWST-151002B,10m
36	CCV-3,CCV,1	28	1000	Unknown		10/27/2015 11:45	Finished	CCV @ 5ppb, IWST 151002A
37	CCB-3,CCB,1	29	1000	Unknown		10/27/2015 11:54	Finished	CCB
38	N017382-003A,SAMF	30	1000	Unknown		10/27/2015 12:08	Finished	SAMP, 10mL
39	N017390-001A,SAMF	31	1000	Unknown		10/27/2015 12:19	Finished	SAMP, 10mL
40	N017390-001AMS,MS	32	1000	Unknown		10/27/2015 12:29	Finished	MS(1ppb), IWST-151002B,10m
41	N017390-002A,SAMF	33	1000	Unknown		10/27/2015 12:38	Finished	SAMP, 10mL
42	N017390-002AMS,MS	34	1000	Unknown		10/27/2015 12:47	Finished	MS(1ppb), IWST-151002B,10m
43	N017390-001AMS,MS	35	1000	Unknown		10/27/2015 12:57	Finished	MS(5ppb), IWST-151002B,10m
44	CCV-4,CCV,1	36	1000	Unknown		10/27/2015 13:31	Finished	CCV @ 10ppb, IWST 151002A
45	CCB-4,CCB,1	37	1000	Unknown		10/27/2015 13:42	Finished	CCB
46	SHUTDOWN	38	1000	Unknown		10/27/2015 13:52	Finished	BLANK
47	Eluent: R151026B	39	1000	Unknown		n.a.	Finished	Eluent
48	PCR: R151027B	40	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 07:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

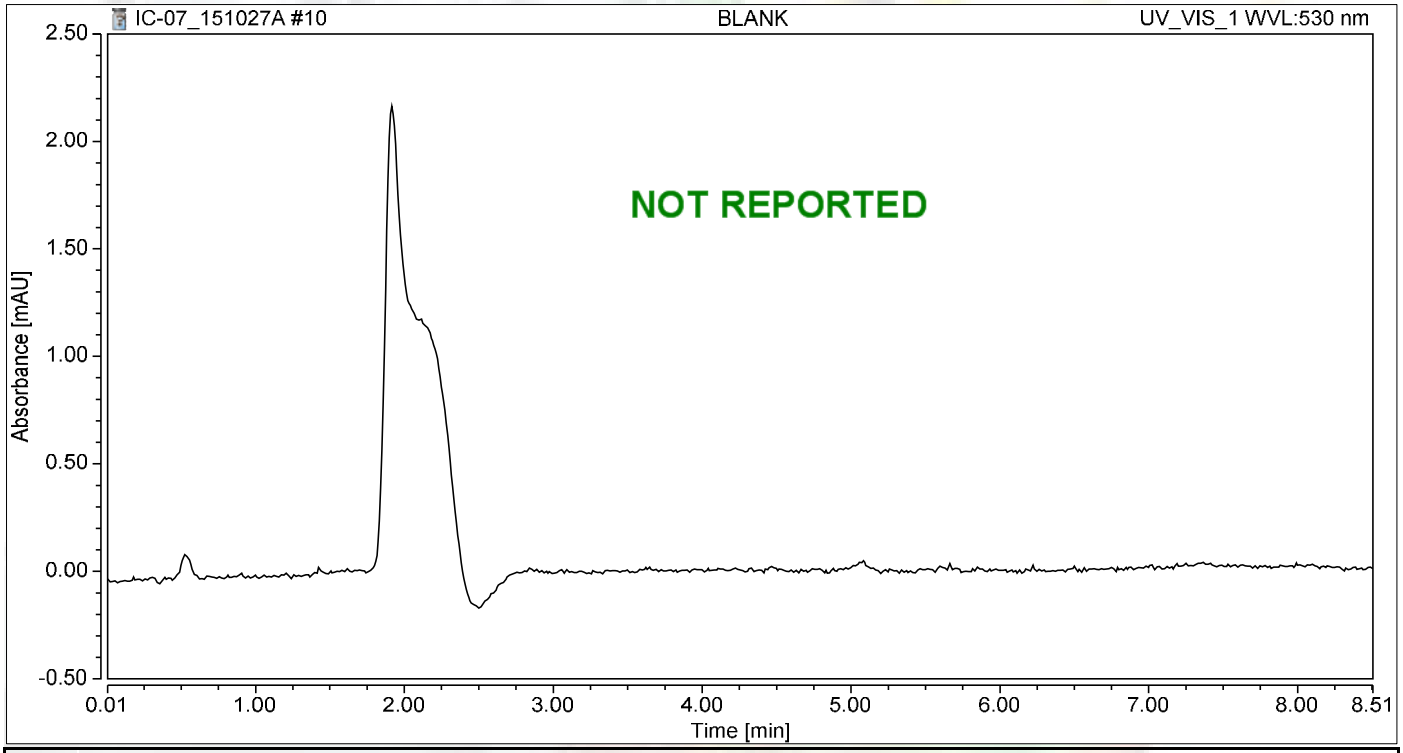
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 07:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

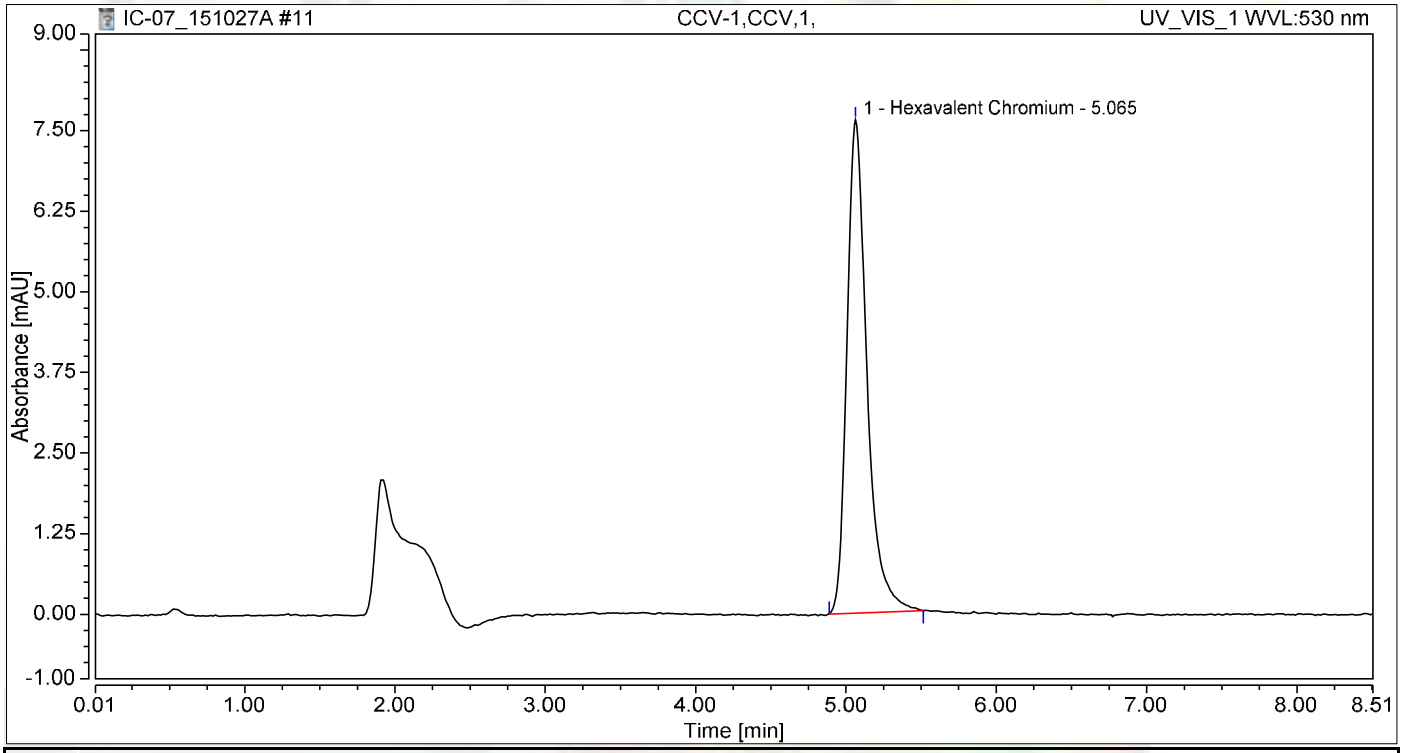
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 07:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

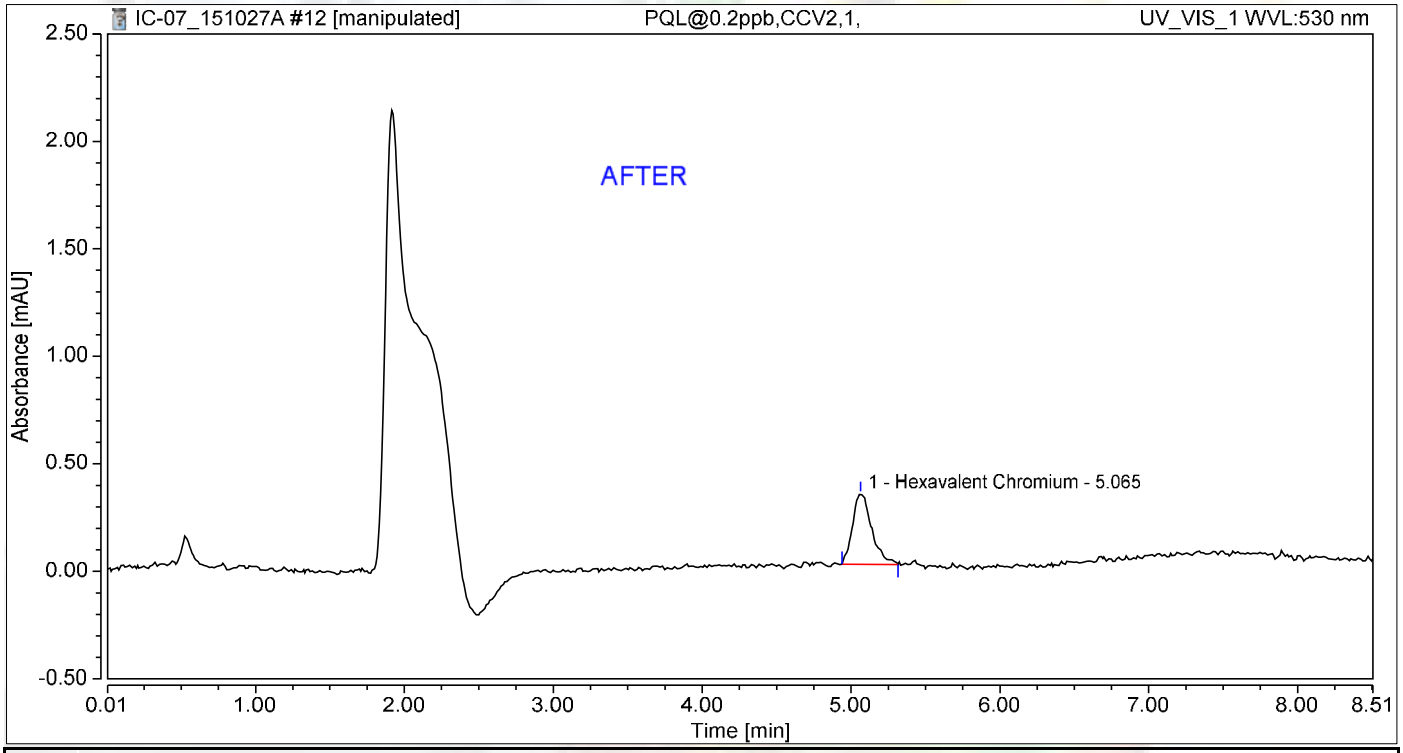
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.171	7.649	100.00	100.00	4.9658
Total:			**1.171**	**7.649**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 07:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.049	0.327	100.00	100.00	0.2073
Total:			**0.049**	**0.327**	**100.00**	**100.00**	

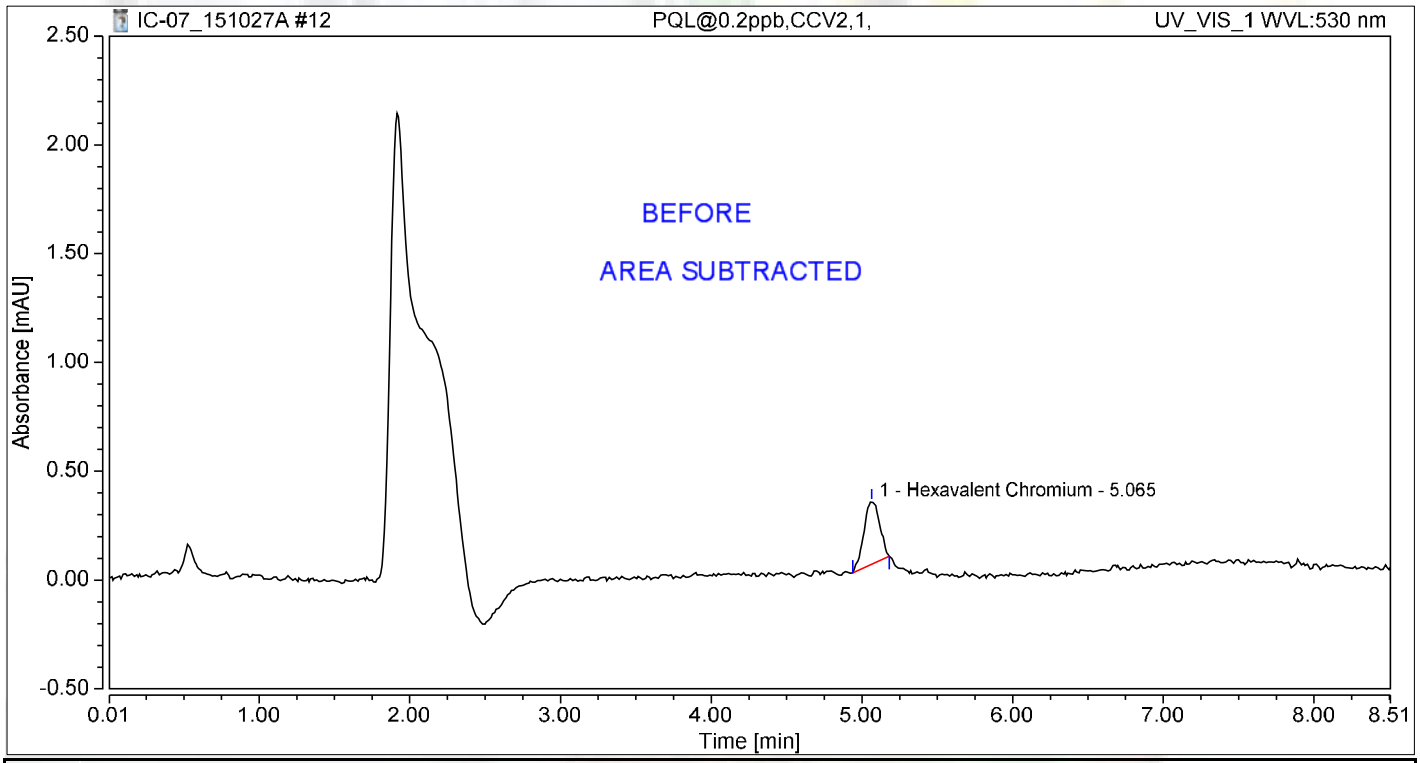
11/6/2015

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 07:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

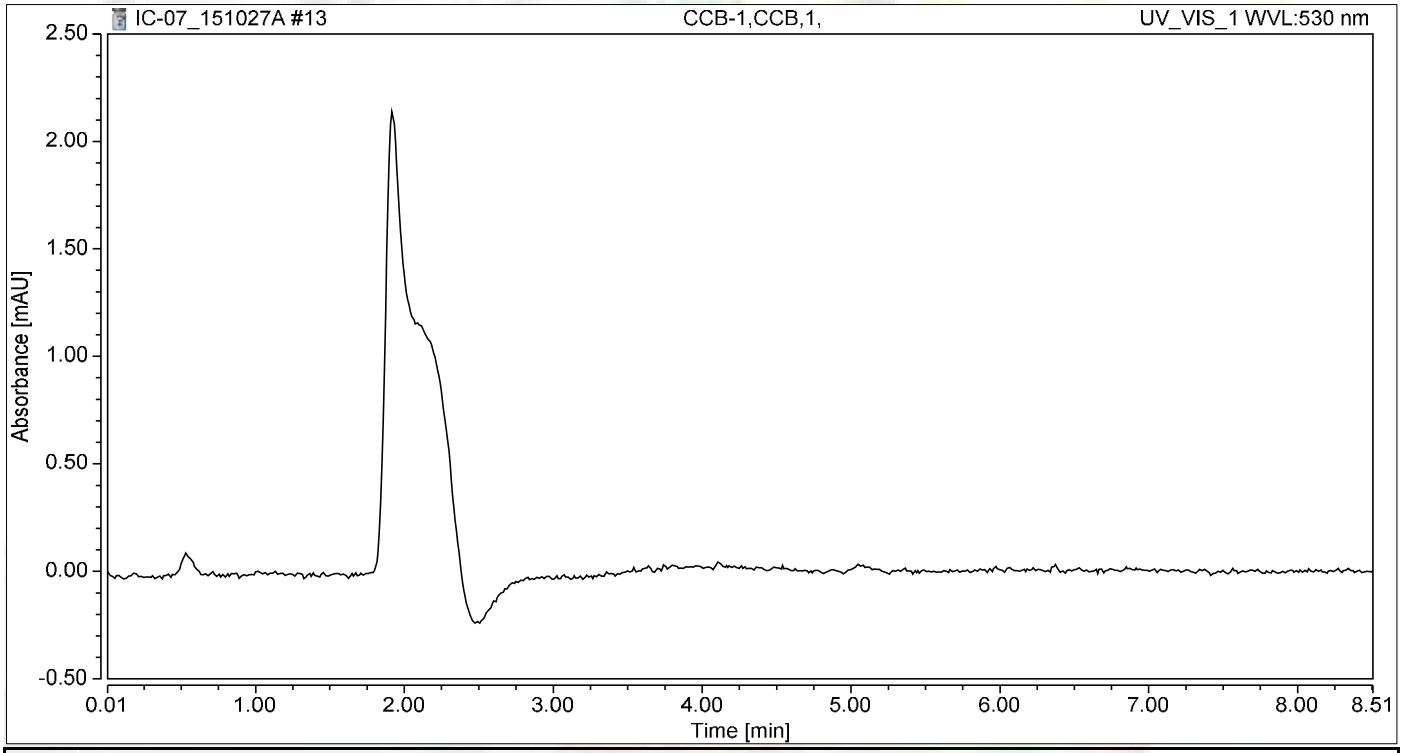
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.035	0.287	100.00	100.00	0.1496
Total:			**0.035**	**0.287**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 07:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

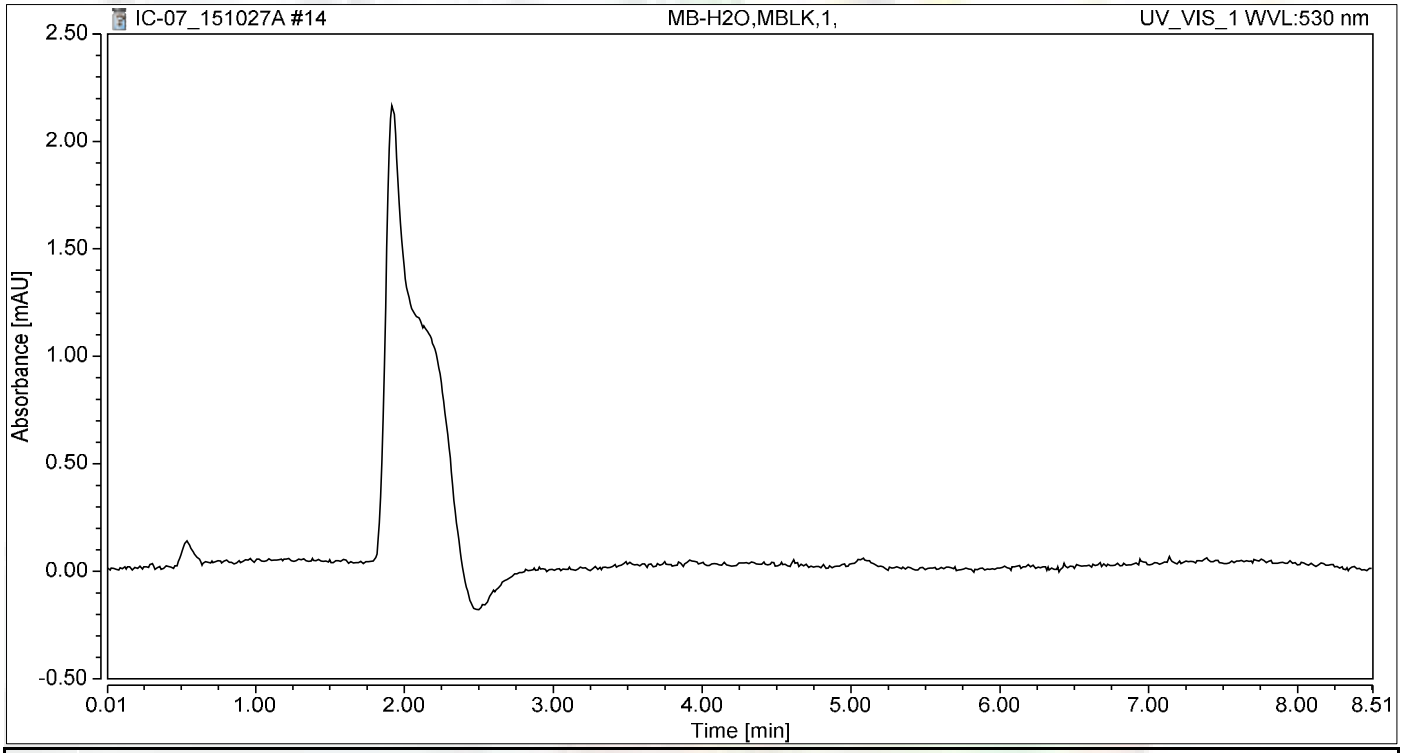
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 08:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

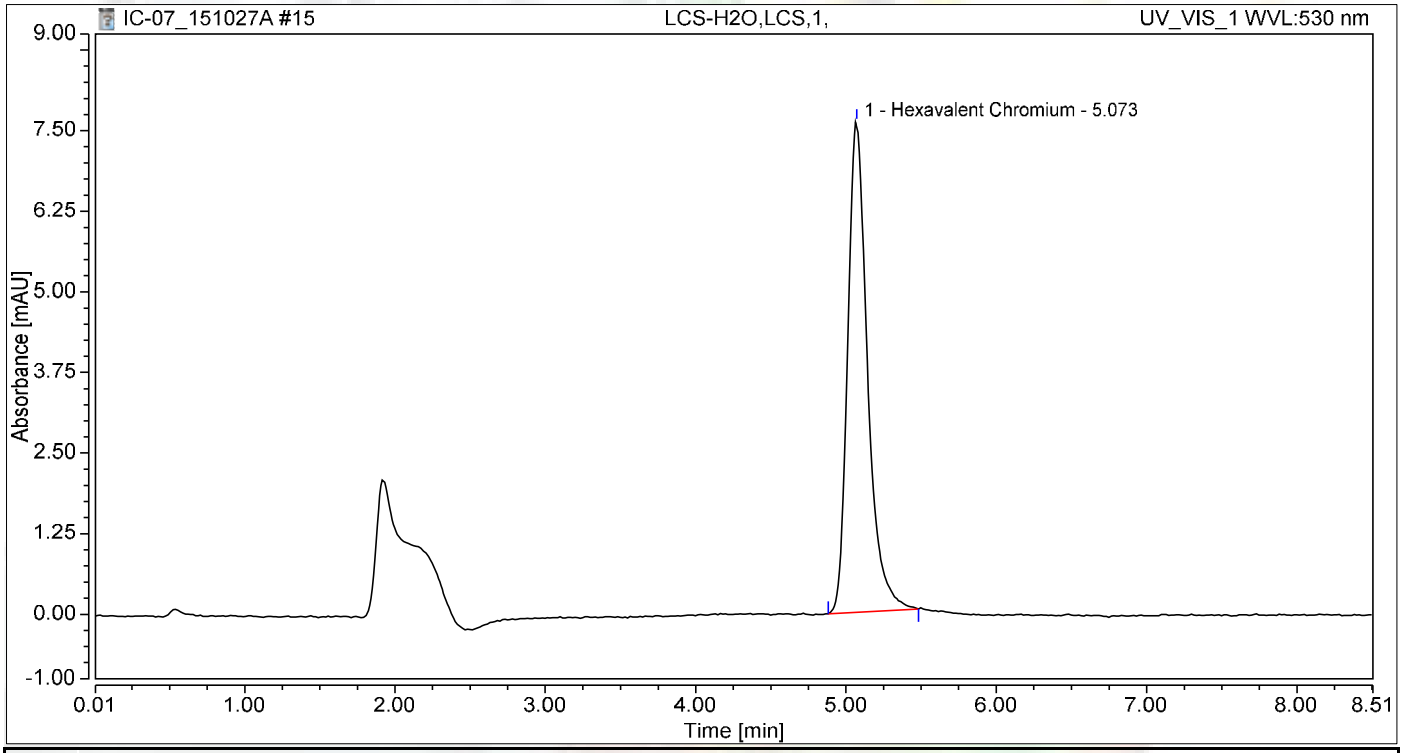
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 08:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

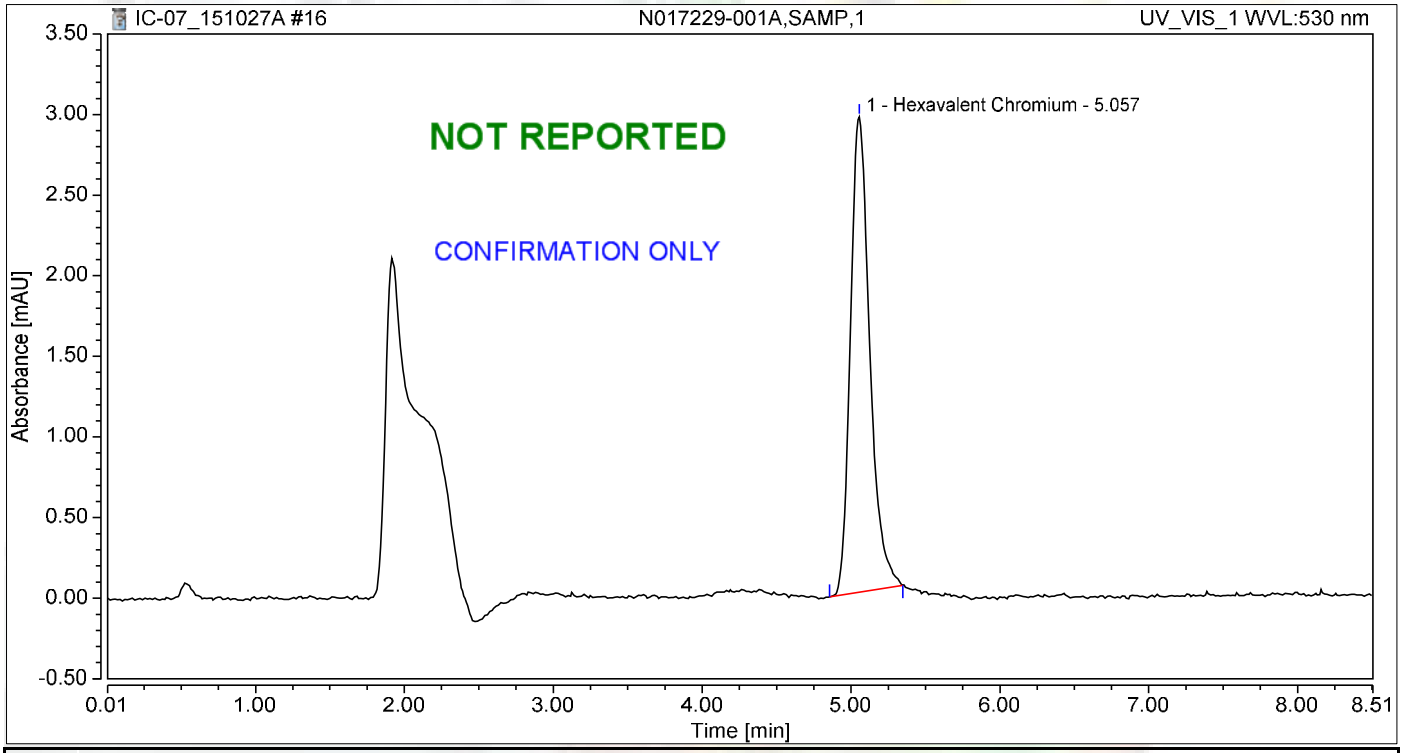
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.157	7.604	100.00	100.00	4.9072
Total:			**1.157**	**7.604**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017229-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 08:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

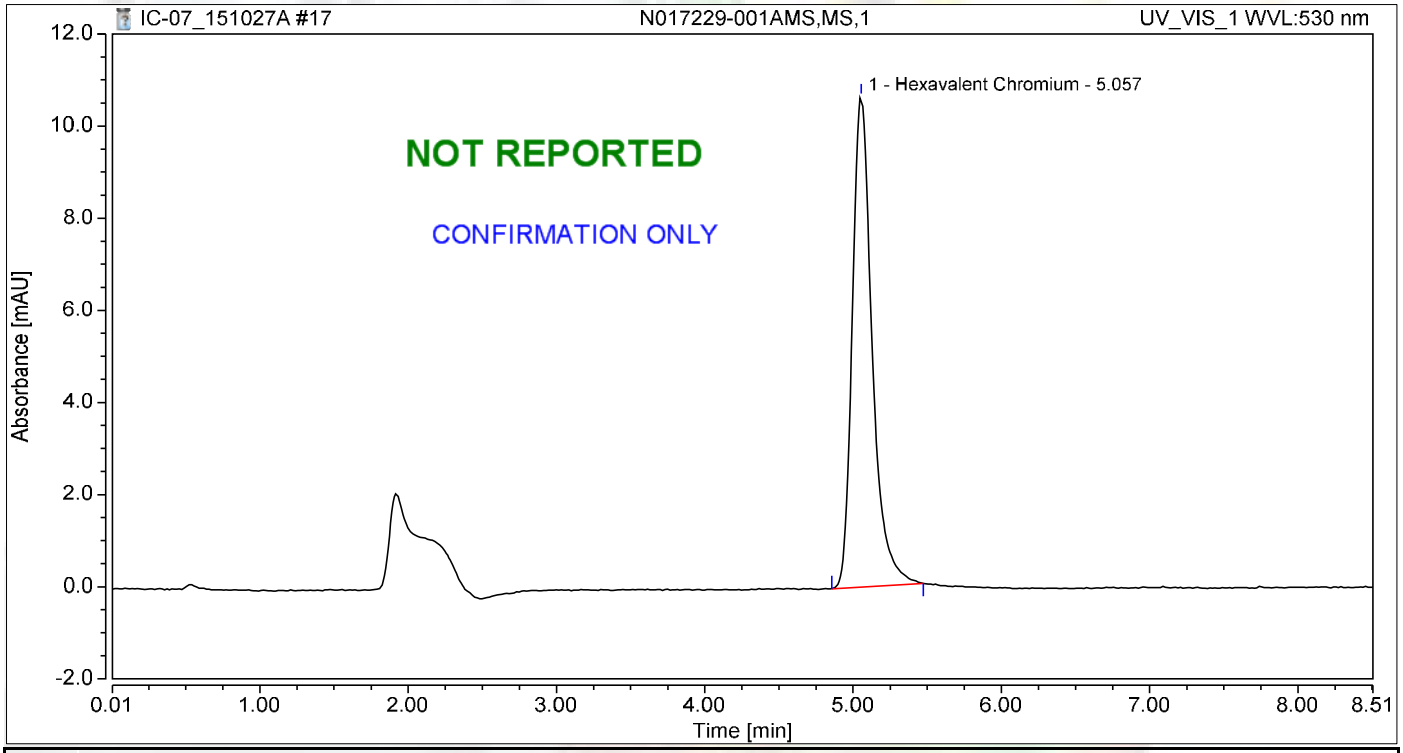
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.440	2.949	100.00	100.00	1.8657
Total:			**0.440**	**2.949**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017229-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 08:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

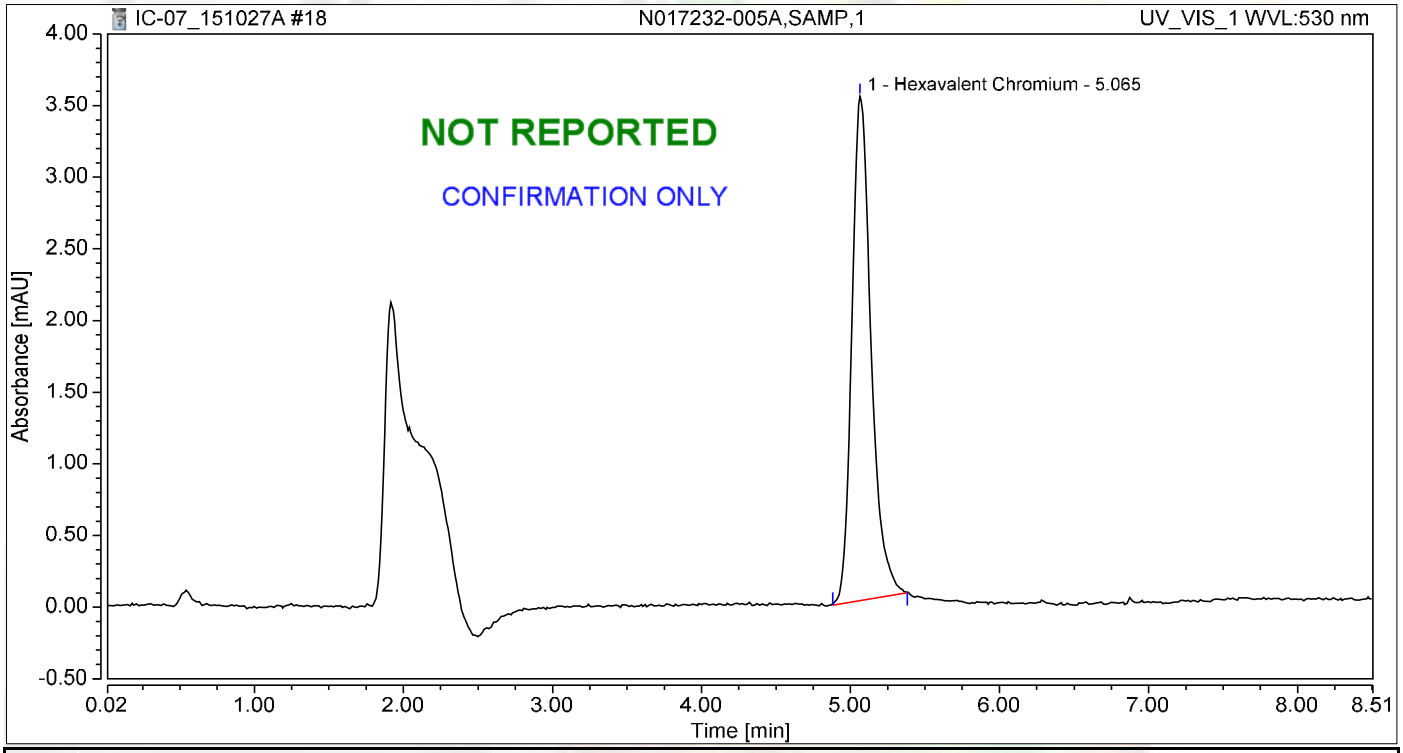
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	1.637	10.650	100.00	100.00	6.9423
Total:			**1.637**	**10.650**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017232-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 08:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

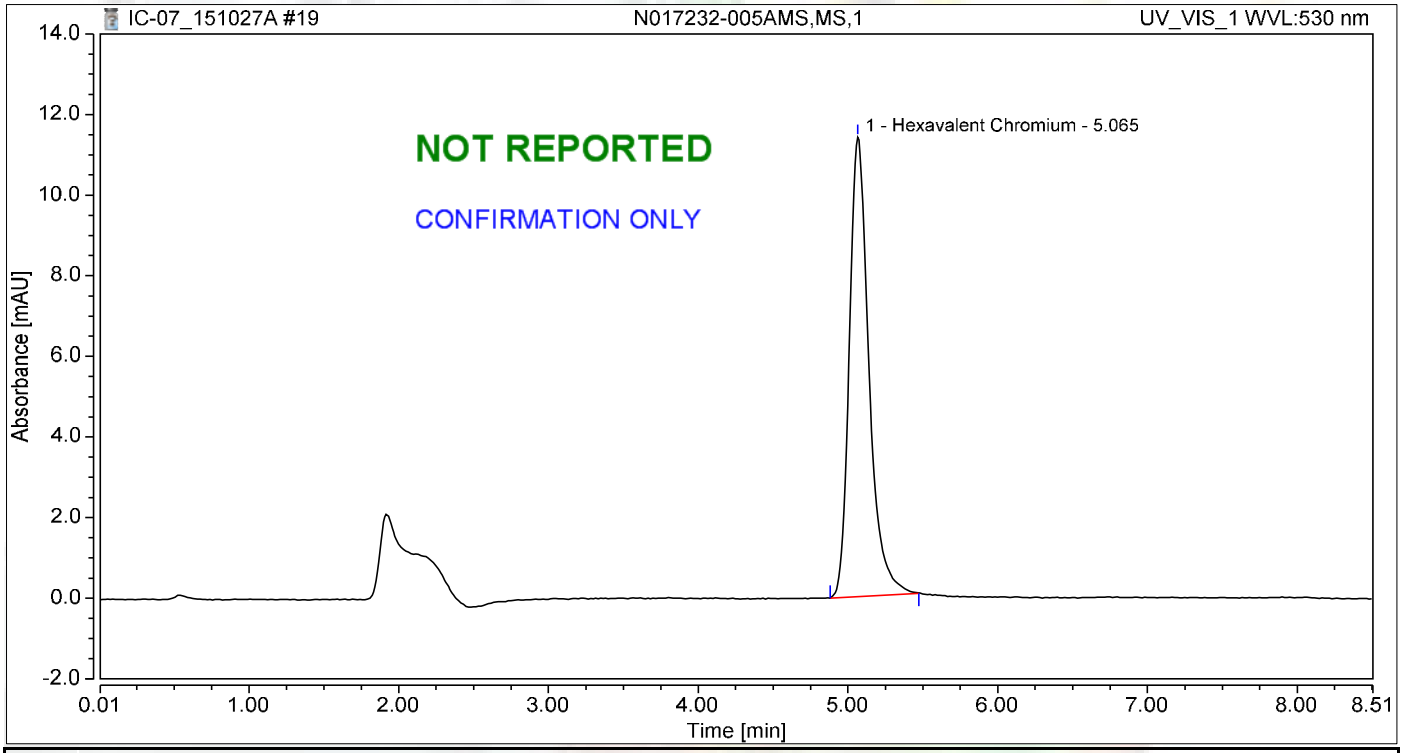
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.520	3.519	100.00	100.00	2.2077
Total:			**0.520**	**3.519**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017232-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 08:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

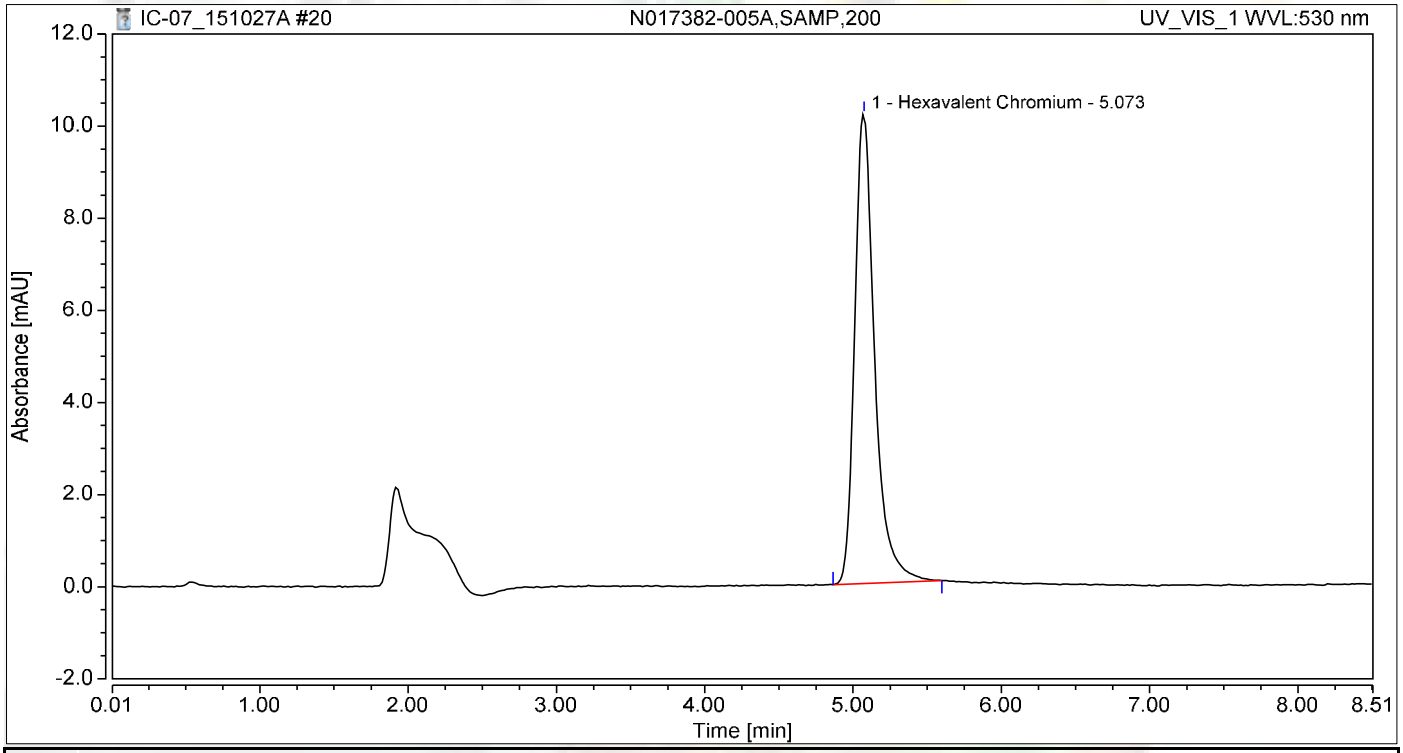
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.716	11.390	100.00	100.00	7.2776
Total:			**1.716**	**11.390**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017382-005A,SAMP,200**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 09:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

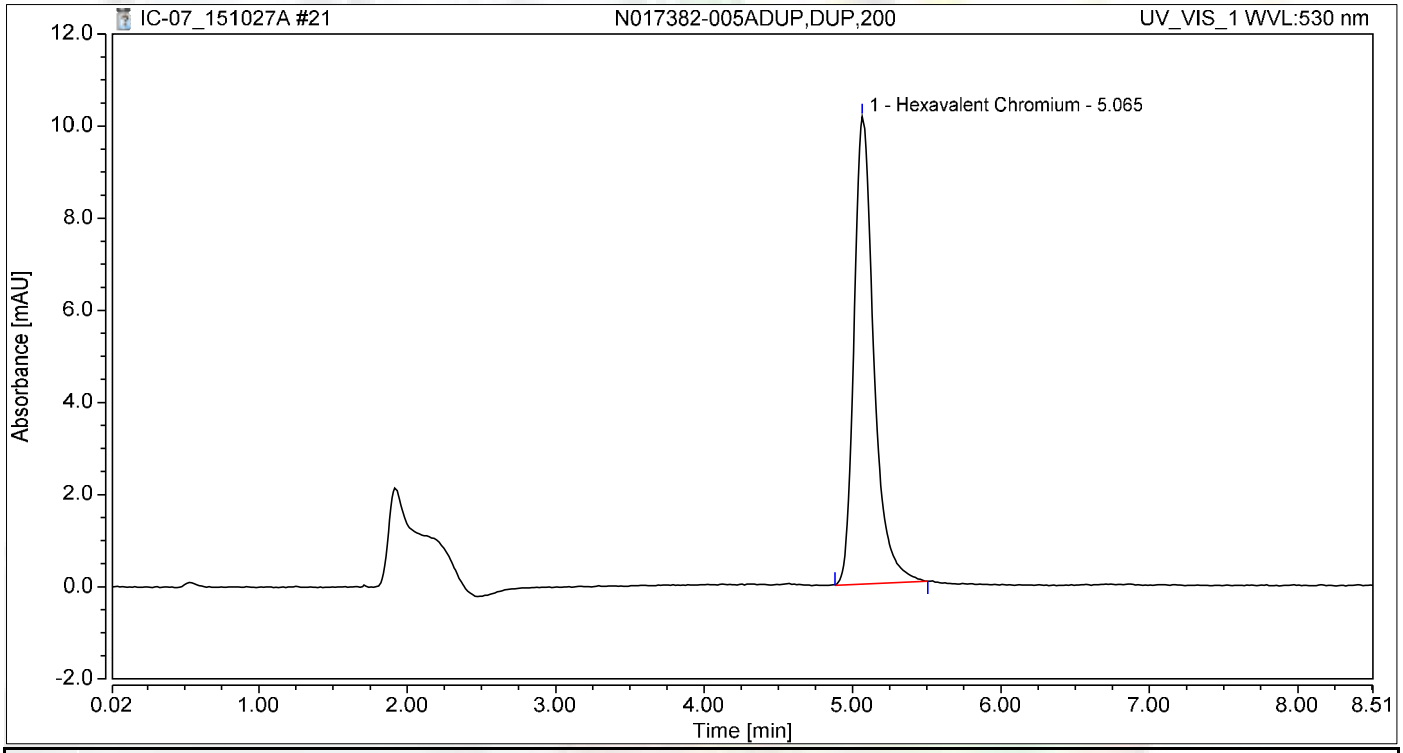
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.573	10.189	100.00	100.00	6.6716
Total:			**1.573**	**10.189**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017382-005ADUP,DUP,200**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 09:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

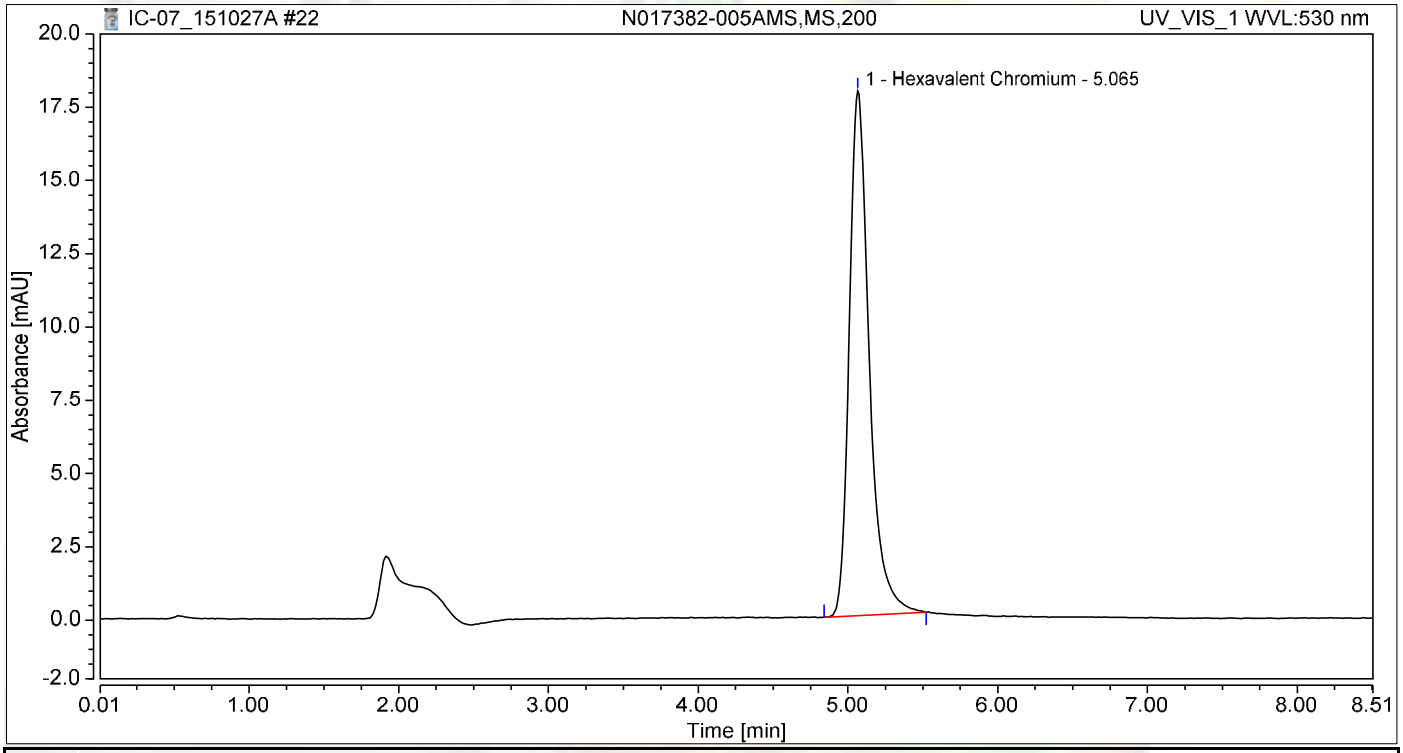
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.551	10.147	100.00	100.00	6.5772
Total:			**1.551**	**10.147**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017382-005AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

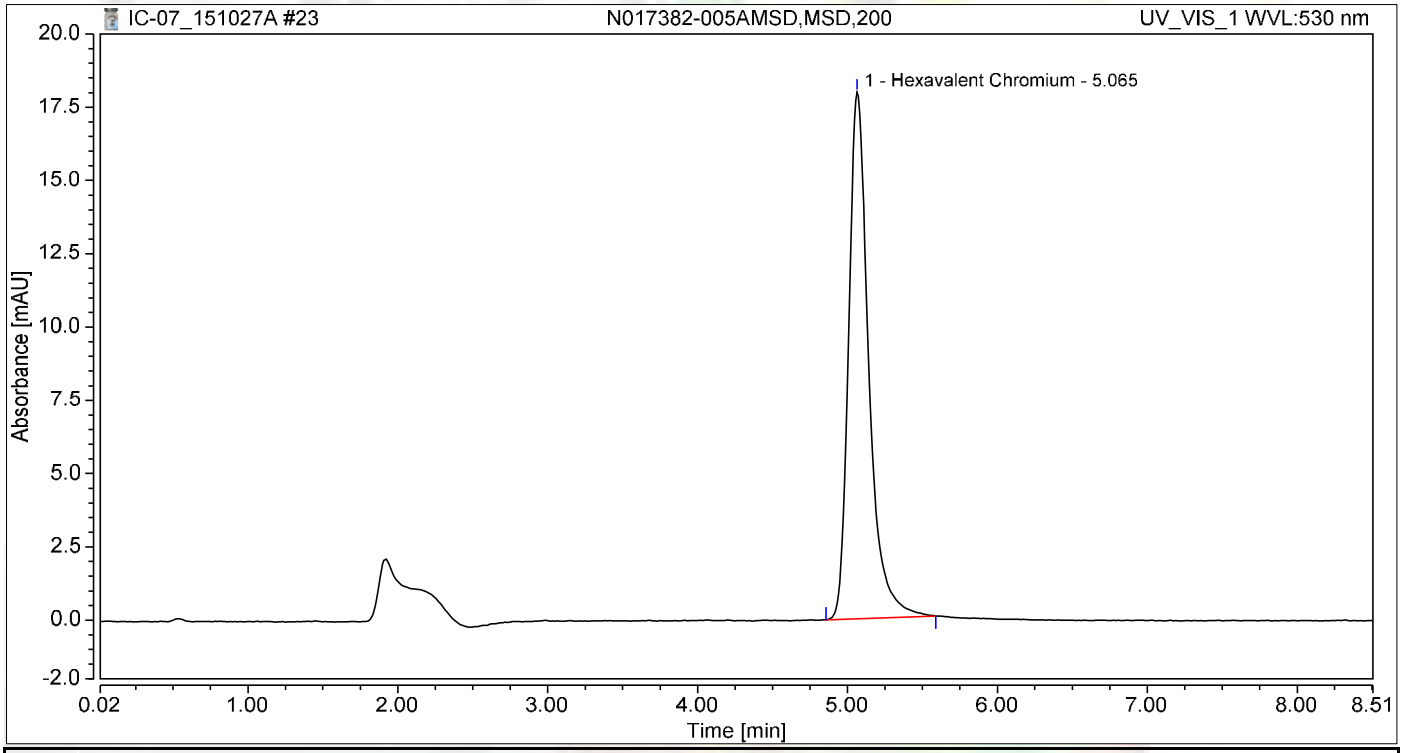
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.742	17.906	100.00	100.00	11.6313
Total:			**2.742**	**17.906**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017382-005AMSD,MSD,200**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

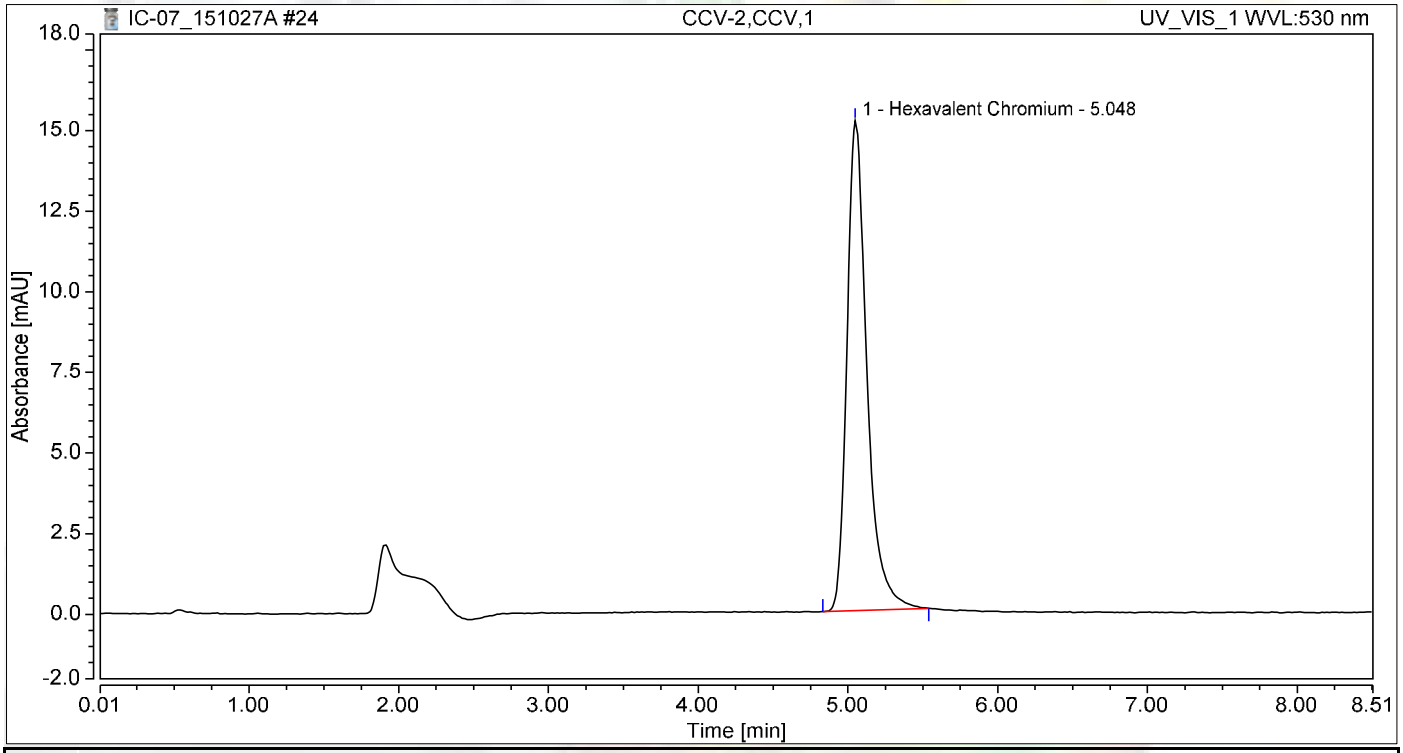
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.775	17.969	100.00	100.00	11.7694
Total:			**2.775**	**17.969**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

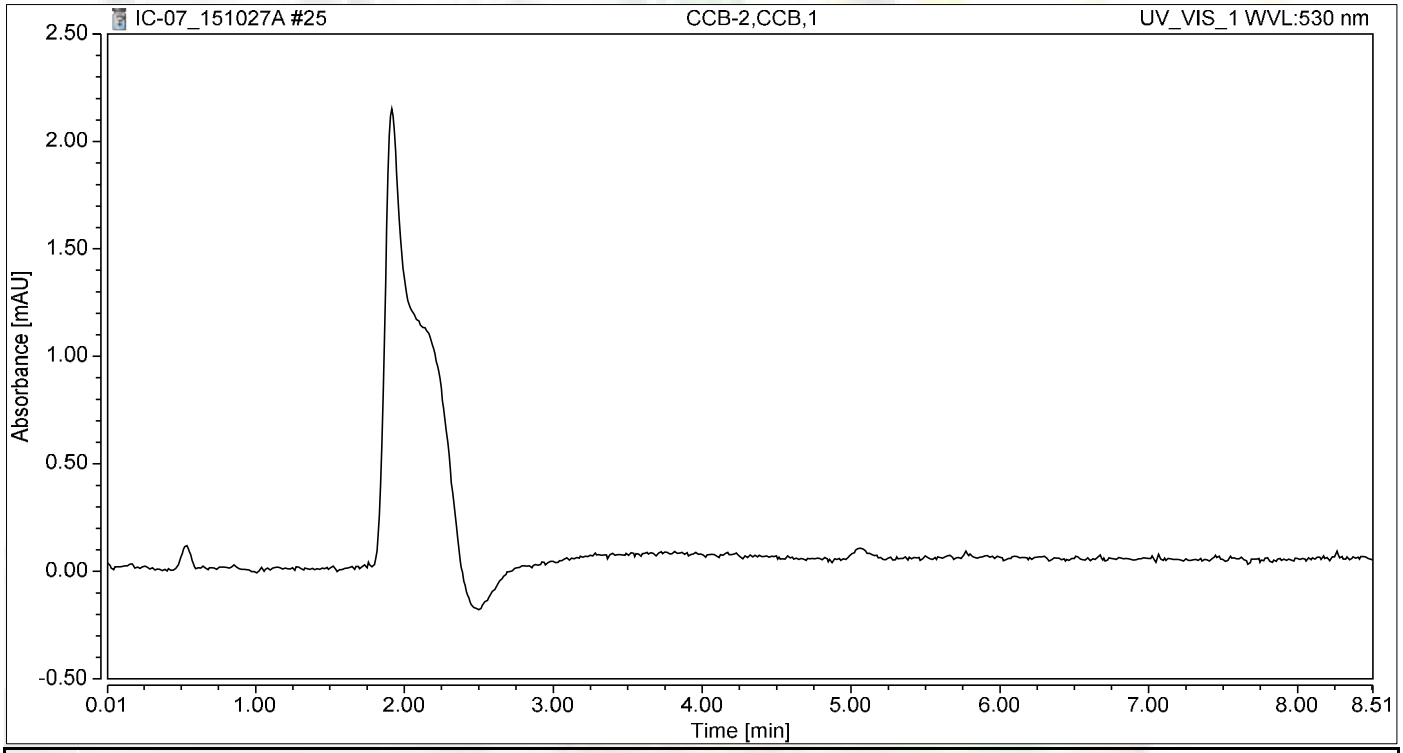
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	2.338	15.194	100.00	100.00	9.9154
Total:			**2.338**	**15.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

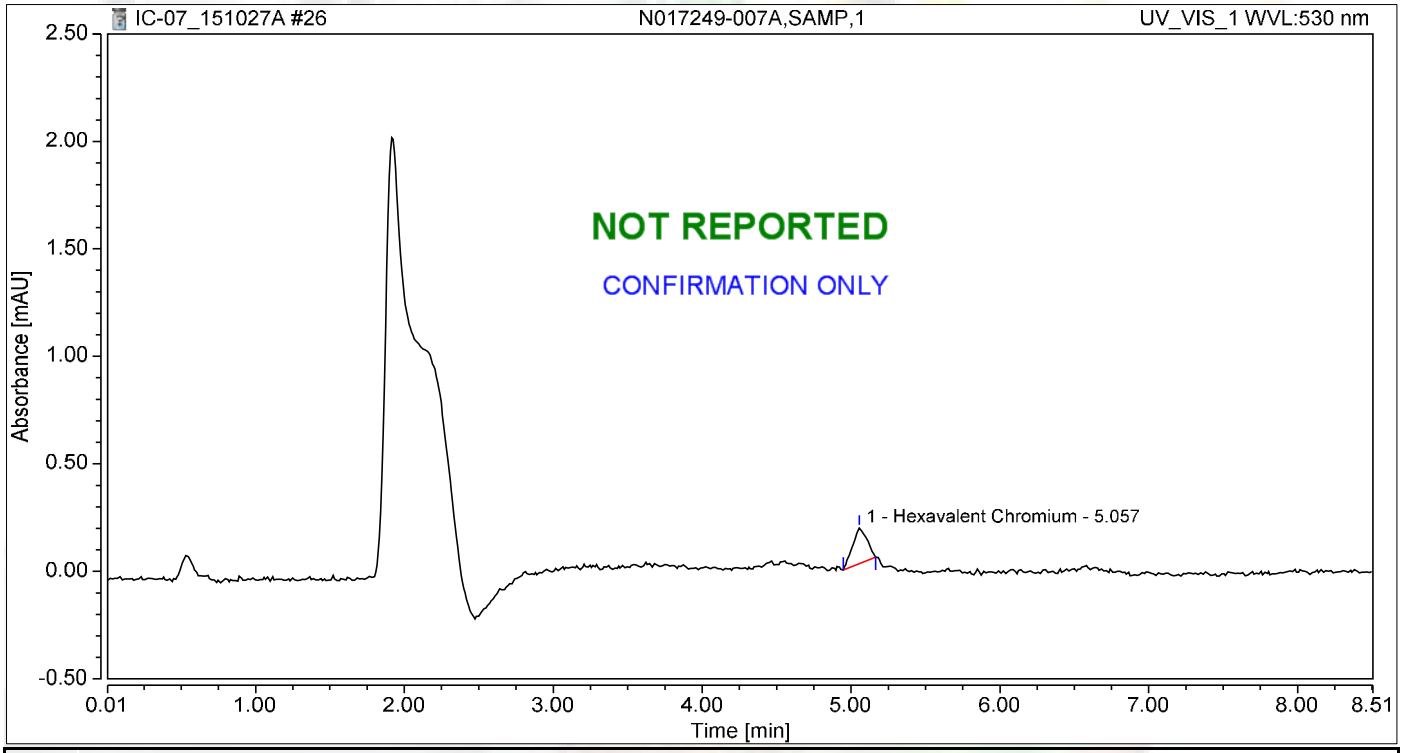
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017249-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

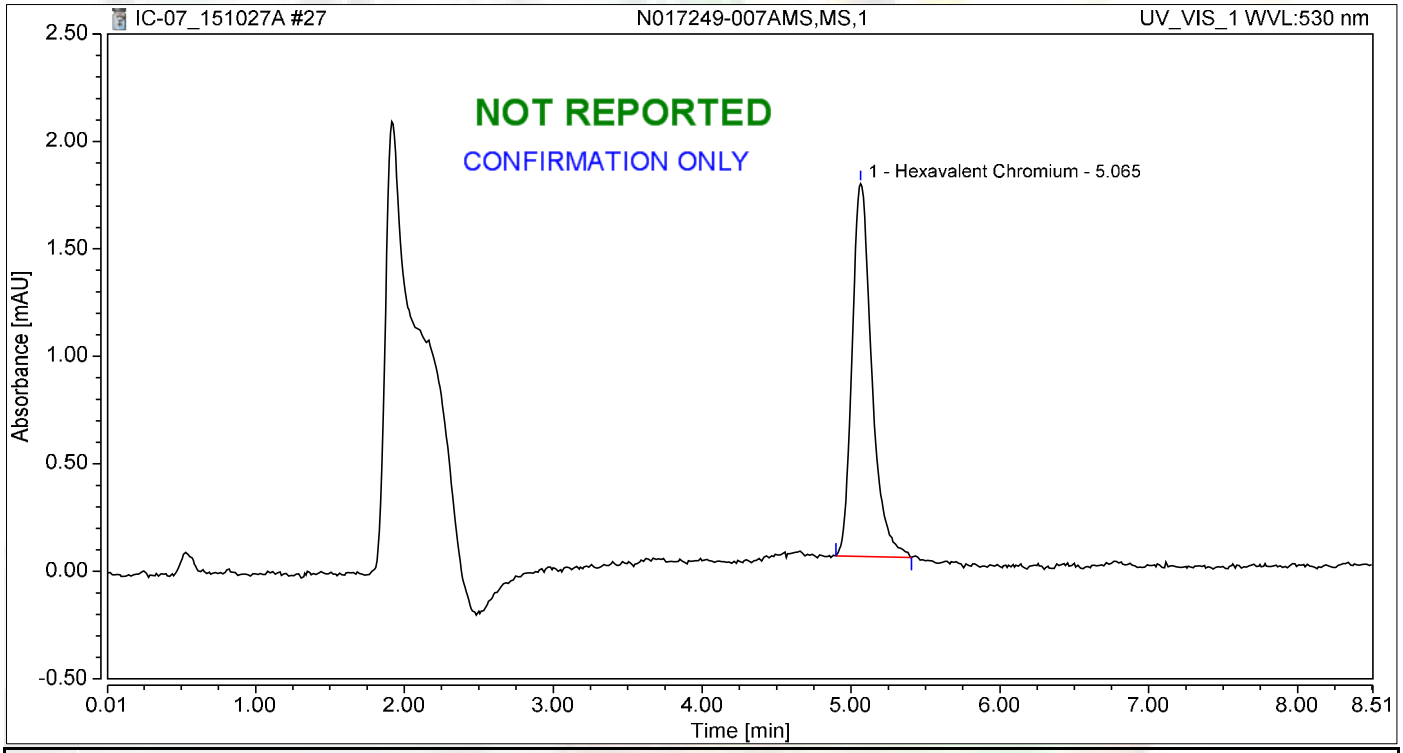
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.018	0.165	100.00	100.00	0.0779
Total:			**0.018**	**0.165**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017249-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

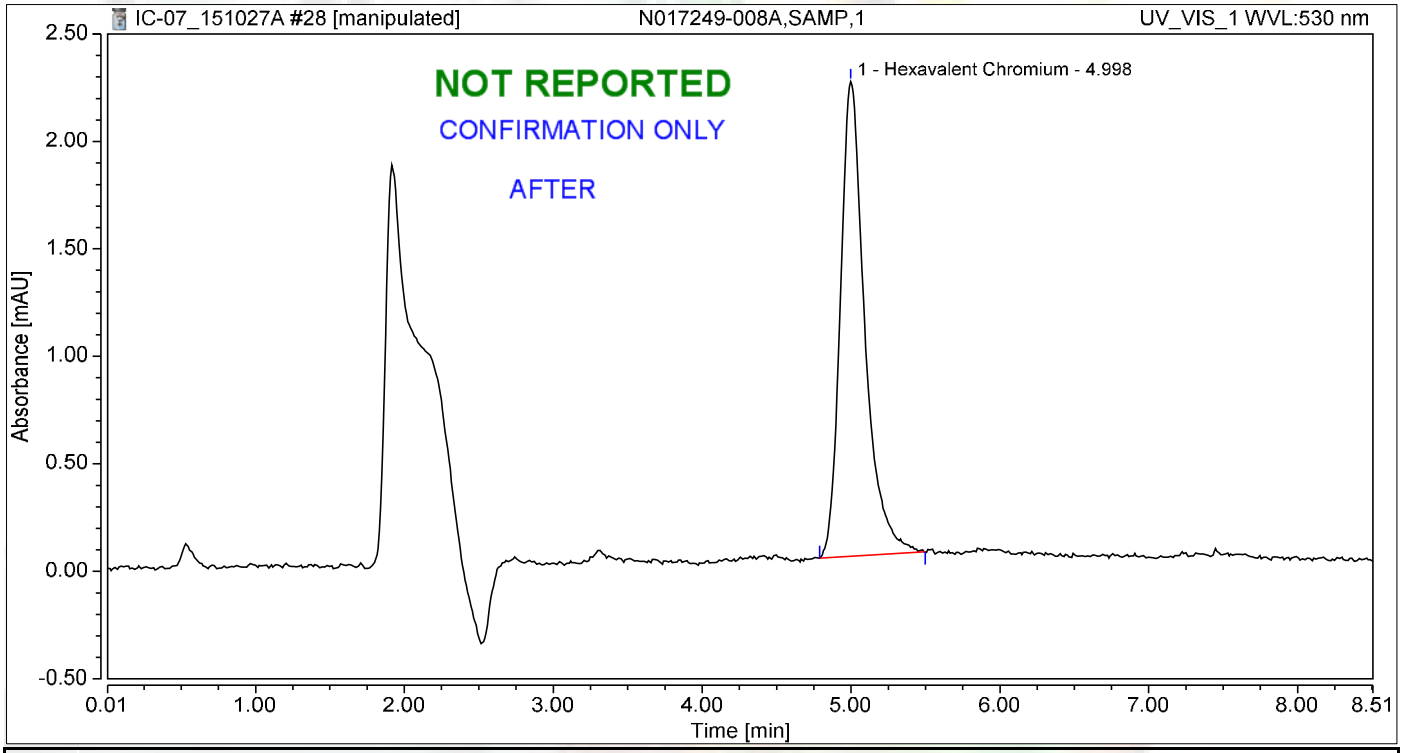
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.263	1.735	100.00	100.00	1.1144
Total:			**0.263**	**1.735**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017249-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

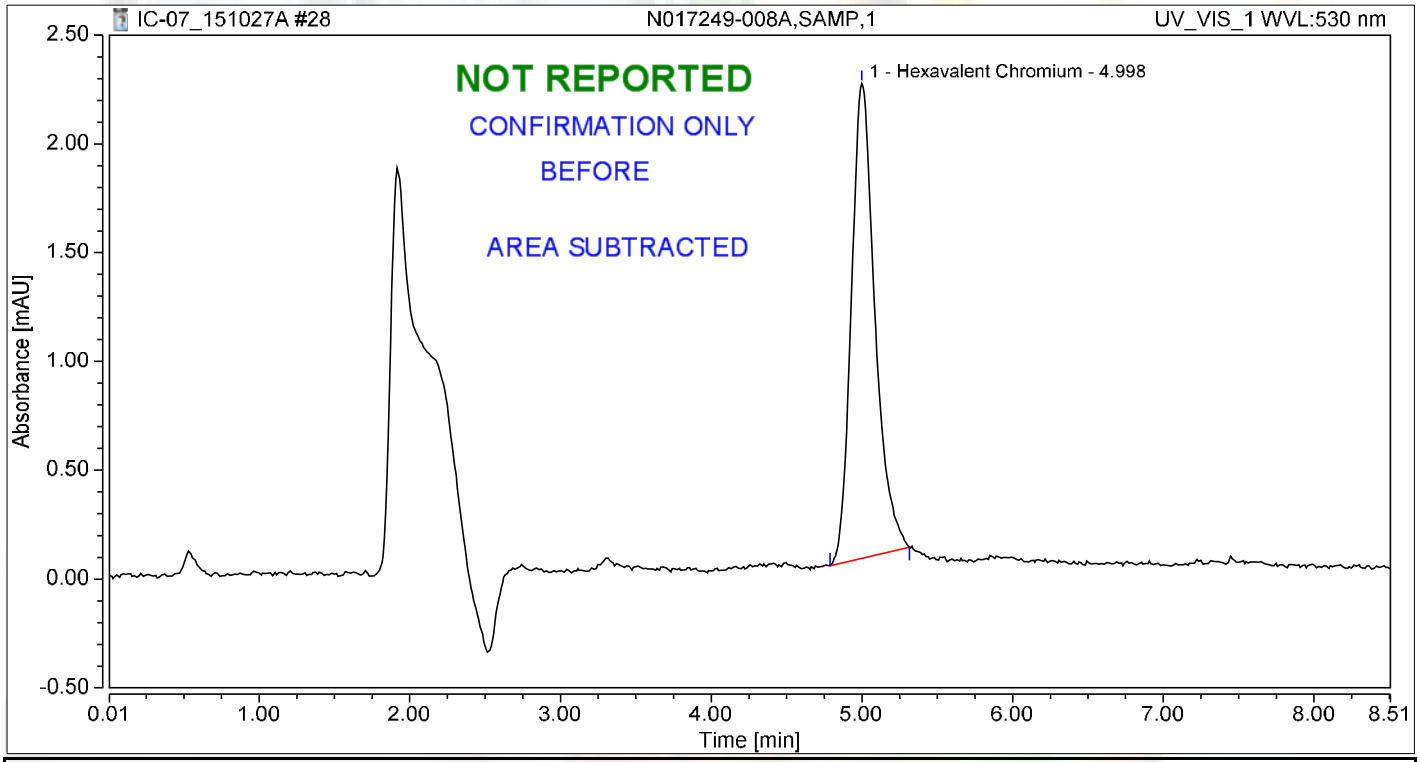
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	0.418	2.209	100.00	100.00	1.7750
Total:			**0.418**	**2.209**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017249-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

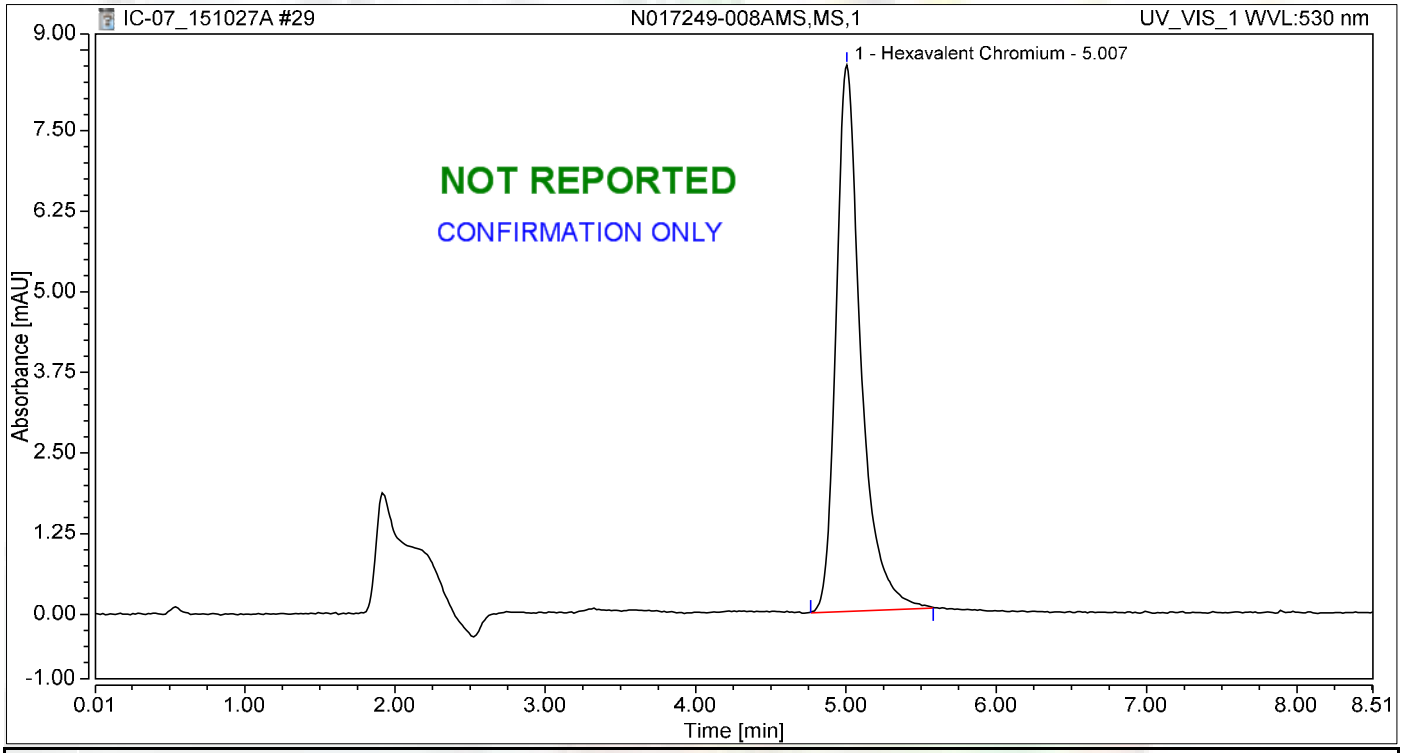
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	0.397	2.184	100.00	100.00	1.6826
Total:			**0.397**	**2.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017249-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

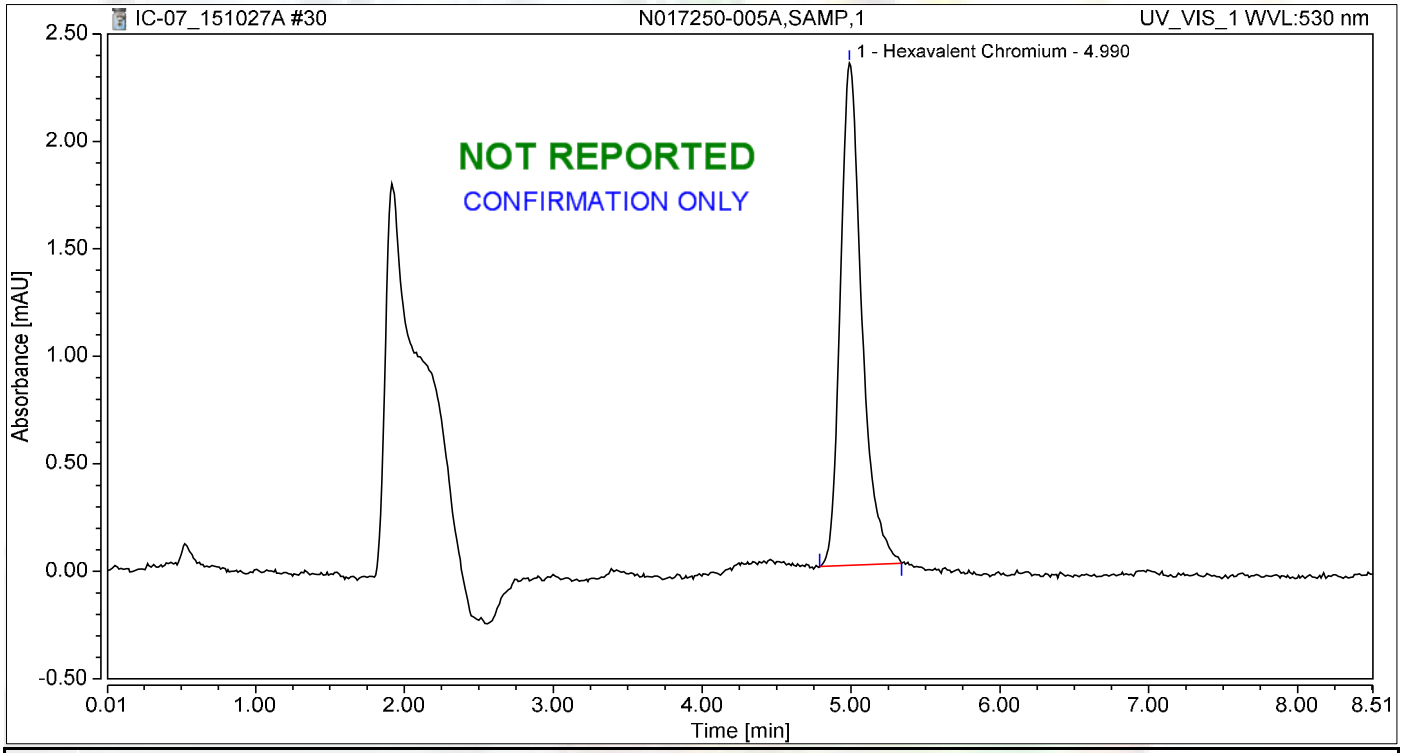
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.007	1.620	8.470	100.00	100.00	6.8714
Total:			**1.620**	**8.470**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017250-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

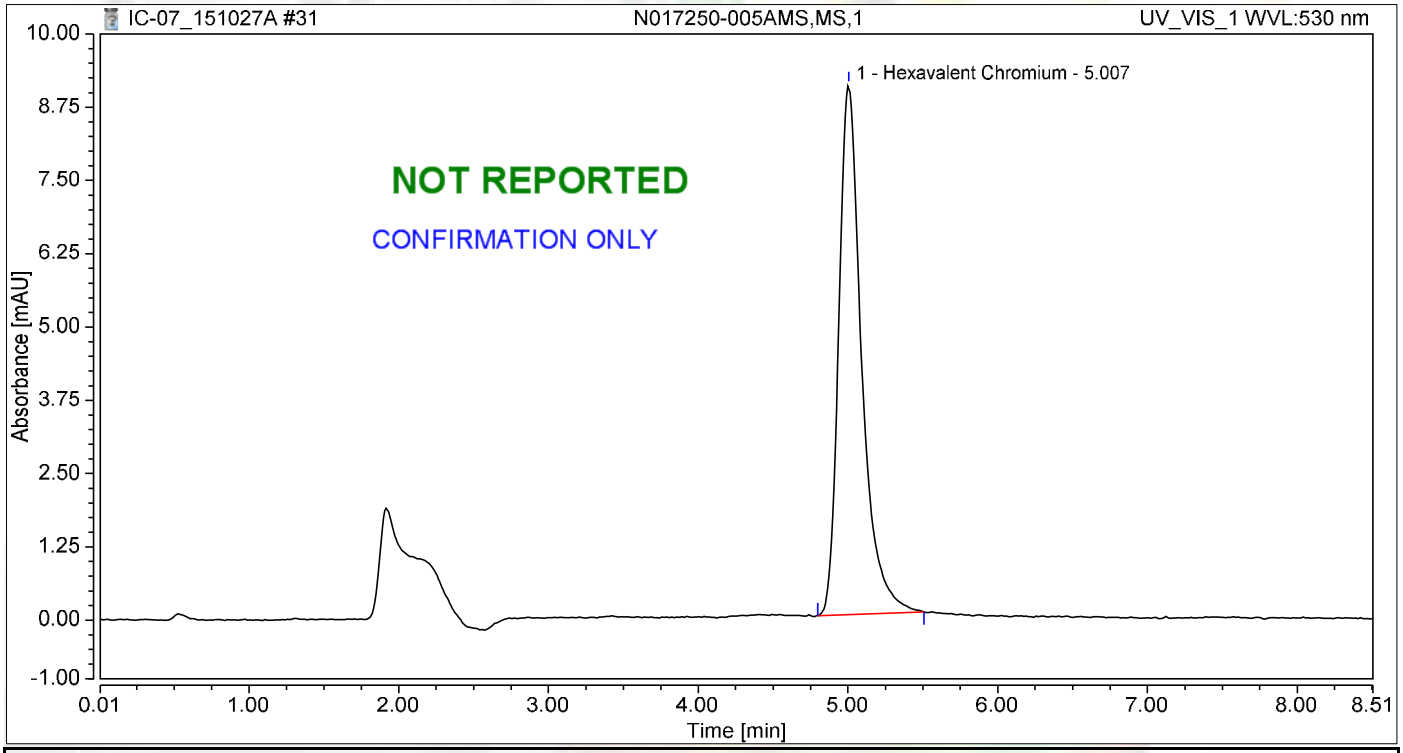
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	0.391	2.336	100.00	100.00	1.6585
Total:			**0.391**	**2.336**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017250-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

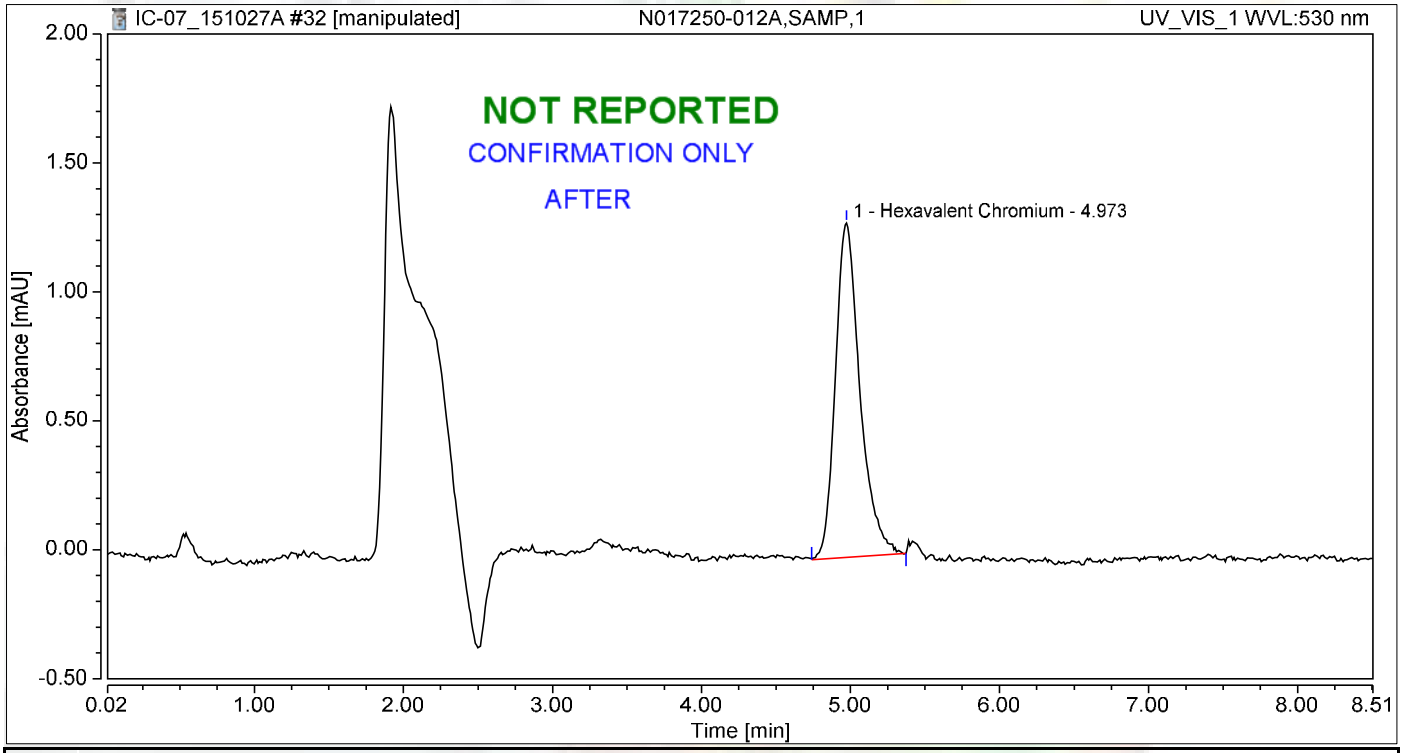
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.007	1.599	9.039	100.00	100.00	6.7828
Total:			**1.599**	**9.039**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017250-012A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

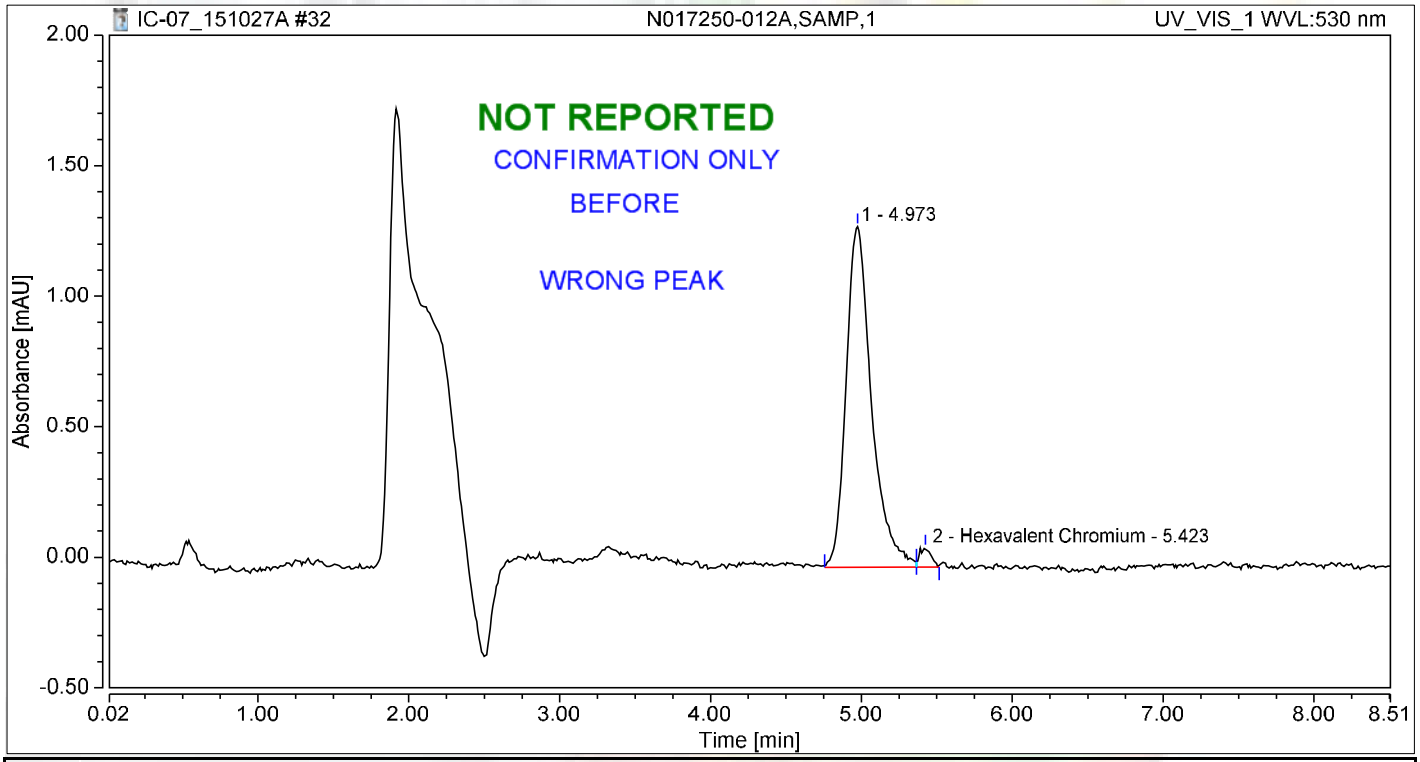
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.973	0.248	1.297	100.00	100.00	1.0499
Total:			**0.248**	**1.297**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017250-012A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

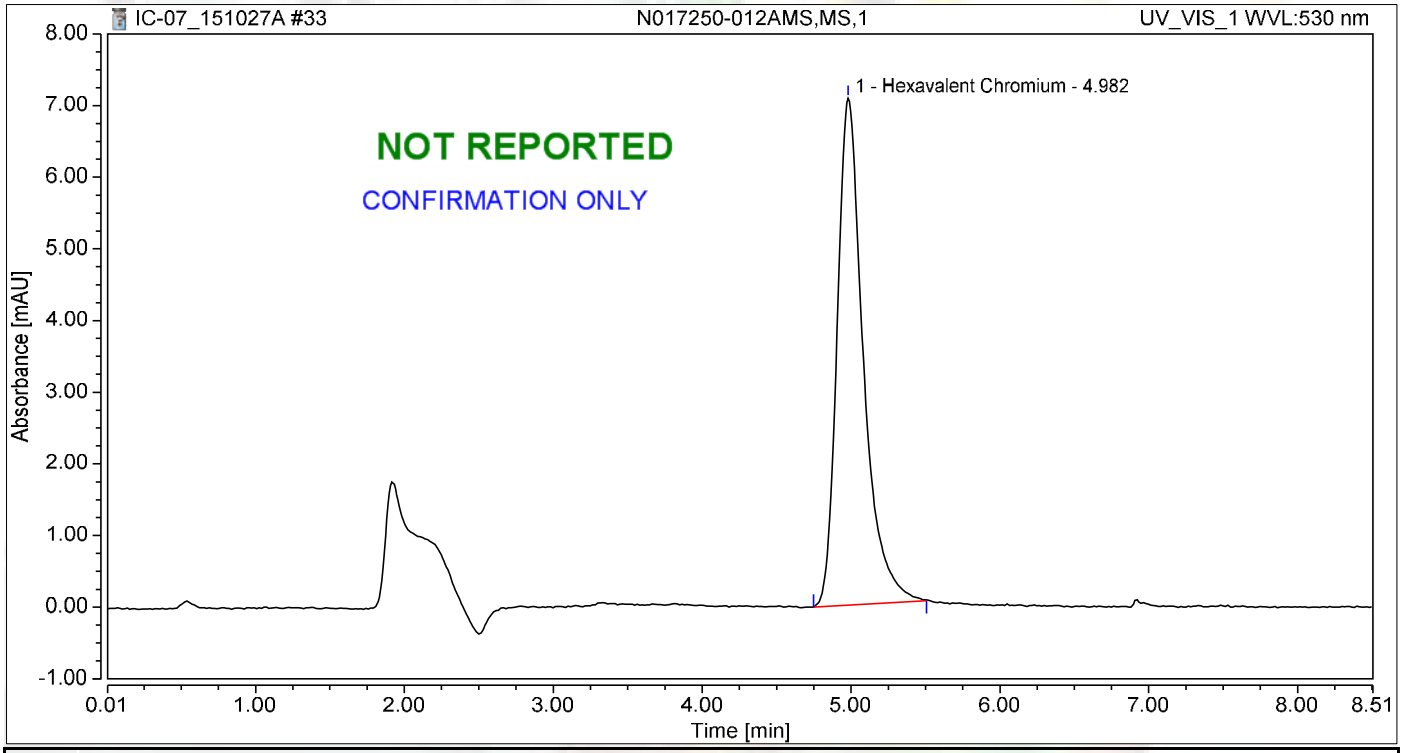
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.973	0.255	1.306	97.50	94.68	n.a.
2	Hexavalent Chromium	5.423	0.007	0.073	2.50	5.32	0.0277
Total:			**0.261**	**1.379**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017250-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

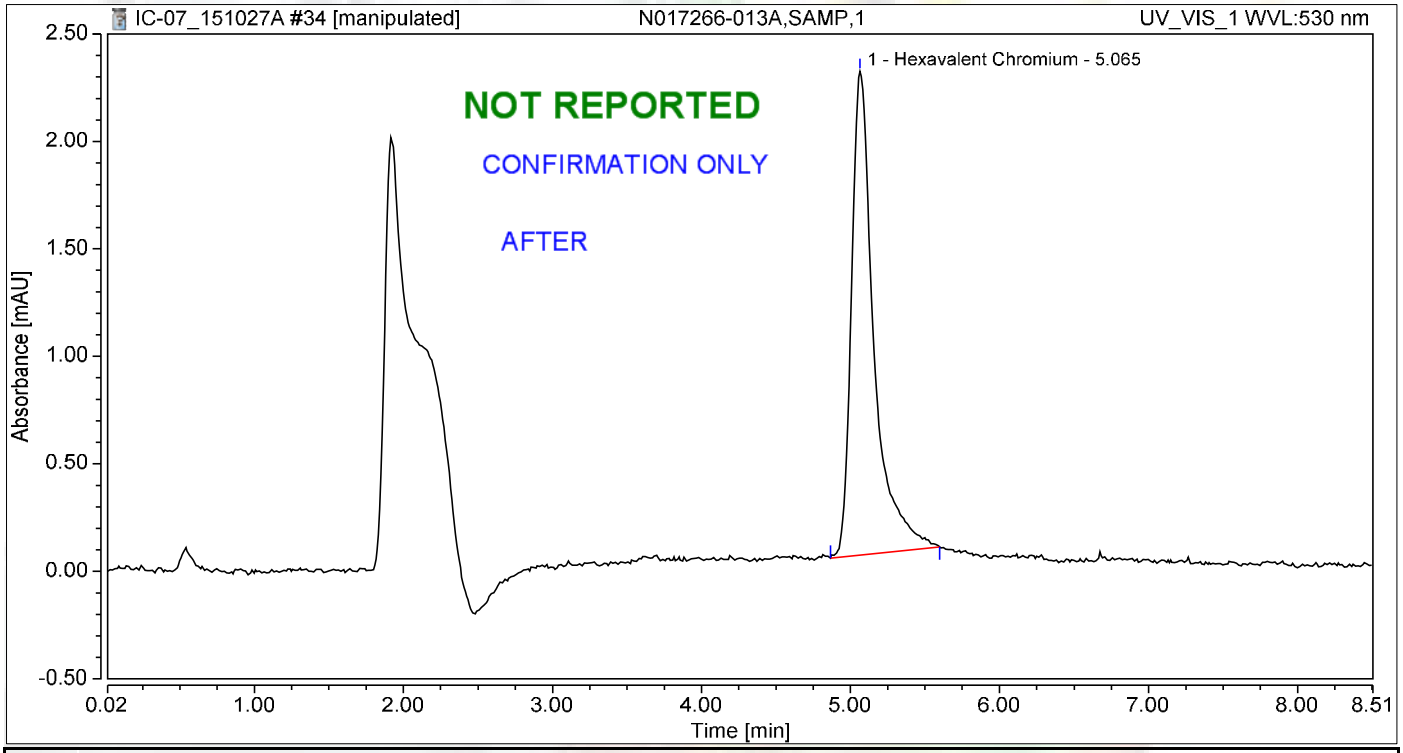
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.982	1.438	7.076	100.00	100.00	6.1013
Total:			**1.438**	**7.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017266-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

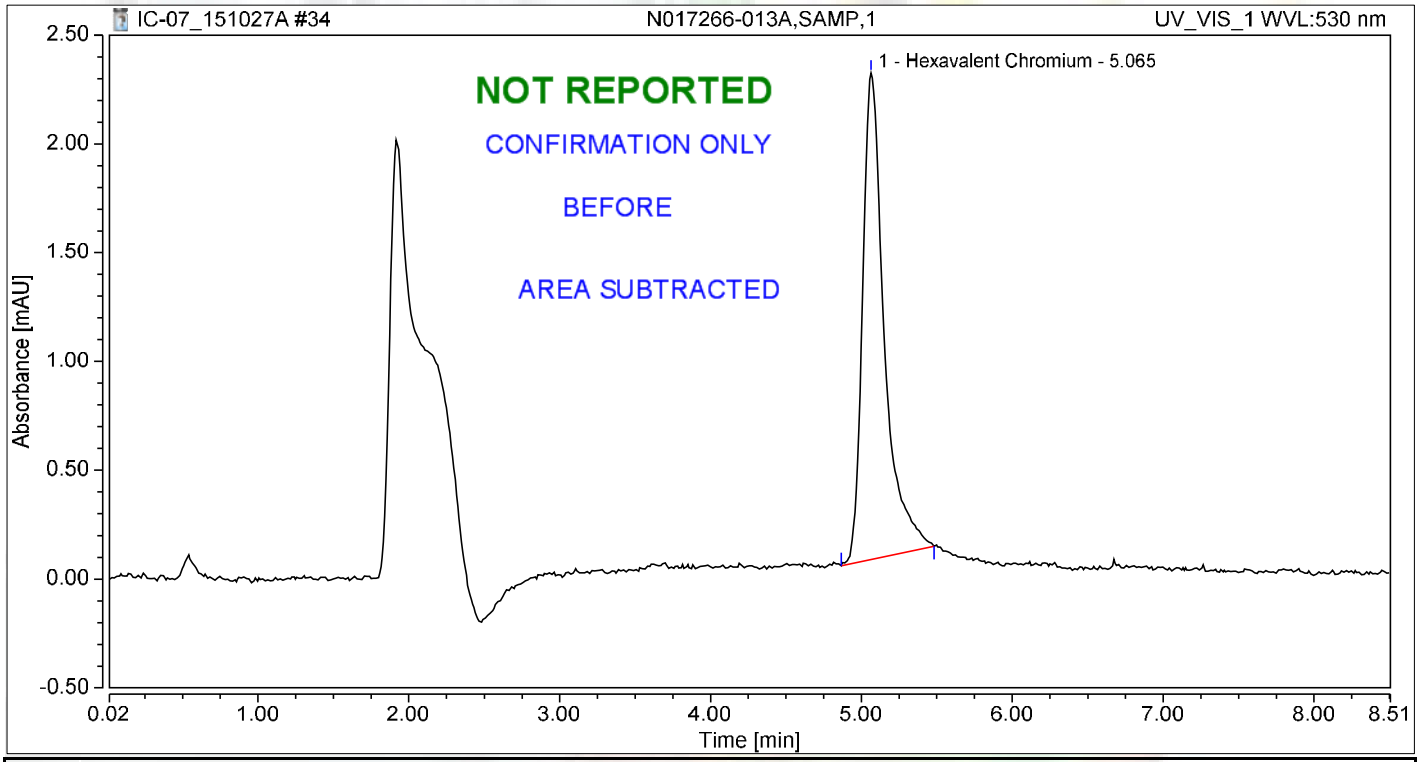
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.390	2.250	100.00	100.00	1.6552
Total:			**0.390**	**2.250**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017266-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

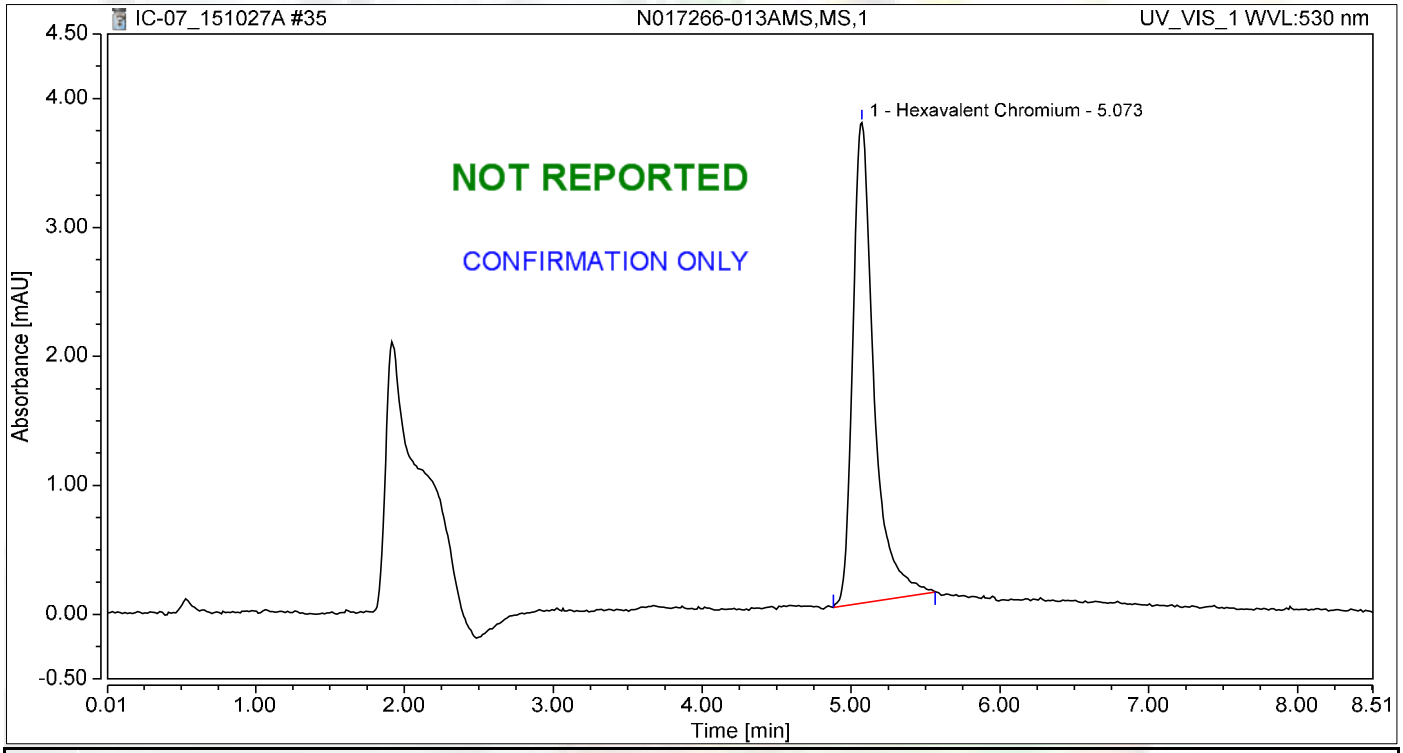
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.373	2.235	100.00	100.00	1.5835
Total:			**0.373**	**2.235**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017266-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

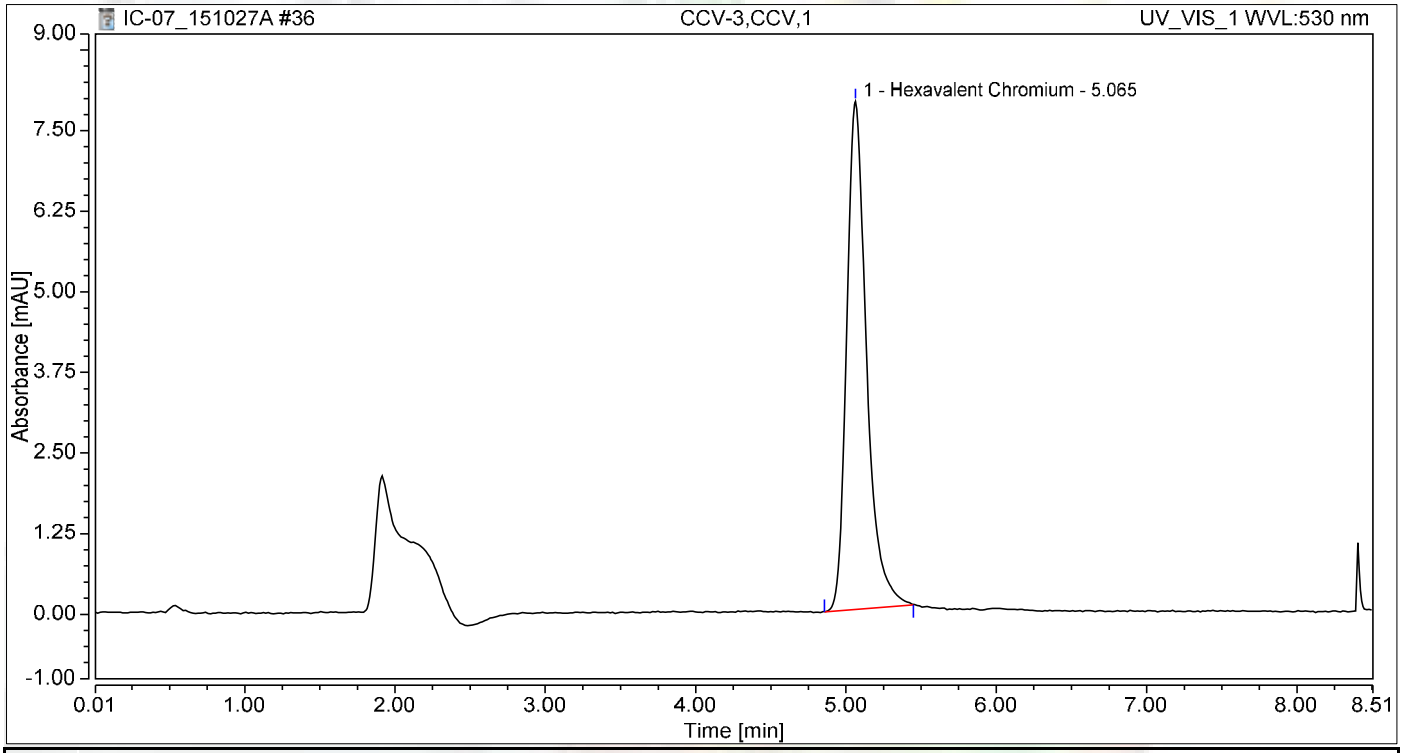
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.607	3.727	100.00	100.00	2.5747
Total:			**0.607**	**3.727**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

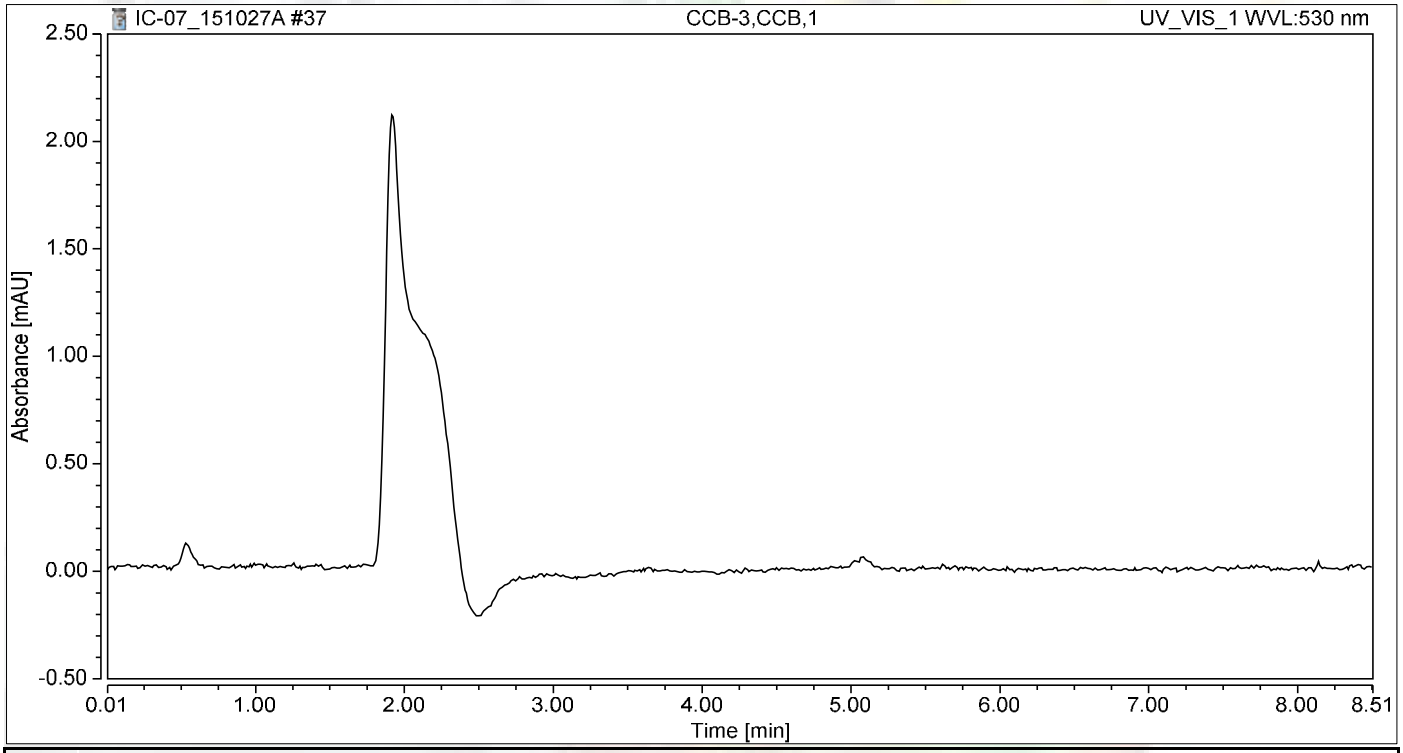
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.203	7.877	100.00	100.00	5.1022
Total:			**1.203**	**7.877**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

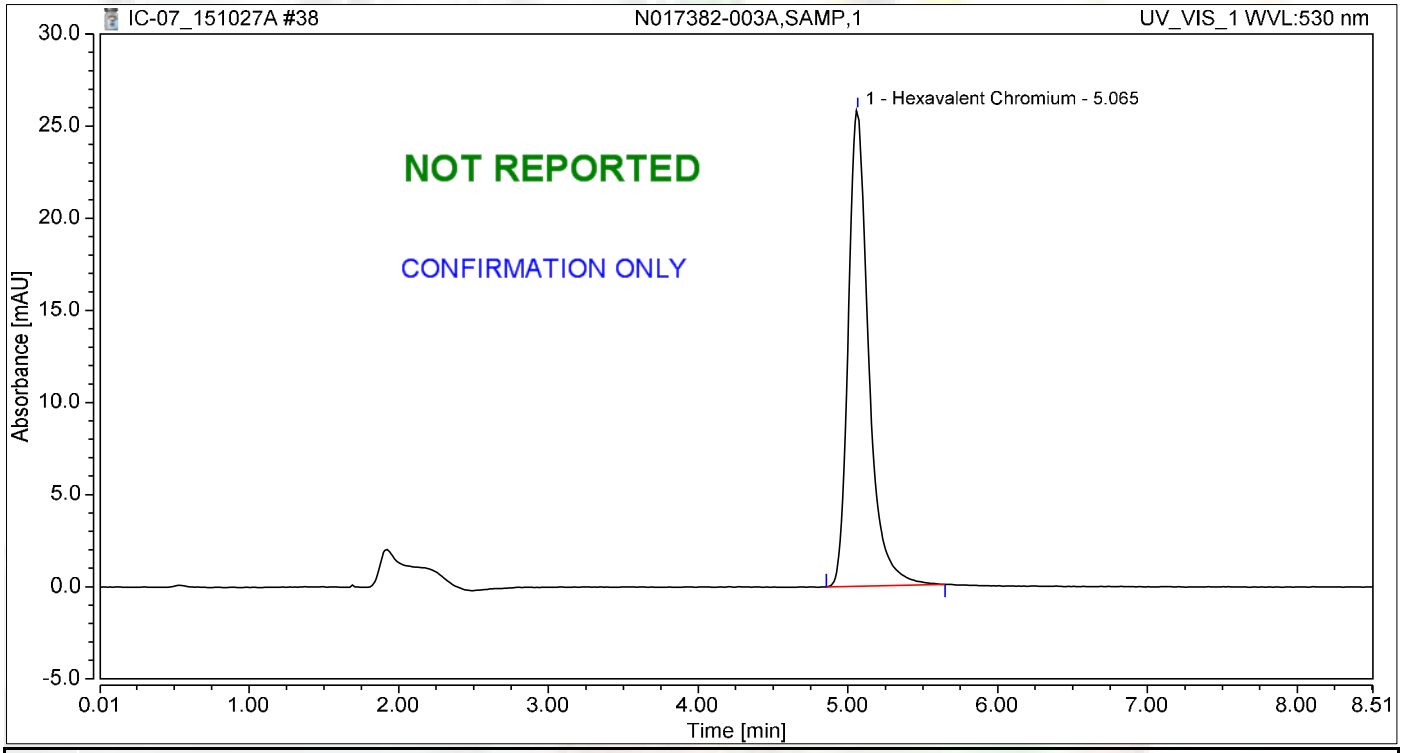
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017382-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

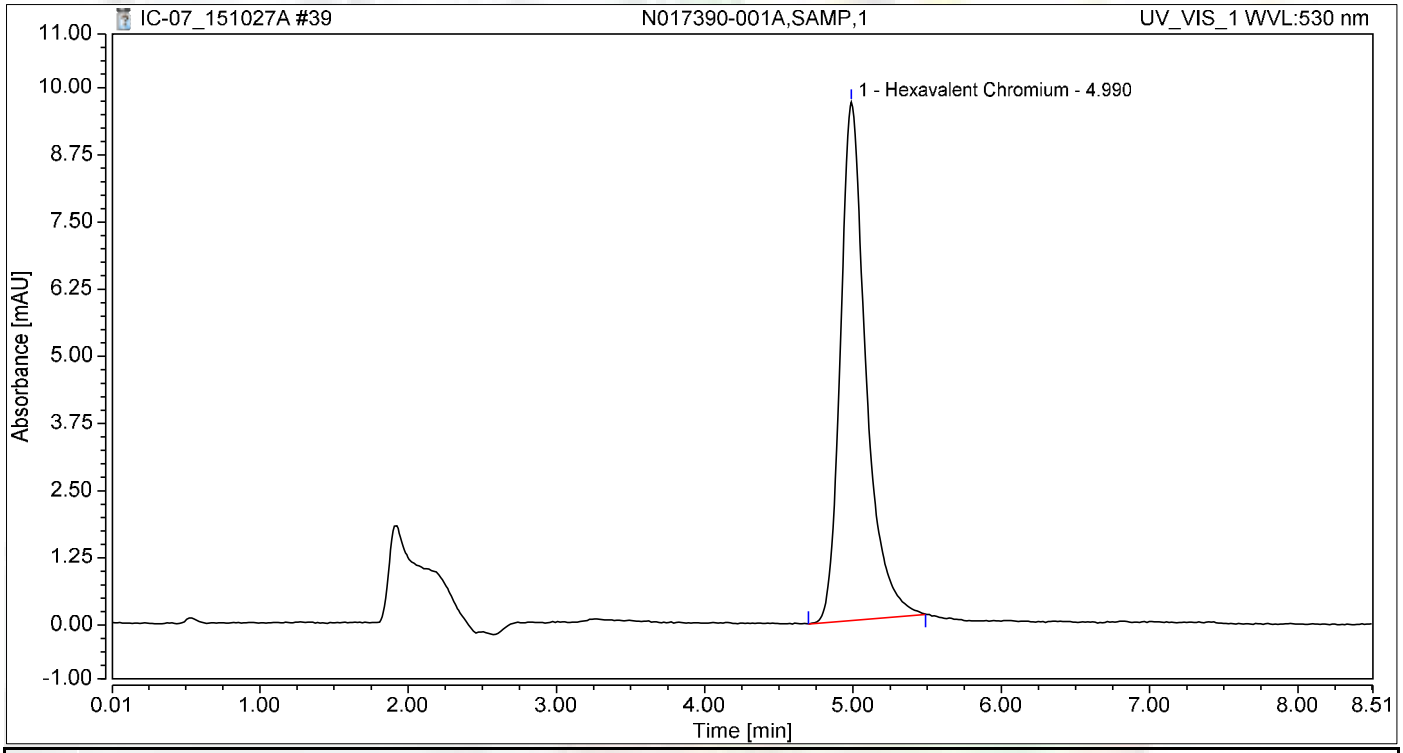
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.037	25.824	100.00	100.00	17.1237
Total:			**4.037**	**25.824**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017390-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

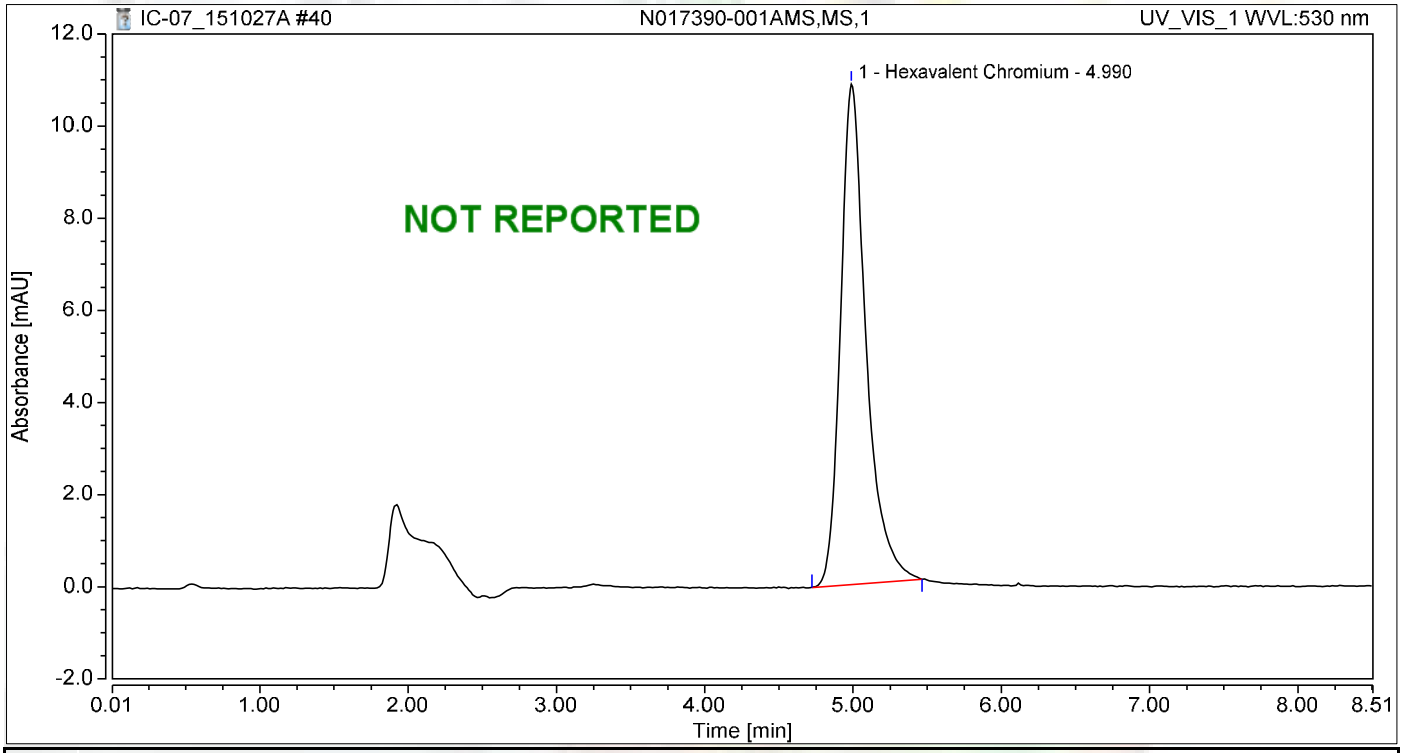
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	1.924	9.648	100.00	100.00	8.1624
Total:			**1.924**	**9.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017390-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 12:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

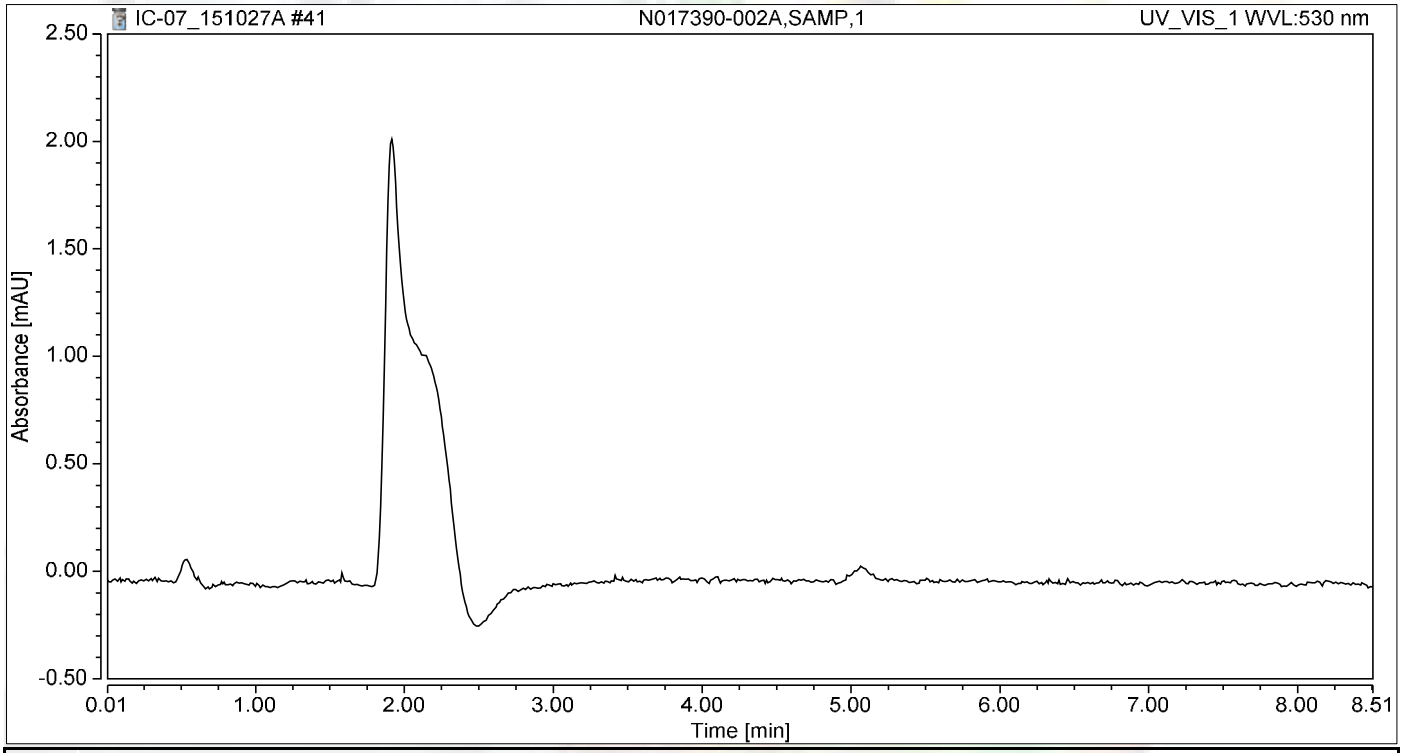
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	2.159	10.864	100.00	100.00	9.1570
Total:			**2.159**	**10.864**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017390-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

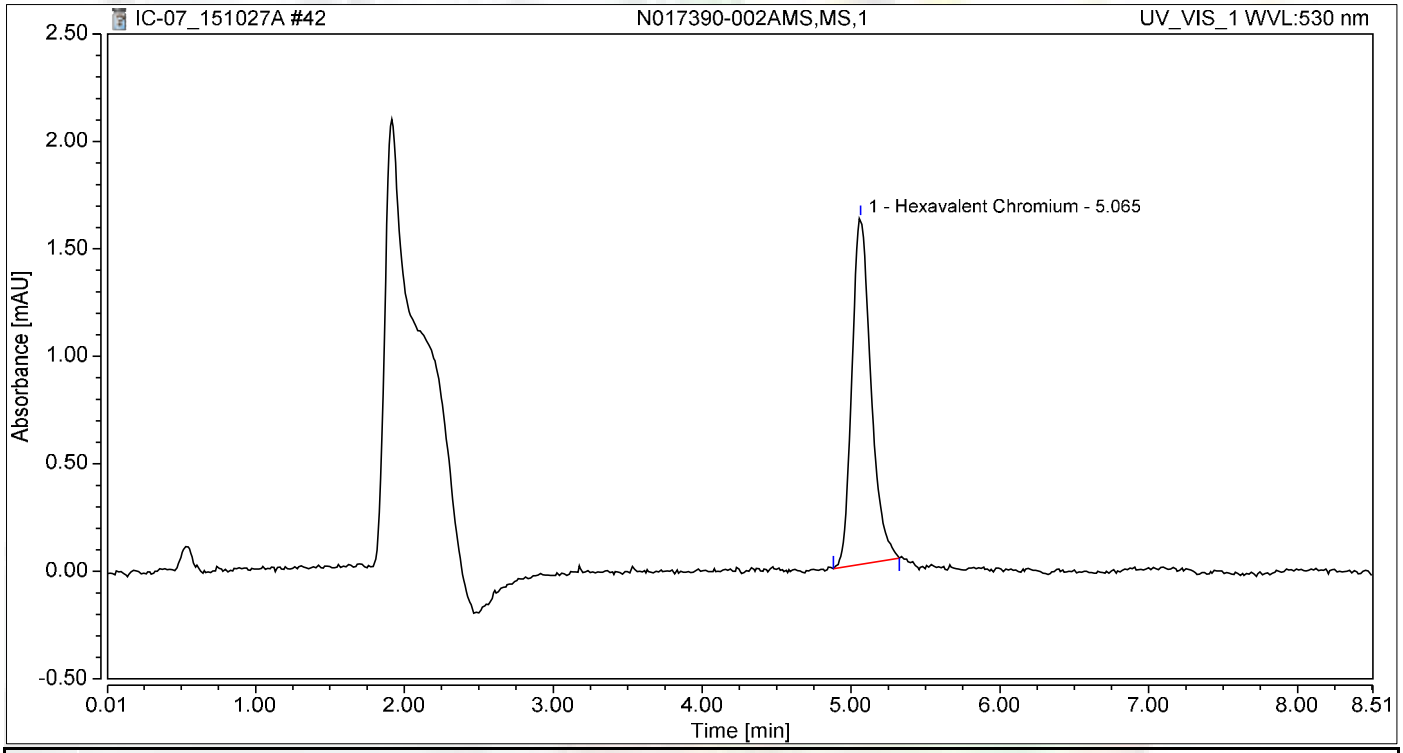
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017390-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

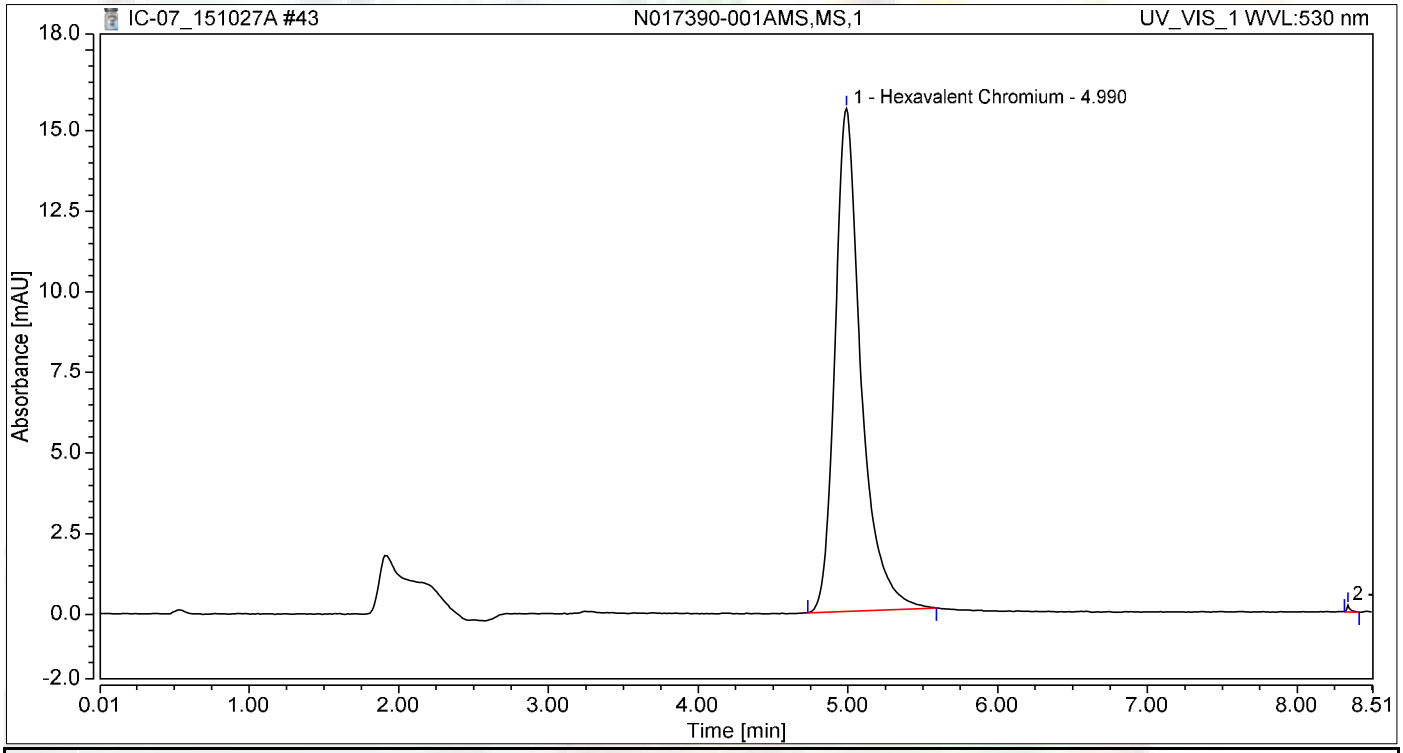
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.238	1.611	100.00	100.00	1.0082
Total:			**0.238**	**1.611**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017390-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

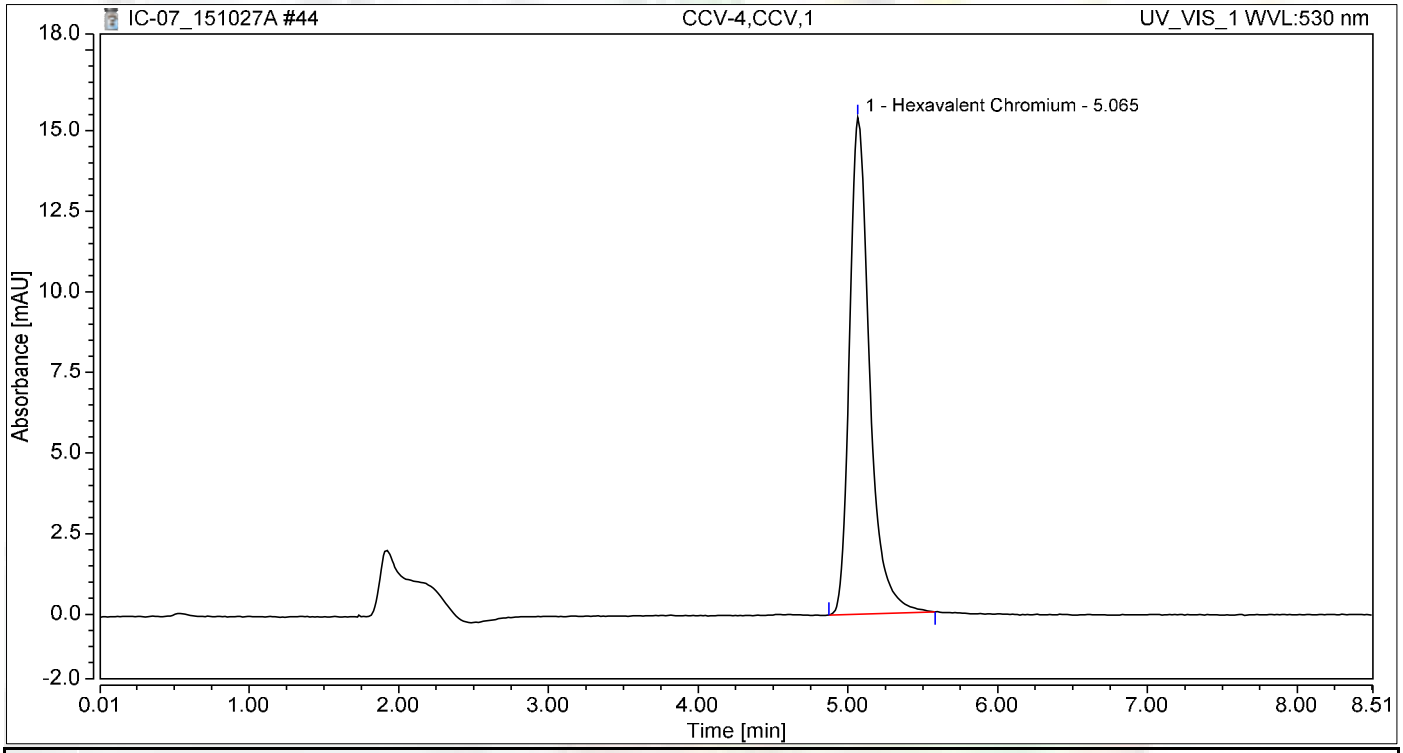
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.990	3.145	15.594	99.86	98.70	13.3383
2		8.340	0.004	0.205	0.14	1.30	n.a.
Total:			**3.149**	**15.799**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

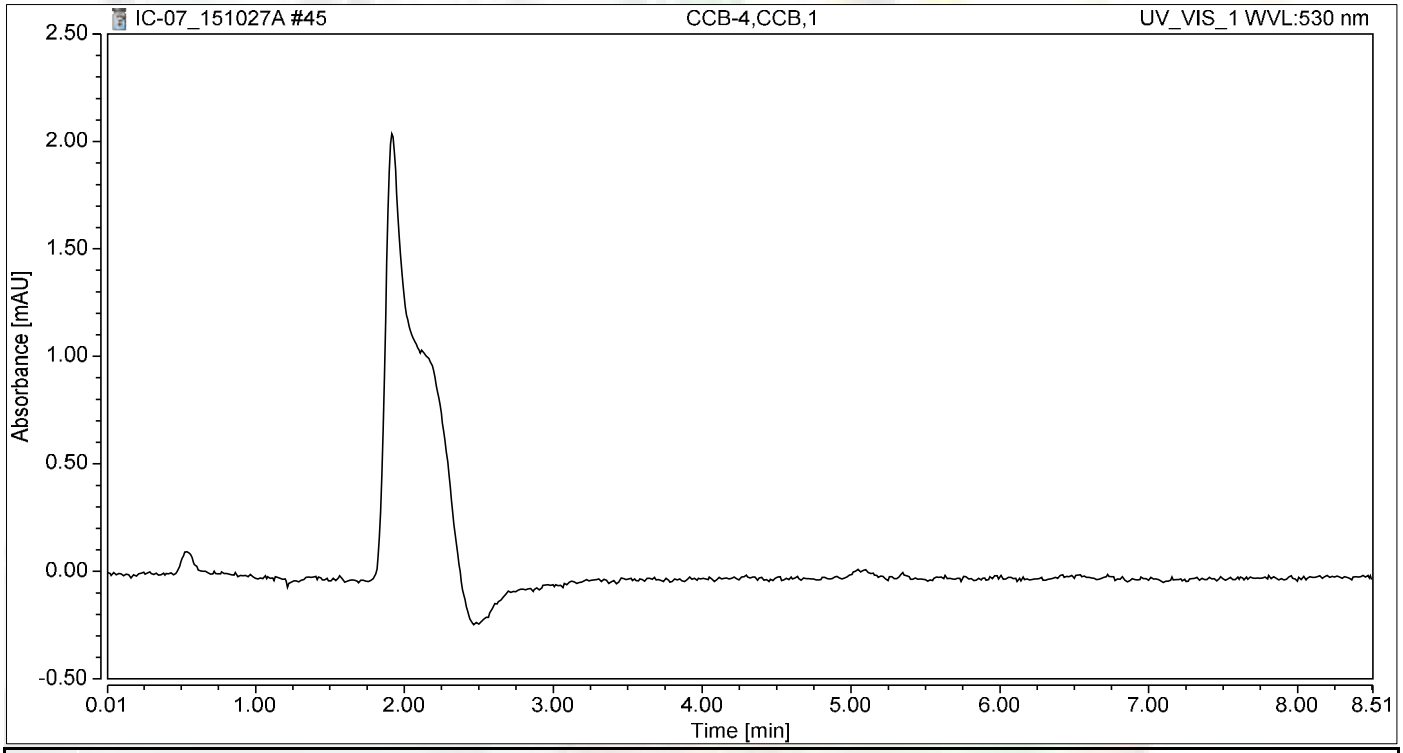
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.381	15.410	100.00	100.00	10.1006
Total:			**2.381**	**15.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Oct/15 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103929
ASSET #: N017390 / N017399 / N017400

Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 10/30/2015

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 11/6/2015

2nd Level Reviewer _____ 11/10/201 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103951
ASSET #: N017390 / N017400 / N017427
Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 10/31/2015

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 11/6/2015

2nd Level Reviewer _____ 11/10/201 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N017390-001C**, concentration in mg/L are calculated as follows:

Chloride, mg/L = 3.066 * 500

= 1533

Reporting **N017390-001C** results in two significant figures,

Chloride, mg/L = 1500



ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\151012.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15101201.D01	1	1	1
2	,BLANK,	..\151012.M	..\15101201.D02	1	1	1
3	AUTOCAL1R	..\151012.M	..\15101201.D03	1	1	1
4	AUTOCAL2R	..\151012.M	..\15101201.D04	1	1	1
5	AUTOCAL3R	..\151012.M	..\15101201.D05	1	1	1
6	AUTOCAL4R	..\151012.M	..\15101201.D06	1	1	1
7	AUTOCAL5R	..\151012.M	..\15101201.D07	1	1	1
8	AUTOCAL6R	..\151012.M	..\15101201.D08	1	1	1
9	,ICV,ICV,1,	..\151012.M	..\15101201.D09	1	1	1
10	,ICB,ICB,1,	..\151012.M	..\15101201.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\151012.M	..\15101201.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\151012.M	..\15101201.D12	1	1	1
13	,MDL-1,1,	..\151012.M	..\15101201.D13	1	1	1
14	,MDL-2,1,	..\151012.M	..\15101201.D14	1	1	1
15	,MDL-3,1,	..\151012.M	..\15101201.D15	1	1	1
16	,MDL-4,1,	..\151012.M	..\15101201.D16	1	1	1
17	,MDL-5,1,	..\151012.M	..\15101201.D17	1	1	1
18	,MDL-6,1,	..\151012.M	..\15101201.D18	1	1	1
19	,MDL-7,1,	..\151012.M	..\15101201.D19	1	1	1
20	,CCV-1,CCV,1,	..\151012.M	..\15101201.D20	1	1	1
21	,CCB-1,CCB,1,	..\151012.M	..\15101201.D21	1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

10/21/2015

DIONEX SCHEDULE - C:\DX\SCHEDULE\151030.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.	
1	,BLANK,	..\151012.M	..\15103001.D01	1	1	1	
2	,CCV-1,CCV,1,	..\151012.M	..\15103001.D02	1	1	1	
3	,CCB-1,CCB,1,	..\151012.M	..\15103001.D03	1	1	1	
4	,MB-H2O,MBLK,1,	..\151012.M	..\15103001.D04	1	1	1	
5	,LCS-H2O,LCS,1,	..\151012.M	..\15103001.D05	1	1	1	
6	,N017434-003B,SAMP,	..\151012.M	..\15103001.D06	1	1	1	
7	,N017434-004B,SAMP,	..\151012.M	..\15103001.D07	1	1	1	
8	,N017434-008B,SAMP,	..\151012.M	..\15103001.D08	1	1	1	
9	,N017434-009B,SAMP,	..\151012.M	..\15103001.D09	1	1	1	
10	,N017435-003B,SAMP,	..\151012.M	..\15103001.D10	1	1	1	
11	,N017435-008B,SAMP,	..\151012.M	..\15103001.D11	1	1	1	
12	,N017435-010B,SAMP,	..\151012.M	..\15103001.D12	1	1	1	
13	,N017434-004B,SAMP,	..\151012.M	..\15103001.D13	1	1	1	
14	,CCV-2,CCV,1,	..\151012.M	..\15103001.D14	1	1	1	
15	,CCB-2,CCB,1,	..\151012.M	..\15103001.D15	1	1	1	
16	,N017435-008B,SAMP,1	..\151012.M	..\15103001.D16	1	1	1	N017435-008B,SAMP,1
17	,N017435-010BDUP,DU	..\151012.M	..\15103001.D17	1	1	1	
18	,N017435-010BMS,MS,	..\151012.M	..\15103001.D18	1	1	1	
19	,N017435-010BMS,MS,	..\151012.M	..\15103001.D19	1	1	1	
20	,N017435-010BMSD,MS	..\151012.M	..\15103001.D20	1	1	1	
21	,N017434-004B,SAMP,	..\151012.M	..\15103001.D21	1	1	1	
22	,N017434-008B,SAMP,	..\151012.M	..\15103001.D22	1	1	1	
23	,N017434-009B,SAMP,	..\151012.M	..\15103001.D23	1	1	1	
24	,N017435-003B,SAMP,	..\151012.M	..\15103001.D24	1	1	1	
25	,N017435-008B,SAMP,	..\151012.M	..\15103001.D25	1	1	1	
26	,CCV-3,CCV,1,	..\151012.M	..\15103001.D26	1	1	1	
27	,CCB-3,CCB,1,	..\151012.M	..\15103001.D27	1	1	1	
28	,N017435-010B,SAMP,	..\151012.M	..\15103001.D28	1	1	1	
29	,N017434-004BMS,MS,	..\151012.M	..\15103001.D29	1	1	1	
30	,N017390-001C,SAMP,	..\151012.M	..\15103001.D30	1	1	1	
31	,N017390-001C,SAMP,	..\151012.M	..\15103001.D31	1	1	1	
32	,N017400-005C,SAMP,	..\151012.M	..\15103001.D32	1	1	1	
33	,N017400-005C,SAMP,	..\151012.M	..\15103001.D33	1	1	1	
34	,N017399-001B,SAMP,	..\151012.M	..\15103001.D34	1	1	1	
35	,N017399-001BDUP,DU	..\151012.M	..\15103001.D35	1	1	1	
36	,N017399-001B,SAMP,	..\151012.M	..\15103001.D36	1	1	1	
37	,N017399-001BDUP,DU	..\151012.M	..\15103001.D37	1	1	1	
38	,CCV-4,CCV,1,	..\151012.M	..\15103001.D38	1	1	1	
39	,CCB-4,CCB,1,	..\151012.M	..\15103001.D39	1	1	1	
40	,N017399-002C,SAMP,	..\151012.M	..\15103001.D40	1	1	1	
41	,N017399-002CMS,MS,	..\151012.M	..\15103001.D41	1	1	1	
42	,N017399-002CMSD,MS	..\151012.M	..\15103001.D42	1	1	1	
43	,N017399-002C,SAMP,	..\151012.M	..\15103001.D43	1	1	1	
44	,N017399-002CMS,MS,	..\151012.M	..\15103001.D44	1	1	1	
45	,N017399-002CMSD,MS	..\151012.M	..\15103001.D45	1	1	1	
46	,N017390-001C,SAMP,	..\151012.M	..\15103001.D46	1	1	1	
47	,N017400-005C,SAMP,	..\151012.M	..\15103001.D47	1	1	1	
48	,N017400-001D,SAMP,	..\151012.M	..\15103001.D48	1	1	1	
49	,N017400-001D,SAMP,	..\151012.M	..\15103001.D49	1	1	1	
50	,CCV-5,CCV,1,	..\151012.M	..\15103001.D50	1	1	1	
51	,CCB-5,CCB,1,	..\151012.M	..\15103001.D51	1	1	1	
52	,N017400-002D,SAMP,	..\151012.M	..\15103001.D52	1	1	1	
53	,N017400-002D,SAMP,	..\151012.M	..\15103001.D53	1	1	1	
54	,N017400-003C,SAMP,	..\151012.M	..\15103001.D54	1	1	1	
55	,N017400-003C,SAMP,	..\151012.M	..\15103001.D55	1	1	1	
56	,N017400-004C,SAMP,	..\151012.M	..\15103001.D56	1	1	1	
57	,N017400-004C,SAMP,	..\151012.M	..\15103001.D57	1	1	1	
58	,N017400-006C,SAMP,	..\151012.M	..\15103001.D58	1	1	1	
59	,N017400-006C,SAMP,	..\151012.M	..\15103001.D59	1	1	1	
60	,N017400-007C,SAMP,	..\151012.M	..\15103001.D60	1	1	1	
61	,N017400-007C,SAMP,	..\151012.M	..\15103001.D61	1	1	1	
62	,CCV-6,CCV,1,	..\151012.M	..\15103001.D62	1	1	1	
63	,CCB-6,CCB,1,	..\151012.M	..\15103001.D63	1	1	1	
64	,N017400-008C,SAMP,	..\151012.M	..\15103001.D64	1	1	1	
65	,N017400-008C,SAMP,	..\151012.M	..\15103001.D65	1	1	1	
66	,N017427-001D,SAMP,	..\151012.M	..\15103001.D66	1	1	1	
67	,N017427-001D,SAMP,	..\151012.M	..\15103001.D67	1	1	1	
68	,N017427-002D,SAMP,	..\151012.M	..\15103001.D68	1	1	1	
69	,N017427-002D,SAMP,	..\151012.M	..\15103001.D69	1	1	1	
70	,N017390-001CDUP,DU	..\151012.M	..\15103001.D70	1	1	1	
71	,N017390-001CMS,MS,	..\151012.M	..\15103001.D71	1	1	1	
72	,N017390-001CMSD,MS	..\151012.M	..\15103001.D72	1	1	1	
73	,N017400-001D,SAMP,	..\151012.M	..\15103001.D73	1	1	1	
74	,CCV-7,CCV,1,	..\151012.M	..\15103001.D74	1	1	1	

11/6/2015

DIONEX SCHEDULE - C:\DX\SCHEDULE\151031.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15103101.D01	1	1	1
2	,CCV-1,CCV,1,	..\151012.M	..\15103101.D02	1	1	1
3	,CCB-1,CCB,1,	..\151012.M	..\15103101.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\151012.M	..\15103101.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\151012.M	..\15103101.D05	1	1	1
6	,N017442-001B,SAMP,	..\151012.M	..\15103101.D06	1	1	1
7	,N017442-004B,SAMP,	..\151012.M	..\15103101.D07	1	1	1
8	,N017442-005B,SAMP,	..\151012.M	..\15103101.D08	1	1	1
9	,N017442-006B,SAMP,	..\151012.M	..\15103101.D09	1	1	1
10	,N017443-003B,SAMP,	..\151012.M	..\15103101.D10	1	1	1
11	,N017443-004B,SAMP,	..\151012.M	..\15103101.D11	1	1	1
12	,N017443-006B,SAMP,	..\151012.M	..\15103101.D12	1	1	1
13	,N017443-007B,SAMP,	..\151012.M	..\15103101.D13	1	1	1
14	,CCV-2,CCV,1,	..\151012.M	..\15103101.D14	1	1	1
15	,CCB-2,CCB,1,	..\151012.M	..\15103101.D15	1	1	1
16	,N017441-004B,SAMP,	..\151012.M	..\15103101.D16	1	1	1
17	,N017441-005B,SAMP,	..\151012.M	..\15103101.D17	1	1	1
18	,N017442-001B,SAMP,	..\151012.M	..\15103101.D18	1	1	1
19	,N017443-003B,SAMP,	..\151012.M	..\15103101.D19	1	1	1
20	,N017443-007BDUP,DU	..\151012.M	..\15103101.D20	1	1	1
21	,N017443-007BMS,MS,	..\151012.M	..\15103101.D21	1	1	1
22	,N017443-007BMSD,MS	..\151012.M	..\15103101.D22	1	1	1
23	,N017442-004B,SAMP,	..\151012.M	..\15103101.D23	1	1	1
24	,N017442-005B,SAMP,	..\151012.M	..\15103101.D24	1	1	1
25	,N017442-006B,SAMP,	..\151012.M	..\15103101.D25	1	1	1
26	,CCV-3,CCV,1,	..\151012.M	..\15103101.D26	1	1	1
27	,CCB-3,CCB,1,	..\151012.M	..\15103101.D27	1	1	1
28	,N017443-003B,SAMP,	..\151012.M	..\15103101.D28	1	1	1
29	,N017443-004B,SAMP,	..\151012.M	..\15103101.D29	1	1	1
30	,N017443-004BMS,MS,	..\151012.M	..\15103101.D30	1	1	1
31	,N017443-006B,SAMP,	..\151012.M	..\15103101.D31	1	1	1
32	,N017443-007B,SAMP,	..\151012.M	..\15103101.D32	1	1	1
33	,N017400-002D,SAMP,	..\151012.M	..\15103101.D33	1	1	1
34	,N017400-002DDUP,DU	..\151012.M	..\15103101.D34	1	1	1
35	,N017400-003C,SAMP,	..\151012.M	..\15103101.D35	1	1	1
36	,N017400-003CMS,MS,	..\151012.M	..\15103101.D36	1	1	1
37	,N017400-003CMSD,MS	..\151012.M	..\15103101.D37	1	1	1
38	,CCV-4,CCV,1,	..\151012.M	..\15103101.D38	1	1	1
39	,CCB-4,CCB,1,	..\151012.M	..\15103101.D39	1	1	1
40	,N017400-004C,SAMP,	..\151012.M	..\15103101.D40	1	1	1
41	,N017400-006C,SAMP,	..\151012.M	..\15103101.D41	1	1	1
42	,N017400-007C,SAMP,	..\151012.M	..\15103101.D42	1	1	1
43	,N017400-008C,SAMP,	..\151012.M	..\15103101.D43	1	1	1
44	,N017427-001D,SAMP,	..\151012.M	..\15103101.D44	1	1	1
45	,N017427-002D,SAMP,	..\151012.M	..\15103101.D45	1	1	1
46	,N017400-002D,SAMP,	..\151012.M	..\15103101.D46	1	1	1
47	,N017400-002DDUP,DU	..\151012.M	..\15103101.D47	1	1	1
48	,N017400-003C,SAMP,	..\151012.M	..\15103101.D48	1	1	1
49	,N017400-003CMS,MS,	..\151012.M	..\15103101.D49	1	1	1
50	,CCV-5,CCV,1,	..\151012.M	..\15103101.D50	1	1	1
51	,CCB-5,CCB,1,	..\151012.M	..\15103101.D51	1	1	1
52	,N017400-003CMSD,MS	..\151012.M	..\15103101.D52	1	1	1
53	,N017400-004C,SAMP,	..\151012.M	..\15103101.D53	1	1	1
54	,N017400-006C,SAMP,	..\151012.M	..\15103101.D54	1	1	1
55	,N017400-007C,SAMP,	..\151012.M	..\15103101.D55	1	1	1
56	,N017400-008C,SAMP,	..\151012.M	..\15103101.D56	1	1	1
57	,N017427-001D,SAMP,	..\151012.M	..\15103101.D57	1	1	1
58	,N017427-002D,SAMP,	..\151012.M	..\15103101.D58	1	1	1
59	,N017390-001C,SAMP,	..\151012.M	..\15103101.D59	1	1	1
60	,N017390-001CMS,MS,	..\151012.M	..\15103101.D60	1	1	1
61	,N017390-001CMSD,MS	..\151012.M	..\15103101.D61	1	1	1
62	,CCV-6,CCV,1,	..\151012.M	..\15103101.D62	1	1	1
63	,CCB-6,CCB,1,	..\151012.M	..\15103101.D63	1	1	1
64	,N017400-001D,SAMP,	..\151012.M	..\15103101.D64	1	1	1
65	,N017400-002D,SAMP,	..\151012.M	..\15103101.D65	1	1	1
66	,N017400-003C,SAMP,	..\151012.M	..\15103101.D66	1	1	1
67	,N017400-004C,SAMP,	..\151012.M	..\15103101.D67	1	1	1
68	,N017400-005C,SAMP,	..\151012.M	..\15103101.D68	1	1	1
69	,N017400-005CDUP,DU	..\151012.M	..\15103101.D69	1	1	1
70	,N017400-006C,SAMP,	..\151012.M	..\15103101.D70	1	1	1
71	,N017400-007C,SAMP,	..\151012.M	..\15103101.D71	1	1	1
72	,N017400-008C,SAMP,	..\151012.M	..\15103101.D72	1	1	1
73	,N017427-001D,SAMP,	..\151012.M	..\15103101.D73	1	1	1
74	,CCV-7,CCV,1,	..\151012.M	..\15103101.D74	1	1	1

11/6/2015

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
75	,CCB-7,CCB,1,	..\151012.M	..\15103101.D75	1	1	1
76	,N017427-002D,SAMP,	..\151012.M	..\15103101.D76	1	1	1
77	,CCV-8,CCV,1,	..\151012.M	..\15103101.D77	1	1	1
78	,CCB-8,CCB,1,	..\151012.M	..\15103101.D78	1	1	1
79	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

11/6/2015

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 151012.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS	
Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes
Data File Name: C:\DX\DATA\14120201.D02	

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes
Format File Name: C:\DX\METHOD\DEFAULT.PRF	

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

10/21/2015

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

10/21/2015

Component Table -- Last Modified: 16:44 on Mon, 12 Oct 2015

Component # 1 Fluoride Retention Time 2.71
Reference Comp. Fluoride Window Size 0.05 min.
Amount = K0 + K1*Area
K0 = 1.21838E-002
K1 = 2.39369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	22404	2579
3	5.00000E-001	196348	23135
4	1.00000E+000	405665	47246
5	2.50000E+000	1040848	129618
6	5.00000E+000	2084965	275326

Component # 2 Chloride Retention Time 4.12
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.51893E-002
K1 = 3.31876E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	142077	16162
3	1.00000E+000	281846	33232
4	2.50000E+000	734644	85716
5	5.00000E+000	1427982	175887
6	1.00000E+001	3020632	387582

Component # 3 Nitrite Retention Time 5.05
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 5.00308E-003
K1 = 1.85944E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	31734	2012
3	5.00000E-001	263959	18839
4	1.00000E+000	531236	38584
5	2.50000E+000	1331892	110811
6	5.00000E+000	2692079	240029

Component # 4 Bromide Retention Time 6.15
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -5.14938E-002
K1 = 7.25458E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	30666	2325
3	5.00000E-001	75718	5314
4	1.00000E+000	156766	11014
5	2.50000E+000	355924	26859
6	5.00000E+000	691679	56045

10/21/2015

Component # 5 Nitrate Retention Time 6.96
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.93433E-002
K1 = 1.32929E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	40317	2890
3	5.00000E-001	341615	25397
4	1.00000E+000	742823	51841
5	2.50000E+000	1831956	140466
6	5.00000E+000	3764108	298846

Component # 6 Phosphate Retention Time 9.11
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -5.25613E-003
K1 = 4.04495E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	21773	1555
3	5.00000E-001	120032	6390
4	1.00000E+000	256903	13753
5	2.50000E+000	625939	35044
6	5.00000E+000	1232870	71866

Component # 7 Sulfate Retention Time 10.43
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.09722E-001
K1 = 4.73420E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	105494	5187
3	2.00000E+000	376299	19426
4	5.00000E+000	1046779	50229
5	1.00000E+001	2021874	102155
6	2.00000E+001	4231586	220606

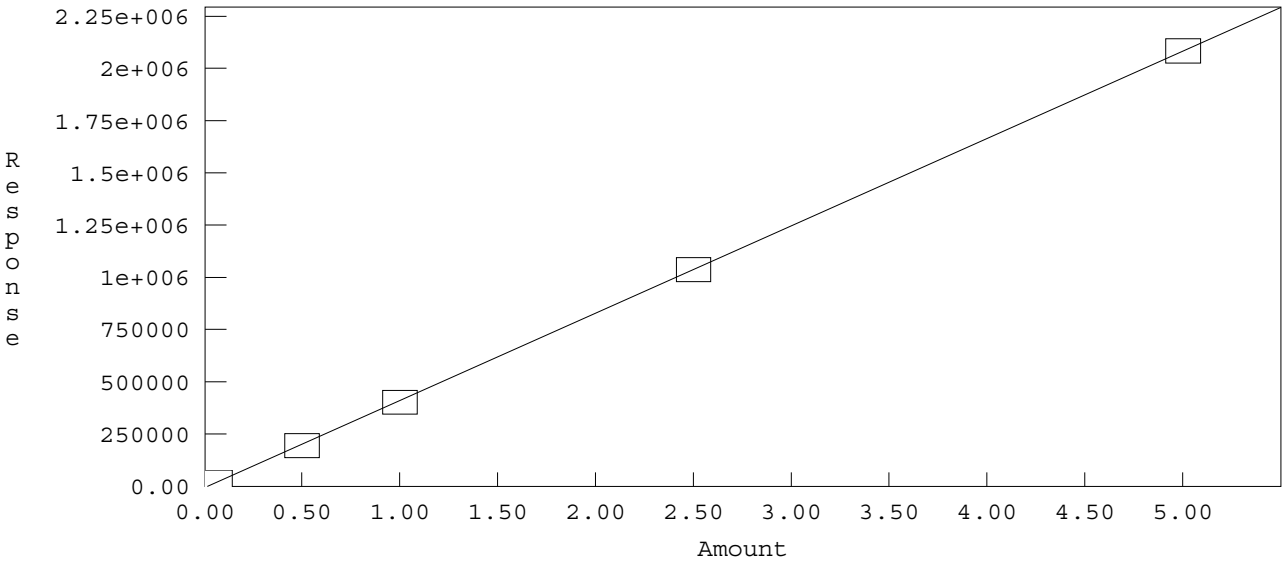
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

10/21/2015

Method: 151012.MET - Last Updated: 16:44 on Mon, 12 Oct 2015

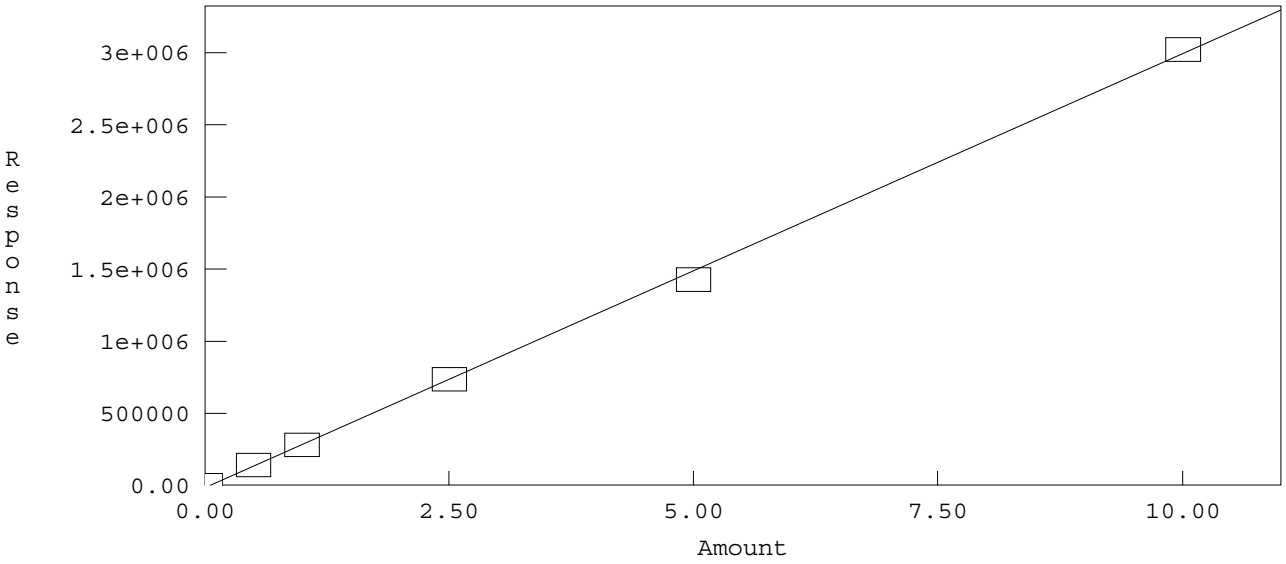
Component: Fluoride
Fit Type: Linear
r^2 = 0.999946
Amt = Resp * 2.394e-006 + 0.01218
Resp = Amt * 4.178e+005 + -5090
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

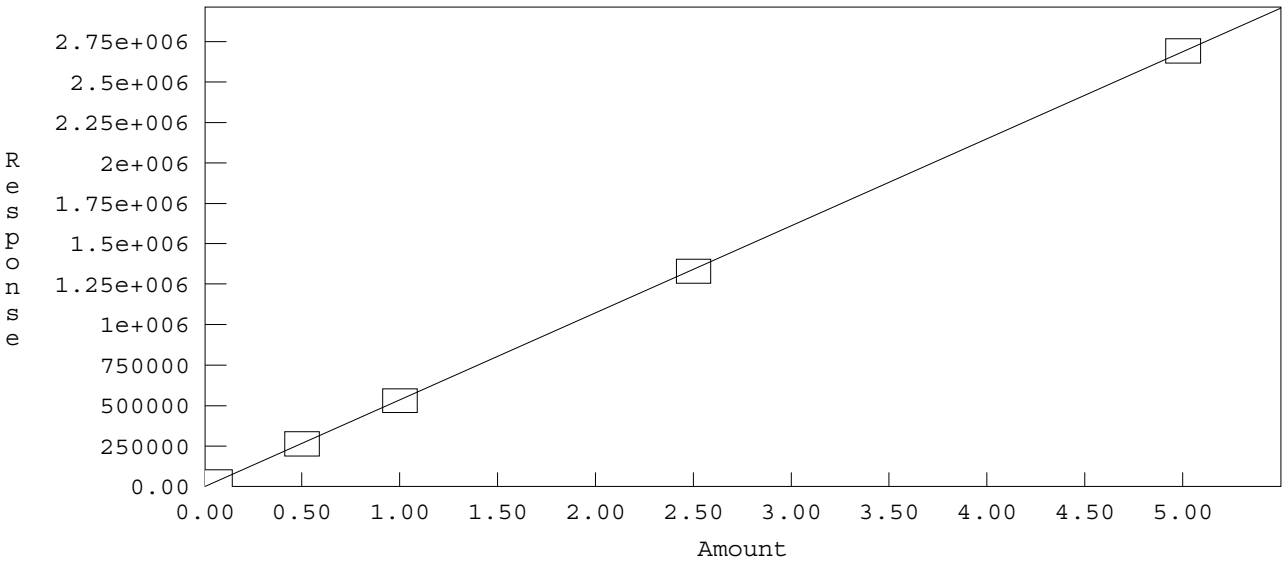
Component: Chloride
Fit Type: Linear
r^2 = 0.999281
Amt = Resp * 3.319e-006 + 0.06519
Resp = Amt * 3.013e+005 + -1.964e+004
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

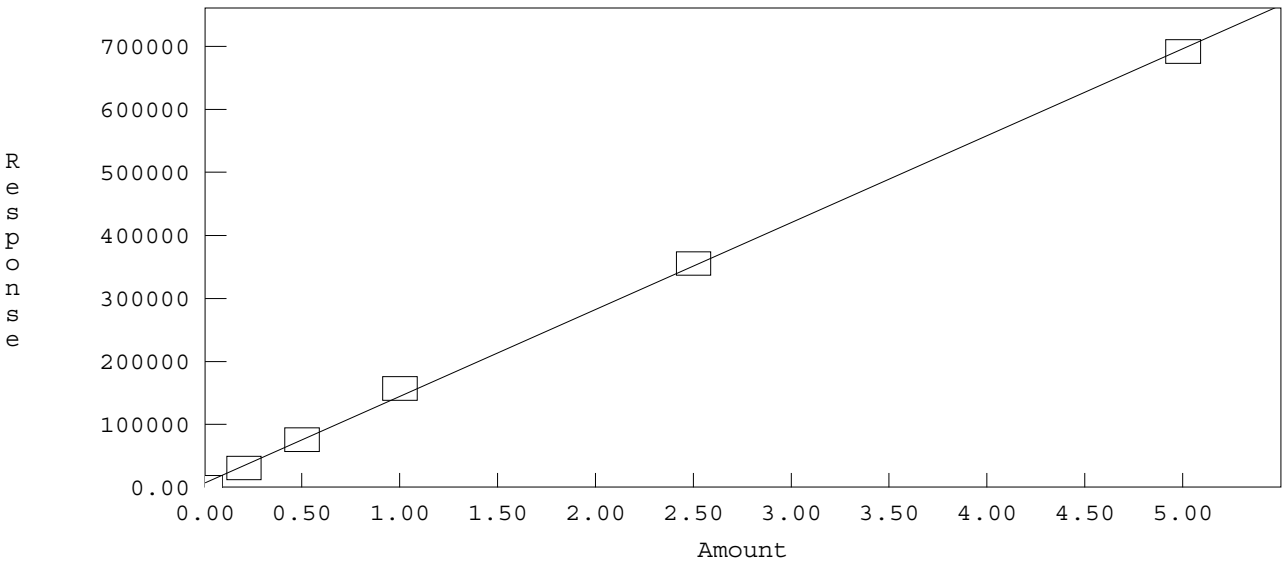
Component: Nitrite
Fit Type: Linear
r² = 0.999960
Amt = Resp * 1.859e-006 + 0.005003
Resp = Amt * 5.378e+005 + -2691
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

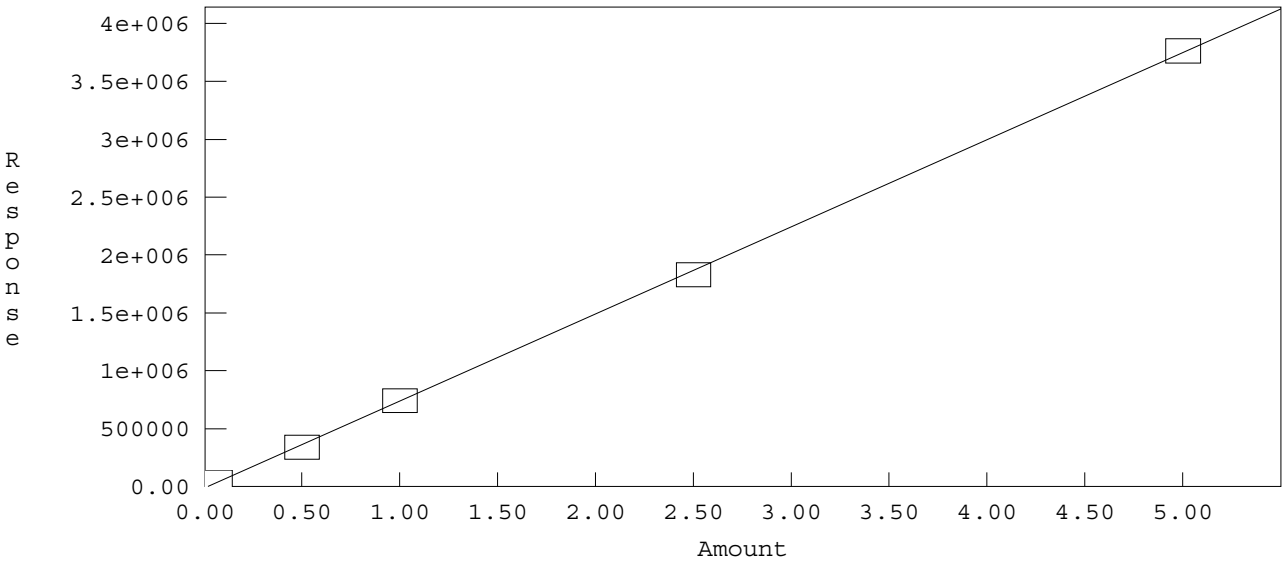
Component: Bromide
Fit Type: Linear
r² = 0.999299
Amt = Resp * 7.255e-006 + -0.05149
Resp = Amt * 1.378e+005 + 7098
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

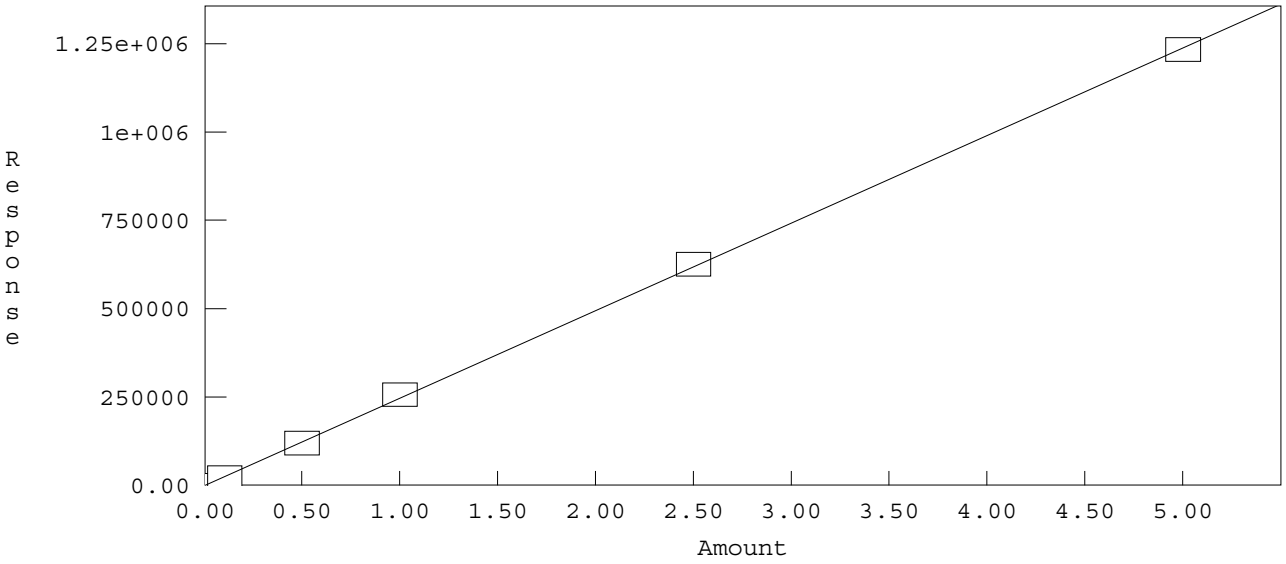
Component: Nitrate
Fit Type: Linear
r² = 0.999775
Amt = Resp * 1.329e-006 + 0.01934
Resp = Amt * 7.523e+005 + -1.455e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

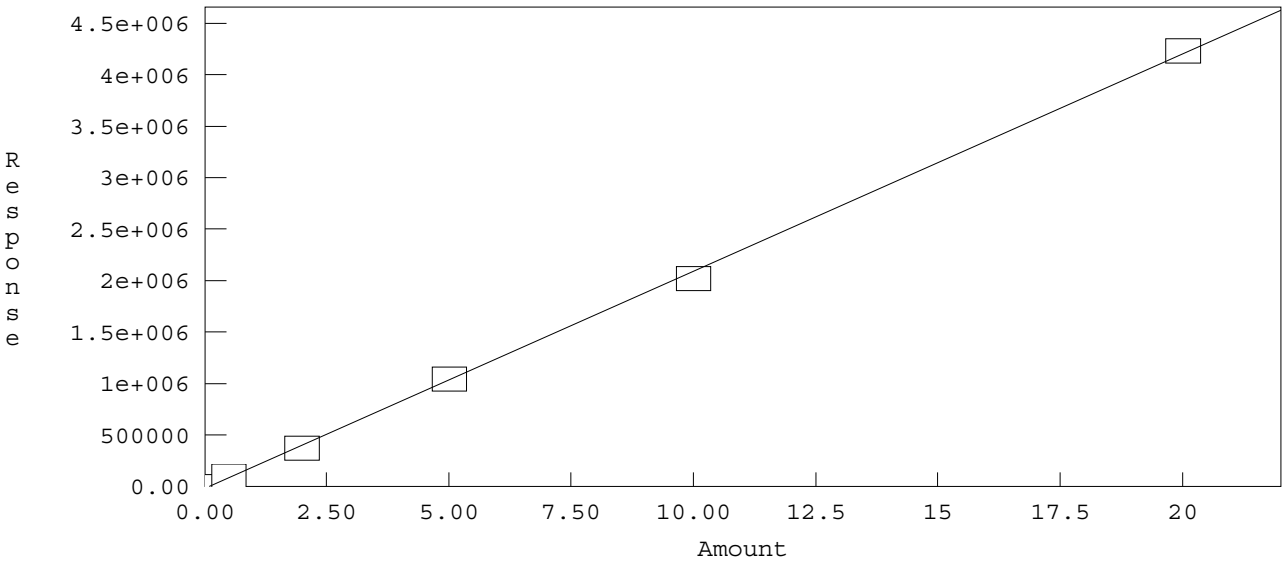
Component: Phosphate
Fit Type: Linear
r² = 0.999845
Amt = Resp * 4.045e-006 + -0.005256
Resp = Amt * 2.472e+005 + 1299
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999451
Amt = Resp * 4.734e-006 + 0.1097
Resp = Amt * 2.112e+005 + -2.318e+004
Standardization: External
Calibration: Area



10/21/2015

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **ICV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2124200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.442	0.50	2.500	0	97.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.449	0.50	2.500	0	98.0	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.582	0.50	2.500	0	103	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.356	0.50	2.500	0	94.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.492	0.50	2.500	0	99.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.376	0.50	2.500	0	95.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.348	0.10	2.500	0	93.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.364	0.10	2.500	0	94.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.375	0.10	2.500	0	95.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.392	0.10	2.500	0	95.7	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.342	0.10	2.500	0	93.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.412	0.10	2.500	0	96.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.341	0.10	2.500	0	93.6	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.338	0.10	2.500	0	93.5	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.330	0.10	2.500	0	93.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **ICV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2124239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.841	0.50	5.000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.883	0.50	5.000	0	97.7	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.164	0.50	5.000	0	103	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.668	0.50	5.000	0	93.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.851	0.50	5.000	0	97.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.667	0.50	5.000	0	93.3	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**ICB**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/12/2015**	SeqNo:	**2124201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**CCB**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**CCB**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**CCB**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**CCB-4**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**CCB**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

Calculations are based on raw values

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **ICB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2124240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**	Analysis Date: **10/30/2015**	SeqNo: **2124272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/30/2015

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.29	
CCV-2	Sulfate	10.21	
CCV-3	Sulfate	10.17	
CCV-4	Sulfate	10.37	
CCV-5	Sulfate	10.25	
	Average	10.258	
	Lower Limit	10.058	
	Upper Limit	10.458	
MB-R103929_SO4	Sulfate	N.A.	N.A.
LCS-R103929_SO4	Sulfate	10.18	PASS
N017390-001C	Sulfate	10.35	PASS
N017399-001BDUP	Sulfate	10.23	PASS
N017399-002CMS	Sulfate	10.35	PASS
N017399-002CMSD	Sulfate	10.17	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/30/2015

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.09	
CCV-2	Chloride	4.15	
CCV-3	Chloride	4.11	
CCV-4	Chloride	4.17	
CCV-5	Chloride	4.06	
	Average	4.116	
	Lower Limit	3.916	
	Upper Limit	4.316	
MB-R103929_CL	Chloride	N.A.	N.A.
LCS-R103929_CL	Chloride	4.11	PASS
N017399-001BDUP	Chloride	4.07	PASS
N017399-002CMS	Chloride	4.13	PASS
N017399-002CMSD	Chloride	4.16	PASS
N017390-001C	Chloride	4.13	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.71	
CCV-2	Fluoride	2.75	
CCV-3	Fluoride	2.76	
CCV-4	Fluoride	2.71	
CCV-5	Fluoride	2.71	
CCV-6	Fluoride	2.69	
CCV-7	Fluoride	2.72	
CCV-8	Fluoride	2.71	
	Average	2.720	
	Lower Limit	2.520	
	Upper Limit	2.920	
MB-R103951_F	Fluoride	N.A.	N.A.
LCS-R103951_F	Fluoride	2.74	PASS
N017390-001C	Fluoride	2.70	PASS
N017390-001CMS	Fluoride	2.72	PASS
N017390-001CMSD	Fluoride	2.73	PASS
N017400-005CDUP	Fluoride	2.71	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 3/23/2015 & 10/12/2015
Analyst: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile: 15032301.D06 15032301.D07 15032301.D08 15032301.D09 15032301.D10 15032301.D11 15032301.D12

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Fluoride	0.039	0.047	0.046	0.038	0.039	0.046	0.045	0.020	0.0040	3.143	**0.0125**	**0.10**	OK,meets criteria
Chloride	0.159	0.149	0.158	0.169	0.149	0.142	0.141	0.10	0.0101	3.143	**0.0317**	**0.50**	OK,meets criteria
Nitrite	0.033	0.027	0.030	0.027	0.030	0.026	0.026	0.020	0.0026	3.143	**0.0083**	**0.050**	OK,meets criteria
Nitrate	0.034	0.027	0.036	0.033	0.028	0.027	0.030	0.020	0.0036	3.143	**0.0114**	**0.050**	OK,meets criteria
Phosphate	0.050	0.053	0.060	0.046	0.049	0.062	0.044	0.050	0.0068	3.143	**0.0214**	**0.10**	OK,meets criteria
Sulfate	0.267	0.246	0.243	0.238	0.250	0.245	0.235	0.10	0.0104	3.143	**0.0327**	**0.50**	OK,meets criteria
Datafile:	15101201.D13	15101201.D14	15101201.D15	15101201.D16	15101201.D17	15101201.D18	15101201.D19						
Bromide	0.074	0.045	0.102	0.055	0.057	0.071	0.061	0.10	0.0185	3.143	**0.0581**	**0.50**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R104043 **Analyst:** REB

ASSET #: N017390 **Date Analyzed:** 11/8/2015

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/9/2015 Date: —

2nd Level Reviewer 11/10/201 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N017390-001D**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5959*5

= 2.9795 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.0 mg/L

REB 11/9/2015

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

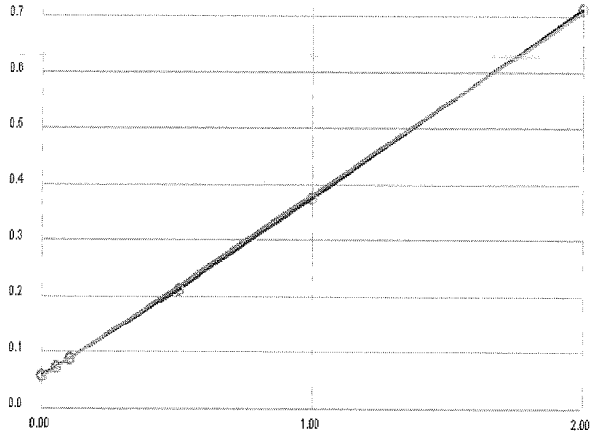
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.327x + 0.0544
Correlation	.999769



Calibrant	Energy	Set	Conc
1	0.0586	0.0000	0.0127
2	0.0734	0.0500	0.0580
3	0.0891	0.1000	0.1060
4	0.2114	0.5000	0.4800
5	0.3741	1.0000	0.9776
6	0.7135	2.0000	2.0157

Notes:

R1 Buffer - R151019D
R2 Coloring Rgt. - R151109A
% $CuSO_4$ - R151019C

STD1 - 1SST-150206D
STD2 - 1SST-150730E

REB 11/9/2015

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **ICV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.510	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	95.9	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **ICB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131123**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131135**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131147**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131156**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 11/08/2015
Time Analyzed: 22:16 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R151019D
Color reagent: R151107A
2% Copper Sulfate: R151019C
Ammonium Hydroxide: CINV-150924A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N017390-001D		8.65						
2)	N017399-001C		8.48						
3)	N017399-002D		8.71						
4)	N017400-001E		8.53						
5)	N017400-002E		8.95						
6)	N017400-003D		8.55						
7)	N017400-004D		8.34						
8)	N017400-005D		7.66						
9)	N017400-006D		7.87						
10)	N017400-007D		7.02						
11)	N017400-008D		8.41						
12)	N017415-001E		8.64						
13)	N017415-002E		8.81						
14)	N017415-003E		8.91						
15)	N017415-004E		8.81						
16)	N017415-005E		7.36						
17)	N017415-006E		8.52						
18)	N017415-007E		8.31						
19)	N017415-008D		7.62						
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

REB 11/9/2015

Advanced Technology Laboratories, Inc.

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Las Vegas, NV. 89118
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Time start: 11-08-2015 22:16
Time end: 11-09-2015 01:04

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	00:25:22	0.0228		0.0619
2	<BLANK>	00:26:16	0.0136		0.0589
3	<CAL1>	00:27:16	0.0127	[0]	0.0586
4	<CAL2>	00:28:12	0.0580	[0.05]	0.0734
5	<CAL3>	00:29:13	0.1060	[0.1]	0.0891
6	<CAL4>	00:30:08	0.4800	[0.5]	0.2114
7	<CAL5>	00:31:02	0.9776	[1]	0.3741
8	<CAL6>	00:32:04	2.0157	[2]	0.7135
9	,BLANK,BLANK,1,	00:32:59	0.0249		0.0626
10	,ICV,ICV,1,	00:33:59	0.5097		0.2211
11	,ICB,ICB,1,	00:34:55	0.0130		0.0587
12	,MB-H2O,MBLK,1,	00:35:50	0.0103		0.0578
13	,LCS-H2O,LCS,1,	00:36:45	0.5219		0.2251
14	,N017390-001D,SAMP,5,	00:37:45	0.5959		0.2493
15	,N017390-001DDUP,DUP,5,	00:38:41	0.5794		0.2439
16	,N017390-001DMS,MS,5,	00:39:42	1.1052		0.4158
17	,N017390-001DMSD,MSD,5,	00:40:36	1.0578		0.4003
18	,N017399-001C,SAMP,1,	00:41:32	0.0439		0.0688
19	,N017399-002D,SAMP,5,	00:42:33	0.6556		0.2688
20	,N017400-001E,SAMP,5,	00:43:28	0.5394		0.2308
21	,BLANK,BLANK,1	00:44:22	0.0203		0.0611
22	,CCV-1,CCV,1,	00:45:24	0.4797		0.2113
23	,CCB-1,CCB,1,	00:46:19	0.0170		0.0600
24	,N017400-002E,SAMP,5,	00:47:21	0.5320		0.2284
25	,N017400-003D,SAMP,5,	00:48:15	0.5250		0.2261
26	,N017400-004D,SAMP,5,	00:49:04	0.5394		0.2308

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N017400-005D,SAMP,5,	00:49:46	0.6632		0.2713
28	,N017400-006D,SAMP,5,	00:50:36	0.6507		0.2672
29	,N017400-007D,SAMP,5,	00:51:19	0.5011		0.2183
30	,N017400-008D,SAMP,5,	00:52:01	0.5207		0.2247
31	,N017415-001E,SAMP,5,	00:52:50	0.5531		0.2353
32	,N017415-002E,SAMP,5,	00:53:32	0.5681		0.2402
33	,BLANK,BLANK,1	00:54:16	0.0103		0.0578
34	,CCV-2,CCV,1,	00:55:04	0.5014		0.2184
35	,CCB-2,CCB,1,	00:55:47	0.0090		0.0574
36	,N017415-003E,SAMP,5,	00:56:36	0.5776		0.2433
37	,N017415-004E,SAMP,5,	00:57:18	0.4100		0.1885
38	,N017415-005E,SAMP,5,	00:58:02	0.4299		0.1950
39	,N017415-006E,SAMP,5,	00:58:50	0.5510		0.2346
40	,N017415-007E,SAMP,5,	00:59:33	0.5696		0.2407
41	,N017415-008D,SAMP,5,	01:00:15	0.5519		0.2349
42	,BLANK,BLANK,1	01:00:58	0.0103		0.0578
43	,CCV-3,CCV,1,	01:01:46	0.4987		0.2175
44	,CCB-3,CCB,1,	01:02:30	0.0081		0.0571

REB 11/9/2015

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52882
ASSET #: N017390

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 11/4/2015

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N017400-04B PS/MSD failed, due to high analyte cocentration already present in the sample.
However, LCS & dilution test passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/10/2015 Date:

2nd Level Reviewer 11/10/201 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Sodium concentration, in ug/L , in the original sample as follows:

Sodium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017390-001B** , the concentration ir ug/L is calculated as follows:

Sodium , ug/L = 28.9259 * 25 * (25/25) * 1000

Sodium , ug/L = 723147.5

Reporting results in two significant figures,

Sodium , ug/L = 720000



% RSD SUMMARY

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.8	15	PASS
Standard1	ICAL	1	Na	0.1	2.83	15	PASS
Standard2	ICAL	1	Na	1	0.4	15	PASS
Standard3	ICAL	1	Na	5	0.29	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.29	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	10.079	0.18	15	PASS
ICB	ICB	1	Na	-0.0041	172.78	15	<PQL
ICSA1	ICSA	1	Na	-0.0061	67.66	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.4	15	PASS
CCV1	CCV	1	Na	9.81	0.19	15	PASS
CCB1	CCB	1	Na	-0.019	13.33	15	PASS
CCV2	CCV	1	Na	9.68	0.25	15	PASS
CCB2	CCB	1	Na	0.15	3.23	15	PASS
MB-52882	MBLK	1	Na	0.14	5.59	15	PASS
LCS2-52882	LCS	1	Na	2260.1	23.76	15	NR!
N017390-001B	SAMP	5	Na	141.03	0.15	15	PASS
N017400-003B	SAMP	5	Na	331.08	0.46	15	PASS
N017400-004B	SAMP	5	Na	347.66	0.27	15	PASS
N017400-005B	SAMP	5	Na	103.92	0.83	15	PASS
N017400-006B	SAMP	5	Na	104	0.37	15	PASS
CCV3	CCV	1	Na	9.76	0.25	15	PASS
CCB3	CCB	1	Na	0.07	4.77	15	PASS
N017400-007B	SAMP	5	Na	342.57	1.83	15	PASS
N017400-008B	SAMP	5	Na	333.68	0.35	15	PASS
N017415-008B	SAMP	5	Na	124.65	0.16	15	PASS
CCV4	CCV	1	Na	9.48	0.31	15	PASS
CCB4	CCB	1	Na	0.068	3.69	15	PASS
CCV5	CCV	1	Na	9.53	0.34	15	PASS
CCB5	CCB	1	Na	0.024	22.21	15	<PQL
ICSA2	ICSA	1	Na	0.017	10.17	15	PASS
ICSAB2	ICSAB	1	Na	9.62	0.11	15	PASS
LCS2-52882	LCS	1	Na	9.63	0.064	15	PASS
N017390-001B	SAMP	25	Na	28.93	0.2	15	PASS
N017400-003B	SAMP	100	Na	12.97	0.42	15	PASS
N017400-004B	SAMP	100	Na	13.51	0.56	15	PASS
CCV6	CCV	1	Na	9.59	0.12	15	PASS
CCB6	CCB	1	Na	0.019	22.17	15	<PQL
N017400-004B	SAMP	500	Na	2.72	0.43	15	PASS
N017400-004B-PS	PS	100	Na	13.46	0.36	15	PASS
N017400-004B-MS2	MS	100	Na	13.63	0.49	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017400-004B-MSD2	MSD	100	Na	13.38	0.35	15	PASS
N017400-005B	SAMP	25	Na	16.88	0.64	15	PASS
N017400-006B	SAMP	25	Na	17.14	0.39	15	PASS
N017400-007B	SAMP	100	Na	13.19	0.35	15	PASS
N017400-008B	SAMP	100	Na	13.063	0.39	15	PASS
N017415-008B	SAMP	25	Na	20.18	0.13	15	PASS
CCV7	CCV	1	Na	9.56	0.0099	15	PASS
CCB7	CCB	1	Na	0.0058	83.38	15	<PQL
ICSA3	ICSA	1	Na	0.00055	577.89	15	<PQL
ICSAB3	ICSAB	1	Na	9.44	0.2	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150324A,0.025<50mL
Standard2	MWST-150324A,0.25<50mL
Standard3	MWST-150324A,1.25<50mL
Standard4	MWST-150324A,2.5<50mL
Standard5	MWST-150324A,5<50mL
Standard6	MWST-150324A,10<50mL
ICV	MWST-150324B,2.5<50mL
CCV	MWST-150324A,2.5<50mL
ICSA/ICSAB	MWST-150304L/ MWST-150324C
Int. Std. (Sc):	MWST-150305A
PS Spike	MWST-150324A,5<50mL

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/04/2015	07:34:35 AM
2	Standard1	ICAL	1	11/04/2015	07:37:52 AM
3	Standard2	ICAL	1	11/04/2015	07:41:09 AM
4	Standard3	ICAL	1	11/04/2015	07:44:57 AM
5	Standard4	ICAL	1	11/04/2015	07:48:49 AM
6	Standard5	ICAL	1	11/04/2015	07:52:42 AM
7	Standard6	ICAL	1	11/04/2015	07:56:37 AM
8	ICV	ICV	1	11/04/2015	07:59:24 AM
1	ICB	ICB	1	11/04/2015	08:03:16 AM
3	ICSA1	ICSA	1	11/04/2015	08:06:32 AM
4	ICSAB1	ICSAB	1	11/04/2015	08:09:51 AM
38	MB-52866	MBLK	1	11/04/2015	08:13:44 AM
39	LCS2-52866	LCS	1	11/04/2015	08:19:36 AM
40	N017404-001A	SAMP	5	11/04/2015	08:23:28 AM
41	N017404-002A	SAMP	5	11/04/2015	08:26:48 AM
42	N017404-002A	SAMP	25	11/04/2015	08:31:27 AM
43	N017404-002A-PS	PS	5	11/04/2015	08:35:15 AM
44	N017404-002A-MS2	MS	5	11/04/2015	08:39:04 AM
45	N017404-002A-MSD2	MSD	5	11/04/2015	08:42:54 AM
46	MB-52910	MBLK	1	11/04/2015	08:46:45 AM
47	LCS2-52910	LCS	1	11/04/2015	08:50:04 AM
5	CCV1	CCV	1	11/04/2015	08:53:24 AM
1	CCB1	CCB	1	11/04/2015	08:57:18 AM
48	N017399-001A	SAMP	5	11/04/2015	09:00:36 AM
49	N017399-002B	SAMP	5	11/04/2015	09:05:28 AM
50	N017400-001B	SAMP	5	11/04/2015	09:10:21 AM
51	N017400-002B	SAMP	5	11/04/2015	09:15:11 AM
52	N017415-001B	SAMP	5	11/04/2015	09:20:03 AM
53	N017415-002B	SAMP	5	11/04/2015	09:24:53 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N017415-003B	SAMP	5	11/04/2015	09:29:45 AM
55	N017415-004B	SAMP	5	11/04/2015	09:34:36 AM
56	N017415-005B	SAMP	5	11/04/2015	09:39:27 AM
57	N017415-006B	SAMP	5	11/04/2015	09:44:19 AM
5	CCV2	CCV	1	11/04/2015	09:49:10 AM
1	CCB2	CCB	1	11/04/2015	09:53:04 AM
58	N017415-007B	SAMP	5	11/04/2015	09:56:21 AM
59	N017427-001B	SAMP	5	11/04/2015	10:01:15 AM
60	N017427-002B	SAMP	5	11/04/2015	10:06:07 AM
61	MB-52882	MBLK	1	11/04/2015	10:11:00 AM
62	LCS2-52882	LCS	1	11/04/2015	10:14:20 AM
63	N017390-001B	SAMP	5	11/04/2015	10:19:10 AM
64	N017400-003B	SAMP	5	11/04/2015	10:24:04 AM
65	N017400-004B	SAMP	5	11/04/2015	10:28:56 AM
66	N017400-005B	SAMP	5	11/04/2015	10:33:47 AM
67	N017400-006B	SAMP	5	11/04/2015	10:38:37 AM
5	CCV3	CCV	1	11/04/2015	10:43:28 AM
1	CCB3	CCB	1	11/04/2015	10:47:22 AM
68	N017400-007B	SAMP	5	11/04/2015	10:50:39 AM
69	N017400-008B	SAMP	5	11/04/2015	10:55:31 AM
70	N017415-008B	SAMP	5	11/04/2015	10:59:51 AM
71	N017399-001A	SAMP	25	11/04/2015	11:04:45 AM
72	N017399-002B	SAMP	25	11/04/2015	11:08:06 AM
73	N017399-002B-PS	PS	5	11/04/2015	11:11:26 AM
74	N017399-002B-MS2	MS	5	11/04/2015	11:16:19 AM
75	N017399-002B-MSD2	MSD	5	11/04/2015	11:21:11 AM
76	N017399-002B	SAMP	50	11/04/2015	11:26:03 AM
77	N017399-002B	SAMP	250	11/04/2015	11:29:23 AM
5	CCV4	CCV	1	11/04/2015	11:41:12 AM
1	CCB4	CCB	1	11/04/2015	11:45:07 AM
78	N017399-002B-PS	PS	50	11/04/2015	11:48:27 AM
79	N017399-002B-MS2	MS	50	11/04/2015	11:51:47 AM
80	N017399-002B-MSD2	MSD	50	11/04/2015	11:55:07 AM
81	N017400-001B	SAMP	50	11/04/2015	11:58:27 AM
82	N017400-002B	SAMP	50	11/04/2015	12:01:46 PM
83	N017415-001B	SAMP	50	11/04/2015	12:05:06 PM
84	N017415-002B	SAMP	50	11/04/2015	12:08:25 PM
85	N017415-003B	SAMP	50	11/04/2015	12:11:44 PM
86	N017415-004B	SAMP	100	11/04/2015	12:15:04 PM
87	N017415-005B	SAMP	100	11/04/2015	12:18:23 PM
5	CCV5	CCV	1	11/04/2015	12:21:43 PM
1	CCB5	CCB	1	11/04/2015	12:25:36 PM
3	ICSA2	ICSA	1	11/04/2015	12:28:53 PM
4	ICSAB2	ICSAB	1	11/04/2015	12:32:10 PM
88	N017415-006B	SAMP	100	11/04/2015	12:35:35 PM
89	N017415-007B	SAMP	50	11/04/2015	12:38:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N017415-007B-MS2	MS	5	11/04/2015	12:42:15 PM
104	N017415-007B-MS2	MS	50	11/04/2015	12:47:10 PM
90	N017427-001B	SAMP	50	11/04/2015	12:50:30 PM
91	N017427-002B	SAMP	50	11/04/2015	12:53:51 PM
62	LCS2-52882	LCS	1	11/04/2015	12:57:12 PM
92	N017390-001B	SAMP	25	11/04/2015	01:01:03 PM
93	N017400-003B	SAMP	100	11/04/2015	01:04:54 PM
94	N017400-004B	SAMP	100	11/04/2015	01:08:13 PM
5	CCV6	CCV	1	11/04/2015	01:11:32 PM
1	CCB6	CCB	1	11/04/2015	01:15:25 PM
95	N017400-004B	SAMP	500	11/04/2015	01:19:02 PM
96	N017400-004B-PS	PS	100	11/04/2015	01:22:21 PM
97	N017400-004B-MS2	MS	100	11/04/2015	01:25:40 PM
98	N017400-004B-MSD2	MSD	100	11/04/2015	01:28:59 PM
99	N017400-005B	SAMP	25	11/04/2015	01:32:19 PM
100	N017400-006B	SAMP	25	11/04/2015	01:35:39 PM
101	N017400-007B	SAMP	100	11/04/2015	01:38:59 PM
102	N017400-008B	SAMP	100	11/04/2015	01:42:18 PM
103	N017415-008B	SAMP	25	11/04/2015	01:45:39 PM
5	CCV7	CCV	1	11/04/2015	01:49:31 PM
1	CCB7	CCB	1	11/04/2015	01:53:26 PM
3	ICSA3	ICSA	1	11/04/2015	01:56:43 PM
4	ICSAB3	ICSAB	1	11/04/2015	02:00:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 9:38:31**
Prep End Date: **10/29/2015 2:00:00**

Initials/ Date: 11/10/2015

Prep Batch **52882** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-52882	Aqueous		25	☐	0	0	25	1.000		
LCS2-52882	Aqueous		25	☐	0	0	25	1.000		
MB-52882	Aqueous		25	☐	0	0	25	1.000		
N017390-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 9:38:31**
Prep End Date: **10/29/2015 2:00:00**

Initials/ Date: 11/10/2015

Prep Batch **52882** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	11/04/2015	07:34:35 AM	Na	589.594	442	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	Na	589.594	420	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	Na	589.594	5039	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	Na	589.594	24874	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	Na	589.594	49512	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	Na	589.594	99141	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	Na	589.594	197629	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **ICV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10078.967	500	10000	0	101	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9808.247	500	10000	0	98.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9680.031	500	10000	0	96.8	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9758.992	500	10000	0	97.6	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9477.942	500	10000	0	94.8	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9530.829	500	10000	0	95.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9593.983	500	10000	0	95.9	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9556.105	500	10000	0	95.6	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.100499	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-18.943199	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	145.637	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	70.296	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	68.198	500									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB5**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.500	500									

Sample ID	**CCB6**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	18.539	500									

Sample ID	**CCB7**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5.756	500									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-6.13799	500									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSAB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9999.827	500	10000	0	100	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	16.921	500									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSAB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9624.486	500	10000	0	96.2	80	120				

Sample ID	**ICSA3**	SampType:	**ICSA**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.551	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9440.724	500	10000	0	94.4	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.24	124.42	65-125	PASS
Standard2	ICAL	1	1.0091	100.91	65-125	PASS
Standard3	ICAL	1	1	100	65-125	PASS
Standard4	ICAL	1	1.0052	100.52	65-125	PASS
Standard5	ICAL	1	0.99	98.89	65-125	PASS
Standard6	ICAL	1	1	99.59	65-125	PASS
ICV	ICV	1	1.0013	100.13	65-125	PASS
ICB	ICB	1	0.99	99.25	65-125	PASS
ICSA1	ICSA	1	0.99	98.97	65-125	PASS
ICSAB1	ICSAB	1	1.0026	100.26	65-125	PASS
CCV1	CCV	1	1.016	101.59	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
CCV2	CCV	1	0.85	85.077	65-125	PASS
CCB2	CCB	1	0.85	85.39	65-125	PASS
MB-52882	MBLK	1	1.0076	100.76	65-125	PASS
LCS2-52882	LCS	1	0.0092	0.92	65-125	NR!
N017390-001B	SAMP	5	1	100	65-125	PASS
N017400-003B	SAMP	5	0.75	75.35	65-125	PASS
N017400-004B	SAMP	5	0.76	76.16	65-125	PASS
N017400-005B	SAMP	5	0.76	75.5	65-125	PASS
N017400-006B	SAMP	5	0.77	77.2	65-125	PASS
CCV3	CCV	1	0.97	96.5	65-125	PASS
CCB3	CCB	1	0.95	94.9	65-125	PASS
N017400-007B	SAMP	5	0.75	74.99	65-125	PASS
N017400-008B	SAMP	5	0.76	76.4	65-125	PASS
N017415-008B	SAMP	5	0.76	76.007	65-125	PASS
CCV4	CCV	1	0.97	96.92	65-125	PASS
CCB4	CCB	1	0.93	93.31	65-125	PASS
CCV5	CCV	1	0.93	93.2	65-125	PASS
CCB5	CCB	1	0.98	98.49	65-125	PASS
ICSA2	ICSA	1	0.98	98.1	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.19	65-125	PASS
LCS2-52882	LCS	1	0.96	95.71	65-125	PASS
N017390-001B	SAMP	25	0.94	94.48	65-125	PASS
N017400-003B	SAMP	100	0.93	92.63	65-125	PASS
N017400-004B	SAMP	100	0.94	93.83	65-125	PASS
CCV6	CCV	1	0.96	95.52	65-125	PASS
CCB6	CCB	1	0.95	94.87	65-125	PASS
N017400-004B	SAMP	500	0.94	93.59	65-125	PASS
N017400-004B-PS	PS	100	0.94	93.87	65-125	PASS

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017400-004B-MS2	MS	100	0.94	93.8	65-125	PASS
N017400-004B-MSD2	MSD	100	0.93	93.27	65-125	PASS
N017400-005B	SAMP	25	0.91	91.43	65-125	PASS
N017400-006B	SAMP	25	0.91	90.78	65-125	PASS
N017400-007B	SAMP	100	0.94	93.91	65-125	PASS
N017400-008B	SAMP	100	0.94	93.95	65-125	PASS
N017415-008B	SAMP	25	0.91	90.83	65-125	PASS
CCV7	CCV	1	0.95	94.76	65-125	PASS
CCB7	CCB	1	0.94	94.3	65-125	PASS
ICSA3	ICSA	1	0.95	95.13	65-125	PASS
ICSAB3	ICSAB	1	0.96	96.16	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017390
Test Method: EPA 6010B
Analysis Date: 11/04/15

Matrix: Groundwater
Batch No.: 52882

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-004B -DT 500X	Sodium	ug/L	1361856	PASS	1350809	0.82%	10

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N017400-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID:	**ZZZZZZ**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2126004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1346415.512	50000	10000	1351000	-43.9	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52955
ASSET #: N017390

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/10/2015 Date: —

2nd Level Reviewer 11/10/201 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N017390-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 8.427588087 * 1 * (25/25)

Chromium , ug/L = 8.427588

Reporting results in two significant figures,

Chromium , ug/L = 8.4



% RSD SUMMARY

PERCENT RSD SUMMARY: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	10.86	15	PASS	0.1	3.45	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	8.032	15	PASS	0.5	4.94	15	PASS
Std3-5/50 ppb	ICAL	1	5.29	0.6	15	PASS	5.09	2.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	1.37	15	PASS	10.24	1.081	15	PASS
Std5-20/200 ppb	ICAL	1	20.57	0.54	15	PASS	20.33	0.98	15	PASS
Std6-40/400 ppb	ICAL	1	41.12	2.75	15	PASS	40.15	0.37	15	PASS
Std7-100/1000 ppb	ICAL	1	101.36	2.07	15	PASS	100.17	0.39	15	PASS
Std8-200/2000 ppb	ICAL	1	199.016	0.4	15	PASS	199.84	0.8	15	PASS
ICV	ICV	1	9.66	0.55	15	PASS	9.49	2.48	15	PASS
ICB	ICB	1	0.004	183.18	15	<PQL	0.061	15.49	15	<PQL
LLICV	CCV1	1	1.087	3.13	20	PASS	0.53	6.37	20	PASS
ICSA1	ICSA	1	0.15	19.16	15	<PQL	0.043	15.14	15	<PQL
ICSAB1	ICSAB	1	20.22	1.83	15	PASS	23.18	0.78	15	PASS
LLICV	CCV1	1	1.046	1.53	20	PASS	0.49	4.4	20	PASS
CCV1	CCV	1	20.33	0.59	15	PASS	20.29	2.73	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.14	6.56	15	PASS
CCV2	CCV	1	20.38	1.16	15	PASS	20.38	0.66	15	PASS
CCB2	CCB	1	0.087	21.33	15	<PQL	0.15	10.72	15	PASS
LLCCV1	CCV2	1	1.077	2.87	20	PASS	0.54	3.66	20	PASS
ICSA2	ICSA	1	0.19	0.87	15	PASS	0.059	14.17	15	PASS
ICSAB2	ICSAB	1	20.14	1.12	15	PASS	22.99	0.36	15	PASS
MB-52955	MBLK	1	0.075	10.25	15	PASS	0.053	16.37	15	<PQL
LCS-52955	LCS	1	9.42	0.51	15	PASS	9.49	0.65	15	PASS
N017390-001B	SAMP	1	8.43	0.87	15	PASS	7.4	2.35	15	PASS
N017390-001B	SAMP	5	1.92	2.29	15	PASS	1.62	4.22	15	PASS
N017390-001B-PS	PS	1	17.29	1.39	15	PASS	18.4	1.38	15	PASS
N017390-001B-MS	MS	1	17.24	0.67	15	PASS	18.8	1.75	15	PASS
N017390-001B-MSD	MSD	1	16.89	1.35	15	PASS	18.43	1.91	15	PASS
N017400-003B	SAMP	1	0.37	7.57	15	PASS	24.64	1.61	15	PASS
N017400-004B	SAMP	1	0.81	5.39	15	PASS	17.71	0.16	15	PASS
CCV3	CCV	1	20.053	1.73	15	PASS	20.55	1.31	15	PASS
CCB3	CCB	1	0.064	11.28	15	PASS	0.0014	355.79	15	<PQL
N017400-005B	SAMP	1	19.27	1.65	15	PASS	30.4	0.66	15	PASS
N017400-006B	SAMP	1	18.67	1.055	15	PASS	31.55	1.28	15	PASS
N017400-007B	SAMP	1	0.37	8.82	15	PASS	20.47	0.37	15	PASS
N017400-008B	SAMP	1	1.11	1.89	15	PASS	19.036	1.081	15	PASS
N017415-008B	SAMP	1	14.7	0.99	15	PASS	12.36	3.04	15	PASS
CCV4	CCV	1	19.85	0.4	15	PASS	20.82	0.65	15	PASS
CCB4	CCB	1	0.12	13.85	15	PASS	0.089	9.54	15	PASS
LLCCV2	CCV2	1	1.045	1.33	20	PASS	0.59	8.85	20	PASS

PERCENT RSD SUMMARY: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSA3	ICSA	1	0.18	12.31	15	PASS	0.057	11.37	15	PASS
ICSAB3	ICSAB	1	20.19	1.77	15	PASS	23.28	2.37	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1105001.D	RINSE	RINSE	1	11/05/15 1:53 PM
B1105002.D	Cal Blank	IBLK	1	11/05/15 1:59 PM
B1105003.D	Std1-0.1/1 ppb	ICAL	1	11/05/15 2:04 PM
B1105004.D	Std2-0.5/5 ppb	ICAL	1	11/05/15 2:10 PM
B1105005.D	Std3-5/50 ppb	ICAL	1	11/05/15 2:16 PM
B1105006.D	Std4-10/100 ppb	ICAL	1	11/05/15 2:21 PM
B1105007.D	Std5-20/200 ppb	ICAL	1	11/05/15 2:27 PM
B1105008.D	Std6-40/400 ppb	ICAL	1	11/05/15 2:32 PM
B1105009.D	Std7-100/1000 ppb	ICAL	1	11/05/15 2:38 PM
B1105010.D	Std8-200/2000 ppb	ICAL	1	11/05/15 2:43 PM
B1105011.D	ICV	ICV	1	11/05/15 2:46 PM
B1105012.D	ICB	ICB	1	11/05/15 2:52 PM
B1105013.D	LLICV	CCV1	1	11/05/15 2:57 PM
B1105014.D	ICSA1	ICSA	1	11/05/15 3:03 PM
B1105015.D	ICSAB1	ICSAB	1	11/05/15 3:11 PM
B1105016.D	LLICV	CCV1	1	11/05/15 3:16 PM
B1105017.D	MB-52939	MBLK	1	11/05/15 3:22 PM
B1105018.D	LCS-52939	LCS	1	11/05/15 3:27 PM
B1105019.D	N017381-002B	SAMP	1	11/05/15 3:33 PM
B1105020.D	N017457-016B	SAMP	1	11/05/15 3:38 PM
B1105021.D	N017471-001E	SAMP	1	11/05/15 3:45 PM
B1105022.D	N017471-001E	SAMP	5	11/05/15 3:50 PM
B1105023.D	N017471-001E	SAMP	25	11/05/15 3:56 PM
B1105024.D	N017471-001E-PS	PS	1	11/05/15 4:01 PM
B1105025.D	N017471-001E-PS	PS	5	11/05/15 4:07 PM
B1105026.D	N017471-001E-MS	MS	1	11/05/15 4:13 PM
B1105027.D	CCV1	CCV	1	11/05/15 4:18 PM
B1105028.D	CCB1	CCB	1	11/05/15 4:24 PM
B1105029.D	N017471-001E-MS	MS	5	11/05/15 4:29 PM
B1105030.D	N017471-001E-MSD	MSD	1	11/05/15 4:35 PM
B1105031.D	N017471-001E-MSD	MSD	5	11/05/15 4:40 PM
B1105032.D	N017469-001C	SAMP	1	11/05/15 4:46 PM
B1105033.D	N017469-001C	SAMP	5	11/05/15 4:52 PM
B1105034.D	N017469-002E	SAMP	1	11/05/15 4:57 PM
B1105035.D	N017469-002E	SAMP	5	11/05/15 5:03 PM
B1105036.D	N017470-001B	SAMP	1	11/05/15 5:08 PM
B1105037.D	N017470-001B	SAMP	5	11/05/15 5:14 PM
B1105038.D	N017470-002B	SAMP	1	11/05/15 5:19 PM
B1105039.D	CCV2	CCV	1	11/05/15 5:25 PM
B1105040.D	CCB2	CCB	1	11/05/15 5:30 PM
B1105041.D	LLCCV1	CCV2	1	11/05/15 5:36 PM
B1105042.D	ICSA2	ICSA	1	11/05/15 5:42 PM

INJECTION LOG: 151105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1105043.D	ICSAB2	ICSAB	1	11/05/15 5:47 PM
B1105044.D	N017470-002B	SAMP	5	11/05/15 5:53 PM
B1105045.D	MB-52955	MBLK	1	11/05/15 5:58 PM
B1105046.D	LCS-52955	LCS	1	11/05/15 6:04 PM
B1105047.D	N017390-001B	SAMP	1	11/05/15 6:09 PM
B1105048.D	N017390-001B	SAMP	5	11/05/15 6:15 PM
B1105049.D	N017390-001B-PS	PS	1	11/05/15 6:20 PM
B1105050.D	N017390-001B-MS	MS	1	11/05/15 6:26 PM
B1105051.D	N017390-001B-MSD	MSD	1	11/05/15 6:32 PM
B1105052.D	N017400-003B	SAMP	1	11/05/15 6:37 PM
B1105053.D	N017400-004B	SAMP	1	11/05/15 6:43 PM
B1105054.D	CCV3	CCV	1	11/05/15 6:48 PM
B1105055.D	CCB3	CCB	1	11/05/15 6:51 PM
B1105056.D	N017400-005B	SAMP	1	11/05/15 6:57 PM
B1105057.D	N017400-006B	SAMP	1	11/05/15 7:05 PM
B1105058.D	N017400-007B	SAMP	1	11/05/15 7:10 PM
B1105059.D	N017400-008B	SAMP	1	11/05/15 7:16 PM
B1105060.D	N017415-008B	SAMP	1	11/05/15 7:22 PM
B1105061.D	CCV4	CCV	1	11/05/15 7:27 PM
B1105062.D	CCB4	CCB	1	11/05/15 7:31 PM
B1105063.D	LLCCV2	CCV2	1	11/05/15 7:38 PM
B1105064.D	ICSA3	ICSA	1	11/05/15 7:44 PM
B1105065.D	ICSAB3	ICSAB	1	11/05/15 7:49 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/5/2015 10:21:08**
Prep End Date: **11/5/2015 3:00:00**
Initials/ Date: 11/10/2015

Prep Batch **52955** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52955	Aqueous		25	☐	0	0	25	1.000		
MB-52955	Aqueous		25	☐	0	0	25	1.000		
N017390-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017390-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017390-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-151019	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Nov 2015 09:05:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	40342.70	0.00	
24	Mg	154712.00	0.00	
25	Mg	20840.10	0.00	
26	Mg	24660.30	0.00	
59	Co	433131.00	0.00	
115	In	886048.00	0.00	
206	Pb	221045.00	0.00	
207	Pb	192924.00	0.00	
208	Pb	473894.00	0.00	

RSD (%)

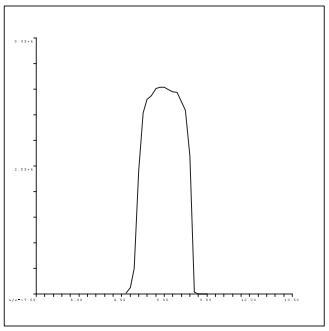
Element		Actual	Required	Flag
9	Be	1.37	5.00	
24	Mg	0.60	5.00	
25	Mg	1.50	5.00	
26	Mg	2.98	5.00	
59	Co	0.81	5.00	
115	In	1.21	5.00	
206	Pb	0.68	5.00	
207	Pb	1.13	5.00	
208	Pb	1.13	5.00	

Ion Ratio

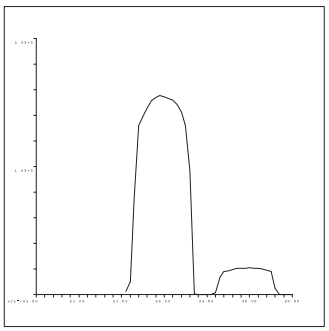
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

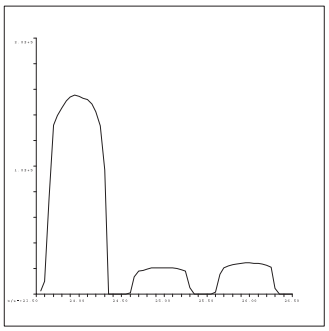
Element	Actual	Required	Flag



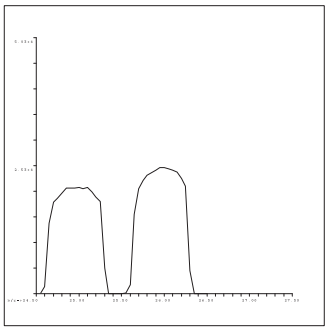
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



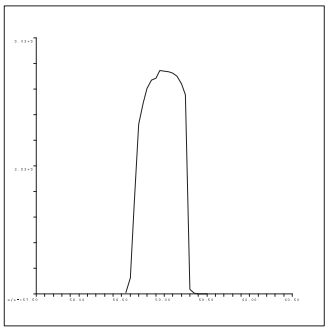
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



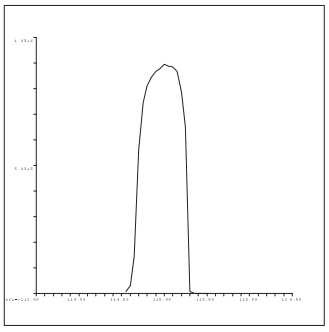
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



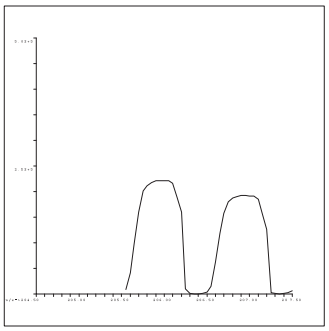
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



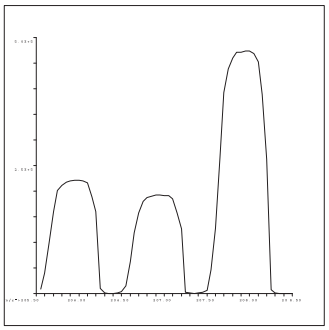
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



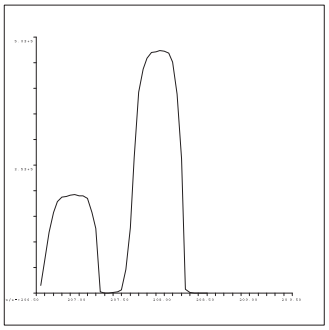
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151105B

Instrument ID: ICPMS-02

Analyte	Data File	B1105002.D	B1105003.D	B1105004.D	B1105005.D	B1105006.D	B1105007.D	B1105008.D	B1105009.D	B1105010.D	
	Acq. Date-Time	11/05/2015 01:59 PM	11/05/2015 02:04 PM	11/05/2015 02:10 PM	11/05/2015 02:16 PM	11/05/2015 02:21 PM	11/05/2015 02:27 PM	11/05/2015 02:32 PM	11/05/2015 02:38 PM	11/05/2015 02:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	61999.7	62749.5	61620.7	62237.3	63477.2	62864.1	63716.3	64767.9	66521.5	
52 Cr [2]	CPS	272.1	756.6	2690.2	25200.9	49823.3	98256.6	198726.1	497642	1003452.3	1.0000
103 Rh (ISTD) [2]	CPS	1462586.3	1464391	1446953.3	1466330.6	1481665.1	1462499.1	1486784.9	1497703.3	1520174.6	
95 Mo [2]	CPS	53.3	403.4	1742.4	17483.6	35492.5	69509.1	139506.1	350483	709698.8	1.0000

STD1-not used

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.490	0.50	10.00	0	94.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.489	0.50	0.5000	0	97.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.292	0.50	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.382	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.538	0.50	0.5000	0	108	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.548	0.50	20.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.822	0.50	20.00	0	104	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.586	0.50	0.5000	0	117	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.656	1.0	10.00	0	96.6	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.046	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.334	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.375	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.077	1.0	1.000	0	108	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.053	1.0	20.00	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.852	1.0	20.00	0	99.3	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.045	1.0	1.000	0	104	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.061	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.138	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.150	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.089	0.50									

Qualifiers:

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

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130477**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130493**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.087	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130520**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.116	1.0									

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.043	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.180	0.50	20.00	0	116	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.059	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	22.995	0.50	20.00	0	115	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.057	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.283	0.50	20.00	0	116	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.154	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSAB	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.224	1.0	20.00	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.191	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSAB	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.142	1.0	20.00	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.183	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.188	1.0	20.00	0	101	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61999.7	61999.7	100	PASS	70-130	1462586.3	1462586.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	62749.5	61999.7	101.21	PASS	70-130	1464391	1462586.3	100.12	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	61620.7	61999.7	99.39	PASS	70-130	1446953.3	1462586.3	98.93	PASS	70-130
Std3-5/50 ppb	ICAL	1	62237.3	61999.7	100.38	PASS	70-130	1466330.6	1462586.3	100.26	PASS	70-130
Std4-10/100 ppb	ICAL	1	63477.2	61999.7	102.38	PASS	70-130	1481665.1	1462586.3	101.3	PASS	70-130
Std5-20/200 ppb	ICAL	1	62864.1	61999.7	101.39	PASS	70-130	1462499.1	1462586.3	99.99	PASS	70-130
Std6-40/400 ppb	ICAL	1	63716.3	61999.7	102.77	PASS	70-130	1486784.9	1462586.3	101.65	PASS	70-130
Std7-100/1000 ppb	ICAL	1	64767.9	61999.7	104.46	PASS	70-130	1497703.3	1462586.3	102.4	PASS	70-130
Std8-200/2000 ppb	ICAL	1	66521.5	61999.7	107.29	PASS	70-130	1520174.6	1462586.3	103.94	PASS	70-130
ICV	ICV	1	57960.1	61999.7	93.48	PASS	70-130	1249316.4	1462586.3	85.42	PASS	70-130
ICB	ICB	1	64692.2	61999.7	104.34	PASS	70-130	1401707.5	1462586.3	95.84	PASS	70-130
LLICV	CCV1	1	60264.5	61999.7	97.2	PASS	70-130	1311481.7	1462586.3	89.67	PASS	70-130
ICSA1	ICSA	1	66916.1	61999.7	107.93	PASS	70-130	1346989.2	1462586.3	92.096	PASS	70-130
ICSAB1	ICSAB	1	70002.3	61999.7	112.91	PASS	70-130	1353738.6	1462586.3	92.56	PASS	70-130
LLICV	CCV1	1	55667.5	61999.7	89.79	PASS	70-130	1215917	1462586.3	83.13	PASS	70-130
CCV1	CCV	1	67773.1	61999.7	109.31	PASS	70-130	1476975.8	1462586.3	100.98	PASS	70-130
CCB1	CCB	1	64189.1	61999.7	103.53	PASS	70-130	1420672.3	1462586.3	97.13	PASS	70-130
CCV2	CCV	1	70373.7	61999.7	113.51	PASS	70-130	1458917.8	1462586.3	99.75	PASS	70-130
CCB2	CCB	1	65758.6	61999.7	106.06	PASS	70-130	1388637.8	1462586.3	94.94	PASS	70-130
LLCCV1	CCV2	1	55759.2	61999.7	89.93	PASS	70-130	1222632.5	1462586.3	83.59	PASS	70-130
ICSA2	ICSA	1	63155.4	61999.7	101.86	PASS	70-130	1243436.4	1462586.3	85.016	PASS	70-130
ICSAB2	ICSAB	1	66479.4	61999.7	107.23	PASS	70-130	1264950.5	1462586.3	86.49	PASS	70-130
MB-52955	MBLK	1	60925.5	61999.7	98.27	PASS	70-130	1288682.2	1462586.3	88.11	PASS	70-130
LCS-52955	LCS	1	57401.1	61999.7	92.58	PASS	70-130	1205438.3	1462586.3	82.42	PASS	70-130
N017390-001B	SAMP	1	65073.7	61999.7	104.96	PASS	70-130	1204011.9	1462586.3	82.32	PASS	70-130
N017390-001B	SAMP	5	65488.6	61999.7	105.63	PASS	70-130	1277567	1462586.3	87.35	PASS	70-130
N017390-001B-PS	PS	1	65716.1	61999.7	105.99	PASS	70-130	1210805	1462586.3	82.79	PASS	70-130
N017390-001B-MS	MS	1	68288.7	61999.7	110.14	PASS	70-130	1221864.9	1462586.3	83.54	PASS	70-130
N017390-001B-MSD	MSD	1	70188.6	61999.7	113.21	PASS	70-130	1266769.7	1462586.3	86.61	PASS	70-130
N017400-003B	SAMP	1	65538.7	61999.7	105.71	PASS	70-130	1166285.5	1462586.3	79.74	PASS	70-130
N017400-004B	SAMP	1	68031.9	61999.7	109.73	PASS	70-130	1210504.3	1462586.3	82.76	PASS	70-130
CCV3	CCV	1	76176.7	61999.7	122.87	PASS	70-130	1522782.6	1462586.3	104.12	PASS	70-130
CCB3	CCB	1	54590.4	61999.7	88.049	PASS	70-130	1205484.3	1462586.3	82.42	PASS	70-130
N017400-005B	SAMP	1	67724.4	61999.7	109.23	PASS	70-130	1318539.7	1462586.3	90.15	PASS	70-130
N017400-006B	SAMP	1	70021.2	61999.7	112.94	PASS	70-130	1323698.9	1462586.3	90.5	PASS	70-130
N017400-007B	SAMP	1	70065.7	61999.7	113.01	PASS	70-130	1244749.7	1462586.3	85.11	PASS	70-130
N017400-008B	SAMP	1	68827.7	61999.7	111.01	PASS	70-130	1224650.5	1462586.3	83.73	PASS	70-130
N017415-008B	SAMP	1	72007.8	61999.7	116.14	PASS	70-130	1334980.4	1462586.3	91.28	PASS	70-130
CCV4	CCV	1	71165.8	61999.7	114.78	PASS	70-130	1429899.4	1462586.3	97.77	PASS	70-130
CCB4	CCB	1	49068.9	61999.7	79.14	PASS	70-130	1095884.5	1462586.3	74.93	PASS	70-130
LLCCV2	CCV2	1	59417.2	61999.7	95.83	PASS	70-130	1224143.5	1462586.3	83.7	PASS	70-130

INTERNAL STANDARD: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSA3	ICSA	1	62882.1	61999.7	101.42	PASS	70-130	1215217	1462586.3	83.087	PASS	70-130
ICSAB3	ICSAB	1	65981.5	61999.7	106.42	PASS	70-130	1252777.1	1462586.3	85.65	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017390
Test Method: EPA 6020
Analysis Date: 11/5/2015

Matrix: Goundwater
Batch No.: 52955

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr & Mo. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N017390-001B DT 5X	Chromium	ug/L	9.585461	NA	8.427588	13.74%	10
N017390-001B DT 5X	Molybdenum	ug/L	8.077557	NA	7.398991	9.17%	10

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N017390-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID:	**ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.402	0.50	10.00	7.399	110	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017390
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N017390-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **104036**
Client ID: **ZZZZZZ** Batch ID: **52955** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **11/5/2015** SeqNo: **2130514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.287	1.0	10.00	8.428	88.6	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICPMS**
Method Number: EPA 6020/200.8
Preparation Method: EPA 3010/200.8_PR
Analysis Date(s): 3/13/2015; 3/14/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **ICPMS-02**

Acceptance Criteria: MDL < spike < 10XMDL

		Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
27	Al	Aluminum	1.428	1.454	1.368	1.790	1.039	1.487	1.501	1.0	0.22163	3.143	**0.6966**	10	OK,meets criteria
121	Sb	Antimony	0.114	0.097	0.093	0.091	0.109	0.103	0.102	0.10	0.0083	3.143	**0.0262**	0.50	OK,meets criteria
75	As	Arsenic	0.057	0.049	0.046	0.056	0.051	0.059	0.058	0.050	0.00502	3.143	**0.0158**	0.10	OK,meets criteria
137	Ba	Barium	0.116	0.107	0.137	0.115	0.117	0.175	0.126	0.10	0.02298	3.143	**0.0722**	1.0	OK,meets criteria
9	Be	Beryllium	0.102	0.082	0.086	0.081	0.091	0.100	0.094	0.10	0.00834	3.143	**0.0262**	0.50	OK,meets criteria
11	B	Boron	2.773	2.788	2.855	4.317	3.713	3.448	3.231	2.5	0.57291	3.143	**1.801**	50	OK,meets criteria
111	Cd	Cadmium	0.042	0.043	0.049	0.041	0.042	0.048	0.044	0.050	0.00313	3.143	**0.0098**	0.50	OK,meets criteria
52	Cr	Chromium	0.181	0.200	0.197	0.258	0.196	0.191	0.175	0.25	0.02725	3.143	**0.0856**	1.0	OK,meets criteria
59	Co	Cobalt	0.056	0.047	0.055	0.045	0.051	0.049	0.054	0.050	0.00420	3.143	**0.0132**	0.50	OK,meets criteria
63	Cu	Copper	0.437	0.463	0.447	0.423	0.445	0.424	0.659	0.50	0.08399	3.143	**0.2640**	1.0	OK,meets criteria
56	Fe	Iron	1.231	1.163	1.267	1.061	1.088	1.188	1.211	1.0	0.07499	3.143	**0.2357**	10	OK,meets criteria
208	Pb	Lead	0.227	0.237	0.232	0.278	0.246	0.234	0.243	0.25	0.01696	3.143	**0.0533**	1.0	OK,meets criteria
55	Mn	Manganese	0.077	0.082	0.067	0.065	0.081	0.066	0.075	0.10	0.00723	3.143	**0.0227**	0.50	OK,meets criteria
95	Mo	Molybdenum	0.092	0.084	0.090	0.077	0.106	0.094	0.097	0.10	0.00927	3.143	**0.0291**	0.50	OK,meets criteria
60	Ni	Nickel	0.107	0.073	0.074	0.082	0.095	0.091	0.085	0.10	0.01207	3.143	**0.0379**	1.0	OK,meets criteria
78	Se	Selenium	0.094	0.100	0.055	0.078	0.125	0.074	0.092	0.10	0.02217	3.143	**0.0697**	0.50	OK,meets criteria
107	Ag	Silver	0.099	0.084	0.086	0.083	0.095	0.098	0.099	0.10	0.00735	3.143	**0.0231**	0.50	OK,meets criteria
205	Tl	Thallium	0.106	0.077	0.080	0.074	0.089	0.084	0.090	0.10	0.01072	3.143	**0.0337**	0.50	OK,meets criteria
118	Sn	Tin	0.219	0.228	0.218	0.307	0.256	0.235	0.247	0.25	0.03098	3.143	**0.0974**	10	OK,meets criteria
47	Ti	Titanium	0.101	0.136	0.084	0.094	0.105	0.089	0.134	0.10	0.02092	3.143	**0.0658**	10	OK,meets criteria
238	U	Uranium	0.109	0.093	0.094	0.094	0.112	0.104	0.111	0.10	0.00858	3.143	**0.0270**	0.50	OK,meets criteria
51	V	Vanadium	0.136	0.128	0.116	0.135	0.127	0.121	0.136	0.10	0.00785	3.143	**0.0247**	1.0	OK,meets criteria
66	Zn	Zinc	0.075	0.056	0.082	0.078	0.093	0.092	0.082	0.10	0.01242	3.143	**0.0390**	10	OK,meets criteria

ARCADIS

Project: PG&E TOPOCK - CMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N017400

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

Table of Contents

ASSET Laboratories Work Order: N017400

Item	Pages
Cover Letter	1-7
Analytical Result/QC Summary Reports	8-114
Sample Receiving Items	115-124
List of Analysts	125
Raw Data:	
EPA 120.1	126-129
SM 2540C	130-139
EPA 200.7_Dissolved	140-191
EPA 200.8_ Dissolved	192-308
SM 2130B	309-312
EPA 218.6	313-427
SM 2320B	428-437
EPA 245.1_Dissolved	438-454
EPA 300.0	455-503
SM 4500-NO3F	504-517
EPA 6010B_Dissolved	518-550
EPA 6010B_Total	551-592
EPA 6020_Dissolved	593-632

November 13, 2015

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N017400

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 27, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Glen Gesmundo
QA Manager

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

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Truesdail-Tustin,CA.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N017399-002B-MS2, N017399-002B-MSD2 and N017415-007B-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017399-001A-MS1, N017399-001A-MSD1 and N017415-006B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017400-001B-MS, N017400-001B-MSD and N017427-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on Beryllium for sample N017400-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analyte for this failed internal standard was reported at dilution that meet internal standard recovery limit.

ASSET LABORATORIES
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Analytical Comments for EPA 300.0:

Dilution was necessary on samples N017400-001, N017400-002, N017400-003, N017400-004, N017400-005, N017400-007 and N017400-008 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Sodium on QC sample N017400-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Total:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron on QC samples N017400-001C-MS1, N017400-001C-MSD1 and N017427-002C-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ASSET Laboratories

Date: *13-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017400
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017400-001A	OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	10/27/2015	11/13/2015
N017400-001B	OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	10/27/2015	11/13/2015
N017400-001C	OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	10/27/2015	11/13/2015
N017400-001D	OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	10/27/2015	11/13/2015
N017400-001E	OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	10/27/2015	11/13/2015
N017400-001F	OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	10/27/2015	11/13/2015
N017400-002A	OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	10/27/2015	11/13/2015
N017400-002B	OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	10/27/2015	11/13/2015
N017400-002C	OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	10/27/2015	11/13/2015
N017400-002D	OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	10/27/2015	11/13/2015
N017400-002E	OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	10/27/2015	11/13/2015
N017400-002F	OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	10/27/2015	11/13/2015
N017400-003A	OW-02D-4Q15	Groundwater	10/27/2015 12:08:00 PM	10/27/2015	11/13/2015
N017400-003B	OW-02D-4Q15	Groundwater	10/27/2015 12:08:00 PM	10/27/2015	11/13/2015
N017400-003C	OW-02D-4Q15	Groundwater	10/27/2015 12:08:00 PM	10/27/2015	11/13/2015
N017400-003D	OW-02D-4Q15	Groundwater	10/27/2015 12:08:00 PM	10/27/2015	11/13/2015
N017400-004A	OW-02M-4Q15	Groundwater	10/27/2015 1:37:00 PM	10/27/2015	11/13/2015
N017400-004B	OW-02M-4Q15	Groundwater	10/27/2015 1:37:00 PM	10/27/2015	11/13/2015
N017400-004C	OW-02M-4Q15	Groundwater	10/27/2015 1:37:00 PM	10/27/2015	11/13/2015
N017400-004D	OW-02M-4Q15	Groundwater	10/27/2015 1:37:00 PM	10/27/2015	11/13/2015
N017400-005A	OW-02S-4Q15	Groundwater	10/27/2015 12:44:00 PM	10/27/2015	11/13/2015
N017400-005B	OW-02S-4Q15	Groundwater	10/27/2015 12:44:00 PM	10/27/2015	11/13/2015
N017400-005C	OW-02S-4Q15	Groundwater	10/27/2015 12:44:00 PM	10/27/2015	11/13/2015
N017400-005D	OW-02S-4Q15	Groundwater	10/27/2015 12:44:00 PM	10/27/2015	11/13/2015
N017400-006A	OW-071-4Q15	Groundwater	10/27/2015 12:54:00 PM	10/27/2015	11/13/2015
N017400-006B	OW-071-4Q15	Groundwater	10/27/2015 12:54:00 PM	10/27/2015	11/13/2015
N017400-006C	OW-071-4Q15	Groundwater	10/27/2015 12:54:00 PM	10/27/2015	11/13/2015
N017400-006D	OW-071-4Q15	Groundwater	10/27/2015 12:54:00 PM	10/27/2015	11/13/2015
N017400-007A	OW-05D-4Q15	Groundwater	10/27/2015 3:32:00 PM	10/27/2015	11/13/2015

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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017400
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017400-007B	OW-05D-4Q15	Groundwater	10/27/2015 3:32:00 PM	10/27/2015	11/13/2015
N017400-007C	OW-05D-4Q15	Groundwater	10/27/2015 3:32:00 PM	10/27/2015	11/13/2015
N017400-007D	OW-05D-4Q15	Groundwater	10/27/2015 3:32:00 PM	10/27/2015	11/13/2015
N017400-008A	OW-05M-4Q15	Groundwater	10/27/2015 4:14:00 PM	10/27/2015	11/13/2015
N017400-008B	OW-05M-4Q15	Groundwater	10/27/2015 4:14:00 PM	10/27/2015	11/13/2015
N017400-008C	OW-05M-4Q15	Groundwater	10/27/2015 4:14:00 PM	10/27/2015	11/13/2015
N017400-008D	OW-05M-4Q15	Groundwater	10/27/2015 4:14:00 PM	10/27/2015	11/13/2015
N017400-009A	MW-202-4Q15	Groundwater	10/27/2015 4:30:00 PM	10/27/2015	11/13/2015

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-001

Client Sample ID: OW-01D-4Q15
Collection Date: 10/27/2015 9:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	6700	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	6600	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	6700	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	2300	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	2300	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151028G**	QC Batch: **R103852**			PrepDate			Analyst: **LR**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	10/28/2015 02:15 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N017399-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **103852**
Client ID:	**ZZZZZZ**	Batch ID: **R103852**	TestNo: **EPA 120.1**		Analysis Date: **10/28/2015**	SeqNo: **2120252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7640.000	0.10						7640	0	10	

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**				PrepDate	**10/28/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**				PrepDate	**10/28/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1300	17	17		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151028F**	QC Batch: **52871**			PrepDate	**10/28/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	10/28/2015 02:20 PM

Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	MB-52871	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/28/2015	RunNo:	103851
Client ID:	PBW	Batch ID:	52871	TestNo:	SM2540C			Analysis Date:	10/28/2015	SeqNo:	2120232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	LCS-52871	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/28/2015	RunNo:	103851
Client ID:	LCSW	Batch ID:	52871	TestNo:	SM2540C			Analysis Date:	10/28/2015	SeqNo:	2120233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	987.000	10	1000	0	98.7	80	120				

Sample ID	N017399-002C-DUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	10/28/2015	RunNo:	103851
Client ID:	ZZZZZZ	Batch ID:	52871	TestNo:	SM2540C			Analysis Date:	10/28/2015	SeqNo:	2120237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4525.000	50						4570	0.990	5	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-001

Client Sample ID: OW-01D-4Q15
Collection Date: 10/27/2015 9:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_151110A**	QC Batch: **52910**				PrepDate	**11/2/2015**	Analyst: **CEI**
Aluminum	ND	12	50		µg/L	1	11/10/2015 11:41 AM
Boron	1100	11	100		µg/L	1	11/10/2015 11:41 AM
Calcium	160000	31	500		µg/L	1	11/10/2015 11:41 AM
Iron	ND	17	20		µg/L	1	11/10/2015 11:41 AM
Magnesium	14000	86	100		µg/L	1	11/10/2015 11:41 AM
Potassium	13000	360	2500		µg/L	5	11/4/2015 09:10 AM
Sodium	1500000	580	25000		µg/L	50	11/4/2015 11:58 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-002

Client Sample ID: OW-01M-4Q15
Collection Date: 10/27/2015 10:49:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_151110A** QC Batch: **52910** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Aluminum	ND	12	50		µg/L	1	11/10/2015 11:46 AM
Boron	980	11	100		µg/L	1	11/10/2015 11:46 AM
Calcium	140000	31	500		µg/L	1	11/10/2015 11:46 AM
Iron	ND	17	20		µg/L	1	11/10/2015 11:46 AM
Magnesium	20000	86	100		µg/L	1	11/10/2015 11:46 AM
Potassium	13000	360	2500		µg/L	5	11/4/2015 09:15 AM
Sodium	1400000	580	25000		µg/L	50	11/4/2015 12:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-52910	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	PBW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-52910	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	LCSW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	20463.164	500	20000	0	102	85	115				
Sodium	19298.304	500	20000	0	96.5	85	115				

Sample ID	N017399-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38656.299	2500	20000	16100	113	75	125				

Sample ID	N017399-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38051.316	2500	20000	16100	110	75	125	38660	1.58	20	

Sample ID	N017399-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1471097.938	25000	20000	1458000	65.2	75	125				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N017399-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1471119.166	25000	20000	1458000	65.3	75	125	1471000	0.00144	20	S

Sample ID	N017415-007B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125852

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	35910.474	2500	20000	13200	114	75	125				

Sample ID	N017415-007B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1340018.611	25000	20000	1220000	601	75	125				S

Sample ID	MB-52910	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	PBW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	50									
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID	LCS1-52910	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	LCSW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10140.575	50	10000	0	101	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-52910** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **LCSW** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5042.788	100	5000	0	101	85	115				
Calcium	9625.755	500	10000	0	96.3	85	115				
Iron	105.292	20	100.0	0	105	85	115				
Magnesium	9428.515	100	10000	0	94.3	85	115				

Sample ID **N017399-001A-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5272.448	50	10000	0	52.7	75	125				S
Boron	3043.496	100	5000	536.1	50.1	75	125				S
Calcium	120164.092	500	10000	110500	96.5	75	125				
Iron	51.690	20	100.0	0	51.7	75	125				S
Magnesium	25028.529	100	10000	20260	47.7	75	125				S

Sample ID **N017399-001A-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5252.009	50	10000	0	52.5	75	125	5272	0.388	20	S
Boron	3040.700	100	5000	536.1	50.1	75	125	3043	0.0919	20	S
Calcium	120336.291	500	10000	110500	98.2	75	125	120200	0.143	20	
Iron	49.963	20	100.0	0	50.0	75	125	51.69	3.40	20	S
Magnesium	24998.094	100	10000	20260	47.4	75	125	25030	0.122	20	S

Sample ID **N017415-006B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132977**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N017415-006B-MS1	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132977

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5249.573	50	10000	0	52.5	75	125				S
Boron	3441.876	100	5000	1125	46.3	75	125				S
Calcium	148847.810	500	10000	146300	25.0	75	125				S
Iron	58.273	20	100.0	0	58.3	75	125				S
Magnesium	11779.303	100	10000	7906	38.7	75	125				S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-001

Client Sample ID: OW-01D-4Q15
Collection Date: 10/27/2015 9:49:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 12:07 AM
Arsenic	1.1	0.016	0.10		µg/L	1	11/4/2015 10:31 AM
Barium	27	0.072	1.0		µg/L	1	11/4/2015 10:31 AM
Beryllium	ND	0.026	0.50		µg/L	1	11/10/2015 12:07 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 10:31 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 10:31 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 12:07 AM
Lead	ND	0.053	1.0		µg/L	1	11/4/2015 10:31 AM
Manganese	ND	0.023	0.50		µg/L	1	11/4/2015 10:31 AM
Molybdenum	12	0.029	0.50		µg/L	1	11/10/2015 12:07 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 12:07 AM
Selenium	3.3	0.070	0.50		µg/L	1	11/10/2015 12:07 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 01:32 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 12:07 AM
Vanadium	2.6	0.025	1.0		µg/L	1	11/4/2015 10:31 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 10:31 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **ICP7_151109A**	QC Batch: **52909**				PrepDate	**11/2/2015**	Analyst: **CEI**
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 12:18 AM
Arsenic	1.6	0.016	0.10		µg/L	1	11/4/2015 10:59 AM
Barium	62	0.072	1.0		µg/L	1	11/4/2015 10:59 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 12:12 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 10:59 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 10:59 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 12:18 AM
Lead	ND	0.053	1.0		µg/L	1	11/4/2015 10:59 AM
Manganese	ND	0.023	0.50		µg/L	1	11/4/2015 10:59 AM
Molybdenum	11	0.029	0.50		µg/L	1	11/10/2015 12:18 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 12:18 AM
Selenium	2.7	0.070	0.50		µg/L	1	11/10/2015 12:18 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 01:43 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 12:18 AM
Vanadium	2.8	0.025	1.0		µg/L	1	11/4/2015 10:59 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 10:59 AM

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-52909** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **PBW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	0.025	1.0									
Zinc	ND	10									

Sample ID **LCS-52909** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **LCSW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.719	0.10	10.00	0	107	85	115				
Barium	108.832	1.0	100.0	0	109	85	115				
Cadmium	10.939	0.50	10.00	0	109	85	115				
Chromium	10.527	1.0	10.00	0	105	85	115				
Cobalt	10.062	0.50	10.00	0	101	85	115				
Lead	10.775	1.0	10.00	0	108	85	115				
Manganese	105.464	0.50	100.0	0	105	85	115				
Vanadium	10.671	1.0	10.00	0	107	85	115				
Zinc	107.163	10	100.0	0	107	85	115				

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126137**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126137

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.693	0.10	10.00	1.065	86.3	75	125				
Barium	114.939	1.0	100.0	27.44	87.5	75	125				
Cadmium	8.296	0.50	10.00	0	83.0	75	125				
Chromium	8.350	1.0	10.00	0.5062	78.4	75	125				
Cobalt	7.089	0.50	10.00	0	70.9	75	125				S
Lead	8.720	1.0	10.00	0	87.2	75	125				
Manganese	78.975	0.50	100.0	0.3006	78.7	75	125				
Vanadium	10.942	1.0	10.00	2.626	83.2	75	125				
Zinc	80.633	10	100.0	0.3110	80.3	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126138

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.784	0.10	10.00	1.065	87.2	75	125	9.693	0.935	20	
Barium	115.625	1.0	100.0	27.44	88.2	75	125	114.9	0.595	20	
Cadmium	8.452	0.50	10.00	0	84.5	75	125	8.296	1.87	20	
Chromium	8.303	1.0	10.00	0.5062	78.0	75	125	8.350	0.562	20	
Cobalt	7.070	0.50	10.00	0	70.7	75	125	7.089	0.281	20	S
Lead	8.759	1.0	10.00	0	87.6	75	125	8.720	0.452	20	
Manganese	78.807	0.50	100.0	0.3006	78.5	75	125	78.98	0.213	20	
Vanadium	10.808	1.0	10.00	2.626	81.8	75	125	10.94	1.23	20	
Zinc	79.837	10	100.0	0.3110	79.5	75	125	80.63	0.991	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.967	0.10	10.00	1.128	88.4	75	125				
Barium	171.802	1.0	100.0	80.77	91.0	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017427-002B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	8.608	0.50	10.00	0	86.1	75	125				
Chromium	8.602	1.0	10.00	0.7762	78.3	75	125				
Cobalt	6.971	0.50	10.00	0	69.7	75	125				S
Manganese	79.375	0.50	100.0	0.5352	78.8	75	125				
Vanadium	10.685	1.0	10.00	2.319	83.7	75	125				
Zinc	81.853	10	100.0	5.388	76.5	75	125				

Sample ID **MB-52909** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **PBW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.083	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Molybdenum	0.161	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **LCS-52909** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **LCSW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.423	0.50	10.00	0	104	85	115				
Beryllium	10.279	0.50	10.00	0	103	85	115				
Copper	10.479	1.0	10.00	0	105	85	115				
Molybdenum	9.974	0.50	10.00	0	99.7	85	115				
Nickel	10.496	1.0	10.00	0	105	85	115				
Selenium	9.765	0.50	10.00	0	97.6	85	115				
Thallium	9.757	0.50	10.00	0	97.6	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.473	0.50	10.00	0	105	75	125				
Beryllium	10.647	0.50	10.00	0	106	75	125				
Copper	8.637	1.0	10.00	0	86.4	75	125				
Molybdenum	14.242	0.50	10.00	11.58	26.6	75	125				S
Nickel	10.008	1.0	10.00	0.06799	99.4	75	125				
Selenium	9.545	0.50	10.00	3.278	62.7	75	125				S
Thallium	10.156	0.50	10.00	0.05680	101	75	125				

Sample ID **N017400-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.539	0.50	10.00	0	105	75	125	10.47	0.626	20	
Beryllium	10.566	0.50	10.00	0	106	75	125	10.65	0.765	20	
Copper	9.241	1.0	10.00	0	92.4	75	125	8.637	6.75	20	
Molybdenum	14.352	0.50	10.00	11.58	27.7	75	125	14.24	0.767	20	S
Nickel	10.125	1.0	10.00	0.06799	101	75	125	10.01	1.16	20	
Selenium	9.778	0.50	10.00	3.278	65.0	75	125	9.545	2.41	20	S
Thallium	10.119	0.50	10.00	0.05680	101	75	125	10.16	0.359	20	

Sample ID **N017427-002B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.597	0.50	10.00	0	106	75	125				
Beryllium	10.718	0.50	10.00	0	107	75	125				
Copper	9.048	1.0	10.00	0	90.5	75	125				
Lead	10.245	1.0	10.00	0	102	75	125				
Molybdenum	13.433	0.50	10.00	14.55	-11.2	75	125				S
Nickel	10.141	1.0	10.00	0	101	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017427-002B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.506	0.50	10.00	3.007	65.0	75	125				S
Thallium	10.171	0.50	10.00	0	102	75	125				

Sample ID **MB-52909** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104074**
Client ID: **PBW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **LCS-52909** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104074**
Client ID: **LCSW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.890	0.50	10.00	0	109	85	115				

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.281	0.50	10.00	0	103	75	125				

Sample ID **N017400-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.239	0.50	10.00	0	102	75	125	10.28	0.410	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.250	0.50	10.00	0	103	75	125				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.47	0.015	0.20		µg/L	1	10/30/2015 11:05 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 10:31 AM

Qualifiers:

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

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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	1.2	0.015	0.20		µg/L	1	10/30/2015 11:26 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 10:59 AM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.43	0.015	0.20		µg/L	1	10/30/2015 11:45 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/5/2015 06:37 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	1.0	0.015	0.20		µg/L	1	10/30/2015 12:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/5/2015 06:43 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	19	0.075	1.0		µg/L	5	10/30/2015 12:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	19	0.086	1.0		µg/L	1	11/5/2015 06:57 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	19	0.075	1.0		µg/L	5	10/30/2015 02:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	19	0.086	1.0		µg/L	1	11/5/2015 07:05 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.42	0.015	0.20		µg/L	1	10/30/2015 01:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/5/2015 07:10 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.55	0.015	0.20		µg/L	1	10/30/2015 01:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	1.1	0.086	1.0		µg/L	1	11/5/2015 07:16 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-202-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:30:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151030A**	QC Batch: **R103982**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	10/30/2015 01:57 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126053

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

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.527	1.0	10.00	0	105	85	115				

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126060

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.350	1.0	10.00	0.5062	78.4	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.303	1.0	10.00	0.5062	78.0	75	125	8.350	0.562	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.602	1.0	10.00	0.7762	78.3	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R103982	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103982		
Client ID:	PBW	Batch ID:	R103982	TestNo:	EPA 218.6			Analysis Date:	10/30/2015	SeqNo:	2127541		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R103982	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103982		
Client ID:	LCSW	Batch ID:	R103982	TestNo:	EPA 218.6			Analysis Date:	10/30/2015	SeqNo:	2127544		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.105	0.20	5.000	0	102	90	110					

Sample ID	N017434-003DDUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103982		
Client ID:	ZZZZZZ	Batch ID:	R103982	TestNo:	EPA 218.6			Analysis Date:	10/30/2015	SeqNo:	2127546		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		672.620	40						701.7	4.23	20		

Sample ID	N017434-003DMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103982		
Client ID:	ZZZZZZ	Batch ID:	R103982	TestNo:	EPA 218.6			Analysis Date:	10/30/2015	SeqNo:	2127555		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1695.160	40	1000	701.7	99.4	90	110					

Sample ID	N017434-003DMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103982		
Client ID:	ZZZZZZ	Batch ID:	R103982	TestNo:	EPA 218.6			Analysis Date:	10/30/2015	SeqNo:	2127556		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1716.300	40	1000	701.7	101	90	110	1695	1.24	20		

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N017400-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.482	0.20	1.000	0.4699	101	90	110				

Sample ID **N017400-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.296	0.20	1.000	1.228	107	90	110				

Sample ID **N017400-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.446	0.20	1.000	0.4282	102	90	110				

Sample ID **N017400-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.091	0.20	1.000	1.007	108	90	110				

Sample ID **N017400-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.984	1.0	25.00	18.97	100	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N017400-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.476	0.20	1.000	0.4192	106	90	110				

Sample ID **N017400-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.617	0.20	1.000	0.5457	107	90	110				

Sample ID **N017400-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.017	0.20	1.000	0.04310	97.4	90	110				

Sample ID **N017400-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103982**
Client ID: **ZZZZZZ** Batch ID: **R103982** TestNo: **EPA 218.6** Analysis Date: **10/30/2015** SeqNo: **2127580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.934	1.0	25.00	18.76	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-52955	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	PBW	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130510

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

Sample ID	LCS-52955	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	LCSW	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.424	1.0	10.00	0	94.2	85	115				

Sample ID	N017390-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	ZZZZZZ	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130515

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.236	1.0	10.00	8.428	88.1	75	125				

Sample ID	N017390-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	11/5/2015	RunNo:	104036
Client ID:	ZZZZZZ	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130516

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.889	1.0	10.00	8.428	84.6	75	125	17.24	2.03	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	0.97	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	0.29	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	0.23	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	0.33	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	3.6	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	5.5	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	0.24	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151028H**	QC Batch: **R103853**			PrepDate			Analyst: **LR**
Turbidity	3.8	0.10	0.10		NTU	1	10/28/2015 02:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	**MB-R103853**	SampType:	**MBLK**	TestCode:	**2130_W**	Units:	**NTU**	Prep Date:		RunNo:	**103853**
Client ID:	**PBW**	Batch ID:	**R103853**	TestNo:	**SM 2130B**			Analysis Date:	**10/28/2015**	SeqNo:	**2120272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID	**N017400-001DDUP**	SampType:	**DUP**	TestCode:	**2130_W**	Units:	**NTU**	Prep Date:		RunNo:	**103853**
Client ID:	**ZZZZZZ**	Batch ID:	**R103853**	TestNo:	**SM 2130B**			Analysis Date:	**10/28/2015**	SeqNo:	**2120274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.970	0.10						0.9700	0	30	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	89	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	89	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	110	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	110	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	45	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	45	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	89	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	89	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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NEVADA
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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	74	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	74	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-006

Client Sample ID: OW-071-4Q15
Collection Date: 10/27/2015 12:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	71	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	71	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	67	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	67	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151028I**	QC Batch: **R103909**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	78	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/28/2015 04:30 PM
Alkalinity, Total (As CaCO3)	78	1.2	5.0		mg/L	1	10/28/2015 04:30 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R103909** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103909**
Client ID: **LCSW** Batch ID: **R103909** TestNo: **SM 2320 B** Analysis Date: **10/28/2015** SeqNo: **2123139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	99.567	5.0	100.0	0	99.6	85	115				
Alkalinity, Total (As CaCO3)	99.567	5.0	100.0	0	99.6	85	115				

Sample ID **MB-R103909** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103909**
Client ID: **PBW** Batch ID: **R103909** TestNo: **SM 2320 B** Analysis Date: **10/28/2015** SeqNo: **2123140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N017400-003C_DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103909**
Client ID: **ZZZZZZ** Batch ID: **R103909** TestNo: **SM 2320 B** Analysis Date: **10/28/2015** SeqNo: **2123145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	45.455	5.0						45.45	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	45.455	5.0						45.45	0	30	

Sample ID **N017400-004C-MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103909**
Client ID: **ZZZZZZ** Batch ID: **R103909** TestNo: **SM 2320 B** Analysis Date: **10/28/2015** SeqNo: **2123147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	166.667	5.0	100.0	88.74	77.9	75	125				
Alkalinity, Total (As CaCO3)	188.312	5.0	100.0	88.74	99.6	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N017400-004C-MSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103909**
Client ID: **ZZZZZZ** Batch ID: **R103909** TestNo: **SM 2320 B** Analysis Date: **10/28/2015** SeqNo: **2123148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	167.749	5.0	100.0	88.74	79.0	75	125	166.7	0.647	20	
Alkalinity, Total (As CaCO3)	189.394	5.0	100.0	88.74	101	75	125	188.3	0.573	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **AA1_151105A**	QC Batch: **52920**				PrepDate	**11/3/2015**	Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:17 PM

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **AA1_151105A**	QC Batch: **52920**				PrepDate	**11/3/2015**	Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:19 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID	MB-52920	SampType:	MBLK	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	PBW	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.086	0.20									

Sample ID	N017415-001B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.951	0.20	5.000	0.09477	77.1	75	125				

Sample ID	N017415-001B-MSD	SampType:	MSD	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.951	0.20	5.000	0.09477	77.1	75	125	3.951	0.0152	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.066	0.20	5.000	0.06610	80.0	75	125				

Sample ID	LCS-52920	SampType:	LCS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	LCSW	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.144	0.20	5.000	0	103	85	115				

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-001

Client Sample ID: OW-01D-4Q15
Collection Date: 10/27/2015 9:49:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151030A** QC Batch: **R103929**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	10/30/2015 09:38 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.8	0.062	0.50		mg/L	5	10/31/2015 11:05 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151030A** QC Batch: **R103929**				PrepDate			Analyst: **QBM**
Sulfate	450	1.6	25		mg/L	50	10/30/2015 09:22 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	10/31/2015 03:00 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.6	0.062	0.50		mg/L	5	10/31/2015 11:21 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	450	1.6	25		mg/L	50	10/31/2015 06:23 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-003

Client Sample ID: OW-02D-4Q15
Collection Date: 10/27/2015 12:08:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	10/31/2015 03:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	2.2	0.062	0.50		mg/L	5	10/31/2015 11:36 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	460	1.6	25		mg/L	50	10/31/2015 06:55 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	1900	16	250		mg/L	500	10/31/2015 04:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.8	0.062	0.50		mg/L	5	10/31/2015 11:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	450	1.6	25		mg/L	50	10/31/2015 08:13 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-005

Client Sample ID: OW-02S-4Q15
Collection Date: 10/27/2015 12:44:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151030A** QC Batch: **R103929**				PrepDate			Analyst: **QBM**
Chloride	610	6.3	100		mg/L	200	10/30/2015 09:06 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	3.3	0.025	0.20		mg/L	2	11/1/2015 12:07 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151030A** QC Batch: **R103929**				PrepDate			Analyst: **QBM**
Sulfate	97	0.65	10		mg/L	20	10/30/2015 05:28 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-006

Client Sample ID: OW-071-4Q15
Collection Date: 10/27/2015 12:54:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	610	6.3	100		mg/L	200	10/31/2015 05:05 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	3.4	0.012	0.10		mg/L	1	11/1/2015 12:39 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	100	0.65	10		mg/L	20	10/31/2015 08:29 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017400
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017400-007

Client Sample ID: OW-05D-4Q15
Collection Date: 10/27/2015 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	10/31/2015 05:21 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.8	0.062	0.50		mg/L	5	11/1/2015 12:54 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	450	1.6	25		mg/L	50	10/31/2015 08:44 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	1900	16	250		mg/L	500	10/31/2015 05:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.7	0.062	0.50		mg/L	5	11/1/2015 01:10 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	450	1.6	25		mg/L	50	10/31/2015 09:00 PM

Qualifiers:

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

ASSET LABORATORIES
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ASSET Laboratories

Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**MB-R103929_CL**	SampType:	**MBLK**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**PBW**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	**LCS-R103929_CL**	SampType:	**LCS**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**LCSW**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.487	0.50	2.500	0	99.5	90	110				

Sample ID	**N017399-001BDUP**	SampType:	**DUP**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**ZZZZZZ**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1000.800	100						1021	2.04	20	

Sample ID	**N017399-002CMS**	SampType:	**MS**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**ZZZZZZ**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3402.500	250	1250	2154	99.8	80	120				

Sample ID	**N017399-002CMSD**	SampType:	**MSD**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**
Client ID:	**ZZZZZZ**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3483.500	250	1250	2154	106	80	120	3402	2.35	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R103951_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R103951	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125490

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.428	0.50	2.500	0	97.1	90	110				

Sample ID	N017400-002DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2008.000	250						1973	1.76	20	

Sample ID	N017400-003CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3205.500	250	1250	1975	98.4	80	120				

Sample ID	N017400-003CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3261.000	250	1250	1975	103	80	120	3206	1.72	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R103951_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R103951_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.413	0.10	2.500	0	96.5	90	110				

Sample ID	N017390-001CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.745	0.50	12.50	1.315	83.4	80	120				

Sample ID	N017390-001CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	12.100	0.50	12.50	1.315	86.3	80	120	11.74	2.98	20	

Sample ID	N017400-005CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	11/1/2015	SeqNo:	2125475

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.320	0.20						3.298	0.665	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R103929_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	PBW	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R103929_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	LCSW	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124244

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.961	0.50	5.000	0	99.2	90	110				

Sample ID	N017399-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124264

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	369.700	25						366.3	0.924	20	

Sample ID	N017399-002CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124268

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1009.900	50	500.0	488.4	104	80	120				

Sample ID	N017399-002CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103929
Client ID:	ZZZZZZ	Batch ID:	R103929	TestNo:	EPA 300.0			Analysis Date:	10/30/2015	SeqNo:	2124269

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	977.300	50	500.0	488.4	97.8	80	120	1010	3.28	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R103951_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R103951_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.848	0.50	5.000	0	97.0	90	110				

Sample ID	N017400-002DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	457.050	25						453.0	0.879	20	

Sample ID	N017400-003CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	727.000	25	250.0	457.2	108	80	120				

Sample ID	N017400-003CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125534

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	720.100	25	250.0	457.2	105	80	120	727.0	0.954	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.6	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.3	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.3	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.5	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.6	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R104043	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	PBW	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131124

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

Sample ID	LCS-R104043	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	LCSW	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131125

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

Sample ID	N017390-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	ZZZZZZ	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131127

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.897	0.25						2.980	2.81	20	

Sample ID	N017390-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	ZZZZZZ	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.526	0.25	2.500	2.980	102	75	125				

Sample ID	N017390-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104043
Client ID:	ZZZZZZ	Batch ID:	R104043	TestNo:	SM4500-NO3			Analysis Date:	11/8/2015	SeqNo:	2131129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.289	0.25	2.500	2.980	92.4	75	125	5.526	4.38	20	

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 9:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	65	17	20		ug/L	1	11/3/2015 07:44 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-01M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 10:49:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	37	17	20		ug/L	1	11/3/2015 09:06 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151104A**	QC Batch: **52882**				PrepDate	**10/29/2015**	Analyst: **CEI**
Sodium	1300000	1200	50000		ug/L	100	11/4/2015 01:04 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_151104A**	QC Batch: **52882**			PrepDate	**10/29/2015**		Analyst: **CEI**
Sodium	1400000	1200	50000		ug/L	100	11/4/2015 01:08 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **ICP2_151104A**	QC Batch: **52882**			PrepDate	**10/29/2015**		Analyst: **CEI**
Sodium	420000	290	12000		ug/L	25	11/4/2015 01:32 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151104A**	QC Batch: **52882**				PrepDate	**10/29/2015**	Analyst: **CEI**
Sodium	430000	290	12000		ug/L	25	11/4/2015 01:35 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151104A**	QC Batch: **52882**				PrepDate	**10/29/2015**	Analyst: **CEI**
Sodium	1300000	1200	50000		ug/L	100	11/4/2015 01:38 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_151104A**	QC Batch: **52882**			PrepDate	**10/29/2015**		Analyst: **CEI**
Sodium	1300000	1200	50000		ug/L	100	11/4/2015 01:42 PM

Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-52882	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	PBW	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2125956

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	139.838	500									

Sample ID	LCS2-52882	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	LCSW	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2125997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9627.679	500	10000	0	96.3	85	115				

Sample ID	N017400-004B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2126005

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1362631.918	50000	10000	1351000	118	75	125				

Sample ID	N017400-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	10/29/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52882	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/4/2015	SeqNo:	2126006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1337800.448	50000	10000	1351000	-130	75	125	1363000	1.84	20	S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-52897	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	PBW	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125062

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

Sample ID	LCS-52897	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	LCSW	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	92.772	20	100.0	0	92.8	85	115				

Sample ID	N017400-001C-MS1	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	131.065	20	100.0	65.31	65.8	75	125				S

Sample ID	N017400-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.120	20	100.0	65.31	66.8	75	125	131.1	0.802	20	S

Sample ID	N017427-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	166.778	20	100.0	105.6	61.2	75	125				S

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:08:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_151105C**	QC Batch: **52955**				PrepDate	**11/5/2015**	Analyst: **CEI**
Molybdenum	25	0.029	0.50		µg/L	1	11/5/2015 06:37 PM

Qualifiers:

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

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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 1:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_151105C**	QC Batch: **52955**				PrepDate	**11/5/2015**	Analyst: **CEI**
Molybdenum	18	0.029	0.50		µg/L	1	11/5/2015 06:43 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-02S-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:44:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_151105C**	QC Batch: **52955**				PrepDate	**11/5/2015**	Analyst: **CEI**
Molybdenum	30	0.029	0.50		µg/L	1	11/5/2015 06:57 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-071-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 12:54:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_151105C**	QC Batch: **52955**				PrepDate	**11/5/2015**	Analyst: **CEI**
Molybdenum	32	0.029	0.50		µg/L	1	11/5/2015 07:05 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05D-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 3:32:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Molybdenum	20	0.029	0.50		µg/L	1	11/5/2015 07:10 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *12-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05M-4Q15
Lab Order:	N017400	**Collection Date:**	10/27/2015 4:14:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017400-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Molybdenum	19	0.029	0.50		µg/L	1	11/5/2015 07:16 PM

Qualifiers:

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

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-52955**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **PBW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.053	0.50									

Sample ID **LCS-52955**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **LCSW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.494	0.50	10.00	0	94.9	85	115				

Sample ID **N017390-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.799	0.50	10.00	7.399	114	75	125				

Sample ID **N017390-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.430	0.50	10.00	7.399	110	75	125	18.80	1.98	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Marty Bloes	**EDD Requirement:** Excel EDD ☐ Geotracker ☐ Labspec ☐ Others ☑
Address: 1410 Rocky Ridge Dr # 330	**Company:** Arcadis	**Address:**	**QA/QC:** RTNE ☐ RWQCB ☐ CalTrans ☐ Level III ☐ LEVEL IV ☑ Regulatory ☐
Address: Roseville, CA 95661	**Email:** Dan.Bush@arcadis.com; Daniel.Moore@critigen.com		**Sampe Receipt Condition:** Y / N — 1. Chilled ☑ ☐; 2. Headspace ☐ ☑; 3. Container Intact ☑ ☐; 4. Seal Present ☐ ☑; 5. IR number 2; 6. Method of Cooling Ice
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	**Email to:** mbloes@pivox.com **PO#**	**Specify:** EQ EDD
Submitted By: Nara Tay		**Phone:** 949.727.1400, ext 200 **Fax:**	**Global ID:**
Title: Sample Tech	**Phone:** 916.786.3302 **Fax:**		**Specify State:**
Signature: **Date:**	**Sampled By:** Nara Tay		Sample Temp: 2.4, 2.6°C
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*		
Project Name: PG&E Topock - CMP	**Signature:** **Date:** 10/27/15		
Project Number: RC000753.0801			

Matrix: Ground ☑ Sediment ☐ Potable ☐ Soil ☐ NPDES ☐ Other Solid ☐ Surface ☐

Courier: ASSET — **Tracking No.**

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr(VI) (E218.6) (NH4)2, SO4, NH4, OH, 4°C, 250 ml Poly	Metals Dissolved (6010BDis) Cr, Mo, Na HNO3, 4°C; 500 ml Poly	Dissolved metals (Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na) (E200PP); HNO3, 4°C; 500 ml Poly	Metals Total (SW6010B) Fe: HNO3, 4°C; 500 ml Poly	Turbidity (SM2130): 4°C; 1000ml Poly	Specific Conductance (E120.1); 4°C; 1000ml Poly	Anions (E300.0) Chloride,Sulfate, Fluoride; 4°C; 1000ml	Anions (SM4500NO3E) Nitrate/Nitrite; H2SO4, 4°C; 125ml Poly	TDS (SM2540C); 4°C; 1000ml Poly	Total Alkalinity, speciated (SM2320B); 4°C; 1 L poly	Ammonia (SM4500NH3); H2SO4, 4°C; 125 mL poly	Gross Alpha/Beta (E900); HNO3; 2x1000ml Poly	Metals Dissolved (6020A/FF) Cr; HNO3, 4°C; 500 ml Poly	Ortho-Phosphate (E300.0); 4°C; 1000ml Poly	Turn Around Time	No. of container	Remarks
1	NO17400-1	OW-01D-4Q15	10/27/15	0949	X			X		X	X	X	X	X	X	X	X	X				10	6	
2	-2	OW-01M-4Q15	10/27/15	1049	X			X		X	X	X	X	X	X	X	X	X				10	6	
3	-3	OW-02D-4Q15	10/27/15	1208	X			X	X			X	X	X	X	X						10	4	
4	-4	OW-02M-4Q15	10/27/15	1337	X			X	X			X	X	X	X	X						10	4	
5	-5	OW-02S-4Q15	10/27/15	1244	X			X	X			X	X	X	X	X						10	4	
6	-6	OW-071-4Q15	10/27/15	1254	X			X	X			X	X	X	X	X						10	4	
7	-7	OW-05D-4Q15	10/27/15	1532	X			X	X			X	X	X	X	X						10	4	
8	-8	OW-05M-4Q15	10/27/15	1614	X			X	X			X	X	X	X	X						10	4	
9																								
10	NO17400-9	MW-202-4Q15	10/27/15	1630	X			X														10	1	
11																								
12																								

Relinquished by (Signature and Printed Name):	Date / Time: 10/27/1655	Received by (Signature and Printed Name):	Date / Time: 10/27/15@1652
Relinquished by (Signature and Printed Name):	Date / Time: 10/27/15@1905	Received by (Signature and Printed Name):	Date / Time: 10/27/15@1905
Relinquished by (Signature and Printed Name):	Date / Time:	Received by (Signature and Printed Name):	Date / Time:

Turn Around Time (TAT)
- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

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

Special Instruction:

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

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

ASSET Laboratories

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

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

Cooler Received/Opened On: 10/27/2015 Workorder: N017400

Rep sample Temp (Deg C): 1.4/2.6 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

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

Comments

Checklist Completed B for MBC 10/30/2015

Reviewed By: 11/4/15

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Nara Tep

28-Oct-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3C		
N017400-001F / OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	4OZP	1		
N017400-002F / OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	4OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N17400A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-DAY TAT.

Please analyze Ammonia by SM4500.

		Date/Time		Date/Time
Relinquished by:		10/28/15 1700	**Received by:**	GSO TRK# 529766169
Relinquished by:			**Received by:**	

ASSET Laboratories

WORK ORDER Summary

28-Oct-15

WorkOrder: N017400

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/27/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017400-001A	OW-01D-4Q15	10/27/2015 9:49:00 AM	11/10/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-001B			11/10/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/10/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/10/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/10/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/10/2015			MERCURY PREP	☐	☐	☐	WW
N017400-001C			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017400-001D			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-001E			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-001F			11/10/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
N017400-002A	OW-01M-4Q15	10/27/2015 10:49:00 AM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Oct-15

WorkOrder: N017400

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/27/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017400-002B	OW-01M-4Q15	10/27/2015 10:49:00 AM	11/10/2015	Groundwater		AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/10/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/10/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/10/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/10/2015			MERCURY PREP	☐	☐	☐	WW
N017400-002C			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017400-002D			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-002E			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-002F			11/10/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
N017400-003A	OW-02D-4Q15	10/27/2015 12:08:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-003B			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Oct-15

WorkOrder: N017400

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/27/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017400-003B	OW-02D-4Q15	10/27/2015 12:08:00 PM	11/10/2015	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017400-003C			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-003D			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-004A	OW-02M-4Q15	10/27/2015 1:37:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-004B			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017400-004C			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Oct-15

WorkOrder: N017400

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/27/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017400-004D	OW-02M-4Q15	10/27/2015 1:37:00 PM	11/10/2015	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-005A	OW-02S-4Q15	10/27/2015 12:44:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-005B			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017400-005C			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-005D			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-006A	OW-071-4Q15	10/27/2015 12:54:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-006B			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017400-006C			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Oct-15

WorkOrder: N017400

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/27/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017400-006C	OW-071-4Q15	10/27/2015 12:54:00 PM	11/10/2015	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-006D			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-007A	OW-05D-4Q15	10/27/2015 3:32:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-007B			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017400-007C			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/10/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-007D			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-008A	OW-05M-4Q15	10/27/2015 4:14:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-008B			11/10/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/10/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017400-008C			11/10/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/10/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Oct-15

WorkOrder: N017400

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/27/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017400-008C	OW-05M-4Q15	10/27/2015 4:14:00 PM	11/10/2015	Groundwater		Total Dissolved Solids Prep	☐	☐	☐	WW
			11/10/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/10/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/10/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017400-008D			11/10/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017400-009A	MW-202-4Q15	10/27/2015 4:30:00 PM	11/10/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017400-010A	FOLDER		11/10/2015		EDD	Client specific project	☐	☐	☐	LAB
			11/10/2015		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N017400

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 200.7, EPA 200.8, EPA 6010B, EPA 6020, EPA 245.1
Ryan Balilu	EPA 218.6, SM4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B, SM 2320B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103852 **Analyst:** LSR

ASSET #: N017400 **Date Analyzed:** 10/28/2015

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/3/2015

2nd Level Reviewer: Nancy 11/10/201 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 10/27/15 1050

Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 uS/cm	CINV - 150619A	9.57 uS/cm @ 21.2°C	% Rec: (90-110%)
1414	- 150601B	1418 @ 21.2°C	
10009	- 150619B	10110 @ 21.2°C	
99996	- 150430A	101600 @ 21.2°C	

	Sample ID	Matrix	Reading	Comments
1	ND17390 - 001C	Water	5760 uS/cm @ 22.1°C	
2	- 001C DUP		5770 @ 21.6°C	
3				
4				
5				
6				
7				
8	1413 uS/cm	CINV - 150527A	1419 uS/cm @ 21.7°C	
9	10000	- 141205A	10250 @ 21.5°C	
10	100061	- 150309G	103200 @ 21.5°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 10/28/15 1415

Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 uS/cm	CINV - 150619A	9.61 uS/cm @ 20.9°C	% Rec: (90-110%)
1414	- 150601B	1418 @ 20.9°C	
10009	- 150619B	10090 @ 20.9°C	
99996	- 150430A	100300 @ 20.9°C	

	Sample ID	Matrix	Reading	Comments
1	ND17399 - 001B	Water	4000 uS/cm @ 23.6°C	
2	- 002C		7640 @ 23.4°C	
3	- 002C DUP		7640 @ 23.3°C	
4	ND17400 - 001D		6870 @ 23.1°C	
5	- 002D		6680 @ 22.7°C	Julia Ramit 11/3/2015
6	- 003C		6570 @ 21.8°C	
7	- 004C		6730 @ 21.9°C	
8	- 005C		2260 @ 22.2°C	
9	- 006C		2210 @ 22.7°C	
10	- 007C		6940 @ 22.6°C	
Dup	- 008C		6980 @ 22.8°C	Accept: 10% water, 20% soil
	Std Chk: 1413 10000 100061 uS/cm	CINV - 150527A 141205A 150309AG	1431 uS/cm @ 20.8°C 10200 @ 21.0°C 103400 @ 21.2°C	% Rec: (90-110%)

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52871 **Analyst:** LSR

ASSET #: N017400 **Date Analyzed:** 10/28/2015

Method: EPA 160.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

~~MS/MSD failed however LCS/LCSD passed criteria~~.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/2/2015

2nd Level Reviewer: Nancy 11/10/201 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N017400-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(54.6994 - 54.6135)*1000000}{20}$$

= 4295 mg/L

Reporting result in two significant figures,

TDS =4300 mg/L

Divia Ramit 11/2/2015

SAMPLE PREPARATION LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
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ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/28/2015 2:20:52**
Prep End Date: **10/29/2015 11:10:0**

Initials/ Date: Lilia Ramit 11/2/2015

Prep Batch **52871** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52871	Water		100	☐	0	0	100	1.000		
MB-52871	Water		100	☐	0	0	100	1.000		
N017399-001B	Groundwater		40	☐	0	0	100	2.500		
N017399-002C	Groundwater		20	☐	0	0	100	5.000		
N017399-002C-DU	Groundwater		20	☐	0	0	100	5.000		
N017400-001D	Groundwater		20	☐	0	0	100	5.000		
N017400-002D	Groundwater		20	☐	0	0	100	5.000		
N017400-003C	Groundwater		20	☐	0	0	100	5.000		
N017400-004C	Groundwater		20	☐	0	0	100	5.000		
N017400-005C	Groundwater		60	☐	0	0	100	1.667		
N017400-006C	Groundwater		60	☐	0	0	100	1.667		
N017400-007C	Groundwater		20	☐	0	0	100	5.000		
N017400-008C	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Spk ID	Spike Name	SampType	AmtAdd
IWST151026A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/28/2015**
Prep End Date:

Initials/ Date: Lilia Ramit 11/2/2015

Prep Batch **52871** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

	Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check	
LC	LCS-52871	Water	1WS1151026 A	100	☐	0	0	100	1.000	74.0446 74.0444	74.1489 74.1431	987
BC	MB-52871	Water		100	☐	0	0	100	1.000	62.9611 62.9609	62.9611 62.9612	3
AC	N017399-001B	Groundwater	4000	100/40	☐	0	0	100	1.000	64.0737 64.0737	64.1649 64.1653	2290
24	N017399-002C	Groundwater	7640	100/20	☐	0	0	100	1.000	55.5250 55.5249	55.6142 55.6163	4570
RR	N017399-002C-DU	Groundwater	↓	100/20	☐	0	0	100	1.000	63.9409 63.9402	64.0308 64.0307	4525
G	N017400-001D	Groundwater	6870	100/20	☐	0	0	100	1.000	54.6133 54.6135	54.6991 54.6994	4295
BB	N017400-002D	Groundwater	6680	100/20	☐	0	0	100	1.000	63.4130 63.4130	63.4946 63.4950	4100
8	N017400-003C	Groundwater	6570	100/20	☐	0	0	100	1.000	54.5837 54.5837	54.9651 54.9651	4070
3	N017400-004C	Groundwater	6730	100/20	☐	0	0	100	1.000	53.7905 53.7905	53.8770 53.8723	4090
61	N017400-005C	Groundwater	2260	100/60	☐	0	0	100	1.000	53.9460 53.9460	54.0233 54.0236	1293, 3333
20	N017400-006C	Groundwater	2310	100/60	☐	0	0	100	1.000	61.2037 61.2036	61.2809 61.2813	1295
42	N017400-007C	Groundwater	6940	100/20	☐	0	0	100	1.000	54.2782 54.2783	54.3593 54.3590	4035
C	N017400-008C	Groundwater	6930	100/20	☐	0	0	100	1.000	55.7468 55.7469	55.8281 55.8279	4050

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TSS / TS / TDS Preparation and Runlog

Name of Test: TDS

QC Batch No.: 58871

Date Prepared: 10/28/15
Time Prepared: 1420 (Start Time)
Prepared By: LQR

Date of Weighing: 10/29/15
Time of Reading: 915 (Start time)
Weighings performed by: LQR

Oven Temperature: 180°C
Filter Paper Lot #: T50410

	Sample ID	Sample Vol. (ml)	Crucible+Filter 1st Final Tare Wt.(g)	Crucible+Filter 2nd Final Tare Wt.(g)	Crucible+Filter+Sample 1st Final Wt(g)	Crucible+Filter+Sample 2nd Final Wt(g)	TSS/TS/TDS (mg/L)	Comments
	Blank MB-52871	100	62.9611	62.9609	62.9611	62.9612	3	TDS/COND RATIO
1	LCS - 52871	100	74.0446	74.0444	74.1439	74.1431	987	
2	ND17399-001B	40	64.0737	64.0737	64.1649	64.1653	2290	2290/4000 = 0.572
3	-002C	20	55.5250	55.5249	55.6162	55.6163	4570	4570/7640 = 0.598
4	-002C DUP	20	63.9404	63.9402	64.0308	64.0307	4585	4585/7640 = 0.592
5	ND17400-009D	20	54.6133	54.6135	54.6991	54.6994	4395	4395/6870 = 0.625
6	-002D	20	63.4130	63.4120	63.4946	63.4950	4100	4100/6680 = 0.614
7	-003C	20	54.8837	54.8837	54.9651	54.9651	4070	4070/6570 = 0.619
8	-004C	20	53.7905	53.7905	53.8720	53.8723	4090	4090/6730 = 0.608
9	-005C	60	53.9460	53.9460	54.0233	54.0236	1293.3333	1293.3333/2260 = 0.572
10	-006C	60	61.2037	61.2036	61.2809	61.2813	1295	1295/2310 = 0.561
11	-007C	20	54.2782	54.2783	54.3593	54.3590	4035	4035/6940 = 0.581
12	-008C	20	55.7468	55.7469	55.8281	55.8279	4050	4050/6930 = 0.584
13								
14								
15								
16								
17								Up 10/29/15
18								
19								
20								
Dup								

Julia Ramit 11/2/2015

Logbook #13

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:

A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO
Date Finished:10/29/15								
MB-52871	100	62.9609	62.9612	3	1	3		
LCS-52871	100	74.0444	74.1431	987	1	987		
N017399-001B	40	64.0737	64.1653	916	2.5	2290	4000	0.572
N017399-002C	20	55.5249	55.6163	914	5	4570	7640	0.598
N017399-002CDUP	20	63.9402	64.0307	905	5	4525	7640	0.592
N017400-001D	20	54.6135	54.6994	859	5	4295	6870	0.625
N017400-002D	20	63.413	63.495	820	5	4100	6680	0.614
N017400-003C	20	54.8837	54.9651	814	5	4070	6570	0.619
N017400-004C	20	53.7905	53.8723	818	5	4090	6730	0.608
N017400-005C	60	53.946	54.0236	776	1.66666667	1293.33333	2260	0.572
N017400-006C	60	61.2036	61.2813	777	1.66666667	1295	2310	0.561
N017400-007C	20	54.2783	54.359	807	5	4035	6940	0.581
N017400-008C	20	55.7469	55.8279	810	5	4050	6930	0.584

Silvia Ramit 11/2/2015

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52910
ASSET #: N017400

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/4/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N017399-002B PS/MS/MSD & N017415-007B MS failed, due to high analyte cocentration already present in the sample. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date:

2nd Level Reviewer 11/12/2015 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52910
ASSET #: N017400

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/10/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Dilution test of Mg failed. However LCS passed criteria.
% Rec of Several analytes in N017399-001A PS/MS/MSD & N017415-006B MS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date: —

2nd Level Reviewer 11/12/2015 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017400-001B** , the concentration in ug/L is calculated as follows:

Calcium , ug/L = 163.377 * 1 * (25/25) * 1000

Calcium , ug/L = 163377

Reporting results in two significant figures,

Calcium , ug/L = 160000



% RSD SUMMARY

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	4.14	15	PASS
Standard1	ICAL	1	K	0.1	8.28	15	PASS
Standard2	ICAL	1	K	1	0.49	15	PASS
Standard3	ICAL	1	K	5	0.38	15	PASS
Standard4	ICAL	1	K	10	0.22	15	PASS
Standard5	ICAL	1	K	20	0.077	15	PASS
Standard6	ICAL	1	K	40	0.096	15	PASS
ICV	ICV	1	K	10.019	0.074	15	PASS
ICB	ICB	1	K	0.046	23.2	15	<PQL
ICSA1	ICSA	1	K	0.024	41.89	15	<PQL
ICSAB1	ICSAB	1	K	9.95	0.15	15	PASS
MB-52910	MBLK	1	K	0.056	18.26	15	<PQL
LCS2-52910	LCS	1	K	20.46	1.049	15	PASS
CCV1	CCV	1	K	9.91	0.12	15	PASS
CCB1	CCB	1	K	0.049	25.67	15	<PQL
N017399-001A	SAMP	5	K	1.84	0.5	15	PASS
N017399-002B	SAMP	5	K	3.22	0.22	15	PASS
N017400-001B	SAMP	5	K	2.54	0.52	15	PASS
N017400-002B	SAMP	5	K	2.69	0.46	15	PASS
N017415-001B	SAMP	5	K	2.14	0.21	15	PASS
N017415-002B	SAMP	5	K	2.41	0.38	15	PASS
N017415-003B	SAMP	5	K	2.24	0.2	15	PASS
N017415-004B	SAMP	5	K	2.76	0.18	15	PASS
N017415-005B	SAMP	5	K	2.79	0.64	15	PASS
N017415-006B	SAMP	5	K	2.53	0.54	15	PASS
CCV2	CCV	1	K	9.82	0.16	15	PASS
CCB2	CCB	1	K	0.085	12.98	15	PASS
N017415-007B	SAMP	5	K	2.64	0.34	15	PASS
N017427-001B	SAMP	5	K	2.3	0.75	15	PASS
N017427-002B	SAMP	5	K	2.53	1.42	15	PASS
CCV3	CCV	1	K	10	0.083	15	PASS
CCB3	CCB	1	K	0.063	10.31	15	PASS
N017399-001A	SAMP	25	K	0.45	2.079	15	PASS
N017399-002B	SAMP	25	K	0.7	2.015	15	PASS
N017399-002B-PS	PS	5	K	7.77	0.17	15	PASS
N017399-002B-MS2	MS	5	K	7.73	0.036	15	PASS
N017399-002B-MSD2	MSD	5	K	7.61	0.16	15	PASS
N017399-002B	SAMP	50	K	0.41	1.73	15	PASS
N017399-002B	SAMP	250	K	0.17	0.68	15	PASS
CCV4	CCV	1	K	9.75	0.38	15	PASS
CCB4	CCB	1	K	0.066	14.65	15	PASS
N017399-002B-PS	PS	50	K	0.81	1.28	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017399-002B-MS2	MS	50	K	0.79	0.39	15	PASS
N017399-002B-MSD2	MSD	50	K	0.79	0.86	15	PASS
N017400-001B	SAMP	50	K	0.32	1.14	15	PASS
N017400-002B	SAMP	50	K	0.35	3.79	15	PASS
N017415-001B	SAMP	50	K	0.28	4.028	15	PASS
N017415-002B	SAMP	50	K	0.3	4.56	15	PASS
N017415-003B	SAMP	50	K	0.29	4.15	15	PASS
N017415-004B	SAMP	100	K	0.35	4.076	15	PASS
N017415-005B	SAMP	100	K	0.34	1.64	15	PASS
CCV5	CCV	1	K	9.93	0.049	15	PASS
CCB5	CCB	1	K	0.072	14.33	15	PASS
ICSA2	ICSA	1	K	0.052	9.45	15	PASS
ICSAB2	ICSAB	1	K	10.014	0.13	15	PASS
N017415-006B	SAMP	100	K	0.33	2.44	15	PASS
N017415-007B	SAMP	50	K	0.31	0.65	15	PASS
N017415-007B-MS2	MS	5	K	7.18	0.15	15	PASS
N017415-007B-MS2	MS	50	K	0.76	2.047	15	PASS
N017427-001B	SAMP	50	K	0.31	3.39	15	PASS
N017427-002B	SAMP	50	K	0.33	4.17	15	PASS
CCV6	CCV	1	K	10.093	0.19	15	PASS
CCB6	CCB	1	K	0.077	13.68	15	PASS
CCV7	CCV	1	K	10.11	0.062	15	PASS
CCB7	CCB	1	K	0.072	4.51	15	PASS
ICSA3	ICSA	1	K	0.068	15.84	15	<PQL
ICSAB3	ICSAB	1	K	9.98	0.15	15	PASS
CalBlk	IBLK	1	Na	0	1.8	15	PASS
Standard1	ICAL	1	Na	0.1	2.83	15	PASS
Standard2	ICAL	1	Na	1	0.4	15	PASS
Standard3	ICAL	1	Na	5	0.29	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.29	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	10.079	0.18	15	PASS
ICB	ICB	1	Na	-0.0041	172.78	15	<PQL
ICSA1	ICSA	1	Na	-0.0061	67.66	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.4	15	PASS
MB-52910	MBLK	1	Na	-0.021	18.51	15	<PQL
LCS2-52910	LCS	1	Na	19.3	1.19	15	PASS
CCV1	CCV	1	Na	9.81	0.19	15	PASS
CCB1	CCB	1	Na	-0.019	13.33	15	PASS
N017399-001A	SAMP	5	Na	152.09	0.61	15	PASS
N017399-002B	SAMP	5	Na	299.62	0.76	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017400-001B	SAMP	5	Na	295.92	0.48	15	PASS
N017400-002B	SAMP	5	Na	281.18	1.031	15	PASS
N017415-001B	SAMP	5	Na	301.22	0.98	15	PASS
N017415-002B	SAMP	5	Na	294.52	0.42	15	PASS
N017415-003B	SAMP	5	Na	307.16	0.33	15	PASS
N017415-004B	SAMP	5	Na	326.62	0.76	15	PASS
N017415-005B	SAMP	5	Na	324.04	0.71	15	PASS
N017415-006B	SAMP	5	Na	313.25	0.84	15	PASS
CCV2	CCV	1	Na	9.68	0.25	15	PASS
CCB2	CCB	1	Na	0.15	3.23	15	PASS
N017415-007B	SAMP	5	Na	268.2	0.44	15	PASS
N017427-001B	SAMP	5	Na	262.4	0.34	15	PASS
N017427-002B	SAMP	5	Na	271.7	7.11	15	PASS
CCV3	CCV	1	Na	9.76	0.25	15	PASS
CCB3	CCB	1	Na	0.07	4.77	15	PASS
N017399-001A	SAMP	25	Na	31.008	0.64	15	PASS
N017399-002B	SAMP	25	Na	59.94	0.85	15	PASS
N017399-002B-PS	PS	5	Na	302.78	0.44	15	PASS
N017399-002B-MS2	MS	5	Na	301.14	0.61	15	PASS
N017399-002B-MSD2	MSD	5	Na	294.59	0.73	15	PASS
N017399-002B	SAMP	50	Na	29.16	0.74	15	PASS
N017399-002B	SAMP	250	Na	5.95	0.78	15	PASS
CCV4	CCV	1	Na	9.48	0.31	15	PASS
CCB4	CCB	1	Na	0.068	3.69	15	PASS
N017399-002B-PS	PS	50	Na	29.98	0.67	15	PASS
N017399-002B-MS2	MS	50	Na	29.42	0.57	15	PASS
N017399-002B-MSD2	MSD	50	Na	29.42	0.79	15	PASS
N017400-001B	SAMP	50	Na	29.087	0.96	15	PASS
N017400-002B	SAMP	50	Na	27.48	0.74	15	PASS
N017415-001B	SAMP	50	Na	29.085	0.57	15	PASS
N017415-002B	SAMP	50	Na	28.83	0.79	15	PASS
N017415-003B	SAMP	50	Na	29.92	0.76	15	PASS
N017415-004B	SAMP	100	Na	31.4	0.96	15	PASS
N017415-005B	SAMP	100	Na	31.83	0.69	15	PASS
CCV5	CCV	1	Na	9.53	0.34	15	PASS
CCB5	CCB	1	Na	0.024	22.21	15	<PQL
ICSA2	ICSA	1	Na	0.017	10.17	15	PASS
ICSAB2	ICSAB	1	Na	9.62	0.11	15	PASS
N017415-006B	SAMP	100	Na	30.36	0.51	15	PASS
N017415-007B	SAMP	50	Na	24.4	0.52	15	PASS
N017415-007B-MS2	MS	5	Na	268.79	0.48	15	PASS
N017415-007B-MS2	MS	50	Na	26.8	0.62	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017427-001B	SAMP	50	Na	26.59	0.68	15	PASS
N017427-002B	SAMP	50	Na	28.33	0.51	15	PASS
CCV6	CCV	1	Na	9.59	0.12	15	PASS
CCB6	CCB	1	Na	0.019	22.17	15	<PQL
CCV7	CCV	1	Na	9.56	0.0099	15	PASS
CCB7	CCB	1	Na	0.0058	83.38	15	<PQL
ICSA3	ICSA	1	Na	0.00055	577.89	15	<PQL
ICSAB3	ICSAB	1	Na	9.44	0.2	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Al	0	81.49	15	<PQL
Standard1	ICAL	1	Al	0.05	0.17	15	PASS
Standard2	ICAL	1	Al	1	0.65	15	PASS
Standard3	ICAL	1	Al	2	0.13	15	PASS
Standard4	ICAL	1	Al	5	0.061	15	PASS
Standard5	ICAL	1	Al	7.5	0.042	15	PASS
Standard6	ICAL	1	Al	10	0.032	15	PASS
Standard7	ICAL	1	Al	20	0.14	15	PASS
ICV	ICV	1	Al	10.12	0.19	15	PASS
ICB	ICB	1	Al	-0.0022	75.43	15	<PQL
LLCCV1	CCV1	1	Al	0.053	4.48	20	PASS
LLCCV1	CCV1	1	Al	0.052	3.0071	20	PASS
ICSA1	ICSA	1	Al	510.33	0.47	15	PASS
ICSAB1	ICSAB	1	Al	505.3	0.34	15	PASS
MB-52910	MBLK	1	Al	0.0011	126.36	15	<PQL
LCS1-52910	LCS	1	Al	10.14	0.077	15	PASS
N017399-001A	SAMP	1	Al	-0.018	13.29	15	PASS
N017399-001A	SAMP	5	Al	-0.007	29.9	15	<PQL
N017399-001A-PS	PS	1	Al	5.25	0.14	15	PASS
N017399-001A-MS1	MS	1	Al	5.27	0.071	15	PASS
N017399-001A-MSD1	MSD	1	Al	5.25	0.14	15	PASS
N017399-002B	SAMP	1	Al	-0.014	26.57	15	<PQL
N017400-001B	SAMP	1	Al	-0.01	12.54	15	PASS
N017400-002B	SAMP	1	Al	0.043	0.83	15	PASS
CCV1	CCV	1	Al	9.87	0.048	15	PASS
CCB1	CCB	1	Al	-0.0044	21.83	15	<PQL
N017415-001B	SAMP	1	Al	-0.01	11.57	15	PASS
N017415-002B	SAMP	1	Al	0.008	6.81	15	PASS
N017415-003B	SAMP	1	Al	-0.011	29.6	15	<PQL
N017415-004B	SAMP	1	Al	-0.01	5.54	15	PASS
N017415-005B	SAMP	1	Al	-0.011	8.0048	15	PASS
N017415-006B	SAMP	1	Al	-0.0085	6.31	15	PASS
N017415-006B-MS1	MS	1	Al	5.25	0.084	15	PASS
N017415-007B	SAMP	1	Al	-0.012	12.77	15	PASS
N017427-001B	SAMP	1	Al	-0.0092	9.24	15	PASS
N017427-002B	SAMP	1	Al	-0.0099	24.79	15	<PQL
CCV2	CCV	1	Al	9.94	0.15	15	PASS
CCB2	CCB	1	Al	-0.0044	5.82	15	PASS
LLCCV2	CCV2	1	Al	0.05	2.95	20	PASS
LLCCV2	CCV2	1	Al	0.051	4.29	20	PASS
ICSA2	ICSA	1	Al	495.26	0.35	15	PASS
ICSAB2	ICSAB	1	Al	491.41	0.65	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.22	15	PASS
Standard1	ICAL	1	B	0.1	0.54	15	PASS
Standard3	ICAL	1	B	1	0.33	15	PASS
Standard4	ICAL	1	B	2.5	0.41	15	PASS
Standard5	ICAL	1	B	3.75	0.34	15	PASS
Standard6	ICAL	1	B	5	0.46	15	PASS
Standard7	ICAL	1	B	10	0.28	15	PASS
ICV	ICV	1	B	5.083	0.41	15	PASS
ICB	ICB	1	B	0.02	12.16	15	PASS
LLCCV1	CCV1	1	B	0.1	0.43	20	PASS
LLCCV1	CCV1	1	B	0.096	1.77	20	PASS
ICSA1	ICSA	1	B	0.038	1.97	15	PASS
ICSAB1	ICSAB	1	B	0.97	0.089	15	PASS
MB-52910	MBLK	1	B	-0.0019	26.93	15	<PQL
LCS1-52910	LCS	1	B	5.043	0.46	15	PASS
N017399-001A	SAMP	1	B	0.54	0.85	15	PASS
N017399-001A	SAMP	5	B	0.12	0.33	15	PASS
N017399-001A-PS	PS	1	B	3.027	0.42	15	PASS
N017399-001A-MS1	MS	1	B	3.043	0.28	15	PASS
N017399-001A-MSD1	MSD	1	B	3.041	0.31	15	PASS
N017399-002B	SAMP	1	B	1.034	0.19	15	PASS
N017400-001B	SAMP	1	B	1.069	0.31	15	PASS
N017400-002B	SAMP	1	B	0.98	0.17	15	PASS
CCV1	CCV	1	B	5.018	0.6	15	PASS
CCB1	CCB	1	B	0.033	10.39	15	PASS
N017415-001B	SAMP	1	B	0.95	0.017	15	PASS
N017415-002B	SAMP	1	B	1.14	0.092	15	PASS
N017415-003B	SAMP	1	B	1.093	0.22	15	PASS
N017415-004B	SAMP	1	B	1.13	0.33	15	PASS
N017415-005B	SAMP	1	B	1.15	0.2	15	PASS
N017415-006B	SAMP	1	B	1.13	0.4	15	PASS
N017415-006B-MS1	MS	1	B	3.44	0.31	15	PASS
N017415-007B	SAMP	1	B	0.93	0.29	15	PASS
N017427-001B	SAMP	1	B	0.93	0.47	15	PASS
N017427-002B	SAMP	1	B	1.0004	0.66	15	PASS
CCV2	CCV	1	B	5.11	0.3	15	PASS
CCB2	CCB	1	B	0.047	4.78	15	PASS
LLCCV2	CCV2	1	B	0.13	1.21	20	PASS
LLCCV2	CCV2	1	B	0.12	1.17	20	PASS
ICSA2	ICSA	1	B	0.063	2.22	15	PASS
ICSAB2	ICSAB	1	B	1	0.085	15	PASS
CalBlk	IBLK	1	Ca	0	14.52	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Ca	0.2	6.94	15	PASS
Standard2	ICAL	1	Ca	1	1.28	15	PASS
Standard3	ICAL	1	Ca	2	1.37	15	PASS
Standard4	ICAL	1	Ca	5	0.34	15	PASS
Standard5	ICAL	1	Ca	7.5	0.71	15	PASS
Standard6	ICAL	1	Ca	10	0.25	15	PASS
Standard7	ICAL	1	Ca	20	0.85	15	PASS
ICV	ICV	1	Ca	10.13	0.46	15	PASS
ICB	ICB	1	Ca	-0.0045	540.23	15	<PQL
LLCCV1	CCV1	1	Ca	0.23	5.19	20	PASS
LLCCV1	CCV1	1	Ca	0.21	3.37	20	PASS
ICSA1	ICSA	1	Ca	518.03	0.038	15	PASS
ICSAB1	ICSAB	1	Ca	505.49	0.27	15	PASS
MB-52910	MBLK	1	Ca	0.029	69.92	15	<PQL
LCS1-52910	LCS	1	Ca	9.63	0.13	15	PASS
N017399-001A	SAMP	1	Ca	110.52	0.43	15	PASS
N017399-001A	SAMP	5	Ca	23.42	0.35	15	PASS
N017399-001A-PS	PS	1	Ca	121.53	0.15	15	PASS
N017399-001A-MS1	MS	1	Ca	120.16	0.35	15	PASS
N017399-001A-MSD1	MSD	1	Ca	120.34	0.072	15	PASS
N017399-002B	SAMP	1	Ca	232.24	0.24	15	PASS
N017400-001B	SAMP	1	Ca	163.38	0.25	15	PASS
N017400-002B	SAMP	1	Ca	144.24	0.19	15	PASS
CCV1	CCV	1	Ca	9.64	0.21	15	PASS
CCB1	CCB	1	Ca	0.025	189.16	15	<PQL
N017415-001B	SAMP	1	Ca	93.73	0.38	15	PASS
N017415-002B	SAMP	1	Ca	150.27	0.23	15	PASS
N017415-003B	SAMP	1	Ca	92.77	0.083	15	PASS
N017415-004B	SAMP	1	Ca	213	0.24	15	PASS
N017415-005B	SAMP	1	Ca	214.56	0.26	15	PASS
N017415-006B	SAMP	1	Ca	146.35	0.31	15	PASS
N017415-006B-MS1	MS	1	Ca	148.85	0.21	15	PASS
N017415-007B	SAMP	1	Ca	208.92	0.66	15	PASS
N017427-001B	SAMP	1	Ca	158.09	0.17	15	PASS
N017427-002B	SAMP	1	Ca	182.53	0.7	15	PASS
CCV2	CCV	1	Ca	9.76	0.92	15	PASS
CCB2	CCB	1	Ca	0.011	532.77	15	<PQL
LLCCV2	CCV2	1	Ca	0.2	6.42	20	PASS
LLCCV2	CCV2	1	Ca	0.16	12.97	20	PASS
ICSA2	ICSA	1	Ca	490.66	0.17	15	PASS
ICSAB2	ICSAB	1	Ca	478.67	0.15	15	PASS
CalBlk	IBLK	1	Fe	0	426.32	15	<PQL

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Fe	0.02	1.98	15	PASS
Standard2	ICAL	1	Fe	0.05	0.94	15	PASS
Standard3	ICAL	1	Fe	2	0.16	15	PASS
Standard4	ICAL	1	Fe	5	0.13	15	PASS
Standard5	ICAL	1	Fe	7.5	0.088	15	PASS
Standard6	ICAL	1	Fe	10	0.14	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.12	0.3	15	PASS
ICB	ICB	1	Fe	-0.0019	34.48	15	<PQL
LLCCV1	CCV1	1	Fe	0.018	2.26	20	PASS
LLCCV1	CCV1	1	Fe	0.017	0.51	20	PASS
ICSA1	ICSA	1	Fe	185.4	0.4	15	PASS
ICSAB1	ICSAB	1	Fe	183.71	0.29	15	PASS
MB-52910	MBLK	1	Fe	0.0046	37.4	15	<PQL
LCS1-52910	LCS	1	Fe	0.11	0.26	15	PASS
N017399-001A	SAMP	1	Fe	0.00019	236.98	15	<PQL
N017399-001A	SAMP	5	Fe	-0.0028	9.6	15	PASS
N017399-001A-PS	PS	1	Fe	0.05	0.97	15	PASS
N017399-001A-MS1	MS	1	Fe	0.052	1.31	15	PASS
N017399-001A-MSD1	MSD	1	Fe	0.05	0.6	15	PASS
N017399-002B	SAMP	1	Fe	-0.00014	88.36	15	<PQL
N017400-001B	SAMP	1	Fe	0.0041	10.55	15	PASS
N017400-002B	SAMP	1	Fe	0.0077	5.49	15	PASS
CCV1	CCV	1	Fe	9.97	0.21	15	PASS
CCB1	CCB	1	Fe	-0.0025	11.4	15	PASS
N017415-001B	SAMP	1	Fe	0.0045	11.46	15	PASS
N017415-002B	SAMP	1	Fe	0.013	2.28	15	PASS
N017415-003B	SAMP	1	Fe	0.0016	10.057	15	PASS
N017415-004B	SAMP	1	Fe	0.0046	12.77	15	PASS
N017415-005B	SAMP	1	Fe	0.0052	2.5	15	PASS
N017415-006B	SAMP	1	Fe	0.0027	8.6	15	PASS
N017415-006B-MS1	MS	1	Fe	0.058	0.71	15	PASS
N017415-007B	SAMP	1	Fe	0.0061	1.63	15	PASS
N017427-001B	SAMP	1	Fe	0.0013	8.8	15	PASS
N017427-002B	SAMP	1	Fe	0.0018	15.95	15	<PQL
CCV2	CCV	1	Fe	10.26	0.064	15	PASS
CCB2	CCB	1	Fe	-0.0024	32.44	15	<PQL
LLCCV2	CCV2	1	Fe	0.018	2.047	20	PASS
LLCCV2	CCV2	1	Fe	0.018	1.63	20	PASS
ICSA2	ICSA	1	Fe	188.31	0.35	15	PASS
ICSAB2	ICSAB	1	Fe	187.01	0.58	15	PASS
CalBlk	IBLK	1	Mg	0	14.94	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Mg	0.1	0.38	15	PASS
Standard2	ICAL	1	Mg	1	0.47	15	PASS
Standard3	ICAL	1	Mg	2	0.23	15	PASS
Standard4	ICAL	1	Mg	5	0.3	15	PASS
Standard5	ICAL	1	Mg	7.5	0.26	15	PASS
Standard6	ICAL	1	Mg	10	0.23	15	PASS
Standard7	ICAL	1	Mg	20	0.18	15	PASS
ICV	ICV	1	Mg	9.88	0.32	15	PASS
ICB	ICB	1	Mg	-0.0024	13.97	15	PASS
LLCCV1	CCV1	1	Mg	0.1	0.45	20	PASS
LLCCV1	CCV1	1	Mg	0.1	0.51	20	PASS
ICSA1	ICSA	1	Mg	475.95	0.53	15	PASS
ICSAB1	ICSAB	1	Mg	468.27	0.15	15	PASS
MB-52910	MBLK	1	Mg	0.0014	71.4	15	<PQL
LCS1-52910	LCS	1	Mg	9.43	0.32	15	PASS
N017399-001A	SAMP	1	Mg	20.26	0.79	15	PASS
N017399-001A	SAMP	5	Mg	4.59	0.53	15	PASS
N017399-001A-PS	PS	1	Mg	25.31	0.028	15	PASS
N017399-001A-MS1	MS	1	Mg	25.029	0.36	15	PASS
N017399-001A-MSD1	MSD	1	Mg	25	0.12	15	PASS
N017399-002B	SAMP	1	Mg	24.61	0.14	15	PASS
N017400-001B	SAMP	1	Mg	14.28	0.34	15	PASS
N017400-002B	SAMP	1	Mg	19.7	0.3	15	PASS
CCV1	CCV	1	Mg	9.19	0.41	15	PASS
CCB1	CCB	1	Mg	-0.0037	14.48	15	PASS
N017415-001B	SAMP	1	Mg	3.87	0.34	15	PASS
N017415-002B	SAMP	1	Mg	8.52	0.2	15	PASS
N017415-003B	SAMP	1	Mg	4.98	0.32	15	PASS
N017415-004B	SAMP	1	Mg	12.45	0.06	15	PASS
N017415-005B	SAMP	1	Mg	12.56	0.18	15	PASS
N017415-006B	SAMP	1	Mg	7.91	0.15	15	PASS
N017415-006B-MS1	MS	1	Mg	11.78	0.13	15	PASS
N017415-007B	SAMP	1	Mg	13.29	0.23	15	PASS
N017427-001B	SAMP	1	Mg	13.22	0.36	15	PASS
N017427-002B	SAMP	1	Mg	12.78	0.35	15	PASS
CCV2	CCV	1	Mg	10.31	0.3	15	PASS
CCB2	CCB	1	Mg	-0.0025	20.008	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.33	20	PASS
LLCCV2	CCV2	1	Mg	0.099	0.9	20	PASS
ICSA2	ICSA	1	Mg	497.31	0.41	15	PASS
ICSAB2	ICSAB	1	Mg	492.91	0.58	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151007B,0.025<50mL
Standard2	MWST-151007B,0.25<50mL
Standard3	MWST-151007B,1.25<50mL
Standard4	MWST-151007B,2.5<50mL
Standard5	MWST-151007B,5<50mL
Standard6	MWST-151007B,10<50mL
ICV	MWST-151007CB,2.5<50mL
CCV	MWST-151007B,2.5<50mL
ICSA/ICSAB	MWST-151028A/151007D
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/MSST-111006A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/04/2015	07:34:35 AM
2	Standard1	ICAL	1	11/04/2015	07:37:52 AM
3	Standard2	ICAL	1	11/04/2015	07:41:09 AM
4	Standard3	ICAL	1	11/04/2015	07:44:57 AM
5	Standard4	ICAL	1	11/04/2015	07:48:49 AM
6	Standard5	ICAL	1	11/04/2015	07:52:42 AM
7	Standard6	ICAL	1	11/04/2015	07:56:37 AM
8	ICV	ICV	1	11/04/2015	07:59:24 AM
1	ICB	ICB	1	11/04/2015	08:03:16 AM
3	ICSA1	ICSA	1	11/04/2015	08:06:32 AM
4	ICSAB1	ICSAB	1	11/04/2015	08:09:51 AM
38	MB-52866	MBLK	1	11/04/2015	08:13:44 AM
39	LCS2-52866	LCS	1	11/04/2015	08:19:36 AM
40	N017404-001A	SAMP	5	11/04/2015	08:23:28 AM
41	N017404-002A	SAMP	5	11/04/2015	08:26:48 AM
42	N017404-002A	SAMP	25	11/04/2015	08:31:27 AM
43	N017404-002A-PS	PS	5	11/04/2015	08:35:15 AM
44	N017404-002A-MS2	MS	5	11/04/2015	08:39:04 AM
45	N017404-002A-MSD2	MSD	5	11/04/2015	08:42:54 AM
46	MB-52910	MBLK	1	11/04/2015	08:46:45 AM
47	LCS2-52910	LCS	1	11/04/2015	08:50:04 AM
5	CCV1	CCV	1	11/04/2015	08:53:24 AM
1	CCB1	CCB	1	11/04/2015	08:57:18 AM
48	N017399-001A	SAMP	5	11/04/2015	09:00:36 AM
49	N017399-002B	SAMP	5	11/04/2015	09:05:28 AM
50	N017400-001B	SAMP	5	11/04/2015	09:10:21 AM
51	N017400-002B	SAMP	5	11/04/2015	09:15:11 AM
52	N017415-001B	SAMP	5	11/04/2015	09:20:03 AM
53	N017415-002B	SAMP	5	11/04/2015	09:24:53 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N017415-003B	SAMP	5	11/04/2015	09:29:45 AM
55	N017415-004B	SAMP	5	11/04/2015	09:34:36 AM
56	N017415-005B	SAMP	5	11/04/2015	09:39:27 AM
57	N017415-006B	SAMP	5	11/04/2015	09:44:19 AM
5	CCV2	CCV	1	11/04/2015	09:49:10 AM
1	CCB2	CCB	1	11/04/2015	09:53:04 AM
58	N017415-007B	SAMP	5	11/04/2015	09:56:21 AM
59	N017427-001B	SAMP	5	11/04/2015	10:01:15 AM
60	N017427-002B	SAMP	5	11/04/2015	10:06:07 AM
61	MB-52882	MBLK	1	11/04/2015	10:11:00 AM
62	LCS2-52882	LCS	1	11/04/2015	10:14:20 AM
63	N017390-001B	SAMP	5	11/04/2015	10:19:10 AM
64	N017400-003B	SAMP	5	11/04/2015	10:24:04 AM
65	N017400-004B	SAMP	5	11/04/2015	10:28:56 AM
66	N017400-005B	SAMP	5	11/04/2015	10:33:47 AM
67	N017400-006B	SAMP	5	11/04/2015	10:38:37 AM
5	CCV3	CCV	1	11/04/2015	10:43:28 AM
1	CCB3	CCB	1	11/04/2015	10:47:22 AM
68	N017400-007B	SAMP	5	11/04/2015	10:50:39 AM
69	N017400-008B	SAMP	5	11/04/2015	10:55:31 AM
70	N017415-008B	SAMP	5	11/04/2015	10:59:51 AM
71	N017399-001A	SAMP	25	11/04/2015	11:04:45 AM
72	N017399-002B	SAMP	25	11/04/2015	11:08:06 AM
73	N017399-002B-PS	PS	5	11/04/2015	11:11:26 AM
74	N017399-002B-MS2	MS	5	11/04/2015	11:16:19 AM
75	N017399-002B-MSD2	MSD	5	11/04/2015	11:21:11 AM
76	N017399-002B	SAMP	50	11/04/2015	11:26:03 AM
77	N017399-002B	SAMP	250	11/04/2015	11:29:23 AM
5	CCV4	CCV	1	11/04/2015	11:41:12 AM
1	CCB4	CCB	1	11/04/2015	11:45:07 AM
78	N017399-002B-PS	PS	50	11/04/2015	11:48:27 AM
79	N017399-002B-MS2	MS	50	11/04/2015	11:51:47 AM
80	N017399-002B-MSD2	MSD	50	11/04/2015	11:55:07 AM
81	N017400-001B	SAMP	50	11/04/2015	11:58:27 AM
82	N017400-002B	SAMP	50	11/04/2015	12:01:46 PM
83	N017415-001B	SAMP	50	11/04/2015	12:05:06 PM
84	N017415-002B	SAMP	50	11/04/2015	12:08:25 PM
85	N017415-003B	SAMP	50	11/04/2015	12:11:44 PM
86	N017415-004B	SAMP	100	11/04/2015	12:15:04 PM
87	N017415-005B	SAMP	100	11/04/2015	12:18:23 PM
5	CCV5	CCV	1	11/04/2015	12:21:43 PM
1	CCB5	CCB	1	11/04/2015	12:25:36 PM
3	ICSA2	ICSA	1	11/04/2015	12:28:53 PM
4	ICSAB2	ICSAB	1	11/04/2015	12:32:10 PM
88	N017415-006B	SAMP	100	11/04/2015	12:35:35 PM
89	N017415-007B	SAMP	50	11/04/2015	12:38:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N017415-007B-MS2	MS	5	11/04/2015	12:42:15 PM
104	N017415-007B-MS2	MS	50	11/04/2015	12:47:10 PM
90	N017427-001B	SAMP	50	11/04/2015	12:50:30 PM
91	N017427-002B	SAMP	50	11/04/2015	12:53:51 PM
62	LCS2-52882	LCS	1	11/04/2015	12:57:12 PM
92	N017390-001B	SAMP	25	11/04/2015	01:01:03 PM
93	N017400-003B	SAMP	100	11/04/2015	01:04:54 PM
94	N017400-004B	SAMP	100	11/04/2015	01:08:13 PM
5	CCV6	CCV	1	11/04/2015	01:11:32 PM
1	CCB6	CCB	1	11/04/2015	01:15:25 PM
95	N017400-004B	SAMP	500	11/04/2015	01:19:02 PM
96	N017400-004B-PS	PS	100	11/04/2015	01:22:21 PM
97	N017400-004B-MS2	MS	100	11/04/2015	01:25:40 PM
98	N017400-004B-MSD2	MSD	100	11/04/2015	01:28:59 PM
99	N017400-005B	SAMP	25	11/04/2015	01:32:19 PM
100	N017400-006B	SAMP	25	11/04/2015	01:35:39 PM
101	N017400-007B	SAMP	100	11/04/2015	01:38:59 PM
102	N017400-008B	SAMP	100	11/04/2015	01:42:18 PM
103	N017415-008B	SAMP	25	11/04/2015	01:45:39 PM
5	CCV7	CCV	1	11/04/2015	01:49:31 PM
1	CCB7	CCB	1	11/04/2015	01:53:26 PM
3	ICSA3	ICSA	1	11/04/2015	01:56:43 PM
4	ICSAB3	ICSAB	1	11/04/2015	02:00:01 PM

INJECTION LOG: 151110A1

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/10/2015	09:36:29 AM
2	Standard1	ICAL	1	11/10/2015	09:40:52 AM
3	Standard2	ICAL	1	11/10/2015	09:45:40 AM
4	Standard3	ICAL	1	11/10/2015	09:50:31 AM
5	Standard4	ICAL	1	11/10/2015	09:54:55 AM
6	Standard5	ICAL	1	11/10/2015	10:00:23 AM
7	Standard6	ICAL	1	11/10/2015	10:05:48 AM
8	Standard7	ICAL	1	11/10/2015	10:11:13 AM
9	ICV	ICV	1	11/10/2015	10:28:11 AM
1	ICB	ICB	1	11/10/2015	10:33:36 AM
2	LLCCV1	CCV1	1	11/10/2015	10:37:56 AM
2	LLCCV1	CCV1	1	11/10/2015	10:43:35 AM
4	ICSA1	ICSA	1	11/10/2015	10:48:24 AM
5	ICSAB1	ICSAB	1	11/10/2015	10:53:58 AM
98	MB-52910	MBLK	1	11/10/2015	10:59:26 AM
99	LCS1-52910	LCS	1	11/10/2015	11:03:47 AM
100	N017399-001A	SAMP	1	11/10/2015	11:09:12 AM
101	N017399-001A	SAMP	5	11/10/2015	11:14:38 AM
102	N017399-001A-PS	PS	1	11/10/2015	11:19:30 AM
103	N017399-001A-MS1	MS	1	11/10/2015	11:24:56 AM
104	N017399-001A-MSD1	MSD	1	11/10/2015	11:30:23 AM
105	N017399-002B	SAMP	1	11/10/2015	11:35:49 AM
106	N017400-001B	SAMP	1	11/10/2015	11:41:15 AM
107	N017400-002B	SAMP	1	11/10/2015	11:46:41 AM
7	CCV1	CCV	1	11/10/2015	11:52:05 AM
1	CCB1	CCB	1	11/10/2015	11:57:30 AM
108	N017415-001B	SAMP	1	11/10/2015	12:01:49 PM
109	N017415-002B	SAMP	1	11/10/2015	12:06:13 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
110	N017415-003B	SAMP	1	11/10/2015	12:11:37 PM
111	N017415-004B	SAMP	1	11/10/2015	12:17:00 PM
112	N017415-005B	SAMP	1	11/10/2015	12:22:24 PM
113	N017415-006B	SAMP	1	11/10/2015	12:27:48 PM
114	N017415-006B-MS1	MS	1	11/10/2015	01:11:01 PM
115	N017415-007B	SAMP	1	11/10/2015	01:16:28 PM
116	N017427-001B	SAMP	1	11/10/2015	01:21:52 PM
117	N017427-002B	SAMP	1	11/10/2015	01:27:17 PM
7	CCV2	CCV	1	11/10/2015	01:32:41 PM
1	CCB2	CCB	1	11/10/2015	01:38:06 PM
2	LLCCV2	CCV2	1	11/10/2015	01:42:55 PM
2	LLCCV2	CCV2	1	11/10/2015	01:53:03 PM
4	ICSA2	ICSA	1	11/10/2015	01:57:52 PM
5	ICSAB2	ICSAB	1	11/10/2015	02:03:27 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:07:48**
Prep End Date: **11/2/2015 3:30:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52910** Prep Code: **200.7_PR** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-52910	Aqueous		25	☐	0	0	25	1.000		
LCS2-52910	Aqueous		25	☐	0	0	25	1.000		
MB-52910	Aqueous		25	☐	0	0	25	1.000		
N017399-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:07:48**
Prep End Date: **11/2/2015 3:30:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52910** Prep Code: **200.7_PR** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	11/04/2015	07:34:35 AM	Na	589.594	442	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	Na	589.594	420	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	Na	589.594	5039	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	Na	589.594	24874	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	Na	589.594	49512	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	Na	589.594	99141	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	Na	589.594	197629	40.000	mg/L	1.0000
Potassium								
CalBlk	11/04/2015	07:34:35 AM	K	766.451	-307	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	K	766.451	593	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	K	766.451	5115	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	K	766.451	25371	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	K	766.451	50604	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	K	766.451	101999	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	K	766.451	205216	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151110A1

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	11/10/2015	09:36:29 AM	B	249.677	11365	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	B	249.677	6740	0.1000	mg/L	
Standard3	11/10/2015	09:50:31 AM	B	249.677	82202	1.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	B	249.677	189884	2.500	mg/L	
Standard5	11/10/2015	10:00:23 AM	B	249.677	284386	3.750	mg/L	
Standard6	11/10/2015	10:05:48 AM	B	249.677	375446	5.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	B	249.677	731126	10.000	mg/L	0.9998
Magnesium								
CalBlk	11/10/2015	09:36:29 AM	Mg	279.079	182	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Mg	279.079	2219	0.1000	mg/L	
Standard2	11/10/2015	09:45:40 AM	Mg	279.079	18072	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Mg	279.079	44603	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Mg	279.079	101202	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Mg	279.079	151360	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Mg	279.079	197743	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Mg	279.079	385619	20.000	mg/L	0.9998
Aluminum								
CalBlk	11/10/2015	09:36:29 AM	Al	237.313	15	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Al	237.313	549	0.0500	mg/L	
Standard2	11/10/2015	09:45:40 AM	Al	237.313	9186	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Al	237.313	23708	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Al	237.313	51160	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Al	237.313	76838	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Al	237.313	100485	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Al	237.313	195893	20.000	mg/L	0.9997
Calcium								
CalBlk	11/10/2015	09:36:29 AM	Ca	227.546	64	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Ca	227.546	113	0.2000	mg/L	
Standard2	11/10/2015	09:45:40 AM	Ca	227.546	502	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Ca	227.546	1250	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Ca	227.546	2879	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Ca	227.546	4327	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Ca	227.546	5663	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Ca	227.546	10997	20.000	mg/L	0.9998
Iron								
CalBlk	11/10/2015	09:36:29 AM	Fe	273.953	77	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Fe	273.953	884	0.0200	mg/L	
Standard2	11/10/2015	09:45:40 AM	Fe	273.953	2562	0.050	mg/L	
Standard3	11/10/2015	09:50:31 AM	Fe	273.953	115010	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Fe	273.953	261908	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Fe	273.953	394094	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Fe	273.953	517059	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Fe	273.953	1009915	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *10-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10019.040	500	10000	0	100	90	110				
Sodium	10078.967	500	10000	0	101	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9907.437	500	10000	0	99.1	90	110				
Sodium	9808.247	500	10000	0	98.1	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9823.547	500	10000	0	98.2	90	110				
Sodium	9680.031	500	10000	0	96.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9999.030	500	10000	0	100	90	110				
Sodium	9758.992	500	10000	0	97.6	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125834**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9747.808	500	10000	0	97.5	90	110				
Sodium	9477.942	500	10000	0	94.8	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9929.652	500	10000	0	99.3	90	110				
Sodium	9530.829	500	10000	0	95.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10092.984	500	10000	0	101	90	110				
Sodium	9593.983	500	10000	0	95.9	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10111.986	500	10000	0	101	90	110				
Sodium	9556.105	500	10000	0	95.6	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICV** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10122.277	50	10000	0	101	90	110				
Boron	5083.433	100	5000	0	102	90	110				
Calcium	10126.074	500	10000	0	101	90	110				
Iron	10119.756	20	10000	0	101	90	110				
Magnesium	9883.584	100	10000	0	98.8	90	110				

Sample ID **LLCCV1** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	52.043	50	50.00	0	104	80	120				
Boron	96.348	100	100.0	0	96.3	80	120				
Calcium	210.631	500	200.0	0	105	80	120				
Iron	17.369	20	20.00	0	86.8	80	120				
Magnesium	103.671	100	100.0	0	104	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **CCV** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9874.750	50	10000	0	98.7	90	110				
Boron	5017.523	100	5000	0	100	90	110				
Calcium	9642.957	500	10000	0	96.4	90	110				
Iron	9966.094	20	10000	0	99.7	90	110				
Magnesium	9185.448	100	10000	0	91.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCV**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9935.153	50	10000	0	99.4	90	110				
Boron	5105.957	100	5000	0	102	90	110				
Calcium	9756.907	500	10000	0	97.6	90	110				
Iron	10257.501	20	10000	0	103	90	110				
Magnesium	10306.497	100	10000	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ZZZZZZ**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	51.140	50	50.00	0	102	70	130				
Boron	120.275	100	100.0	0	120	70	130				
Calcium	162.187	500	200.0	0	81.1	70	130				
Iron	17.499	20	20.00	0	87.5	70	130				
Magnesium	98.678	100	100.0	0	98.7	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *10-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	46.364	500									
Sodium	-4.100499	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49.391	500									
Sodium	-18.943199	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	85.105	500									
Sodium	145.637	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	63.177	500									
Sodium	70.296	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125835**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	65.503	500									
Sodium	68.198	500									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	72.291	500									
Sodium	23.500	500									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	76.815	500									
Sodium	18.539	500									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	72.452	500									
Sodium	5.756	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ICB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-2.242391	50									
Boron	20.464	100									
Calcium	-4.459163	500									
Iron	-1.874465	20									
Magnesium	-2.419701	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-4.439899	50									
Boron	32.624	100									
Calcium	25.076	500									
Iron	-2.462547	20									
Magnesium	-3.713109	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-4.435265	50									
Boron	47.322	100									
Calcium	10.724	500									
Iron	-2.432628	20									
Magnesium	-2.455502	100									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *10-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	23.496	500									
Sodium	-6.13799	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9946.594	500	10000	0	99.5	80	120				
Sodium	9999.827	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.497	500									
Sodium	16.921	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10013.782	500	10000	0	100	80	120				
Sodium	9624.486	500	10000	0	96.2	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125873**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	67.815	500									
Sodium	0.551	500									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9980.581	500	10000	0	99.8	80	120				
Sodium	9440.724	500	10000	0	94.4	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSA** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510333.526	50	500000	0	102	80	120				
Boron	38.420	100									
Calcium	518034.854	500	500000	0	104	80	120				
Iron	185399.041	20	200000	0	92.7	80	120				
Magnesium	475951.115	100	500000	0	95.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSAB** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505300.009	50	500000	0	101	80	120				
Boron	972.086	100	1000	0	97.2	80	120				
Calcium	505488.249	500	500000	0	101	80	120				
Iron	183705.639	20	200000	0	91.9	80	120				
Magnesium	468269.785	100	500000	0	93.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSA** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	495255.705	50	500000	0	99.1	80	120				
Boron	63.074	100									
Calcium	490662.525	500	500000	0	98.1	80	120				
Iron	188308.034	20	200000	0	94.2	80	120				
Magnesium	497310.102	100	500000	0	99.5	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSAB** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491409.393	50	500000	0	98.3	80	120				
Boron	995.904	100	1000	0	99.6	80	120				
Calcium	478671.922	500	500000	0	95.7	80	120				
Iron	187005.737	20	200000	0	93.5	80	120				
Magnesium	492909.806	100	500000	0	98.6	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.24	124.42	65-125	PASS
Standard2	ICAL	1	1.0091	100.91	65-125	PASS
Standard3	ICAL	1	1	100	65-125	PASS
Standard4	ICAL	1	1.0052	100.52	65-125	PASS
Standard5	ICAL	1	0.99	98.89	65-125	PASS
Standard6	ICAL	1	1	99.59	65-125	PASS
ICV	ICV	1	1.0013	100.13	65-125	PASS
ICB	ICB	1	0.99	99.25	65-125	PASS
ICSA1	ICSA	1	0.99	98.97	65-125	PASS
ICSAB1	ICSAB	1	1.0026	100.26	65-125	PASS
MB-52910	MBLK	1	0.99	99.22	65-125	PASS
LCS2-52910	LCS	1	1.084	108.41	65-125	PASS
CCV1	CCV	1	1.016	101.59	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
N017399-001A	SAMP	5	1.013	101.34	65-125	PASS
N017399-002B	SAMP	5	0.99	99.033	65-125	PASS
N017400-001B	SAMP	5	1.0032	100.32	65-125	PASS
N017400-002B	SAMP	5	1.0008	100.08	65-125	PASS
N017415-001B	SAMP	5	0.98	97.79	65-125	PASS
N017415-002B	SAMP	5	0.95	94.93	65-125	PASS
N017415-003B	SAMP	5	0.93	92.88	65-125	PASS
N017415-004B	SAMP	5	0.94	93.59	65-125	PASS
N017415-005B	SAMP	5	0.91	90.84	65-125	PASS
N017415-006B	SAMP	5	0.87	86.72	65-125	PASS
CCV2	CCV	1	0.85	85.077	65-125	PASS
CCB2	CCB	1	0.85	85.39	65-125	PASS
N017415-007B	SAMP	5	0.82	82.48	65-125	PASS
N017427-001B	SAMP	5	0.83	82.6	65-125	PASS
N017427-002B	SAMP	5	0.93	93.45	65-125	PASS
CCV3	CCV	1	0.97	96.5	65-125	PASS
CCB3	CCB	1	0.95	94.9	65-125	PASS
N017399-001A	SAMP	25	0.97	96.81	65-125	PASS
N017399-002B	SAMP	25	0.98	98.16	65-125	PASS
N017399-002B-PS	PS	5	0.96	96.033	65-125	PASS
N017399-002B-MS2	MS	5	0.93	92.96	65-125	PASS
N017399-002B-MSD2	MSD	5	0.88	87.93	65-125	PASS
N017399-002B	SAMP	50	0.91	90.55	65-125	PASS
N017399-002B	SAMP	250	0.91	91.36	65-125	PASS
CCV4	CCV	1	0.97	96.92	65-125	PASS
CCB4	CCB	1	0.93	93.31	65-125	PASS

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017399-002B-PS	PS	50	0.92	91.67	65-125	PASS
N017399-002B-MS2	MS	50	0.92	92.11	65-125	PASS
N017399-002B-MSD2	MSD	50	0.92	92.23	65-125	PASS
N017400-001B	SAMP	50	0.92	91.87	65-125	PASS
N017400-002B	SAMP	50	0.92	92.025	65-125	PASS
N017415-001B	SAMP	50	0.92	92.086	65-125	PASS
N017415-002B	SAMP	50	0.92	91.73	65-125	PASS
N017415-003B	SAMP	50	0.92	91.75	65-125	PASS
N017415-004B	SAMP	100	0.91	91.12	65-125	PASS
N017415-005B	SAMP	100	0.91	91.052	65-125	PASS
CCV5	CCV	1	0.93	93.2	65-125	PASS
CCB5	CCB	1	0.98	98.49	65-125	PASS
ICSA2	ICSA	1	0.98	98.1	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.19	65-125	PASS
N017415-006B	SAMP	100	0.98	97.54	65-125	PASS
N017415-007B	SAMP	50	0.96	95.87	65-125	PASS
N017415-007B-MS2	MS	5	0.93	93.48	65-125	PASS
N017415-007B-MS2	MS	50	0.94	93.56	65-125	PASS
N017427-001B	SAMP	50	0.94	94.2	65-125	PASS
N017427-002B	SAMP	50	0.95	94.76	65-125	PASS
CCV6	CCV	1	0.96	95.52	65-125	PASS
CCB6	CCB	1	0.95	94.87	65-125	PASS
CCV7	CCV	1	0.95	94.76	65-125	PASS
CCB7	CCB	1	0.94	94.3	65-125	PASS
ICSA3	ICSA	1	0.95	95.13	65-125	PASS
ICSAB3	ICSAB	1	0.96	96.16	65-125	PASS

INTERNAL STANDARD: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0069	100.69	65-125	PASS
Standard2	ICAL	1	1.15	115.41	65-125	PASS
Standard3	ICAL	1	1.13	113.37	65-125	PASS
Standard4	ICAL	1	1.018	101.82	65-125	PASS
Standard5	ICAL	1	1.099	109.92	65-125	PASS
Standard6	ICAL	1	1.032	103.18	65-125	PASS
Standard7	ICAL	1	1.052	105.19	65-125	PASS
ICV	ICV	1	1.051	105.1	65-125	PASS
ICB	ICB	1	1.014	101.36	65-125	PASS
LLCCV1	CCV1	1	1.014	101.43	65-125	PASS
LLCCV1	CCV1	1	1.018	101.8	65-125	PASS
ICSA1	ICSA	1	0.94	94.083	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.035	65-125	PASS
MB-52910	MBLK	1	1.026	102.58	65-125	PASS
LCS1-52910	LCS	1	0.96	96.009	65-125	PASS
N017399-001A	SAMP	1	1.028	102.76	65-125	PASS
N017399-001A	SAMP	5	1.013	101.26	65-125	PASS
N017399-001A-PS	PS	1	1.024	102.44	65-125	PASS
N017399-001A-MS1	MS	1	1.024	102.36	65-125	PASS
N017399-001A-MSD1	MSD	1	1.027	102.66	65-125	PASS
N017399-002B	SAMP	1	0.98	98.26	65-125	PASS
N017400-001B	SAMP	1	0.98	98.096	65-125	PASS
N017400-002B	SAMP	1	1	99.92	65-125	PASS
CCV1	CCV	1	1.027	102.69	65-125	PASS
CCB1	CCB	1	1	99.63	65-125	PASS
N017415-001B	SAMP	1	0.93	93.31	65-125	PASS
N017415-002B	SAMP	1	0.96	95.95	65-125	PASS
N017415-003B	SAMP	1	0.86	86.14	65-125	PASS
N017415-004B	SAMP	1	1.0058	100.58	65-125	PASS
N017415-005B	SAMP	1	1.0086	100.86	65-125	PASS
N017415-006B	SAMP	1	1.035	103.54	65-125	PASS
N017415-006B-MS1	MS	1	1.014	101.42	65-125	PASS
N017415-007B	SAMP	1	1	99.54	65-125	PASS
N017427-001B	SAMP	1	0.94	94.05	65-125	PASS
N017427-002B	SAMP	1	1	99.53	65-125	PASS
CCV2	CCV	1	1.017	101.72	65-125	PASS
CCB2	CCB	1	0.99	99.14	65-125	PASS
LLCCV2	CCV2	1	0.99	99.44	65-125	PASS
LLCCV2	CCV2	1	1	99.5	65-125	PASS
ICSA2	ICSA	1	0.93	93.067	65-125	PASS

INTERNAL STANDARD: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB2	ICSAB	1	0.96	95.53	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017400
Test Method: EPA 200.7
Analysis Date: 11/04/15

Matrix: Groundwater
Batch No.: 52910

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to K. The calculated concentration is <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017399-002B -DT 25X	Potassium	ug/L	17441.02	NA	16095.72	8.36%	10
N017399-002B -DT 250X	Sodium	ug/L	1487857	PASS	1458068	2.04%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017400
Test Method: EPA 200.7
Analysis Date: 11/10/15

Matrix: Groundwater
Batch No.: 52910

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to Al , B & Fe. The calculated concentration is <25XRL.
Dilution test of Mg failed. However LCS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017399-001A -DT 5X	Aluminum	ug/L	0	NA	0		10
N017399-001A -DT 5X	Boron	ug/L	575.5936	NA	536.1142	7.36%	10
N017399-001A -DT 5X	Calcium	ug/L	117090.2	PASS	110515.2	5.95%	10
N017399-001A -DT 5X	Iron	ug/L	0	NA	0		10
N017399-001A -DT 5X	Magnesium	ug/L	22953.83	FAIL	20258.61	13.30%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *10-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N017399-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38850.638	2500	20000	16100	114	80	120				

Sample ID **N017399-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1498971.792	25000	20000	1458000	205	80	120				S

Sample ID **N017399-001A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5251.795	50	10000	0	52.5	80	120				S
Boron	3026.964	100	5000	536.1	49.8	80	120				S
Calcium	121527.732	500	10000	110500	110	80	120				
Iron	49.650	20	100.0	0	49.6	80	120				S
Magnesium	25311.227	100	10000	20260	50.5	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017400

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: ~~11/9/2015~~ 11/4/2015 11/11/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).		x				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

% Rec of LI [IS] failing. Be for rerun, % Rec of Mo & Tl in ICV failed. Mo & Tl for rerun,
Ag in ICB/CCBs & MB > PQL & % Rec in LLCCV1 failed, low bias. For rerun.
% Rec of Se , Sb in LLICV failed, high bias, Se & Sb for rerun,
% Rec of Cu in LLCCV1 failed, low bias, For rerun,
Ni in ICSA1 > PQL. Ni for rerun.
Co failed in MS/MSD criteria, however LCS passed.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date: –

2nd Level Reviewer 11/12/2015 Date: –

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017400

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/9/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	x					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Rerun For Be, Cu, Mo,Sb, Ni, Tl, Se & Pb.
Mo & Se failed in MS/MSD criteria, however LCS passed.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date: –

2nd Level Reviewer 11/12/2015 Date: –

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017400

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/10/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	x					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:
Rerun for Ag.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date:

2nd Level Reviewer 11/12/2015 Date:

SAMPLE CALCULATION

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N017400-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 1.06517 * 1 * (25/25)

Arsenic , ug/L = 1.065170

Reporting results in two significant figures,

Arsenic , ug/L = 1.1



%RSD SUMMARY

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.022	17.33	15	<PQL	0.11	6.82	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.37	4.22	15	PASS	0.54	2.26	15	PASS
Std3-5/50 ppb	ICAL	1	4.99	1.64	15	PASS	5.25	0.39	15	PASS
Std4-10/100 ppb	ICAL	1	10.063	0.83	15	PASS	10.41	1.41	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	0.61	15	PASS	20.98	0.79	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	1.14	15	PASS	41.18	0.97	15	PASS
Std7-100/1000 ppb	ICAL	1	99.74	0.41	15	PASS	101.85	0.2	15	PASS
Std8-200/2000 ppb	ICAL	1	198.064	1.23	15	PASS	198.71	3.79	15	PASS
ICV	ICV	1	10.86	0.35	15	PASS	10.62	1.87	15	PASS
ICB	ICB	1	0.55	13.39	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.34	3.86	20	PASS	0.53	2.55	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.9	0.87	15	PASS	19.78	0.68	15	PASS
MB-52909	MBLK	1	0.56	17.0065	15	NR!	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.7	1.29	15	PASS	10.94	0.93	15	PASS
N017399-001A	SAMP	1	0.24	10.89	15	PASS	<0.000	N/A	15	<PQL
N017399-002B	SAMP	1	0.034	69.42	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	8.29	1.14	15	PASS	8.65	2.3	15	PASS
N017400-001B-MS	MS	1	8.43	0.79	15	PASS	8.3	0.86	15	PASS
N017400-001B-MSD	MSD	1	8.39	0.79	15	PASS	8.45	0.74	15	PASS
N017400-002B	SAMP	1	0.4	12.81	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.94	0.35	15	PASS	20.64	0.97	15	PASS
CCB1	CCB	1	0.53	15.082	15	NR!	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B-MS	MS	1	8.06	1.71	15	PASS	8.61	0.44	15	PASS
CCV2	CCV	1	20.13	0.54	15	PASS	20.83	1.24	15	PASS
CCB2	CCB	1	0.59	13.96	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.32	0.69	20	PASS	0.53	10.54	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.11	0.11	15	PASS	19.79	0.73	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]				111 Cd [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	19.83	0.5	15	PASS	20.78	0.24	15	PASS
CCB3	CCB	1	0.53	15.098	15	NR!	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.5	0.52	15	PASS	20.7	0.41	15	PASS
CCB4	CCB	1	0.69	12.11	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.79	1.34	15	PASS	20.64	1.23	15	PASS
CCB5	CCB	1	0.52	12.97	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	19.93	0.37	15	PASS	20.56	0.25	15	PASS
CCB6	CCB	1	0.59	17.43	15	NR!	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.31	2.24	20	PASS	0.55	3.72	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.81	0.5	15	PASS	19.53	0.76	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.097	5.026	15	PASS	0.14	0.98	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	1.0067	15	PASS	0.56	3.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.1	1.48	15	PASS	5.24	0.4	15	PASS
Std4-10/100 ppb	ICAL	1	10.19	0.59	15	PASS	10.36	1.0027	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	0.4	15	PASS	20.84	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	40.36	0.54	15	PASS	40.84	0.44	15	PASS
Std7-100/1000 ppb	ICAL	1	100.59	0.73	15	PASS	100.87	0.38	15	PASS
Std8-200/2000 ppb	ICAL	1	199.58	0.89	15	PASS	199.29	3.18	15	PASS
ICV	ICV	1	10.73	1.069	15	PASS	104.17	0.29	15	PASS
ICB	ICB	1	0.12	6.4	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.61	2.098	20	PASS	1.096	3.14	20	PASS
ICSA1	ICSA	1	0.04	10.073	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.38	1.18	15	PASS	17.89	0.85	15	PASS
MB-52909	MBLK	1	0.064	9.75	15	PASS	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.73	0.61	15	PASS	108.83	0.57	15	PASS
N017399-001A	SAMP	1	0.062	7.54	15	PASS	13.63	0.38	15	PASS
N017399-002B	SAMP	1	0.034	8.99	15	PASS	26.035	0.54	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	27.44	0.71	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	5.34	34.98	15	NR!
N017400-001B-PS	PS	1	8.92	0.28	15	PASS	118.28	0.4	15	PASS
N017400-001B-MS	MS	1	8.67	0.34	15	PASS	114.94	0.38	15	PASS
N017400-001B-MSD	MSD	1	8.71	0.77	15	PASS	115.62	0.35	15	PASS
N017400-002B	SAMP	1	0.0069	22.38	15	<PQL	61.92	0.29	15	PASS
CCV1	CCV	1	19.99	0.7	15	PASS	21.66	1.22	15	PASS
CCB1	CCB	1	0.038	7.11	15	PASS	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	0.012	27.23	15	<PQL	12.63	0.53	15	PASS
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	64.16	0.99	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	14.64	0.37	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	42.13	0.37	15	PASS
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	42.9	1.011	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	17.99	0.47	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	95.82	0.85	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	19.18	1.54	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	80.77	0.66	15	PASS
N017427-002B-MS	MS	1	8.84	0.35	15	PASS	171.8	1.1	15	PASS
CCV2	CCV	1	20.13	0.3	15	PASS	21.67	0.27	15	PASS
CCB2	CCB	1	0.035	7.32	15	PASS	0.00069	281.8	15	<PQL
LLCCV1	CCV2	1	0.55	2.52	20	PASS	1.12	2.042	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.33	0.64	15	PASS	18.67	0.71	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	20.38	0.78	15	PASS	21.19	0.41	15	PASS
CCB3	CCB	1	0.033	5.36	15	PASS	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.14	0.59	15	PASS	21.19	0.89	15	PASS
CCB4	CCB	1	0.036	7.3	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.29	0.3	15	PASS	20.88	1.46	15	PASS
CCB5	CCB	1	0.037	2.028	15	PASS	0.0014	83.77	15	<PQL
CCV6	CCV	1	20.19	0.6	15	PASS	21.12	1.24	15	PASS
CCB6	CCB	1	0.043	3.082	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.55	1.64	20	PASS	1.11	1.21	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.37	0.12	15	PASS	18.12	0.81	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	4.35	15	PASS	0.11	1.053	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	0.71	15	PASS	0.54	2.19	15	PASS
Std3-5/50 ppb	ICAL	1	5.24	0.64	15	PASS	5.3	0.9	15	PASS
Std4-10/100 ppb	ICAL	1	10.39	0.66	15	PASS	10.42	0.77	15	PASS
Std5-20/200 ppb	ICAL	1	20.68	0.17	15	PASS	20.72	0.39	15	PASS
Std6-40/400 ppb	ICAL	1	41.011	0.57	15	PASS	41.13	0.3	15	PASS
Std7-100/1000 ppb	ICAL	1	100.93	0.62	15	PASS	101.39	0.43	15	PASS
Std8-200/2000 ppb	ICAL	1	199.24	0.83	15	PASS	198.98	0.9	15	PASS
ICV	ICV	1	8.84	1.1	15	PASS	10.43	0.76	15	PASS
ICB	ICB	1	0.11	5.16	15	PASS	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.5	0.68	20	PASS	1.093	0.65	20	PASS
ICSA1	ICSA	1	0.029	13.65	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	22.87	1.44	15	PASS	21.55	0.58	15	PASS
MB-52909	MBLK	1	0.0032	47.38	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	9.15	1.12	15	PASS	10.77	0.26	15	PASS
N017399-001A	SAMP	1	0.36	1.12	15	PASS	<0.000	N/A	15	<PQL
N017399-002B	SAMP	1	0.091	5.055	15	PASS	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.026	8.14	15	PASS	<0.000	N/A	15	<PQL
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	8.16	0.32	15	PASS	8.98	0.36	15	PASS
N017400-001B-MS	MS	1	8.26	0.99	15	PASS	8.72	0.54	15	PASS
N017400-001B-MSD	MSD	1	8.25	0.57	15	PASS	8.76	0.62	15	PASS
N017400-002B	SAMP	1	0.11	5.83	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.74	1.48	15	PASS	20.66	0.86	15	PASS
CCB1	CCB	1	0.014	7.19	15	PASS	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	0.032	14.63	15	PASS	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	0.024	11.22	15	PASS	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	0.017	6.3	15	PASS	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	0.02	11.097	15	PASS	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	0.021	4.31	15	PASS	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	0.01	9.42	15	PASS	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B-MS	MS	1	8.16	1.59	15	PASS	8.95	1.1	15	PASS
CCV2	CCV	1	21.052	0.21	15	PASS	20.9	0.24	15	PASS
CCB2	CCB	1	0.014	13.12	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.47	2.73	20	PASS	1.086	1.72	20	PASS
ICSA2	ICSA	1	0.012	25.023	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	22.89	0.26	15	PASS	21.62	0.62	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	205 Tl [3]				208 Pb [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	20.65	0.31	15	PASS	20.68	0.77	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.52	0.57	15	PASS	20.56	0.34	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.61	0.028	15	PASS	20.62	0.3	15	PASS
CCB5	CCB	1	0.016	0.87	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.91	0.73	15	PASS	20.76	0.27	15	PASS
CCB6	CCB	1	0.049	6.091	15	PASS	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.48	0.22	20	PASS	1.074	0.84	20	PASS
ICSA3	ICSA	1	0.029	13.82	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	22.67	0.59	15	PASS	21.46	0.63	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	22.98	15	<PQL	0.089	12.29	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.53	6.94	15	PASS	0.51	2.047	15	PASS
Std3-5/50 ppb	ICAL	1	5.29	0.94	15	PASS	5.26	0.56	15	PASS
Std4-10/100 ppb	ICAL	1	10.28	0.19	15	PASS	10.27	0.38	15	PASS
Std5-20/200 ppb	ICAL	1	20.6	1.096	15	PASS	20.62	1.82	15	PASS
Std6-40/400 ppb	ICAL	1	40.52	0.99	15	PASS	40.67	1.91	15	PASS
Std7-100/1000 ppb	ICAL	1	100.56	1.1	15	PASS	100.51	1.68	15	PASS
Std8-200/2000 ppb	ICAL	1	199.53	1.32	15	PASS	199.53	1.16	15	PASS
ICV	ICV	1	10.098	1.22	15	PASS	10.26	1.21	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.042	5.55	20	PASS	1.089	2.2	20	PASS
ICSA1	ICSA	1	0.011	101.16	15	<PQL	0.19	16.55	15	<PQL
ICSAB1	ICSAB	1	21.54	0.099	15	PASS	21.32	1.19	15	PASS
MB-52909	MBLK	1	0.025	14.45	15	PASS	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.67	1.29	15	PASS	10.53	1.46	15	PASS
N017399-001A	SAMP	1	6.3	1.31	15	PASS	2.71	0.85	15	PASS
N017399-002B	SAMP	1	6.88	1.51	15	PASS	534.18	1.16	15	PASS
N017400-001B	SAMP	1	2.63	0.33	15	PASS	0.51	4.011	15	PASS
N017400-001B	SAMP	5	0.64	7.3	15	PASS	0.12	5.46	15	PASS
N017400-001B-PS	PS	1	11.17	1.67	15	PASS	8.52	2.15	15	PASS
N017400-001B-MS	MS	1	10.94	0.32	15	PASS	8.35	0.64	15	PASS
N017400-001B-MSD	MSD	1	10.81	1.13	15	PASS	8.3	0.98	15	PASS
N017400-002B	SAMP	1	2.81	2.5	15	PASS	0.98	3.0073	15	PASS
CCV1	CCV	1	20.36	0.49	15	PASS	20.11	1.046	15	PASS
CCB1	CCB	1	0.016	34.29	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	3.82	0.66	15	PASS	0.43	0.32	15	PASS
N017415-002B	SAMP	1	3.29	2.78	15	PASS	1.69	3.18	15	PASS
N017415-003B	SAMP	1	2.38	1.68	15	PASS	0.36	6.84	15	PASS
N017415-004B	SAMP	1	2.33	1.85	15	PASS	4.85	1.071	15	PASS
N017415-005B	SAMP	1	2.38	0.72	15	PASS	4.99	0.9	15	PASS
N017415-006B	SAMP	1	2.96	1.95	15	PASS	0.57	7.011	15	PASS
N017415-007B	SAMP	1	3.11	2.22	15	PASS	2.81	2.095	15	PASS
N017427-001B	SAMP	1	2.056	1.58	15	PASS	0.45	9.04	15	PASS
N017427-002B	SAMP	1	2.32	2.28	15	PASS	0.78	1.81	15	PASS
N017427-002B-MS	MS	1	10.68	1.17	15	PASS	8.6	0.62	15	PASS
CCV2	CCV	1	20.1	0.75	15	PASS	19.91	0.57	15	PASS
CCB2	CCB	1	0.0063	73.9	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.08	3.86	20	PASS	1.062	4.31	20	PASS
ICSA2	ICSA	1	0.0063	148.72	15	<PQL	0.16	5.58	15	PASS
ICSAB2	ICSAB	1	20.88	1.58	15	PASS	20.41	1.29	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	51 V [2]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	20.51	1.49	15	PASS	20.4	1.48	15	PASS
CCB3	CCB	1	0.025	29.38	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.43	1.16	15	PASS	20.34	0.47	15	PASS
CCB4	CCB	1	0.023	13.61	15	PASS	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.71	2.68	15	PASS	20.4	1.76	15	PASS
CCB5	CCB	1	0.01	111.72	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.84	0.91	15	PASS	20.68	2	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.07	3.6	20	PASS	1.098	6.93	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.14	3.89	15	PASS
ICSAB3	ICSAB	1	21.069	0.38	15	PASS	20.18	1.27	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	17.22	15	<PQL	0.11	11.44	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	3.59	15	PASS	0.52	2.6	15	PASS
Std3-5/50 ppb	ICAL	1	5.22	1.32	15	PASS	5.25	0.34	15	PASS
Std4-10/100 ppb	ICAL	1	10.43	0.52	15	PASS	10.4	0.85	15	PASS
Std5-20/200 ppb	ICAL	1	20.78	1.44	15	PASS	20.6	0.089	15	PASS
Std6-40/400 ppb	ICAL	1	40.54	2.35	15	PASS	40.64	1.0077	15	PASS
Std7-100/1000 ppb	ICAL	1	100.92	1.44	15	PASS	100.26	1.61	15	PASS
Std8-200/2000 ppb	ICAL	1	199.32	0.91	15	PASS	199.66	0.53	15	PASS
ICV	ICV	1	101.043	0.77	15	PASS	9.67	0.88	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.00055	103.22	15	<PQL
LLICV	CCV1	1	0.55	7.27	20	PASS	0.54	3.08	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.013	34.59	15	<PQL
ICSAB1	ICSAB	1	19	1.14	15	PASS	20.18	1.42	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	105.46	0.4	15	PASS	10.062	0.51	15	PASS
N017399-001A	SAMP	1	69.26	0.85	15	PASS	0.056	15.13	15	<PQL
N017399-002B	SAMP	1	10.28	0.53	15	PASS	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.3	3.2	15	PASS	<0.000	N/A	15	<PQL
N017400-001B	SAMP	5	0.074	2.17	15	PASS	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	80.62	1.23	15	PASS	7.27	1.65	15	PASS
N017400-001B-MS	MS	1	78.98	0.67	15	PASS	7.089	0.44	15	PASS
N017400-001B-MSD	MSD	1	78.81	0.65	15	PASS	7.07	0.56	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.61	0.61	15	PASS	19.81	0.63	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	1.036	1.14	15	PASS	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	0.73	1.068	15	PASS	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	1.034	1.38	15	PASS	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	0.76	2.51	15	PASS	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	0.56	1.15	15	PASS	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	0.78	0.17	15	PASS	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	0.42	4.37	15	PASS	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	0.46	2.27	15	PASS	<0.000	N/A	15	<PQL
N017427-002B	SAMP	1	0.54	3.11	15	PASS	<0.000	N/A	15	<PQL
N017427-002B-MS	MS	1	79.37	0.78	15	PASS	6.97	0.88	15	PASS
CCV2	CCV	1	20.68	0.42	15	PASS	19.62	0.86	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.58	11.25	20	PASS	0.51	3.018	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.014	18.53	15	<PQL
ICSAB2	ICSAB	1	18.18	1.57	15	PASS	19.15	1.4	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				59 Co [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	20.61	0.9	15	PASS	20.29	1.18	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.56	0.29	15	PASS	20.1	1.25	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.79	2.32	15	PASS	20.7	2.59	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.055	3.041	15	PASS	21.03	1.52	15	PASS
CCB6	CCB	1	0.0049	152.072	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.58	5.36	20	PASS	0.52	2.83	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0083	60.08	15	<PQL
ICSAB3	ICSAB	1	18.017	1.19	15	PASS	19.43	0.15	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	21.54	15	<PQL	0.12	92.63	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.57	1.36	15	PASS	0.39	8.083	15	PASS
Std3-5/50 ppb	ICAL	1	5.24	1.0019	15	PASS	5.0039	1.44	15	PASS
Std4-10/100 ppb	ICAL	1	10.51	0.75	15	PASS	10.073	1	15	PASS
Std5-20/200 ppb	ICAL	1	20.64	2.91	15	PASS	20.32	0.47	15	PASS
Std6-40/400 ppb	ICAL	1	41.033	2.22	15	PASS	40.079	0.89	15	PASS
Std7-100/1000 ppb	ICAL	1	100.6	0.16	15	PASS	99.66	0.5	15	PASS
Std8-200/2000 ppb	ICAL	1	199.4	0.98	15	PASS	200.12	1.061	15	PASS
ICV	ICV	1	10.62	3	15	PASS	10.04	1	15	PASS
ICB	ICB	1	0.016	55.6	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.047	2.27	20	PASS	0.79	3.88	20	PASS
ICSA1	ICSA	1	1.49	121.81	15	NR!	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.0087	0.03	15	PASS	18.69	0.88	15	PASS
MB-52909	MBLK	1	0.14	17.37	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.97	1.56	15	PASS	10.23	1.16	15	PASS
N017399-001A	SAMP	1	0.53	8.55	15	PASS	<0.000	N/A	15	<PQL
N017399-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.18	21.1	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	5	0.12	3.66	15	PASS	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	8.2	2.91	15	PASS	5.29	2.53	15	PASS
N017400-001B-MS	MS	1	8.14	2.67	15	PASS	5.37	1.66	15	PASS
N017400-001B-MSD	MSD	1	8.11	1.09	15	PASS	5.36	2.67	15	PASS
N017400-002B	SAMP	1	0.0045	607.74	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	20	1.2	15	PASS	19.16	0.49	15	PASS
CCB1	CCB	1	0.14	19.39	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	0.2	17.019	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	0.23	15.42	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	0.12	24.96	15	<PQL	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	0.2	21.94	15	<PQL	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	0.22	15.39	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	0.21	29.23	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	0.27	3.41	15	PASS	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	0.26	25.043	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B	SAMP	1	0.26	9.68	15	PASS	<0.000	N/A	15	<PQL
N017427-002B-MS	MS	1	8.13	3.61	15	PASS	4.97	4.12	15	PASS
CCV2	CCV	1	20.017	2.19	15	PASS	19.19	1.53	15	PASS
CCB2	CCB	1	0.21	14.31	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.19	4.27	20	PASS	0.68	2.36	20	PASS
ICSA2	ICSA	1	0.71	5.025	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.17	0.83	15	PASS	17.82	1.11	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	19.62	1.38	15	PASS	19.12	0.61	15	PASS
CCB3	CCB	1	0.037	75.7	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.86	1.081	15	PASS	19.26	1.64	15	PASS
CCB4	CCB	1	0.0025	614.69	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.64	2.33	15	PASS	19.15	0.74	15	PASS
CCB5	CCB	1	0.00026	5557.52	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	19.55	1.46	15	PASS	19.018	1.16	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.000046	4.18	20	PASS	0.64	4.17	20	PASS
ICSA3	ICSA	1	0.35	12.17	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.68	0.74	15	PASS	17.55	1.066	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	<0.000	N/A	15	<PQL	0.13	7.26	15	PASS
Std2-0.5/5 ppb	ICAL	1	<0.000	N/A	15	<PQL	0.51	6.81	15	PASS
Std3-5/50 ppb	ICAL	1	4.24	7.43	15	PASS	5.027	1.94	15	PASS
Std4-10/100 ppb	ICAL	1	9.25	1.62	15	PASS	10.27	1.29	15	PASS
Std5-20/200 ppb	ICAL	1	19.8	1.61	15	PASS	20.57	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	41.34	0.5	15	PASS	40.75	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	100.89	0.37	15	PASS	100.46	0.72	15	PASS
Std8-200/2000 ppb	ICAL	1	199.37	0.62	15	PASS	199.55	0.53	15	PASS
ICV	ICV	1	104.46	0.16	15	PASS	10.47	2.74	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0018	414.68	15	<PQL
LLICV	CCV1	1	9.77	0.96	20	PASS	0.12	3.83	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.52	1.57	15	PASS	21.66	1.78	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	107.16	0.37	15	PASS	10.72	3.077	15	PASS
N017399-001A	SAMP	1	1.1	2.038	15	PASS	3.27	1.88	15	PASS
N017399-002B	SAMP	1	0.11	58.16	15	<PQL	2.58	0.82	15	PASS
N017400-001B	SAMP	1	0.31	16.67	15	<PQL	1.065	3.64	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.23	17.73	15	NR!
N017400-001B-PS	PS	1	83.27	1.39	15	PASS	9.99	0.43	15	PASS
N017400-001B-MS	MS	1	80.63	1.39	15	PASS	9.69	2.58	15	PASS
N017400-001B-MSD	MSD	1	79.84	0.21	15	PASS	9.78	1.27	15	PASS
N017400-002B	SAMP	1	2.9	7.78	15	PASS	1.63	5.52	15	PASS
CCV1	CCV	1	19.25	0.8	15	PASS	20.78	1.2	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	1.24	21.026	15	<PQL	2.79	3.23	15	PASS
N017415-002B	SAMP	1	1.49	7.78	15	PASS	1.71	6.95	15	PASS
N017415-003B	SAMP	1	2.17	6.38	15	PASS	1.33	7.84	15	PASS
N017415-004B	SAMP	1	0.65	22.35	15	<PQL	1.0064	4.16	15	PASS
N017415-005B	SAMP	1	0.84	1.74	15	PASS	0.98	6.79	15	PASS
N017415-006B	SAMP	1	2.61	1.81	15	PASS	2.7	3.39	15	PASS
N017415-007B	SAMP	1	0.73	7.46	15	PASS	1.93	2.59	15	PASS
N017427-001B	SAMP	1	0.9	9.67	15	PASS	1.052	3.87	15	PASS
N017427-002B	SAMP	1	5.39	2.4	15	PASS	1.13	6.16	15	PASS
N017427-002B-MS	MS	1	81.85	1.19	15	PASS	9.97	2.96	15	PASS
CCV2	CCV	1	19.027	0.68	15	PASS	20.61	2.32	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	9.43	3.86	20	PASS	0.095	5.51	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.088	1.69	15	PASS	21.58	2.45	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	66 Zn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	18.84	1.94	15	PASS	20.51	1.58	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.15	1.47	15	PASS	20.6	1.48	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	19.34	2.2	15	PASS	20.65	0.66	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	19.0096	0.98	15	PASS	20.76	3.3	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	9.72	3.38	20	PASS	0.096	3.63	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	17.99	1.42	15	PASS	21.99	1.39	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	77.65	15	<PQL	0.1	3.22	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	16.17	15	NR!	0.49	7.66	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	4.29	15	PASS	5.15	2.68	15	PASS
Std4-10/100 ppb	ICAL	1	10.047	4.044	15	PASS	10.26	0.82	15	PASS
Std5-20/200 ppb	ICAL	1	20.63	1.68	15	PASS	20.54	0.67	15	PASS
Std6-40/400 ppb	ICAL	1	40.4	3.27	15	PASS	39.9	2.47	15	PASS
Std7-100/1000 ppb	ICAL	1	101.071	1.061	15	PASS	99.061	1.035	15	PASS
Std8-200/2000 ppb	ICAL	1	199.32	0.46	15	PASS	200.42	0.77	15	PASS
ICV	ICV	1	10.2	0.89	15	PASS	10.48	2.35	15	PASS
ICB	ICB	1	0.018	91.91	15	<PQL	0.0027	113.76	15	<PQL
LLICV	CCV1	1	0.62	18.1	20	PASS	0.51	3.46	20	PASS
ICSA1	ICSA	1	0.035	115.71	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.55	4.76	15	PASS	24.74	1.58	15	PASS
MB-52909	MBLK	1	0.028	23.36	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.46	3.56	15	PASS	11.19	0.9	15	PASS
N017399-001A	SAMP	1	0.08	48.75	15	<PQL	<0.000	N/A	15	<PQL
N017399-002B	SAMP	1	3.81	4.79	15	PASS	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	3.2	1.16	15	PASS	<0.000	N/A	15	<PQL
N017400-001B	SAMP	5	0.87	17.37	15	NR!	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	11.98	5.25	15	PASS	12.76	1.38	15	PASS
N017400-001B-MS	MS	1	11.021	5.16	15	PASS	12.6	1.11	15	PASS
N017400-001B-MSD	MSD	1	11.075	3.87	15	PASS	12.45	1.96	15	PASS
N017400-002B	SAMP	1	3.028	2.057	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.51	1.98	15	PASS	22.6	0.82	15	PASS
CCB1	CCB	1	0.014	42.74	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	3.14	7.89	15	PASS	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	2.75	9.32	15	PASS	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	3.21	3.38	15	PASS	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	1.66	15.3	15	NR!	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	1.59	6.79	15	PASS	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	2.99	7.23	15	PASS	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	2.42	10.39	15	PASS	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	2.71	4.42	15	PASS	<0.000	N/A	15	<PQL
N017427-002B	SAMP	1	3.059	7.036	15	PASS	<0.000	N/A	15	<PQL
N017427-002B-MS	MS	1	11.43	3.09	15	PASS	12.79	1.3	15	PASS
CCV2	CCV	1	19.47	2.82	15	PASS	22.54	1.16	15	PASS
CCB2	CCB	1	0.024	65.71	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.55	14.43	20	PASS	0.53	8.77	20	PASS
ICSA2	ICSA	1	0.015	43.44	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.93	2.75	15	PASS	23.56	0.88	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	20.0076	4.45	15	PASS	21.11	1.44	15	PASS
CCB3	CCB	1	0.032	21.28	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.75	2.25	15	PASS	20.15	0.28	15	PASS
CCB4	CCB	1	0.051	25.31	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.91	6.0037	15	PASS	18.56	0.92	15	PASS
CCB5	CCB	1	0.021	173.21	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.19	4.4	15	PASS	19.054	1.15	15	PASS
CCB6	CCB	1	0.013	100.82	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.56	25.12	20	NR!	0.47	10.36	20	PASS
ICSA3	ICSA	1	0.035	93.87	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.98	6.25	15	PASS	22.27	1.3	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.088	22.87	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	6.25	15	PASS
Std3-5/50 ppb	ICAL	1	5.0091	2.89	15	PASS
Std4-10/100 ppb	ICAL	1	9.97	3.11	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	1.7	15	PASS
Std6-40/400 ppb	ICAL	1	39.87	1.82	15	PASS
Std7-100/1000 ppb	ICAL	1	99.64	1.039	15	PASS
Std8-200/2000 ppb	ICAL	1	198.53	0.81	15	PASS
ICV	ICV	1	11.037	1.46	15	PASS
ICB	ICB	1	0.34	12.66	15	PASS
LLICV	CCV1	1	0.71	4.43	20	PASS
ICSA1	ICSA	1	0.097	9.63	15	PASS
ICSAB1	ICSAB	1	22.98	0.71	15	PASS
MB-52909	MBLK	1	0.13	1.22	15	PASS
LCS-52909	LCS	1	10.38	2.4	15	PASS
N017399-001A	SAMP	1	16.59	1.14	15	PASS
N017399-002B	SAMP	1	17.83	0.95	15	PASS
N017400-001B	SAMP	1	11.22	2.12	15	PASS
N017400-001B	SAMP	5	2.98	0.43	15	PASS
N017400-001B-PS	PS	1	22.56	0.6	15	PASS
N017400-001B-MS	MS	1	21.75	0.91	15	PASS
N017400-001B-MSD	MSD	1	21.76	1.13	15	PASS
N017400-002B	SAMP	1	11.44	1.47	15	PASS
CCV1	CCV	1	20.22	1.00037	15	PASS
CCB1	CCB	1	0.091	10.52	15	PASS
N017415-001B	SAMP	1	12.3	2.014	15	PASS
N017415-002B	SAMP	1	14.65	0.83	15	PASS
N017415-003B	SAMP	1	13.73	0.29	15	PASS
N017415-004B	SAMP	1	21.45	2.9	15	PASS
N017415-005B	SAMP	1	21.78	1.17	15	PASS
N017415-006B	SAMP	1	17.53	1.86	15	PASS
N017415-007B	SAMP	1	9.027	2.98	15	PASS
N017427-001B	SAMP	1	17.31	1.053	15	PASS
N017427-002B	SAMP	1	15.019	1	15	PASS
N017427-002B-MS	MS	1	24.11	0.5	15	PASS
CCV2	CCV	1	20.78	0.19	15	PASS
CCB2	CCB	1	0.12	21.86	15	<PQL
LLCCV1	CCV2	1	0.53	4.99	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	22.69	1.3	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCV3	CCV	1	20.48	1.1	15	PASS
CCB3	CCB	1	0.064	28.52	15	<PQL
CCV4	CCV	1	20.074	1.91	15	PASS
CCB4	CCB	1	0.072	20.67	15	<PQL
CCV5	CCV	1	19.99	2.13	15	PASS
CCB5	CCB	1	0.07	25.69	15	<PQL
CCV6	CCV	1	20.37	2.48	15	PASS
CCB6	CCB	1	0.092	9.34	15	PASS
LLCCV2	CCV2	1	0.53	1.58	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	23.055	0.77	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				205 Tl [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	4.19	15	PASS	0.1	2.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	0.9	15	PASS	0.54	1.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	0.89	15	PASS	5.33	0.73	15	PASS
Std4-10/100 ppb	ICAL	1	10.33	0.48	15	PASS	10.45	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	20.51	0.22	15	PASS	20.67	0.7	15	PASS
Std6-40/400 ppb	ICAL	1	40.79	0.43	15	PASS	41.024	1.019	15	PASS
Std7-100/1000 ppb	ICAL	1	100.69	0.24	15	PASS	101.062	1.094	15	PASS
Std8-200/2000 ppb	ICAL	1	199.43	0.8	15	PASS	199.17	0.47	15	PASS
ICV	ICV	1	10.42	0.46	15	PASS	9.33	2.51	15	PASS
ICB	ICB	1	0.15	2.21	15	PASS	0.13	4.32	15	PASS
LLICV	CCV1	1	0.53	1.074	20	PASS	0.45	0.84	20	PASS
ICSA1	ICSA	1	0.057	4.48	15	PASS	0.043	5.41	15	PASS
ICSAB1	ICSAB	1	21.33	0.37	15	PASS	22.58	1.039	15	PASS
MB-52909	MBLK	1	0.083	1.95	15	PASS	0.017	7.87	15	PASS
LCS-52909	LCS	1	10.42	0.57	15	PASS	9.76	1.43	15	PASS
N017400-001B	SAMP	5	0.025	7.72	15	PASS	0.12	3.17	15	PASS
N017400-001B	SAMP	1	0.011	22.49	15	<PQL	0.057	2.88	15	PASS
N017400-002B	SAMP	5	0.014	15.4	15	<PQL	0.034	3.51	15	PASS
N017400-002B	SAMP	1	0.024	15.5	15	<PQL	0.038	7.72	15	PASS
N017415-001B	SAMP	5	0.012	16.11	15	<PQL	0.02	4.18	15	PASS
N017415-001B	SAMP	1	0.013	10.21	15	PASS	0.037	1.38	15	PASS
N017415-002B	SAMP	5	0.0081	17.19	15	<PQL	0.014	6.25	15	PASS
N017415-002B	SAMP	1	0.014	11.11	15	PASS	0.032	10.98	15	PASS
CCV1	CCV	1	20.083	0.57	15	PASS	20.53	0.87	15	PASS
CCB1	CCB	1	0.071	8.75	15	PASS	0.01	4.42	15	PASS
N017415-003B	SAMP	5	0.028	3.66	15	PASS	0.012	12.82	15	PASS
N017415-003B	SAMP	1	0.017	15.12	15	<PQL	0.023	3.7	15	PASS
N017415-004B	SAMP	5	0.0098	21.27	15	<PQL	0.011	1.9	15	PASS
N017415-004B	SAMP	1	0.01	7.93	15	PASS	0.032	8.62	15	PASS
N017415-005B	SAMP	5	0.015	7.84	15	PASS	0.0086	9.63	15	PASS
N017415-005B	SAMP	1	0.011	22.86	15	<PQL	0.03	3.78	15	PASS
N017415-006B	SAMP	5	0.012	20.48	15	<PQL	0.0061	13.74	15	PASS
N017415-006B	SAMP	1	0.0083	17.83	15	<PQL	0.018	2.1	15	PASS
N017415-007B	SAMP	5	0.0011	248.23	15	<PQL	0.0032	8.74	15	PASS
N017415-007B	SAMP	1	0.0043	22.72	15	<PQL	0.0091	7.18	15	PASS
CCV2	CCV	1	20.57	0.57	15	PASS	20.76	0.77	15	PASS
CCB2	CCB	1	0.07	4.7	15	PASS	0.0049	39.64	15	<PQL
N017427-001B	SAMP	5	0.029	8.24	15	PASS	0.0051	21.51	15	<PQL
N017427-001B	SAMP	1	0.014	25.74	15	<PQL	0.0098	32.21	15	<PQL
N017427-002B	SAMP	5	0.0076	29.067	15	<PQL	0.0027	36.078	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				205 Tl [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	0.0059	25.97	15	<PQL	0.0048	20.64	15	<PQL
N017400-001B	SAMP	25	0.027	8.46	15	PASS	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	5	2.26	1.33	15	PASS	1.92	1.47	15	PASS
N017400-001B-PS	PS	1	10.54	0.15	15	PASS	10.029	0.54	15	PASS
N017400-001B-MS	MS	5	2.3	1.29	15	PASS	2	0.6	15	PASS
N017400-001B-MS	MS	1	10.47	0.37	15	PASS	10.16	1.94	15	PASS
N017400-001B-MSD	MSD	5	2.27	0.67	15	PASS	1.99	1.47	15	PASS
CCV3	CCV	1	20.48	0.41	15	PASS	20.71	0.36	15	PASS
CCB3	CCB	1	0.072	8.14	15	PASS	0.023	12.75	15	PASS
N017400-001B-MSD	MSD	1	10.54	0.47	15	PASS	10.12	1.028	15	PASS
N017427-002B-MS	MS	5	2.27	0.13	15	PASS	1.89	0.71	15	PASS
N017427-002B-MS	MS	1	10.6	0.33	15	PASS	10.17	0.86	15	PASS
CCV4	CCV	1	20.53	0.15	15	PASS	20.87	1.47	15	PASS
CCB4	CCB	1	0.043	15.22	15	<PQL	0.025	11.77	15	PASS
LLCCV1	CCV2	1	0.57	1.84	20	PASS	0.46	1.39	20	PASS
ICSA2	ICSA	1	0.018	1.85	15	PASS	0.028	2.37	15	PASS
ICSAB2	ICSAB	1	21.25	0.87	15	PASS	22.76	1.56	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	4.26	15	PASS	0.18	2.3	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.53	4.55	15	PASS	0.66	4.64	15	PASS
Std3-5/50 ppb	ICAL	1	5.22	1.67	15	PASS	5.39	1.17	15	PASS
Std4-10/100 ppb	ICAL	1	10.26	1.46	15	PASS	10.43	0.16	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	1.53	15	PASS	20.46	1.58	15	PASS
Std6-40/400 ppb	ICAL	1	40.94	0.67	15	PASS	40.92	0.36	15	PASS
Std7-100/1000 ppb	ICAL	1	101.52	0.56	15	PASS	102.35	0.48	15	PASS
Std8-200/2000 ppb	ICAL	1	199	0.8	15	PASS	198.56	1.11	15	PASS
ICV	ICV	1	10.069	0.72	15	PASS	9.97	0.5	15	PASS
ICB	ICB	1	0.0098	99.82	15	<PQL	0.028	37.51	15	<PQL
LLICV	CCV1	1	1.14	6.57	20	PASS	1.17	2.27	20	PASS
ICSA1	ICSA	1	0.32	4.21	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.1	1.2	15	PASS	18.49	0.53	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	0.025	36.62	15	<PQL
LCS-52909	LCS	1	10.5	1.29	15	PASS	10.48	0.69	15	PASS
N017400-001B	SAMP	5	0.031	32.35	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.068	42.93	15	<PQL	<0.000	N/A	15	<PQL
N017400-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	21.32	1.26	15	PASS	21.51	0.86	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-004B	SAMP	5	0.016	115.18	15	<PQL	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	0.013	236.084	15	<PQL	<0.000	N/A	15	<PQL
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.57	1.25	15	PASS	19.5	1.072	15	PASS
CCB2	CCB	1	0.01	66.055	15	<PQL	<0.000	N/A	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	60 Ni [2]				63 Cu [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	25	0.016	58.56	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	5	2.24	2.99	15	PASS	1.99	1.4	15	PASS
N017400-001B-PS	PS	1	10.17	1.71	15	PASS	9.26	1.14	15	PASS
N017400-001B-MS	MS	5	2.22	4.4	15	PASS	1.89	2.95	15	PASS
N017400-001B-MS	MS	1	10.0077	1.015	15	PASS	8.64	0.25	15	PASS
N017400-001B-MSD	MSD	5	2.24	0.19	15	PASS	2.0019	0.8	15	PASS
CCV3	CCV	1	19.9	0.77	15	PASS	20.012	1.09	15	PASS
CCB3	CCB	1	0.025	22.27	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B-MSD	MSD	1	10.12	0.76	15	PASS	9.24	1.096	15	PASS
N017427-002B-MS	MS	5	2.16	1.76	15	PASS	1.93	1.47	15	PASS
N017427-002B-MS	MS	1	10.14	1.33	15	PASS	9.048	0.69	15	PASS
CCV4	CCV	1	19.89	1.1	15	PASS	19.97	1.17	15	PASS
CCB4	CCB	1	0.13	7.51	15	PASS	0.33	2.64	15	PASS
LLCCV1	CCV2	1	1.15	5.46	20	PASS	0.98	0.79	20	PASS
ICSA2	ICSA	1	0.34	14.54	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.77	0.33	15	PASS	18.26	1.0034	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.083	42.82	15	<PQL	0.11	8.34	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	16.021	15	NR!	0.54	0.93	15	PASS
Std3-5/50 ppb	ICAL	1	5.21	9.63	15	PASS	5.18	0.65	15	PASS
Std4-10/100 ppb	ICAL	1	10.69	3.51	15	PASS	10.25	0.94	15	PASS
Std5-20/200 ppb	ICAL	1	20.46	1.75	15	PASS	20.43	0.78	15	PASS
Std6-40/400 ppb	ICAL	1	40.82	1.45	15	PASS	40.74	0.57	15	PASS
Std7-100/1000 ppb	ICAL	1	100.93	0.84	15	PASS	101.071	0.85	15	PASS
Std8-200/2000 ppb	ICAL	1	199.28	1.55	15	PASS	199.26	0.33	15	PASS
ICV	ICV	1	10.1	4	15	PASS	9.91	1.067	15	PASS
ICB	ICB	1	0.027	85.27	15	<PQL	0.015	21.68	15	<PQL
LLICV	CCV1	1	0.48	21.61	20	<PQL	0.51	4.68	20	PASS
ICSA1	ICSA	1	0.023	79.62	15	<PQL	0.0077	25.54	15	<PQL
ICSAB1	ICSAB	1	20.65	3.27	15	PASS	22.35	1.083	15	PASS
MB-52909	MBLK	1	0.017	123.67	15	<PQL	0.0035	26.69	15	<PQL
LCS-52909	LCS	1	9.76	5.73	15	PASS	10.28	0.9	15	PASS
N017400-001B	SAMP	5	0.66	16.11	15	NR!	0.0031	31.52	15	<PQL
N017400-001B	SAMP	1	3.28	11.63	15	PASS	0.0043	102.81	15	<PQL
N017400-002B	SAMP	5	0.74	11.96	15	PASS	0.0031	64.42	15	<PQL
N017400-002B	SAMP	1	2.72	8.43	15	PASS	0.012	21.65	15	<PQL
N017415-001B	SAMP	5	0.7	2.41	15	PASS	0.0023	75.34	15	<PQL
N017415-001B	SAMP	1	2.97	8.67	15	PASS	0.0051	16.98	15	<PQL
N017415-002B	SAMP	5	0.56	28.91	15	NR!	0.0011	135.71	15	<PQL
N017415-002B	SAMP	1	2.55	2.95	15	PASS	0.0051	17.42	15	<PQL
CCV1	CCV	1	19.51	2.39	15	PASS	19.65	1.1	15	PASS
CCB1	CCB	1	0.065	44.52	15	<PQL	0.0024	46.19	15	<PQL
N017415-003B	SAMP	5	0.63	24.89	15	NR!	0.0024	34.18	15	<PQL
N017415-003B	SAMP	1	2.95	5.011	15	PASS	0.0076	28.63	15	<PQL
N017415-004B	SAMP	5	0.36	23.65	15	<PQL	0.004	97.24	15	<PQL
N017415-004B	SAMP	1	1.55	3.98	15	PASS	0.0087	16.098	15	<PQL
N017415-005B	SAMP	5	0.35	26.44	15	<PQL	0.0022	35.77	15	<PQL
N017415-005B	SAMP	1	1.63	6.55	15	PASS	0.007	60.44	15	<PQL
N017415-006B	SAMP	5	0.64	12.56	15	PASS	0.0014	124.13	15	<PQL
N017415-006B	SAMP	1	2.89	9.7	15	PASS	0.01	8.96	15	PASS
N017415-007B	SAMP	5	0.53	7.27	15	PASS	0.0017	56.64	15	<PQL
N017415-007B	SAMP	1	2.45	9.071	15	PASS	0.005	74.75	15	<PQL
CCV2	CCV	1	19.052	3.55	15	PASS	20.73	1.052	15	PASS
CCB2	CCB	1	0.018	72.3	15	<PQL	0.0034	56.43	15	<PQL
N017427-001B	SAMP	5	0.7	10.2	15	PASS	0.0011	178.85	15	<PQL
N017427-001B	SAMP	1	2.82	6.073	15	PASS	0.006	30.55	15	<PQL
N017427-002B	SAMP	5	0.61	7.59	15	PASS	0.0025	99.61	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				9 Be [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	3.0074	6.56	15	PASS	0.0067	48.94	15	<PQL
N017400-001B	SAMP	25	0.14	10.62	15	PASS	0.0008	365.91	15	<PQL
N017400-001B-PS	PS	5	2.04	2.06	15	PASS	2.22	1.34	15	PASS
N017400-001B-PS	PS	1	9.44	6.53	15	PASS	10.7	1.23	15	PASS
N017400-001B-MS	MS	5	1.92	7.7	15	PASS	2.27	1.31	15	PASS
N017400-001B-MS	MS	1	9.54	6.41	15	PASS	10.65	0.55	15	PASS
N017400-001B-MSD	MSD	5	1.89	9.61	15	PASS	2.21	0.41	15	PASS
CCV3	CCV	1	19.64	0.7	15	PASS	20.26	0.95	15	PASS
CCB3	CCB	1	0.0025	224.71	15	<PQL	0.0038	105.34	15	<PQL
N017400-001B-MSD	MSD	1	9.78	2.49	15	PASS	10.57	1.51	15	PASS
N017427-002B-MS	MS	5	1.98	5.088	15	PASS	2.18	1.63	15	PASS
N017427-002B-MS	MS	1	9.51	3.92	15	PASS	10.72	2.65	15	PASS
CCV4	CCV	1	19.3	2.55	15	PASS	19.78	0.88	15	PASS
CCB4	CCB	1	0.14	10.49	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.5	36.5	20	NR!	0.52	3.66	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0026	80.69	15	<PQL
ICSAB2	ICSAB	1	19.48	1.32	15	PASS	22.16	0.12	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	11.83	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	4.47	15	PASS
Std3-5/50 ppb	ICAL	1	5.12	0.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	20.37	0.92	15	PASS
Std6-40/400 ppb	ICAL	1	39.97	0.84	15	PASS
Std7-100/1000 ppb	ICAL	1	100.53	0.84	15	PASS
Std8-200/2000 ppb	ICAL	1	199.69	0.93	15	PASS
ICV	ICV	1	10.74	1.054	15	PASS
ICB	ICB	1	0.37	3.54	15	PASS
LLICV	CCV1	1	0.47	6.2	20	PASS
ICSA1	ICSA	1	0.13	10.84	15	PASS
ICSAB1	ICSAB	1	22.94	1.028	15	PASS
MB-52909	MBLK	1	0.16	4.32	15	PASS
LCS-52909	LCS	1	9.97	0.73	15	PASS
N017400-001B	SAMP	5	2.87	1.51	15	PASS
N017400-001B	SAMP	1	11.58	2.007	15	PASS
N017400-002B	SAMP	5	2.73	0.64	15	PASS
N017400-002B	SAMP	1	11.35	1.36	15	PASS
N017415-001B	SAMP	5	2.86	2.96	15	PASS
N017415-001B	SAMP	1	11.91	1.96	15	PASS
N017415-002B	SAMP	5	3.36	1.84	15	PASS
N017415-002B	SAMP	1	14.47	1.32	15	PASS
CCV1	CCV	1	19.39	0.94	15	PASS
CCB1	CCB	1	0.29	11.29	15	PASS
N017415-003B	SAMP	5	3.12	2.41	15	PASS
N017415-003B	SAMP	1	13.47	2.66	15	PASS
N017415-004B	SAMP	5	5.11	2.39	15	PASS
N017415-004B	SAMP	1	20.83	1.89	15	PASS
N017415-005B	SAMP	5	4.98	2.25	15	PASS
N017415-005B	SAMP	1	21.052	1.84	15	PASS
N017415-006B	SAMP	5	4.11	1.0059	15	PASS
N017415-006B	SAMP	1	17.11	2.2	15	PASS
N017415-007B	SAMP	5	2.13	3.15	15	PASS
N017415-007B	SAMP	1	8.73	0.8	15	PASS
CCV2	CCV	1	20.27	1.91	15	PASS
CCB2	CCB	1	0.25	10.97	15	PASS
N017427-001B	SAMP	5	3.76	2.85	15	PASS
N017427-001B	SAMP	1	16.76	0.6	15	PASS
N017427-002B	SAMP	5	3.36	1.44	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	14.55	0.31	15	PASS
N017400-001B	SAMP	25	0.78	1.78	15	PASS
N017400-001B-PS	PS	5	2.98	2.24	15	PASS
N017400-001B-PS	PS	1	14.16	2.26	15	PASS
N017400-001B-MS	MS	5	3.052	1.99	15	PASS
N017400-001B-MS	MS	1	14.24	2.93	15	PASS
N017400-001B-MSD	MSD	5	3.12	1.47	15	PASS
CCV3	CCV	1	19.95	0.36	15	PASS
CCB3	CCB	1	0.25	14.021	15	PASS
N017400-001B-MSD	MSD	1	14.35	0.8	15	PASS
N017427-002B-MS	MS	5	2.8	1.49	15	PASS
N017427-002B-MS	MS	1	13.43	0.47	15	PASS
CCV4	CCV	1	19.95	1.39	15	PASS
CCB4	CCB	1	0.24	20.69	15	<PQL
LLCCV1	CCV2	1	0.6	7.03	20	PASS
ICSA2	ICSA	1	0.063	13.019	15	PASS
ICSAB2	ICSAB	1	22.23	1.37	15	PASS

PERCENT RSD SUMMARY: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.046	4.7	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.38	5.97	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	1.37	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	0.34	15	PASS
Std5-20/200 ppb	ICAL	1	20.062	1.039	15	PASS
Std6-40/400 ppb	ICAL	1	40.086	0.78	15	PASS
Std7-100/1000 ppb	ICAL	1	99.93	0.18	15	PASS
Std8-200/2000 ppb	ICAL	1	196.69	0.42	15	PASS
ICV	ICV	1	9.25	0.015	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.52	3.23	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.29	0.68	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.89	1.19	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.014	70.47	15	<PQL
N017400-002B	SAMP	5	0.013	29.7	15	<PQL
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL
N017415-001B	SAMP	5	0.023	13.33	15	PASS
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.88	0.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N017415-003B	SAMP	5	0.055	14.62	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.056	0.49	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]			
			Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	9.93	1.063	15	PASS
N017400-001B-MS	MS	1	10.28	0.88	15	PASS
N017400-001B-MSD	MSD	1	10.24	0.66	15	PASS
N017427-002B-MS	MS	1	10.25	0.21	15	PASS
CCV3	CCV	1	20.18	0.47	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.49	1.85	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.72	0.44	15	PASS

ANALYSIS RUN LOG

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
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INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104001.D	RINSE	RINSE	1	11/04/15 8:48 AM
A1104002.D	Cal Blank	IBLK	1	11/04/15 8:53 AM
A1104003.D	Std1-0.1/1 ppb	ICAL	1	11/04/15 8:59 AM
A1104004.D	Std2-0.5/5 ppb	ICAL	1	11/04/15 9:04 AM
A1104005.D	Std3-5/50 ppb	ICAL	1	11/04/15 9:10 AM
A1104006.D	Std4-10/100 ppb	ICAL	1	11/04/15 9:16 AM
A1104007.D	Std5-20/200 ppb	ICAL	1	11/04/15 9:21 AM
A1104008.D	Std6-40/400 ppb	ICAL	1	11/04/15 9:27 AM
A1104009.D	Std7-100/1000 ppb	ICAL	1	11/04/15 9:33 AM
A1104010.D	Std8-200/2000 ppb	ICAL	1	11/04/15 9:39 AM
A1104011.D	ICV	ICV	1	11/04/15 9:44 AM
A1104012.D	ICB	ICB	1	11/04/15 9:50 AM
A1104013.D	LLICV	CCV1	1	11/04/15 9:55 AM
A1104014.D	ICSA1	ICSA	1	11/04/15 10:01 AM
A1104015.D	ICSAB1	ICSAB	1	11/04/15 10:06 AM
A1104016.D	MB-52909	MBLK	1	11/04/15 10:12 AM
A1104017.D	LCS-52909	LCS	1	11/04/15 10:17 AM
A1104018.D	N017399-001A	SAMP	1	11/04/15 10:23 AM
A1104019.D	N017399-002B	SAMP	1	11/04/15 10:28 AM
A1104020.D	N017400-001B	SAMP	1	11/04/15 10:31 AM
A1104021.D	N017400-001B	SAMP	5	11/04/15 10:37 AM
A1104022.D	N017400-001B-PS	PS	1	11/04/15 10:42 AM
A1104023.D	N017400-001B-MS	MS	1	11/04/15 10:48 AM
A1104024.D	N017400-001B-MSD	MSD	1	11/04/15 10:53 AM
A1104025.D	N017400-002B	SAMP	1	11/04/15 10:59 AM
A1104026.D	CCV1	CCV	1	11/04/15 11:04 AM
A1104027.D	CCB1	CCB	1	11/04/15 11:10 AM
A1104028.D	N017415-001B	SAMP	1	11/04/15 11:15 AM
A1104029.D	N017415-002B	SAMP	1	11/04/15 11:21 AM
A1104030.D	N017415-003B	SAMP	1	11/04/15 11:26 AM
A1104031.D	N017415-004B	SAMP	1	11/04/15 11:32 AM
A1104032.D	N017415-005B	SAMP	1	11/04/15 11:37 AM
A1104033.D	N017415-006B	SAMP	1	11/04/15 11:43 AM
A1104034.D	N017415-007B	SAMP	1	11/04/15 11:48 AM
A1104035.D	N017427-001B	SAMP	1	11/04/15 11:54 AM
A1104036.D	N017427-002B	SAMP	1	11/04/15 11:59 AM
A1104037.D	N017427-002B-MS	MS	1	11/04/15 12:05 PM
A1104038.D	CCV2	CCV	1	11/04/15 12:10 PM
A1104039.D	CCB2	CCB	1	11/04/15 12:16 PM
A1104040.D	LLCCV1	CCV2	1	11/04/15 12:21 PM
A1104041.D	ICSA2	ICSA	1	11/04/15 12:27 PM
A1104042.D	ICSAB2	ICSAB	1	11/04/15 12:32 PM

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104043.D	N017349-001B	SAMP	1	11/04/15 12:36 PM
A1104044.D	N017349-001A	SAMP	1	11/04/15 12:40 PM
A1104045.D	N017353-009B	SAMP	1	11/04/15 12:44 PM
A1104046.D	N017353-009A	SAMP	1	11/04/15 12:56 PM
A1104047.D	N017396-002B	SAMP	1	11/04/15 1:03 PM
A1104048.D	N017396-002A	SAMP	1	11/04/15 1:08 PM
A1104049.D	N017396-004B	SAMP	1	11/04/15 1:14 PM
A1104050.D	N017396-004A	SAMP	1	11/04/15 1:19 PM
A1104051.D	N017396-005B	SAMP	1	11/04/15 1:25 PM
A1104052.D	N017396-005A	SAMP	1	11/04/15 1:30 PM
A1104053.D	CCV3	CCV	1	11/04/15 1:36 PM
A1104054.D	CCB3	CCB	1	11/04/15 1:41 PM
A1104055.D	N017396-006B	SAMP	1	11/04/15 1:47 PM
A1104056.D	N017396-006A	SAMP	1	11/04/15 1:52 PM
A1104057.D	N017396-007B	SAMP	1	11/04/15 1:58 PM
A1104058.D	N017396-007A	SAMP	1	11/04/15 2:03 PM
A1104059.D	N017396-008B	SAMP	1	11/04/15 2:09 PM
A1104060.D	N017396-008A	SAMP	1	11/04/15 2:13 PM
A1104061.D	N017396-009B	SAMP	1	11/04/15 2:19 PM
A1104062.D	N017396-009A	SAMP	1	11/04/15 2:24 PM
A1104063.D	MB-52931	MBLK	1	11/04/15 2:30 PM
A1104064.D	LCS-52931	LCS	1	11/04/15 2:35 PM
A1104065.D	CCV4	CCV	1	11/04/15 2:41 PM
A1104066.D	CCB4	CCB	1	11/04/15 2:47 PM
A1104067.D	N017466-001B	SAMP	1	11/04/15 2:52 PM
A1104068.D	N017466-001B	SAMP	5	11/04/15 2:58 PM
A1104069.D	N017466-001B-PS	PS	1	11/04/15 3:03 PM
A1104070.D	N017466-001B-MS	MS	1	11/04/15 3:09 PM
A1104071.D	N017466-001B-MSD	MSD	1	11/04/15 3:15 PM
A1104072.D	N017381-001B	SAMP	5	11/04/15 3:20 PM
A1104073.D	N017399-002B	SAMP	5	11/04/15 3:26 PM
A1104074.D	MB-52922	MBLK	1	11/04/15 3:31 PM
A1104075.D	LCS-52922	LCS	1	11/04/15 3:37 PM
A1104076.D	N017437-005A	SAMP	1	11/04/15 3:43 PM
A1104077.D	CCV5	CCV	1	11/04/15 3:48 PM
A1104078.D	CCB5	CCB	1	11/04/15 3:54 PM
A1104079.D	N017437-005A	SAMP	5	11/04/15 3:59 PM
A1104080.D	N017437-005A-PS	PS	1	11/04/15 4:05 PM
A1104081.D	N017437-005A-MS	MS	1	11/04/15 4:10 PM
A1104082.D	N017437-005A-MSD	MSD	1	11/04/15 4:16 PM
A1104083.D	CCV6	CCV	1	11/04/15 4:21 PM
A1104084.D	CCB6	CCB	1	11/04/15 4:27 PM

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104085.D	LLCCV2	CCV2	1	11/04/15 4:33 PM
A1104086.D	ICSA3	ICSA	1	11/04/15 4:38 PM
A1104087.D	ICSAB3	ICSAB	1	11/04/15 4:44 PM
A1104088.D	RINSE	RINSE	1	11/04/15 4:49 PM
A1104089.D	RINSE	RINSE	1	11/04/15 4:55 PM

INJECTION LOG: 151109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1109001.D	RINSE	RINSE	1	11/09/15 10:24 PM
A1109002.D	Cal Blank	IBLK	1	11/09/15 10:33 PM
A1109003.D	Std1-0.1/1 ppb	ICAL	1	11/09/15 10:39 PM
A1109004.D	Std2-0.5/5 ppb	ICAL	1	11/09/15 10:44 PM
A1109005.D	Std3-5/50 ppb	ICAL	1	11/09/15 10:50 PM
A1109006.D	Std4-10/100 ppb	ICAL	1	11/09/15 10:55 PM
A1109007.D	Std5-20/200 ppb	ICAL	1	11/09/15 11:01 PM
A1109008.D	Std6-40/400 ppb	ICAL	1	11/09/15 11:06 PM
A1109009.D	Std7-100/1000 ppb	ICAL	1	11/09/15 11:12 PM
A1109010.D	Std8-200/2000 ppb	ICAL	1	11/09/15 11:17 PM
A1109011.D	ICV	ICV	1	11/09/15 11:23 PM
A1109012.D	ICB	ICB	1	11/09/15 11:28 PM
A1109013.D	LLICV	CCV1	1	11/09/15 11:32 PM
A1109014.D	ICSA1	ICSA	1	11/09/15 11:39 PM
A1109015.D	ICSAB1	ICSAB	1	11/09/15 11:45 PM
A1109016.D	MB-52909	MBLK	1	11/09/15 11:50 PM
A1109017.D	LCS-52909	LCS	1	11/09/15 11:56 PM
A1109018.D	N017400-001B	SAMP	5	11/10/15 12:01 AM
A1109019.D	N017400-001B	SAMP	1	11/10/15 12:07 AM
A1109020.D	N017400-002B	SAMP	5	11/10/15 12:12 AM
A1109021.D	N017400-002B	SAMP	1	11/10/15 12:18 AM
A1109022.D	N017415-001B	SAMP	5	11/10/15 12:23 AM
A1109023.D	N017415-001B	SAMP	1	11/10/15 12:29 AM
A1109024.D	N017415-002B	SAMP	5	11/10/15 12:34 AM
A1109025.D	N017415-002B	SAMP	1	11/10/15 12:40 AM
A1109026.D	CCV1	CCV	1	11/10/15 12:44 AM
A1109027.D	CCB1	CCB	1	11/10/15 12:51 AM
A1109028.D	N017415-003B	SAMP	5	11/10/15 12:56 AM
A1109029.D	N017415-003B	SAMP	1	11/10/15 1:02 AM
A1109030.D	N017415-004B	SAMP	5	11/10/15 1:07 AM
A1109031.D	N017415-004B	SAMP	1	11/10/15 1:13 AM
A1109032.D	N017415-005B	SAMP	5	11/10/15 1:18 AM
A1109033.D	N017415-005B	SAMP	1	11/10/15 1:24 AM
A1109034.D	N017415-006B	SAMP	5	11/10/15 1:29 AM
A1109035.D	N017415-006B	SAMP	1	11/10/15 1:35 AM
A1109036.D	N017415-007B	SAMP	5	11/10/15 1:40 AM
A1109037.D	N017415-007B	SAMP	1	11/10/15 1:46 AM
A1109038.D	CCV2	CCV	1	11/10/15 1:51 AM
A1109039.D	CCB2	CCB	1	11/10/15 1:57 AM
A1109040.D	N017427-001B	SAMP	5	11/10/15 2:02 AM
A1109041.D	N017427-001B	SAMP	1	11/10/15 2:08 AM
A1109042.D	N017427-002B	SAMP	5	11/10/15 2:13 AM

INJECTION LOG: 151109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1109043.D	N017427-002B	SAMP	1	11/10/15 2:19 AM
A1109044.D	N017400-001B	SAMP	25	11/10/15 2:24 AM
A1109045.D	N017400-001B-PS	PS	5	11/10/15 2:30 AM
A1109046.D	N017400-001B-PS	PS	1	11/10/15 2:35 AM
A1109047.D	N017400-001B-MS	MS	5	11/10/15 2:41 AM
A1109048.D	N017400-001B-MS	MS	1	11/10/15 2:46 AM
A1109049.D	N017400-001B-MSD	MSD	5	11/10/15 2:52 AM
A1109050.D	CCV3	CCV	1	11/10/15 2:57 AM
A1109051.D	CCB3	CCB	1	11/10/15 3:03 AM
A1109052.D	N017400-001B-MSD	MSD	1	11/10/15 3:08 AM
A1109053.D	N017427-002B-MS	MS	5	11/10/15 3:14 AM
A1109054.D	N017427-002B-MS	MS	1	11/10/15 3:19 AM
A1109055.D	CCV4	CCV	1	11/10/15 3:25 AM
A1109056.D	CCB4	CCB	1	11/10/15 3:29 AM
A1109057.D	LLCCV1	CCV2	1	11/10/15 3:36 AM
A1109058.D	ICSA2	ICSA	1	11/10/15 3:42 AM
A1109059.D	ICSAB2	ICSAB	1	11/10/15 3:47 AM

INJECTION LOG: 151110A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1110001.D	RINSE	RINSE	1	11/10/15 11:53 AM
A1110002.D	Cal Blank	IBLK	1	11/10/15 11:59 AM
A1110003.D	Std1-0.1/1 ppb	ICAL	1	11/10/15 12:04 PM
A1110004.D	Std2-0.5/5 ppb	ICAL	1	11/10/15 12:10 PM
A1110005.D	Std3-5/50 ppb	ICAL	1	11/10/15 12:15 PM
A1110006.D	Std4-10/100 ppb	ICAL	1	11/10/15 12:21 PM
A1110007.D	Std5-20/200 ppb	ICAL	1	11/10/15 12:26 PM
A1110008.D	Std6-40/400 ppb	ICAL	1	11/10/15 12:32 PM
A1110009.D	Std7-100/1000 ppb	ICAL	1	11/10/15 12:37 PM
A1110010.D	Std8-200/2000 ppb	ICAL	1	11/10/15 12:43 PM
A1110011.D	ICV	ICV	1	11/10/15 12:47 PM
A1110012.D	ICB	ICB	1	11/10/15 12:51 PM
A1110013.D	LLICV	CCV1	1	11/10/15 12:56 PM
A1110014.D	ICSA1	ICSA	1	11/10/15 1:05 PM
A1110015.D	ICSAB1	ICSAB	1	11/10/15 1:10 PM
A1110016.D	MB-52909	MBLK	1	11/10/15 1:13 PM
A1110017.D	LCS-52909	LCS	1	11/10/15 1:21 PM
A1110018.D	N017400-001B	SAMP	5	11/10/15 1:24 PM
A1110019.D	N017400-001B	SAMP	1	11/10/15 1:32 PM
A1110020.D	N017400-002B	SAMP	5	11/10/15 1:38 PM
A1110021.D	N017400-002B	SAMP	1	11/10/15 1:43 PM
A1110022.D	N017415-001B	SAMP	5	11/10/15 1:49 PM
A1110023.D	N017415-001B	SAMP	1	11/10/15 1:54 PM
A1110024.D	N017415-002B	SAMP	5	11/10/15 2:00 PM
A1110025.D	N017415-002B	SAMP	1	11/10/15 2:05 PM
A1110026.D	CCV1	CCV	1	11/10/15 2:11 PM
A1110027.D	CCB1	CCB	1	11/10/15 2:14 PM
A1110028.D	N017415-003B	SAMP	5	11/10/15 2:22 PM
A1110029.D	N017415-003B	SAMP	1	11/10/15 2:27 PM
A1110030.D	N017415-004B	SAMP	5	11/10/15 2:33 PM
A1110031.D	N017415-004B	SAMP	1	11/10/15 2:38 PM
A1110032.D	N017415-005B	SAMP	5	11/10/15 2:44 PM
A1110033.D	N017415-005B	SAMP	1	11/10/15 2:49 PM
A1110034.D	N017415-006B	SAMP	5	11/10/15 2:55 PM
A1110035.D	N017415-006B	SAMP	1	11/10/15 3:00 PM
A1110036.D	N017415-007B	SAMP	5	11/10/15 3:06 PM
A1110037.D	N017415-007B	SAMP	1	11/10/15 3:11 PM
A1110038.D	CCV2	CCV	1	11/10/15 3:17 PM
A1110039.D	CCB2	CCB	1	11/10/15 3:21 PM
A1110040.D	N017427-001B	SAMP	5	11/10/15 3:28 PM
A1110041.D	N017427-001B	SAMP	1	11/10/15 3:33 PM
A1110042.D	N017427-002B	SAMP	5	11/10/15 3:39 PM

INJECTION LOG: 151110A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1110043.D	N017427-002B	SAMP	1	11/10/15 3:44 PM
A1110044.D	N017400-001B-PS	PS	1	11/10/15 3:50 PM
A1110045.D	N017400-001B-MS	MS	1	11/10/15 3:55 PM
A1110046.D	N017400-001B-MSD	MSD	1	11/10/15 3:59 PM
A1110047.D	N017427-002B-MS	MS	1	11/10/15 4:05 PM
A1110048.D	CCV3	CCV	1	11/10/15 4:10 PM
A1110049.D	CCB3	CCB	1	11/10/15 4:13 PM
A1110050.D	LLCCV1	CCV2	1	11/10/15 4:21 PM
A1110051.D	ICSA2	ICSA	1	11/10/15 4:27 PM
A1110052.D	ICSAB2	ICSAB	1	11/10/15 4:32 PM

SAMPLE PREPARATION LOG

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:13**
Prep End Date: **11/2/2015 3:30:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52909** Prep Code: **200.8_DISS_P** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52909	Aqueous		25	☐	0	0	25	1.000		
MB-52909	Aqueous		25	☐	0	0	25	1.000		
N017399-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:13**
Prep End Date: **11/2/2015 3:30:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52909** Prep Code: **200.8_DISS_P** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 Nov 2015 08:33:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	61608.20	0.00	
24	Mg	235494.00	0.00	
25	Mg	31429.50	0.00	
26	Mg	37246.30	0.00	
59	Co	549927.00	0.00	
115	In	1050520.00	0.00	
206	Pb	259650.00	0.00	
207	Pb	225306.00	0.00	
208	Pb	551269.00	0.00	

RSD (%)

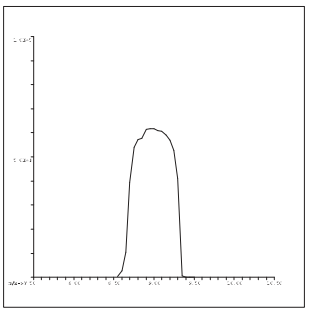
Element		Actual	Required	Flag
9	Be	0.74	5.00	
24	Mg	0.48	5.00	
25	Mg	2.36	5.00	
26	Mg	1.31	5.00	
59	Co	0.83	5.00	
115	In	0.35	5.00	
206	Pb	0.63	5.00	
207	Pb	0.69	5.00	
208	Pb	0.37	5.00	

Ion Ratio

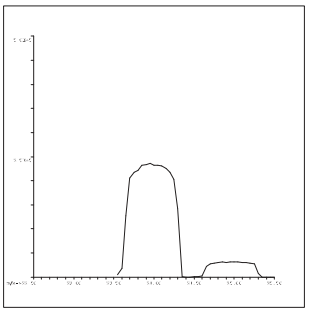
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

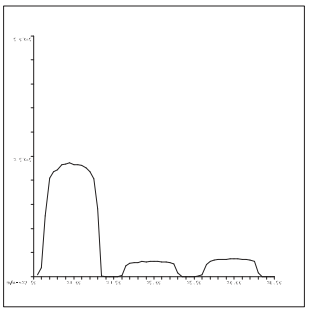
Element	Actual	Required	Flag



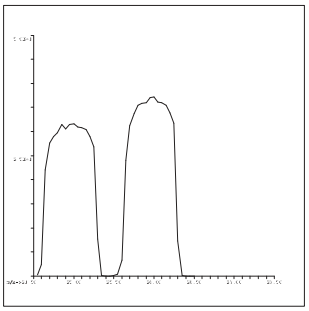
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



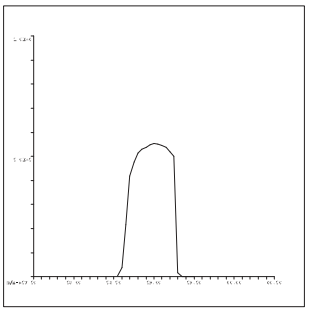
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



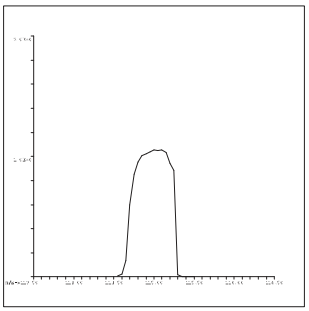
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



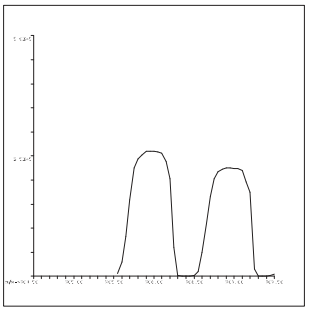
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



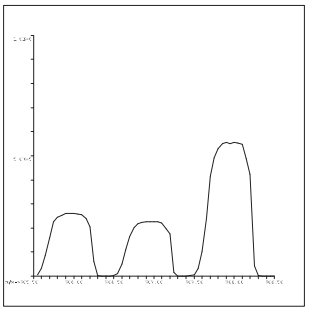
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



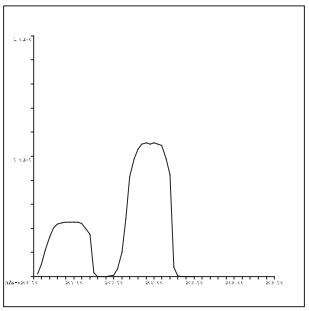
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 Nov 2015 07:54:10 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	54889.00	0.00	
24 Mg	177716.00	0.00	
25 Mg	23525.60	0.00	
26 Mg	28430.10	0.00	
59 Co	338768.00	0.00	
115 In	616528.00	0.00	
206 Pb	144988.00	0.00	
207 Pb	125433.00	0.00	
208 Pb	309753.00	0.00	

RSD (%)

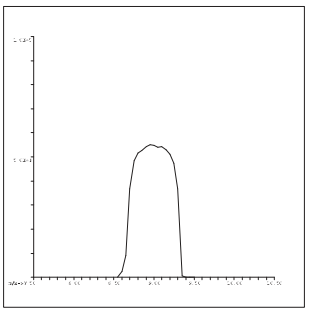
Element	Actual	Required	Flag
9 Be	0.95	5.00	
24 Mg	1.20	5.00	
25 Mg	1.95	5.00	
26 Mg	1.89	5.00	
59 Co	0.81	5.00	
115 In	0.56	5.00	
206 Pb	0.99	5.00	
207 Pb	1.07	5.00	
208 Pb	0.87	5.00	

Ion Ratio

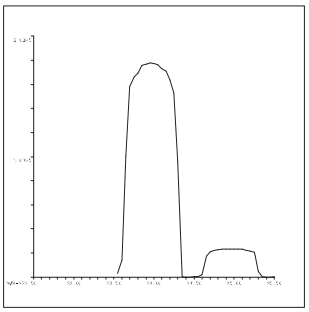
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

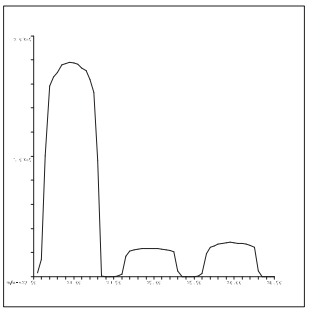
Element	Actual	Required	Flag



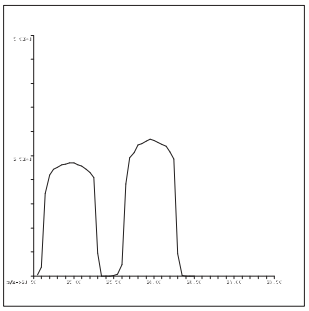
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



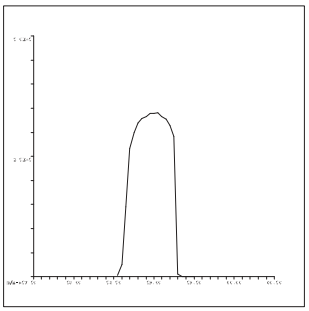
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



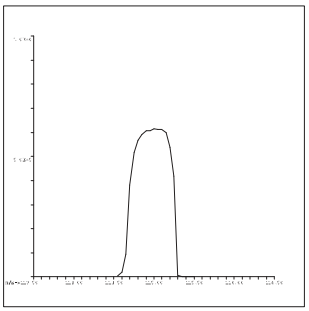
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



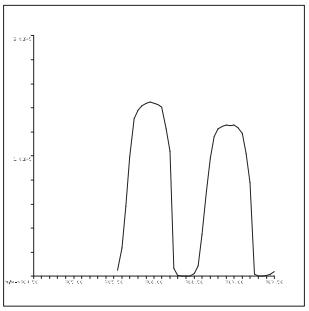
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



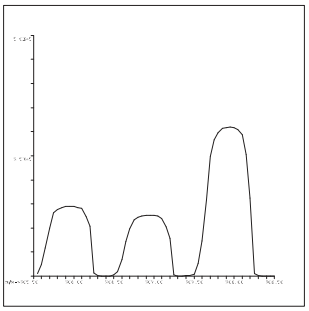
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



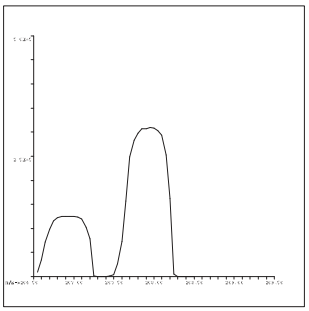
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 10 Nov 2015 09:21:09 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	277925.00	0.00	
24	Mg	819628.00	0.00	
25	Mg	108617.00	0.00	
26	Mg	127052.00	0.00	
59	Co	1413430.00	0.00	
115	In	2057570.00	0.00	
206	Pb	445442.00	0.00	
207	Pb	385361.00	0.00	
208	Pb	945531.00	0.00	

RSD (%)

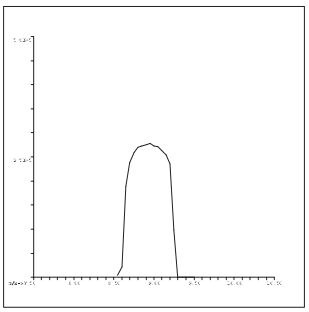
Element		Actual	Required	Flag
9	Be	0.20	5.00	
24	Mg	0.79	5.00	
25	Mg	2.47	5.00	
26	Mg	0.73	5.00	
59	Co	0.98	5.00	
115	In	1.36	5.00	
206	Pb	0.48	5.00	
207	Pb	0.87	5.00	
208	Pb	0.44	5.00	

Ion Ratio

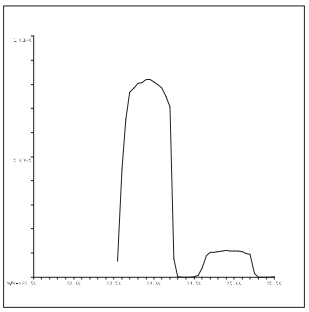
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

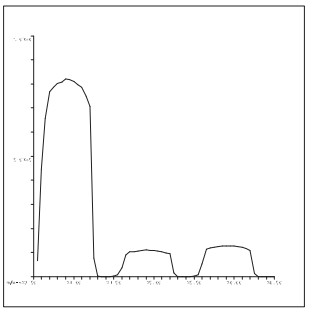
Element	Actual	Required	Flag



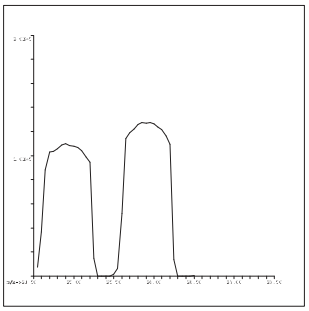
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



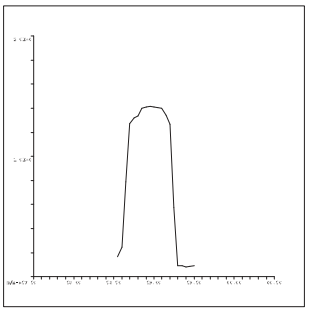
24 Mg
Mass Calib.
Actual: 23.90
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



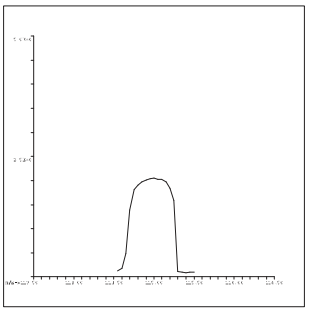
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



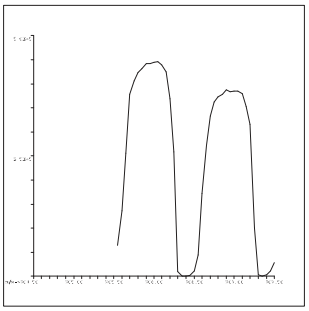
26 Mg
Mass Calib.
Actual: 25.90
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



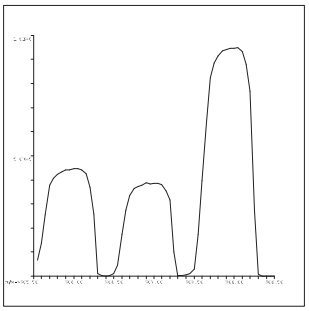
59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



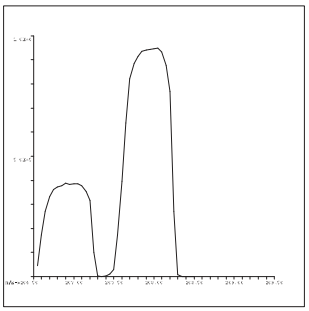
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICPMS-02

Analyte	Data File	A1104002.D	A1104003.D	A1104004.D	A1104005.D	A1104006.D	A1104007.D	A1104008.D	A1104009.D	A1104010.D	
	Acq. Date-Time	11/04/2015 08:53 AM	11/04/2015 08:59 AM	11/04/2015 09:04 AM	11/04/2015 09:10 AM	11/04/2015 09:16 AM	11/04/2015 09:21 AM	11/04/2015 09:27 AM	11/04/2015 09:33 AM	11/04/2015 09:39 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	386981.2		370000	360513.6	355522.6	348486	364687.2	353298.2	345512.7	
9 Be [3]	CPS	104.5		1729.1	16854.5	33056.5	64778.4	131590.9	316393	625954.3	1.0000
45 Sc (ISTD) [2]	CPS	74381.4		73437	72604.8	73583.1	73394.6	74930.3	75030.9	75834.2	
59 Co [2]	CPS	61		5702.2	56270.4	112946	223152.9	449215.9	1109641.3	2233760.9	1.0000
55 Mn [2]	CPS	137.3		1730.3	15056.4	30323.8	60112.5	119633.1	298017	594788.2	1.0000
52 Cr [2]	CPS	333.3		3201.5	29767.3	58605.4	116951.3	235165.9	581508.2	1166624.6	1.0000
51 V [2]	CPS	188.9		2537	23422.9	45975.9	91731.4	184051	457095.6	916535.6	1.0000
72 Ge (ISTD) [1]	CPS	85679.3		83268.3	82810.4	81777.3	80482.2	81907.2	81014.6	81670	
78 Se [1]	CPS	0		171.1	1531.3	3061.5	6184.8	12328.6	30507.4	60647.5	1.0000
72 Ge (ISTD) [2]	CPS	61364	62199.2	61451.2	61844.7	61274	61250.2	62152.5	61941.7	62571	
75 As [2]	CPS	34.7	152	503.6	4690.5	9459.3	18897.8	37958.8	93210	186988.1	1.0000
66 Zn [2]	CPS	1805.9		985.8	7354.8	13772.9	27418.7	56077.6	133783.5	265251.9	0.9999
63 Cu [2]	CPS	4455		7661.4	46221.9	87687.1	172324.8	340456.9	837137.8	1693349.2	1.0000
60 Ni [2]	CPS	274.3		1888.9	15307.1	30108.5	58865	118451.9	289092.8	578506.3	1.0000
103 Rh (ISTD) [2]	CPS	1736407.9		1718449.7	1735855.9	1743874.9	1735425	1754021.5	1751224	1757304.7	
95 Mo [2]	CPS	243.3		2175.8	20588.4	40904.7	82526.8	163897.5	408476.1	816540.5	1.0000
103 Rh (ISTD) [3]	CPS	3969590.5		3894870.3	3842957.1	3835626.8	3805107.3	3823522.3	3783621.2	3761591.3	
107 Ag [3]	CPS	2991.2		15145.5	166257.5	331961	660305.4	1323289	3220121.1	6354069.4	1.0000
115 In (ISTD) [3]	CPS	4120344.3		4048100.7	4044176.8	3997649	4000927.6	4024085.7	3989625.4	3996609.8	
121 Sb [3]	CPS	995.6		16261.3	154463	304029.3	606804.8	1209323.6	2986970.9	5935346.2	1.0000
111 Cd [3]	CPS	56.1		3896.6	37143.9	72798.1	146769.2	289723.9	710432.5	1388874.3	0.9999
159 Tb (ISTD) [3]	CPS	5948159.1		5885553.8	5917339.4	5879781.1	5838893	5893339.1	5842619.5	5903055.8	
137 Ba [3]	CPS	452.8		6206.2	54992.3	107543.6	214523	423810.4	1037057.8	2069991.8	1.0000
209 Bi (ISTD) [3]	CPS	3661582.8		3629819.8	3644920.1	3658334.6	3666602.1	3684831.8	3675623.4	3685377.2	
208 Pb [3]	CPS	2348.9		46703.6	439362.2	864439.5	1721027.7	3431240.6	8432632.5	16590208.7	1.0000
205 Tl [3]	CPS	1504.6		32887.4	316900.9	629283.4	1254303	2498533.9	6131418.4	12133843	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151109A

Instrument ID: ICPMS-02

Analyte	Data File	A1109002.D	A1109004.D	A1109005.D	A1109006.D	A1109007.D	A1109008.D	A1109009.D	A1109010.D	
	Acq. Date-Time	11/09/2015 10:33 PM	11/09/2015 10:44 PM	11/09/2015 10:50 PM	11/09/2015 10:55 PM	11/09/2015 11:01 PM	11/09/2015 11:06 PM	11/09/2015 11:12 PM	11/09/2015 11:17 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1419177.5	1526928.5	1527572	1527812.8	1547085.4	1622856.1	1639925.9	1664305.5	
9 Be [3]	CPS	68.9	6624.9	63422.9	125349.2	252829.1	528977.9	1325866.1	2652721.8	1.0000
72 Ge (ISTD) [1]	CPS	124583.4	129809	128649.1	128306.2	129159.5	134939.2	135452.3	137491.8	
78 Se [1]	CPS	7.8	255.6	2344.7	4784.3	9215.3	19205.5	47646.7	95473.6	1.0000
72 Ge (ISTD) [2]	CPS	93890.7	99290.1	99192.6	100440.5	101433.1	105079.6	105660.8	107776	
63 Cu [2]	CPS	1994.3	11142.2	75719.8	146242.6	287779.7	593962.7	1490565.3	2947384	0.9999
60 Ni [2]	CPS	115.3	2696.7	25260.1	50150.7	100299.2	208979.7	520855.8	1041313.8	1.0000
103 Rh (ISTD) [2]	CPS	2222556	2410396.3	2404745.9	2433146.8	2446941.5	2583046.8	2591061.9	2615738.5	
95 Mo [2]	CPS	200	3247.1	30457.6	60655.6	122650.2	253795.3	639881.1	1282997.8	1.0000
115 In (ISTD) [3]	CPS	4388228.9	4758950.9	4775737.7	4863832.7	4935042.4	5173079	5228314.3	5344142.6	
121 Sb [3]	CPS	561.1	19431.7	184897.1	369616.7	744040.2	1550544.9	3867612.6	7829470.2	1.0000
209 Bi (ISTD) [3]	CPS	3510049	3807805.7	3827910.6	3911084.3	3981637.8	4166584.8	4219867.3	4319905.3	
205 Tl [3]	CPS	596.7	34971.2	343546.9	688035.8	1385299.6	2875838.3	7174334.7	14473293.1	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151110A1

Instrument ID: ICPMS-02

Analyte	Data File	A1110002.D	A1110004.D	A1110005.D	A1110006.D	A1110007.D	A1110008.D	A1110009.D	A1110010.D	
	Acq. Date-Time	11/10/2015 11:59 AM	11/10/2015 12:10 PM	11/10/2015 12:15 PM	11/10/2015 12:21 PM	11/10/2015 12:26 PM	11/10/2015 12:32 PM	11/10/2015 12:37 PM	11/10/2015 12:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
103 Rh (ISTD) [3]	CPS	3561197	4079095.9	4026530.7	4059910	3360140.6	4087403.7	4082419.9	4108948	
107 Ag [3]	CPS	2839.5	16292.2	172876.1	355994	574557.3	1393338.2	3464368.6	6859851.8	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.466	0.10	10.00	0	105	90	110				
Barium	104.174	1.0	100.0	0	104	90	110				
Cadmium	10.623	0.50	10.00	0	106	90	110				
Chromium	10.263	1.0	10.00	0	103	90	110				
Cobalt	9.668	0.50	10.00	0	96.7	90	110				
Lead	10.431	1.0	10.00	0	104	90	110				
Manganese	101.043	0.50	100.0	0	101	90	110				
Vanadium	10.098	1.0	10.00	0	101	90	110				
Zinc	104.464	10	100.0	0	104	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Barium	1.096	1.0	1.000	0	110	80	120				
Cadmium	0.534	0.50	0.5000	0	107	80	120				
Chromium	1.089	1.0	1.000	0	109	80	120				
Cobalt	0.539	0.50	0.5000	0	108	80	120				
Lead	1.093	1.0	1.000	0	109	80	120				
Manganese	0.548	0.50	0.5000	0	110	80	120				
Vanadium	1.042	1.0	1.000	0	104	80	120				
Zinc	9.766	10	10.00	0	97.7	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126140**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.781	0.10	20.00	0	104	90	110				
Barium	21.656	1.0	20.00	0	108	90	110				
Cadmium	20.636	0.50	20.00	0	103	90	110				
Chromium	20.114	1.0	20.00	0	101	90	110				
Cobalt	19.809	0.50	20.00	0	99.0	90	110				
Lead	20.663	1.0	20.00	0	103	90	110				
Manganese	20.615	0.50	20.00	0	103	90	110				
Vanadium	20.360	1.0	20.00	0	102	90	110				
Zinc	19.253	10	20.00	0	96.3	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.607	0.10	20.00	0	103	90	110				
Barium	21.666	1.0	20.00	0	108	90	110				
Cadmium	20.832	0.50	20.00	0	104	90	110				
Chromium	19.907	1.0	20.00	0	99.5	90	110				
Cobalt	19.625	0.50	20.00	0	98.1	90	110				
Lead	20.905	1.0	20.00	0	105	90	110				
Manganese	20.678	0.50	20.00	0	103	90	110				
Vanadium	20.104	1.0	20.00	0	101	90	110				
Zinc	19.027	10	20.00	0	95.1	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.9	70	130				
Barium	1.116	1.0	1.000	0	112	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.535	0.50	0.5000	0	107	70	130				
Chromium	1.062	1.0	1.000	0	106	70	130				
Cobalt	0.512	0.50	0.5000	0	102	70	130				
Lead	1.086	1.0	1.000	0	109	70	130				
Manganese	0.578	0.50	0.5000	0	116	70	130				
Vanadium	1.080	1.0	1.000	0	108	70	130				
Zinc	9.434	10	10.00	0	94.3	70	130				

Sample ID: **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.508	0.10	20.00	0	103	90	110				
Barium	21.187	1.0	20.00	0	106	90	110				
Cadmium	20.783	0.50	20.00	0	104	90	110				
Chromium	20.398	1.0	20.00	0	102	90	110				
Cobalt	20.288	0.50	20.00	0	101	90	110				
Lead	20.678	1.0	20.00	0	103	90	110				
Manganese	20.608	0.50	20.00	0	103	90	110				
Vanadium	20.513	1.0	20.00	0	103	90	110				
Zinc	18.836	10	20.00	0	94.2	90	110				

Sample ID: **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.596	0.10	20.00	0	103	90	110				
Barium	21.190	1.0	20.00	0	106	90	110				
Cadmium	20.698	0.50	20.00	0	103	90	110				
Chromium	20.336	1.0	20.00	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCV4**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCV**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	20.103	0.50	20.00	0	101	90	110				
Lead	20.561	1.0	20.00	0	103	90	110				
Manganese	20.556	0.50	20.00	0	103	90	110				
Vanadium	20.428	1.0	20.00	0	102	90	110				
Zinc	19.155	10	20.00	0	95.8	90	110				

Sample ID: **CCV5**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCV**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.649	0.10	20.00	0	103	90	110				
Barium	20.877	1.0	20.00	0	104	90	110				
Cadmium	20.636	0.50	20.00	0	103	90	110				
Chromium	20.403	1.0	20.00	0	102	90	110				
Cobalt	20.703	0.50	20.00	0	104	90	110				
Lead	20.623	1.0	20.00	0	103	90	110				
Manganese	20.795	0.50	20.00	0	104	90	110				
Vanadium	20.711	1.0	20.00	0	104	90	110				
Zinc	19.345	10	20.00	0	96.7	90	110				

Sample ID: **CCV6**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCV**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.757	0.10	20.00	0	104	90	110				
Barium	21.120	1.0	20.00	0	106	90	110				
Cadmium	20.560	0.50	20.00	0	103	90	110				
Chromium	20.685	1.0	20.00	0	103	90	110				
Cobalt	21.030	0.50	20.00	0	105	90	110				
Lead	20.757	1.0	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCV6** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.055	0.50	20.00	0	105	90	110				
Vanadium	20.845	1.0	20.00	0	104	90	110				
Zinc	19.010	10	20.00	0	95.0	90	110				

Sample ID: **LLCCV2** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.096	0.10	0.1000	0	95.6	70	130				
Barium	1.109	1.0	1.000	0	111	70	130				
Cadmium	0.549	0.50	0.5000	0	110	70	130				
Chromium	1.098	1.0	1.000	0	110	70	130				
Cobalt	0.520	0.50	0.5000	0	104	70	130				
Lead	1.074	1.0	1.000	0	107	70	130				
Manganese	0.584	0.50	0.5000	0	117	70	130				
Vanadium	1.070	1.0	1.000	0	107	70	130				
Zinc	9.716	10	10.00	0	97.2	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.423	0.50	10.00	0	104	90	110				
Beryllium	9.909	0.50	10.00	0	99.1	90	110				
Copper	9.968	1.0	10.00	0	99.7	90	110				
Lead	9.918	1.0	10.00	0	99.2	90	110				
Molybdenum	10.738	0.50	10.00	0	107	90	110				
Nickel	10.069	1.0	10.00	0	101	90	110				
Selenium	10.100	0.50	10.00	0	101	90	110				
Thallium	9.332	0.50	10.00	0	93.3	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.531	0.50	0.5000	0	106	80	120				
Beryllium	0.512	0.50	0.5000	0	102	80	120				
Copper	1.175	1.0	1.000	0	117	80	120				
Lead	1.080	1.0	1.000	0	108	80	120				
Molybdenum	0.471	0.50	0.5000	0	94.2	80	120				
Nickel	1.136	1.0	1.000	0	114	80	120				
Selenium	0.477	0.50	0.5000	0	95.5	80	120				
Thallium	0.449	0.50	0.5000	0	89.8	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.083	0.50	20.00	0	100	90	110				
Beryllium	19.651	0.50	20.00	0	98.3	90	110				
Copper	21.505	1.0	20.00	0	108	90	110				
Lead	20.554	1.0	20.00	0	103	90	110				

Qualifiers:

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

Calculations are based on raw values

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

Lead is not reported on this run

11/12/2015

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.395	0.50	20.00	0	97.0	90	110				
Nickel	21.317	1.0	20.00	0	107	90	110				
Selenium	19.513	0.50	20.00	0	97.6	90	110				
Thallium	20.532	0.50	20.00	0	103	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.568	0.50	20.00	0	103	90	110				
Beryllium	20.731	0.50	20.00	0	104	90	110				
Copper	19.498	1.0	20.00	0	97.5	90	110				
Lead	20.681	1.0	20.00	0	103	90	110				
Molybdenum	20.269	0.50	20.00	0	101	90	110				
Nickel	19.571	1.0	20.00	0	97.9	90	110				
Selenium	19.052	0.50	20.00	0	95.3	90	110				
Thallium	20.757	0.50	20.00	0	104	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.484	0.50	20.00	0	102	90	110				
Beryllium	20.260	0.50	20.00	0	101	90	110				
Copper	20.012	1.0	20.00	0	100	90	110				
Lead	20.577	1.0	20.00	0	103	90	110				
Molybdenum	19.948	0.50	20.00	0	99.7	90	110				
Nickel	19.897	1.0	20.00	0	99.5	90	110				
Selenium	19.637	0.50	20.00	0	98.2	90	110				
Thallium	20.710	0.50	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.535	0.50	20.00	0	103	90	110				
Beryllium	19.785	0.50	20.00	0	98.9	90	110				
Copper	19.971	1.0	20.00	0	99.9	90	110				
Lead	20.726	1.0	20.00	0	104	90	110				
Molybdenum	19.949	0.50	20.00	0	99.7	90	110				
Nickel	19.886	1.0	20.00	0	99.4	90	110				
Selenium	19.303	0.50	20.00	0	96.5	90	110				
Thallium	20.871	0.50	20.00	0	104	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.575	0.50	0.5000	0	115	70	130				
Beryllium	0.521	0.50	0.5000	0	104	70	130				
Copper	0.984	1.0	1.000	0	98.4	70	130				
Lead	1.067	1.0	1.000	0	107	70	130				
Molybdenum	0.596	0.50	0.5000	0	119	70	130				
Nickel	1.147	1.0	1.000	0	115	70	130				
Selenium	0.502	0.50	0.5000	0	100	70	130				
Thallium	0.455	0.50	0.5000	0	91.1	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **ICV** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.251	0.50	10.00	0	92.5	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.519	0.50	0.5000	0	104	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **CCV** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	19.877	0.50	20.00	0	99.4	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **CCV** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.056	0.50	20.00	0	100	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **CCV** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.176	0.50	20.00	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.491	0.50	0.5000	0	98.1	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **ICV**	SampType: **ICV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.263	1.0	10.00	0	103	90	110				

Sample ID: **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.089	1.0	1.000	0	109	80	120				

Sample ID: **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.114	1.0	20.00	0	101	90	110				

Sample ID: **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.907	1.0	20.00	0	99.5	90	110				

Sample ID: **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.062	1.0	1.000	0	106	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.398	1.0	20.00	0	102	90	110				

Sample ID: **CCV4**	SampType: **CCV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.336	1.0	20.00	0	102	90	110				

Sample ID: **CCV5**	SampType: **CCV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.403	1.0	20.00	0	102	90	110				

Sample ID: **CCV6**	SampType: **CCV**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.685	1.0	20.00	0	103	90	110				

Sample ID: **LLCCV2**	SampType: **CCV2**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.098	1.0	1.000	0	110	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

Date: *11-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126153**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	0.025	1.0									
Zinc	ND	10									

Sample ID: **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126180**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **CCB5**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126198**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCB6** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.151	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.375	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	0.126	0.50									

Sample ID: **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.071	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.293	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.070	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

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

Lead is not reported on this run

11/12/2015

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.245	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.072	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.252	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.043	0.50									
Beryllium	ND	0.50									
Copper	0.327	1.0									
Lead	ND	1.0									
Molybdenum	0.242	0.50									
Nickel	0.127	1.0									
Selenium	0.137	0.50									
Thallium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126049**

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

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126064**

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

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126076**

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

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126091**

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

Sample ID: **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126103**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **CCB5**	SampType: **CCB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126115**

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

Sample ID: **CCB6**	SampType: **CCB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126121**

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

Date: *11-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	0.190	1.0									
Cobalt	0.013	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSAB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.662	0.10	20.00	0	108	80	120				
Barium	17.889	1.0	20.00	0	89.4	80	120				
Cadmium	19.781	0.50	20.00	0	98.9	80	120				
Chromium	21.317	1.0	20.00	0	107	80	120				
Cobalt	20.182	0.50	20.00	0	101	80	120				
Lead	21.553	1.0	20.00	0	108	80	120				
Manganese	18.995	0.50	20.00	0	95.0	80	120				
Vanadium	21.542	1.0	20.00	0	108	80	120				
Zinc	18.516	10	20.00	0	92.6	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126155**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	0.162	1.0									
Cobalt	0.014	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSAB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.581	0.10	20.00	0	108	80	120				
Barium	18.672	1.0	20.00	0	93.4	80	120				
Cadmium	19.794	0.50	20.00	0	99.0	80	120				
Chromium	20.415	1.0	20.00	0	102	80	120				
Cobalt	19.149	0.50	20.00	0	95.7	80	120				
Lead	21.621	1.0	20.00	0	108	80	120				
Manganese	18.177	0.50	20.00	0	90.9	80	120				
Vanadium	20.876	1.0	20.00	0	104	80	120				
Zinc	18.088	10	20.00	0	90.4	80	120				

Sample ID: **ICSA3** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126200**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICSA3**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **ICSA**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Chromium	0.140	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID: **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **ICSAB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.985	0.10	20.00	0	110	80	120				
Barium	18.124	1.0	20.00	0	90.6	80	120				
Cadmium	19.529	0.50	20.00	0	97.6	80	120				
Chromium	20.180	1.0	20.00	0	101	80	120				
Cobalt	19.429	0.50	20.00	0	97.1	80	120				
Lead	21.459	1.0	20.00	0	107	80	120				
Manganese	18.017	0.50	20.00	0	90.1	80	120				
Vanadium	21.069	1.0	20.00	0	105	80	120				
Zinc	17.991	10	20.00	0	90.0	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.057	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.133	0.50									
Nickel	0.315	1.0									
Selenium	ND	0.50									
Thallium	0.043	0.50									

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSAB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.333	0.50	20.00	0	107	80	120				
Beryllium	22.347	0.50	20.00	0	112	80	120				
Copper	18.493	1.0	20.00	0	92.5	80	120				
Lead	22.141	1.0	20.00	0	111	80	120				
Molybdenum	22.945	0.50	20.00	0	115	80	120				
Nickel	20.101	1.0	20.00	0	101	80	120				
Selenium	20.654	0.50	20.00	0	103	80	120				
Thallium	22.575	0.50	20.00	0	113	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

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

Lead is not reported on this run

11/12/2015

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.063	0.50									
Nickel	0.338	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSAB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.253	0.50	20.00	0	106	80	120				
Beryllium	22.157	0.50	20.00	0	111	80	120				
Copper	18.257	1.0	20.00	0	91.3	80	120				
Lead	22.127	1.0	20.00	0	111	80	120				
Molybdenum	22.228	0.50	20.00	0	111	80	120				
Nickel	19.773	1.0	20.00	0	98.9	80	120				
Selenium	19.478	0.50	20.00	0	97.4	80	120				
Thallium	22.756	0.50	20.00	0	114	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSA**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID: **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSAB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	19.291	0.50	20.00	0	96.5	80	120				

Sample ID: **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSA**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID: **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSAB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.724	0.50	20.00	0	104	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **ICSA1**	SampType: **ICSA**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSA**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.190	1.0									

Sample ID: **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.317	1.0	20.00	0	107	80	120				

Sample ID: **ICSA2**	SampType: **ICSA**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSA**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.162	1.0									

Sample ID: **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.415	1.0	20.00	0	102	80	120				

Sample ID: **ICSA3**	SampType: **ICSA**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSA**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.140	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.180	1.0	20.00	0	101	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3969590.5	3969590.5	100	PASS	70-130	386981.2	386981.2	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	3917375.4	3969590.5	98.68	PASS	70-130	361934.4	386981.2	93.53	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	3894870.3	3969590.5	98.12	PASS	70-130	370000	386981.2	95.61	PASS	70-130
Std3-5/50 ppb	ICAL	1	3842957.1	3969590.5	96.81	PASS	70-130	360513.6	386981.2	93.16	PASS	70-130
Std4-10/100 ppb	ICAL	1	3835626.8	3969590.5	96.63	PASS	70-130	355522.6	386981.2	91.87	PASS	70-130
Std5-20/200 ppb	ICAL	1	3805107.3	3969590.5	95.86	PASS	70-130	348486	386981.2	90.052	PASS	70-130
Std6-40/400 ppb	ICAL	1	3823522.3	3969590.5	96.32	PASS	70-130	364687.2	386981.2	94.24	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3783621.2	3969590.5	95.32	PASS	70-130	353298.2	386981.2	91.3	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3761591.3	3969590.5	94.76	PASS	70-130	345512.7	386981.2	89.28	PASS	70-130
ICV	ICV	1	3646981.3	3969590.5	91.87	PASS	70-130	329271.8	386981.2	85.087	PASS	70-130
ICB	ICB	1	3712167.6	3969590.5	93.52	PASS	70-130	313912.3	386981.2	81.12	PASS	70-130
LLICV	CCV1	1	3728447.5	3969590.5	93.93	PASS	70-130	317586.5	386981.2	82.068	PASS	70-130
ICSA1	ICSA	1	3420262.8	3969590.5	86.16	PASS	70-130	285510.1	386981.2	73.78	PASS	70-130
ICSAB1	ICSAB	1	3441252.7	3969590.5	86.69	PASS	70-130	266176.6	386981.2	68.78	NR!	70-130
MB-52909	MBLK	1	3904889.7	3969590.5	98.37	PASS	70-130	329714.4	386981.2	85.2	PASS	70-130
LCS-52909	LCS	1	3661700.7	3969590.5	92.24	PASS	70-130	312787.9	386981.2	80.83	PASS	70-130
N017399-001A	SAMP	1	3916616.9	3969590.5	98.67	PASS	70-130	327592	386981.2	84.65	PASS	70-130
N017399-002B	SAMP	1	3836226.6	3969590.5	96.64	PASS	70-130	255538.2	386981.2	66.034	NR!	70-130
N017400-001B	SAMP	1	3490396.9	3969590.5	87.93	PASS	70-130	276403.2	386981.2	71.43	PASS	70-130
N017400-001B	SAMP	5	3363039.3	3969590.5	84.72	PASS	70-130	261794.8	386981.2	67.65	NR!	70-130
N017400-001B-PS	PS	1	3477601.9	3969590.5	87.61	PASS	70-130	267139.8	386981.2	69.032	NR!	70-130
N017400-001B-MS	MS	1	3526731.5	3969590.5	88.84	PASS	70-130	272740.7	386981.2	70.48	PASS	70-130
N017400-001B-MSD	MSD	1	3506568.8	3969590.5	88.34	PASS	70-130	278016.2	386981.2	71.84	PASS	70-130
N017400-002B	SAMP	1	3567195.2	3969590.5	89.86	PASS	70-130	279228.6	386981.2	72.16	PASS	70-130
CCV1	CCV	1	3901287	3969590.5	98.28	PASS	70-130	318456	386981.2	82.29	PASS	70-130
CCB1	CCB	1	3771196.1	3969590.5	95.002	PASS	70-130	283023.3	386981.2	73.14	PASS	70-130
N017415-001B	SAMP	1	3155627.6	3969590.5	79.5	PASS	70-130	249477.4	386981.2	64.47	NR!	70-130
N017415-002B	SAMP	1	3323190.6	3969590.5	83.72	PASS	70-130	256700	386981.2	66.33	NR!	70-130
N017415-003B	SAMP	1	3336178.8	3969590.5	84.043	PASS	70-130	263192.8	386981.2	68.012	NR!	70-130
N017415-004B	SAMP	1	3347939.8	3969590.5	84.34	PASS	70-130	250640.3	386981.2	64.77	NR!	70-130
N017415-005B	SAMP	1	2949484	3969590.5	74.3	PASS	70-130	226722.2	386981.2	58.59	NR!	70-130
N017415-006B	SAMP	1	2906286.2	3969590.5	73.21	PASS	70-130	239854.5	386981.2	61.98	NR!	70-130
N017415-007B	SAMP	1	2863579.9	3969590.5	72.14	PASS	70-130	230504.6	386981.2	59.56	NR!	70-130
N017427-001B	SAMP	1	2963035	3969590.5	74.64	PASS	70-130	251677.1	386981.2	65.036	NR!	70-130
N017427-002B	SAMP	1	3058403.8	3969590.5	77.046	PASS	70-130	260955.4	386981.2	67.43	NR!	70-130
N017427-002B-MS	MS	1	3189167.7	3969590.5	80.34	PASS	70-130	271215.6	386981.2	70.085	PASS	70-130
CCV2	CCV	1	3878239	3969590.5	97.7	PASS	70-130	354349.8	386981.2	91.57	PASS	70-130
CCB2	CCB	1	3791403.2	3969590.5	95.51	PASS	70-130	321653.5	386981.2	83.12	PASS	70-130
LLCCV1	CCV2	1	3738084.8	3969590.5	94.17	PASS	70-130	332536.6	386981.2	85.93	PASS	70-130
ICSA2	ICSA	1	3305355.6	3969590.5	83.27	PASS	70-130	288287.4	386981.2	74.5	PASS	70-130
ICSAB2	ICSAB	1	3319598.2	3969590.5	83.63	PASS	70-130	260381.5	386981.2	67.29	NR!	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]					6 Li (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV3	CCV	1	3446094.6	3969590.5	86.81	PASS	70-130	293227.5	386981.2	75.77	PASS	70-130
CCB3	CCB	1	3482327.9	3969590.5	87.73	PASS	70-130	323373.7	386981.2	83.56	PASS	70-130
CCV4	CCV	1	3324372.8	3969590.5	83.75	PASS	70-130	334144.6	386981.2	86.35	PASS	70-130
CCB4	CCB	1	3294905	3969590.5	83.004	PASS	70-130	329803.4	386981.2	85.22	PASS	70-130
CCV5	CCV	1	3224859.2	3969590.5	81.24	PASS	70-130	372802.9	386981.2	96.34	PASS	70-130
CCB5	CCB	1	3285986.1	3969590.5	82.78	PASS	70-130	393342.9	386981.2	101.64	PASS	70-130
CCV6	CCV	1	3237323	3969590.5	81.55	PASS	70-130	336054.7	386981.2	86.84	PASS	70-130
CCB6	CCB	1	3211303.8	3969590.5	80.9	PASS	70-130	318287.7	386981.2	82.25	PASS	70-130
LLCCV2	CCV2	1	3209470.3	3969590.5	80.85	PASS	70-130	322598.3	386981.2	83.36	PASS	70-130
ICSA3	ICSA	1	2929624.4	3969590.5	73.8	PASS	70-130	304843	386981.2	78.77	PASS	70-130
ICSAB3	ICSAB	1	2959457.9	3969590.5	74.55	PASS	70-130	274753.8	386981.2	71	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					159 Tb (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4120344.3	4120344.3	100	PASS	70-130	5948159.1	5948159.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4074409.1	4120344.3	98.89	PASS	70-130	5951037.3	5948159.1	100.05	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4048100.7	4120344.3	98.25	PASS	70-130	5885553.8	5948159.1	98.95	PASS	70-130
Std3-5/50 ppb	ICAL	1	4044176.8	4120344.3	98.15	PASS	70-130	5917339.4	5948159.1	99.48	PASS	70-130
Std4-10/100 ppb	ICAL	1	3997649	4120344.3	97.022	PASS	70-130	5879781.1	5948159.1	98.85	PASS	70-130
Std5-20/200 ppb	ICAL	1	4000927.6	4120344.3	97.1	PASS	70-130	5838893	5948159.1	98.16	PASS	70-130
Std6-40/400 ppb	ICAL	1	4024085.7	4120344.3	97.66	PASS	70-130	5893339.1	5948159.1	99.078	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3989625.4	4120344.3	96.83	PASS	70-130	5842619.5	5948159.1	98.23	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3996609.8	4120344.3	97	PASS	70-130	5903055.8	5948159.1	99.24	PASS	70-130
ICV	ICV	1	3831046.8	4120344.3	92.98	PASS	70-130	5620720.6	5948159.1	94.5	PASS	70-130
ICB	ICB	1	3875010.5	4120344.3	94.046	PASS	70-130	5703337	5948159.1	95.88	PASS	70-130
LLICV	CCV1	1	3872835.8	4120344.3	93.99	PASS	70-130	5628474.4	5948159.1	94.63	PASS	70-130
ICSA1	ICSA	1	3619708.7	4120344.3	87.85	PASS	70-130	5333459.2	5948159.1	89.67	PASS	70-130
ICSAB1	ICSAB	1	3661820.5	4120344.3	88.87	PASS	70-130	5330621.8	5948159.1	89.62	PASS	70-130
MB-52909	MBLK	1	3984445.1	4120344.3	96.7	PASS	70-130	5757836.6	5948159.1	96.8	PASS	70-130
LCS-52909	LCS	1	3831646.3	4120344.3	92.99	PASS	70-130	5564370.1	5948159.1	93.55	PASS	70-130
N017399-001A	SAMP	1	4257317.7	4120344.3	103.32	PASS	70-130	5943753.1	5948159.1	99.93	PASS	70-130
N017399-002B	SAMP	1	4169876.4	4120344.3	101.2	PASS	70-130	5768291.2	5948159.1	96.98	PASS	70-130
N017400-001B	SAMP	1	3719863.4	4120344.3	90.28	PASS	70-130	5244297.5	5948159.1	88.17	PASS	70-130
N017400-001B	SAMP	5	3639862.9	4120344.3	88.34	PASS	70-130	5132011.3	5948159.1	86.28	PASS	70-130
N017400-001B-PS	PS	1	3772815.1	4120344.3	91.57	PASS	70-130	5272690.3	5948159.1	88.64	PASS	70-130
N017400-001B-MS	MS	1	3833044.4	4120344.3	93.027	PASS	70-130	5289578.2	5948159.1	88.93	PASS	70-130
N017400-001B-MSD	MSD	1	3778608.7	4120344.3	91.71	PASS	70-130	5223782.4	5948159.1	87.82	PASS	70-130
N017400-002B	SAMP	1	3816636.8	4120344.3	92.63	PASS	70-130	5257652.5	5948159.1	88.39	PASS	70-130
CCV1	CCV	1	4096182.4	4120344.3	99.41	PASS	70-130	5608643.3	5948159.1	94.29	PASS	70-130
CCB1	CCB	1	3934335.7	4120344.3	95.49	PASS	70-130	5581087.8	5948159.1	93.83	PASS	70-130
N017415-001B	SAMP	1	3388784.5	4120344.3	82.25	PASS	70-130	4754115.9	5948159.1	79.93	PASS	70-130
N017415-002B	SAMP	1	3585868.2	4120344.3	87.028	PASS	70-130	4968241.4	5948159.1	83.53	PASS	70-130
N017415-003B	SAMP	1	3597498.8	4120344.3	87.31	PASS	70-130	4939598.1	5948159.1	83.044	PASS	70-130
N017415-004B	SAMP	1	3625809.6	4120344.3	88	PASS	70-130	4932231.5	5948159.1	82.92	PASS	70-130
N017415-005B	SAMP	1	3174767.3	4120344.3	77.051	PASS	70-130	4329879.5	5948159.1	72.79	PASS	70-130
N017415-006B	SAMP	1	3142647	4120344.3	76.27	PASS	70-130	4279904.8	5948159.1	71.95	PASS	70-130
N017415-007B	SAMP	1	3055529.1	4120344.3	74.16	PASS	70-130	4175387.8	5948159.1	70.2	PASS	70-130
N017427-001B	SAMP	1	3143274.8	4120344.3	76.29	PASS	70-130	4294177.3	5948159.1	72.19	PASS	70-130
N017427-002B	SAMP	1	3300502.1	4120344.3	80.1	PASS	70-130	4511428.1	5948159.1	75.85	PASS	70-130
N017427-002B-MS	MS	1	3440606.3	4120344.3	83.5	PASS	70-130	4651419.9	5948159.1	78.2	PASS	70-130
CCV2	CCV	1	4055519.6	4120344.3	98.43	PASS	70-130	5531215.8	5948159.1	92.99	PASS	70-130
CCB2	CCB	1	3923149.3	4120344.3	95.21	PASS	70-130	5532086.9	5948159.1	93.005	PASS	70-130
LLCCV1	CCV2	1	3870888.4	4120344.3	93.95	PASS	70-130	5505466.2	5948159.1	92.56	PASS	70-130
ICSA2	ICSA	1	3557176.3	4120344.3	86.33	PASS	70-130	5105597.6	5948159.1	85.83	PASS	70-130
ICSAB2	ICSAB	1	3606608.1	4120344.3	87.53	PASS	70-130	5119332.3	5948159.1	86.066	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					159 Tb (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV3	CCV	1	3612091.8	4120344.3	87.66	PASS	70-130	5222914.4	5948159.1	87.81	PASS	70-130
CCB3	CCB	1	3640098.2	4120344.3	88.34	PASS	70-130	5304029.9	5948159.1	89.17	PASS	70-130
CCV4	CCV	1	3507261.1	4120344.3	85.12	PASS	70-130	5021466.9	5948159.1	84.42	PASS	70-130
CCB4	CCB	1	3426063.6	4120344.3	83.15	PASS	70-130	4981731.8	5948159.1	83.75	PASS	70-130
CCV5	CCV	1	3373670.7	4120344.3	81.88	PASS	70-130	4950946.4	5948159.1	83.23	PASS	70-130
CCB5	CCB	1	3402970.4	4120344.3	82.59	PASS	70-130	5009961.6	5948159.1	84.23	PASS	70-130
CCV6	CCV	1	3428622.2	4120344.3	83.21	PASS	70-130	4915903.5	5948159.1	82.65	PASS	70-130
CCB6	CCB	1	3328476.1	4120344.3	80.78	PASS	70-130	4883927	5948159.1	82.11	PASS	70-130
LLCCV2	CCV2	1	3351374.7	4120344.3	81.34	PASS	70-130	4870517.1	5948159.1	81.88	PASS	70-130
ICSA3	ICSA	1	3092997.7	4120344.3	75.066	PASS	70-130	4515680.5	5948159.1	75.92	PASS	70-130
ICSAB3	ICSAB	1	3165273.6	4120344.3	76.82	PASS	70-130	4523909.7	5948159.1	76.056	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	209 Bi (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3661582.8	3661582.8	100	PASS	70-130	74381.4	74381.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	3631545.8	3661582.8	99.18	PASS	70-130	73197.2	74381.4	98.41	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	3629819.8	3661582.8	99.13	PASS	70-130	73437	74381.4	98.73	PASS	70-130
Std3-5/50 ppb	ICAL	1	3644920.1	3661582.8	99.54	PASS	70-130	72604.8	74381.4	97.61	PASS	70-130
Std4-10/100 ppb	ICAL	1	3658334.6	3661582.8	99.91	PASS	70-130	73583.1	74381.4	98.93	PASS	70-130
Std5-20/200 ppb	ICAL	1	3666602.1	3661582.8	100.14	PASS	70-130	73394.6	74381.4	98.67	PASS	70-130
Std6-40/400 ppb	ICAL	1	3684831.8	3661582.8	100.63	PASS	70-130	74930.3	74381.4	100.74	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3675623.4	3661582.8	100.38	PASS	70-130	75030.9	74381.4	100.87	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3685377.2	3661582.8	100.65	PASS	70-130	75834.2	74381.4	101.95	PASS	70-130
ICV	ICV	1	3490188.4	3661582.8	95.32	PASS	70-130	72458.4	74381.4	97.41	PASS	70-130
ICB	ICB	1	3498592.9	3661582.8	95.55	PASS	70-130	73982.7	74381.4	99.46	PASS	70-130
LLICV	CCV1	1	3494957.4	3661582.8	95.45	PASS	70-130	73327.5	74381.4	98.58	PASS	70-130
ICSA1	ICSA	1	2942733.8	3661582.8	80.37	PASS	70-130	74396.8	74381.4	100.02	PASS	70-130
ICSAB1	ICSAB	1	2924057	3661582.8	79.86	PASS	70-130	75787.2	74381.4	101.89	PASS	70-130
MB-52909	MBLK	1	3488493.5	3661582.8	95.27	PASS	70-130	78504.3	74381.4	105.54	PASS	70-130
LCS-52909	LCS	1	3435213.6	3661582.8	93.82	PASS	70-130	74271.2	74381.4	99.85	PASS	70-130
N017399-001A	SAMP	1	3247272	3661582.8	88.68	PASS	70-130	92303.6	74381.4	124.1	PASS	70-130
N017399-002B	SAMP	1	3022405.2	3661582.8	82.54	PASS	70-130	96490.6	74381.4	129.72	PASS	70-130
N017400-001B	SAMP	1	2666490.7	3661582.8	72.82	PASS	70-130	82759.7	74381.4	111.26	PASS	70-130
N017400-001B	SAMP	5	2928188.4	3661582.8	79.97	PASS	70-130	76920	74381.4	103.41	PASS	70-130
N017400-001B-PS	PS	1	2872110.6	3661582.8	78.44	PASS	70-130	83524.1	74381.4	112.29	PASS	70-130
N017400-001B-MS	MS	1	2871743	3661582.8	78.43	PASS	70-130	84490.2	74381.4	113.59	PASS	70-130
N017400-001B-MSD	MSD	1	2827691.9	3661582.8	77.23	PASS	70-130	87726.8	74381.4	117.94	PASS	70-130
N017400-002B	SAMP	1	2807784.2	3661582.8	76.68	PASS	70-130	88968.6	74381.4	119.61	PASS	70-130
CCV1	CCV	1	3382099	3661582.8	92.37	PASS	70-130	85139.8	74381.4	114.46	PASS	70-130
CCB1	CCB	1	3335025.9	3661582.8	91.082	PASS	70-130	78958.7	74381.4	106.15	PASS	70-130
N017415-001B	SAMP	1	2642686.9	3661582.8	72.17	PASS	70-130	74555.6	74381.4	100.23	PASS	70-130
N017415-002B	SAMP	1	2696107	3661582.8	73.63	PASS	70-130	82393.3	74381.4	110.77	PASS	70-130
N017415-003B	SAMP	1	2667232.3	3661582.8	72.84	PASS	70-130	85104.3	74381.4	114.42	PASS	70-130
N017415-004B	SAMP	1	2634235.6	3661582.8	71.94	PASS	70-130	86207.7	74381.4	115.9	PASS	70-130
N017415-005B	SAMP	1	2304720.3	3661582.8	62.94	NR!	70-130	75558.6	74381.4	101.58	PASS	70-130
N017415-006B	SAMP	1	2300963	3661582.8	62.84	NR!	70-130	74982.5	74381.4	100.81	PASS	70-130
N017415-007B	SAMP	1	2250018.1	3661582.8	61.45	NR!	70-130	72614.4	74381.4	97.62	PASS	70-130
N017427-001B	SAMP	1	2305989.9	3661582.8	62.98	NR!	70-130	73269.5	74381.4	98.51	PASS	70-130
N017427-002B	SAMP	1	2415587.3	3661582.8	65.97	NR!	70-130	77915	74381.4	104.75	PASS	70-130
N017427-002B-MS	MS	1	2520009.8	3661582.8	68.82	NR!	70-130	79013.2	74381.4	106.23	PASS	70-130
CCV2	CCV	1	3277286	3661582.8	89.5	PASS	70-130	87451.8	74381.4	117.57	PASS	70-130
CCB2	CCB	1	3269201.8	3661582.8	89.28	PASS	70-130	81436.2	74381.4	109.48	PASS	70-130
LLCCV1	CCV2	1	3295246.1	3661582.8	90	PASS	70-130	76999.9	74381.4	103.52	PASS	70-130
ICSA2	ICSA	1	2772044.3	3661582.8	75.71	PASS	70-130	75957.7	74381.4	102.12	PASS	70-130
ICSAB2	ICSAB	1	2772852.7	3661582.8	75.73	PASS	70-130	77742.9	74381.4	104.52	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	209 Bi (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV3	CCV	1	3280081.7	3661582.8	89.58	PASS	70-130	70354	74381.4	94.59	PASS	70-130
CCB3	CCB	1	3287835.2	3661582.8	89.79	PASS	70-130	69498	74381.4	93.43	PASS	70-130
CCV4	CCV	1	3142039.7	3661582.8	85.81	PASS	70-130	69047.4	74381.4	92.83	PASS	70-130
CCB4	CCB	1	3057061.1	3661582.8	83.49	PASS	70-130	65769.7	74381.4	88.42	PASS	70-130
CCV5	CCV	1	3112948.5	3661582.8	85.016	PASS	70-130	62878.4	74381.4	84.54	PASS	70-130
CCB5	CCB	1	3075562	3661582.8	84	PASS	70-130	62726.7	74381.4	84.33	PASS	70-130
CCV6	CCV	1	3087666.7	3661582.8	84.33	PASS	70-130	63544.2	74381.4	85.43	PASS	70-130
CCB6	CCB	1	2982878.2	3661582.8	81.46	PASS	70-130	62440.4	74381.4	83.95	PASS	70-130
LLCCV2	CCV2	1	3006479.4	3661582.8	82.11	PASS	70-130	62403.3	74381.4	83.9	PASS	70-130
ICSA3	ICSA	1	2519666.9	3661582.8	68.81	NR!	70-130	66396.3	74381.4	89.26	PASS	70-130
ICSAB3	ICSAB	1	2499267.2	3661582.8	68.26	NR!	70-130	67361.5	74381.4	90.56	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61364	61364	100	PASS	70-130	85679.3	85679.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	62199.2	61364	101.36	PASS	70-130	83694.8	85679.3	97.68	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	61451.2	61364	100.14	PASS	70-130	83268.3	85679.3	97.19	PASS	70-130
Std3-5/50 ppb	ICAL	1	61844.7	61364	100.78	PASS	70-130	82810.4	85679.3	96.65	PASS	70-130
Std4-10/100 ppb	ICAL	1	61274	61364	99.85	PASS	70-130	81777.3	85679.3	95.45	PASS	70-130
Std5-20/200 ppb	ICAL	1	61250.2	61364	99.81	PASS	70-130	80482.2	85679.3	93.93	PASS	70-130
Std6-40/400 ppb	ICAL	1	62152.5	61364	101.28	PASS	70-130	81907.2	85679.3	95.6	PASS	70-130
Std7-100/1000 ppb	ICAL	1	61941.7	61364	100.94	PASS	70-130	81014.6	85679.3	94.56	PASS	70-130
Std8-200/2000 ppb	ICAL	1	62571	61364	101.97	PASS	70-130	81670	85679.3	95.32	PASS	70-130
ICV	ICV	1	59976.6	61364	97.74	PASS	70-130	78021.3	85679.3	91.062	PASS	70-130
ICB	ICB	1	62417.1	61364	101.72	PASS	70-130	81161.8	85679.3	94.73	PASS	70-130
LLICV	CCV1	1	62527.2	61364	101.9	PASS	70-130	80237.5	85679.3	93.65	PASS	70-130
ICSA1	ICSA	1	59596.2	61364	97.12	PASS	70-130	76128.1	85679.3	88.85	PASS	70-130
ICSAB1	ICSAB	1	61643.8	61364	100.46	PASS	70-130	80574.5	85679.3	94.042	PASS	70-130
MB-52909	MBLK	1	66140.6	61364	107.78	PASS	70-130	86055.9	85679.3	100.44	PASS	70-130
LCS-52909	LCS	1	62284.3	61364	101.5	PASS	70-130	81231.5	85679.3	94.81	PASS	70-130
N017399-001A	SAMP	1	73776.1	61364	120.23	PASS	70-130	93297.4	85679.3	108.89	PASS	70-130
N017399-002B	SAMP	1	73640.2	61364	120.01	PASS	70-130	93498.2	85679.3	109.13	PASS	70-130
N017400-001B	SAMP	1	64675.8	61364	105.4	PASS	70-130	75888.1	85679.3	88.57	PASS	70-130
N017400-001B	SAMP	5	63246.8	61364	103.07	PASS	70-130	79763.8	85679.3	93.096	PASS	70-130
N017400-001B-PS	PS	1	65540.3	61364	106.81	PASS	70-130	81369.5	85679.3	94.97	PASS	70-130
N017400-001B-MS	MS	1	65900.9	61364	107.39	PASS	70-130	84777.1	85679.3	98.95	PASS	70-130
N017400-001B-MSD	MSD	1	68510.1	61364	111.65	PASS	70-130	87373.9	85679.3	101.98	PASS	70-130
N017400-002B	SAMP	1	67900.9	61364	110.65	PASS	70-130	87064.3	85679.3	101.62	PASS	70-130
CCV1	CCV	1	70018.6	61364	114.1	PASS	70-130	89727.7	85679.3	104.73	PASS	70-130
CCB1	CCB	1	65320.5	61364	106.45	PASS	70-130	82996.1	85679.3	96.87	PASS	70-130
N017415-001B	SAMP	1	60175.1	61364	98.063	PASS	70-130	75263.9	85679.3	87.84	PASS	70-130
N017415-002B	SAMP	1	64146.7	61364	104.53	PASS	70-130	83574	85679.3	97.54	PASS	70-130
N017415-003B	SAMP	1	65820.4	61364	107.26	PASS	70-130	85547.4	85679.3	99.85	PASS	70-130
N017415-004B	SAMP	1	66439.5	61364	108.27	PASS	70-130	84433.7	85679.3	98.55	PASS	70-130
N017415-005B	SAMP	1	59114.5	61364	96.33	PASS	70-130	77195.1	85679.3	90.098	PASS	70-130
N017415-006B	SAMP	1	57964.9	61364	94.46	PASS	70-130	77109.1	85679.3	90	PASS	70-130
N017415-007B	SAMP	1	55866.7	61364	91.041	PASS	70-130	73795.1	85679.3	86.13	PASS	70-130
N017427-001B	SAMP	1	56953.7	61364	92.81	PASS	70-130	77946.4	85679.3	90.97	PASS	70-130
N017427-002B	SAMP	1	58908.2	61364	96	PASS	70-130	79289.4	85679.3	92.54	PASS	70-130
N017427-002B-MS	MS	1	60863.5	61364	99.18	PASS	70-130	82521.5	85679.3	96.31	PASS	70-130
CCV2	CCV	1	71646.8	61364	116.76	PASS	70-130	96193.7	85679.3	112.27	PASS	70-130
CCB2	CCB	1	68261.5	61364	111.24	PASS	70-130	88128.9	85679.3	102.86	PASS	70-130
LLCCV1	CCV2	1	66460.5	61364	108.31	PASS	70-130	84320.3	85679.3	98.41	PASS	70-130
ICSA2	ICSA	1	60857.8	61364	99.18	PASS	70-130	78527.2	85679.3	91.65	PASS	70-130
ICSAB2	ICSAB	1	62475.9	61364	101.81	PASS	70-130	80851.8	85679.3	94.37	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV3	CCV	1	60621.4	61364	98.79	PASS	70-130	75599.7	85679.3	88.24	PASS	70-130
CCB3	CCB	1	58713.1	61364	95.68	PASS	70-130	74686	85679.3	87.17	PASS	70-130
CCV4	CCV	1	57986.1	61364	94.5	PASS	70-130	74809.7	85679.3	87.31	PASS	70-130
CCB4	CCB	1	55236.6	61364	90.015	PASS	70-130	70761.9	85679.3	82.59	PASS	70-130
CCV5	CCV	1	54690.4	61364	89.12	PASS	70-130	69808.9	85679.3	81.48	PASS	70-130
CCB5	CCB	1	54978	61364	89.59	PASS	70-130	69707.1	85679.3	81.36	PASS	70-130
CCV6	CCV	1	56353.8	61364	91.84	PASS	70-130	71671.4	85679.3	83.65	PASS	70-130
CCB6	CCB	1	55128.7	61364	89.84	PASS	70-130	70320.9	85679.3	82.075	PASS	70-130
LLCCV2	CCV2	1	54983.6	61364	89.6	PASS	70-130	70509.9	85679.3	82.3	PASS	70-130
ICSA3	ICSA	1	52968.2	61364	86.32	PASS	70-130	68525.5	85679.3	79.98	PASS	70-130
ICSAB3	ICSAB	1	55081.7	61364	89.76	PASS	70-130	71868.6	85679.3	83.88	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1736407.9	1736407.9	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	1726100.8	1736407.9	99.41	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	1718449.7	1736407.9	98.97	PASS	70-130
Std3-5/50 ppb	ICAL	1	1735855.9	1736407.9	99.97	PASS	70-130
Std4-10/100 ppb	ICAL	1	1743874.9	1736407.9	100.43	PASS	70-130
Std5-20/200 ppb	ICAL	1	1735425	1736407.9	99.94	PASS	70-130
Std6-40/400 ppb	ICAL	1	1754021.5	1736407.9	101.01	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1751224	1736407.9	100.85	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1757304.7	1736407.9	101.2	PASS	70-130
ICV	ICV	1	1712135.7	1736407.9	98.6	PASS	70-130
ICB	ICB	1	1746542.2	1736407.9	100.58	PASS	70-130
LLICV	CCV1	1	1735912.7	1736407.9	99.97	PASS	70-130
ICSA1	ICSA	1	1537113.8	1736407.9	88.52	PASS	70-130
ICSAB1	ICSAB	1	1576115.1	1736407.9	90.77	PASS	70-130
MB-52909	MBLK	1	1823668.5	1736407.9	105.03	PASS	70-130
LCS-52909	LCS	1	1713894.3	1736407.9	98.7	PASS	70-130
N017399-001A	SAMP	1	1790521.8	1736407.9	103.12	PASS	70-130
N017399-002B	SAMP	1	1735308.7	1736407.9	99.94	PASS	70-130
N017400-001B	SAMP	1	1607324.2	1736407.9	92.57	PASS	70-130
N017400-001B	SAMP	5	1575339.2	1736407.9	90.72	PASS	70-130
N017400-001B-PS	PS	1	1577464	1736407.9	90.85	PASS	70-130
N017400-001B-MS	MS	1	1590523.4	1736407.9	91.6	PASS	70-130
N017400-001B-MSD	MSD	1	1643581.6	1736407.9	94.65	PASS	70-130
N017400-002B	SAMP	1	1648150.4	1736407.9	94.92	PASS	70-130
CCV1	CCV	1	1848528.3	1736407.9	106.46	PASS	70-130
CCB1	CCB	1	1789121.8	1736407.9	103.04	PASS	70-130
N017415-001B	SAMP	1	1432249.8	1736407.9	82.48	PASS	70-130
N017415-002B	SAMP	1	1546074.8	1736407.9	89.039	PASS	70-130
N017415-003B	SAMP	1	1544464.1	1736407.9	88.95	PASS	70-130
N017415-004B	SAMP	1	1548929.2	1736407.9	89.2	PASS	70-130
N017415-005B	SAMP	1	1356966.2	1736407.9	78.15	PASS	70-130
N017415-006B	SAMP	1	1355299.1	1736407.9	78.052	PASS	70-130
N017415-007B	SAMP	1	1318041.5	1736407.9	75.91	PASS	70-130
N017427-001B	SAMP	1	1340161.8	1736407.9	77.18	PASS	70-130
N017427-002B	SAMP	1	1396210	1736407.9	80.41	PASS	70-130
N017427-002B-MS	MS	1	1432645.3	1736407.9	82.51	PASS	70-130
CCV2	CCV	1	1838344.2	1736407.9	105.87	PASS	70-130
CCB2	CCB	1	1789832.5	1736407.9	103.08	PASS	70-130
LLCCV1	CCV2	1	1760003.1	1736407.9	101.36	PASS	70-130
ICSA2	ICSA	1	1553619.1	1736407.9	89.47	PASS	70-130
ICSAB2	ICSAB	1	1573176	1736407.9	90.6	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCV3	CCV	1	1618564.6	1736407.9	93.21	PASS	70-130
CCB3	CCB	1	1649591.6	1736407.9	95	PASS	70-130
CCV4	CCV	1	1550891.5	1736407.9	89.32	PASS	70-130
CCB4	CCB	1	1513080.4	1736407.9	87.14	PASS	70-130
CCV5	CCV	1	1496220.5	1736407.9	86.17	PASS	70-130
CCB5	CCB	1	1498341.4	1736407.9	86.29	PASS	70-130
CCV6	CCV	1	1518951.9	1736407.9	87.48	PASS	70-130
CCB6	CCB	1	1487057.5	1736407.9	85.64	PASS	70-130
LLCCV2	CCV2	1	1485789.6	1736407.9	85.57	PASS	70-130
ICSA3	ICSA	1	1341313.7	1736407.9	77.25	PASS	70-130
ICSAB3	ICSAB	1	1356917.4	1736407.9	78.15	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4388228.9	4388228.9	100	PASS	70-130	3510049	3510049	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4826660.1	4388228.9	109.99	PASS	70-130	3850607.5	3510049	109.7	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4758950.9	4388228.9	108.45	PASS	70-130	3807805.7	3510049	108.48	PASS	70-130
Std3-5/50 ppb	ICAL	1	4775737.7	4388228.9	108.83	PASS	70-130	3827910.6	3510049	109.06	PASS	70-130
Std4-10/100 ppb	ICAL	1	4863832.7	4388228.9	110.84	PASS	70-130	3911084.3	3510049	111.43	PASS	70-130
Std5-20/200 ppb	ICAL	1	4935042.4	4388228.9	112.46	PASS	70-130	3981637.8	3510049	113.44	PASS	70-130
Std6-40/400 ppb	ICAL	1	5173079	4388228.9	117.89	PASS	70-130	4166584.8	3510049	118.7	PASS	70-130
Std7-100/1000 ppb	ICAL	1	5228314.3	4388228.9	119.14	PASS	70-130	4219867.3	3510049	120.22	PASS	70-130
Std8-200/2000 ppb	ICAL	1	5344142.6	4388228.9	121.78	PASS	70-130	4319905.3	3510049	123.07	PASS	70-130
ICV	ICV	1	4671728.1	4388228.9	106.46	PASS	70-130	3752133.5	3510049	106.9	PASS	70-130
ICB	ICB	1	4494470.9	4388228.9	102.42	PASS	70-130	3619735.1	3510049	103.12	PASS	70-130
LLICV	CCV1	1	5121998.7	4388228.9	116.72	PASS	70-130	3932740	3510049	112.04	PASS	70-130
ICSA1	ICSA	1	4949144.1	4388228.9	112.78	PASS	70-130	3585705.2	3510049	102.16	PASS	70-130
ICSAB1	ICSAB	1	4980354	4388228.9	113.49	PASS	70-130	3547712.8	3510049	101.07	PASS	70-130
MB-52909	MBLK	1	4697512.9	4388228.9	107.05	PASS	70-130	3646902.1	3510049	103.9	PASS	70-130
LCS-52909	LCS	1	4747098.4	4388228.9	108.18	PASS	70-130	3772544.6	3510049	107.48	PASS	70-130
N017400-001B	SAMP	5	4931236.6	4388228.9	112.37	PASS	70-130	3652842.2	3510049	104.07	PASS	70-130
N017400-001B	SAMP	1	4568340.4	4388228.9	104.1	PASS	70-130	3039148.8	3510049	86.58	PASS	70-130
N017400-002B	SAMP	5	4351115.1	4388228.9	99.15	PASS	70-130	3227136.9	3510049	91.94	PASS	70-130
N017400-002B	SAMP	1	4050524.8	4388228.9	92.3	PASS	70-130	2879924.9	3510049	82.048	PASS	70-130
N017415-001B	SAMP	5	4377625.3	4388228.9	99.76	PASS	70-130	3236746.4	3510049	92.21	PASS	70-130
N017415-001B	SAMP	1	3893746	4388228.9	88.73	PASS	70-130	2791267.7	3510049	79.52	PASS	70-130
N017415-002B	SAMP	5	3922053.6	4388228.9	89.38	PASS	70-130	2895174.7	3510049	82.48	PASS	70-130
N017415-002B	SAMP	1	3479869.5	4388228.9	79.3	PASS	70-130	2476737.2	3510049	70.56	PASS	70-130
CCV1	CCV	1	4643021	4388228.9	105.81	PASS	70-130	3674034.1	3510049	104.67	PASS	70-130
CCB1	CCB	1	3457121.3	4388228.9	78.78	PASS	70-130	2680546.7	3510049	76.37	PASS	70-130
N017415-003B	SAMP	5	3444738.3	4388228.9	78.5	PASS	70-130	2586698	3510049	73.69	PASS	70-130
N017415-003B	SAMP	1	3849259.5	4388228.9	87.72	PASS	70-130	2740638.2	3510049	78.08	PASS	70-130
N017415-004B	SAMP	5	3749864.4	4388228.9	85.45	PASS	70-130	2762883.3	3510049	78.71	PASS	70-130
N017415-004B	SAMP	1	4595211.7	4388228.9	104.72	PASS	70-130	3241003.6	3510049	92.33	PASS	70-130
N017415-005B	SAMP	5	4314285.7	4388228.9	98.31	PASS	70-130	3171136.6	3510049	90.34	PASS	70-130
N017415-005B	SAMP	1	4374431.9	4388228.9	99.69	PASS	70-130	3113337.7	3510049	88.7	PASS	70-130
N017415-006B	SAMP	5	4660847.8	4388228.9	106.21	PASS	70-130	3452919.8	3510049	98.37	PASS	70-130
N017415-006B	SAMP	1	4297943.9	4388228.9	97.94	PASS	70-130	3030635.9	3510049	86.34	PASS	70-130
N017415-007B	SAMP	5	4069274.9	4388228.9	92.73	PASS	70-130	2994298.4	3510049	85.31	PASS	70-130
N017415-007B	SAMP	1	4003160.1	4388228.9	91.22	PASS	70-130	2849108.5	3510049	81.17	PASS	70-130
CCV2	CCV	1	4737094.6	4388228.9	107.95	PASS	70-130	3634603.2	3510049	103.55	PASS	70-130
CCB2	CCB	1	4095063.5	4388228.9	93.32	PASS	70-130	3199169.4	3510049	91.14	PASS	70-130
N017427-001B	SAMP	5	3843193.6	4388228.9	87.58	PASS	70-130	2889500.8	3510049	82.32	PASS	70-130
N017427-001B	SAMP	1	3846435.1	4388228.9	87.65	PASS	70-130	2730797.9	3510049	77.8	PASS	70-130
N017427-002B	SAMP	5	4179551	4388228.9	95.24	PASS	70-130	3065422.8	3510049	87.33	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	4339696.3	4388228.9	98.89	PASS	70-130	3064634	3510049	87.31	PASS	70-130
N017400-001B	SAMP	25	4504482.7	4388228.9	102.65	PASS	70-130	3390614.5	3510049	96.6	PASS	70-130
N017400-001B-PS	PS	5	4508013.3	4388228.9	102.73	PASS	70-130	3482681	3510049	99.22	PASS	70-130
N017400-001B-PS	PS	1	4383607.3	4388228.9	99.89	PASS	70-130	3323184	3510049	94.68	PASS	70-130
N017400-001B-MS	MS	5	4417716.4	4388228.9	100.67	PASS	70-130	3400075	3510049	96.87	PASS	70-130
N017400-001B-MS	MS	1	4455377.8	4388228.9	101.53	PASS	70-130	3390133.7	3510049	96.58	PASS	70-130
N017400-001B-MSD	MSD	5	4372617.3	4388228.9	99.64	PASS	70-130	3389971.3	3510049	96.58	PASS	70-130
CCV3	CCV	1	4742207.7	4388228.9	108.07	PASS	70-130	3774001.9	3510049	107.52	PASS	70-130
CCB3	CCB	1	4095160.5	4388228.9	93.32	PASS	70-130	3268957.1	3510049	93.13	PASS	70-130
N017400-001B-MSD	MSD	1	4126342.3	4388228.9	94.032	PASS	70-130	3168438.5	3510049	90.27	PASS	70-130
N017427-002B-MS	MS	5	4381343.5	4388228.9	99.84	PASS	70-130	3447778.4	3510049	98.23	PASS	70-130
N017427-002B-MS	MS	1	4139939.8	4388228.9	94.34	PASS	70-130	3161127.1	3510049	90.059	PASS	70-130
CCV4	CCV	1	4964730.5	4388228.9	113.14	PASS	70-130	3951841.6	3510049	112.59	PASS	70-130
CCB4	CCB	1	4981608	4388228.9	113.52	PASS	70-130	3799380.2	3510049	108.24	PASS	70-130
LLCCV1	CCV2	1	4373380.7	4388228.9	99.66	PASS	70-130	3489954.3	3510049	99.43	PASS	70-130
ICSA2	ICSA	1	4716816.4	4388228.9	107.49	PASS	70-130	3441173.7	3510049	98.038	PASS	70-130
ICSAB2	ICSAB	1	4548214.7	4388228.9	103.65	PASS	70-130	3234723.3	3510049	92.16	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	93890.7	93890.7	100	PASS	70-130	124583.4	124583.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	101811.1	93890.7	108.44	PASS	70-130	132611.3	124583.4	106.44	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	99290.1	93890.7	105.75	PASS	70-130	129809	124583.4	104.19	PASS	70-130
Std3-5/50 ppb	ICAL	1	99192.6	93890.7	105.65	PASS	70-130	128649.1	124583.4	103.26	PASS	70-130
Std4-10/100 ppb	ICAL	1	100440.5	93890.7	106.98	PASS	70-130	128306.2	124583.4	102.99	PASS	70-130
Std5-20/200 ppb	ICAL	1	101433.1	93890.7	108.03	PASS	70-130	129159.5	124583.4	103.67	PASS	70-130
Std6-40/400 ppb	ICAL	1	105079.6	93890.7	111.92	PASS	70-130	134939.2	124583.4	108.31	PASS	70-130
Std7-100/1000 ppb	ICAL	1	105660.8	93890.7	112.54	PASS	70-130	135452.3	124583.4	108.72	PASS	70-130
Std8-200/2000 ppb	ICAL	1	107776	93890.7	114.79	PASS	70-130	137491.8	124583.4	110.36	PASS	70-130
ICV	ICV	1	96443.4	93890.7	102.72	PASS	70-130	122551.7	124583.4	98.37	PASS	70-130
ICB	ICB	1	94594	93890.7	100.75	PASS	70-130	121660.6	124583.4	97.65	PASS	70-130
LLICV	CCV1	1	93815.8	93890.7	99.92	PASS	70-130	116822.3	124583.4	93.77	PASS	70-130
ICSA1	ICSA	1	105415.7	93890.7	112.27	PASS	70-130	133424.3	124583.4	107.1	PASS	70-130
ICSAB1	ICSAB	1	108871.3	93890.7	115.96	PASS	70-130	142403.4	124583.4	114.3	PASS	70-130
MB-52909	MBLK	1	100692.9	93890.7	107.24	PASS	70-130	136869.5	124583.4	109.86	PASS	70-130
LCS-52909	LCS	1	96797.5	93890.7	103.1	PASS	70-130	132649.6	124583.4	106.47	PASS	70-130
N017400-001B	SAMP	5	104001.3	93890.7	110.77	PASS	70-130	135762.1	124583.4	108.97	PASS	70-130
N017400-001B	SAMP	1	107152.1	93890.7	114.12	PASS	70-130	153181.8	124583.4	122.96	PASS	70-130
N017400-002B	SAMP	5	102016.7	93890.7	108.65	PASS	70-130	137448.9	124583.4	110.33	PASS	70-130
N017400-002B	SAMP	1	97702.4	93890.7	104.06	PASS	70-130	135320.5	124583.4	108.62	PASS	70-130
N017415-001B	SAMP	5	95965.2	93890.7	102.21	PASS	70-130	132325	124583.4	106.21	PASS	70-130
N017415-001B	SAMP	1	98347.7	93890.7	104.75	PASS	70-130	130521.3	124583.4	104.77	PASS	70-130
N017415-002B	SAMP	5	84740.2	93890.7	90.25	PASS	70-130	110196.5	124583.4	88.45	PASS	70-130
N017415-002B	SAMP	1	95488.3	93890.7	101.7	PASS	70-130	122656.7	124583.4	98.45	PASS	70-130
CCV1	CCV	1	84353.3	93890.7	89.84	PASS	70-130	104161.3	124583.4	83.61	PASS	70-130
CCB1	CCB	1	73928.3	93890.7	78.74	PASS	70-130	100496.3	124583.4	80.67	PASS	70-130
N017415-003B	SAMP	5	81000	93890.7	86.27	PASS	70-130	105976.9	124583.4	85.065	PASS	70-130
N017415-003B	SAMP	1	89064.3	93890.7	94.86	PASS	70-130	117220.2	124583.4	94.09	PASS	70-130
N017415-004B	SAMP	5	90874.9	93890.7	96.79	PASS	70-130	116443.4	124583.4	93.47	PASS	70-130
N017415-004B	SAMP	1	107680.3	93890.7	114.69	PASS	70-130	137635.2	124583.4	110.48	PASS	70-130
N017415-005B	SAMP	5	95931.4	93890.7	102.17	PASS	70-130	128734.2	124583.4	103.33	PASS	70-130
N017415-005B	SAMP	1	102497.6	93890.7	109.17	PASS	70-130	138057.2	124583.4	110.82	PASS	70-130
N017415-006B	SAMP	5	102320.7	93890.7	108.98	PASS	70-130	135899.2	124583.4	109.08	PASS	70-130
N017415-006B	SAMP	1	100308.7	93890.7	106.84	PASS	70-130	134541.5	124583.4	107.99	PASS	70-130
N017415-007B	SAMP	5	93970.7	93890.7	100.09	PASS	70-130	129999.2	124583.4	104.35	PASS	70-130
N017415-007B	SAMP	1	97909.6	93890.7	104.28	PASS	70-130	136406	124583.4	109.49	PASS	70-130
CCV2	CCV	1	102316.8	93890.7	108.97	PASS	70-130	137173.3	124583.4	110.11	PASS	70-130
CCB2	CCB	1	87452.2	93890.7	93.14	PASS	70-130	117134.6	124583.4	94.021	PASS	70-130
N017427-001B	SAMP	5	83173.3	93890.7	88.59	PASS	70-130	116630	124583.4	93.62	PASS	70-130
N017427-001B	SAMP	1	85199.2	93890.7	90.74	PASS	70-130	115037.9	124583.4	92.34	PASS	70-130
N017427-002B	SAMP	5	94351.6	93890.7	100.49	PASS	70-130	124809.7	124583.4	100.18	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	100615.2	93890.7	107.16	PASS	70-130	135722.3	124583.4	108.94	PASS	70-130
N017400-001B	SAMP	25	96904.4	93890.7	103.21	PASS	70-130	129028.2	124583.4	103.57	PASS	70-130
N017400-001B-PS	PS	5	92022.4	93890.7	98.01	PASS	70-130	123049.7	124583.4	98.77	PASS	70-130
N017400-001B-PS	PS	1	90938.5	93890.7	96.86	PASS	70-130	123281.1	124583.4	98.95	PASS	70-130
N017400-001B-MS	MS	5	91328.6	93890.7	97.27	PASS	70-130	122867.1	124583.4	98.62	PASS	70-130
N017400-001B-MS	MS	1	91778.7	93890.7	97.75	PASS	70-130	124310.1	124583.4	99.78	PASS	70-130
N017400-001B-MSD	MSD	5	90135.2	93890.7	96	PASS	70-130	113993.2	124583.4	91.5	PASS	70-130
CCV3	CCV	1	95495.3	93890.7	101.71	PASS	70-130	127998.3	124583.4	102.74	PASS	70-130
CCB3	CCB	1	84026.5	93890.7	89.49	PASS	70-130	109931.9	124583.4	88.24	PASS	70-130
N017400-001B-MSD	MSD	1	84592.9	93890.7	90.097	PASS	70-130	112969.8	124583.4	90.68	PASS	70-130
N017427-002B-MS	MS	5	88868.5	93890.7	94.65	PASS	70-130	119881.7	124583.4	96.23	PASS	70-130
N017427-002B-MS	MS	1	84852.8	93890.7	90.37	PASS	70-130	112249.5	124583.4	90.1	PASS	70-130
CCV4	CCV	1	100627.8	93890.7	107.18	PASS	70-130	135624.8	124583.4	108.86	PASS	70-130
CCB4	CCB	1	95783	93890.7	102.02	PASS	70-130	133948.3	124583.4	107.52	PASS	70-130
LLCCV1	CCV2	1	89555.8	93890.7	95.38	PASS	70-130	121496.2	124583.4	97.52	PASS	70-130
ICSA2	ICSA	1	97661.6	93890.7	104.02	PASS	70-130	124908.1	124583.4	100.26	PASS	70-130
ICSAB2	ICSAB	1	95868.9	93890.7	102.11	PASS	70-130	128121.3	124583.4	102.84	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	6 Li (ISTD) [3]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1419177.5	1419177.5	100	PASS	70-130	2222556	2222556	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	1553340.2	1419177.5	109.45	PASS	70-130	2465400.2	2222556	110.93	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	1526928.5	1419177.5	107.59	PASS	70-130	2410396.3	2222556	108.45	PASS	70-130
Std3-5/50 ppb	ICAL	1	1527572	1419177.5	107.64	PASS	70-130	2404745.9	2222556	108.2	PASS	70-130
Std4-10/100 ppb	ICAL	1	1527812.8	1419177.5	107.65	PASS	70-130	2433146.8	2222556	109.48	PASS	70-130
Std5-20/200 ppb	ICAL	1	1547085.4	1419177.5	109.01	PASS	70-130	2446941.5	2222556	110.1	PASS	70-130
Std6-40/400 ppb	ICAL	1	1622856.1	1419177.5	114.35	PASS	70-130	2583046.8	2222556	116.22	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1639925.9	1419177.5	115.55	PASS	70-130	2591061.9	2222556	116.58	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1664305.5	1419177.5	117.27	PASS	70-130	2615738.5	2222556	117.69	PASS	70-130
ICV	ICV	1	1460009.9	1419177.5	102.88	PASS	70-130	2353754.9	2222556	105.9	PASS	70-130
ICB	ICB	1	1413300.2	1419177.5	99.59	PASS	70-130	2313981.7	2222556	104.11	PASS	70-130
LLICV	CCV1	1	1733739.9	1419177.5	122.17	PASS	70-130	2348266.7	2222556	105.66	PASS	70-130
ICSA1	ICSA	1	1554711.3	1419177.5	109.55	PASS	70-130	2367589.1	2222556	106.53	PASS	70-130
ICSAB1	ICSAB	1	1513319.1	1419177.5	106.63	PASS	70-130	2410653.2	2222556	108.46	PASS	70-130
MB-52909	MBLK	1	1477035.6	1419177.5	104.08	PASS	70-130	2387195.1	2222556	107.41	PASS	70-130
LCS-52909	LCS	1	1546179.7	1419177.5	108.95	PASS	70-130	2374839.5	2222556	106.85	PASS	70-130
N017400-001B	SAMP	5	1419150.5	1419177.5	100	PASS	70-130	2370278.1	2222556	106.65	PASS	70-130
N017400-001B	SAMP	1	1099908.8	1419177.5	77.5	PASS	70-130	2264964.6	2222556	101.91	PASS	70-130
N017400-002B	SAMP	5	1281737.7	1419177.5	90.32	PASS	70-130	2237305.7	2222556	100.66	PASS	70-130
N017400-002B	SAMP	1	982613.1	1419177.5	69.24	NR!	70-130	2080621.6	2222556	93.61	PASS	70-130
N017415-001B	SAMP	5	1271457.7	1419177.5	89.59	PASS	70-130	2102580.6	2222556	94.6	PASS	70-130
N017415-001B	SAMP	1	915725.4	1419177.5	64.53	NR!	70-130	2098609	2222556	94.42	PASS	70-130
N017415-002B	SAMP	5	1126175	1419177.5	79.35	PASS	70-130	1846717.3	2222556	83.09	PASS	70-130
N017415-002B	SAMP	1	822386.9	1419177.5	57.95	NR!	70-130	2033971.3	2222556	91.51	PASS	70-130
CCV1	CCV	1	1599185.1	1419177.5	112.68	PASS	70-130	2158791	2222556	97.13	PASS	70-130
CCB1	CCB	1	1100114.1	1419177.5	77.52	PASS	70-130	1727699.5	2222556	77.73	PASS	70-130
N017415-003B	SAMP	5	1004445.9	1419177.5	70.78	PASS	70-130	1808907.7	2222556	81.39	PASS	70-130
N017415-003B	SAMP	1	895623.9	1419177.5	63.11	NR!	70-130	1861453.7	2222556	83.75	PASS	70-130
N017415-004B	SAMP	5	1068666.3	1419177.5	75.3	PASS	70-130	1989869.4	2222556	89.53	PASS	70-130
N017415-004B	SAMP	1	1035850.5	1419177.5	72.99	PASS	70-130	2267040.4	2222556	102	PASS	70-130
N017415-005B	SAMP	5	1203160.1	1419177.5	84.78	PASS	70-130	2119569.1	2222556	95.37	PASS	70-130
N017415-005B	SAMP	1	990925.5	1419177.5	69.82	NR!	70-130	2197901.6	2222556	98.89	PASS	70-130
N017415-006B	SAMP	5	1299840.3	1419177.5	91.59	PASS	70-130	2249860	2222556	101.23	PASS	70-130
N017415-006B	SAMP	1	983417.4	1419177.5	69.29	NR!	70-130	2119931.5	2222556	95.38	PASS	70-130
N017415-007B	SAMP	5	1127435.4	1419177.5	79.44	PASS	70-130	2086568.5	2222556	93.88	PASS	70-130
N017415-007B	SAMP	1	927207.4	1419177.5	65.33	NR!	70-130	2100149.6	2222556	94.49	PASS	70-130
CCV2	CCV	1	1433082.8	1419177.5	100.98	PASS	70-130	2362687.1	2222556	106.3	PASS	70-130
CCB2	CCB	1	1244288.3	1419177.5	87.68	PASS	70-130	2051227	2222556	92.29	PASS	70-130
N017427-001B	SAMP	5	1081411.3	1419177.5	76.2	PASS	70-130	1857734.1	2222556	83.59	PASS	70-130
N017427-001B	SAMP	1	931416.1	1419177.5	65.63	NR!	70-130	1840146.9	2222556	82.79	PASS	70-130
N017427-002B	SAMP	5	1148582.5	1419177.5	80.93	PASS	70-130	2087875.1	2222556	93.94	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	6 Li (ISTD) [3]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	1017140.6	1419177.5	71.67	PASS	70-130	2145251.2	2222556	96.52	PASS	70-130
N017400-001B	SAMP	25	1299681.4	1419177.5	91.58	PASS	70-130	2175171.5	2222556	97.87	PASS	70-130
N017400-001B-PS	PS	5	1339082	1419177.5	94.36	PASS	70-130	2118457.3	2222556	95.32	PASS	70-130
N017400-001B-PS	PS	1	1336973.6	1419177.5	94.21	PASS	70-130	2072147	2222556	93.23	PASS	70-130
N017400-001B-MS	MS	5	1337648.3	1419177.5	94.26	PASS	70-130	2089296.7	2222556	94.004	PASS	70-130
N017400-001B-MS	MS	1	1360708.7	1419177.5	95.88	PASS	70-130	2073869.3	2222556	93.31	PASS	70-130
N017400-001B-MSD	MSD	5	1340669.4	1419177.5	94.47	PASS	70-130	2081272.7	2222556	93.64	PASS	70-130
CCV3	CCV	1	1450656.7	1419177.5	102.22	PASS	70-130	2266559.7	2222556	101.98	PASS	70-130
CCB3	CCB	1	1249411.5	1419177.5	88.038	PASS	70-130	1998011.6	2222556	89.9	PASS	70-130
N017400-001B-MSD	MSD	1	1271871.1	1419177.5	89.62	PASS	70-130	1932233.4	2222556	86.94	PASS	70-130
N017427-002B-MS	MS	5	1358152.3	1419177.5	95.7	PASS	70-130	2051821.8	2222556	92.32	PASS	70-130
N017427-002B-MS	MS	1	1267172.4	1419177.5	89.29	PASS	70-130	1906767.4	2222556	85.79	PASS	70-130
CCV4	CCV	1	1581537.1	1419177.5	111.44	PASS	70-130	2392956	2222556	107.67	PASS	70-130
CCB4	CCB	1	1545277.7	1419177.5	108.89	PASS	70-130	2343381	2222556	105.44	PASS	70-130
LLCCV1	CCV2	1	1380646.2	1419177.5	97.28	PASS	70-130	2132263.3	2222556	95.94	PASS	70-130
ICSA2	ICSA	1	1404320.3	1419177.5	98.95	PASS	70-130	2187043.1	2222556	98.4	PASS	70-130
ICSAB2	ICSAB	1	1298545.4	1419177.5	91.5	PASS	70-130	2119140.2	2222556	95.35	PASS	70-130

INTERNAL STANDARD: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3561197	3561197	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4091756.9	3561197	114.9	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4079095.9	3561197	114.54	PASS	70-130
Std3-5/50 ppb	ICAL	1	4026530.7	3561197	113.07	PASS	70-130
Std4-10/100 ppb	ICAL	1	4059910	3561197	114	PASS	70-130
Std5-20/200 ppb	ICAL	1	3360140.6	3561197	94.35	PASS	70-130
Std6-40/400 ppb	ICAL	1	4087403.7	3561197	114.78	PASS	70-130
Std7-100/1000 ppb	ICAL	1	4082419.9	3561197	114.64	PASS	70-130
Std8-200/2000 ppb	ICAL	1	4108948	3561197	115.38	PASS	70-130
ICV	ICV	1	3958530.2	3561197	111.16	PASS	70-130
ICB	ICB	1	3703443.4	3561197	103.99	PASS	70-130
LLICV	CCV1	1	3684920	3561197	103.47	PASS	70-130
ICSA1	ICSA	1	3560511.2	3561197	99.98	PASS	70-130
ICSAB1	ICSAB	1	3273762.2	3561197	91.93	PASS	70-130
MB-52909	MBLK	1	3637967.7	3561197	102.16	PASS	70-130
LCS-52909	LCS	1	3226418.6	3561197	90.6	PASS	70-130
N017400-001B	SAMP	5	3920133.8	3561197	110.08	PASS	70-130
N017400-001B	SAMP	1	2911286.7	3561197	81.75	PASS	70-130
N017400-002B	SAMP	5	2966939.5	3561197	83.31	PASS	70-130
N017400-002B	SAMP	1	2996165.8	3561197	84.13	PASS	70-130
N017415-001B	SAMP	5	3428851.3	3561197	96.28	PASS	70-130
N017415-001B	SAMP	1	2657799.9	3561197	74.63	PASS	70-130
N017415-002B	SAMP	5	2968774	3561197	83.36	PASS	70-130
N017415-002B	SAMP	1	2818763.4	3561197	79.15	PASS	70-130
CCV1	CCV	1	3965322.5	3561197	111.35	PASS	70-130
CCB1	CCB	1	4057033.7	3561197	113.92	PASS	70-130
N017415-003B	SAMP	5	3217233.9	3561197	90.34	PASS	70-130
N017415-003B	SAMP	1	3186580.3	3561197	89.48	PASS	70-130
N017415-004B	SAMP	5	2971359.3	3561197	83.44	PASS	70-130
N017415-004B	SAMP	1	2859617.2	3561197	80.3	PASS	70-130
N017415-005B	SAMP	5	2689212	3561197	75.51	PASS	70-130
N017415-005B	SAMP	1	2696948.8	3561197	75.73	PASS	70-130
N017415-006B	SAMP	5	3413709.9	3561197	95.86	PASS	70-130
N017415-006B	SAMP	1	3243051.4	3561197	91.066	PASS	70-130
N017415-007B	SAMP	5	3037796.7	3561197	85.3	PASS	70-130
N017415-007B	SAMP	1	3488015.4	3561197	97.95	PASS	70-130
CCV2	CCV	1	3919445.7	3561197	110.06	PASS	70-130
CCB2	CCB	1	4121491.7	3561197	115.73	PASS	70-130
N017427-001B	SAMP	5	3512974.8	3561197	98.65	PASS	70-130
N017427-001B	SAMP	1	2822220.9	3561197	79.25	PASS	70-130
N017427-002B	SAMP	5	3566034.7	3561197	100.14	PASS	70-130

INTERNAL STANDARD: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	3474421.9	3561197	97.56	PASS	70-130
N017400-001B-PS	PS	1	4137716.3	3561197	116.19	PASS	70-130
N017400-001B-MS	MS	1	4072836	3561197	114.37	PASS	70-130
N017400-001B-MSD	MSD	1	4213042.6	3561197	118.3	PASS	70-130
N017427-002B-MS	MS	1	4137710.1	3561197	116.19	PASS	70-130
CCV3	CCV	1	3514437.2	3561197	98.69	PASS	70-130
CCB3	CCB	1	4220070.3	3561197	118.5	PASS	70-130
LLCCV1	CCV2	1	3804526.9	3561197	106.83	PASS	70-130
ICSA2	ICSA	1	3958707.9	3561197	111.16	PASS	70-130
ICSAB2	ICSAB	1	4176040.8	3561197	117.27	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017400
Test Method: EPA 6020
Analysis Date: 11/4,11/9,11/10

Matrix: Goundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is only applicable to Ba. The rest of the analyes' calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N017400-001B @ 5X	Arsenic	ug/L	1.166550	NA	1.0652	9.52%	10
N017400-001B	Barium	ug/L	26.681480	PASS	27.4429	2.77%	10
N017400-001B	Cadmium	ug/L		NA			10
N017400-001B	Manganese	ug/L	0.370024	NA	0.3006	23.09%	10
N017400-001B	Cobalt	ug/L		NA			10
N017400-001B	Lead	ug/L		NA			10
N017400-001B	Vanadium	ug/L	3.198626	NA	2.6264	21.79%	10
N017400-001B	Zinc	ug/L		NA	0.3110		10
N017400-001B	Beryllium	ug/L		NA			10
N017400-001B	Copper	ug/L		NA			10
N017400-001B	Antimony	ug/L		NA			10
N017400-001B	Molybdenum	ug/L	14.332110	NA	11.579520	23.77%	10
N017400-001B	Nickel	ug/L		NA	0.067993	100.00%	10
N017400-001B	Thallium	ug/L	0.593478	NA	0.056803	944.80%	10
N017400-001B	Selenium	ug/L	3.279730	NA	3.278219	0.05%	10
N017400-001B	Silver	ug/L		NA			10
N017400-001B	Chromium		0.58317		0.5062	15.2%	

Note: NA - Not applicable

Mary for 11/12/2015

ASSET Laboratories

Date: *11-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID: **N017400-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.985	0.10	10.00	1.065	89.2	80	120				
Barium	118.281	1.0	100.0	27.44	90.8	80	120				
Cadmium	8.654	0.50	10.00	0	86.5	80	120				
Chromium	8.516	1.0	10.00	0.5062	80.1	80	120				
Cobalt	7.266	0.50	10.00	0	72.7	80	120				S
Lead	8.976	1.0	10.00	0	89.8	80	120				
Manganese	80.622	0.50	100.0	0.3006	80.3	80	120				
Vanadium	11.171	1.0	10.00	2.626	85.4	80	120				
Zinc	83.268	10	100.0	0.3110	83.0	80	120				

Sample ID: **N017400-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.537	0.50	10.00	0	105	80	120				
Beryllium	10.705	0.50	10.00	0	107	80	120				
Copper	9.258	1.0	10.00	0	92.6	80	120				
Molybdenum	14.162	0.50	10.00	11.58	25.8	80	120				S
Nickel	10.168	1.0	10.00	0.06799	101	80	120				
Selenium	9.440	0.50	10.00	3.278	61.6	80	120				S
Thallium	10.029	0.50	10.00	0.05680	99.7	80	120				

Sample ID: **N017400-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.929	0.50	10.00	0	99.3	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID: **N017400-001B-PS** SampType: **PS** TestCode: **200.8DIS_CrP** Units: **µg/L** Prep Date: RunNo: **103959**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.516	1.0	10.00	0.5062	80.1	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICPMS**
Method Number: EPA 6020/200.8
Preparation Method: EPA 3010/200.8_PR
Analysis Date(s): 3/13/2015; 3/14/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **ICPMS-02**

Acceptance Criteria: MDL < spike < 10XMDL

		Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
27	Al	Aluminum	1.428	1.454	1.368	1.790	1.039	1.487	1.501	1.0	0.22163	3.143	**0.6966**	10	OK,meets criteria
121	Sb	Antimony	0.114	0.097	0.093	0.091	0.109	0.103	0.102	0.10	0.0083	3.143	**0.0262**	0.50	OK,meets criteria
75	As	Arsenic	0.057	0.049	0.046	0.056	0.051	0.059	0.058	0.050	0.00502	3.143	**0.0158**	0.10	OK,meets criteria
137	Ba	Barium	0.116	0.107	0.137	0.115	0.117	0.175	0.126	0.10	0.02298	3.143	**0.0722**	1.0	OK,meets criteria
9	Be	Beryllium	0.102	0.082	0.086	0.081	0.091	0.100	0.094	0.10	0.00834	3.143	**0.0262**	0.50	OK,meets criteria
11	B	Boron	2.773	2.788	2.855	4.317	3.713	3.448	3.231	2.5	0.57291	3.143	**1.801**	50	OK,meets criteria
111	Cd	Cadmium	0.042	0.043	0.049	0.041	0.042	0.048	0.044	0.050	0.00313	3.143	**0.0098**	0.50	OK,meets criteria
52	Cr	Chromium	0.181	0.200	0.197	0.258	0.196	0.191	0.175	0.25	0.02725	3.143	**0.0856**	1.0	OK,meets criteria
59	Co	Cobalt	0.056	0.047	0.055	0.045	0.051	0.049	0.054	0.050	0.00420	3.143	**0.0132**	0.50	OK,meets criteria
63	Cu	Copper	0.437	0.463	0.447	0.423	0.445	0.424	0.659	0.50	0.08399	3.143	**0.2640**	1.0	OK,meets criteria
56	Fe	Iron	1.231	1.163	1.267	1.061	1.088	1.188	1.211	1.0	0.07499	3.143	**0.2357**	10	OK,meets criteria
208	Pb	Lead	0.227	0.237	0.232	0.278	0.246	0.234	0.243	0.25	0.01696	3.143	**0.0533**	1.0	OK,meets criteria
55	Mn	Manganese	0.077	0.082	0.067	0.065	0.081	0.066	0.075	0.10	0.00723	3.143	**0.0227**	0.50	OK,meets criteria
95	Mo	Molybdenum	0.092	0.084	0.090	0.077	0.106	0.094	0.097	0.10	0.00927	3.143	**0.0291**	0.50	OK,meets criteria
60	Ni	Nickel	0.107	0.073	0.074	0.082	0.095	0.091	0.085	0.10	0.01207	3.143	**0.0379**	1.0	OK,meets criteria
78	Se	Selenium	0.094	0.100	0.055	0.078	0.125	0.074	0.092	0.10	0.02217	3.143	**0.0697**	0.50	OK,meets criteria
107	Ag	Silver	0.099	0.084	0.086	0.083	0.095	0.098	0.099	0.10	0.00735	3.143	**0.0231**	0.50	OK,meets criteria
205	Tl	Thallium	0.106	0.077	0.080	0.074	0.089	0.084	0.090	0.10	0.01072	3.143	**0.0337**	0.50	OK,meets criteria
118	Sn	Tin	0.219	0.228	0.218	0.307	0.256	0.235	0.247	0.25	0.03098	3.143	**0.0974**	10	OK,meets criteria
47	Ti	Titanium	0.101	0.136	0.084	0.094	0.105	0.089	0.134	0.10	0.02092	3.143	**0.0658**	10	OK,meets criteria
238	U	Uranium	0.109	0.093	0.094	0.094	0.112	0.104	0.111	0.10	0.00858	3.143	**0.0270**	0.50	OK,meets criteria
51	V	Vanadium	0.136	0.128	0.116	0.135	0.127	0.121	0.136	0.10	0.00785	3.143	**0.0247**	1.0	OK,meets criteria
66	Zn	Zinc	0.075	0.056	0.082	0.078	0.093	0.092	0.082	0.10	0.01242	3.143	**0.0390**	10	OK,meets criteria

SM 2130B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103853 **Analyst:** LSR

ASSET #: N017400 **Date Analyzed:** 10/28/2015

Method: EPA 2130

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/3/2015

2nd Level Reviewer: 11/11/2015 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Turbidity Preparation and Runlog

Date Analyzed: 10/28/15
Time Analyzed: 1445
Analyzed By: LSR

Sample ID.	Matrix	Sample Vol (ml)	Std Code	Dilution (F/I)	Reading	Calculations	Comments
0.02 NTU			CINV-150528 A		0.03 NTU		
20			B		19.84		
100			C		100		
800			D		806		

1)	MB	H_2O	10		1	0 NTU		
2)	NO174100-001D					0.97		
3)	- 001D DUP					0.97		
4)	- 002D					0.29		
5)	- 003 @ C					0.23		
6)	- 004 @ C					0.33		
7)	- 005 @ C					3.55		
8)	- 006 @ C					5.50		
9)	- 007C					0.21		
10)	- 008C					3.78		
11)								
12)							Julia Ramit 11/3/2015	
13)	@ 5 NTU			CINV-150119A		5.14 NTU		
14)	20			-150520A		20.7		
15)	100			-150520 B		99.7		
16)								
17)								
18)								
19)								
20)								LSR 10/28/15

LSR 10/28

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103982
ASSET #: N017400

Instrument ID: IC-07
Analyst: REB
Date Analyzed: 10/30/2015

Method:

[ ] EPA 300.0
[ ] EPA 7199

[X] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.			X			
30. Before and after manual integration chromatogram included in the package			X			
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Detection in CCB-1 is 0.0196 ppb. However, N017400 samples are ND and > 10X the blank detection.

~~samples were also enclosed between CCV-3/CCB-3 and CCV-5/ CCB-5~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/9/2015 Date: —

2nd Level Reviewer ~~11/11/2015~~ Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N017400-001A** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.4699 * 1$$

$$= 0.4699$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 0.47}$$



ANALYSIS RUN LOG

INJECTION LOG: 151002A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	10/02/15 12:02 PM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/02/15 12:13 PM	Reported
11	ICB	ICB	1	Hexavalent Chromium	10/02/15 12:22 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151002A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**07/Oct/15 19:21:29**
No. of Injections:	**14**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	ICV,ICV,1,	9	1000	Unknown		10/02/2015 12:02	Finished	ICV @ 5ppb, IWST 151002B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		10/02/2015 12:13	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		10/02/2015 12:22	Finished	ICB R150928A
12	SHUTDOWN	12	1000	Unknown		10/02/2015 12:37	Finished	BLANK
13	Eluent: R150924B	13	1000	Unknown		n.a.	Finished	Eluent
14	PCR: R150929A	14	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 151030A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	10/30/15 5:56 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	10/30/15 6:13 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/30/15 6:24 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	10/30/15 6:33 AM	Reported
13	MB-R103982	MBLK	1	Hexavalent Chromium	10/30/15 6:43 AM	Reported
14	N017434-001C	SAMP	1	Hexavalent Chromium	10/30/15 6:52 AM	Reported
15	N017434-001CREP	DUP	1	Hexavalent Chromium	10/30/15 7:01 AM	Reported
16	LCS-R103982	LCS	1	Hexavalent Chromium	10/30/15 7:11 AM	Reported
17	N017434-003D	SAMP	200	Hexavalent Chromium	10/30/15 7:20 AM	Reported
18	N017434-003DDUP	DUP	200	Hexavalent Chromium	10/30/15 7:30 AM	Reported
19	N017434-006C	SAMP	1	Hexavalent Chromium	10/30/15 7:39 AM	Reported
20	N017434-006CREP	DUP	1	Hexavalent Chromium	10/30/15 7:49 AM	Reported
21	N017434-007B	SAMP	500	Hexavalent Chromium	10/30/15 7:58 AM	Reported
22	N017434-007BREP	DUP	500	Hexavalent Chromium	10/30/15 8:07 AM	Reported
23	CCV-2	CCV	1	Hexavalent Chromium	10/30/15 8:17 AM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	10/30/15 8:26 AM	Reported
25	N017434-008D	SAMP	500	Hexavalent Chromium	10/30/15 8:50 AM	Reported
26	N017434-008DREP	DUP	500	Hexavalent Chromium	10/30/15 9:01 AM	Reported
27	N017434-009D	SAMP	1	Hexavalent Chromium	10/30/15 9:11 AM	Not Reported
28	N017434-009DREP	DUP	1	Hexavalent Chromium	10/30/15 9:20 AM	Not Reported
29	N017434-003DMS	MS	200	Hexavalent Chromium	10/30/15 9:30 AM	Reported
30	N017434-003DMSD	MSD	200	Hexavalent Chromium	10/30/15 9:39 AM	Reported
31	N017434-009D	SAMP	10	Hexavalent Chromium	10/30/15 9:49 AM	Reported
32	N017434-009DREP	DUP	10	Hexavalent Chromium	10/30/15 9:58 AM	Reported
33	CCV-3	CCV	1	Hexavalent Chromium	10/30/15 10:17 AM	Reported
34	CCB-3	CCB	1	Hexavalent Chromium	10/30/15 10:28 AM	Reported
35	N017400-001A	SAMP	1	Hexavalent Chromium	10/30/15 11:05 AM	Reported
36	N017400-001AMS	MS	1	Hexavalent Chromium	10/30/15 11:16 AM	Reported
37	N017400-002A	SAMP	1	Hexavalent Chromium	10/30/15 11:26 AM	Reported
38	N017400-002AMS	MS	1	Hexavalent Chromium	10/30/15 11:35 AM	Reported
39	N017400-003A	SAMP	1	Hexavalent Chromium	10/30/15 11:45 AM	Reported
40	N017400-003AMS	MS	1	Hexavalent Chromium	10/30/15 11:54 AM	Reported
41	N017400-004A	SAMP	1	Hexavalent Chromium	10/30/15 12:04 PM	Reported
42	N017400-004AMS	MS	1	Hexavalent Chromium	10/30/15 12:13 PM	Reported
43	N017400-005A	SAMP	5	Hexavalent Chromium	10/30/15 12:22 PM	Reported

INJECTION LOG: 151030A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
44	N017400-005AMS	MS	5	Hexavalent Chromium	10/30/15 12:32 PM	Reported
45	CCV-4	CCV	1	Hexavalent Chromium	10/30/15 12:42 PM	Reported
46	CCB-4	CCB	1	Hexavalent Chromium	10/30/15 12:51 PM	Reported
47	N017400-006A	SAMP	1	Hexavalent Chromium	10/30/15 1:00 PM	Not Reported
48	N017400-006AMS	MS	1	Hexavalent Chromium	10/30/15 1:10 PM	Not Reported
49	N017400-007A	SAMP	1	Hexavalent Chromium	10/30/15 1:19 PM	Reported
50	N017400-007AMS	MS	1	Hexavalent Chromium	10/30/15 1:29 PM	Reported
51	N017400-008A	SAMP	1	Hexavalent Chromium	10/30/15 1:38 PM	Reported
52	N017400-008AMS	MS	1	Hexavalent Chromium	10/30/15 1:48 PM	Reported
53	N017400-009A	SAMP	1	Hexavalent Chromium	10/30/15 1:57 PM	Reported
54	N017400-009AMS	MS	1	Hexavalent Chromium	10/30/15 2:07 PM	Reported
55	N017400-006A	SAMP	5	Hexavalent Chromium	10/30/15 2:16 PM	Reported
56	N017400-006AMS	MS	5	Hexavalent Chromium	10/30/15 2:26 PM	Reported
57	CCV-5	CCV	1	Hexavalent Chromium	10/30/15 2:35 PM	Reported
58	CCB-5	CCB	1	Hexavalent Chromium	10/30/15 2:44 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151030A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Nov/15 14:30:10**
No. of Injections:	**61**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	BLANK	1	1000	Unknown		10/30/2015 05:56	Finished	BLANK
10	CCV-1,CCV,1,	2	1000	Unknown		10/30/2015 06:13	Finished	CCV @ 5ppb, IWST 151002A
11	PQL@0.2ppb,CCV2,1	3	1000	Unknown		10/30/2015 06:24	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	4	1000	Unknown		10/30/2015 06:33	Finished	CCB R150928A
13	MB-H2O,MBLK,1,	5	1000	Unknown		10/30/2015 06:43	Finished	MB, R151005A
14	N017434-001C,SAMP	6	1000	Unknown		10/30/2015 06:52	Finished	SAMP, 10mL
15	N017434-001CREP,D	7	1000	Unknown		10/30/2015 07:01	Finished	REP, 10mL
16	LCS-H2O,LCS,1,	8	1000	Unknown		10/30/2015 07:11	Finished	LCS@5ppb, IWST-151002B
17	N017434-003D,SAMP	9	1000	Unknown		10/30/2015 07:20	Finished	SAMP, 0.05 to 10mL
18	N017434-003DDUP,D	10	1000	Unknown		10/30/2015 07:30	Finished	REP, 0.05 to 10mL
19	N017434-006C,SAMP	11	1000	Unknown		10/30/2015 07:39	Finished	SAMP, 10mL
20	N017434-006CREP,D	12	1000	Unknown		10/30/2015 07:49	Finished	REP, 10mL
21	N017434-007B,SAMP	13	1000	Unknown		10/30/2015 07:58	Finished	SAMP, 0.02 to 10mL
22	N017434-007BREP,D	14	1000	Unknown		10/30/2015 08:07	Finished	REP, 0.02 to 10mL
23	CCV-2,CCV,1	15	1000	Unknown		10/30/2015 08:17	Finished	CCV @ 10ppb, IWST 151002A
24	CCB-2,CCB,1	16	1000	Unknown		10/30/2015 08:26	Finished	CCB
25	N017434-008D,SAMP	17	1000	Unknown		10/30/2015 08:50	Finished	SAMP, 0.02 to 10mL
26	N017434-008DREP,D	18	1000	Unknown		10/30/2015 09:01	Finished	REP, 0.02 to 10mL
27	N017434-009D,SAMP	19	1000	Unknown		10/30/2015 09:11	Finished	SAMP, 10mL
28	N017434-009DREP,D	20	1000	Unknown		10/30/2015 09:20	Finished	REP, 10mL
29	N017434-003DMS,MS	21	1000	Unknown		10/30/2015 09:30	Finished	MS(5ppb), IWST-151002B,10m
30	N017434-003DMSD,M	22	1000	Unknown		10/30/2015 09:39	Finished	MSD(5ppb), IWST-151002B,10
31	N017434-009D,SAMP	23	1000	Unknown		10/30/2015 09:49	Finished	SAMP, 1 to 10mL
32	N017434-009DREP,D	24	1000	Unknown		10/30/2015 09:58	Finished	REP, 1 to 10mL
33	CCV-3,CCV,1	25	1000	Unknown		10/30/2015 10:17	Finished	CCV @ 5ppb, IWST 151002A
34	CCB-3,CCB,1	26	1000	Unknown		10/30/2015 10:28	Finished	CCB
35	N017400-001A,SAMP	27	1000	Unknown		10/30/2015 11:05	Finished	SAMP, 10mL
36	N017400-001AMS,MS	28	1000	Unknown		10/30/2015 11:16	Finished	MS(1ppb), IWST-151002B, 10r
37	N017400-002A,SAMP	29	1000	Unknown		10/30/2015 11:26	Finished	SAMP, 10mL
38	N017400-002AMS,MS	30	1000	Unknown		10/30/2015 11:35	Finished	MS(1ppb), IWST-151002B, 10r
39	N017400-003A,SAMP	31	1000	Unknown		10/30/2015 11:45	Finished	SAMP, 10mL
40	N017400-003AMS,MS	32	1000	Unknown		10/30/2015 11:54	Finished	MS(1ppb), IWST-151002B, 10r
41	N017400-004A,SAMP	33	1000	Unknown		10/30/2015 12:04	Finished	SAMP, 10mL
42	N017400-004AMS,MS	34	1000	Unknown		10/30/2015 12:13	Finished	MS(1ppb), IWST-151002B, 10r
43	N017400-005A,SAMP	35	1000	Unknown		10/30/2015 12:22	Finished	SAMP, 2 to 10mL
44	N017400-005AMS,MS	36	1000	Unknown		10/30/2015 12:32	Finished	MS(5ppb), IWST-151002B, 10r
45	CCV-4,CCV,1	37	1000	Unknown		10/30/2015 12:42	Finished	CCV @ 10ppb, IWST 151002A
46	CCB-4,CCB,1	38	1000	Unknown		10/30/2015 12:51	Finished	CCB
47	N017400-006A,SAMP	39	1000	Unknown		10/30/2015 13:00	Finished	SAMP, 10mL
48	N017400-006AMS,MS	40	1000	Unknown		10/30/2015 13:10	Finished	MS(5ppb), IWST-151002B, 10r
49	N017400-007A,SAMP	41	1000	Unknown		10/30/2015 13:19	Finished	SAMP, 10mL
50	N017400-007AMS,MS	42	1000	Unknown		10/30/2015 13:29	Finished	MS(1ppb), IWST-151002B, 10r
51	N017400-008A,SAMP	43	1000	Unknown		10/30/2015 13:38	Finished	SAMP, 10mL
52	N017400-008AMS,MS	44	1000	Unknown		10/30/2015 13:48	Finished	MS(1ppb), IWST-151002B, 10r
53	N017400-009A,SAMP	45	1000	Unknown		10/30/2015 13:57	Finished	SAMP, 10mL
54	N017400-009AMS,MS	46	1000	Unknown		10/30/2015 14:07	Finished	MS(1ppb), IWST-151002B, 10r
55	N017400-006A,SAMP	47	1000	Unknown		10/30/2015 14:16	Finished	SAMP, 2 to 10mL
56	N017400-006AMS,MS	48	1000	Unknown		10/30/2015 14:26	Finished	MS(5ppb), IWST-151002B, 10r
57	CCV-5,CCV,1	49	1000	Unknown		10/30/2015 14:35	Finished	CCV @ 5ppb, IWST 151002A
58	CCB-5,CCB,1	50	1000	Unknown		10/30/2015 14:44	Finished	CCB
59	SHUTDOWN	1	1000	Unknown		10/30/2015 14:54	Finished	BLANK
60	Eluent: R151029A	CurrentVial	1000	Unknown		n.a.	Finished	Eluent

61	PCR: R151027B	urrentVial+	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 10/28/15
Time Prepared: 11:35 AM
Prepared By: MEM

Scope 96.7°C
pH 4 - 4.02
7 - 7.01
10 - 10.04
CCV - 6.98

Reagent ID:
Sulfuric Acid: CIW-150715C
Diphenylcarbazide: CIW-150416B
NH4OH + NH4SO4 eluent: R151029A
NH4OH + NH4SO4 buffer: R150930C, R151018C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NOI7396-001A	9.39	—	—	—	—	R150423C
2)	2A	9.11	9.38	~25mL	~25mL	13 drops 6MNaOH	
3)	3A	9.13	9.35	1	1	13 drops 1	
4)	4A	9.39	—	—	—	—	
5)	5A	9.39	—	—	—	—	
6)	6A	9.37	—	—	—	—	
7)	7A	9.35	—	—	—	—	
8)	8A	9.35	—	—	—	—	
9)	9A	9.34	—	—	—	—	
10)	NOI7399-000A	8.76	9.32	~250mL	~250mL	16 drops 6MNaOH	R151018C
11)	NOI7400-001A	9.39	—	—	—	—	
12)	2A	9.37	—	—	—	—	
13)	3A	9.51	—	—	—	—	
14)	4A	9.37	—	—	—	—	
15)	5A	9.48	—	—	—	—	
	6A	9.44	—	—	—	—	

Sample Preparation

Date Prepared: 10/28/15
Time Prepared: 11:35 hrs
Prepared By: MEM

Reagent ID:
Sulfuric Acid: CIW-150715C
Diphenylcarbazide: CIW-150416B
NH4OH + NH4SO4 eluent: R151029A
NH4OH + NH4SO4 buffer: R151015C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	NOI7400-007A	9.40	—	—	—	—	R151018C
2)	8A	9.42	—	—	—	—	
3)	9A	9.34	—	—	—	—	
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							MEM 10/28/15

Logbook No. 9

REB 11/9/2015

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 10/2/2015

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0556	0.2482	1.1638	2.3278	3.5606	4.7147	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST151002A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **ICV**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/2/2015**	SeqNo: **2127535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.075	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **ZZZZZZ**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/2/2015**	SeqNo: **2127536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCV**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.989	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **ZZZZZZ**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.203	0.20	0.2000	0	102	80	120				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCV**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.030	0.20	10.00	0	100	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCV**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.057	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCV**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.208	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCV**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.052	0.20	5.000	0	101	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *05-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **ICB**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/2/2015**	SeqNo: **2127537**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCB**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.020	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCB**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127552**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCB**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127560**

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

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCB**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127572**

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

CCB-1 has detect @0.02ppb,however,samples N017400 were enclosed between CCV-3/CCB-3 and CCV-5/CCB-5.

Qualifiers:

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

11/11/2015

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103982**
Client ID: **CCB**	Batch ID: **R103982**	TestNo: **EPA 218.6**		Analysis Date: **10/30/2015**	SeqNo: **2127582**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 10/30/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.065	
CCV-2	5.065	
CCV-3	5.065	
CCV-4	5.065	
CCV-5	5.065	
Average	5.065	
Actual RT Window	4.985 - 5.145	
Applied RT Window	4.865 - 5.265	
MB-R103982	N.A.	N.A.
N017434-001C	5.048	PASS
N017434-001CREP	5.048	PASS
LCS-R103982	5.065	PASS
N017434-003D	5.065	PASS
N017434-003DDUP	5.065	PASS
N017434-006C	5.032	PASS
N017434-006CREP	5.032	PASS
N017434-007B	5.065	PASS
N017434-007BREP	5.065	PASS
N017434-008D	5.073	PASS
N017434-008DREP	5.065	PASS
N017434-009D	5.023	PASS
N017434-009DREP	5.023	PASS
N017434-003DMS	5.065	PASS
N017434-003DMSD	5.065	PASS
N017434-009D	5.057	PASS
N017434-009DREP	5.065	PASS
N017400-001A	4.957	PASS
N017400-001AMS	4.957	PASS
N017400-002A	4.957	PASS
N017400-002AMS	4.957	PASS
N017400-003A	4.973	PASS
N017400-003AMS	4.957	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 10/30/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.065	
CCV-2	5.065	
CCV-3	5.065	
CCV-4	5.065	
CCV-5	5.065	
Average	5.065	
Actual RT Window	4.985 - 5.145	
Applied RT Window	4.865 - 5.265	
N017400-004A	4.965	PASS
N017400-004AMS	4.965	PASS
N017400-005A	5.057	PASS
N017400-005AMS	5.065	PASS
N017400-006A	5.040	PASS
N017400-006AMS	5.032	PASS
N017400-007A	4.973	PASS
N017400-007AMS	4.957	PASS
N017400-008A	4.965	PASS
N017400-008AMS	4.957	PASS
N017400-009A	5.090	PASS
N017400-009AMS	5.065	PASS
N017400-006A	5.057	PASS
N017400-006AMS	5.057	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography**
Method Number: EPA 218.6 / EPA 7199
Analysis Date(s): 2/26/2015
Analyst: Ryan Balilu

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0329	0.0375	0.0281	0.0325	0.0403	0.0276	0.0265	0.0301	0.030	0.0049	2.998	**0.015**	**0.20**	OK,meets criteria

Students't Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

ASSET LABORATORIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography**
Method Number: EPA 218.6 / EPA 7199
Analysis Date(s): 3/16/2015
Analyst: Ryan Balilu

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0617	0.0578	0.0592	0.0604	0.0606	0.0686	0.0567	0.050	0.0039	3.143	**0.012**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

ASSET LABORATORIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 / EPA 7199 Unit: ug/L
Analysis Date(s): 3/5/2015
Analyst: Ryan Balilu

Instrument Name: **IC-01** **Acceptance Criteria:** MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0672	0.0679	0.0615	0.0664	0.0620	0.0637	0.0610	0.050	0.0029	3.143	**0.0090**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 151002A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	ICV	ICV	1	Hexavalent Chromium	10/02/15 12:02 PM	Reported
10	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/02/15 12:13 PM	Reported
11	ICB	ICB	1	Hexavalent Chromium	10/02/15 12:22 PM	Reported

Nancy 10/14/2015

Injection Log Summary

Sequence Details

Name:	**IC-07_151002A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**07/Oct/15 19:21:29**
No. of Injections:	**14**	*Updated By:*	**ics 5000**

Injection Details

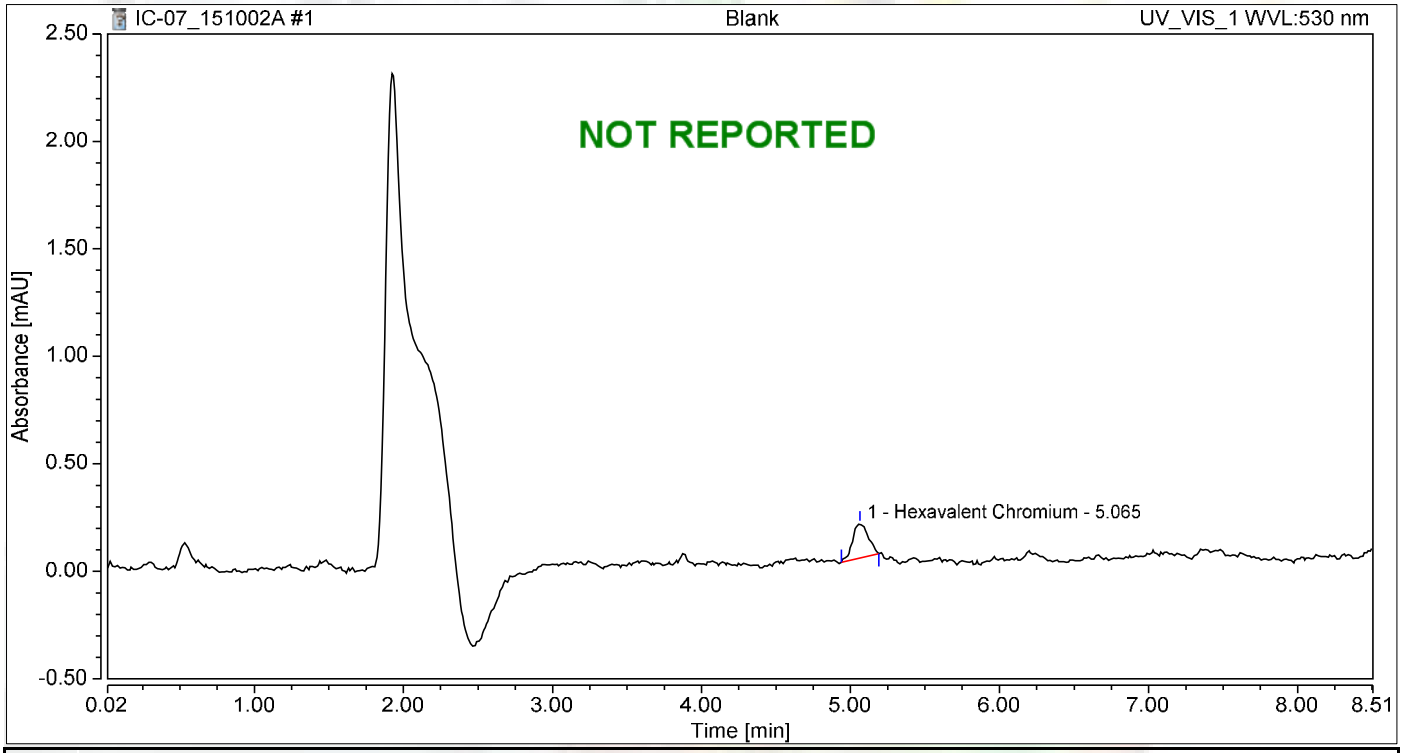
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	ICV,ICV,1,	9	1000	Unknown		10/02/2015 12:02	Finished	ICV @ 5ppb, IWST 151002B
10	PQL@0.2ppb,CCV2,1	10	1000	Unknown		10/02/2015 12:13	Finished	PQL @ 0.2ppb
11	ICB,ICB,1,	11	1000	Unknown		10/02/2015 12:22	Finished	ICB R150928A
12	SHUTDOWN	12	1000	Unknown		10/02/2015 12:37	Finished	BLANK
13	Eluent: R150924B	13	1000	Unknown		n.a.	Finished	Eluent
14	PCR: R150929A	14	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**Blank**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

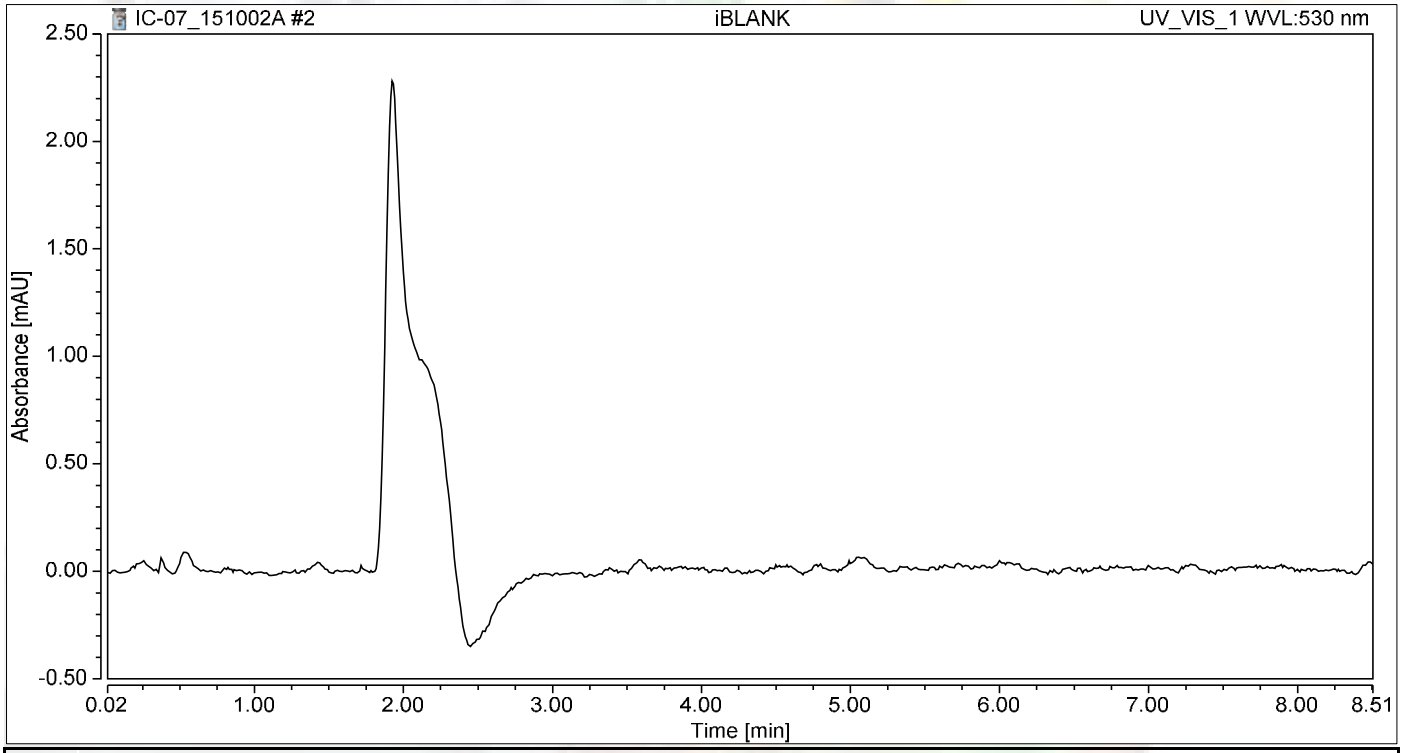
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.019	0.160	100.00	100.00	0.0827
Total:			**0.019**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

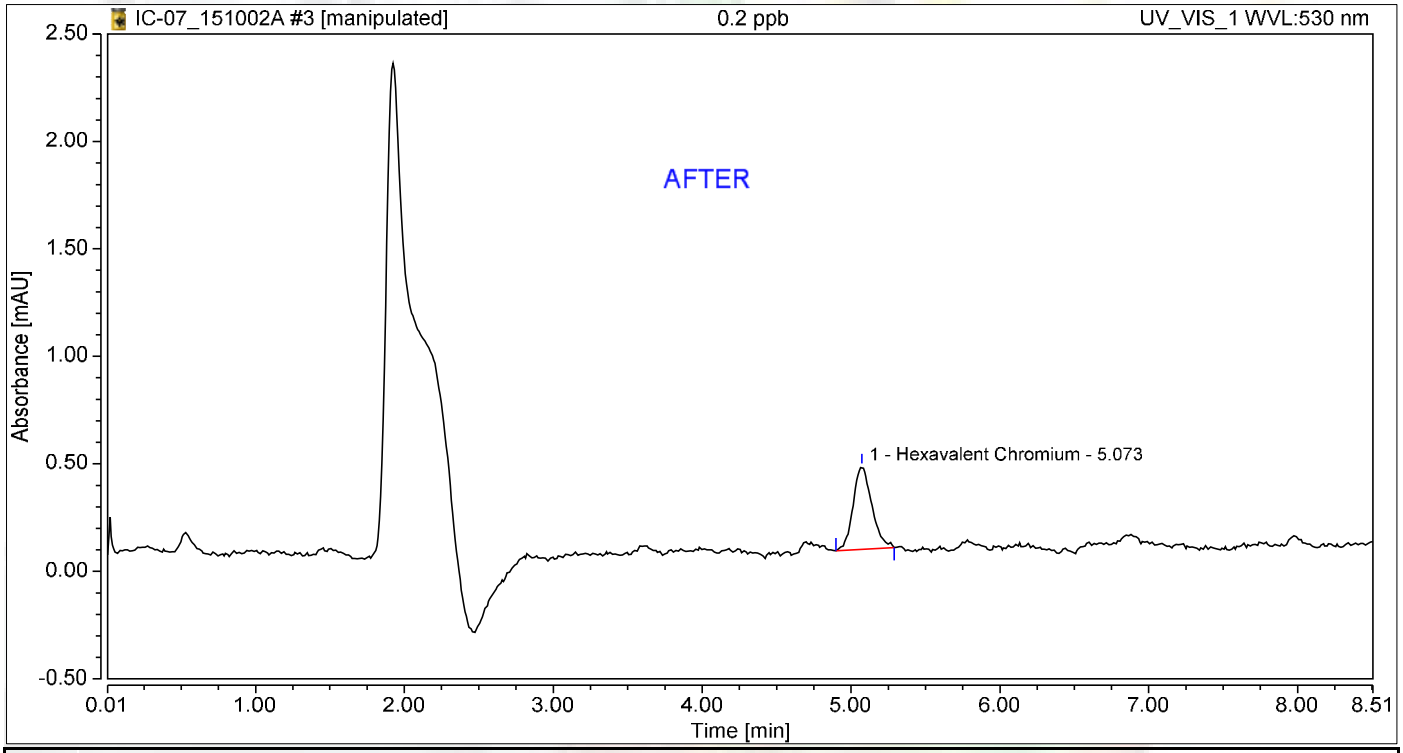
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.056	0.385	100.00	100.00	0.2357
Total:			**0.056**	**0.385**	**100.00**	**100.00**	

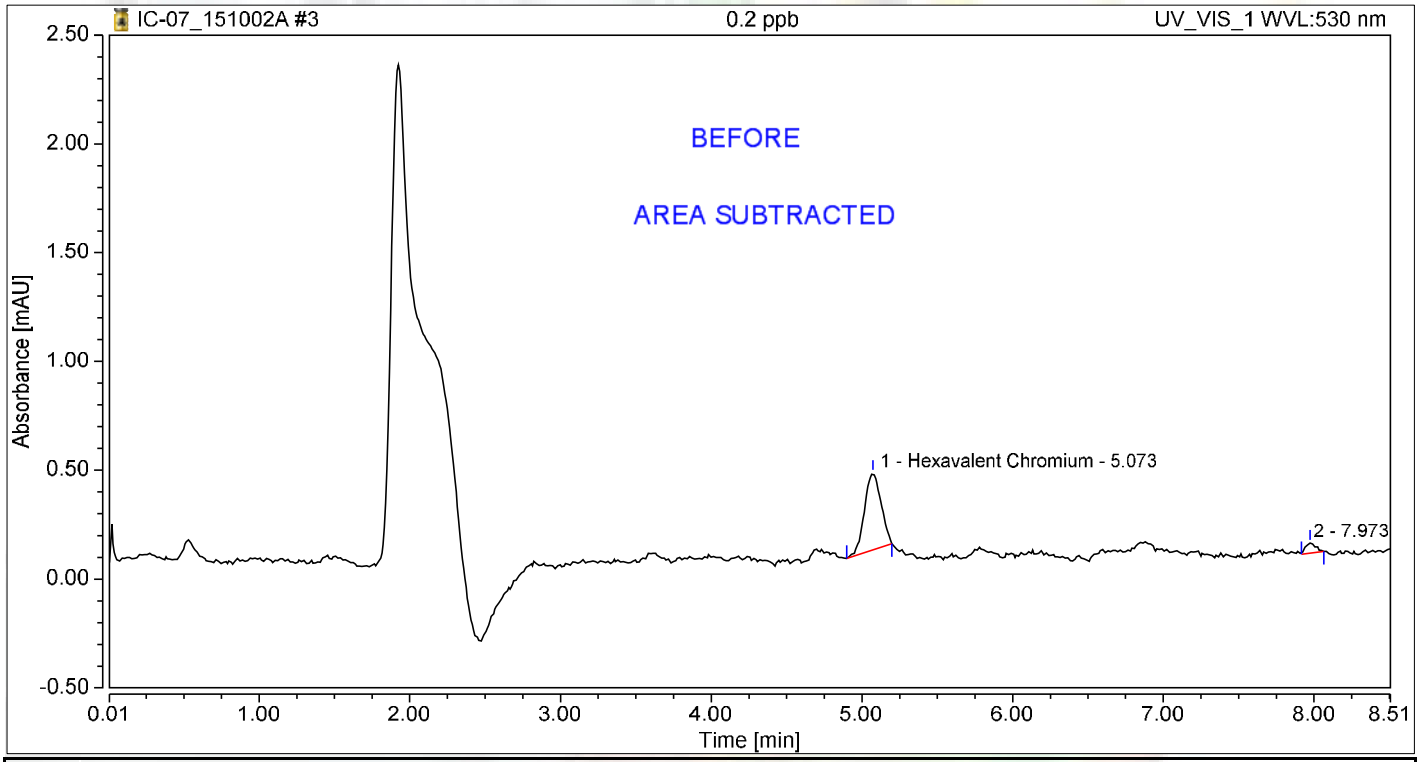
10/14/2015

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

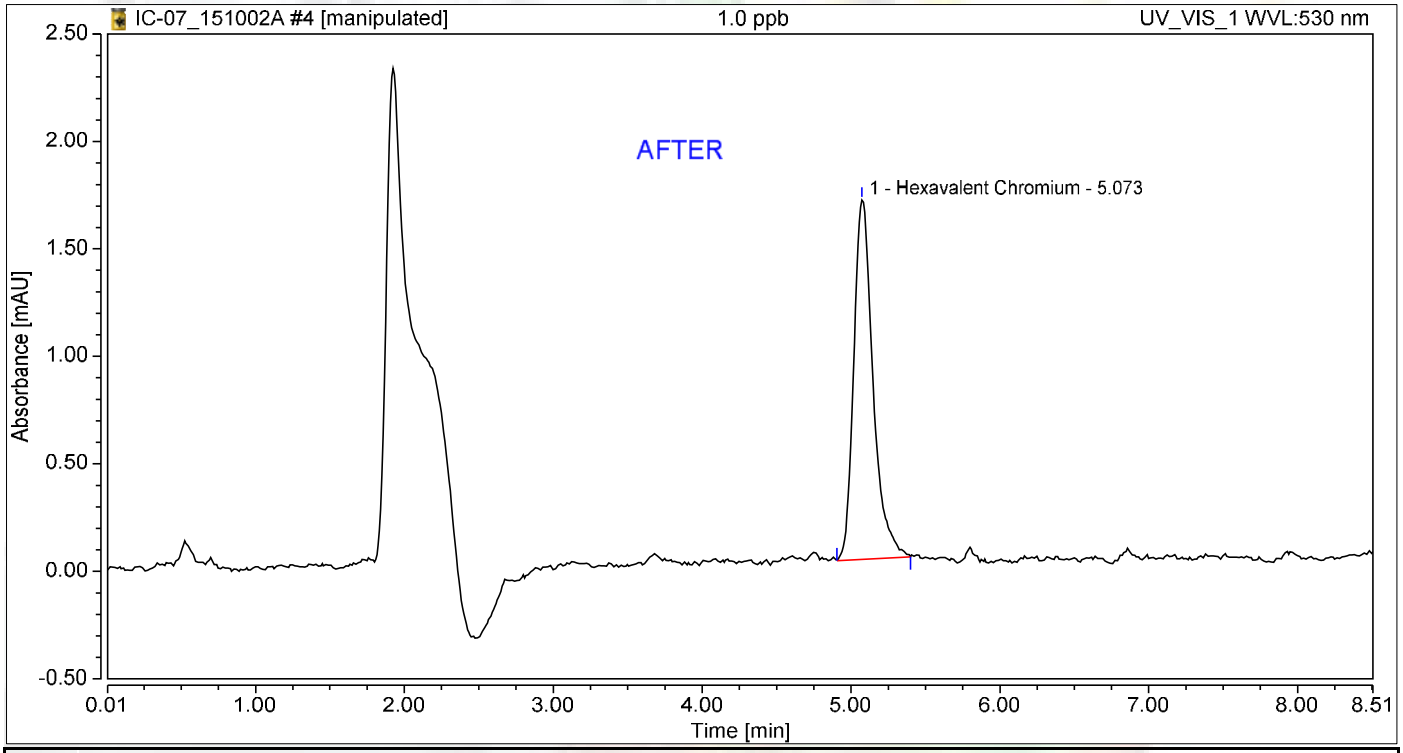
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.045	0.352	92.39	88.20	0.1899
2		7.973	0.004	0.047	7.61	11.80	n.a.
Total:			**0.048**	**0.400**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.248	1.672	100.00	100.00	1.0528
Total:			**0.248**	**1.672**	**100.00**	**100.00**	

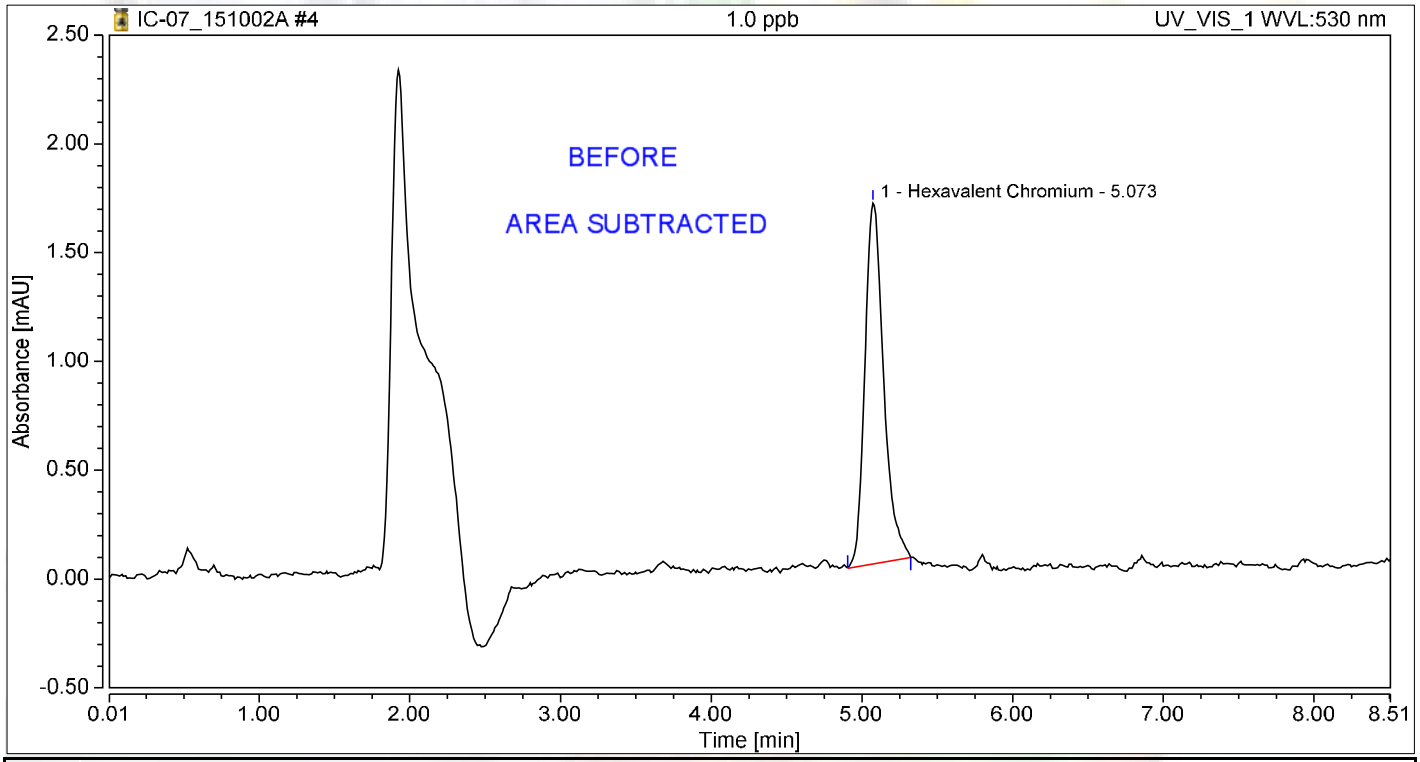
10/14/2015

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

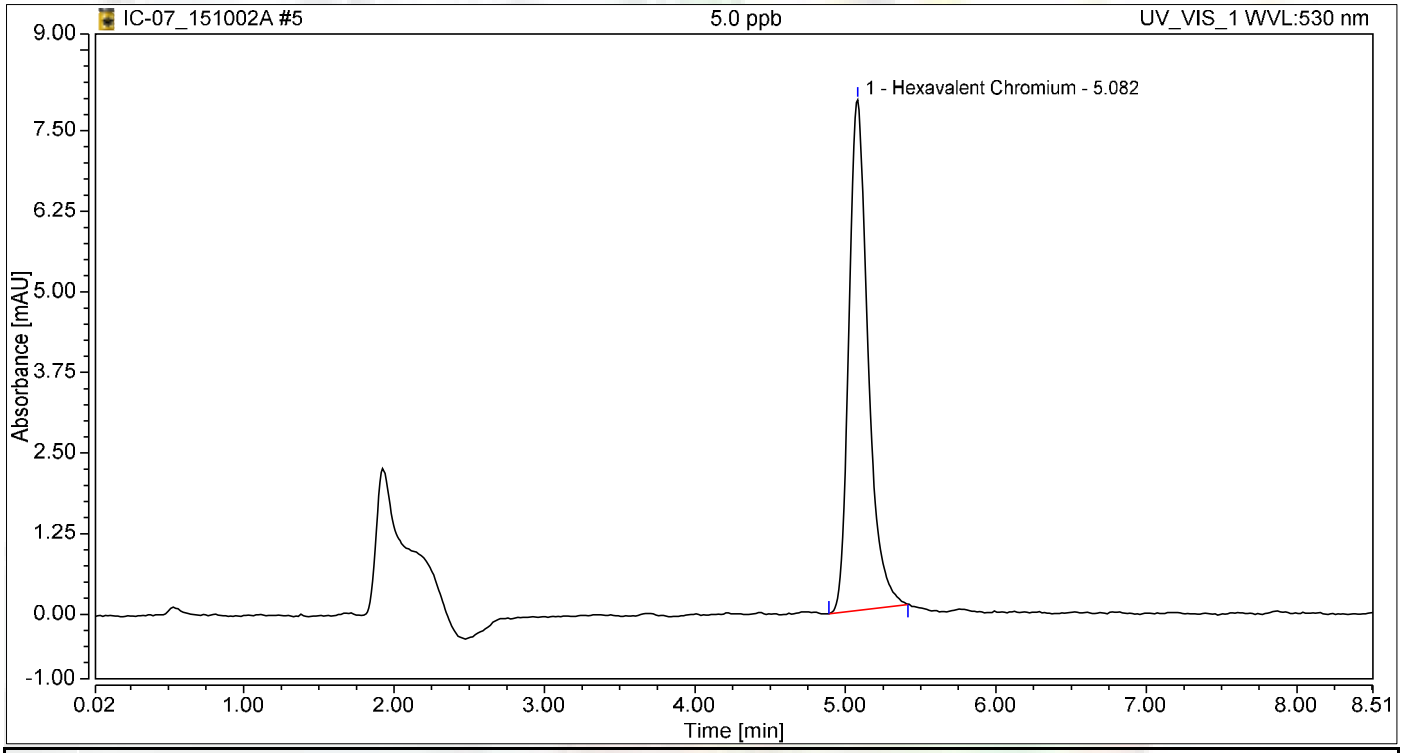
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.239	1.658	100.00	100.00	1.0140
Total:			**0.239**	**1.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

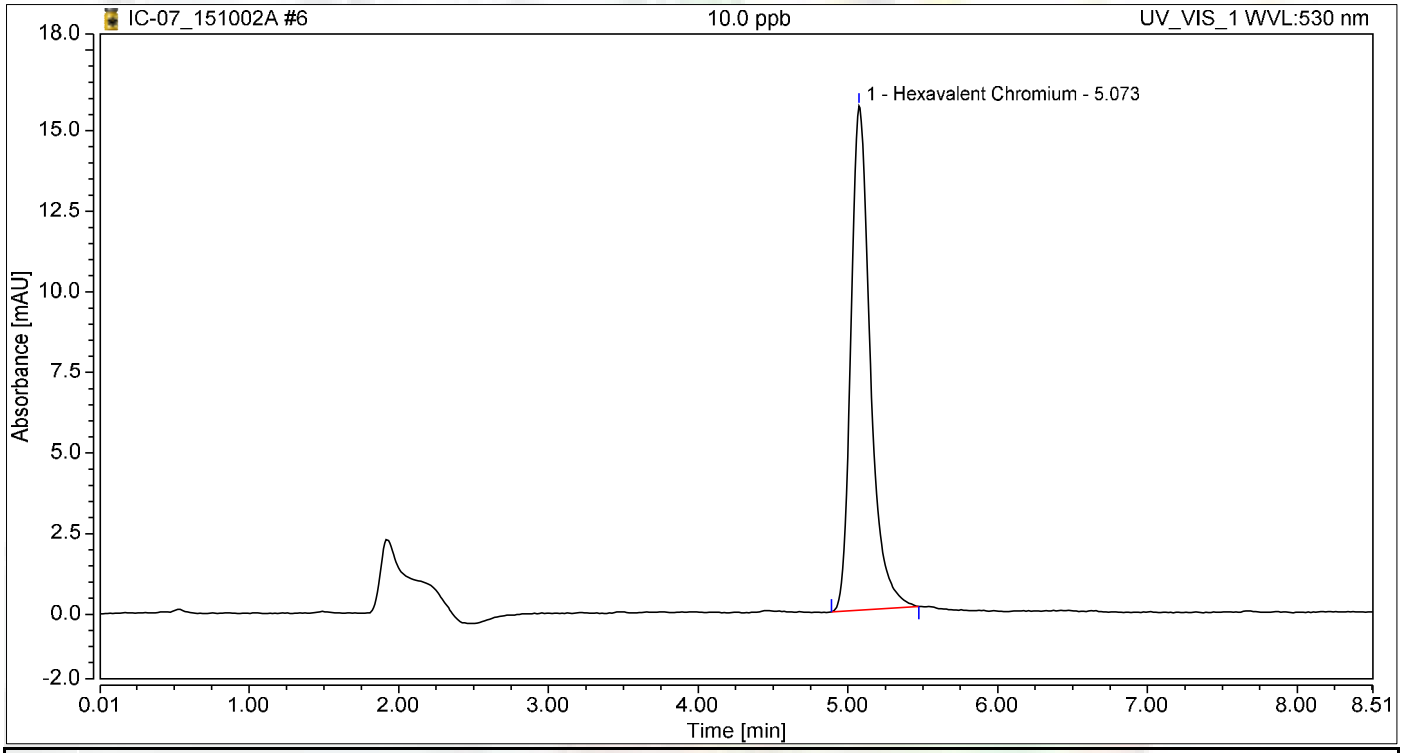
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.082	1.164	7.918	100.00	100.00	4.9363
Total:			**1.164**	**7.918**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

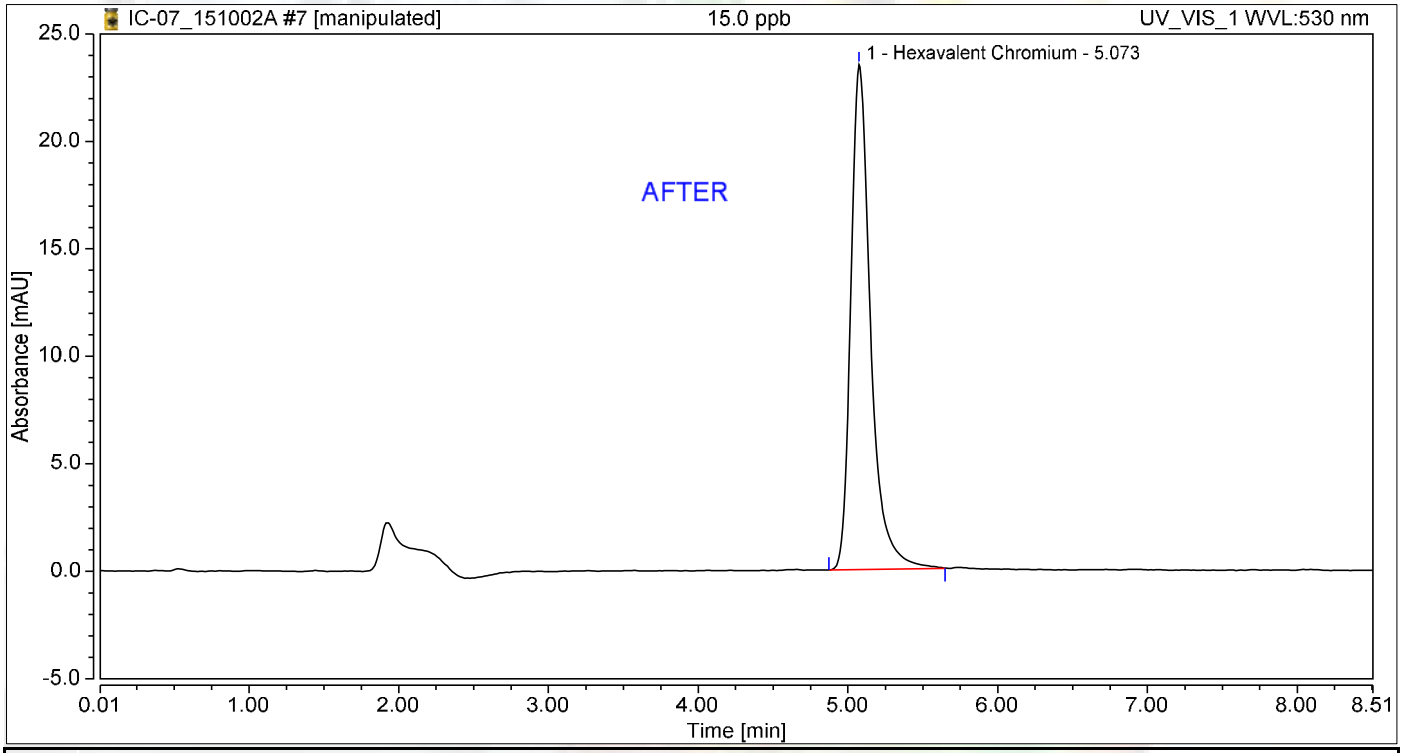
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	2.328	15.641	100.00	100.00	9.8740
Total:			**2.328**	**15.641**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.561	23.482	100.00	100.00	15.1032
Total:			**3.561**	**23.482**	**100.00**	**100.00**	

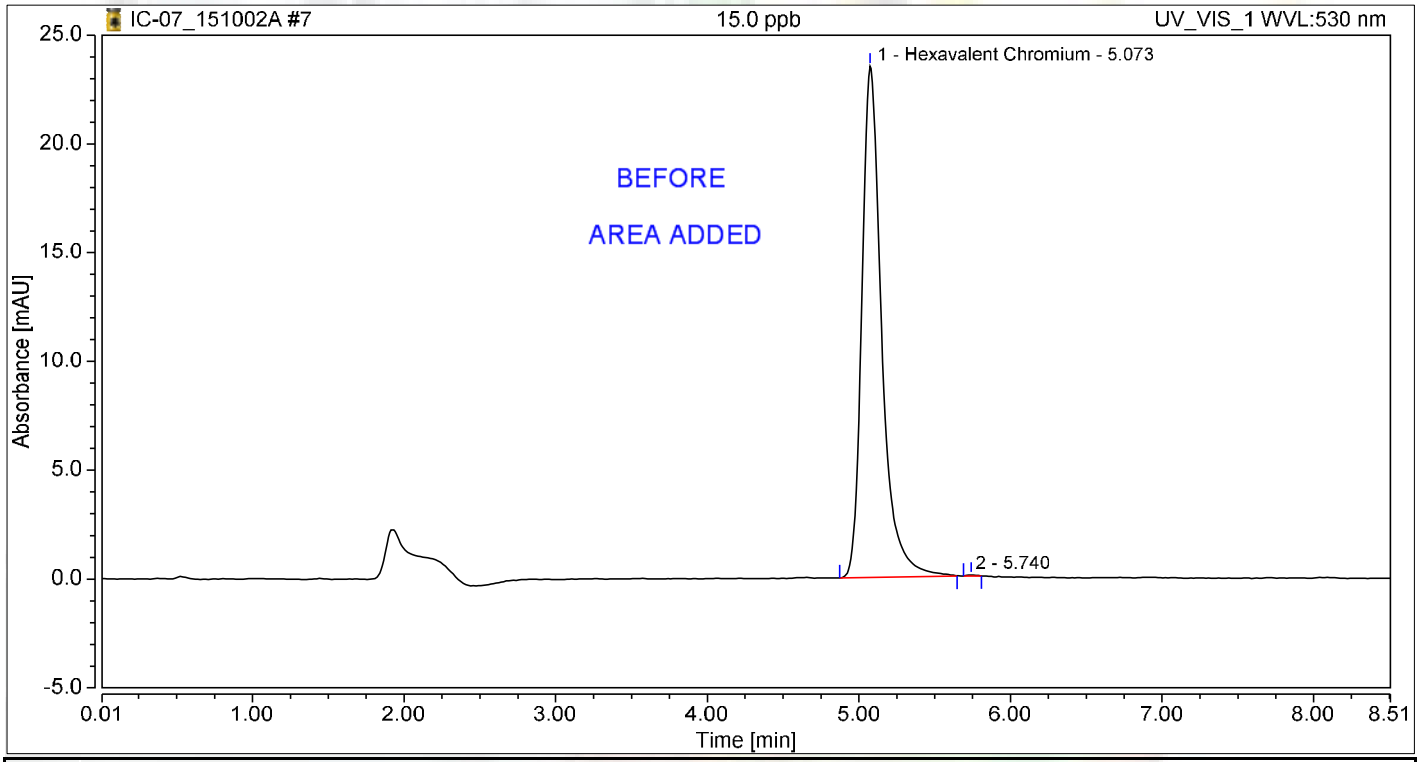
10/14/2015

Chromatogram and Results

Injection Details

Injection Name:	**15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

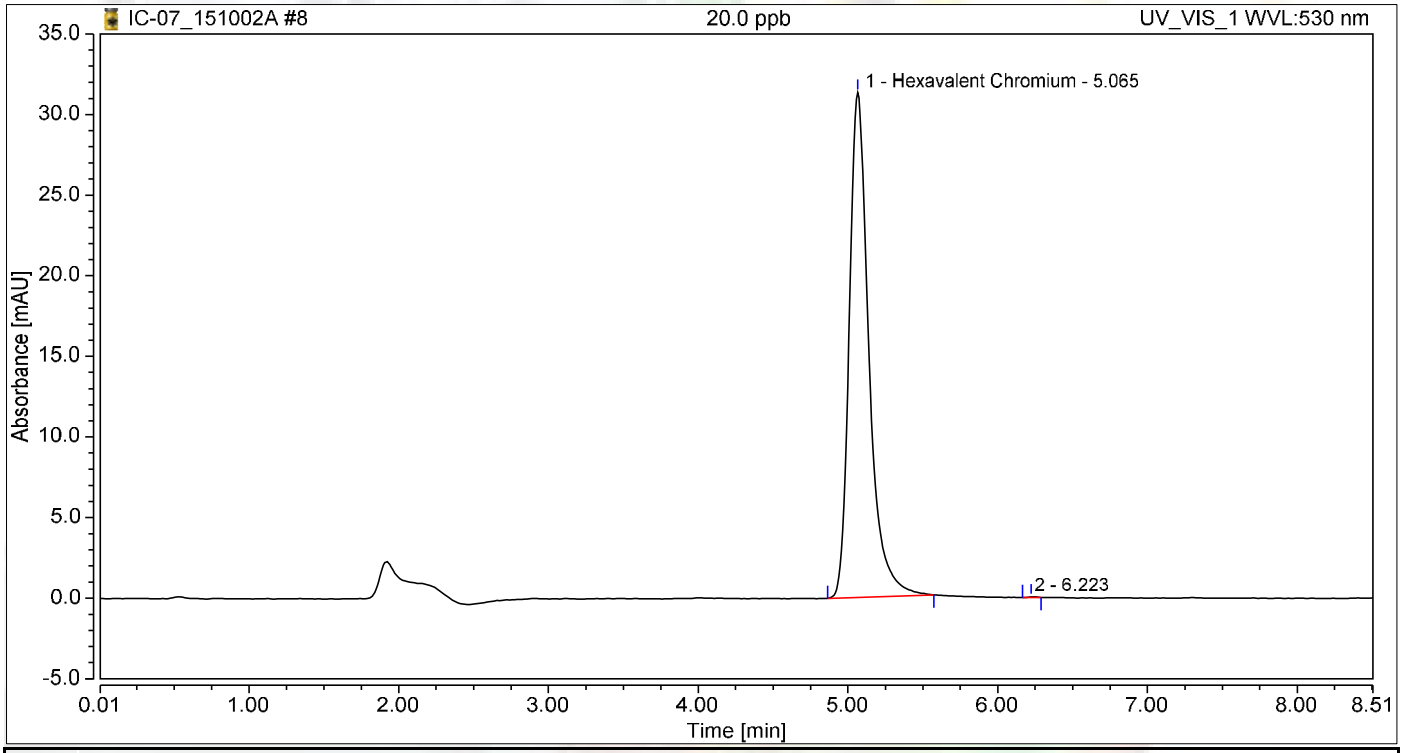
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.561	23.482	99.90	99.78	15.1039
2		5.740	0.004	0.052	0.10	0.22	n.a.
Total:			**3.564**	**23.534**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



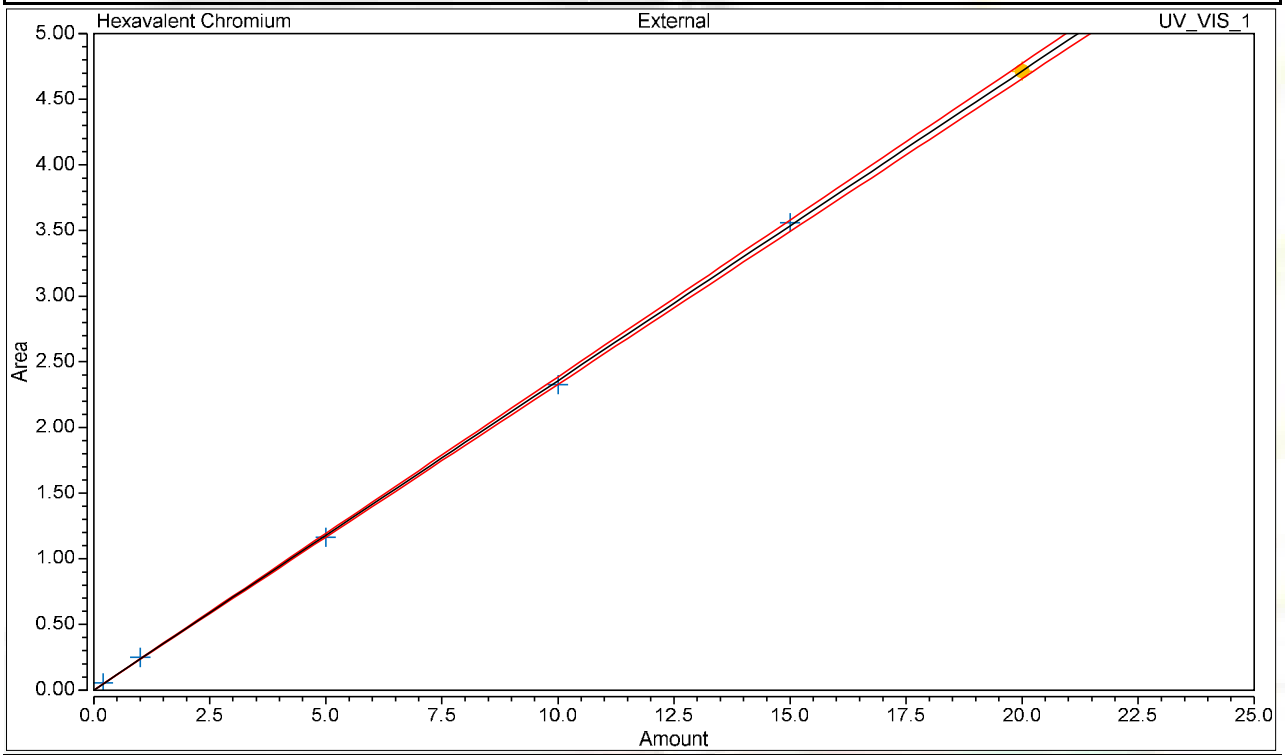
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.715	31.317	99.93	99.85	19.9985
2		6.223	0.003	0.047	0.07	0.15	n.a.
Total:			**4.718**	**31.364**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2358
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99989

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

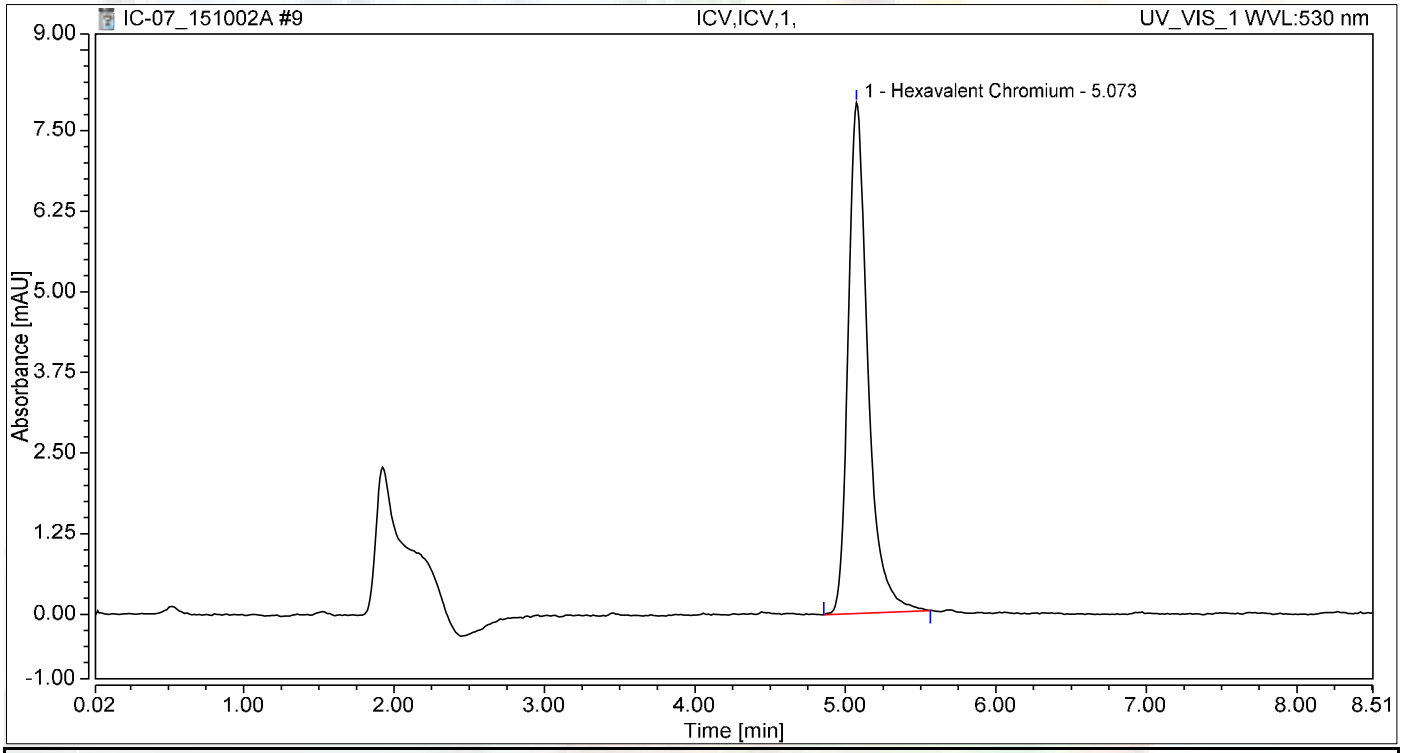
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
3	0.2 ppb	01	0.2000	0.0556	0.056	0.385
4	1.0 ppb	02	1.0000	0.2482	0.248	1.672
5	5.0 ppb	03	5.0000	1.1638	1.164	7.918
6	10.0 ppb	04	10.0000	2.3278	2.328	15.641
7	15.0 ppb	05	15.0000	3.5606	3.561	23.482
8	20.0 ppb	06	20.0000	4.7147	4.715	31.317

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 12:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

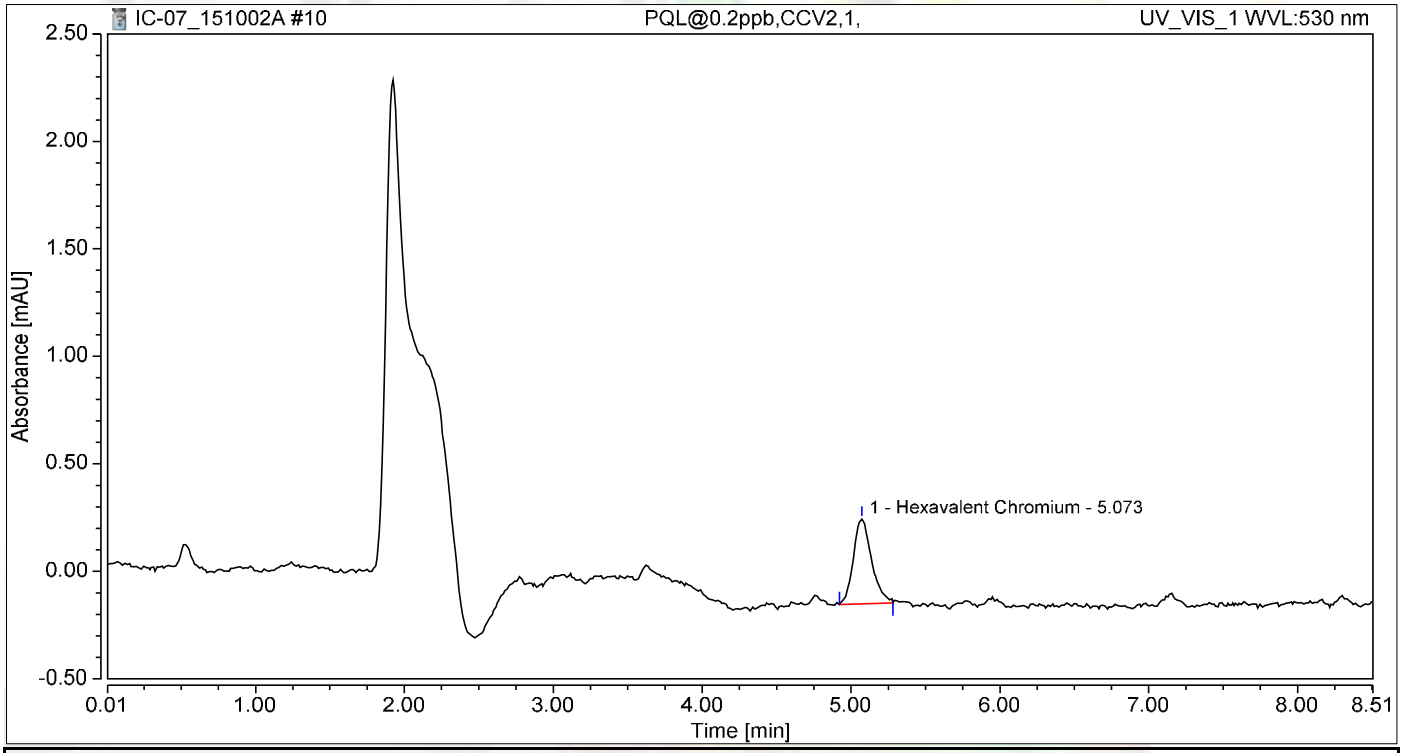
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.197	7.921	100.00	100.00	5.0753
Total:			**1.197**	**7.921**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

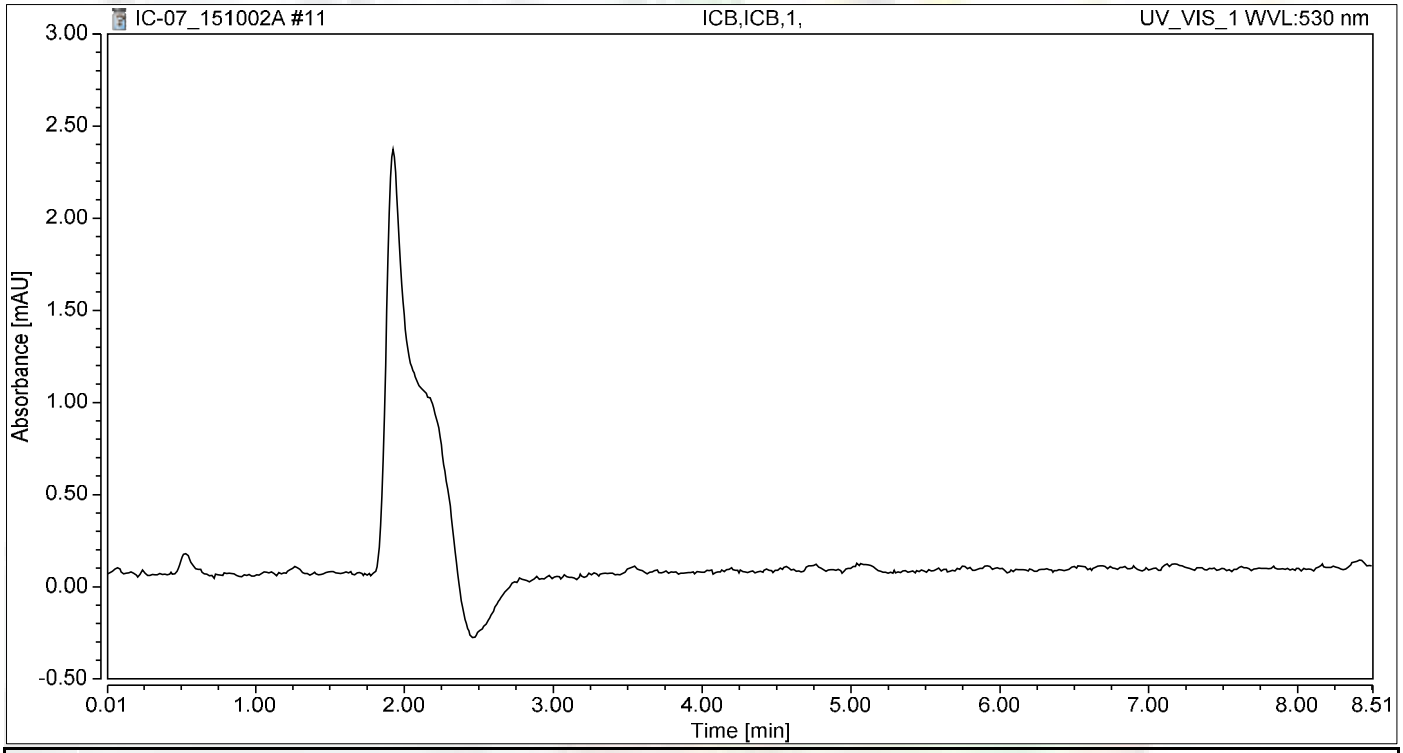
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.055	0.394	100.00	100.00	0.2350
Total:			**0.055**	**0.394**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Oct/15 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 151030A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	10/02/15 10:24 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	10/02/15 10:35 AM	Reported
3	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:02 AM	Reported
4	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:13 AM	Reported
5	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:23 AM	Reported
6	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:32 AM	Reported
7	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:42 AM	Reported
8	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	10/02/15 11:51 AM	Reported
9	BLANK	BLANK	1	Hexavalent Chromium	10/30/15 5:56 AM	Not Reported
10	CCV-1	CCV	1	Hexavalent Chromium	10/30/15 6:13 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	10/30/15 6:24 AM	Reported
12	CCB-1	CCB	1	Hexavalent Chromium	10/30/15 6:33 AM	Reported
13	MB-R103982	MBLK	1	Hexavalent Chromium	10/30/15 6:43 AM	Reported
14	N017434-001C	SAMP	1	Hexavalent Chromium	10/30/15 6:52 AM	Reported
15	N017434-001CREP	DUP	1	Hexavalent Chromium	10/30/15 7:01 AM	Reported
16	LCS-R103982	LCS	1	Hexavalent Chromium	10/30/15 7:11 AM	Reported
17	N017434-003D	SAMP	200	Hexavalent Chromium	10/30/15 7:20 AM	Reported
18	N017434-003DDUP	DUP	200	Hexavalent Chromium	10/30/15 7:30 AM	Reported
19	N017434-006C	SAMP	1	Hexavalent Chromium	10/30/15 7:39 AM	Reported
20	N017434-006CREP	DUP	1	Hexavalent Chromium	10/30/15 7:49 AM	Reported
21	N017434-007B	SAMP	500	Hexavalent Chromium	10/30/15 7:58 AM	Reported
22	N017434-007BREP	DUP	500	Hexavalent Chromium	10/30/15 8:07 AM	Reported
23	CCV-2	CCV	1	Hexavalent Chromium	10/30/15 8:17 AM	Reported
24	CCB-2	CCB	1	Hexavalent Chromium	10/30/15 8:26 AM	Reported
25	N017434-008D	SAMP	500	Hexavalent Chromium	10/30/15 8:50 AM	Reported
26	N017434-008DREP	DUP	500	Hexavalent Chromium	10/30/15 9:01 AM	Reported
27	N017434-009D	SAMP	1	Hexavalent Chromium	10/30/15 9:11 AM	Not Reported
28	N017434-009DREP	DUP	1	Hexavalent Chromium	10/30/15 9:20 AM	Not Reported
29	N017434-003DMS	MS	200	Hexavalent Chromium	10/30/15 9:30 AM	Reported
30	N017434-003DMSD	MSD	200	Hexavalent Chromium	10/30/15 9:39 AM	Reported
31	N017434-009D	SAMP	10	Hexavalent Chromium	10/30/15 9:49 AM	Reported
32	N017434-009DREP	DUP	10	Hexavalent Chromium	10/30/15 9:58 AM	Reported
33	CCV-3	CCV	1	Hexavalent Chromium	10/30/15 10:17 AM	Reported
34	CCB-3	CCB	1	Hexavalent Chromium	10/30/15 10:28 AM	Reported
35	N017400-001A	SAMP	1	Hexavalent Chromium	10/30/15 11:05 AM	Reported
36	N017400-001AMS	MS	1	Hexavalent Chromium	10/30/15 11:16 AM	Reported
37	N017400-002A	SAMP	1	Hexavalent Chromium	10/30/15 11:26 AM	Reported
38	N017400-002AMS	MS	1	Hexavalent Chromium	10/30/15 11:35 AM	Reported
39	N017400-003A	SAMP	1	Hexavalent Chromium	10/30/15 11:45 AM	Reported
40	N017400-003AMS	MS	1	Hexavalent Chromium	10/30/15 11:54 AM	Reported
41	N017400-004A	SAMP	1	Hexavalent Chromium	10/30/15 12:04 PM	Reported
42	N017400-004AMS	MS	1	Hexavalent Chromium	10/30/15 12:13 PM	Reported
43	N017400-005A	SAMP	5	Hexavalent Chromium	10/30/15 12:22 PM	Reported

IC-07 / REB 11/5/2015 5:05 PM

11/11/2015

INJECTION LOG: 151030A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
44	N017400-005AMS	MS	5	Hexavalent Chromium	10/30/15 12:32 PM	Reported
45	CCV-4	CCV	1	Hexavalent Chromium	10/30/15 12:42 PM	Reported
46	CCB-4	CCB	1	Hexavalent Chromium	10/30/15 12:51 PM	Reported
47	N017400-006A	SAMP	1	Hexavalent Chromium	10/30/15 1:00 PM	Not Reported
48	N017400-006AMS	MS	1	Hexavalent Chromium	10/30/15 1:10 PM	Not Reported
49	N017400-007A	SAMP	1	Hexavalent Chromium	10/30/15 1:19 PM	Reported
50	N017400-007AMS	MS	1	Hexavalent Chromium	10/30/15 1:29 PM	Reported
51	N017400-008A	SAMP	1	Hexavalent Chromium	10/30/15 1:38 PM	Reported
52	N017400-008AMS	MS	1	Hexavalent Chromium	10/30/15 1:48 PM	Reported
53	N017400-009A	SAMP	1	Hexavalent Chromium	10/30/15 1:57 PM	Reported
54	N017400-009AMS	MS	1	Hexavalent Chromium	10/30/15 2:07 PM	Reported
55	N017400-006A	SAMP	5	Hexavalent Chromium	10/30/15 2:16 PM	Reported
56	N017400-006AMS	MS	5	Hexavalent Chromium	10/30/15 2:26 PM	Reported
57	CCV-5	CCV	1	Hexavalent Chromium	10/30/15 2:35 PM	Reported
58	CCB-5	CCB	1	Hexavalent Chromium	10/30/15 2:44 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151030A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Nov/15 14:30:10**
No. of Injections:	**61**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		10/02/2015 10:24	Finished	BLANK
2	iBLANK	2	1000	Unknown		10/02/2015 10:35	Finished	INSTRUMENT BLANK
3	0.2 ppb	3	1000	Calibration Standard	01	10/02/2015 11:02	Finished	0.2 ppb, IWST151002A
4	1.0 ppb	4	1000	Calibration Standard	02	10/02/2015 11:13	Finished	1.0 ppb, IWST151002A
5	5.0 ppb	5	1000	Calibration Standard	03	10/02/2015 11:23	Finished	5.0 ppb, IWST151002A
6	10.0 ppb	6	1000	Calibration Standard	04	10/02/2015 11:32	Finished	10 ppb, IWST151002A
7	15.0 ppb	7	1000	Calibration Standard	05	10/02/2015 11:42	Finished	15 ppb, IWST151002A
8	20.0 ppb	8	1000	Calibration Standard	06	10/02/2015 11:51	Finished	20 ppb, IWST151002A
9	BLANK	1	1000	Unknown		10/30/2015 05:56	Finished	BLANK
10	CCV-1,CCV,1,	2	1000	Unknown		10/30/2015 06:13	Finished	CCV @ 5ppb, IWST 151002A
11	PQL@0.2ppb,CCV2,1	3	1000	Unknown		10/30/2015 06:24	Finished	PQL @ 0.2ppb
12	CCB-1,CCB,1,	4	1000	Unknown		10/30/2015 06:33	Finished	CCB R150928A
13	MB-H2O,MBLK,1,	5	1000	Unknown		10/30/2015 06:43	Finished	MB, R151005A
14	N017434-001C,SAMF	6	1000	Unknown		10/30/2015 06:52	Finished	SAMP, 10mL
15	N017434-001CREP,D	7	1000	Unknown		10/30/2015 07:01	Finished	REP, 10mL
16	LCS-H2O,LCS,1,	8	1000	Unknown		10/30/2015 07:11	Finished	LCS@5ppb, IWST-151002B
17	N017434-003D,SAMF	9	1000	Unknown		10/30/2015 07:20	Finished	SAMP, 0.05 to 10mL
18	N017434-003DDUP,D	10	1000	Unknown		10/30/2015 07:30	Finished	REP, 0.05 to 10mL
19	N017434-006C,SAMF	11	1000	Unknown		10/30/2015 07:39	Finished	SAMP, 10mL
20	N017434-006CREP,D	12	1000	Unknown		10/30/2015 07:49	Finished	REP, 10mL
21	N017434-007B,SAMF	13	1000	Unknown		10/30/2015 07:58	Finished	SAMP, 0.02 to 10mL
22	N017434-007BREP,D	14	1000	Unknown		10/30/2015 08:07	Finished	REP, 0.02 to 10mL
23	CCV-2,CCV,1	15	1000	Unknown		10/30/2015 08:17	Finished	CCV @ 10ppb, IWST 151002A
24	CCB-2,CCB,1	16	1000	Unknown		10/30/2015 08:26	Finished	CCB
25	N017434-008D,SAMF	17	1000	Unknown		10/30/2015 08:50	Finished	SAMP, 0.02 to 10mL
26	N017434-008DREP,D	18	1000	Unknown		10/30/2015 09:01	Finished	REP, 0.02 to 10mL
27	N017434-009D,SAMF	19	1000	Unknown		10/30/2015 09:11	Finished	SAMP, 10mL
28	N017434-009DREP,D	20	1000	Unknown		10/30/2015 09:20	Finished	REP, 10mL
29	N017434-003DMS,MS	21	1000	Unknown		10/30/2015 09:30	Finished	MS(5ppb), IWST-151002B,10m
30	N017434-003DMSD,M	22	1000	Unknown		10/30/2015 09:39	Finished	MSD(5ppb), IWST-151002B,10
31	N017434-009D,SAMF	23	1000	Unknown		10/30/2015 09:49	Finished	SAMP, 1 to 10mL
32	N017434-009DREP,D	24	1000	Unknown		10/30/2015 09:58	Finished	REP, 1 to 10mL
33	CCV-3,CCV,1	25	1000	Unknown		10/30/2015 10:17	Finished	CCV @ 5ppb, IWST 151002A
34	CCB-3,CCB,1	26	1000	Unknown		10/30/2015 10:28	Finished	CCB
35	N017400-001A,SAMF	27	1000	Unknown		10/30/2015 11:05	Finished	SAMP, 10mL
36	N017400-001AMS,MS	28	1000	Unknown		10/30/2015 11:16	Finished	MS(1ppb), IWST-151002B, 10r
37	N017400-002A,SAMF	29	1000	Unknown		10/30/2015 11:26	Finished	SAMP, 10mL
38	N017400-002AMS,MS	30	1000	Unknown		10/30/2015 11:35	Finished	MS(1ppb), IWST-151002B, 10r
39	N017400-003A,SAMF	31	1000	Unknown		10/30/2015 11:45	Finished	SAMP, 10mL
40	N017400-003AMS,MS	32	1000	Unknown		10/30/2015 11:54	Finished	MS(1ppb), IWST-151002B, 10r
41	N017400-004A,SAMF	33	1000	Unknown		10/30/2015 12:04	Finished	SAMP, 10mL
42	N017400-004AMS,MS	34	1000	Unknown		10/30/2015 12:13	Finished	MS(1ppb), IWST-151002B, 10r
43	N017400-005A,SAMF	35	1000	Unknown		10/30/2015 12:22	Finished	SAMP, 2 to 10mL
44	N017400-005AMS,MS	36	1000	Unknown		10/30/2015 12:32	Finished	MS(5ppb), IWST-151002B, 10r
45	CCV-4,CCV,1	37	1000	Unknown		10/30/2015 12:42	Finished	CCV @ 10ppb, IWST 151002A
46	CCB-4,CCB,1	38	1000	Unknown		10/30/2015 12:51	Finished	CCB
47	N017400-006A,SAMF	39	1000	Unknown		10/30/2015 13:00	Finished	SAMP, 10mL
48	N017400-006AMS,MS	40	1000	Unknown		10/30/2015 13:10	Finished	MS(5ppb), IWST-151002B, 10r
49	N017400-007A,SAMF	41	1000	Unknown		10/30/2015 13:19	Finished	SAMP, 10mL
50	N017400-007AMS,MS	42	1000	Unknown		10/30/2015 13:29	Finished	MS(1ppb), IWST-151002B, 10r
51	N017400-008A,SAMF	43	1000	Unknown		10/30/2015 13:38	Finished	SAMP, 10mL
52	N017400-008AMS,MS	44	1000	Unknown		10/30/2015 13:48	Finished	MS(1ppb), IWST-151002B, 10r
53	N017400-009A,SAMF	45	1000	Unknown		10/30/2015 13:57	Finished	SAMP, 10mL
54	N017400-009AMS,MS	46	1000	Unknown		10/30/2015 14:07	Finished	MS(1ppb), IWST-151002B, 10r
55	N017400-006A,SAMF	47	1000	Unknown		10/30/2015 14:16	Finished	SAMP, 2 to 10mL
56	N017400-006AMS,MS	48	1000	Unknown		10/30/2015 14:26	Finished	MS(5ppb), IWST-151002B, 10r
57	CCV-5,CCV,1	49	1000	Unknown		10/30/2015 14:35	Finished	CCV @ 5ppb, IWST 151002A
58	CCB-5,CCB,1	50	1000	Unknown		10/30/2015 14:44	Finished	CCB
59	SHUTDOWN	1	1000	Unknown		10/30/2015 14:54	Finished	BLANK
60	Eluent: R151029A	CurrentVial	1000	Unknown		n.a.	Finished	Eluent

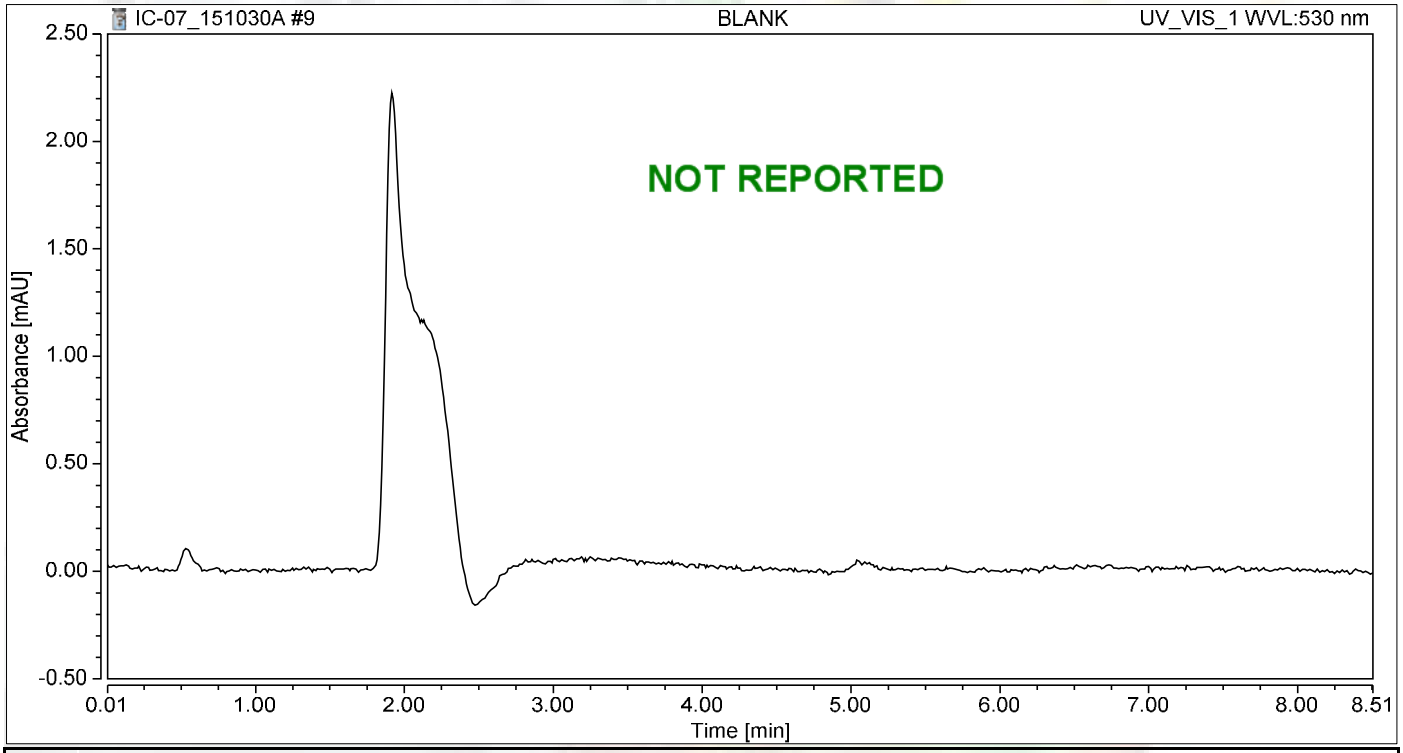
61	PCR: R151027B	urrentVial+	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 05:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

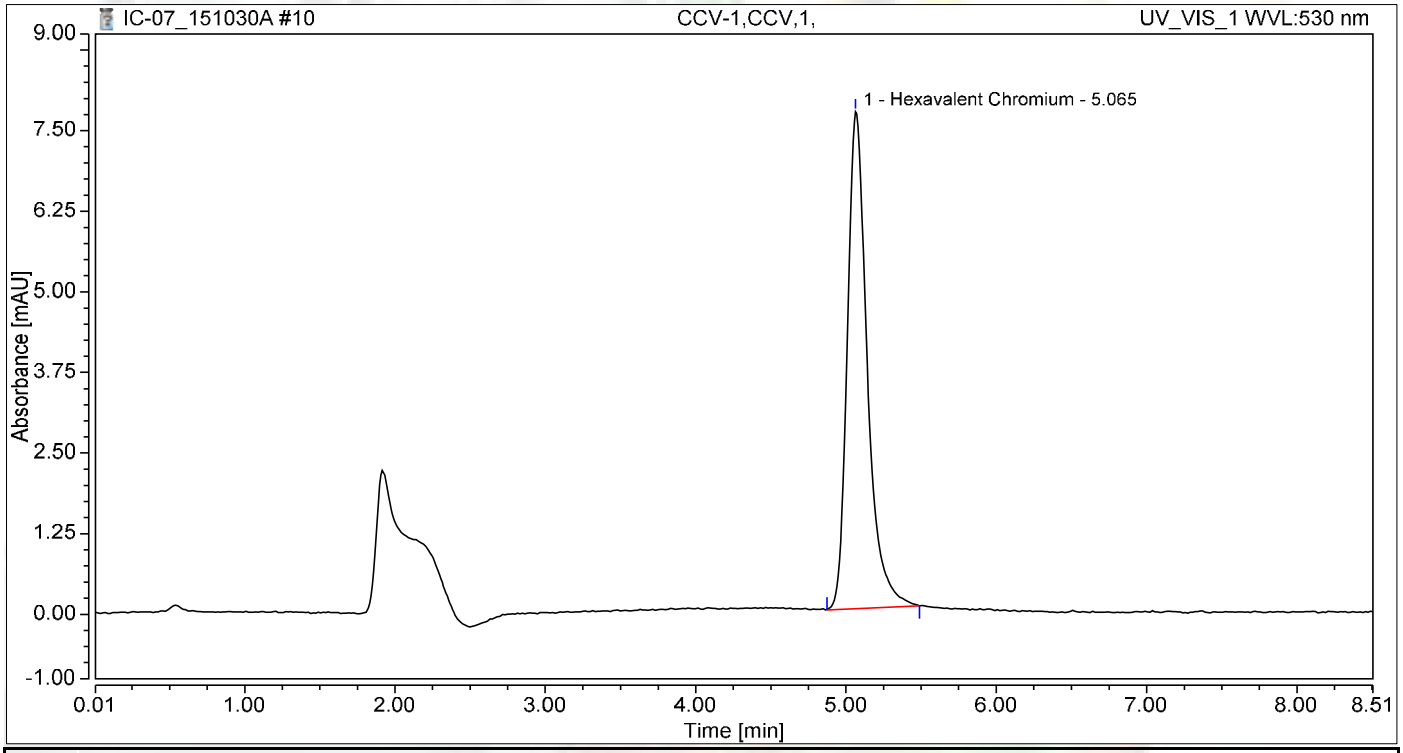
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 06:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

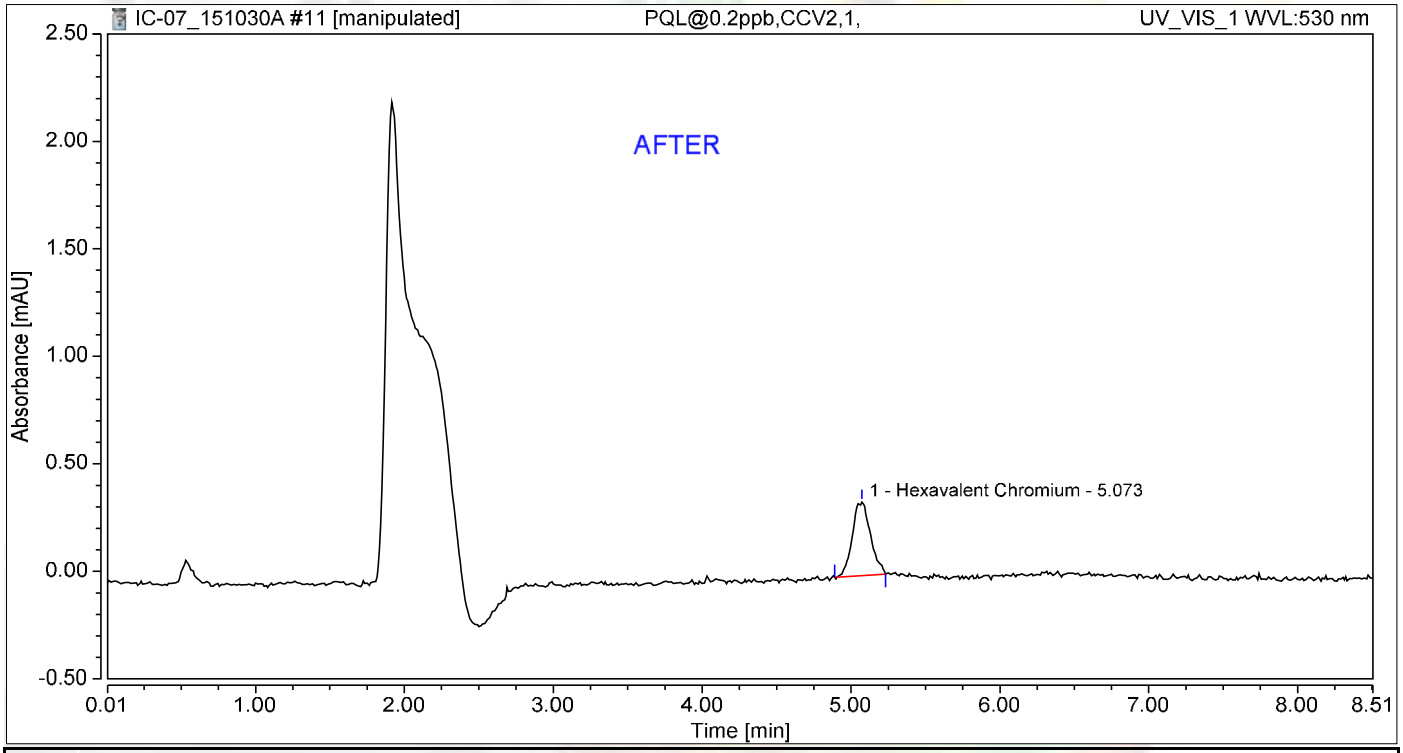
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.176	7.705	100.00	100.00	4.9887
Total:			**1.176**	**7.705**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 06:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.048	0.342	100.00	100.00	0.2032
Total:			**0.048**	**0.342**	**100.00**	**100.00**	

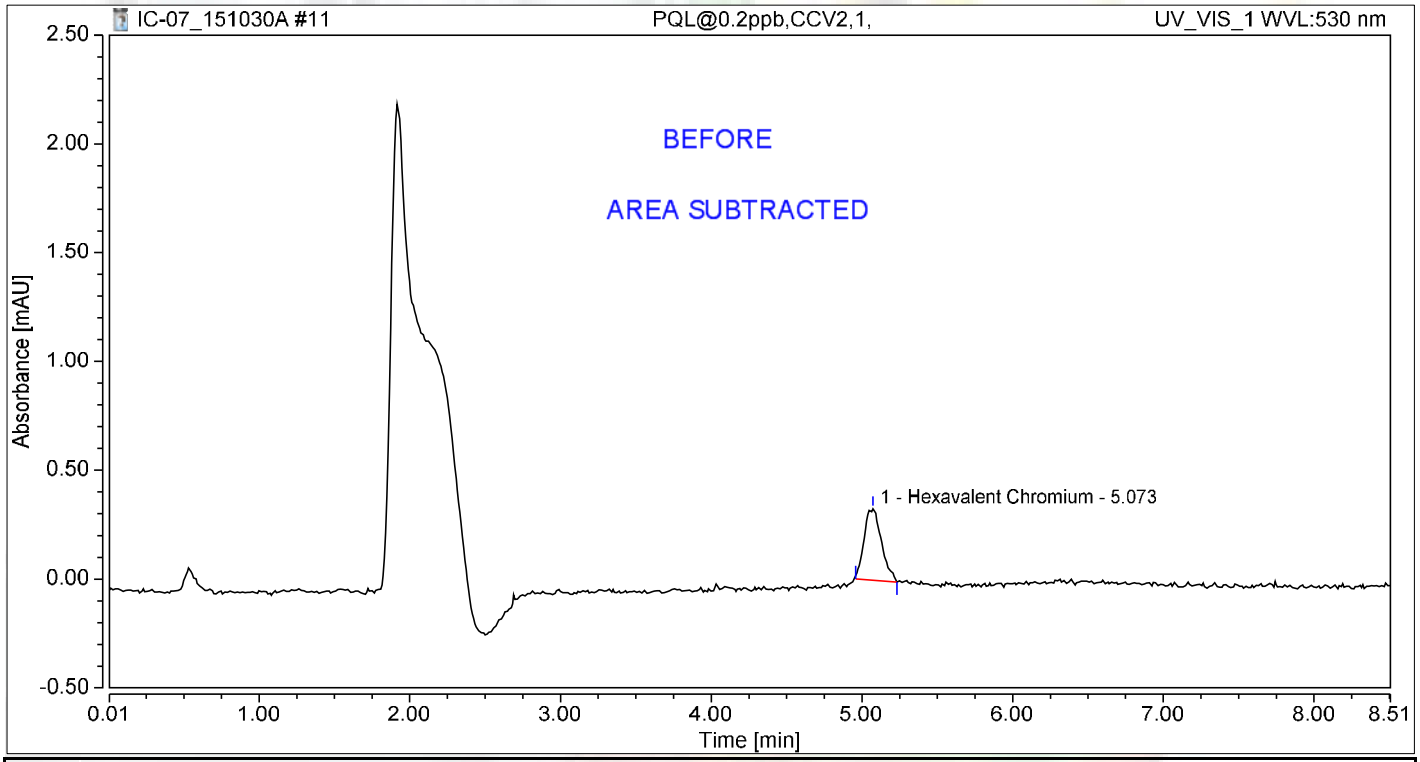
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 06:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

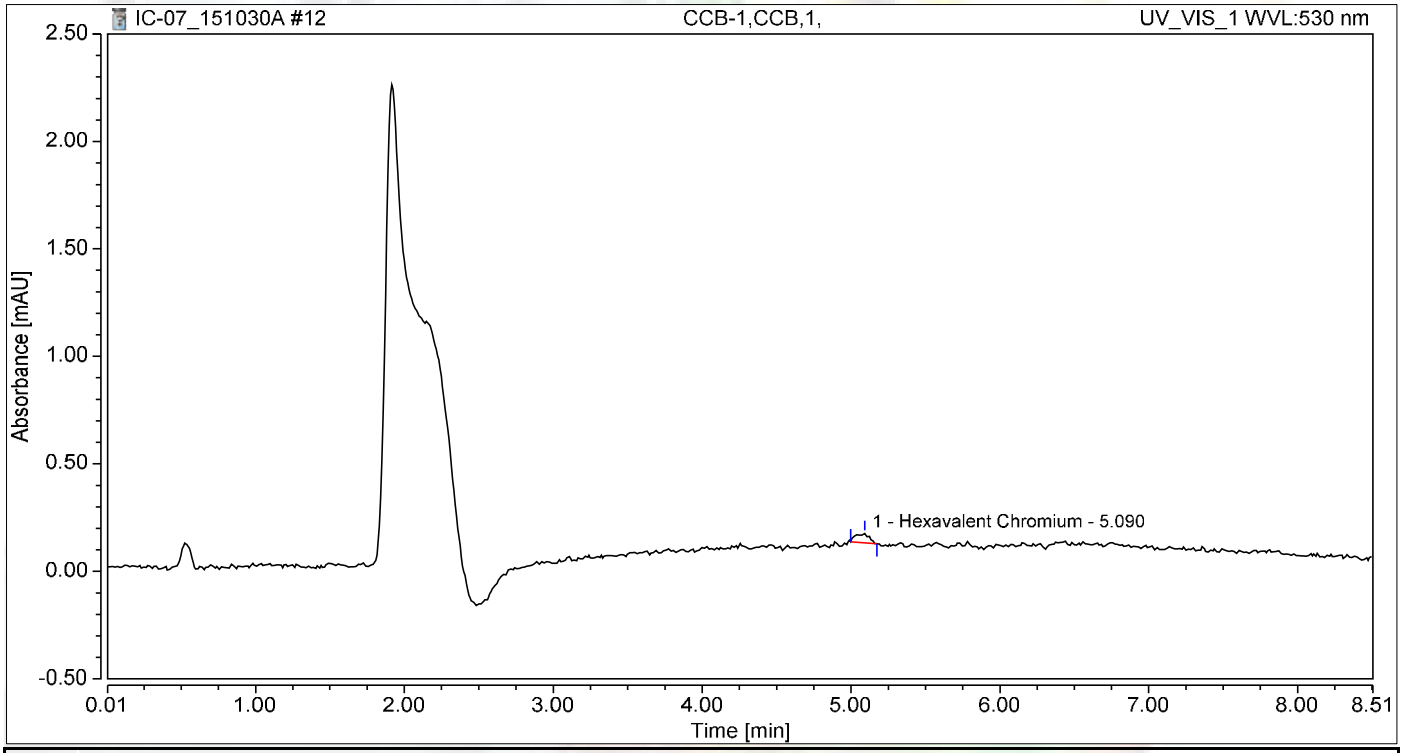
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.044	0.327	100.00	100.00	0.1856
Total:			**0.044**	**0.327**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 06:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

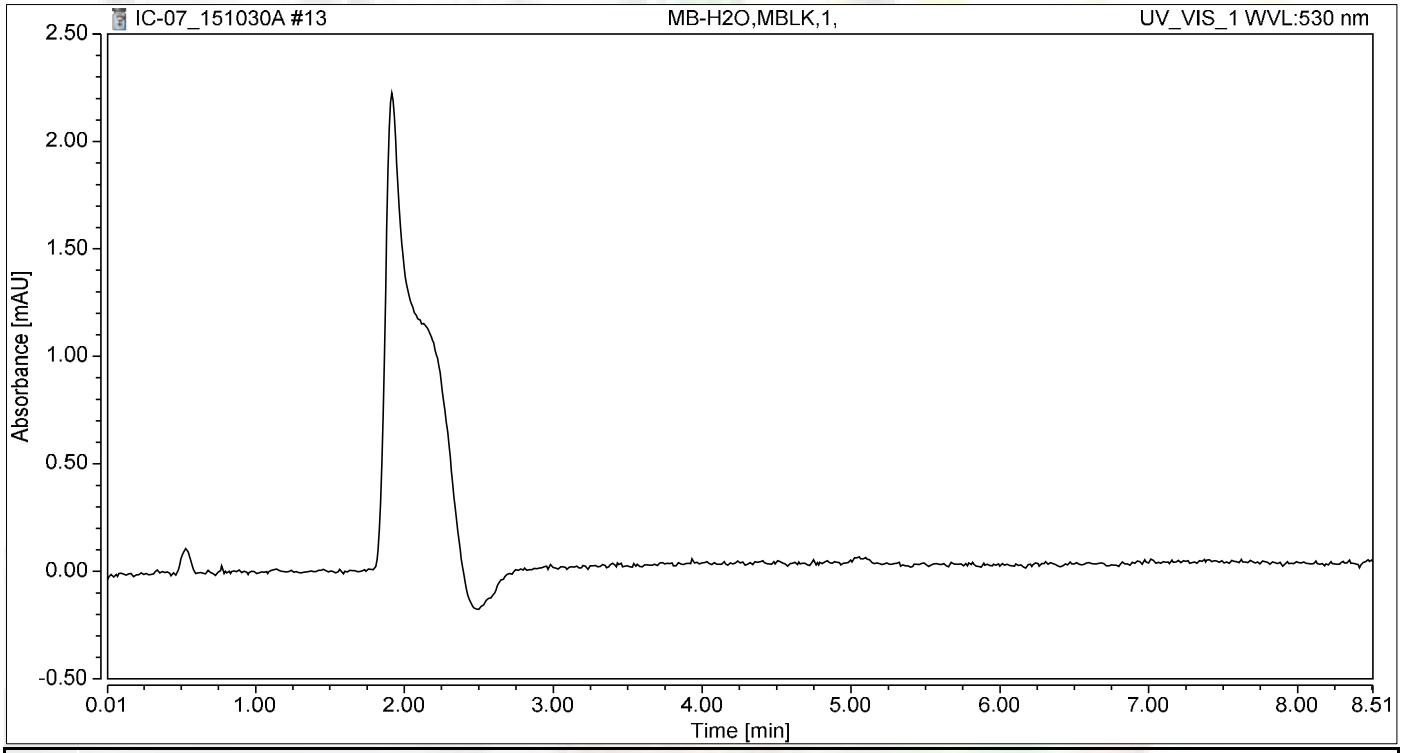
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.005	0.044	100.00	100.00	0.0196
Total:			**0.005**	**0.044**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 06:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

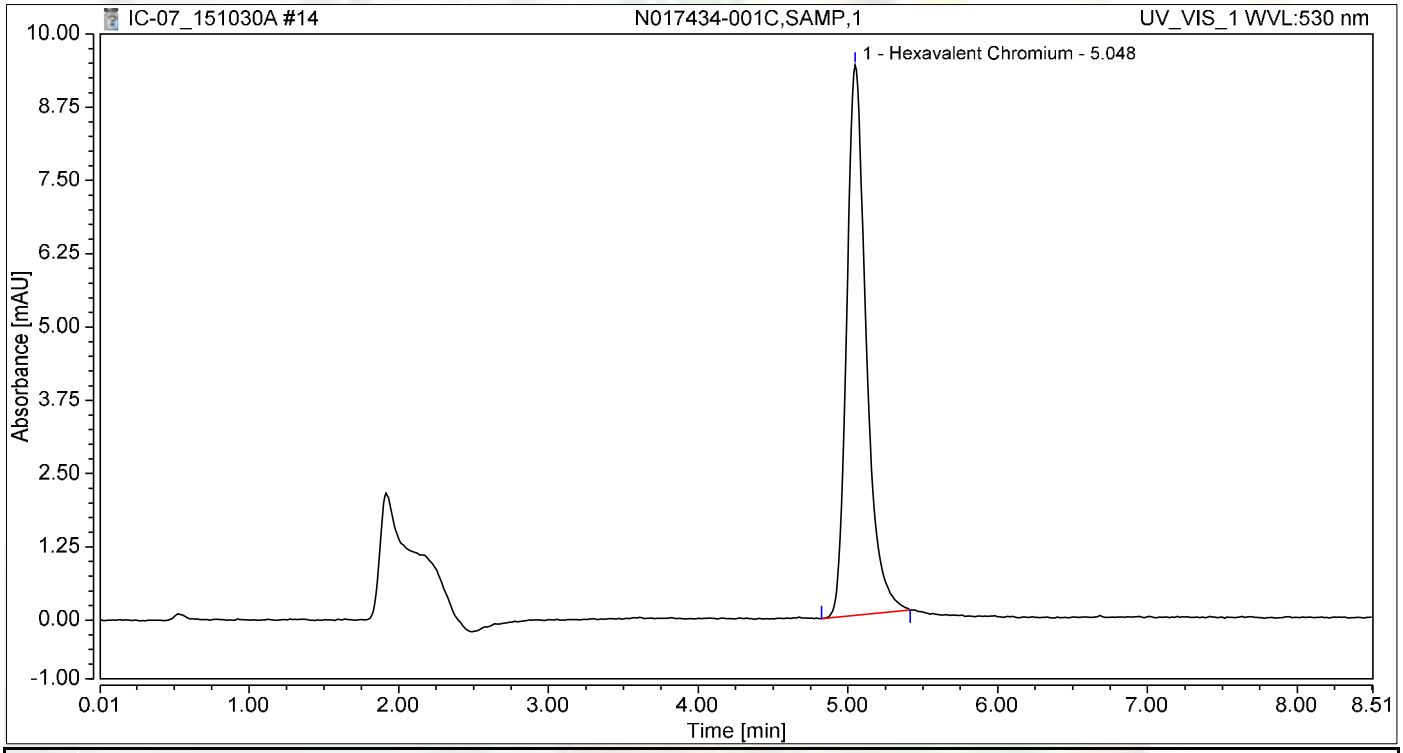
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-001C,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 06:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

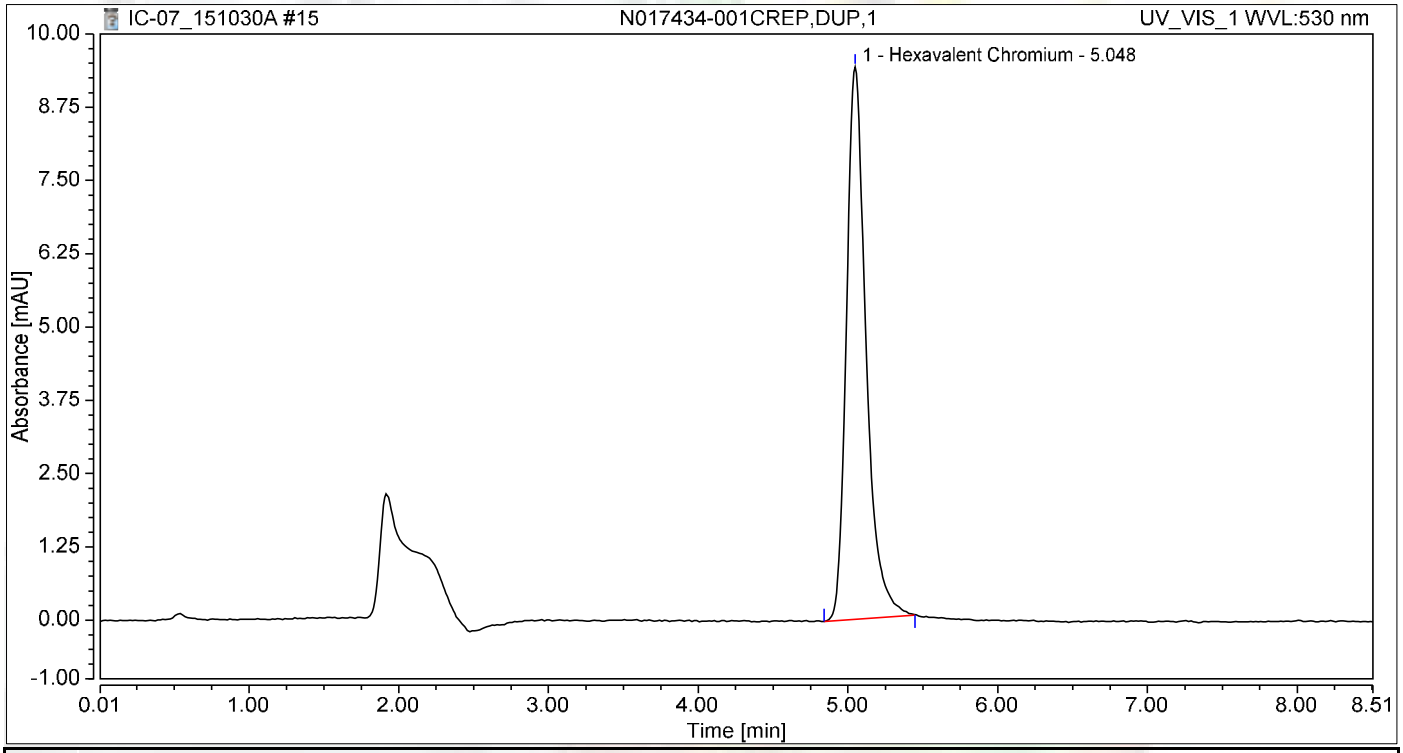
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.412	9.383	100.00	100.00	5.9905
Total:			**1.412**	**9.383**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-001CREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

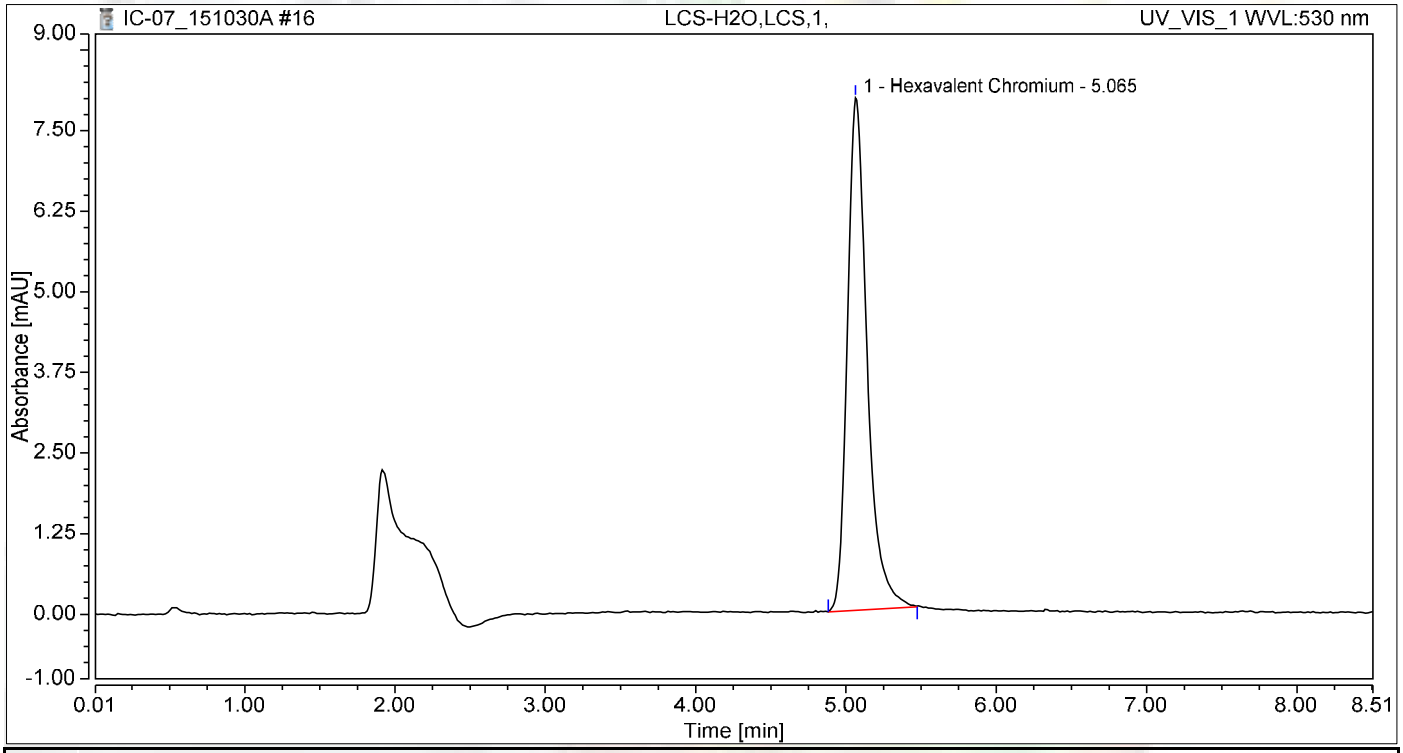
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.423	9.423	100.00	100.00	6.0357
Total:			**1.423**	**9.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

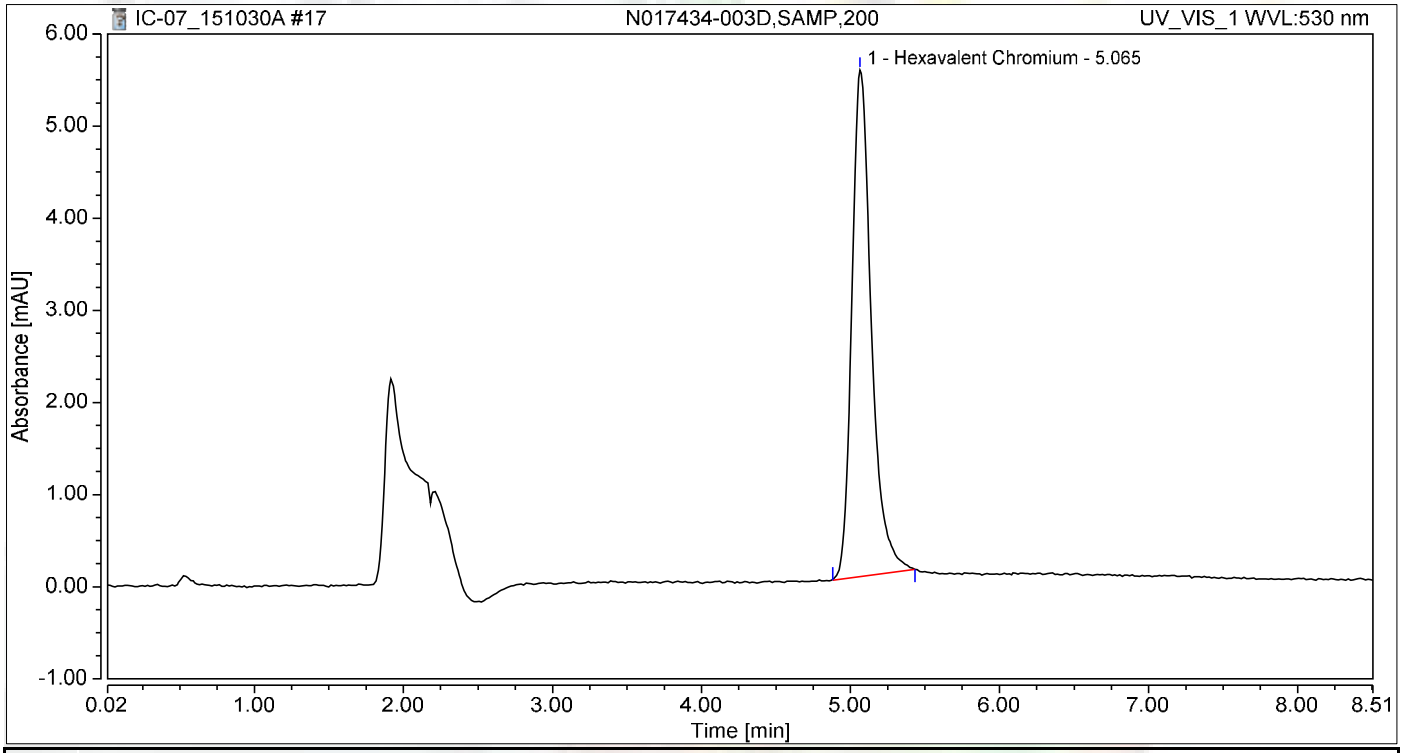
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.203	7.949	100.00	100.00	5.1045
Total:			**1.203**	**7.949**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-003D,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

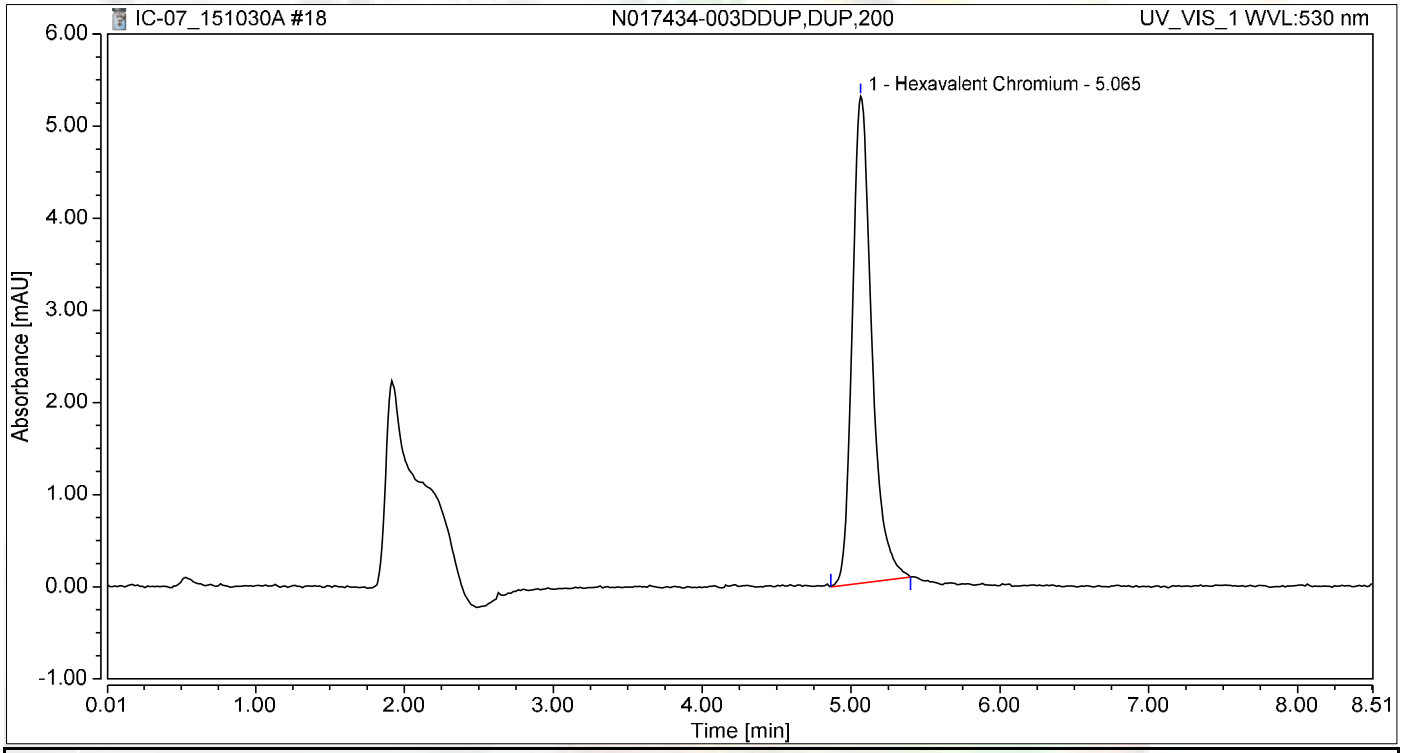
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.827	5.495	100.00	100.00	3.5083
Total:			**0.827**	**5.495**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-003DDUP,DUP,200**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

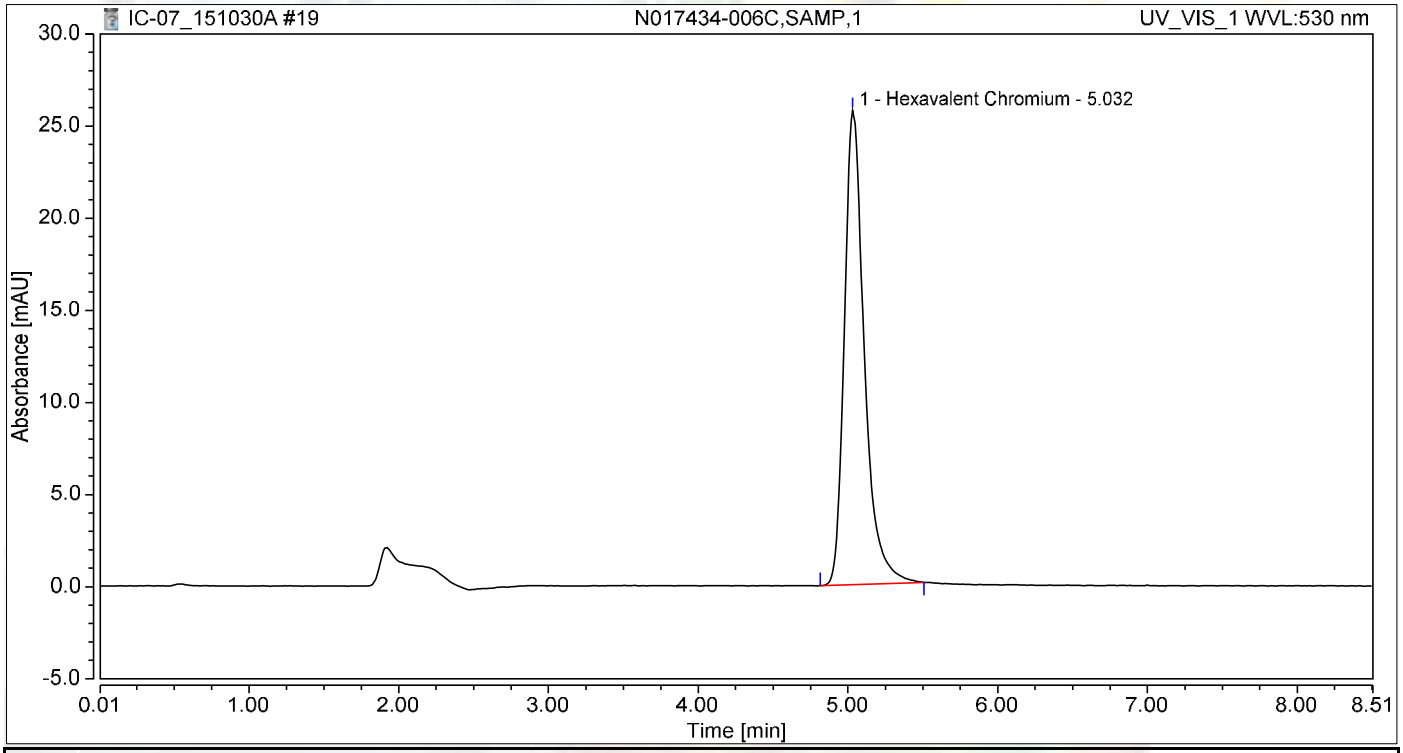
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.793	5.287	100.00	100.00	3.3631
Total:			**0.793**	**5.287**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-006C,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

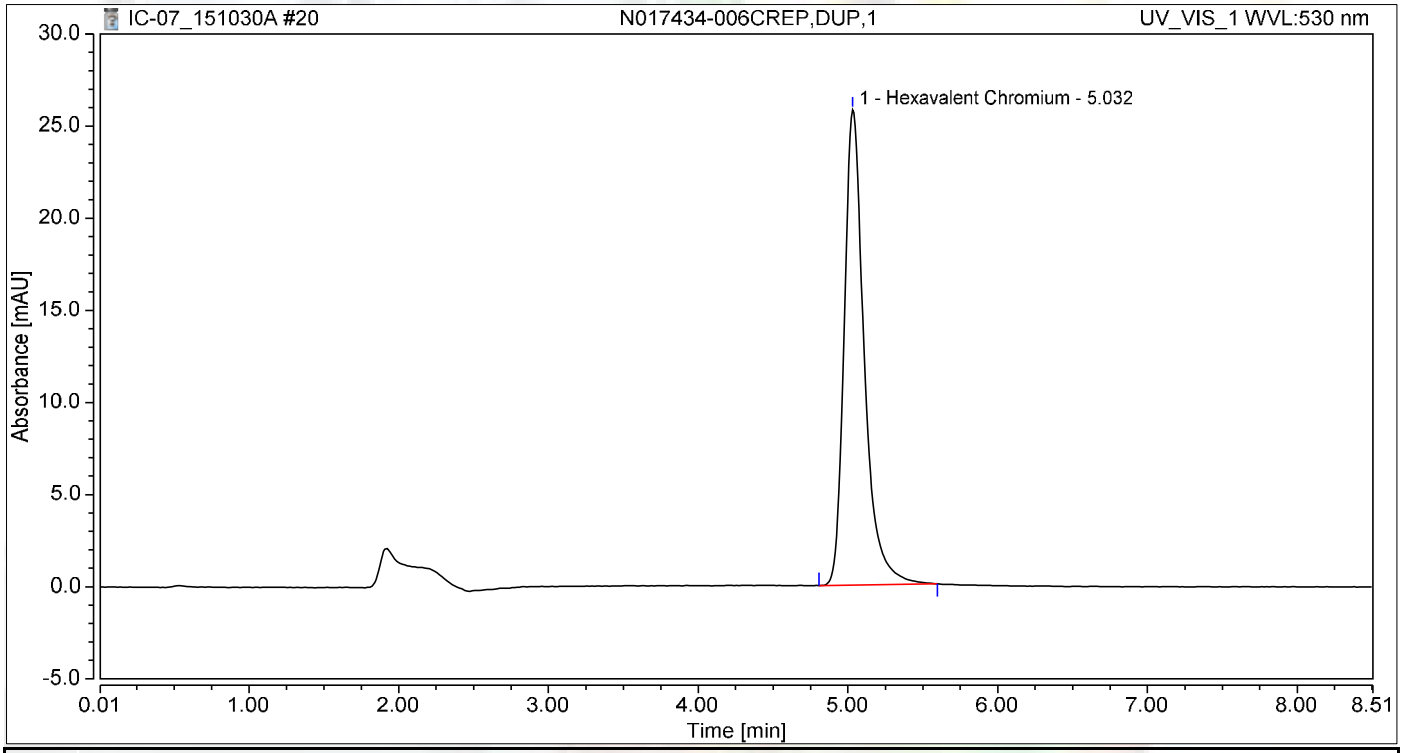
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.032	3.956	25.736	100.00	100.00	16.7795
Total:			**3.956**	**25.736**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-006CREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

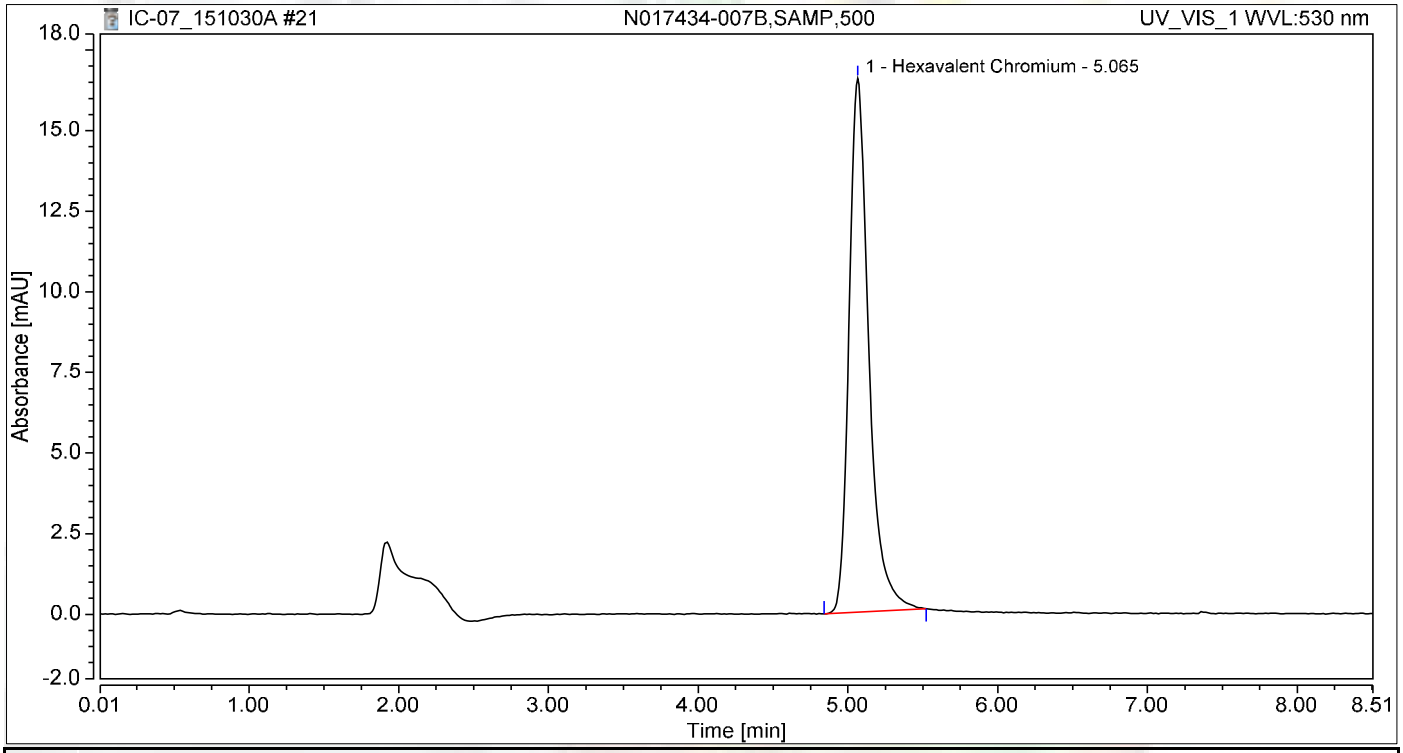
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.032	3.982	25.795	100.00	100.00	16.8906
Total:			**3.982**	**25.795**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-007B,SAMP,500**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 07:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

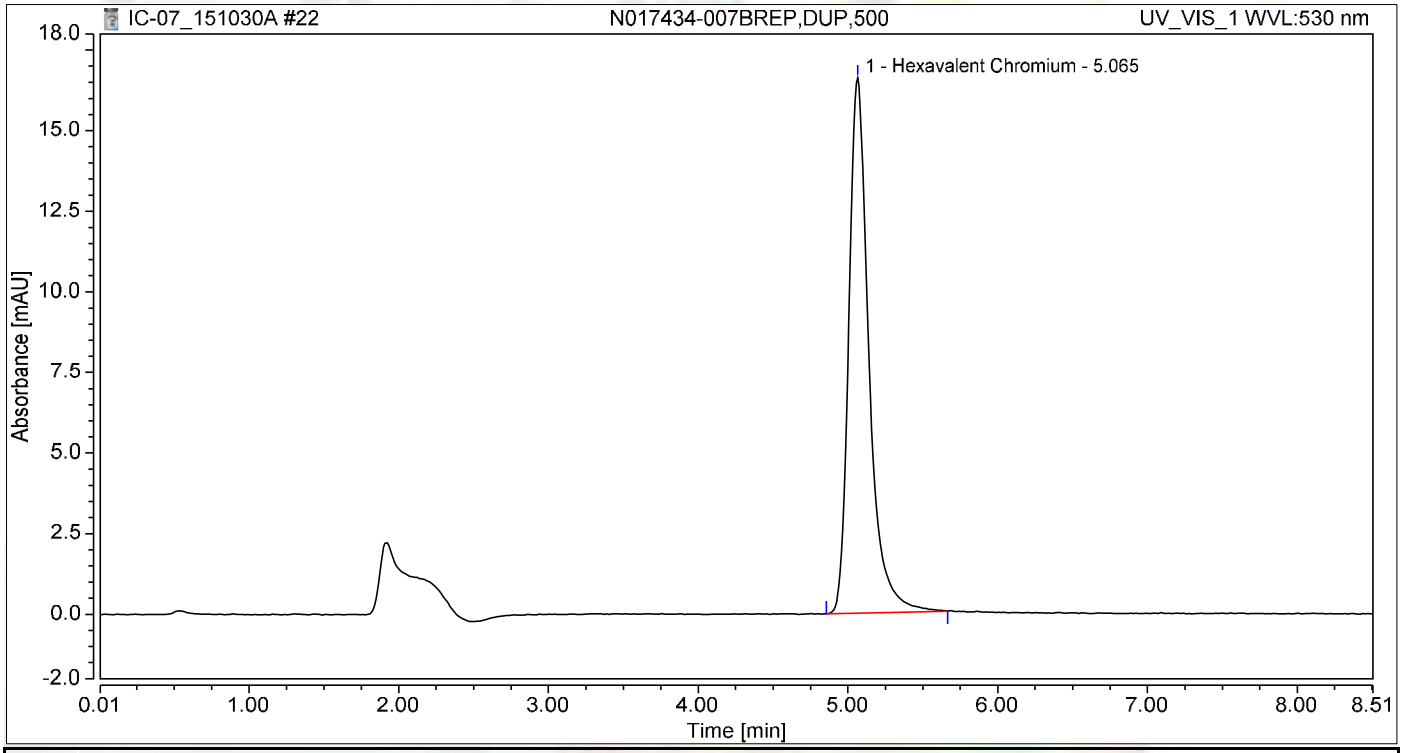
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.513	16.551	100.00	100.00	10.6588
Total:			**2.513**	**16.551**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-007BREP,DUP,500**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 08:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

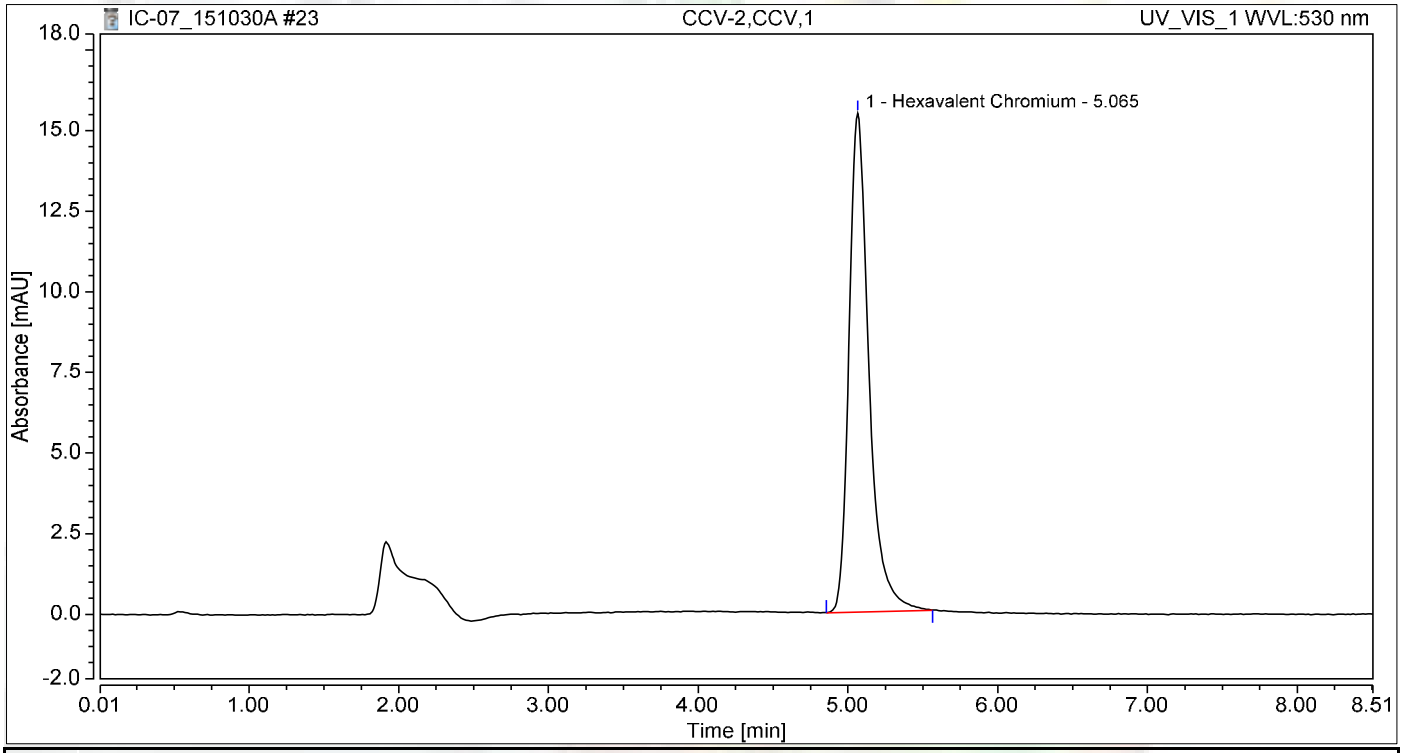
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.560	16.597	100.00	100.00	10.8570
Total:			**2.560**	**16.597**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 08:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

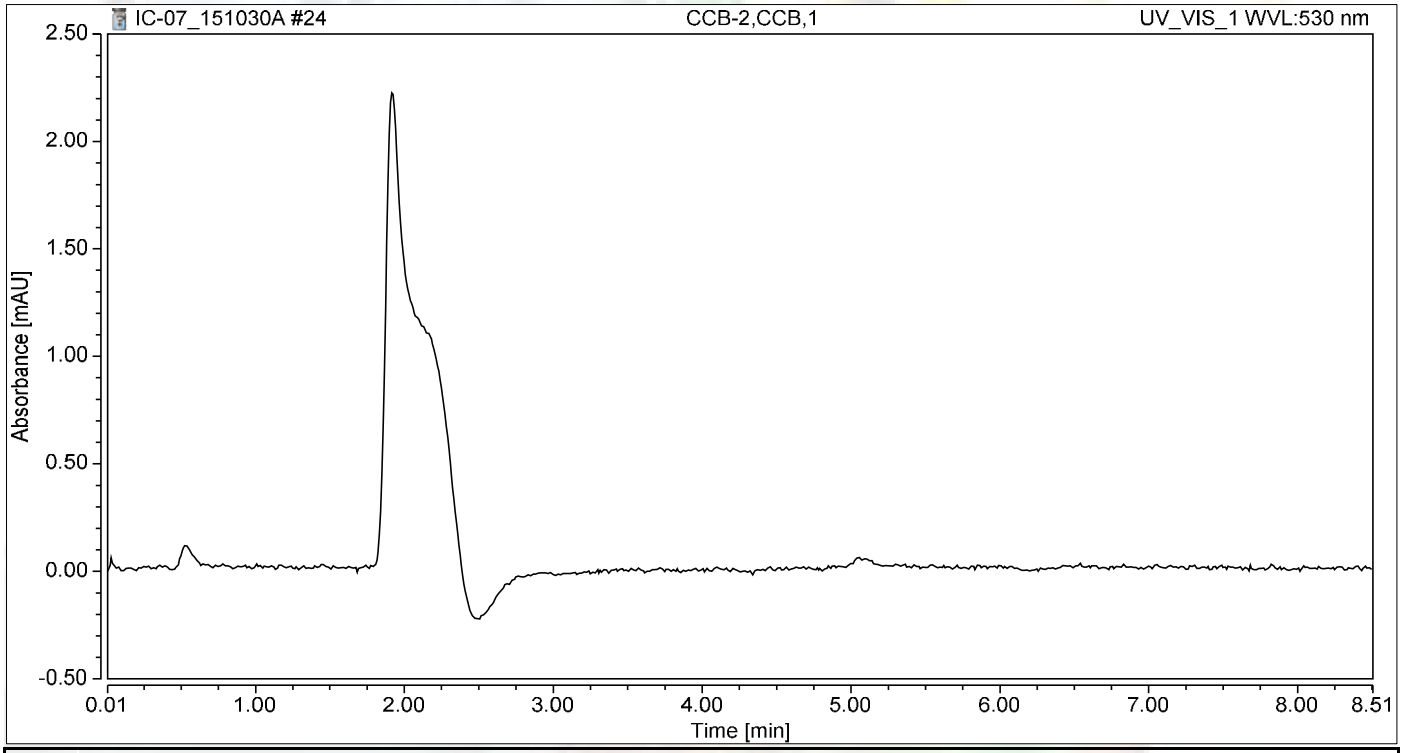
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.365	15.464	100.00	100.00	10.0298
Total:			**2.365**	**15.464**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 08:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

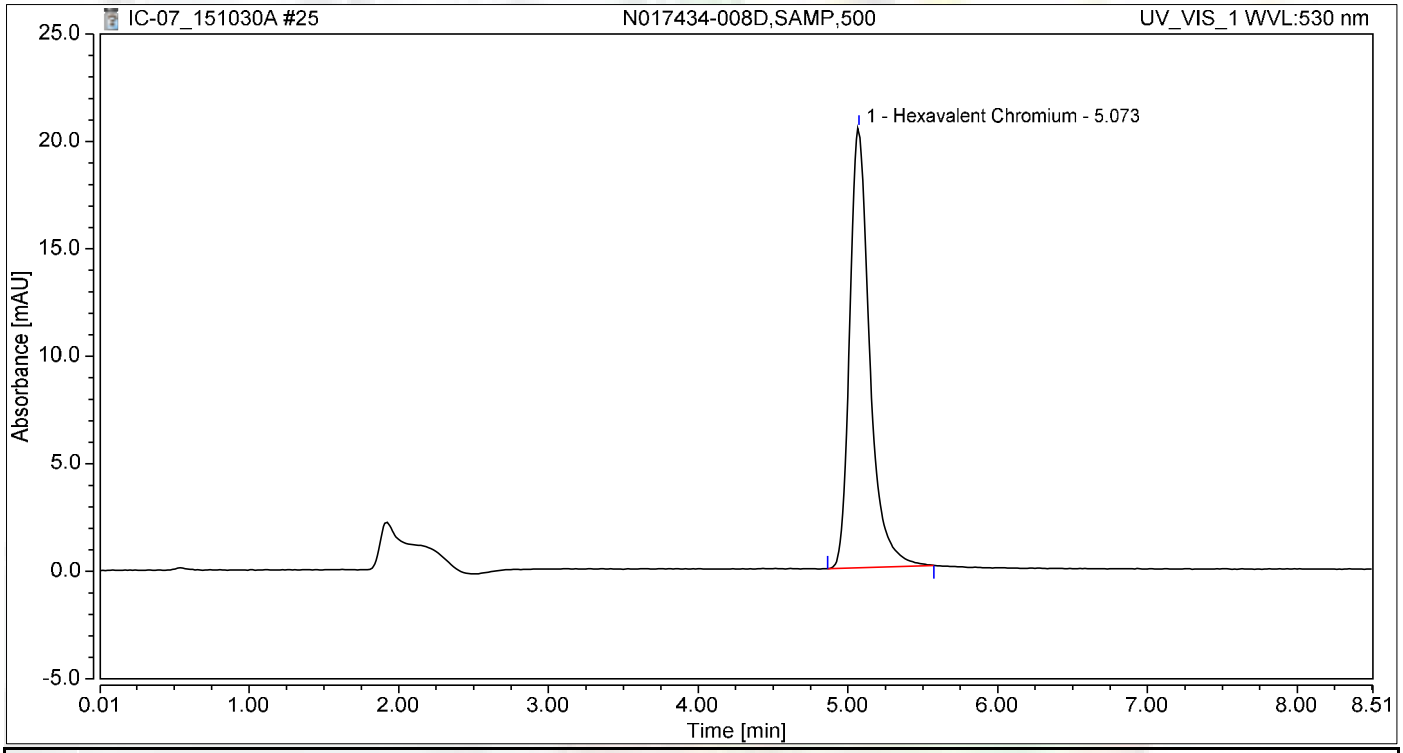
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-008D,SAMP,500**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 08:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

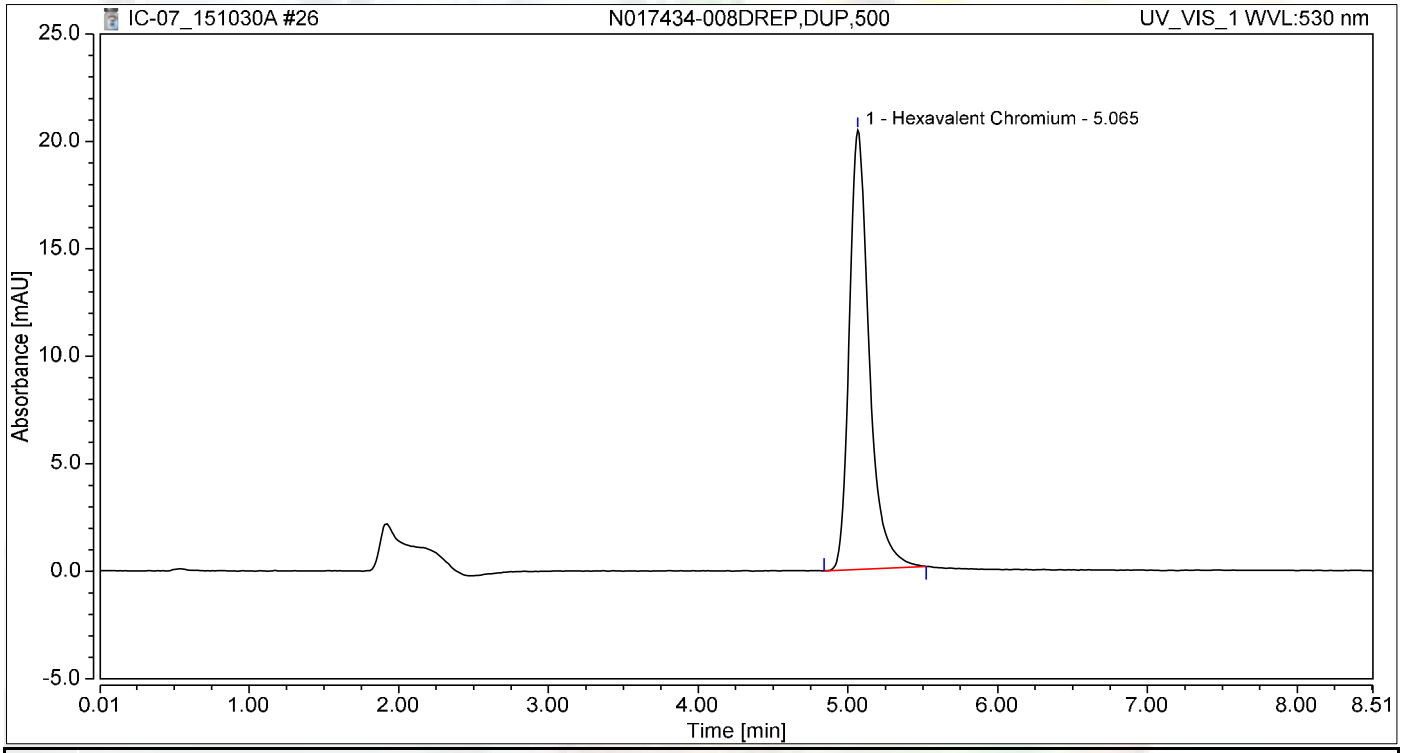
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	3.149	20.470	100.00	100.00	13.3568
Total:			**3.149**	**20.470**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-008DREP,DUP,500**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

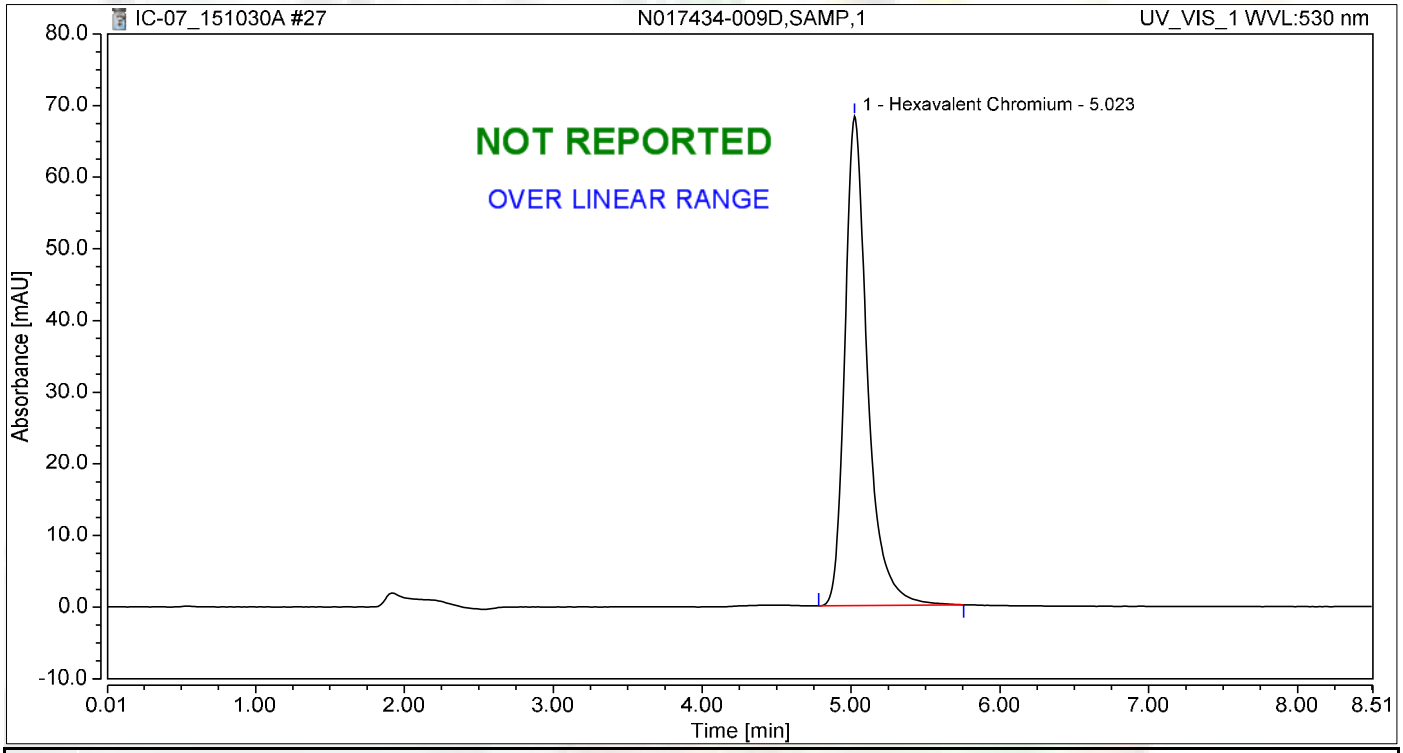
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	3.131	20.444	100.00	100.00	13.2803
Total:			**3.131**	**20.444**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-009D,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

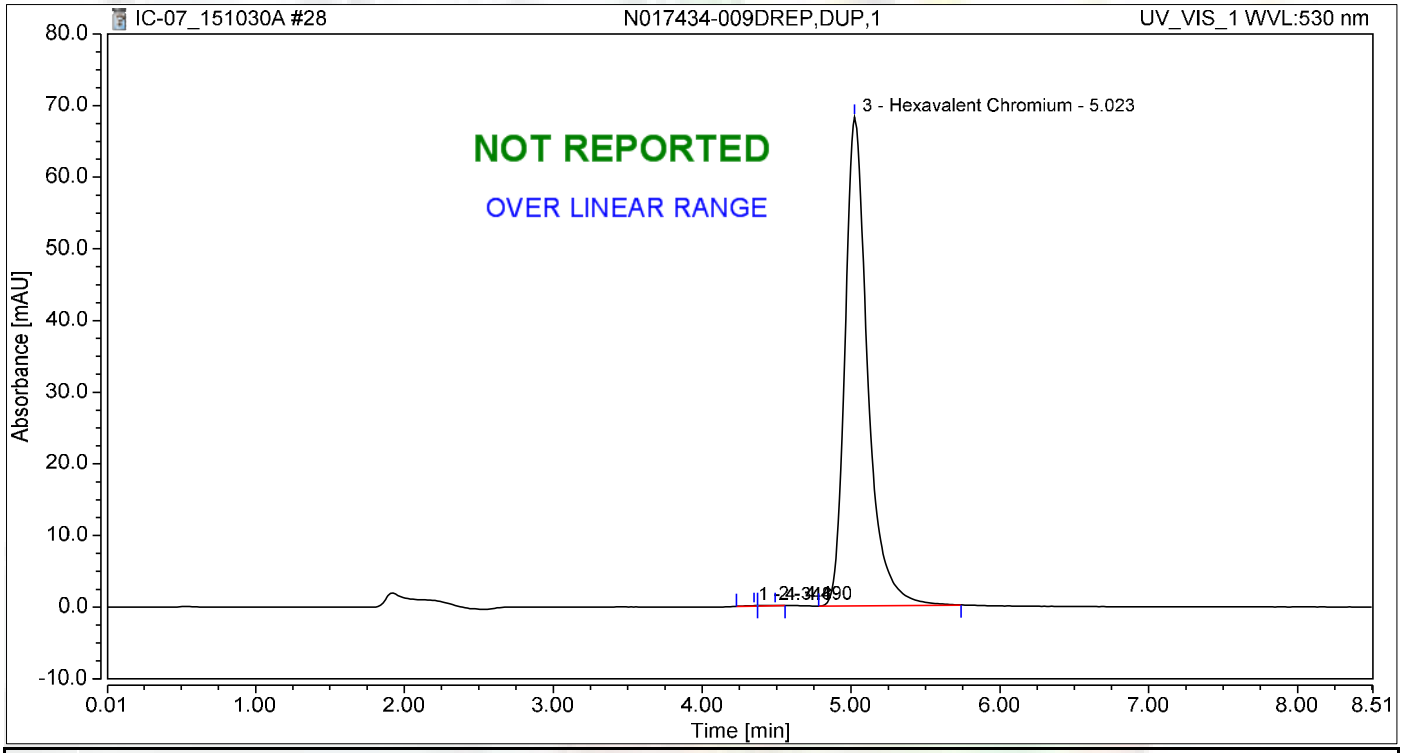
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.023	11.967	68.307	100.00	100.00	50.7625
Total:			**11.967**	**68.307**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-009DREP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

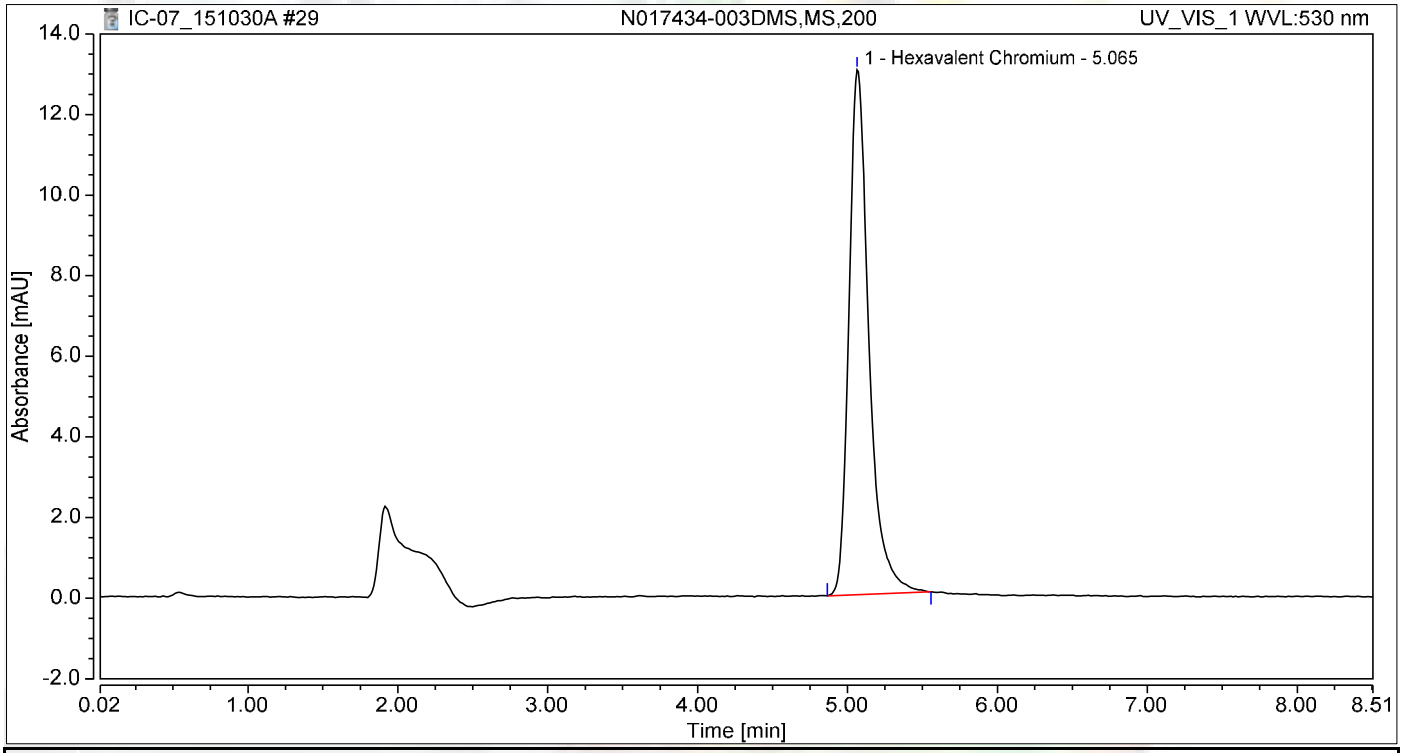
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.348	0.006	0.068	0.05	0.10	n.a.
2		4.490	0.008	0.048	0.07	0.07	n.a.
3	Hexavalent Chromium	5.023	11.981	68.194	99.89	99.83	50.8195
Total:			**11.994**	**68.310**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-003DMS,MS,200**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

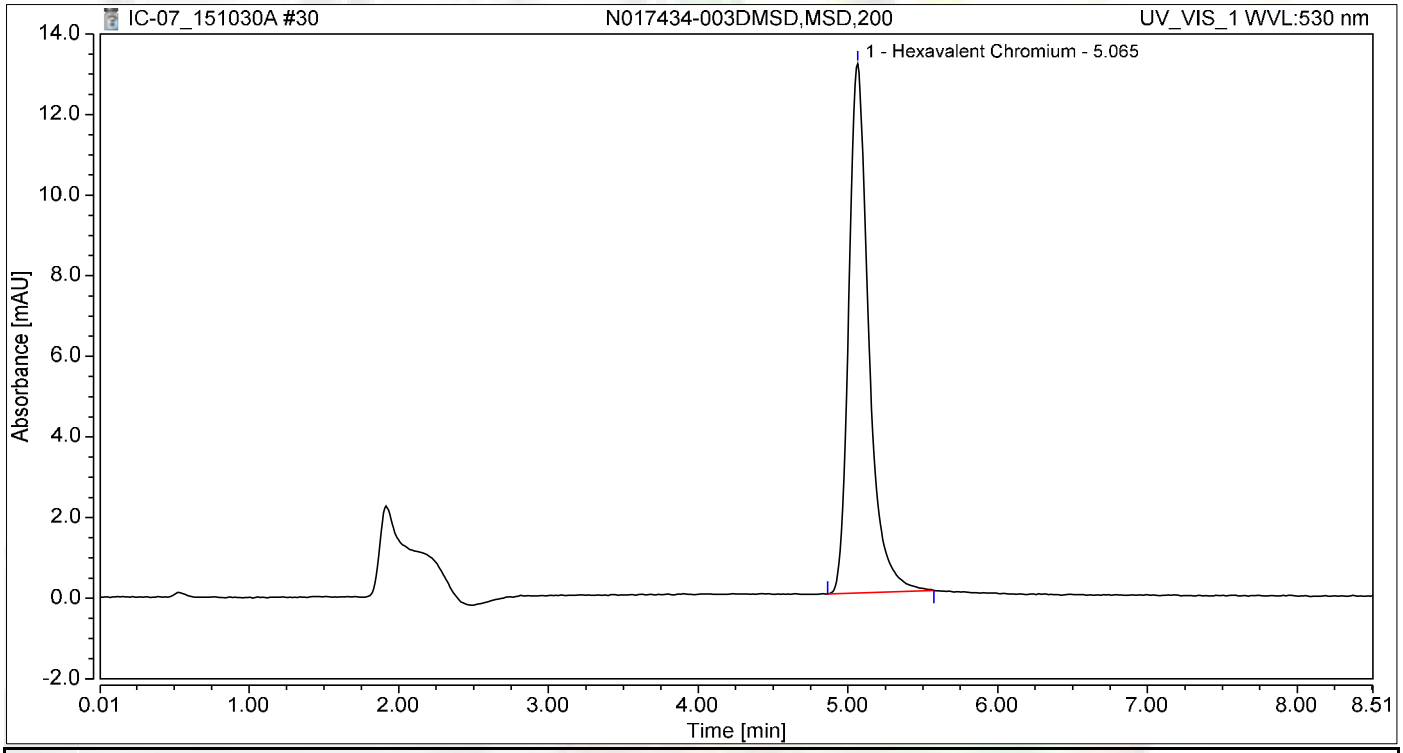
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.998	13.020	100.00	100.00	8.4758
Total:			**1.998**	**13.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-003DMSD,MSD,200**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

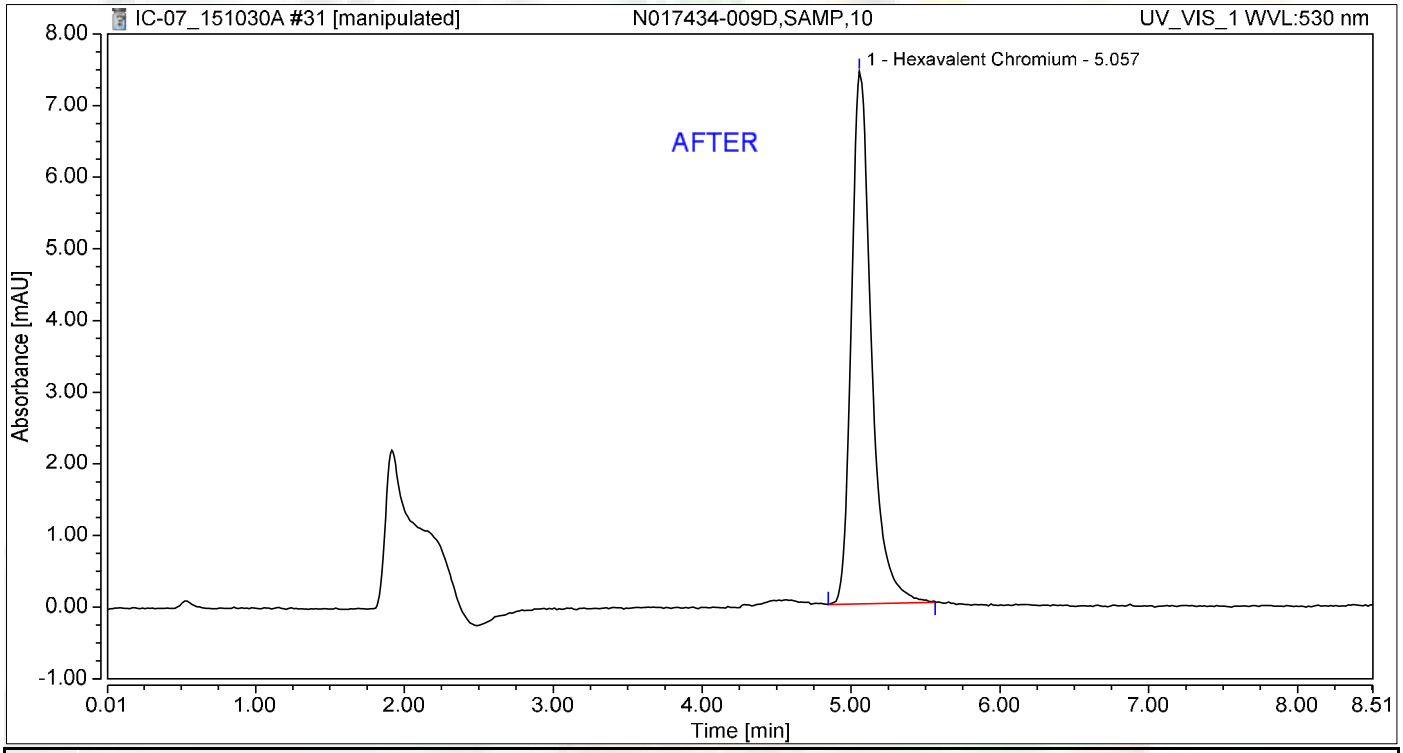
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.023	13.130	100.00	100.00	8.5815
Total:			**2.023**	**13.130**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-009D,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

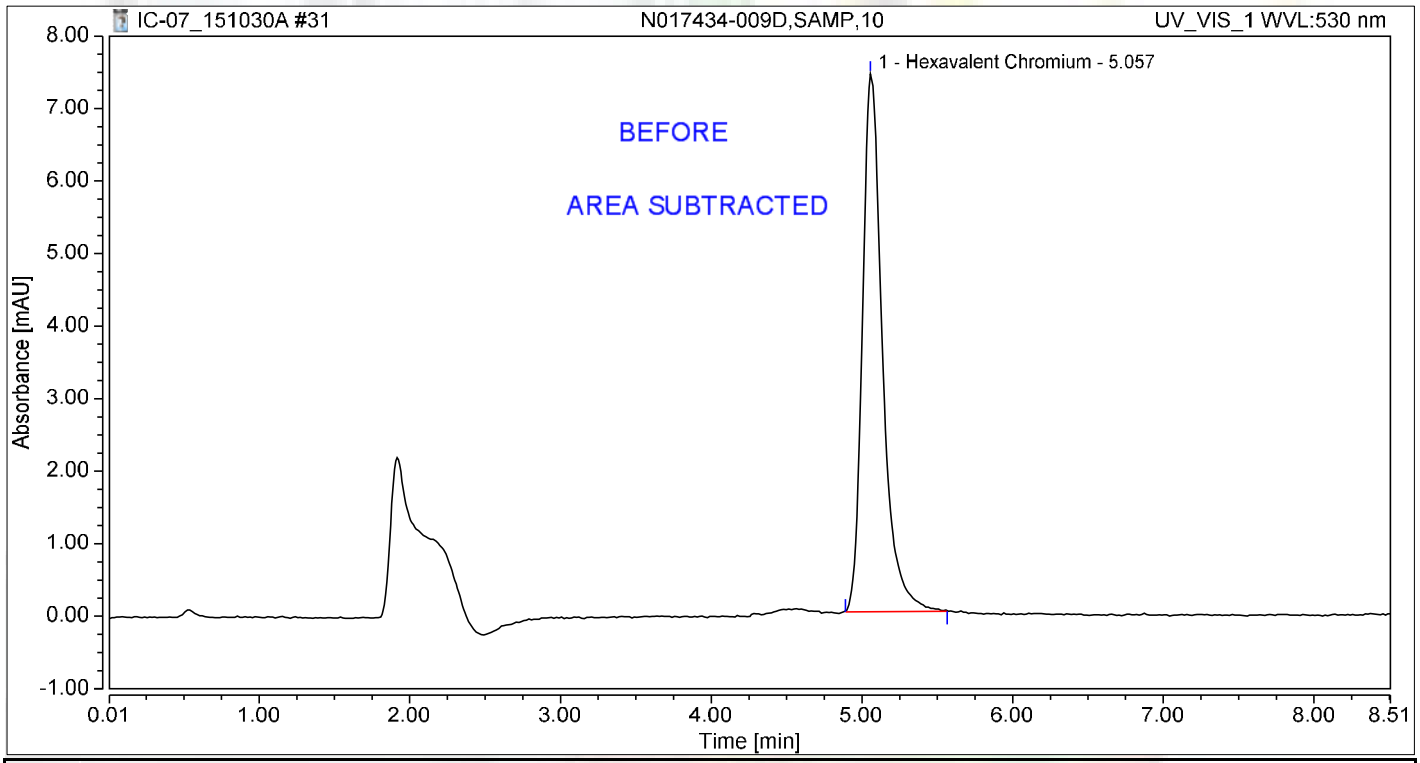
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	1.150	7.427	100.00	100.00	4.8775
Total:			**1.150**	**7.427**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-009D,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

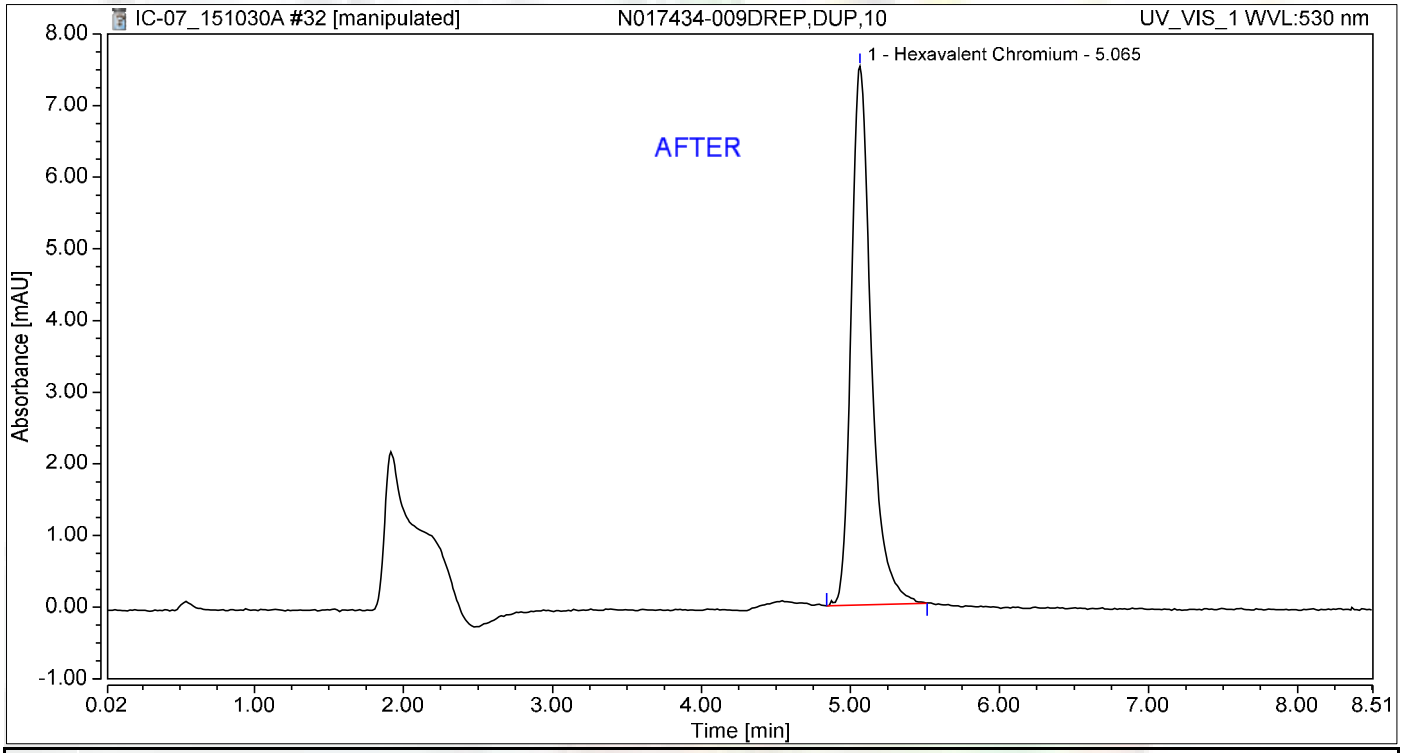
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	1.143	7.412	100.00	100.00	4.8464
Total:			**1.143**	**7.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-009DREP,DUP,10**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

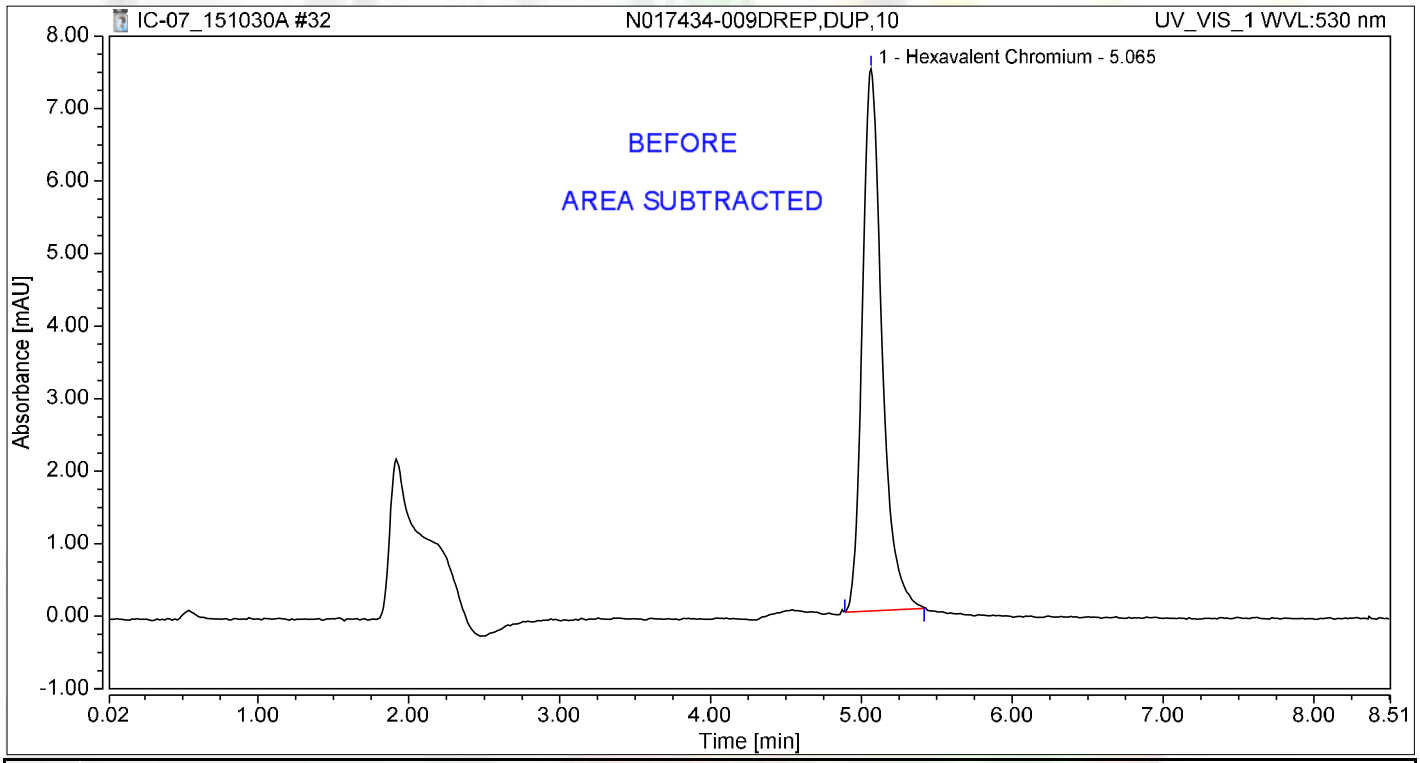
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.159	7.515	100.00	100.00	4.9141
Total:			**1.159**	**7.515**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017434-009DREP,DUP,10**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

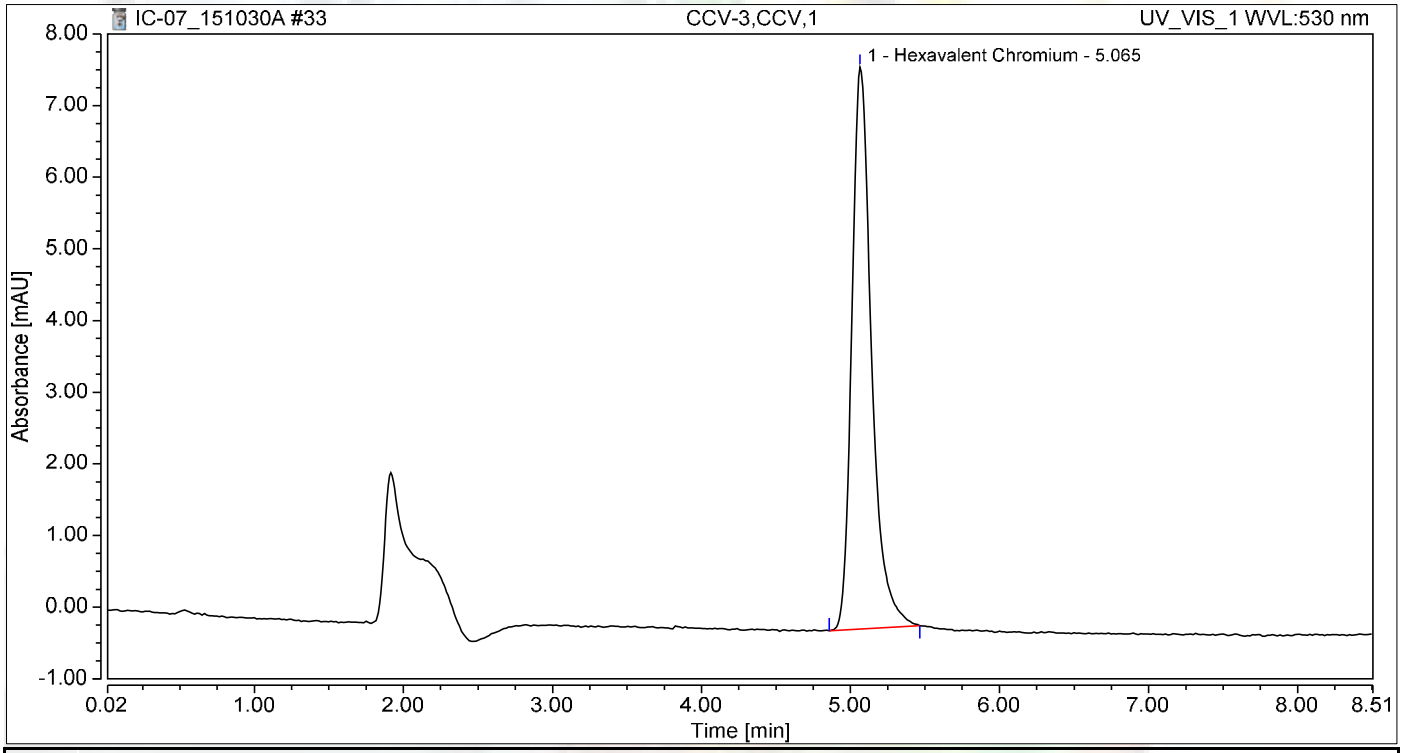
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.130	7.471	100.00	100.00	4.7927
Total:			**1.130**	**7.471**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

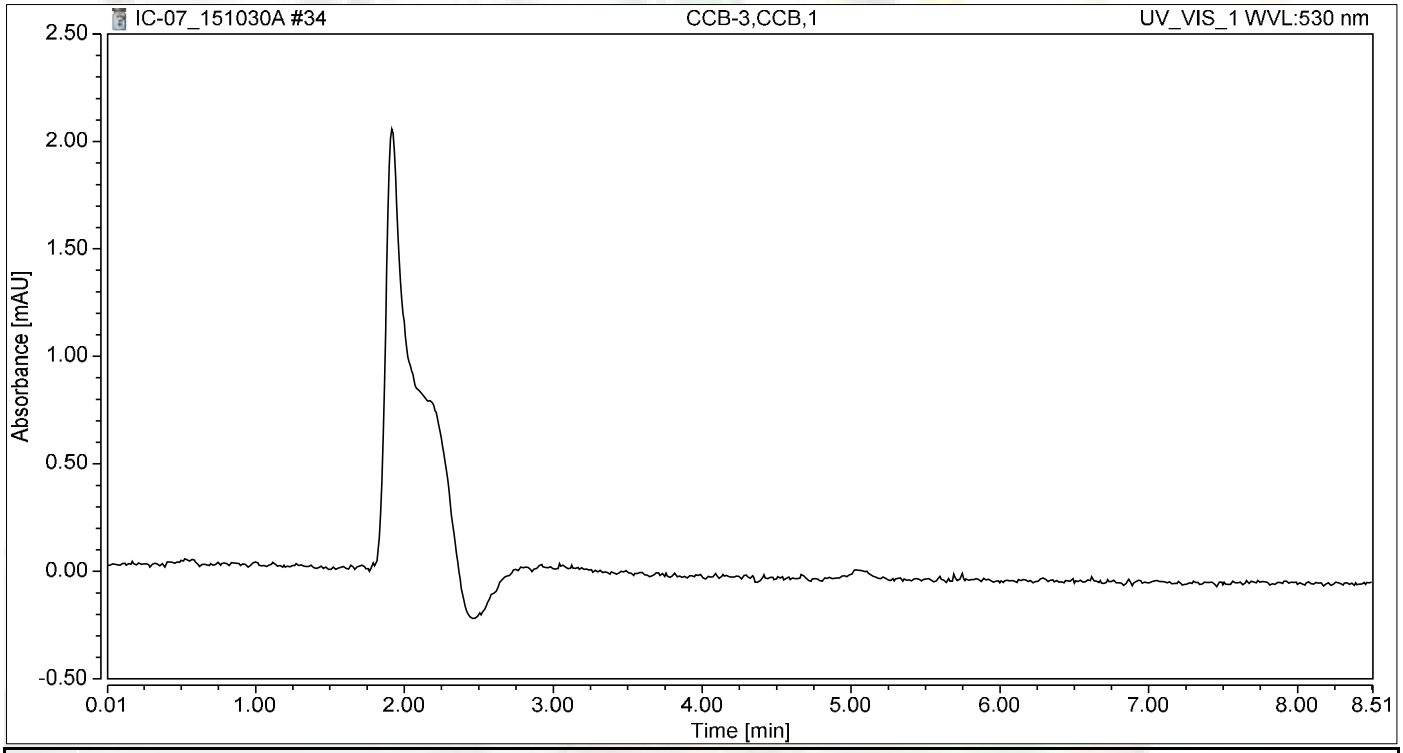
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.192	7.842	100.00	100.00	5.0574
Total:			**1.192**	**7.842**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

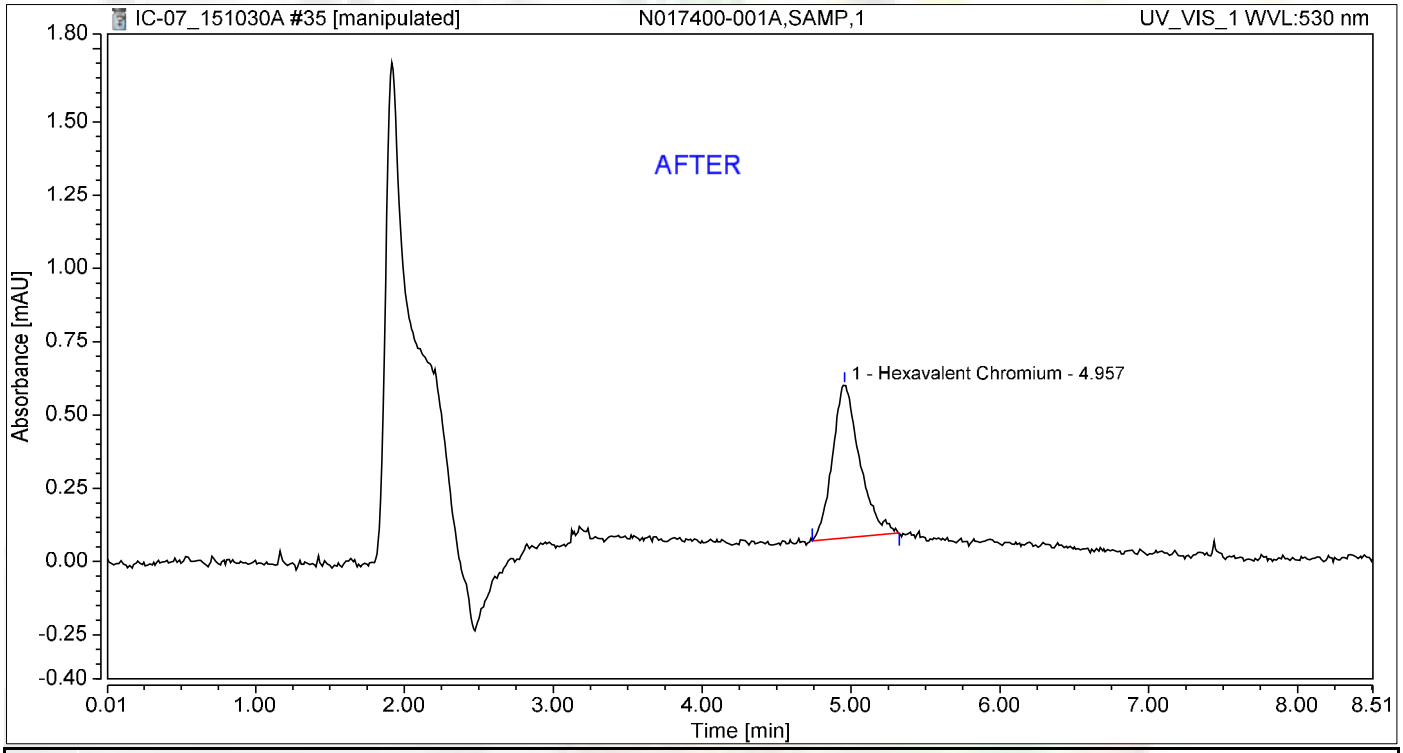
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.111	0.521	100.00	100.00	0.4699
Total:			**0.111**	**0.521**	**100.00**	**100.00**	

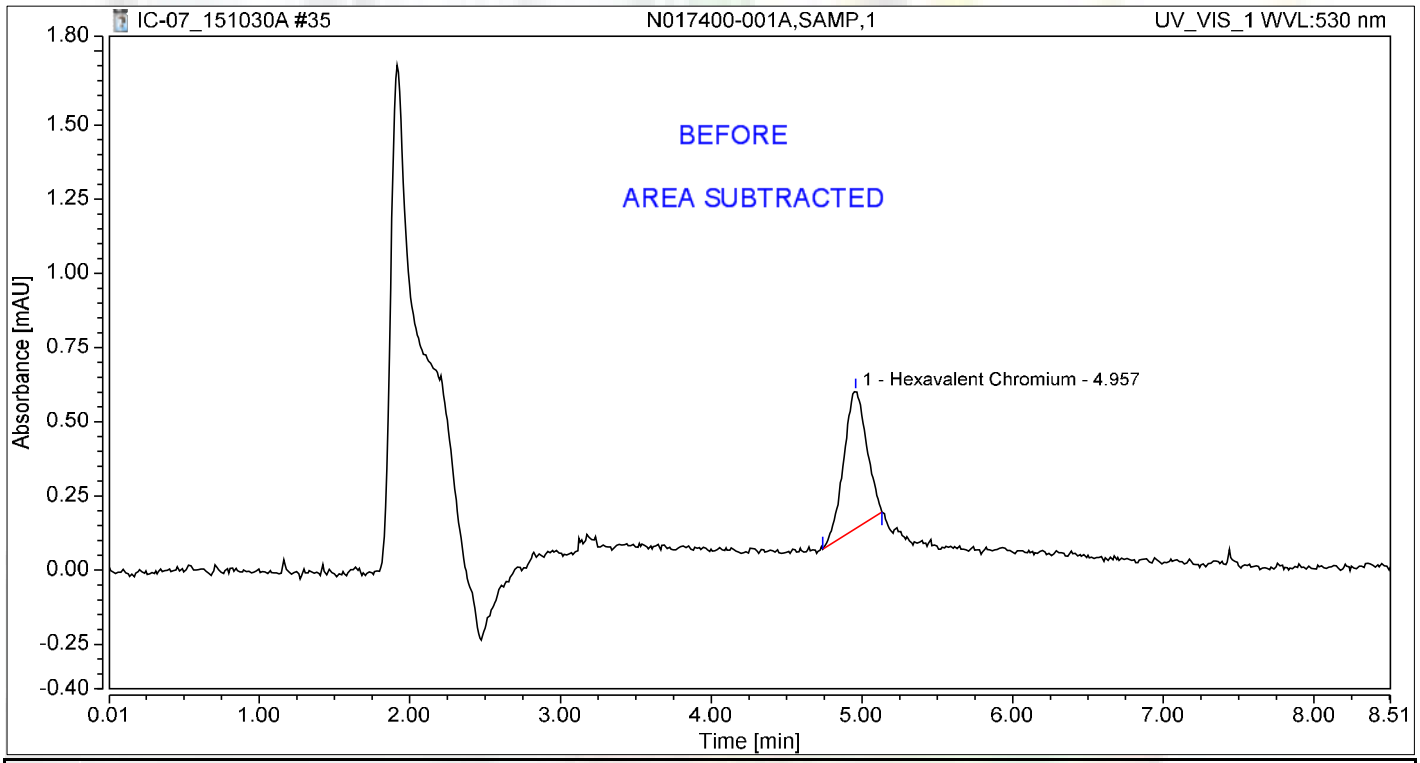
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

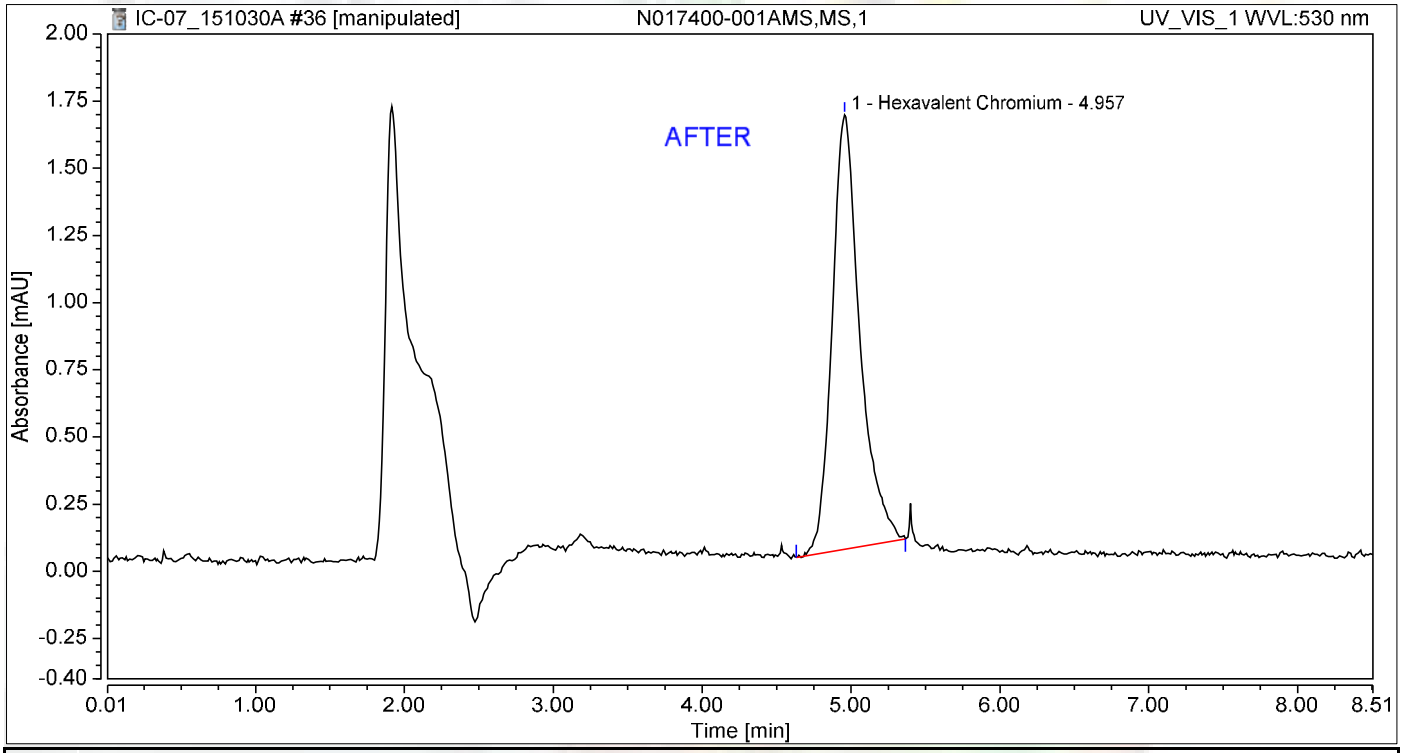
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.082	0.462	100.00	100.00	0.3475
Total:			**0.082**	**0.462**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.349	1.616	100.00	100.00	1.4815
Total:			**0.349**	**1.616**	**100.00**	**100.00**	

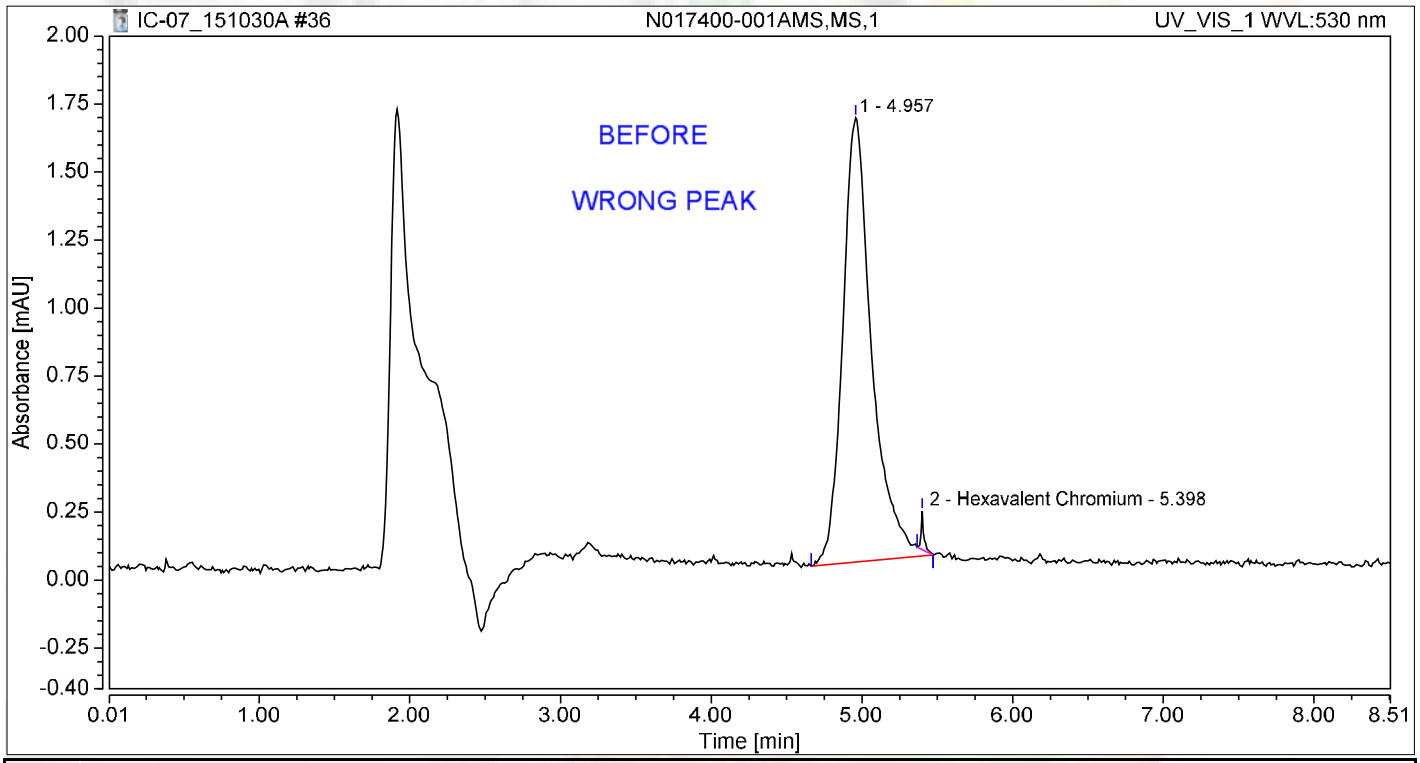
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

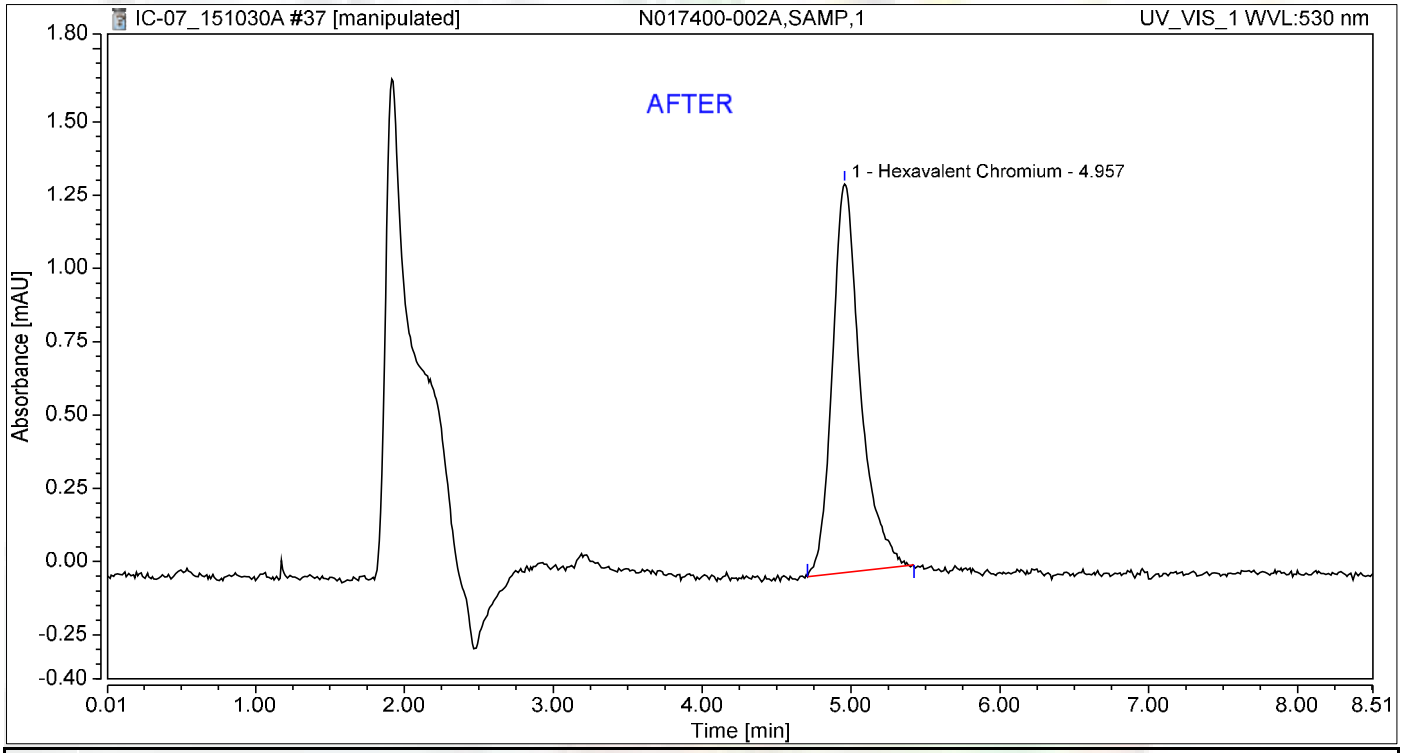
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.957	0.365	1.633	99.15	92.06	n.a.
2	Hexavalent Chromium	5.398	0.003	0.141	0.85	7.94	0.0133
Total:			**0.368**	**1.774**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.289	1.327	100.00	100.00	1.2277
Total:			**0.289**	**1.327**	**100.00**	**100.00**	

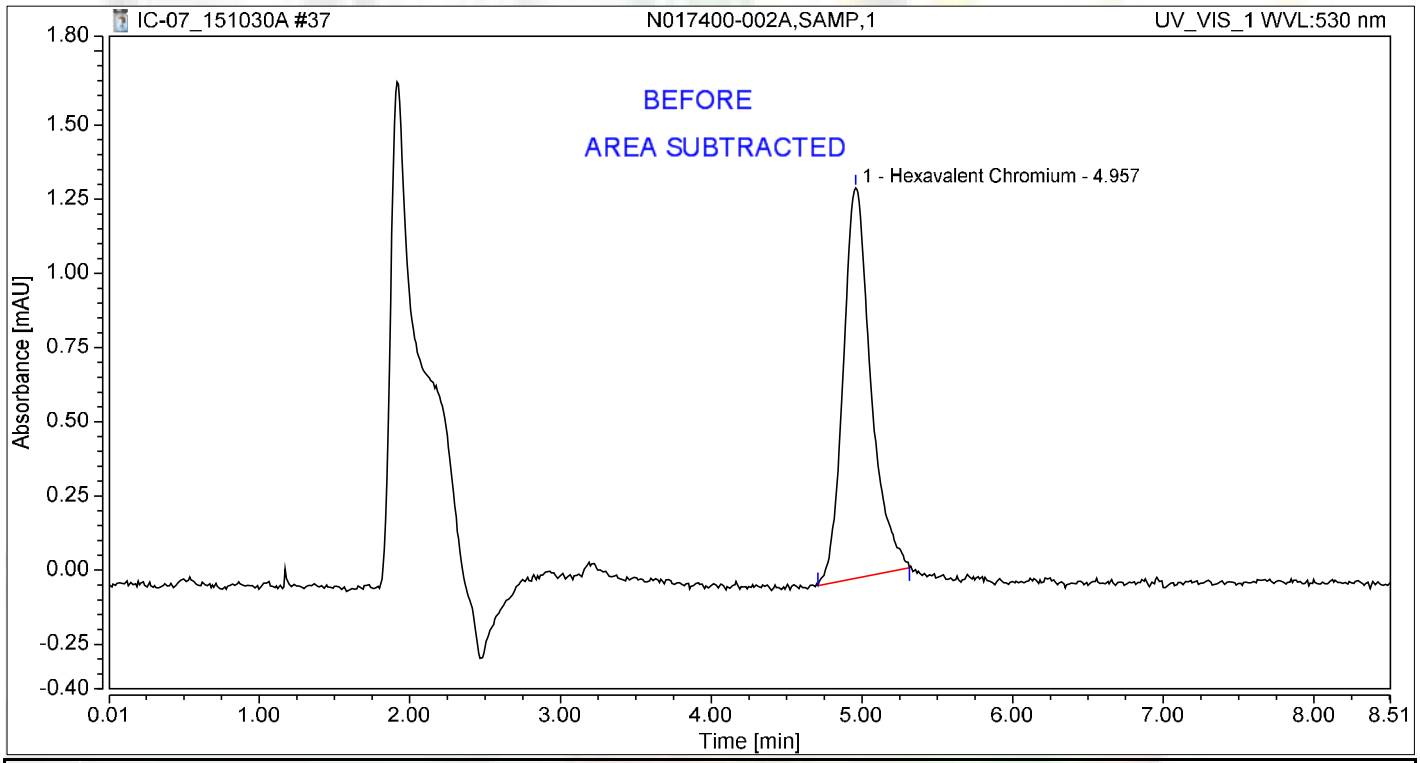
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

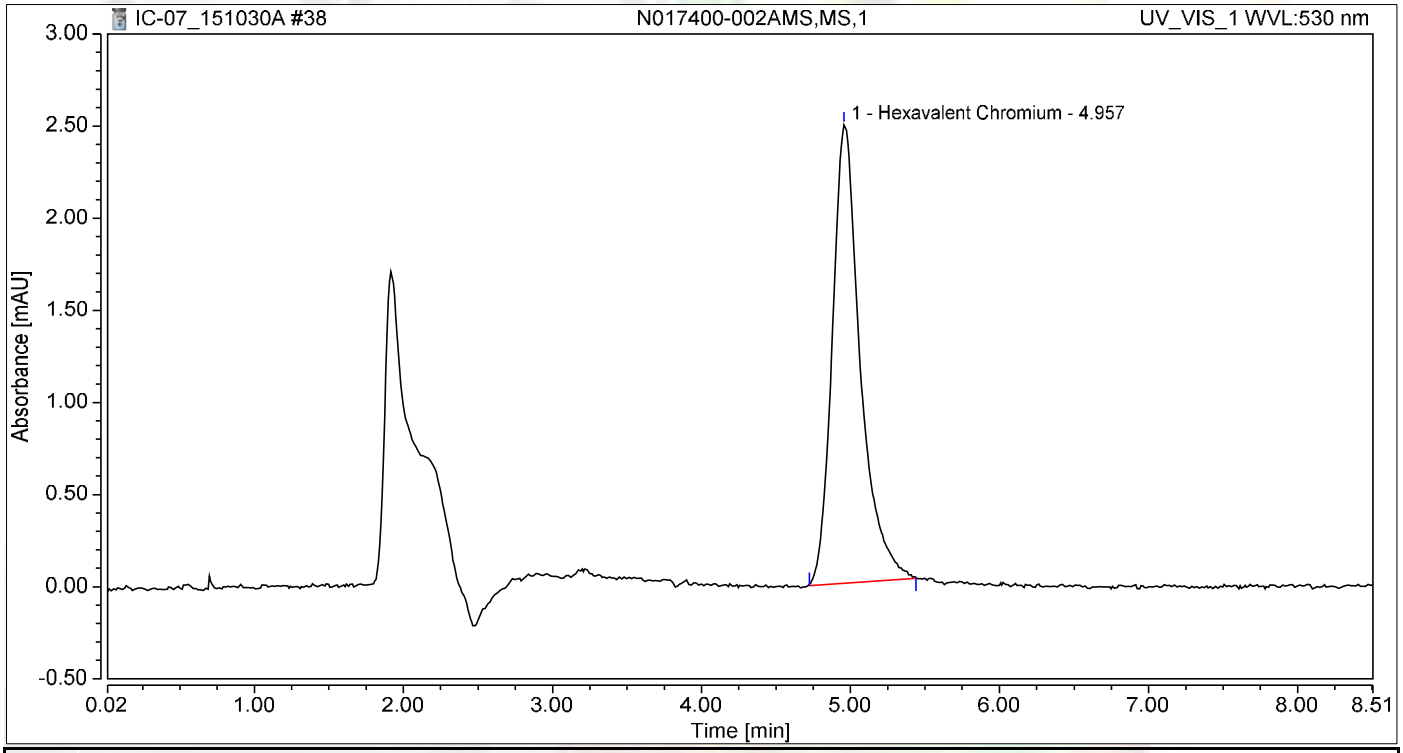
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.281	1.316	100.00	100.00	1.1900
Total:			**0.281**	**1.316**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

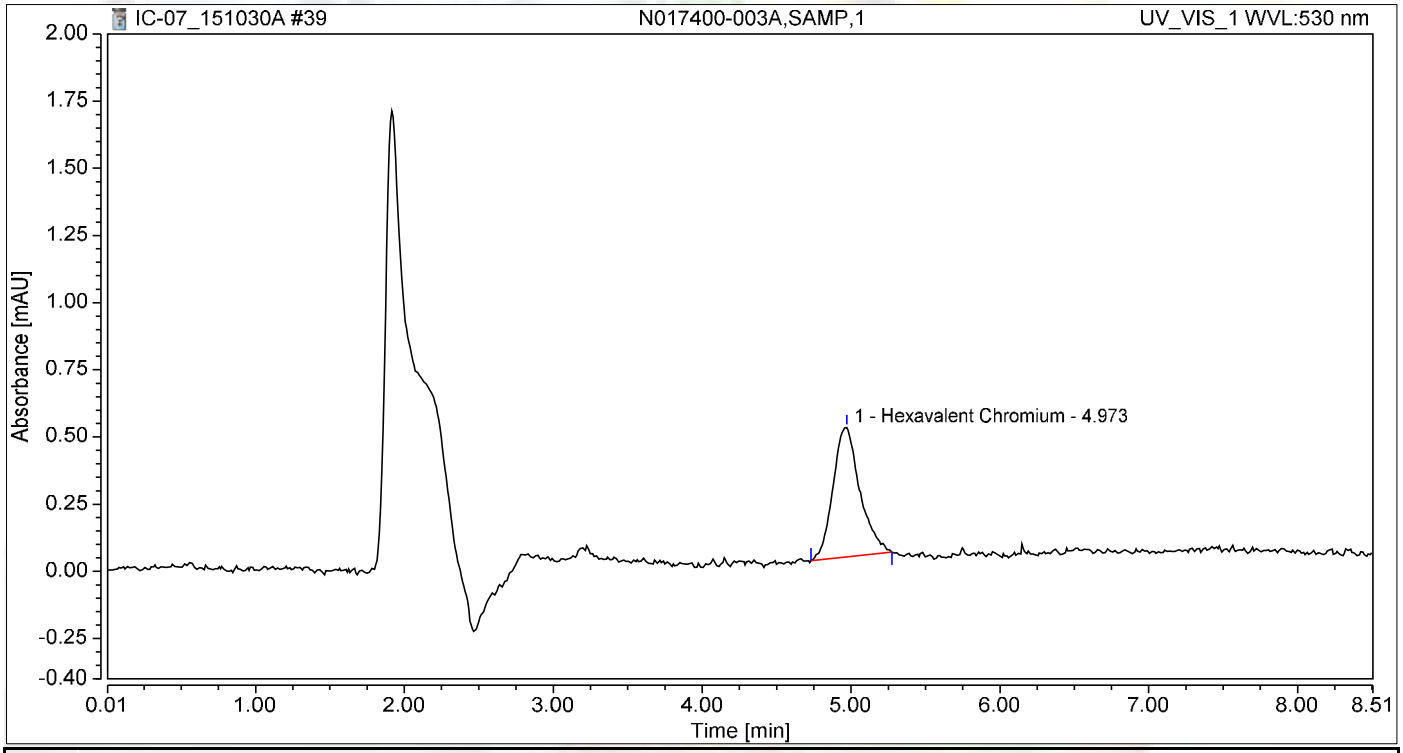
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.541	2.487	100.00	100.00	2.2957
Total:			**0.541**	**2.487**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

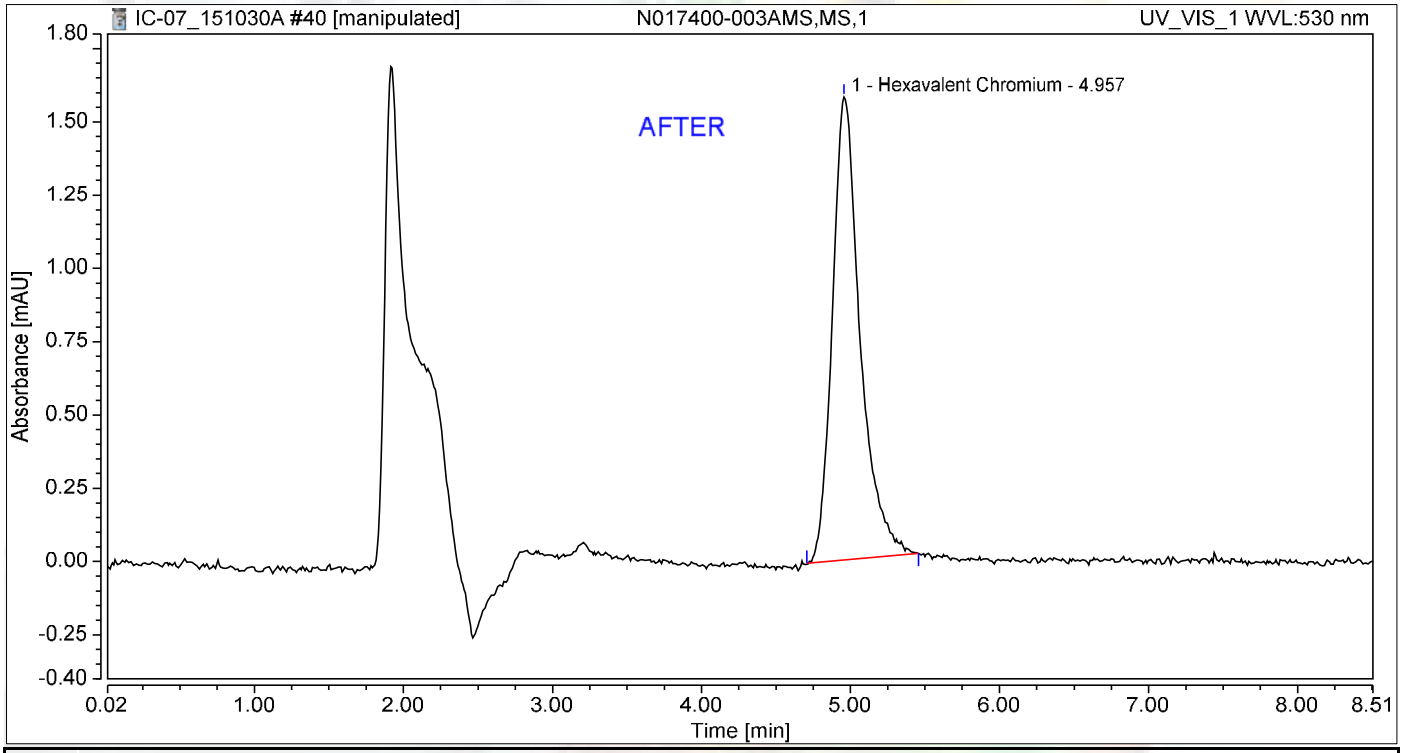
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.973	0.101	0.481	100.00	100.00	0.4282
Total:			**0.101**	**0.481**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.341	1.580	100.00	100.00	1.4463
Total:			**0.341**	**1.580**	**100.00**	**100.00**	

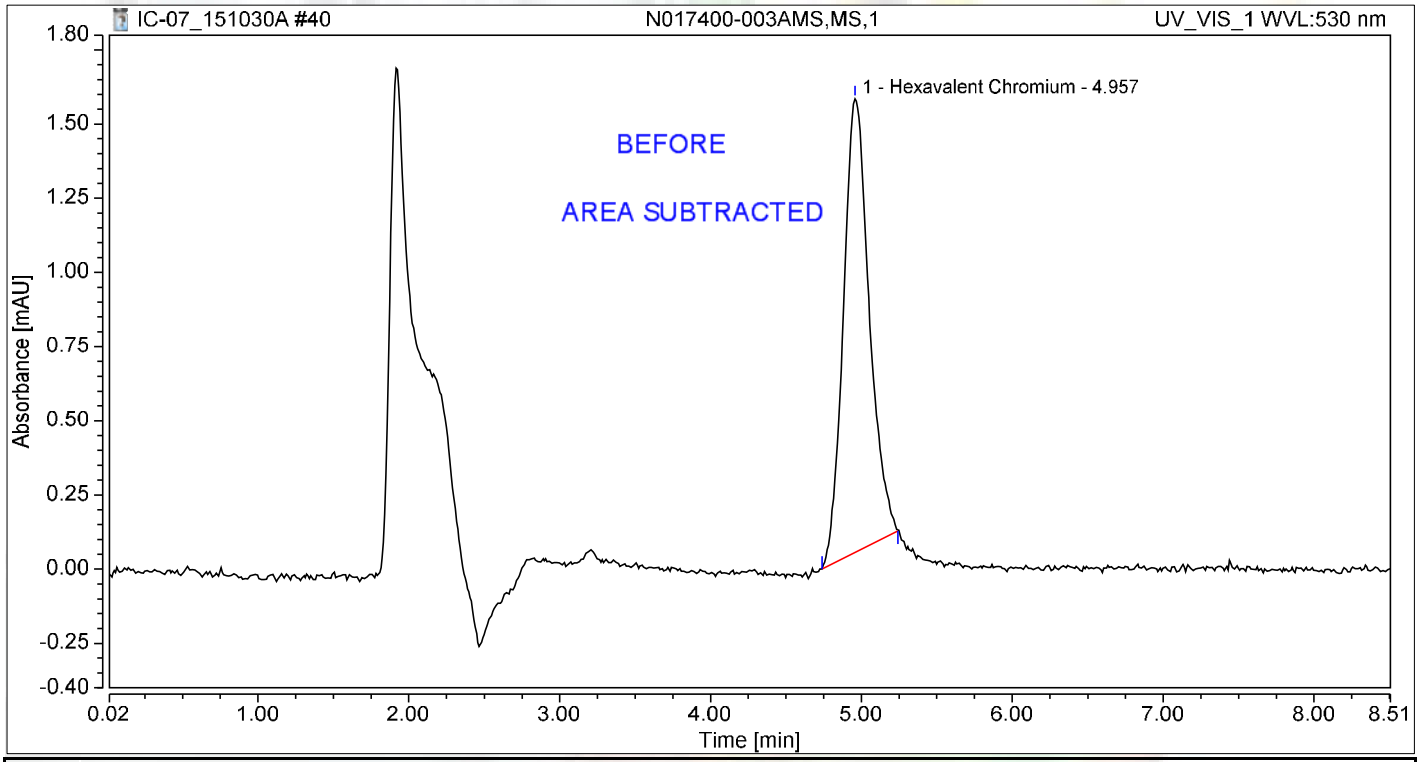
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

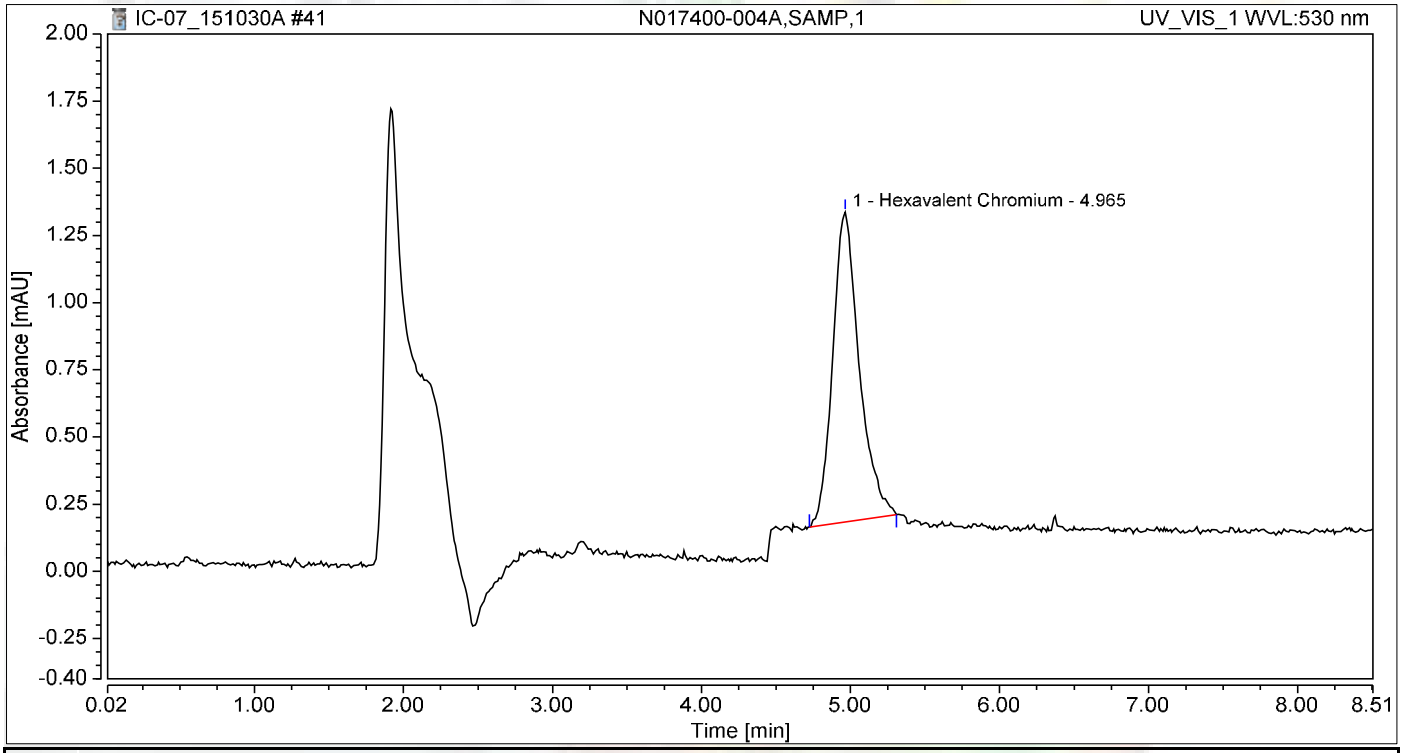
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.303	1.529	100.00	100.00	1.2869
Total:			**0.303**	**1.529**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-004A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

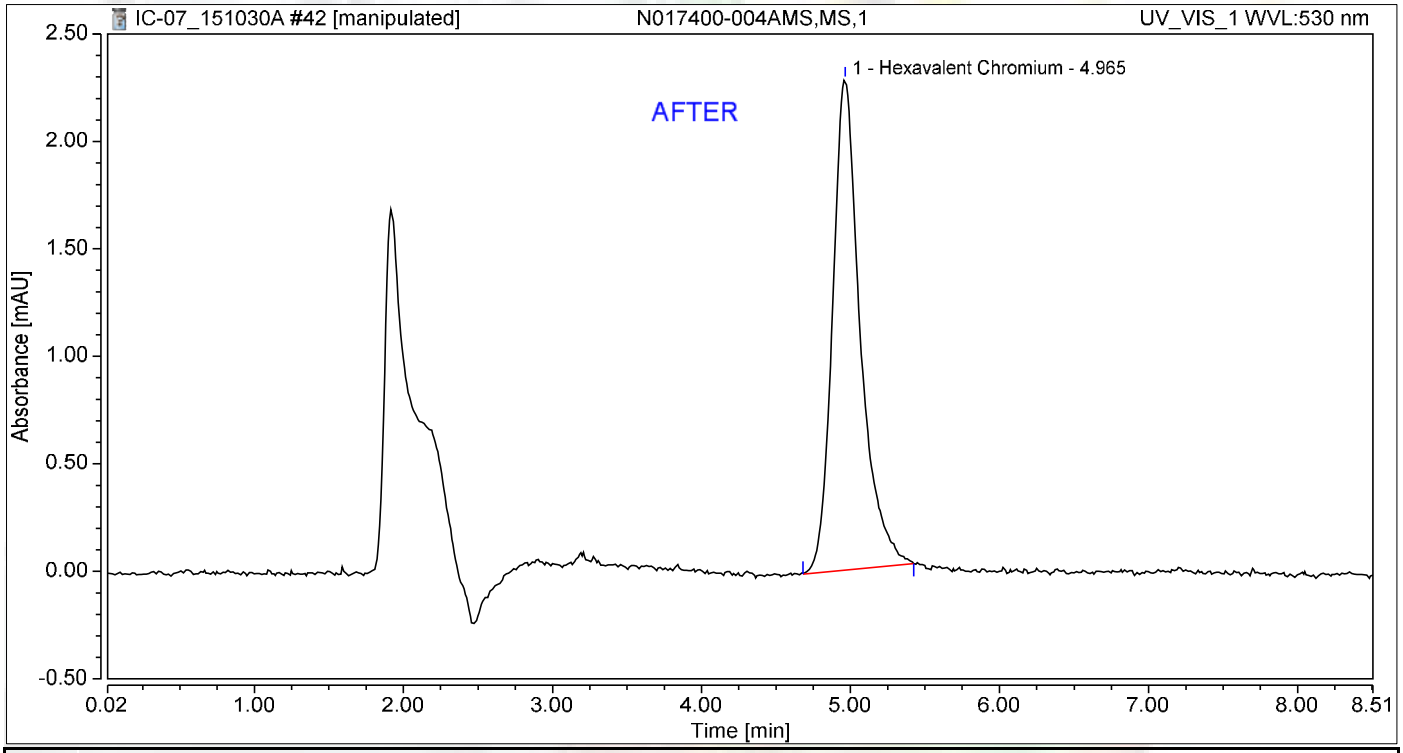
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.965	0.237	1.153	100.00	100.00	1.0073
Total:			**0.237**	**1.153**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.965	0.493	2.281	100.00	100.00	2.0912
Total:			**0.493**	**2.281**	**100.00**	**100.00**	

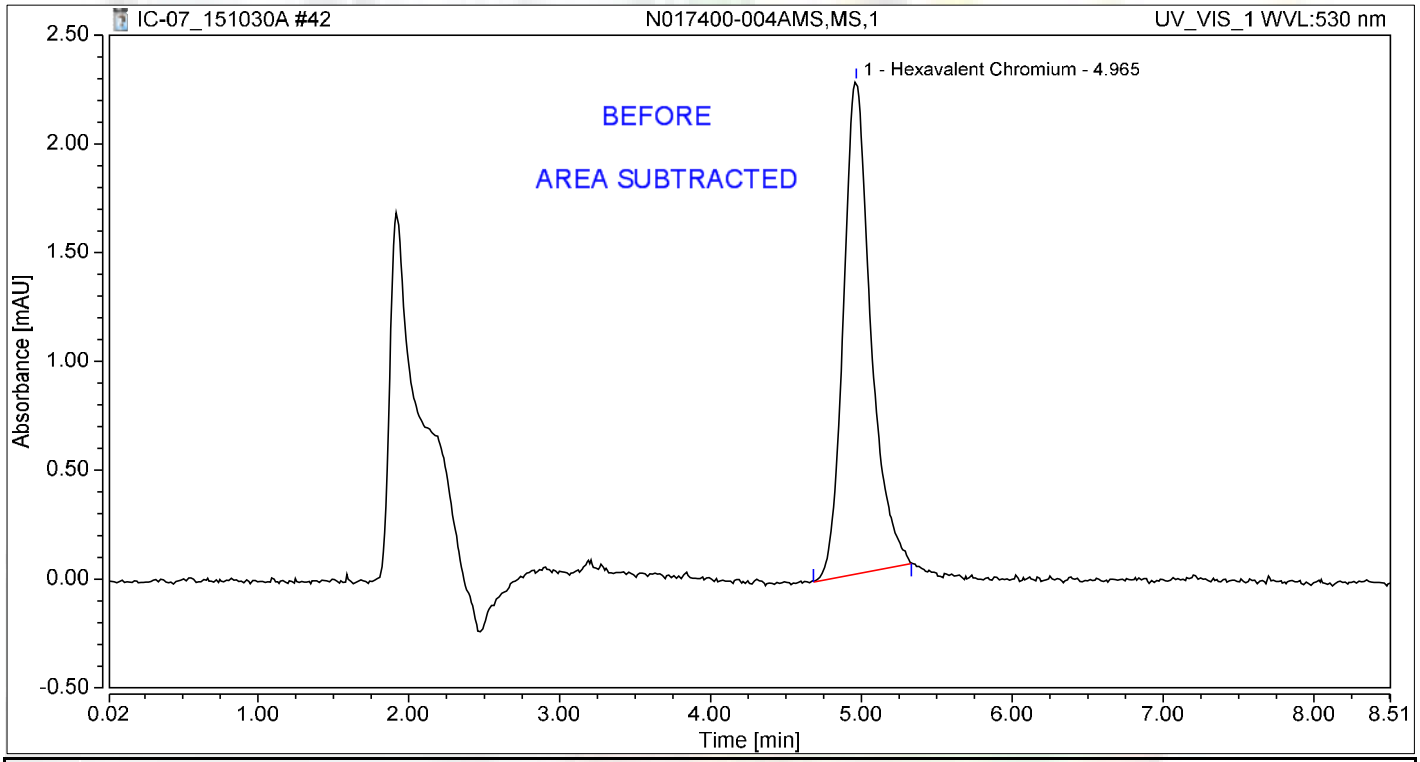
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

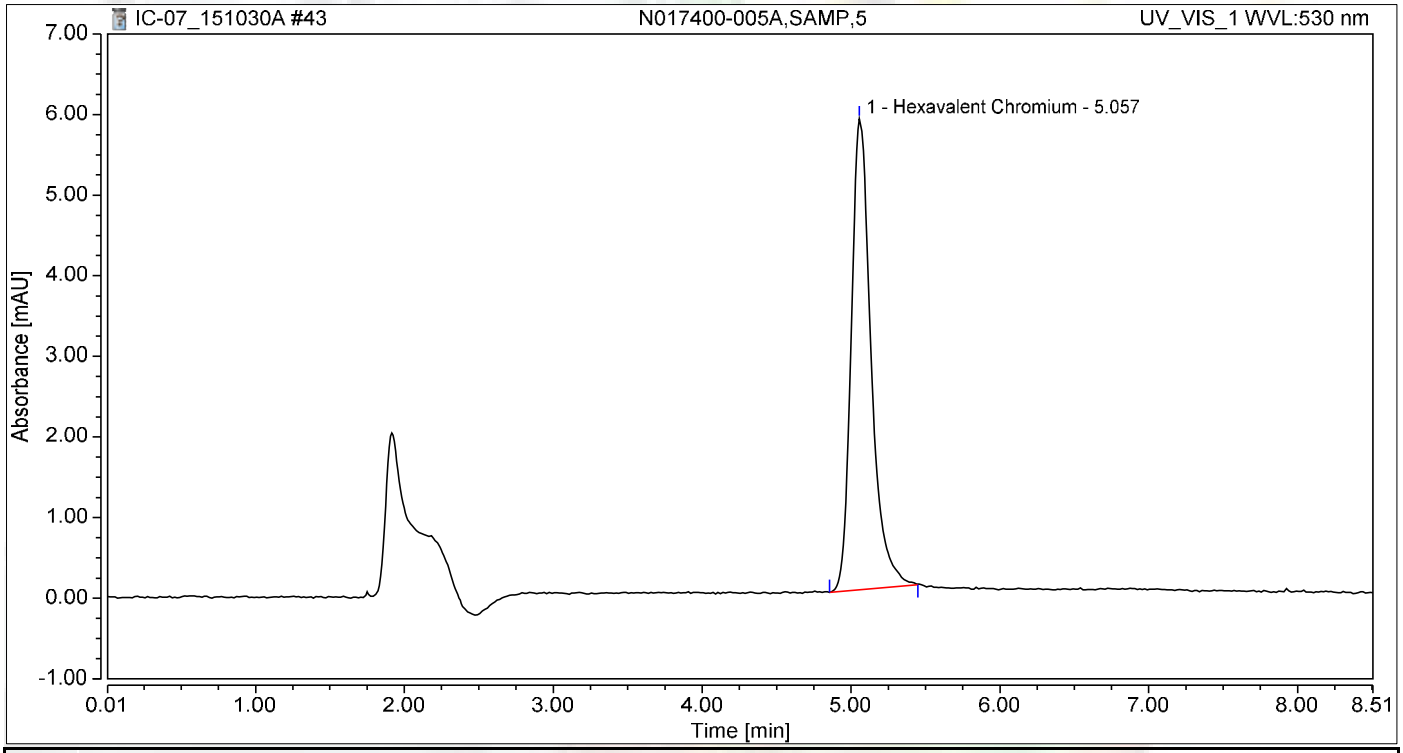
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.965	0.477	2.263	100.00	100.00	2.0238
Total:			**0.477**	**2.263**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-005A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

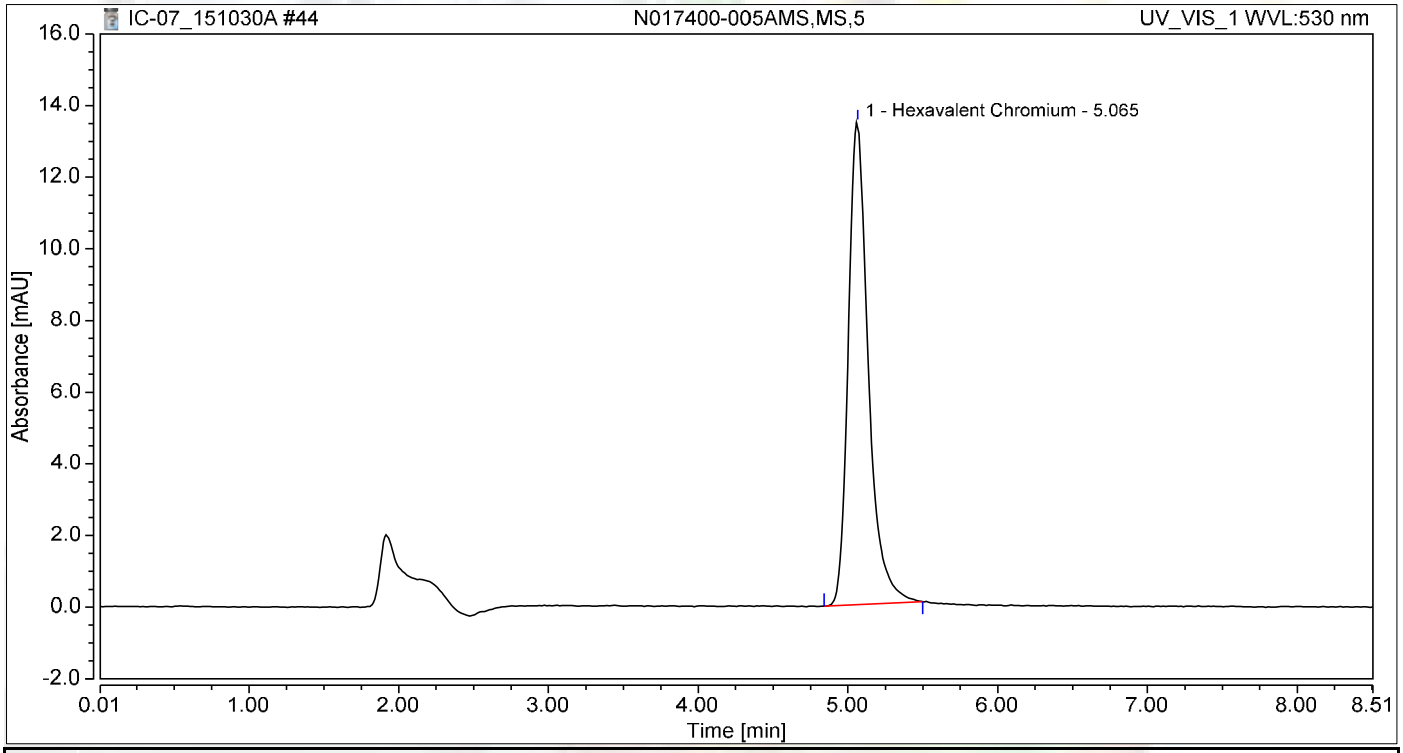
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.895	5.841	100.00	100.00	3.7948
Total:			**0.895**	**5.841**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-005AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

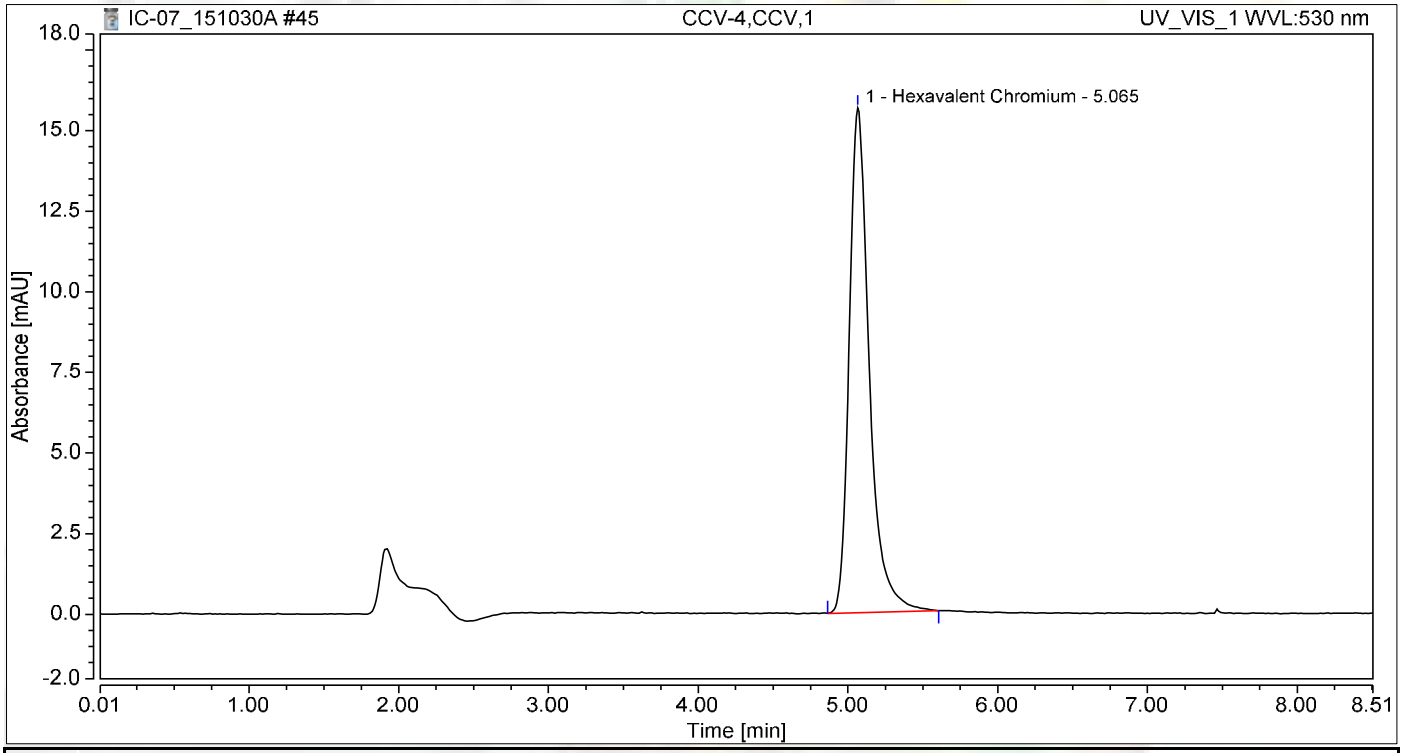
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.074	13.454	100.00	100.00	8.7968
Total:			**2.074**	**13.454**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

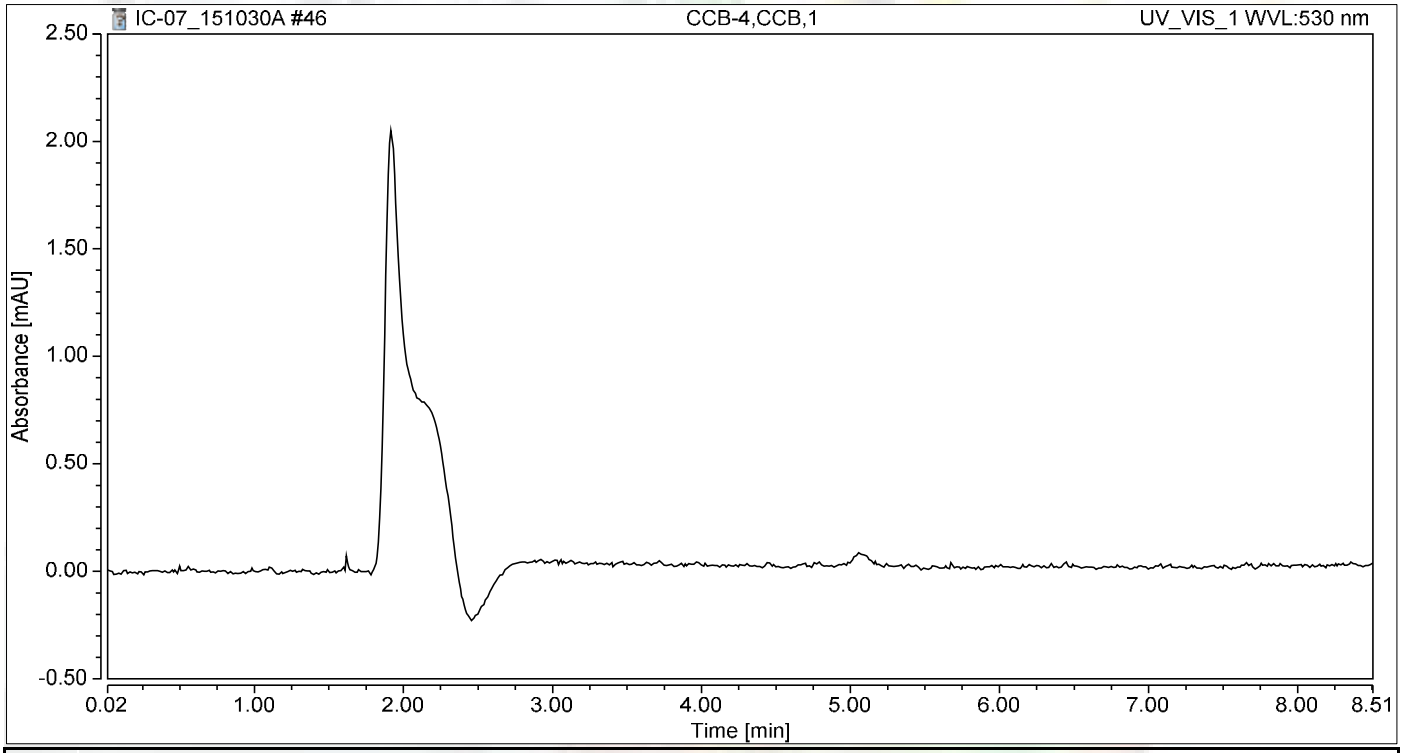
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.406	15.650	100.00	100.00	10.2077
Total:			**2.406**	**15.650**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

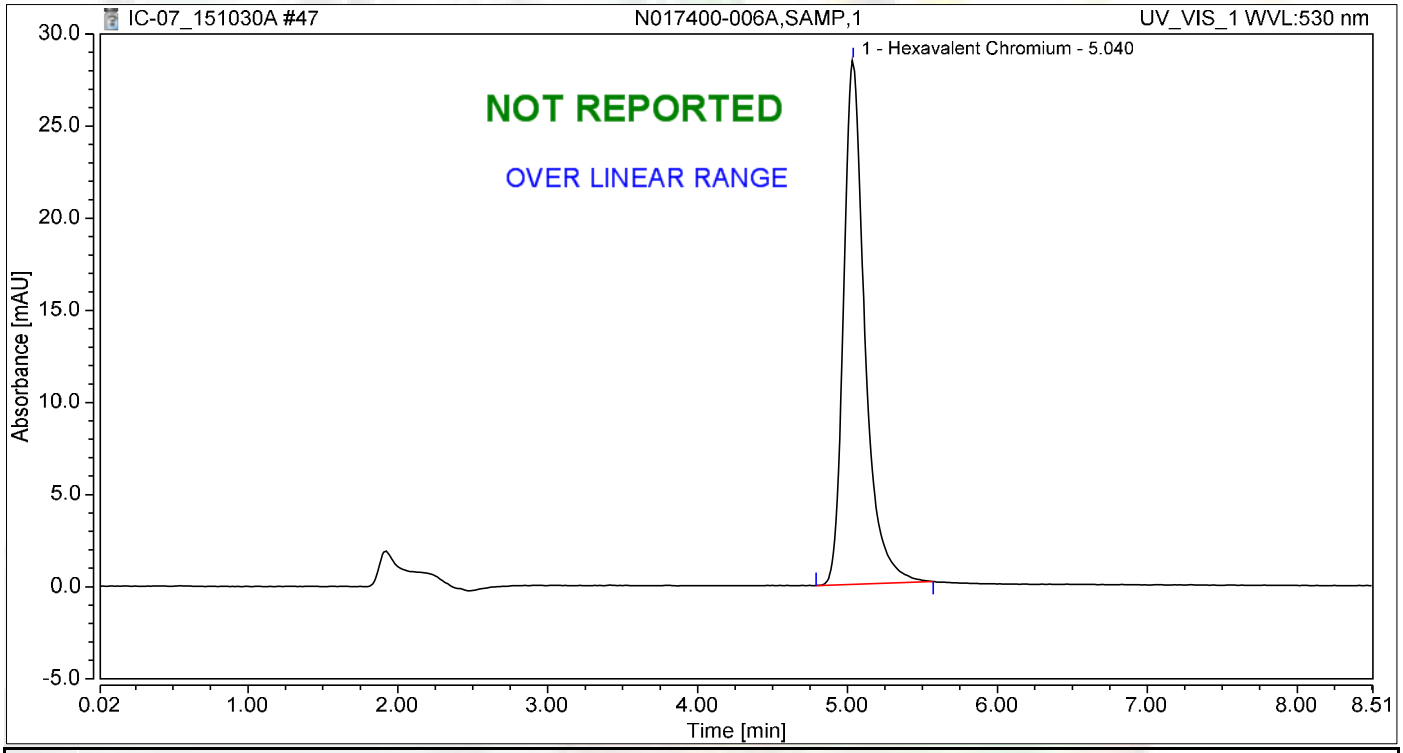
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

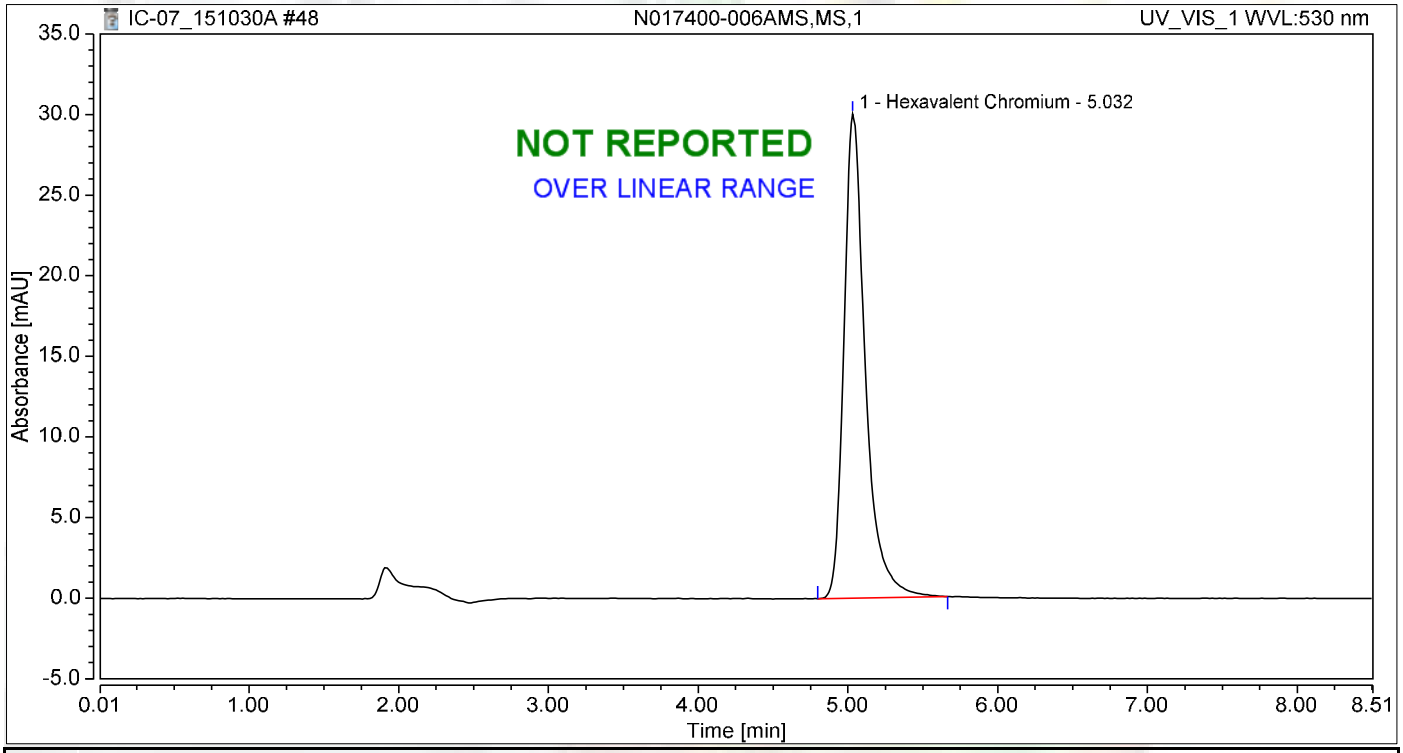
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	4.654	28.420	100.00	100.00	19.7413
Total:			**4.654**	**28.420**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

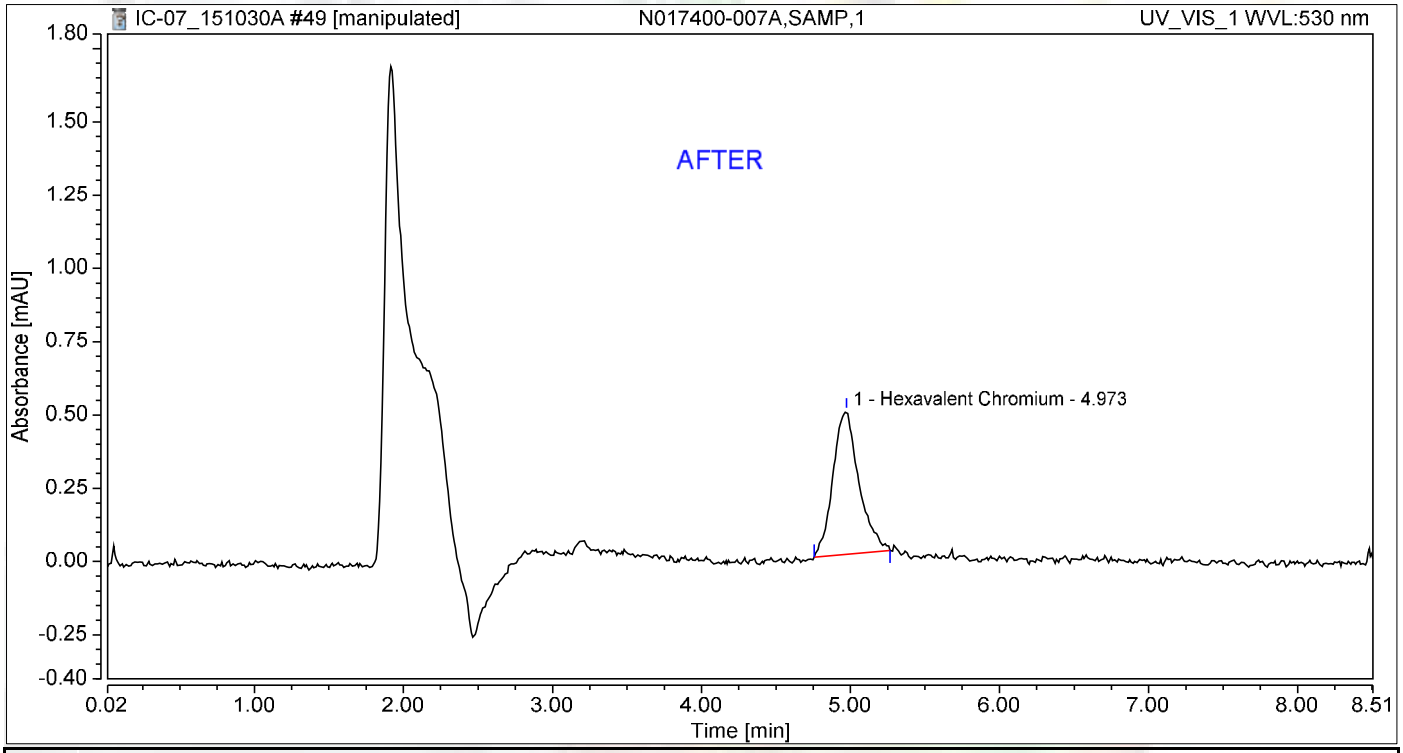
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.032	4.949	30.034	100.00	100.00	20.9939
Total:			**4.949**	**30.034**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.973	0.099	0.490	100.00	100.00	0.4192
Total:			**0.099**	**0.490**	**100.00**	**100.00**	

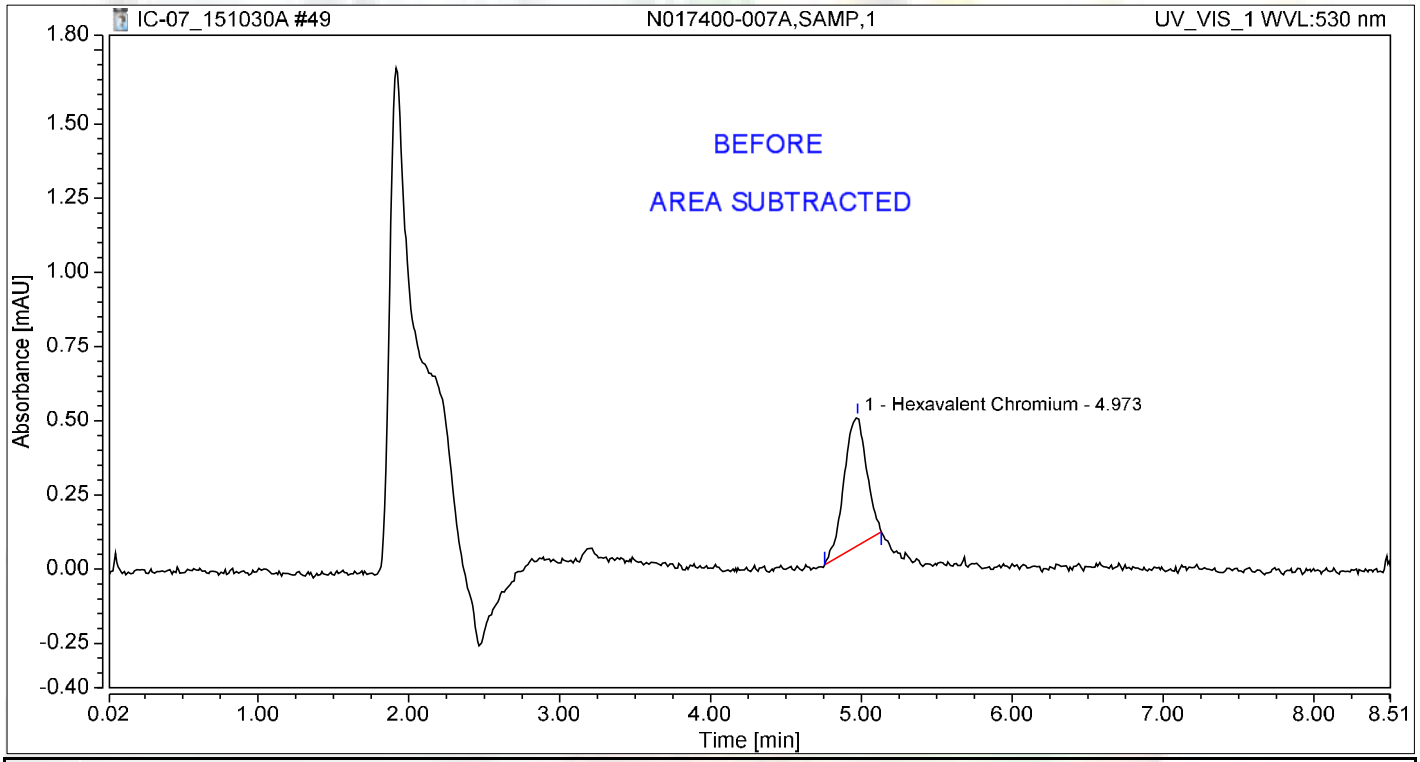
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-007A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

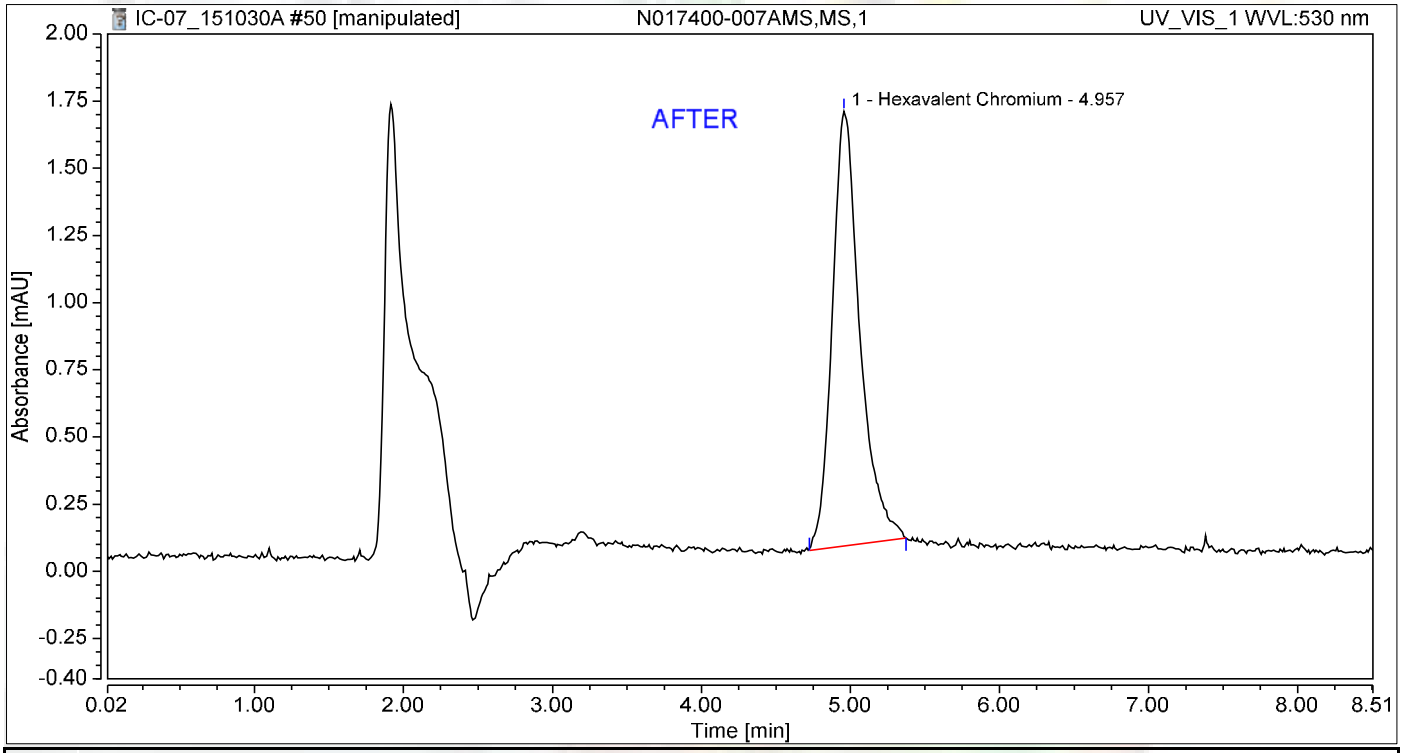
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.973	0.076	0.436	100.00	100.00	0.3208
Total:			**0.076**	**0.436**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.348	1.619	100.00	100.00	1.4761
Total:			**0.348**	**1.619**	**100.00**	**100.00**	

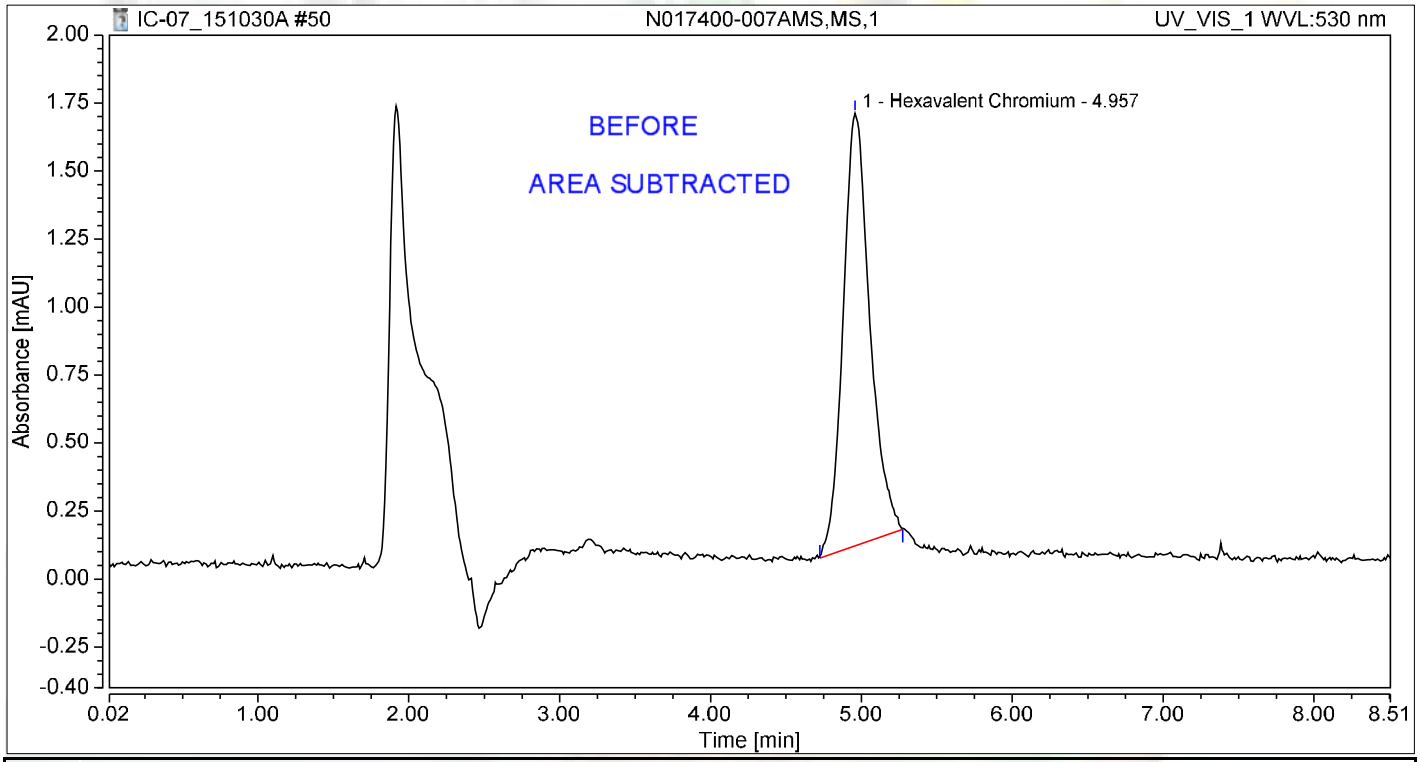
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

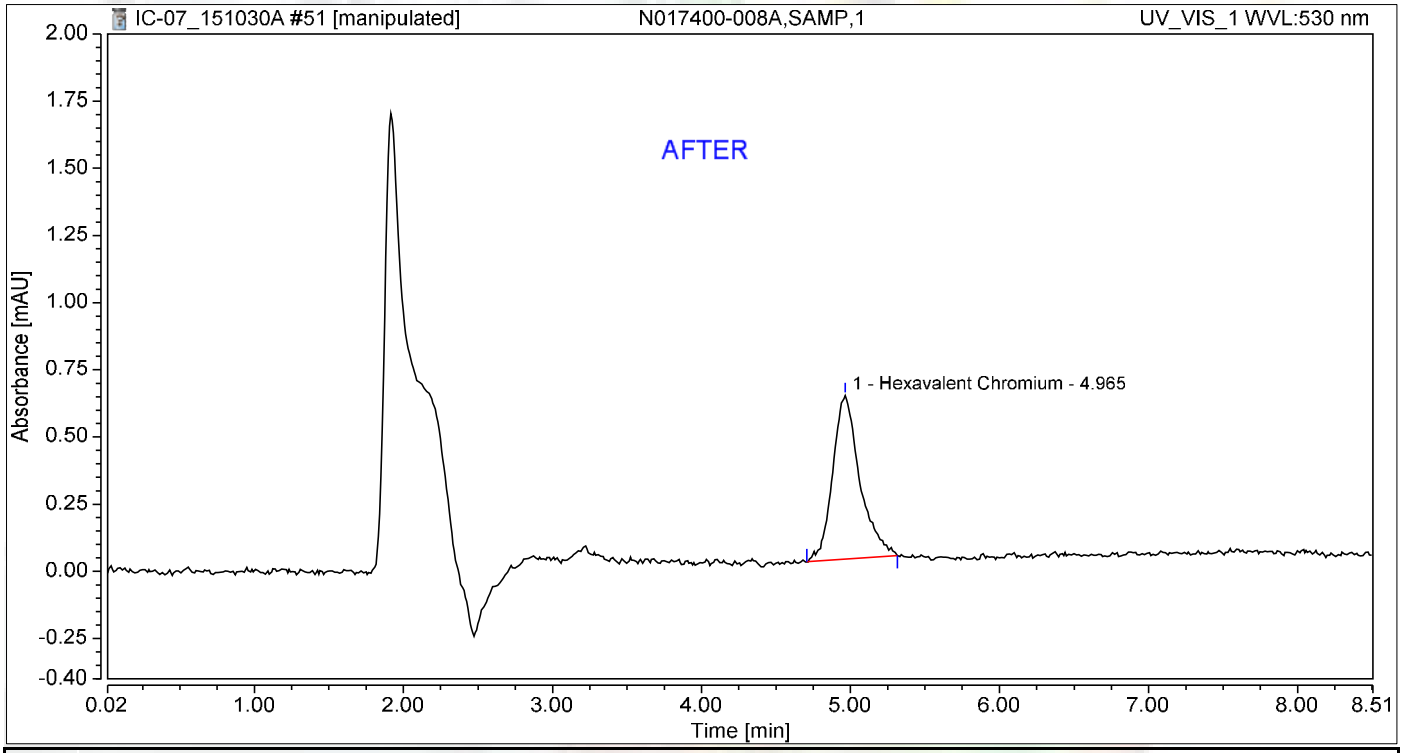
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.326	1.591	100.00	100.00	1.3831
Total:			**0.326**	**1.591**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.965	0.129	0.610	100.00	100.00	0.5457
Total:			**0.129**	**0.610**	**100.00**	**100.00**	

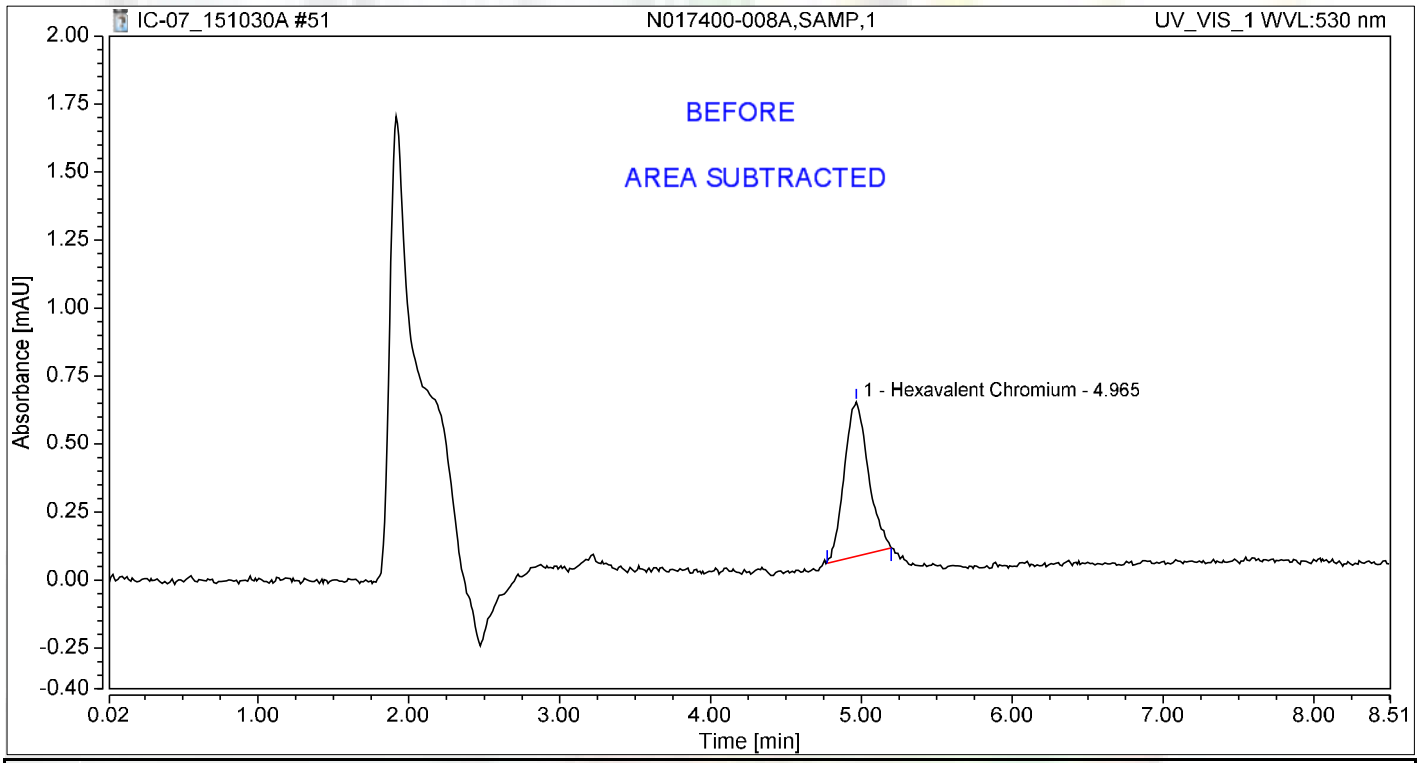
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

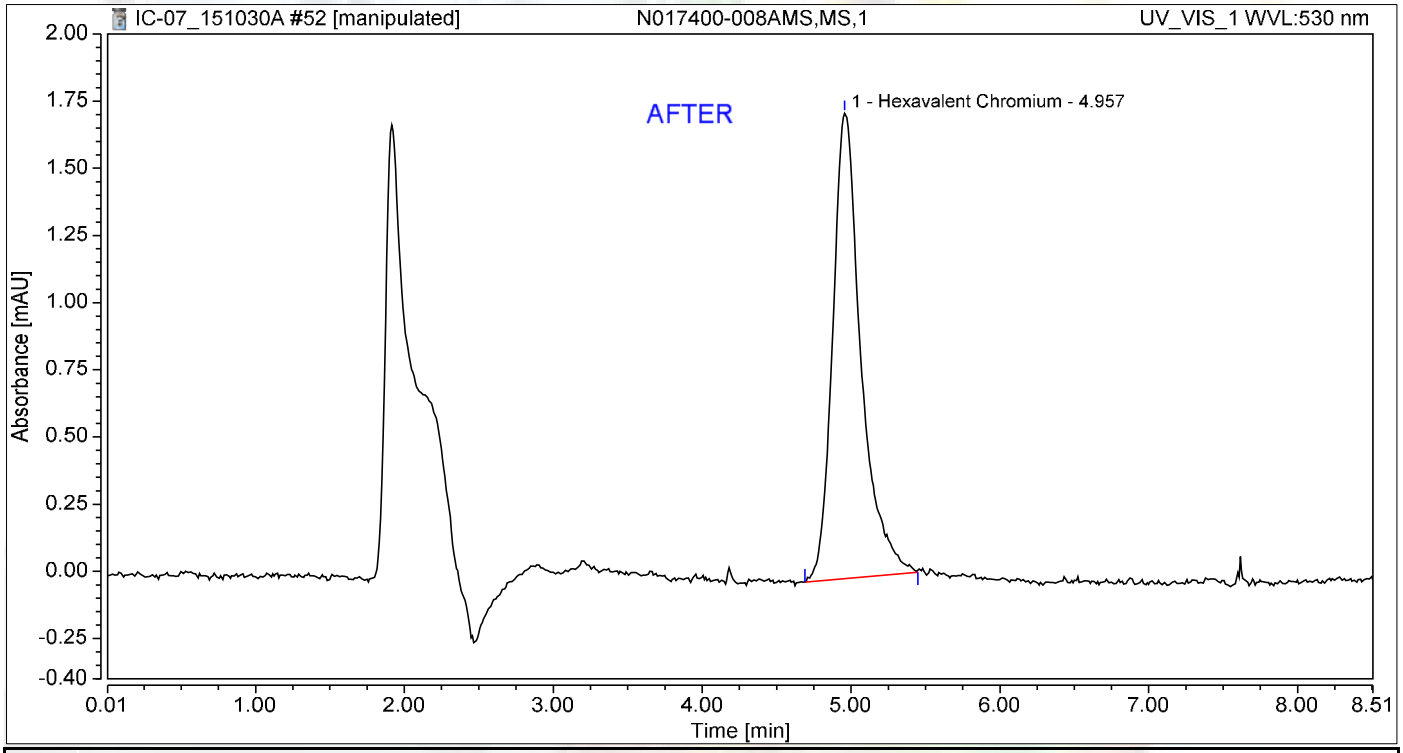
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.965	0.105	0.568	100.00	100.00	0.4451
Total:			**0.105**	**0.568**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.381	1.732	100.00	100.00	1.6171
Total:			**0.381**	**1.732**	**100.00**	**100.00**	

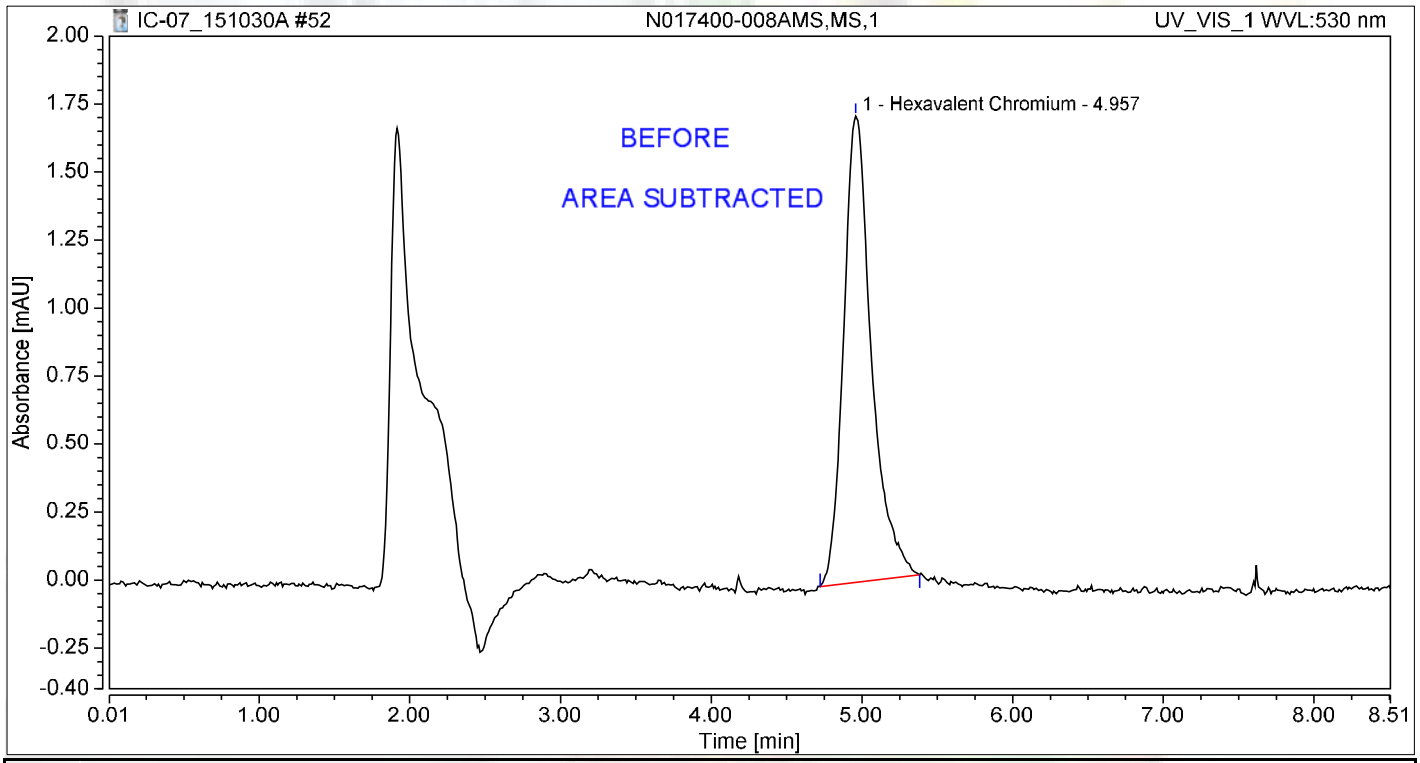
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

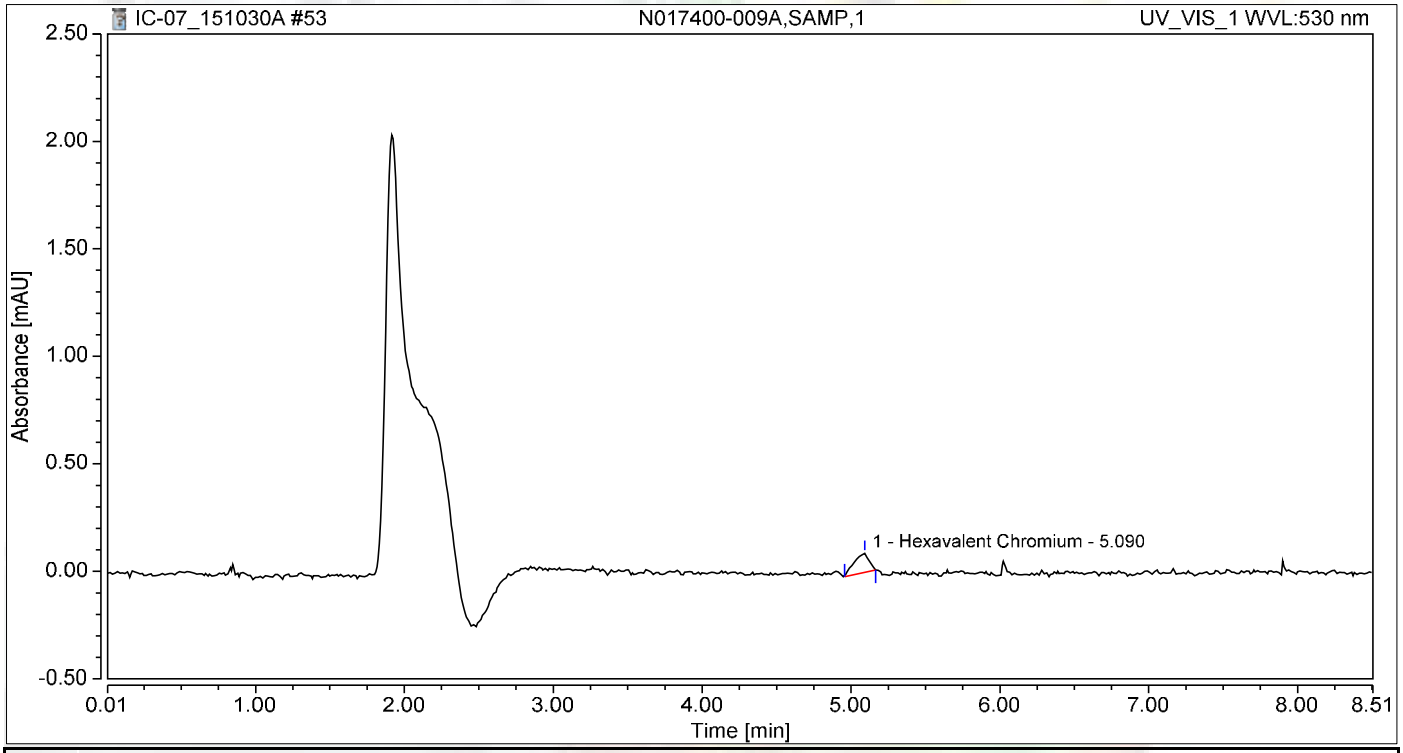
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.367	1.714	100.00	100.00	1.5569
Total:			**0.367**	**1.714**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

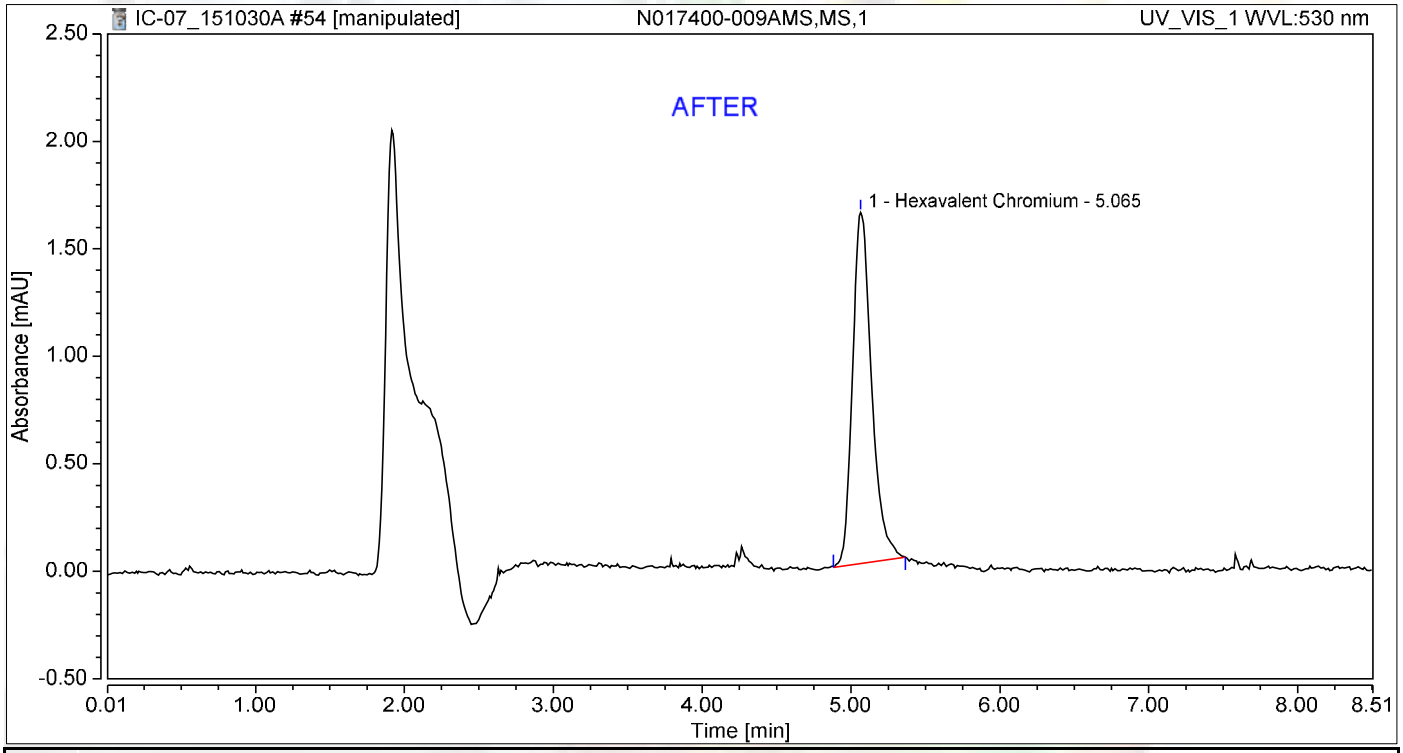
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.010	0.088	100.00	100.00	0.0431
Total:			**0.010**	**0.088**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.240	1.633	100.00	100.00	1.0174
Total:			**0.240**	**1.633**	**100.00**	**100.00**	

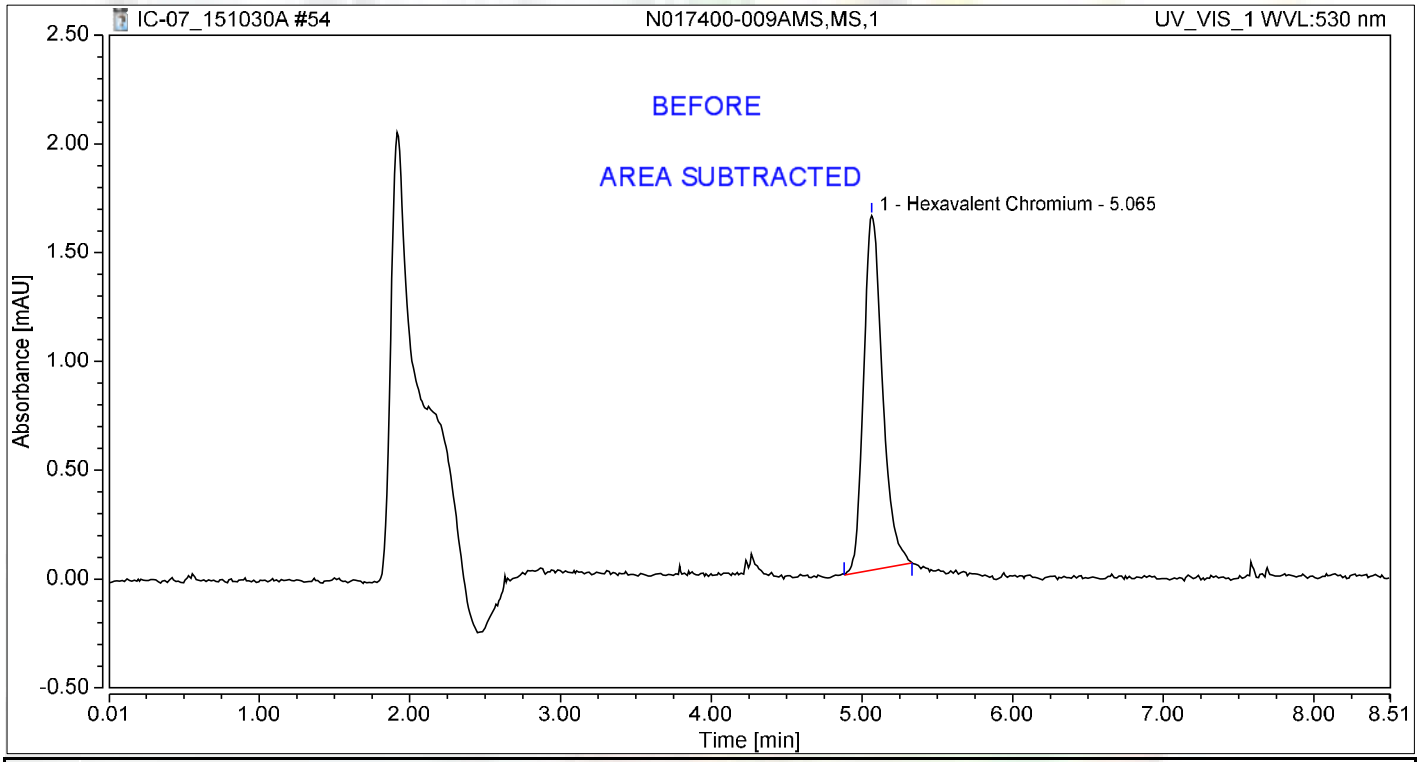
11/11/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017400-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

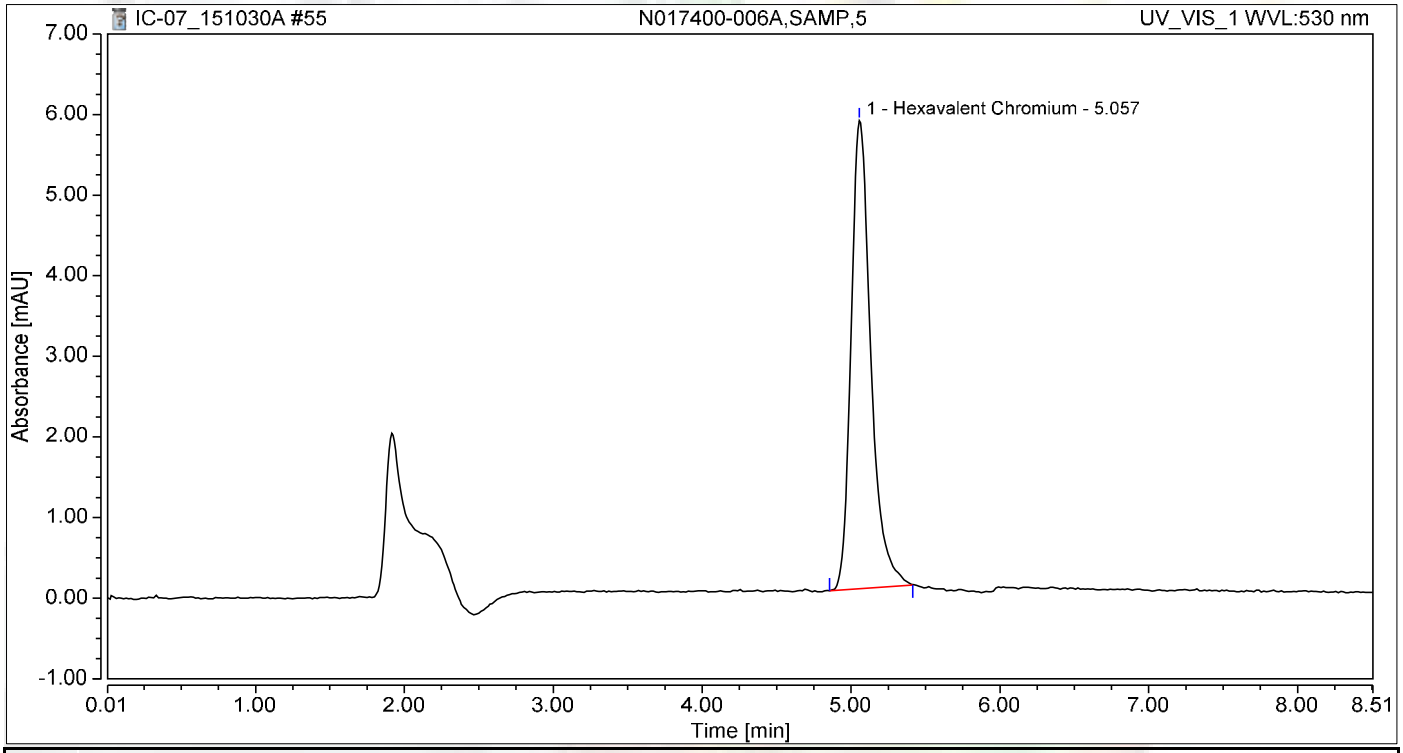
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.237	1.628	100.00	100.00	1.0046
Total:			**0.237**	**1.628**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

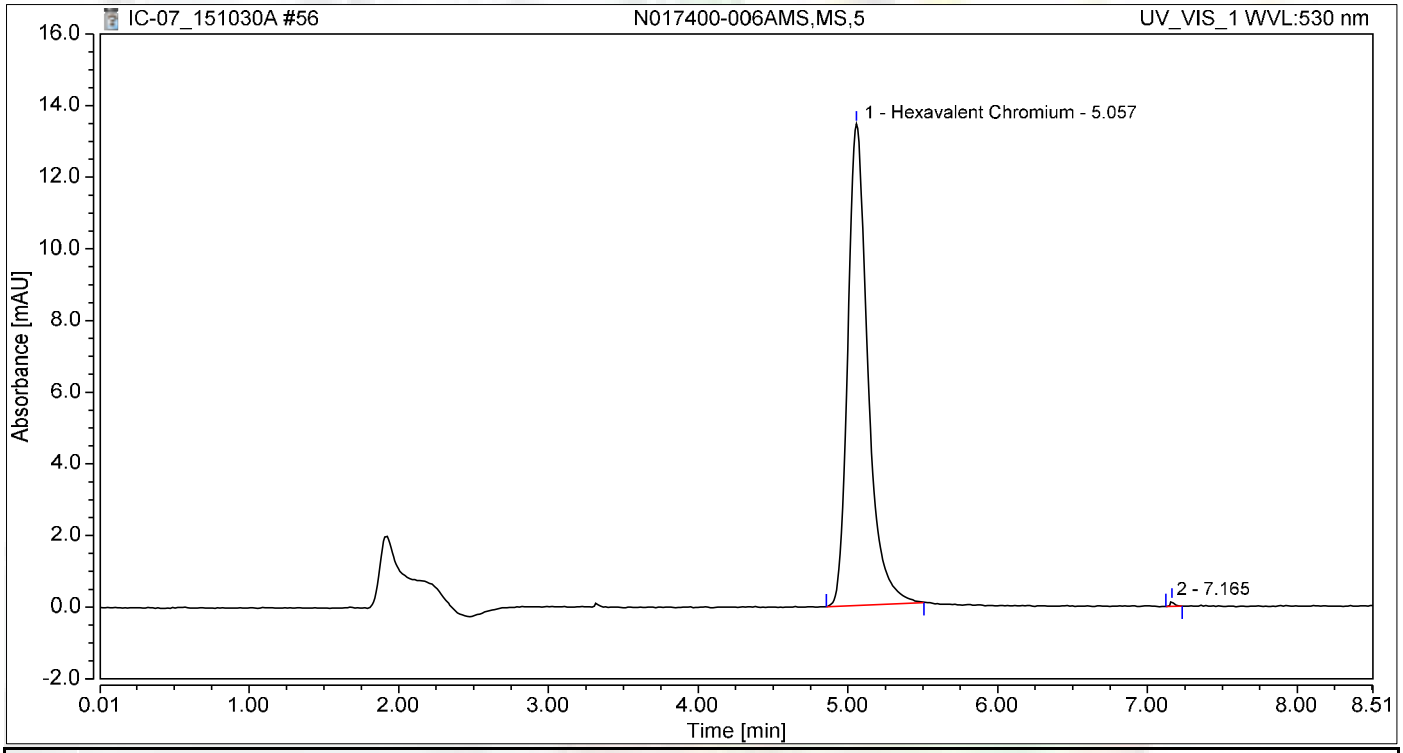
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.885	5.806	100.00	100.00	3.7524
Total:			**0.885**	**5.806**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017400-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

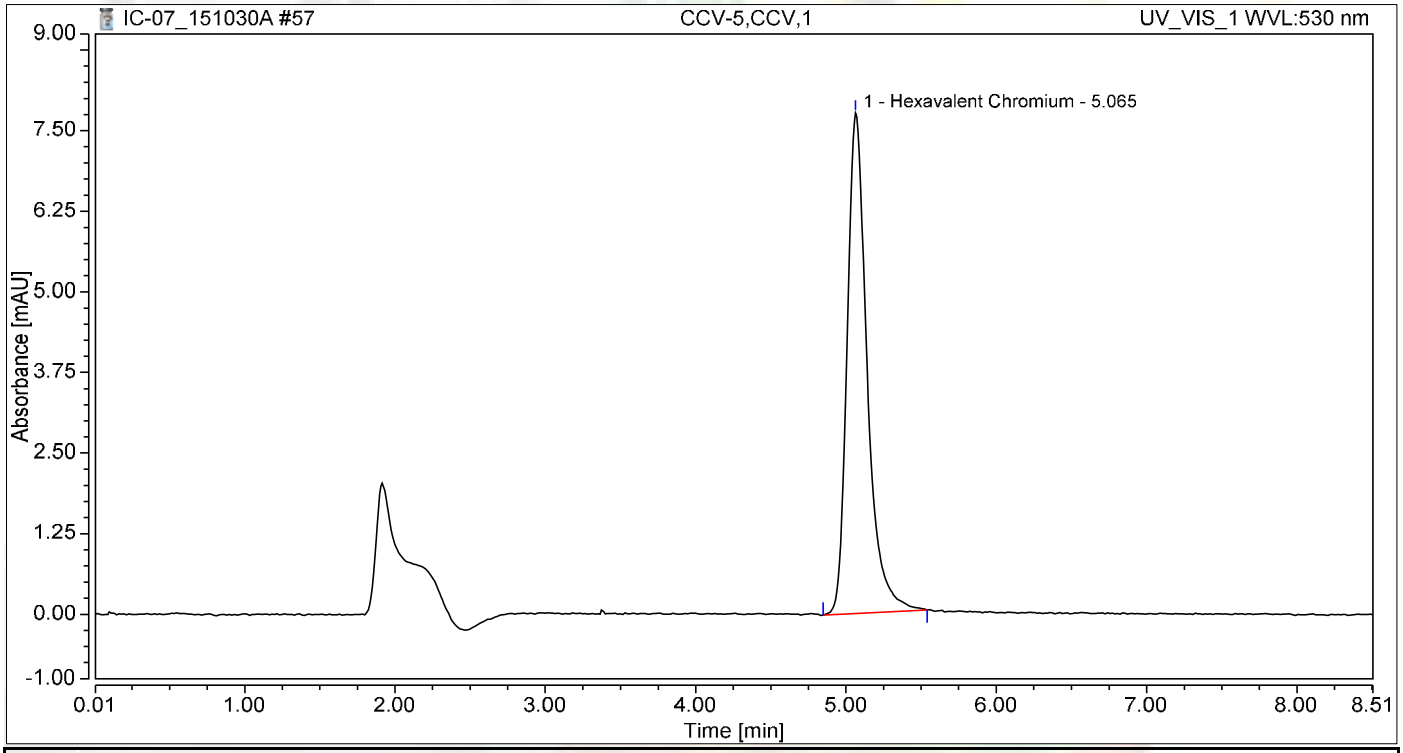
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	2.071	13.436	99.78	98.86	8.7867
2		7.165	0.005	0.155	0.22	1.14	n.a.
Total:			**2.076**	**13.591**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1**	*Run Time (min):*	**8.50**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

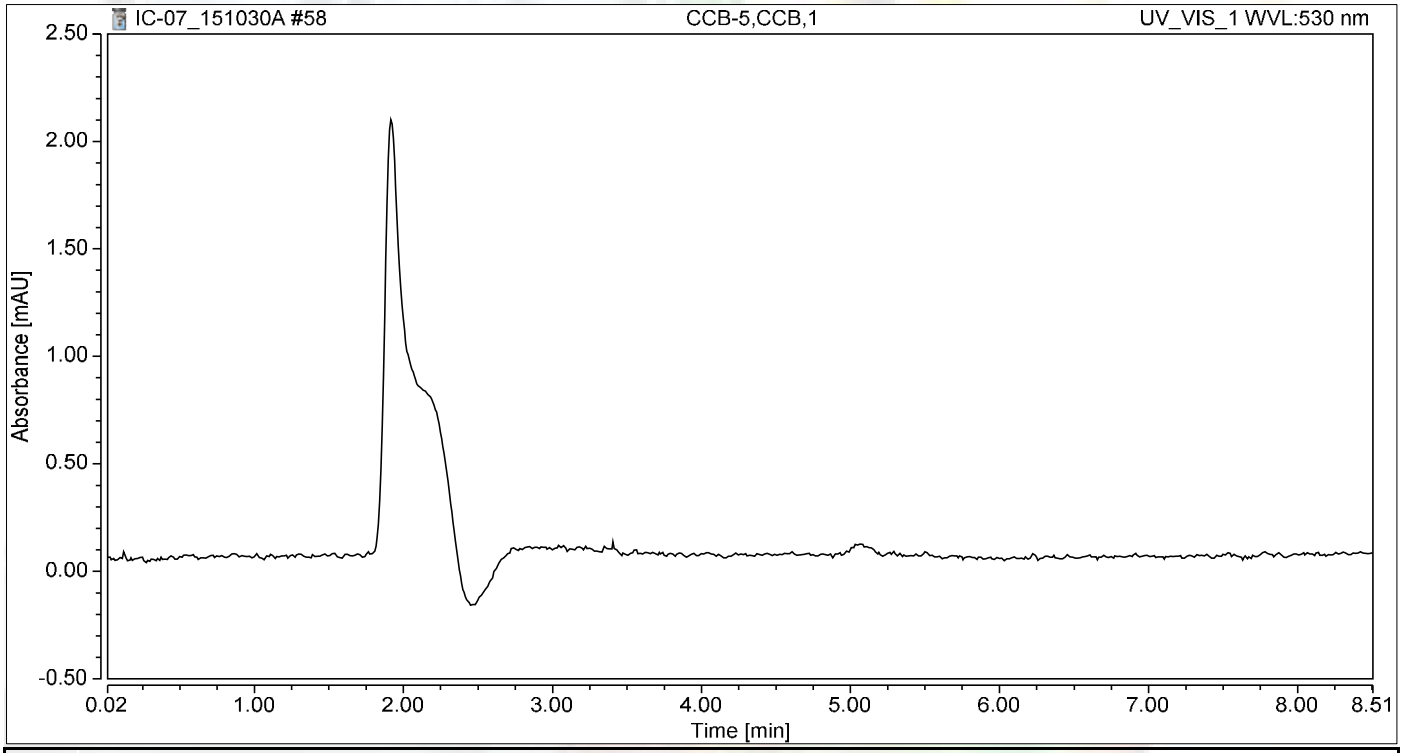
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.191	7.760	100.00	100.00	5.0518
Total:			**1.191**	**7.760**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1**	*Run Time (min):*	**8.49**
Vial Number:	**50**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151002_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Oct/15 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103909 **Analyst:** LSR

ASSET #: N017400 **Date Analyzed:** 10/28/2015

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/4/2015

2nd Level Reviewer: Mary 11/10/201 Date: —

SAMPLE CALCULATION

Sample ID: **N017400-001D @ pH 7.57**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (11.55mL)

= **0.021645 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.10) (0.021645 N) (1) * 1000

= 88.7445 **mg/L**

Reporting results in two significant figures,

= **89 mg/L** as CaCO3

Sirisha Ramit 11/4/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.021645 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.10 mL) (0.021645) (1) * 1000

= 88.7445 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 88.7445 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 89 **mg/L**

Julia Ramit 11/4/2015

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.30	50	0.00	0.05	MBLK
LCS-1	8.16	50	0.00	4.60	LCS
N017399-001B	7.49	50	0.00	9.20	SAMP
N017399-002C	7.51	50	0.00	6.00	SAMP
N017400-001D	7.57	50	0.00	4.10	SAMP
N017400-002D	7.51	50	0.00	5.30	SAMP
N017400-003C	7.52	50	0.00	2.10	SAMP
N017400-004C	7.54	50	0.00	4.10	SAMP
N017400-005C	7.80	50	0.00	3.40	SAMP
N017400-006C	7.80	50	0.00	3.30	SAMP
N017400-007C	7.66	50	0.00	3.10	SAMP
N017400-008C	7.63	50	0.00	3.60	SAMP
N017403-006F	6.91	50	0.00	14.80	SAMP
N017403-008F	6.96	50	0.00	12.20	SAMP
N017400-003C DUP	7.52	50	0.00	2.10	DUP
N017400-004C MS	8.56	50	0.50	8.70	MS
N017400-004C MSD	8.56	50	0.50	8.75	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**11.55**	ml
N H2SO4	**0.02165**	Normal
Date Analyzed:	**10/28/15**	
Time:	**16:30**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-150202G**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R150925A**	

Julia Ramit 11/4/2015

Date Analyzed:	10/28/15		Reagents:					Standardization:					P = 0
Time Started:	4:30 PM			Sodium Carbonate:		CINV-150202G			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.55	mL		P = 1/2 T
				Sulfuric Acid:		R150925A							P > 1/2 T
									N H2SO4	0.02165	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.3				0.02165	0.00	0.05	0.05	1	0.00	1.08	
LCS-1	50	8.16				0.02165	0.00	4.60	4.60	1	0.00	99.57	
N017399-001B	50	7.49				0.02165	0.00	9.20	9.20	1	0.00	199.13	
N017399-002C	50	7.51				0.02165	0.00	6.00	6.00	1	0.00	129.87	
N017400-001D	50	7.57				0.02165	0.00	4.10	4.10	1	0.00	88.74	
N017400-002D	50	7.51				0.02165	0.00	5.30	5.30	1	0.00	114.72	
N017400-003C	50	7.52				0.02165	0.00	2.10	2.10	1	0.00	45.45	
N017400-004C	50	7.54				0.02165	0.00	4.10	4.10	1	0.00	88.74	
N017400-005C	50	7.8				0.02165	0.00	3.40	3.40	1	0.00	73.59	
N017400-006C	50	7.8				0.02165	0.00	3.30	3.30	1	0.00	71.43	
N017400-007C	50	7.66				0.02165	0.00	3.10	3.10	1	0.00	67.10	
N017400-008C	50	7.63				0.02165	0.00	3.60	3.60	1	0.00	77.92	
N017403-006F	50	6.91				0.02165	0.00	14.80	14.80	1	0.00	320.35	
N017403-008F	50	6.96				0.02165	0.00	12.20	12.20	1	0.00	264.07	
N017400-003C DUP	50	7.52				0.02165	0.00	2.10	2.10	1	0.00	45.45	
N017400-004C MS	50	8.56				0.02165	0.50	8.20	8.70	1	10.82	188.31	
N017400-004C MSD	50	8.56				0.02165	0.50	8.25	8.75	1	10.82	189.39	

Julia Ramit 11/4/2015

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	10/28/15
Time:	4:30 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.08	1.08	1.08		P = 0
LCS-1	0.00	0.00	99.57	99.57	99.57		P = 0
N017399-001B	0.00	0.00	199.13	199.13	199.13		P = 0
N017399-002C	0.00	0.00	129.87	129.87	129.87		P = 0
N017400-001D	0.00	0.00	88.74	88.74	88.74		P = 0
N017400-002D	0.00	0.00	114.72	114.72	114.72		P = 0
N017400-003C	0.00	0.00	45.45	45.45	45.45		P = 0
N017400-004C	0.00	0.00	88.74	88.74	88.74		P = 0
N017400-005C	0.00	0.00	73.59	73.59	73.59		P = 0
N017400-006C	0.00	0.00	71.43	71.43	71.43		P = 0
N017400-007C	0.00	0.00	67.10	67.10	67.10		P = 0
N017400-008C	0.00	0.00	77.92	77.92	77.92		P = 0
N017403-006F	0.00	0.00	320.35	320.35	320.35		P = 0
N017403-008F	0.00	0.00	264.07	264.07	264.07		P = 0
N017400-003C DUP	0.00	0.00	45.45	45.45	45.45		P = 0
N017400-004C MS	0.00	21.65	166.67	188.31	188.31		P < 1/2 T
N017400-004C MSD	0.00	21.65	167.75	189.39	189.39		P < 1/2 T

Silvia Ramit 11/4/2015

Alkalinity Preparation and Runlog

Book #5

Matrix: H_2O

Date Extracted: 10/28/15
Time Extracted: 10/28/15
Extracted By: LSR

Date Analyzed: 10/28/15
Time Analyzed: 1630
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: GNV-150202G
Hydrochloric Acid: —
Sulfuric Acid: R150925A
$NaHCO_3$: GNV-150601A

pH meter CALIBRATION:
SLOPE: 96.6%
pH 4 - 4.01 - GNV150126A
7 - 6.98 - 150828A
10 - 10.05 - 150708A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.77	IWST151028A	5 mL	0.05N	-	-	11.60	50/50	$N\ H_2SO_4 = \frac{(2.65\ g/L)(5\ mL)}{(53)(V\ titrant)}$	=0.021551724
	#2	↓	10.74	↓	↓	↓	-	-	11.50	↓		=0.021739130
1)	MBLK	50 mL	5.30	—	-	-	0.02165	0	0.05	50/50		Ave: 0.021645427
2)	LCS		8.16	IWST1028B	1 mL	0.05N		0	4.60			
3)	N017399-001B		7.49	—	-	-		0	9.20			
4)	↓ -002C		7.51	—	-	-		0	6.0			
5)	N017400-001D		7.57	—	-	-		0	4.10			
6)	-002D		7.51	—	-	-		0	5.30			
7)	-003C		7.52	—	-	-		0	2.10			
8)	-004C		7.54	—	-	-		0	4.10			
9)	-005C		7.80	—	-	-		0	3.40			
10)	-006C		7.80	—	-	-		0	3.30			
11)	-007C		7.66	—	-	-		0	3.10			
12)	-008C		7.63	—	-	-		0	3.60			
13)	N017403-006F		6.91	—	-	-		0	14.80			
14)	↓ -008F		6.96	—	-	-		0	12.20			
15)	N017400-003C DUP		7.52	—	-	-		0	2.10			
16)	-004C MS		8.56	IWST151028B	1 mL	0.05N		0.50	8.70			
17)	-004C MSD		8.56	↓	↓	↓		0.50	8.75			
18)												
19)				$P = \frac{(V_{pH}\ 8.3)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$								
20)												
	MS											
	MSD			$T = \frac{(V_{pH}\ 4.5)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$								
	LCS											

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19 of 100

Julia Ramit 11/4/2015

EPA 245.1
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52920
ASSET #: N017400

Instrument ID: AA1
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[X] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)			X			
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?			X			
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)			X			
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.			X			
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/13/2015 Date: —

2nd Level Reviewer 11/13/2015 Date: —

SAMPLE CALCULATION

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Sample Calculation

Work Order No.:	**N017400**
Test Method:	**EPA 7470**
Matrix:	**Water**

FORMULA:

Calculate the Mercury concentration in ug/L in the original sample as follows:

Hg = [A][DF]

where:

A = ppt, instrument calculated concentration
DF = dilution factor

For: **N017400-001B**

The concentration in ug/L is calculated as follows:

Hg = [A][DF]

Hg = [0.08076][1]

Hg = 0.08076 ug/L

Since result is less than 0.2 ug/L reporting limit.

Hg = ND ug/L

ANALYSIS RUN LOG

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
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INJECTION LOG: 151105WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
Calibration Zero	IBLK	1	11/5/2015	12:20:04	Reported
Standard #1	ICAL	1	11/5/2015	12:22:46	Reported
Standard #2	ICAL	1	11/5/2015	12:25:28	Reported
Standard #3	ICAL	1	11/5/2015	12:28:11	Reported
Standard #4	ICAL	1	11/5/2015	12:30:55	Reported
Standard #5	ICAL	1	11/5/2015	12:33:39	Reported
ICV	ICV	1	11/5/2015	12:36:24	Reported
ICB	ICB	1	11/5/2015	12:39:05	Reported
MB-52920	MBLK	1	11/5/2015	12:41:47	Reported
LCS-52920	LCS	1	11/5/2015	12:44:30	Not Reported
N017415-001B-MS	MS	1	11/5/2015	12:47:14	Reported
N017415-001B-MSD	MSD	1	11/5/2015	12:49:57	Reported
N017415-001B	SAMP	1	11/5/2015	12:52:38	Reported
N017415-002B	SAMP	1	11/5/2015	12:55:21	Reported
N017415-003B	SAMP	1	11/5/2015	12:58:03	Reported
N017415-004B	SAMP	1	11/5/2015	13:00:47	Reported
N017415-005B	SAMP	1	11/5/2015	13:03:31	Reported
N017415-006B	SAMP	1	11/5/2015	13:06:15	Reported
CCV1	CCV	1	11/5/2015	13:08:59	Reported
CCB1	CCB	1	11/5/2015	13:11:41	Reported
N017415-007B	SAMP	1	11/5/2015	13:14:23	Reported
N017400-001B	SAMP	1	11/5/2015	13:17:05	Reported
N017400-002B	SAMP	1	11/5/2015	13:19:48	Reported
N017427-001B	SAMP	1	11/5/2015	13:22:32	Reported
N017427-002B	SAMP	1	11/5/2015	13:25:16	Reported
N017427-002B-MS	MS	1	11/5/2015	13:28:00	Reported
N017424-001A	SAMP	1	11/5/2015	13:30:45	Reported
N017425-001A	SAMP	1	11/5/2015	13:33:30	Reported
N017425-002A	SAMP	1	11/5/2015	13:36:13	Reported
N017425-003A	SAMP	1	11/5/2015	13:38:57	Reported
CCV2	CCV	1	11/5/2015	13:41:39	Reported
CCB2	CCB	1	11/5/2015	13:56:01	Reported
LCS-52920	LCS	1	11/5/2015	13:58:44	Reported
N017425-004A	SAMP	1	11/5/2015	14:01:28	Reported
N017456-001B	SAMP	1	11/5/2015	14:04:13	Reported
CCV3	CCV	1	11/5/2015	14:06:56	Reported
CCV3	CCV	1	11/5/2015	14:12:23	Reported
CCB3	CCB	1	11/5/2015	14:15:05	Reported

NR

SAMPLE PREPARATION LOG

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PREP BATCH REPORT

Prep Start Date: **11/3/2015 7:53:18 A**
Prep End Date: **11/3/2015 11:00:00**

Initials/ Date: 11/13/2015

Prep Factor Units: **mL / mL**

Prep Batch **52920** Prep Code: **7470_PR** Technician: **Claire Ignacio**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52920	Aqueous		25	☐	0	0	50	2.000		
MB-52920	Aqueous		25	☐	0	0	50	2.000		
N017400-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017400-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-003B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-004B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-005B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-006B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-007B	Groundwater	<2	25	☐	0	0	50	2.000		
N017424-001A	Water	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
6712	POTASSIUM PERMANGANATE
6757	HYDROXYLAMINE HCl
6837	Potassium Persulfate
6972	SODIUM CHLORIDE
7028	sulfuric acid
7399	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151008	500ppb Hg PRIMARY	ICAL/CCV	0.25
2MWST-151008	500ppb Hg SECONDARY	ICV/LCS/MS/M	0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/3/2015 7:53:18 A**
Prep End Date: **11/3/2015 11:00:00**

Initials/ Date: 11/13/2015

Prep Factor Units: **mL / mL**

Prep Batch **52920** Prep Code: **7470_PR** Technician: **Claire Ignacio**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017425-001A	Water	<2	25	☐	0	0	50	2.000		
N017425-002A	Water	<2	25	☐	0	0	50	2.000		
N017425-003A	Water	<2	25	☐	0	0	50	2.000		
N017425-004A	Water	<2	25	☐	0	0	50	2.000		
N017427-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017427-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017427-002B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017456-001B	Wastewater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
6712	POTASSIUM PERMANGANATE
6757	HYDROXYLAMINE HCl
6837	Potassium Persulfate
6972	SODIUM CHLORIDE
7028	sulfuric acid
7399	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151008	500ppb Hg PRIMARY	ICAL/CCV	0.25
2MWST-151008	500ppb Hg SECONDARY	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

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INITIAL CALIBRATION SUMMARY: 151105WA

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-150310A	2MWST-151008A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	11/05/2015	12:20:04	0	PPB	26.62393	Reported	
Standard #1	11/05/2015	12:22:46	0.2	PPB	115.62846	Reported	
Standard #2	11/05/2015	12:25:28	1	PPB	706.13316	Reported	
Standard #3	11/05/2015	12:28:11	5	PPB	3808.99145	Reported	
Standard #4	11/05/2015	12:30:55	10	PPB	7952.69128	Reported	
Standard #5	11/05/2015	12:33:39	20	PPB	16010.4442	Reported	0.99993

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID: **ICV** SampType: **ICV** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **ICV** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.169	0.20	10.00	0	102	95	105				

Sample ID: **CCV1** SampType: **CCV** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **CCV** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.686	0.20	10.00	0	96.9	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **CCV** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.984	0.20	10.00	0	99.8	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **CCV** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.068	0.20	10.00	0	101	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
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Date: *12-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID: **ICB** SampType: **ICB** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **ICB** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.092	0.20									

Sample ID: **CCB1** SampType: **CCB** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **CCB** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.088	0.20									

Sample ID: **CCB2** SampType: **CCB** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **CCB** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.103	0.20									

Sample ID: **CCB3** SampType: **CCB** TestCode: **245.1_WD** Units: **µg/L** Prep Date: RunNo: **103981**
Client ID: **CCB** Batch ID: **R103981** TestNo: **EPA 245.1** Analysis Date: **11/5/2015** SeqNo: **2133196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.119	0.20									

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Mercury by Cold Vapor Technique**
Method Number: EPA 7470/245.1
Analysis Date(s): 3/23/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **HG-01**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Mercury	0.03523	0.05801	0.04800	0.05661	0.04472	0.04975	0.04420	0.050	0.0078	3.143	**0.025**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

* Please note that the instrument printout for Conc were represented in two decimal places. The exact values are represented in the MDL summary for calculation purposes.

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103929
ASSET #: N017390 / N017399 / N017400

Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 10/30/2015

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 11/6/2015

2nd Level Reviewer _____ 11/11/2015 Date: _____

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103951
ASSET #: N017390 / N017400 / N017427

Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 10/31/2015

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 11/6/2015

2nd Level Reviewer 11/11/2015 Date: —

SAMPLE CALCULATION

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the original sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N017400-001D**, concentration in mg/L are calculated as follows:

Chloride, mg/L = 3.992 * 500

= 1996

Reporting **N017400-001D** results in two significant figures,

Chloride, mg/L = 2000



ANALYSIS RUN LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

DIONEX SCHEDULE - C:\DX\SCHEDULE\151012.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15101201.D01	1	1	1
2	,BLANK,	..\151012.M	..\15101201.D02	1	1	1
3	AUTOCAL1R	..\151012.M	..\15101201.D03	1	1	1
4	AUTOCAL2R	..\151012.M	..\15101201.D04	1	1	1
5	AUTOCAL3R	..\151012.M	..\15101201.D05	1	1	1
6	AUTOCAL4R	..\151012.M	..\15101201.D06	1	1	1
7	AUTOCAL5R	..\151012.M	..\15101201.D07	1	1	1
8	AUTOCAL6R	..\151012.M	..\15101201.D08	1	1	1
9	,ICV,ICV,1,	..\151012.M	..\15101201.D09	1	1	1
10	,ICB,ICB,1,	..\151012.M	..\15101201.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\151012.M	..\15101201.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\151012.M	..\15101201.D12	1	1	1
13	,MDL-1,1,	..\151012.M	..\15101201.D13	1	1	1
14	,MDL-2,1,	..\151012.M	..\15101201.D14	1	1	1
15	,MDL-3,1,	..\151012.M	..\15101201.D15	1	1	1
16	,MDL-4,1,	..\151012.M	..\15101201.D16	1	1	1
17	,MDL-5,1,	..\151012.M	..\15101201.D17	1	1	1
18	,MDL-6,1,	..\151012.M	..\15101201.D18	1	1	1
19	,MDL-7,1,	..\151012.M	..\15101201.D19	1	1	1
20	,CCV-1,CCV,1,	..\151012.M	..\15101201.D20	1	1	1
21	,CCB-1,CCB,1,	..\151012.M	..\15101201.D21	1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

10/21/2015

DIONEX SCHEDULE - C:\DX\SCHEDULE\151030.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.	
1	,BLANK,	..\151012.M	..\15103001.D01	1	1	1	
2	,CCV-1,CCV,1,	..\151012.M	..\15103001.D02	1	1	1	
3	,CCB-1,CCB,1,	..\151012.M	..\15103001.D03	1	1	1	
4	,MB-H2O,MBLK,1,	..\151012.M	..\15103001.D04	1	1	1	
5	,LCS-H2O,LCS,1,	..\151012.M	..\15103001.D05	1	1	1	
6	,N017434-003B,SAMP,	..\151012.M	..\15103001.D06	1	1	1	
7	,N017434-004B,SAMP,	..\151012.M	..\15103001.D07	1	1	1	
8	,N017434-008B,SAMP,	..\151012.M	..\15103001.D08	1	1	1	
9	,N017434-009B,SAMP,	..\151012.M	..\15103001.D09	1	1	1	
10	,N017435-003B,SAMP,	..\151012.M	..\15103001.D10	1	1	1	
11	,N017435-008B,SAMP,	..\151012.M	..\15103001.D11	1	1	1	
12	,N017435-010B,SAMP,	..\151012.M	..\15103001.D12	1	1	1	
13	,N017434-004B,SAMP,	..\151012.M	..\15103001.D13	1	1	1	
14	,CCV-2,CCV,1,	..\151012.M	..\15103001.D14	1	1	1	
15	,CCB-2,CCB,1,	..\151012.M	..\15103001.D15	1	1	1	
16	,N017435-008B,SAMP,1	..\151012.M	..\15103001.D16	1	1	1	N017435-008B,SAMP,1
17	,N017435-010BDUP,DU	..\151012.M	..\15103001.D17	1	1	1	
18	,N017435-010BMS,MS,	..\151012.M	..\15103001.D18	1	1	1	
19	,N017435-010BMS,MS,	..\151012.M	..\15103001.D19	1	1	1	
20	,N017435-010BMSD,MS	..\151012.M	..\15103001.D20	1	1	1	
21	,N017434-004B,SAMP,	..\151012.M	..\15103001.D21	1	1	1	
22	,N017434-008B,SAMP,	..\151012.M	..\15103001.D22	1	1	1	
23	,N017434-009B,SAMP,	..\151012.M	..\15103001.D23	1	1	1	
24	,N017435-003B,SAMP,	..\151012.M	..\15103001.D24	1	1	1	
25	,N017435-008B,SAMP,	..\151012.M	..\15103001.D25	1	1	1	
26	,CCV-3,CCV,1,	..\151012.M	..\15103001.D26	1	1	1	
27	,CCB-3,CCB,1,	..\151012.M	..\15103001.D27	1	1	1	
28	,N017435-010B,SAMP,	..\151012.M	..\15103001.D28	1	1	1	
29	,N017434-004BMS,MS,	..\151012.M	..\15103001.D29	1	1	1	
30	,N017390-001C,SAMP,	..\151012.M	..\15103001.D30	1	1	1	
31	,N017390-001C,SAMP,	..\151012.M	..\15103001.D31	1	1	1	
32	,N017400-005C,SAMP,	..\151012.M	..\15103001.D32	1	1	1	
33	,N017400-005C,SAMP,	..\151012.M	..\15103001.D33	1	1	1	
34	,N017399-001B,SAMP,	..\151012.M	..\15103001.D34	1	1	1	
35	,N017399-001BDUP,DU	..\151012.M	..\15103001.D35	1	1	1	
36	,N017399-001B,SAMP,	..\151012.M	..\15103001.D36	1	1	1	
37	,N017399-001BDUP,DU	..\151012.M	..\15103001.D37	1	1	1	
38	,CCV-4,CCV,1,	..\151012.M	..\15103001.D38	1	1	1	
39	,CCB-4,CCB,1,	..\151012.M	..\15103001.D39	1	1	1	
40	,N017399-002C,SAMP,	..\151012.M	..\15103001.D40	1	1	1	
41	,N017399-002CMS,MS,	..\151012.M	..\15103001.D41	1	1	1	
42	,N017399-002CMSD,MS	..\151012.M	..\15103001.D42	1	1	1	
43	,N017399-002C,SAMP,	..\151012.M	..\15103001.D43	1	1	1	
44	,N017399-002CMS,MS,	..\151012.M	..\15103001.D44	1	1	1	
45	,N017399-002CMSD,MS	..\151012.M	..\15103001.D45	1	1	1	
46	,N017390-001C,SAMP,	..\151012.M	..\15103001.D46	1	1	1	
47	,N017400-005C,SAMP,	..\151012.M	..\15103001.D47	1	1	1	
48	,N017400-001D,SAMP,	..\151012.M	..\15103001.D48	1	1	1	
49	,N017400-001D,SAMP,	..\151012.M	..\15103001.D49	1	1	1	
50	,CCV-5,CCV,1,	..\151012.M	..\15103001.D50	1	1	1	
51	,CCB-5,CCB,1,	..\151012.M	..\15103001.D51	1	1	1	
52	,N017400-002D,SAMP,	..\151012.M	..\15103001.D52	1	1	1	
53	,N017400-002D,SAMP,	..\151012.M	..\15103001.D53	1	1	1	
54	,N017400-003C,SAMP,	..\151012.M	..\15103001.D54	1	1	1	
55	,N017400-003C,SAMP,	..\151012.M	..\15103001.D55	1	1	1	
56	,N017400-004C,SAMP,	..\151012.M	..\15103001.D56	1	1	1	
57	,N017400-004C,SAMP,	..\151012.M	..\15103001.D57	1	1	1	
58	,N017400-006C,SAMP,	..\151012.M	..\15103001.D58	1	1	1	
59	,N017400-006C,SAMP,	..\151012.M	..\15103001.D59	1	1	1	
60	,N017400-007C,SAMP,	..\151012.M	..\15103001.D60	1	1	1	
61	,N017400-007C,SAMP,	..\151012.M	..\15103001.D61	1	1	1	
62	,CCV-6,CCV,1,	..\151012.M	..\15103001.D62	1	1	1	
63	,CCB-6,CCB,1,	..\151012.M	..\15103001.D63	1	1	1	
64	,N017400-008C,SAMP,	..\151012.M	..\15103001.D64	1	1	1	
65	,N017400-008C,SAMP,	..\151012.M	..\15103001.D65	1	1	1	
66	,N017427-001D,SAMP,	..\151012.M	..\15103001.D66	1	1	1	
67	,N017427-001D,SAMP,	..\151012.M	..\15103001.D67	1	1	1	
68	,N017427-002D,SAMP,	..\151012.M	..\15103001.D68	1	1	1	
69	,N017427-002D,SAMP,	..\151012.M	..\15103001.D69	1	1	1	
70	,N017390-001CDUP,DU	..\151012.M	..\15103001.D70	1	1	1	
71	,N017390-001CMS,MS,	..\151012.M	..\15103001.D71	1	1	1	
72	,N017390-001CMSD,MS	..\151012.M	..\15103001.D72	1	1	1	
73	,N017400-001D,SAMP,	..\151012.M	..\15103001.D73	1	1	1	
74	,CCV-7,CCV,1,	..\151012.M	..\15103001.D74	1	1	1	

NR

11/6/2015

NR= Not Reported

DIONEX SCHEDULE - C:\DX\SCHEDULE\151031.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15103101.D01	1	1	1
2	,CCV-1,CCV,1,	..\151012.M	..\15103101.D02	1	1	1
3	,CCB-1,CCB,1,	..\151012.M	..\15103101.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\151012.M	..\15103101.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\151012.M	..\15103101.D05	1	1	1
6	,N017442-001B,SAMP,	..\151012.M	..\15103101.D06	1	1	1
7	,N017442-004B,SAMP,	..\151012.M	..\15103101.D07	1	1	1
8	,N017442-005B,SAMP,	..\151012.M	..\15103101.D08	1	1	1
9	,N017442-006B,SAMP,	..\151012.M	..\15103101.D09	1	1	1
10	,N017443-003B,SAMP,	..\151012.M	..\15103101.D10	1	1	1
11	,N017443-004B,SAMP,	..\151012.M	..\15103101.D11	1	1	1
12	,N017443-006B,SAMP,	..\151012.M	..\15103101.D12	1	1	1
13	,N017443-007B,SAMP,	..\151012.M	..\15103101.D13	1	1	1
14	,CCV-2,CCV,1,	..\151012.M	..\15103101.D14	1	1	1
15	,CCB-2,CCB,1,	..\151012.M	..\15103101.D15	1	1	1
16	,N017441-004B,SAMP,	..\151012.M	..\15103101.D16	1	1	1
17	,N017441-005B,SAMP,	..\151012.M	..\15103101.D17	1	1	1
18	,N017442-001B,SAMP,	..\151012.M	..\15103101.D18	1	1	1
19	,N017443-003B,SAMP,	..\151012.M	..\15103101.D19	1	1	1
20	,N017443-007BDUP,DU	..\151012.M	..\15103101.D20	1	1	1
21	,N017443-007BMS,MS,	..\151012.M	..\15103101.D21	1	1	1
22	,N017443-007BMSD,MS	..\151012.M	..\15103101.D22	1	1	1
23	,N017442-004B,SAMP,	..\151012.M	..\15103101.D23	1	1	1
24	,N017442-005B,SAMP,	..\151012.M	..\15103101.D24	1	1	1
25	,N017442-006B,SAMP,	..\151012.M	..\15103101.D25	1	1	1
26	,CCV-3,CCV,1,	..\151012.M	..\15103101.D26	1	1	1
27	,CCB-3,CCB,1,	..\151012.M	..\15103101.D27	1	1	1
28	,N017443-003B,SAMP,	..\151012.M	..\15103101.D28	1	1	1
29	,N017443-004B,SAMP,	..\151012.M	..\15103101.D29	1	1	1
30	,N017443-004BMS,MS,	..\151012.M	..\15103101.D30	1	1	1
31	,N017443-006B,SAMP,	..\151012.M	..\15103101.D31	1	1	1
32	,N017443-007B,SAMP,	..\151012.M	..\15103101.D32	1	1	1
33	,N017400-002D,SAMP,	..\151012.M	..\15103101.D33	1	1	1
34	,N017400-002DDUP,DU	..\151012.M	..\15103101.D34	1	1	1
35	,N017400-003C,SAMP,	..\151012.M	..\15103101.D35	1	1	1
36	,N017400-003CMS,MS,	..\151012.M	..\15103101.D36	1	1	1
37	,N017400-003CMSD,MS	..\151012.M	..\15103101.D37	1	1	1
38	,CCV-4,CCV,1,	..\151012.M	..\15103101.D38	1	1	1
39	,CCB-4,CCB,1,	..\151012.M	..\15103101.D39	1	1	1
40	,N017400-004C,SAMP,	..\151012.M	..\15103101.D40	1	1	1
41	,N017400-006C,SAMP,	..\151012.M	..\15103101.D41	1	1	1
42	,N017400-007C,SAMP,	..\151012.M	..\15103101.D42	1	1	1
43	,N017400-008C,SAMP,	..\151012.M	..\15103101.D43	1	1	1
44	,N017427-001D,SAMP,	..\151012.M	..\15103101.D44	1	1	1
45	,N017427-002D,SAMP,	..\151012.M	..\15103101.D45	1	1	1
46	,N017400-002D,SAMP,	..\151012.M	..\15103101.D46	1	1	1
47	,N017400-002DDUP,DU	..\151012.M	..\15103101.D47	1	1	1
48	,N017400-003C,SAMP,	..\151012.M	..\15103101.D48	1	1	1
49	,N017400-003CMS,MS,	..\151012.M	..\15103101.D49	1	1	1
50	,CCV-5,CCV,1,	..\151012.M	..\15103101.D50	1	1	1
51	,CCB-5,CCB,1,	..\151012.M	..\15103101.D51	1	1	1
52	,N017400-003CMSD,MS	..\151012.M	..\15103101.D52	1	1	1
53	,N017400-004C,SAMP,	..\151012.M	..\15103101.D53	1	1	1
54	,N017400-006C,SAMP,	..\151012.M	..\15103101.D54	1	1	1
55	,N017400-007C,SAMP,	..\151012.M	..\15103101.D55	1	1	1
56	,N017400-008C,SAMP,	..\151012.M	..\15103101.D56	1	1	1
57	,N017427-001D,SAMP,	..\151012.M	..\15103101.D57	1	1	1
58	,N017427-002D,SAMP,	..\151012.M	..\15103101.D58	1	1	1
59	,N017390-001C,SAMP,	..\151012.M	..\15103101.D59	1	1	1
60	,N017390-001CMS,MS,	..\151012.M	..\15103101.D60	1	1	1
61	,N017390-001CMSD,MS	..\151012.M	..\15103101.D61	1	1	1
62	,CCV-6,CCV,1,	..\151012.M	..\15103101.D62	1	1	1
63	,CCB-6,CCB,1,	..\151012.M	..\15103101.D63	1	1	1
64	,N017400-001D,SAMP,	..\151012.M	..\15103101.D64	1	1	1
65	,N017400-002D,SAMP,	..\151012.M	..\15103101.D65	1	1	1
66	,N017400-003C,SAMP,	..\151012.M	..\15103101.D66	1	1	1
67	,N017400-004C,SAMP,	..\151012.M	..\15103101.D67	1	1	1
68	,N017400-005C,SAMP,	..\151012.M	..\15103101.D68	1	1	1
69	,N017400-005CDUP,DU	..\151012.M	..\15103101.D69	1	1	1
70	,N017400-006C,SAMP,	..\151012.M	..\15103101.D70	1	1	1
71	,N017400-007C,SAMP,	..\151012.M	..\15103101.D71	1	1	1
72	,N017400-008C,SAMP,	..\151012.M	..\15103101.D72	1	1	1
73	,N017427-001D,SAMP,	..\151012.M	..\15103101.D73	1	1	1
74	,CCV-7,CCV,1,	..\151012.M	..\15103101.D74	1	1	1

11/6/2015

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
75	,CCB-7,CCB,1,	..\151012.M	..\15103101.D75	1	1	1
76	,N017427-002D,SAMP,	..\151012.M	..\15103101.D76	1	1	1
77	,CCV-8,CCV,1,	..\151012.M	..\15103101.D77	1	1	1
78	,CCB-8,CCB,1,	..\151012.M	..\15103101.D78	1	1	1
79	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

11/6/2015

INITIAL CALIBRATION DATA SUMMARY

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

DIONEX METHOD PARAMETERS - 151012.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

10/21/2015

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

10/21/2015

Component Table -- Last Modified: 16:44 on Mon, 12 Oct 2015

Component # 1 Fluoride Retention Time 2.71
Reference Comp. Fluoride Window Size 0.05 min.
Amount = K0 + K1*Area
K0 = 1.21838E-002
K1 = 2.39369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	22404	2579
3	5.00000E-001	196348	23135
4	1.00000E+000	405665	47246
5	2.50000E+000	1040848	129618
6	5.00000E+000	2084965	275326

Component # 2 Chloride Retention Time 4.12
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.51893E-002
K1 = 3.31876E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	142077	16162
3	1.00000E+000	281846	33232
4	2.50000E+000	734644	85716
5	5.00000E+000	1427982	175887
6	1.00000E+001	3020632	387582

Component # 3 Nitrite Retention Time 5.05
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 5.00308E-003
K1 = 1.85944E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	31734	2012
3	5.00000E-001	263959	18839
4	1.00000E+000	531236	38584
5	2.50000E+000	1331892	110811
6	5.00000E+000	2692079	240029

Component # 4 Bromide Retention Time 6.15
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -5.14938E-002
K1 = 7.25458E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	30666	2325
3	5.00000E-001	75718	5314
4	1.00000E+000	156766	11014
5	2.50000E+000	355924	26859
6	5.00000E+000	691679	56045

10/21/2015

Component # 5 Nitrate Retention Time 6.96
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.93433E-002
K1 = 1.32929E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	40317	2890
3	5.00000E-001	341615	25397
4	1.00000E+000	742823	51841
5	2.50000E+000	1831956	140466
6	5.00000E+000	3764108	298846

Component # 6 Phosphate Retention Time 9.11
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -5.25613E-003
K1 = 4.04495E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	21773	1555
3	5.00000E-001	120032	6390
4	1.00000E+000	256903	13753
5	2.50000E+000	625939	35044
6	5.00000E+000	1232870	71866

Component # 7 Sulfate Retention Time 10.43
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.09722E-001
K1 = 4.73420E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	105494	5187
3	2.00000E+000	376299	19426
4	5.00000E+000	1046779	50229
5	1.00000E+001	2021874	102155
6	2.00000E+001	4231586	220606

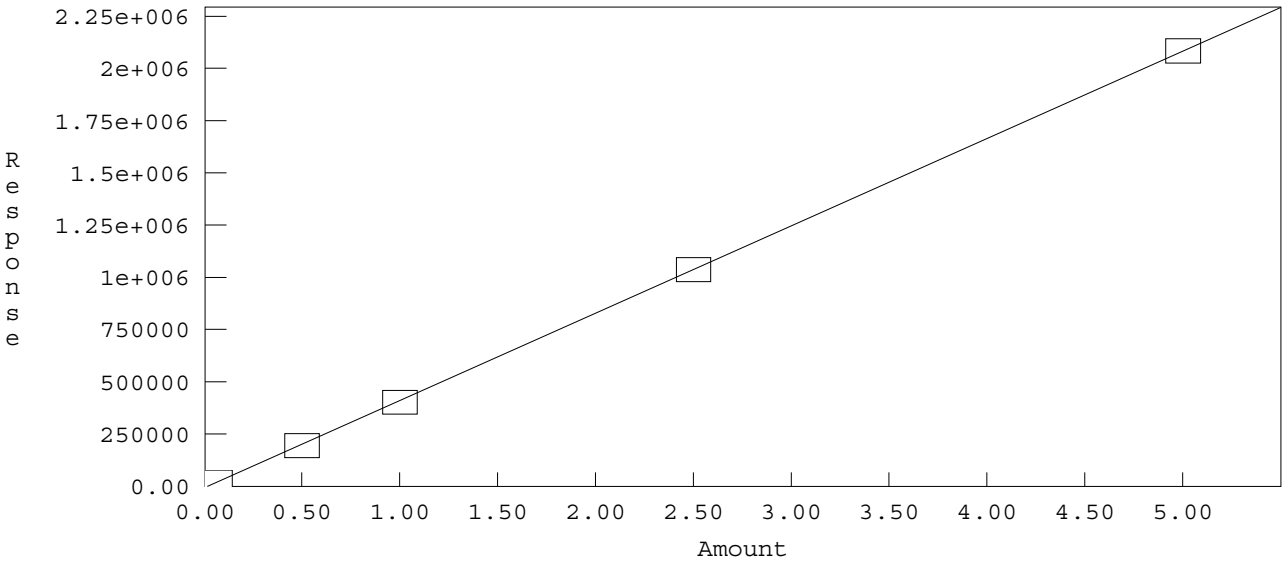
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

10/21/2015

Method: 151012.MET - Last Updated: 16:44 on Mon, 12 Oct 2015

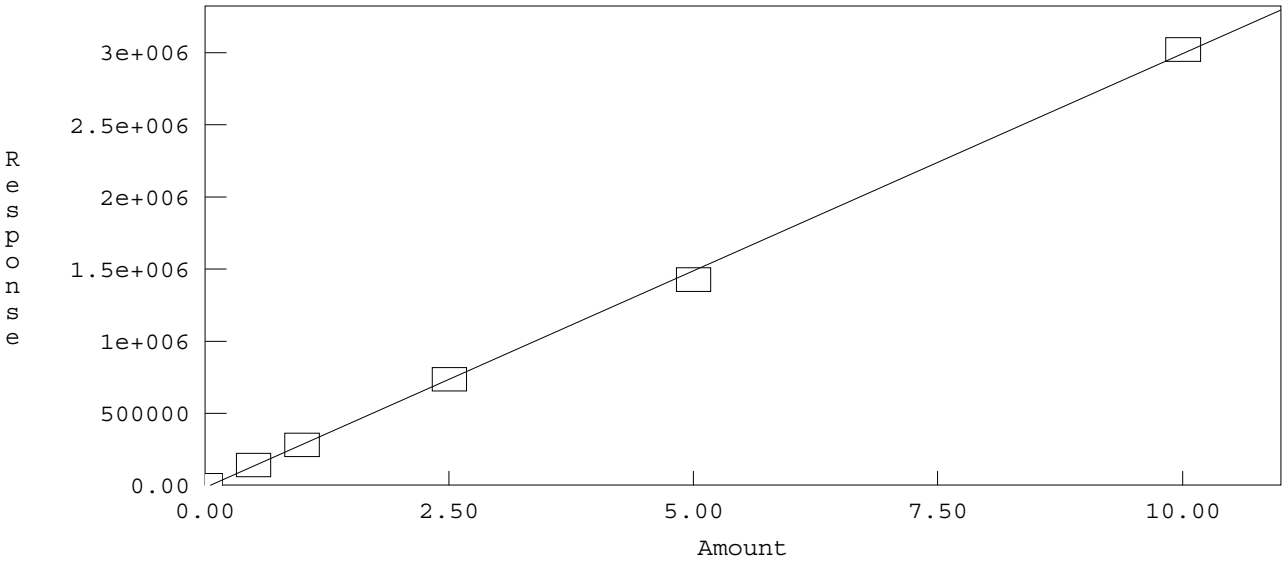
Component: Fluoride
Fit Type: Linear
r^2 = 0.999946
Amt = Resp * 2.394e-006 + 0.01218
Resp = Amt * 4.178e+005 + -5090
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

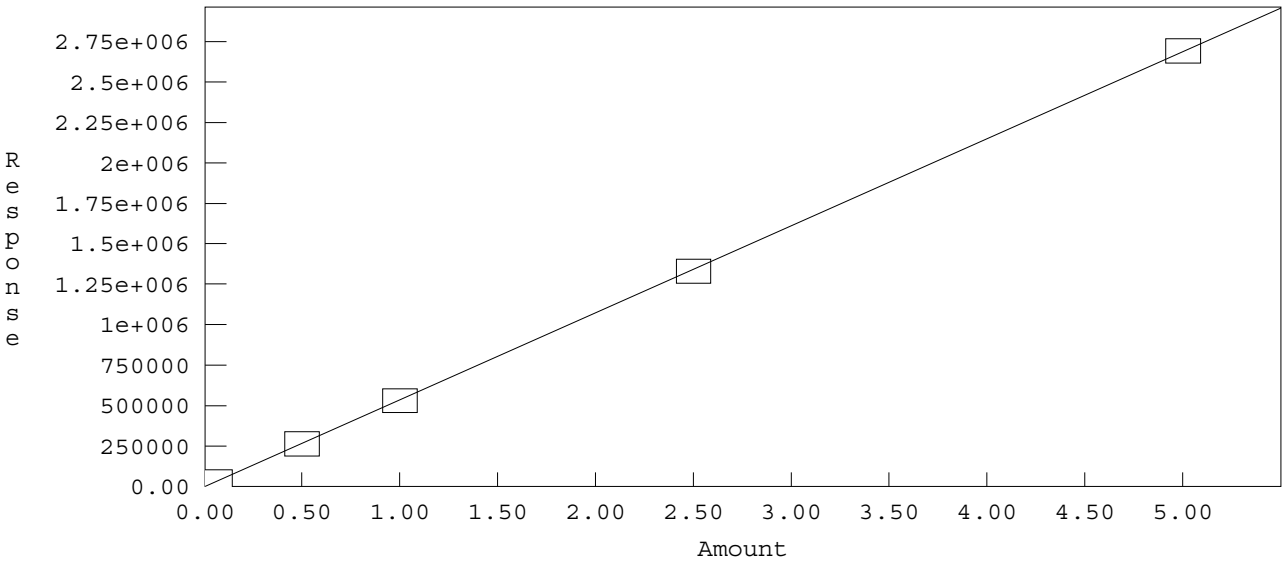
Component: Chloride
Fit Type: Linear
r^2 = 0.999281
Amt = Resp * 3.319e-006 + 0.06519
Resp = Amt * 3.013e+005 + -1.964e+004
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

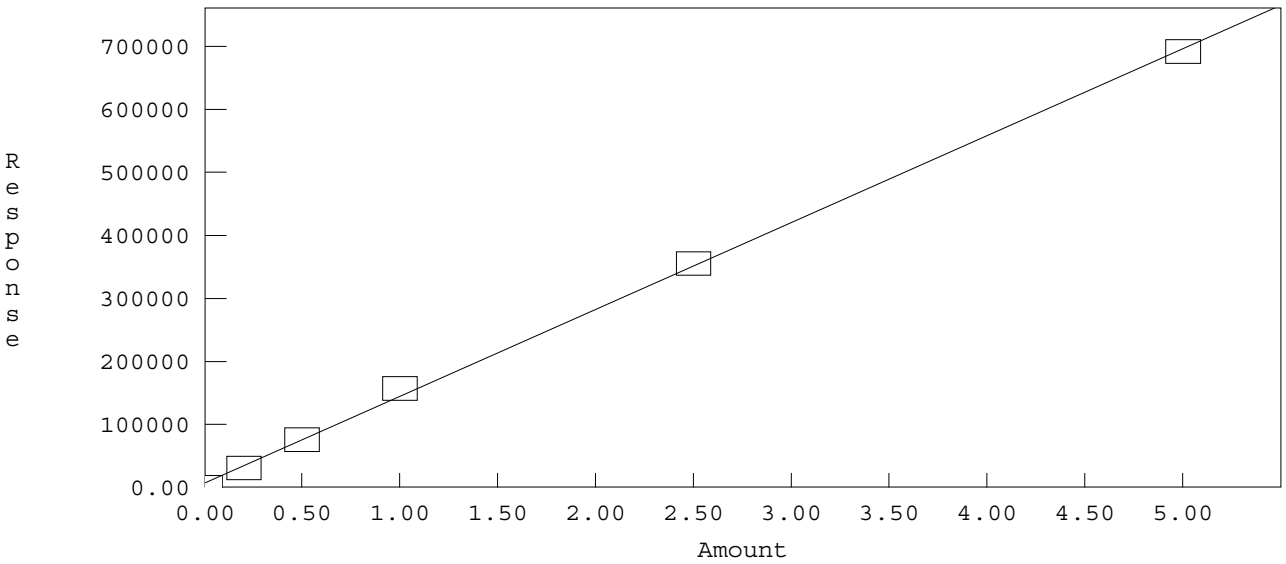
Component: Nitrite
Fit Type: Linear
r^2 = 0.999960
Amt = Resp * 1.859e-006 + 0.005003
Resp = Amt * 5.378e+005 + -2691
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

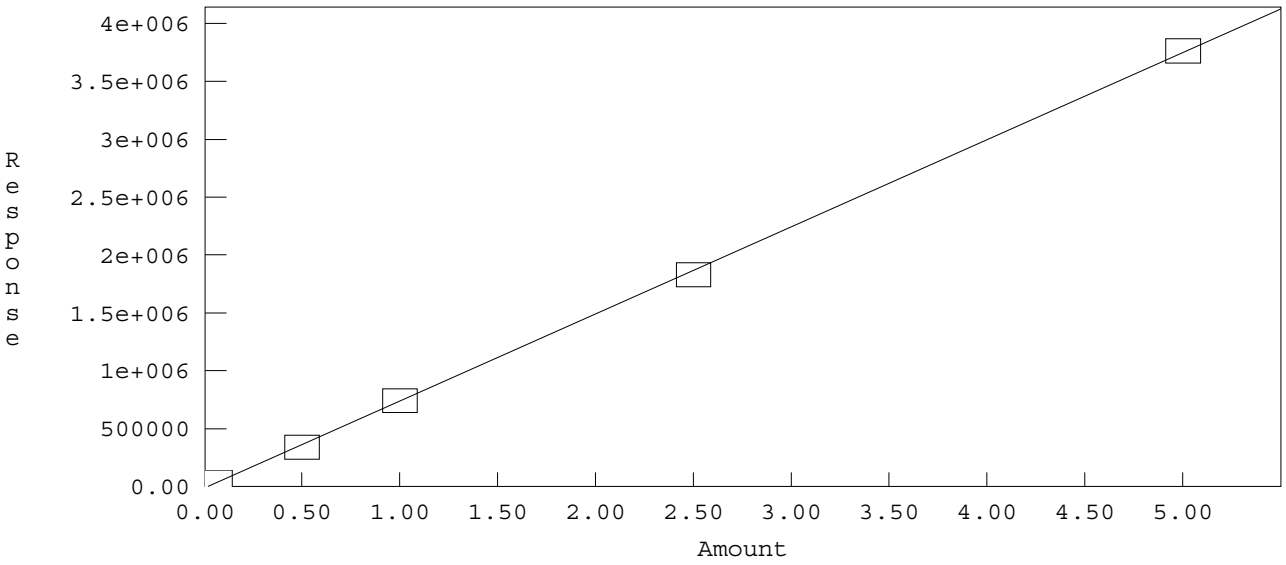
Component: Bromide
Fit Type: Linear
r^2 = 0.999299
Amt = Resp * 7.255e-006 + -0.05149
Resp = Amt * 1.378e+005 + 7098
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

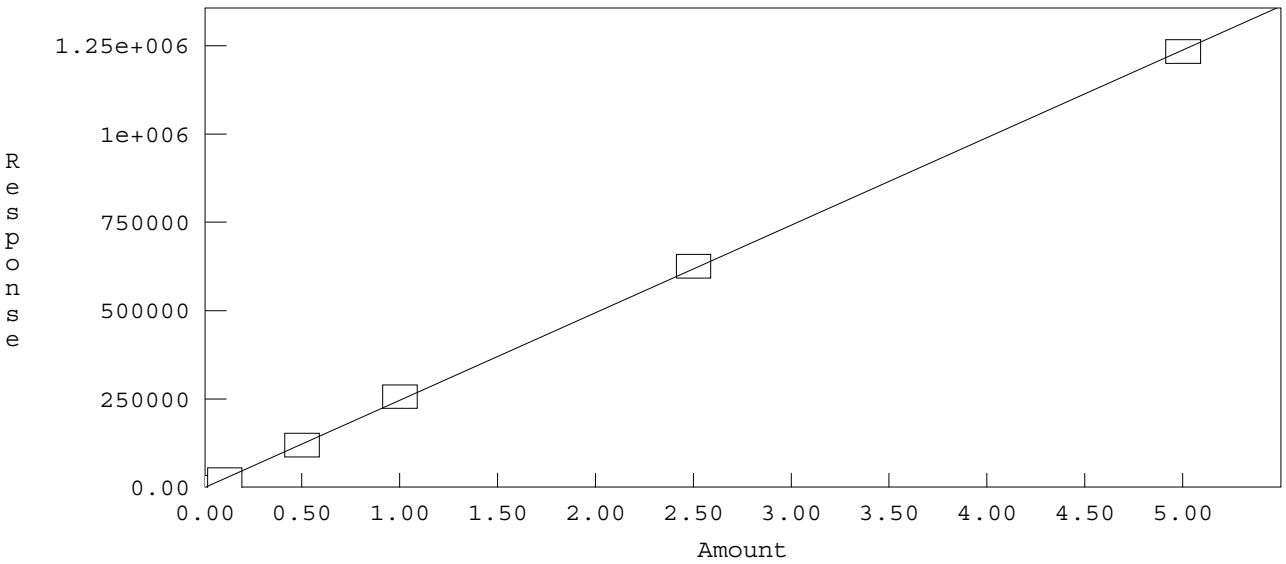
Component: Nitrate
Fit Type: Linear
r² = 0.999775
Amt = Resp * 1.329e-006 + 0.01934
Resp = Amt * 7.523e+005 + -1.455e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

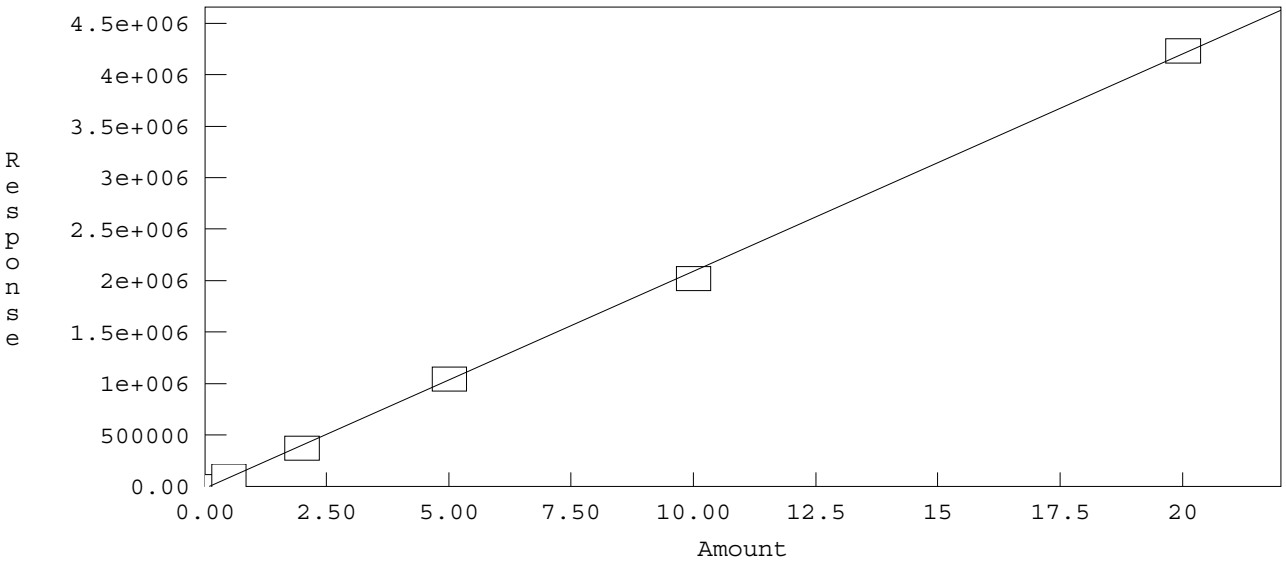
Component: Phosphate
Fit Type: Linear
r² = 0.999845
Amt = Resp * 4.045e-006 + -0.005256
Resp = Amt * 2.472e+005 + 1299
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999451
Amt = Resp * 4.734e-006 + 0.1097
Resp = Amt * 2.112e+005 + -2.318e+004
Standardization: External
Calibration: Area



10/21/2015

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICV	**ICV**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **ICV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2124200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.442	0.50	2.500	0	97.7	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-1	**CCV**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.449	0.50	2.500	0	98.0	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-2	**CCV**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.582	0.50	2.500	0	103	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-3	**CCV**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.356	0.50	2.500	0	94.2	90	110				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCV-4	**CCV**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.492	0.50	2.500	0	99.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.376	0.50	2.500	0	95.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.442	0.50	2.500	0	97.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.354	0.50	2.500	0	94.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.477	0.50	2.500	0	99.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.432	0.50	2.500	0	97.3	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.384	0.50	2.500	0	95.4	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.399	0.50	2.500	0	96.0	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.369	0.50	2.500	0	94.8	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.420	0.50	2.500	0	96.8	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.413	0.50	2.500	0	96.5	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	**ICV**	SampType:	**ICV**	TestCode:	**300_W_FPG**	Units:	**mg/L**	Prep Date:		RunNo:	**103951**
Client ID:	**ICV**	Batch ID:	**R103951**	TestNo:	**EPA 300.0**			Analysis Date:	**10/12/2015**	SeqNo:	**2125451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.348	0.10	2.500	0	93.9	90	110				

Sample ID	**CCV-1**	SampType:	**CCV**	TestCode:	**300_W_FPG**	Units:	**mg/L**	Prep Date:		RunNo:	**103951**
Client ID:	**CCV**	Batch ID:	**R103951**	TestNo:	**EPA 300.0**			Analysis Date:	**10/31/2015**	SeqNo:	**2125453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.364	0.10	2.500	0	94.6	90	110				

Sample ID	**CCV-2**	SampType:	**CCV**	TestCode:	**300_W_FPG**	Units:	**mg/L**	Prep Date:		RunNo:	**103951**
Client ID:	**CCV**	Batch ID:	**R103951**	TestNo:	**EPA 300.0**			Analysis Date:	**10/31/2015**	SeqNo:	**2125457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.375	0.10	2.500	0	95.0	90	110				

Sample ID	**CCV-3**	SampType:	**CCV**	TestCode:	**300_W_FPG**	Units:	**mg/L**	Prep Date:		RunNo:	**103951**
Client ID:	**CCV**	Batch ID:	**R103951**	TestNo:	**EPA 300.0**			Analysis Date:	**10/31/2015**	SeqNo:	**2125459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.392	0.10	2.500	0	95.7	90	110				

Sample ID	**CCV-4**	SampType:	**CCV**	TestCode:	**300_W_FPG**	Units:	**mg/L**	Prep Date:		RunNo:	**103951**
Client ID:	**CCV**	Batch ID:	**R103951**	TestNo:	**EPA 300.0**			Analysis Date:	**10/31/2015**	SeqNo:	**2125461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.342	0.10	2.500	0	93.7	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.412	0.10	2.500	0	96.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.341	0.10	2.500	0	93.6	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.338	0.10	2.500	0	93.5	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.330	0.10	2.500	0	93.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	**ICV**	SampType:	**ICV**	TestCode:	**300_W_SO4P**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**	
Client ID:	**ICV**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/12/2015**	SeqNo:	**2124239**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate	4.841	0.50	5.000	0	96.8	90	110					

Sample ID	**CCV-1**	SampType:	**CCV**	TestCode:	**300_W_SO4P**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**	
Client ID:	**CCV**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124241**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate	4.883	0.50	5.000	0	97.7	90	110					

Sample ID	**CCV-2**	SampType:	**CCV**	TestCode:	**300_W_SO4P**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**	
Client ID:	**CCV**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124245**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate	5.164	0.50	5.000	0	103	90	110					

Sample ID	**CCV-3**	SampType:	**CCV**	TestCode:	**300_W_SO4P**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**	
Client ID:	**CCV**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124247**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate	4.668	0.50	5.000	0	93.4	90	110					

Sample ID	**CCV-4**	SampType:	**CCV**	TestCode:	**300_W_SO4P**	Units:	**mg/L**	Prep Date:		RunNo:	**103929**	
Client ID:	**CCV**	Batch ID:	**R103929**	TestNo:	**EPA 300.0**			Analysis Date:	**10/30/2015**	SeqNo:	**2124265**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sulfate	4.851	0.50	5.000	0	97.0	90	110					

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCV**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.667	0.50	5.000	0	93.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.841	0.50	5.000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.786	0.50	5.000	0	95.7	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.722	0.50	5.000	0	94.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.962	0.50	5.000	0	99.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.706	0.50	5.000	0	94.1	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.775	0.50	5.000	0	95.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.668	0.50	5.000	0	93.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.670	0.50	5.000	0	93.4	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.839	0.50	5.000	0	96.8	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **ICB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2124201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-1	**CCB**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-2	**CCB**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-3	**CCB**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-4	**CCB**	**300_W_CLP**	**mg/L**		**103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	ICB	SampType:	ICB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ICB	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/12/2015	SeqNo:	2125452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	CCB-1	SampType:	CCB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	CCB	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	CCB-2	SampType:	CCB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	CCB	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125458

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	CCB-3	SampType:	CCB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	CCB	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125460

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	CCB-4	SampType:	CCB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	CCB	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **ICB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2124240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103929**
Client ID: **CCB**	Batch ID: **R103929**	TestNo: **EPA 300.0**		Analysis Date: **10/30/2015**	SeqNo: **2124272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/30/2015

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.29	
CCV-2	Sulfate	10.21	
CCV-3	Sulfate	10.17	
CCV-4	Sulfate	10.37	
CCV-5	Sulfate	10.25	
	Average	10.258	
	Lower Limit	10.058	
	Upper Limit	10.458	
MB-R103929_SO4	Sulfate	N.A.	N.A.
LCS-R103929_SO4	Sulfate	10.18	PASS
N017400-005C	Sulfate	10.33	PASS
N017399-001BDUP	Sulfate	10.23	PASS
N017399-002CMS	Sulfate	10.35	PASS
N017399-002CMSD	Sulfate	10.17	PASS
N017400-001D	Sulfate	10.27	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.17	
CCV-2	Sulfate	10.16	
CCV-3	Sulfate	10.27	
CCV-4	Sulfate	10.12	
CCV-5	Sulfate	10.09	
CCV-6	Sulfate	10.13	
CCV-7	Sulfate	10.12	
CCV-8	Sulfate	10.11	
	Average	10.146	
	Lower Limit	9.946	
	Upper Limit	10.346	
MB-R103951_SO4	Sulfate	N.A.	N.A.
LCS-R103951_SO4	Sulfate	10.29	PASS
N017400-002D	Sulfate	10.19	PASS
N017400-002DDUP	Sulfate	10.19	PASS
N017400-003C	Sulfate	10.18	PASS
N017400-003CMS	Sulfate	10.22	PASS
N017400-003CMSD	Sulfate	10.17	PASS
N017400-004C	Sulfate	10.17	PASS
N017400-006C	Sulfate	10.19	PASS
N017400-007C	Sulfate	10.11	PASS
N017400-008C	Sulfate	10.21	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/30/2015

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.09	
CCV-2	Chloride	4.15	
CCV-3	Chloride	4.11	
CCV-4	Chloride	4.17	
CCV-5	Chloride	4.06	
	Average	4.116	
	Lower Limit	3.916	
	Upper Limit	4.316	
MB-R103929_CL	Chloride	N.A.	N.A.
LCS-R103929_CL	Chloride	4.11	PASS
N017399-001BDUP	Chloride	4.07	PASS
N017399-002CMS	Chloride	4.13	PASS
N017399-002CMSD	Chloride	4.16	PASS
N017400-005C	Chloride	4.12	PASS
N017400-001D	Chloride	4.15	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.05	
CCV-2	Chloride	4.11	
CCV-3	Chloride	4.14	
CCV-4	Chloride	4.06	
CCV-5	Chloride	4.05	
CCV-6	Chloride	4.04	
CCV-7	Chloride	4.05	
CCV-8	Chloride	4.05	
	Average	4.069	
	Lower Limit	3.869	
	Upper Limit	4.269	
MB-R103951_CL	Chloride	N.A.	N.A.
LCS-R103951	Chloride	4.11	PASS
N017400-002D	Chloride	4.07	PASS
N017400-002DDUP	Chloride	4.13	PASS
N017400-003C	Chloride	4.11	PASS
N017400-003CMS	Chloride	4.09	PASS
N017400-003CMSD	Chloride	4.11	PASS
N017400-004C	Chloride	4.04	PASS
N017400-006C	Chloride	4.14	PASS
N017400-007C	Chloride	4.09	PASS
N017400-008C	Chloride	4.07	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.71	
CCV-2	Fluoride	2.75	
CCV-3	Fluoride	2.76	
CCV-4	Fluoride	2.71	
CCV-5	Fluoride	2.71	
CCV-6	Fluoride	2.69	
CCV-7	Fluoride	2.72	
CCV-8	Fluoride	2.71	
	Average	2.720	
	Lower Limit	2.520	
	Upper Limit	2.920	
MB-R103929_F	Fluoride	N.A.	N.A.
LCS-R103951_F	Fluoride	2.74	PASS
N017390-001CMS	Fluoride	2.72	PASS
N017390-001CMSD	Fluoride	2.73	PASS
N017400-001D	Fluoride	2.7	PASS
N017400-002D	Fluoride	2.68	PASS
N017400-003C	Fluoride	2.71	PASS
N017400-004C	Fluoride	2.7	PASS
N017400-005C	Fluoride	2.69	PASS
N017400-005CDUP	Fluoride	2.71	PASS
N017400-006C	Fluoride	2.69	PASS
N017400-007C	Fluoride	2.69	PASS
N017400-008C	Fluoride	2.7	PASS

MDL STUDY

ASSET LABORATORIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METHOD DETECTION LIMIT 2015

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 3/23/2015 & 10/12/2015
Analyst: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Datafile:	15032301.D06	15032301.D07	15032301.D08	15032301.D09	15032301.D10	15032301.D11	15032301.D12						
Fluoride	0.039	0.047	0.046	0.038	0.039	0.046	0.045	0.020	0.0040	3.143	**0.0125**	**0.10**	OK,meets criteria
Chloride	0.159	0.149	0.158	0.169	0.149	0.142	0.141	0.10	0.0101	3.143	**0.0317**	**0.50**	OK,meets criteria
Nitrite	0.033	0.027	0.030	0.027	0.030	0.026	0.026	0.020	0.0026	3.143	**0.0083**	**0.050**	OK,meets criteria
Nitrate	0.034	0.027	0.036	0.033	0.028	0.027	0.030	0.020	0.0036	3.143	**0.0114**	**0.050**	OK,meets criteria
Phosphate	0.050	0.053	0.060	0.046	0.049	0.062	0.044	0.050	0.0068	3.143	**0.0214**	**0.10**	OK,meets criteria
Sulfate	0.267	0.246	0.243	0.238	0.250	0.245	0.235	0.10	0.0104	3.143	**0.0327**	**0.50**	OK,meets criteria
Datafile:	15101201.D13	15101201.D14	15101201.D15	15101201.D16	15101201.D17	15101201.D18	15101201.D19						
Bromide	0.074	0.045	0.102	0.055	0.057	0.071	0.061	0.10	0.0185	3.143	**0.0581**	**0.50**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R104043 **Analyst:** REB

ASSET #: N017400 **Date Analyzed:** 11/8/2015

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/9/2015 Date: —

2nd Level Reviewer 11/10/201 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N017400-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5394*5

= 2.697 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.7 mg/L

REB 11/9/2015

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

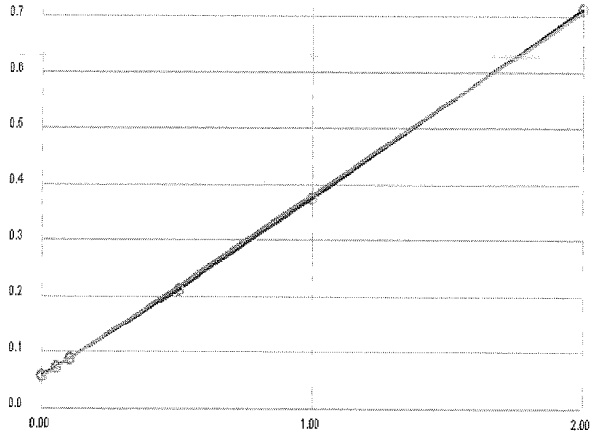
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.327x + 0.0544
Correlation	.999769



Calibrant	Energy	Set	Conc
1	0.0586	0.0000	0.0127
2	0.0734	0.0500	0.0580
3	0.0891	0.1000	0.1060
4	0.2114	0.5000	0.4800
5	0.3741	1.0000	0.9776
6	0.7135	2.0000	2.0157

Notes:

R1 Buffer - R151019D
R2 Coloring Rgt. - R151109A
% $CuSO_4$ - R151019C

STD1 - 1SST-150206D
STD2 - 1SST-150730E

REB 11/9/2015

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **ICV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.510	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	95.9	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **ICB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131123**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131135**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131147**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131156**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 11/08/2015
Time Analyzed: 22:16 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R151019D
Color reagent: R151107A
2% Copper Sulfate: R151019C
Ammonium Hydroxide: CINV-150924A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N017390-001D		8.65						
2)	N017399-001C		8.48						
3)	N017399-002D		8.71						
4)	N017400-001E		8.53						
5)	N017400-002E		8.95						
6)	N017400-003D		8.55						
7)	N017400-004D		8.34						
8)	N017400-005D		7.66						
9)	N017400-006D		7.87						
10)	N017400-007D		7.02						
11)	N017400-008D		8.41						
12)	N017415-001E		8.64						
13)	N017415-002E		8.81						
14)	N017415-003E		8.91						
15)	N017415-004E		8.81						
16)	N017415-005E		7.36						
17)	N017415-006E		8.52						
18)	N017415-007E		8.31						
19)	N017415-008D		7.62						
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 11-08-2015 22:16
Time end: 11-09-2015 01:04

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	00:25:22	0.0228		0.0619
2	<BLANK>	00:26:16	0.0136		0.0589
3	<CAL1>	00:27:16	0.0127	[0]	0.0586
4	<CAL2>	00:28:12	0.0580	[0.05]	0.0734
5	<CAL3>	00:29:13	0.1060	[0.1]	0.0891
6	<CAL4>	00:30:08	0.4800	[0.5]	0.2114
7	<CAL5>	00:31:02	0.9776	[1]	0.3741
8	<CAL6>	00:32:04	2.0157	[2]	0.7135
9	,BLANK,BLANK,1,	00:32:59	0.0249		0.0626
10	,ICV,ICV,1,	00:33:59	0.5097		0.2211
11	,ICB,ICB,1,	00:34:55	0.0130		0.0587
12	,MB-H2O,MBLK,1,	00:35:50	0.0103		0.0578
13	,LCS-H2O,LCS,1,	00:36:45	0.5219		0.2251
14	,N017390-001D,SAMP,5,	00:37:45	0.5959		0.2493
15	,N017390-001DDUP,DUP,5,	00:38:41	0.5794		0.2439
16	,N017390-001DMS,MS,5,	00:39:42	1.1052		0.4158
17	,N017390-001DMSD,MSD,5,	00:40:36	1.0578		0.4003
18	,N017399-001C,SAMP,1,	00:41:32	0.0439		0.0688
19	,N017399-002D,SAMP,5,	00:42:33	0.6556		0.2688
20	,N017400-001E,SAMP,5,	00:43:28	0.5394		0.2308
21	,BLANK,BLANK,1	00:44:22	0.0203		0.0611
22	,CCV-1,CCV,1,	00:45:24	0.4797		0.2113
23	,CCB-1,CCB,1,	00:46:19	0.0170		0.0600
24	,N017400-002E,SAMP,5,	00:47:21	0.5320		0.2284
25	,N017400-003D,SAMP,5,	00:48:15	0.5250		0.2261
26	,N017400-004D,SAMP,5,	00:49:04	0.5394		0.2308

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N017400-005D,SAMP,5,	00:49:46	0.6632		0.2713
28	,N017400-006D,SAMP,5,	00:50:36	0.6507		0.2672
29	,N017400-007D,SAMP,5,	00:51:19	0.5011		0.2183
30	,N017400-008D,SAMP,5,	00:52:01	0.5207		0.2247
31	,N017415-001E,SAMP,5,	00:52:50	0.5531		0.2353
32	,N017415-002E,SAMP,5,	00:53:32	0.5681		0.2402
33	,BLANK,BLANK,1	00:54:16	0.0103		0.0578
34	,CCV-2,CCV,1,	00:55:04	0.5014		0.2184
35	,CCB-2,CCB,1,	00:55:47	0.0090		0.0574
36	,N017415-003E,SAMP,5,	00:56:36	0.5776		0.2433
37	,N017415-004E,SAMP,5,	00:57:18	0.4100		0.1885
38	,N017415-005E,SAMP,5,	00:58:02	0.4299		0.1950
39	,N017415-006E,SAMP,5,	00:58:50	0.5510		0.2346
40	,N017415-007E,SAMP,5,	00:59:33	0.5696		0.2407
41	,N017415-008D,SAMP,5,	01:00:15	0.5519		0.2349
42	,BLANK,BLANK,1	01:00:58	0.0103		0.0578
43	,CCV-3,CCV,1,	01:01:46	0.4987		0.2175
44	,CCB-3,CCB,1,	01:02:30	0.0081		0.0571

REB 11/9/2015

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52882
ASSET #: N017400

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 11/4/2015

[X] EPA 6010B / 200.7 Diss
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N017400-04B PS/MSD failed, due to high analyte cocentration already present in the sample.
However, LCS & dilution test passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/10/2015 Date:

2nd Level Reviewer 11/10/201 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Sodium concentration, in ug/L , in the original sample as follows:

Sodium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017400-003B** , the concentration in ug/L is calculated as follows:

Sodium , ug/L = 12.9754 * 100 * (25/25) * 1000

Sodium , ug/L = 1297540

Reporting results in two significant figures,

Sodium , ug/L = 1300000



% RSD SUMMARY

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.8	15	PASS
Standard1	ICAL	1	Na	0.1	2.83	15	PASS
Standard2	ICAL	1	Na	1	0.4	15	PASS
Standard3	ICAL	1	Na	5	0.29	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.29	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	10.079	0.18	15	PASS
ICB	ICB	1	Na	-0.0041	172.78	15	<PQL
ICSA1	ICSA	1	Na	-0.0061	67.66	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.4	15	PASS
CCV1	CCV	1	Na	9.81	0.19	15	PASS
CCB1	CCB	1	Na	-0.019	13.33	15	PASS
CCV2	CCV	1	Na	9.68	0.25	15	PASS
CCB2	CCB	1	Na	0.15	3.23	15	PASS
MB-52882	MBLK	1	Na	0.14	5.59	15	PASS
LCS2-52882	LCS	1	Na	2260.1	23.76	15	NR!
N017390-001B	SAMP	5	Na	141.03	0.15	15	PASS
N017400-003B	SAMP	5	Na	331.08	0.46	15	PASS
N017400-004B	SAMP	5	Na	347.66	0.27	15	PASS
N017400-005B	SAMP	5	Na	103.92	0.83	15	PASS
N017400-006B	SAMP	5	Na	104	0.37	15	PASS
CCV3	CCV	1	Na	9.76	0.25	15	PASS
CCB3	CCB	1	Na	0.07	4.77	15	PASS
N017400-007B	SAMP	5	Na	342.57	1.83	15	PASS
N017400-008B	SAMP	5	Na	333.68	0.35	15	PASS
N017415-008B	SAMP	5	Na	124.65	0.16	15	PASS
CCV4	CCV	1	Na	9.48	0.31	15	PASS
CCB4	CCB	1	Na	0.068	3.69	15	PASS
CCV5	CCV	1	Na	9.53	0.34	15	PASS
CCB5	CCB	1	Na	0.024	22.21	15	<PQL
ICSA2	ICSA	1	Na	0.017	10.17	15	PASS
ICSAB2	ICSAB	1	Na	9.62	0.11	15	PASS
LCS2-52882	LCS	1	Na	9.63	0.064	15	PASS
N017390-001B	SAMP	25	Na	28.93	0.2	15	PASS
N017400-003B	SAMP	100	Na	12.97	0.42	15	PASS
N017400-004B	SAMP	100	Na	13.51	0.56	15	PASS
CCV6	CCV	1	Na	9.59	0.12	15	PASS
CCB6	CCB	1	Na	0.019	22.17	15	<PQL
N017400-004B	SAMP	500	Na	2.72	0.43	15	PASS
N017400-004B-PS	PS	100	Na	13.46	0.36	15	PASS
N017400-004B-MS2	MS	100	Na	13.63	0.49	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017400-004B-MSD2	MSD	100	Na	13.38	0.35	15	PASS
N017400-005B	SAMP	25	Na	16.88	0.64	15	PASS
N017400-006B	SAMP	25	Na	17.14	0.39	15	PASS
N017400-007B	SAMP	100	Na	13.19	0.35	15	PASS
N017400-008B	SAMP	100	Na	13.063	0.39	15	PASS
N017415-008B	SAMP	25	Na	20.18	0.13	15	PASS
CCV7	CCV	1	Na	9.56	0.0099	15	PASS
CCB7	CCB	1	Na	0.0058	83.38	15	<PQL
ICSA3	ICSA	1	Na	0.00055	577.89	15	<PQL
ICSAB3	ICSAB	1	Na	9.44	0.2	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151007B,0.025<50mL
Standard2	MWST-151007B,0.25<50mL
Standard3	MWST-151007B,1.25<50mL
Standard4	MWST-151007B,2.5<50mL
Standard5	MWST-151007B,5<50mL
Standard6	MWST-151007B,10<50mL
ICV	MWST-151007CB,2.5<50mL
CCV	MWST-151007B,2.5<50mL
ICSA/ICSAB	MWST-151028A/151007D
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/MSST-111006A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/04/2015	07:34:35 AM
2	Standard1	ICAL	1	11/04/2015	07:37:52 AM
3	Standard2	ICAL	1	11/04/2015	07:41:09 AM
4	Standard3	ICAL	1	11/04/2015	07:44:57 AM
5	Standard4	ICAL	1	11/04/2015	07:48:49 AM
6	Standard5	ICAL	1	11/04/2015	07:52:42 AM
7	Standard6	ICAL	1	11/04/2015	07:56:37 AM
8	ICV	ICV	1	11/04/2015	07:59:24 AM
1	ICB	ICB	1	11/04/2015	08:03:16 AM
3	ICSA1	ICSA	1	11/04/2015	08:06:32 AM
4	ICSAB1	ICSAB	1	11/04/2015	08:09:51 AM
38	MB-52866	MBLK	1	11/04/2015	08:13:44 AM
39	LCS2-52866	LCS	1	11/04/2015	08:19:36 AM
40	N017404-001A	SAMP	5	11/04/2015	08:23:28 AM
41	N017404-002A	SAMP	5	11/04/2015	08:26:48 AM
42	N017404-002A	SAMP	25	11/04/2015	08:31:27 AM
43	N017404-002A-PS	PS	5	11/04/2015	08:35:15 AM
44	N017404-002A-MS2	MS	5	11/04/2015	08:39:04 AM
45	N017404-002A-MSD2	MSD	5	11/04/2015	08:42:54 AM
46	MB-52910	MBLK	1	11/04/2015	08:46:45 AM
47	LCS2-52910	LCS	1	11/04/2015	08:50:04 AM
5	CCV1	CCV	1	11/04/2015	08:53:24 AM
1	CCB1	CCB	1	11/04/2015	08:57:18 AM
48	N017399-001A	SAMP	5	11/04/2015	09:00:36 AM
49	N017399-002B	SAMP	5	11/04/2015	09:05:28 AM
50	N017400-001B	SAMP	5	11/04/2015	09:10:21 AM
51	N017400-002B	SAMP	5	11/04/2015	09:15:11 AM
52	N017415-001B	SAMP	5	11/04/2015	09:20:03 AM
53	N017415-002B	SAMP	5	11/04/2015	09:24:53 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N017415-003B	SAMP	5	11/04/2015	09:29:45 AM
55	N017415-004B	SAMP	5	11/04/2015	09:34:36 AM
56	N017415-005B	SAMP	5	11/04/2015	09:39:27 AM
57	N017415-006B	SAMP	5	11/04/2015	09:44:19 AM
5	CCV2	CCV	1	11/04/2015	09:49:10 AM
1	CCB2	CCB	1	11/04/2015	09:53:04 AM
58	N017415-007B	SAMP	5	11/04/2015	09:56:21 AM
59	N017427-001B	SAMP	5	11/04/2015	10:01:15 AM
60	N017427-002B	SAMP	5	11/04/2015	10:06:07 AM
61	MB-52882	MBLK	1	11/04/2015	10:11:00 AM
62	LCS2-52882	LCS	1	11/04/2015	10:14:20 AM
63	N017390-001B	SAMP	5	11/04/2015	10:19:10 AM
64	N017400-003B	SAMP	5	11/04/2015	10:24:04 AM
65	N017400-004B	SAMP	5	11/04/2015	10:28:56 AM
66	N017400-005B	SAMP	5	11/04/2015	10:33:47 AM
67	N017400-006B	SAMP	5	11/04/2015	10:38:37 AM
5	CCV3	CCV	1	11/04/2015	10:43:28 AM
1	CCB3	CCB	1	11/04/2015	10:47:22 AM
68	N017400-007B	SAMP	5	11/04/2015	10:50:39 AM
69	N017400-008B	SAMP	5	11/04/2015	10:55:31 AM
70	N017415-008B	SAMP	5	11/04/2015	10:59:51 AM
71	N017399-001A	SAMP	25	11/04/2015	11:04:45 AM
72	N017399-002B	SAMP	25	11/04/2015	11:08:06 AM
73	N017399-002B-PS	PS	5	11/04/2015	11:11:26 AM
74	N017399-002B-MS2	MS	5	11/04/2015	11:16:19 AM
75	N017399-002B-MSD2	MSD	5	11/04/2015	11:21:11 AM
76	N017399-002B	SAMP	50	11/04/2015	11:26:03 AM
77	N017399-002B	SAMP	250	11/04/2015	11:29:23 AM
5	CCV4	CCV	1	11/04/2015	11:41:12 AM
1	CCB4	CCB	1	11/04/2015	11:45:07 AM
78	N017399-002B-PS	PS	50	11/04/2015	11:48:27 AM
79	N017399-002B-MS2	MS	50	11/04/2015	11:51:47 AM
80	N017399-002B-MSD2	MSD	50	11/04/2015	11:55:07 AM
81	N017400-001B	SAMP	50	11/04/2015	11:58:27 AM
82	N017400-002B	SAMP	50	11/04/2015	12:01:46 PM
83	N017415-001B	SAMP	50	11/04/2015	12:05:06 PM
84	N017415-002B	SAMP	50	11/04/2015	12:08:25 PM
85	N017415-003B	SAMP	50	11/04/2015	12:11:44 PM
86	N017415-004B	SAMP	100	11/04/2015	12:15:04 PM
87	N017415-005B	SAMP	100	11/04/2015	12:18:23 PM
5	CCV5	CCV	1	11/04/2015	12:21:43 PM
1	CCB5	CCB	1	11/04/2015	12:25:36 PM
3	ICSA2	ICSA	1	11/04/2015	12:28:53 PM
4	ICSAB2	ICSAB	1	11/04/2015	12:32:10 PM
88	N017415-006B	SAMP	100	11/04/2015	12:35:35 PM
89	N017415-007B	SAMP	50	11/04/2015	12:38:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N017415-007B-MS2	MS	5	11/04/2015	12:42:15 PM
104	N017415-007B-MS2	MS	50	11/04/2015	12:47:10 PM
90	N017427-001B	SAMP	50	11/04/2015	12:50:30 PM
91	N017427-002B	SAMP	50	11/04/2015	12:53:51 PM
62	LCS2-52882	LCS	1	11/04/2015	12:57:12 PM
92	N017390-001B	SAMP	25	11/04/2015	01:01:03 PM
93	N017400-003B	SAMP	100	11/04/2015	01:04:54 PM
94	N017400-004B	SAMP	100	11/04/2015	01:08:13 PM
5	CCV6	CCV	1	11/04/2015	01:11:32 PM
1	CCB6	CCB	1	11/04/2015	01:15:25 PM
95	N017400-004B	SAMP	500	11/04/2015	01:19:02 PM
96	N017400-004B-PS	PS	100	11/04/2015	01:22:21 PM
97	N017400-004B-MS2	MS	100	11/04/2015	01:25:40 PM
98	N017400-004B-MSD2	MSD	100	11/04/2015	01:28:59 PM
99	N017400-005B	SAMP	25	11/04/2015	01:32:19 PM
100	N017400-006B	SAMP	25	11/04/2015	01:35:39 PM
101	N017400-007B	SAMP	100	11/04/2015	01:38:59 PM
102	N017400-008B	SAMP	100	11/04/2015	01:42:18 PM
103	N017415-008B	SAMP	25	11/04/2015	01:45:39 PM
5	CCV7	CCV	1	11/04/2015	01:49:31 PM
1	CCB7	CCB	1	11/04/2015	01:53:26 PM
3	ICSA3	ICSA	1	11/04/2015	01:56:43 PM
4	ICSAB3	ICSAB	1	11/04/2015	02:00:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 9:38:31**
Prep End Date: **10/29/2015 2:00:00**

Initials/ Date: 11/10/2015

Prep Batch **52882** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-52882	Aqueous		25	☐	0	0	25	1.000		
LCS2-52882	Aqueous		25	☐	0	0	25	1.000		
MB-52882	Aqueous		25	☐	0	0	25	1.000		
N017390-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 9:38:31**
Prep End Date: **10/29/2015 2:00:00**
Initials/ Date: 11/10/2015

Prep Batch **52882** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	11/04/2015	07:34:35 AM	Na	589.594	442	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	Na	589.594	420	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	Na	589.594	5039	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	Na	589.594	24874	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	Na	589.594	49512	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	Na	589.594	99141	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	Na	589.594	197629	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **ICV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10078.967	500	10000	0	101	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9808.247	500	10000	0	98.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9680.031	500	10000	0	96.8	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9758.992	500	10000	0	97.6	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9477.942	500	10000	0	94.8	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9530.829	500	10000	0	95.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9593.983	500	10000	0	95.9	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9556.105	500	10000	0	95.6	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.100499	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-18.943199	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	145.637	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	70.296	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	68.198	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB5**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.500	500									

Sample ID	**CCB6**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	18.539	500									

Sample ID	**CCB7**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5.756	500									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *09-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-6.13799	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9999.827	500	10000	0	100	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	16.921	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9624.486	500	10000	0	96.2	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSA**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.551	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9440.724	500	10000	0	94.4	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.24	124.42	65-125	PASS
Standard2	ICAL	1	1.0091	100.91	65-125	PASS
Standard3	ICAL	1	1	100	65-125	PASS
Standard4	ICAL	1	1.0052	100.52	65-125	PASS
Standard5	ICAL	1	0.99	98.89	65-125	PASS
Standard6	ICAL	1	1	99.59	65-125	PASS
ICV	ICV	1	1.0013	100.13	65-125	PASS
ICB	ICB	1	0.99	99.25	65-125	PASS
ICSA1	ICSA	1	0.99	98.97	65-125	PASS
ICSAB1	ICSAB	1	1.0026	100.26	65-125	PASS
CCV1	CCV	1	1.016	101.59	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
CCV2	CCV	1	0.85	85.077	65-125	PASS
CCB2	CCB	1	0.85	85.39	65-125	PASS
MB-52882	MBLK	1	1.0076	100.76	65-125	PASS
LCS2-52882	LCS	1	0.0092	0.92	65-125	NR!
N017390-001B	SAMP	5	1	100	65-125	PASS
N017400-003B	SAMP	5	0.75	75.35	65-125	PASS
N017400-004B	SAMP	5	0.76	76.16	65-125	PASS
N017400-005B	SAMP	5	0.76	75.5	65-125	PASS
N017400-006B	SAMP	5	0.77	77.2	65-125	PASS
CCV3	CCV	1	0.97	96.5	65-125	PASS
CCB3	CCB	1	0.95	94.9	65-125	PASS
N017400-007B	SAMP	5	0.75	74.99	65-125	PASS
N017400-008B	SAMP	5	0.76	76.4	65-125	PASS
N017415-008B	SAMP	5	0.76	76.007	65-125	PASS
CCV4	CCV	1	0.97	96.92	65-125	PASS
CCB4	CCB	1	0.93	93.31	65-125	PASS
CCV5	CCV	1	0.93	93.2	65-125	PASS
CCB5	CCB	1	0.98	98.49	65-125	PASS
ICSA2	ICSA	1	0.98	98.1	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.19	65-125	PASS
LCS2-52882	LCS	1	0.96	95.71	65-125	PASS
N017390-001B	SAMP	25	0.94	94.48	65-125	PASS
N017400-003B	SAMP	100	0.93	92.63	65-125	PASS
N017400-004B	SAMP	100	0.94	93.83	65-125	PASS
CCV6	CCV	1	0.96	95.52	65-125	PASS
CCB6	CCB	1	0.95	94.87	65-125	PASS
N017400-004B	SAMP	500	0.94	93.59	65-125	PASS
N017400-004B-PS	PS	100	0.94	93.87	65-125	PASS

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017400-004B-MS2	MS	100	0.94	93.8	65-125	PASS
N017400-004B-MSD2	MSD	100	0.93	93.27	65-125	PASS
N017400-005B	SAMP	25	0.91	91.43	65-125	PASS
N017400-006B	SAMP	25	0.91	90.78	65-125	PASS
N017400-007B	SAMP	100	0.94	93.91	65-125	PASS
N017400-008B	SAMP	100	0.94	93.95	65-125	PASS
N017415-008B	SAMP	25	0.91	90.83	65-125	PASS
CCV7	CCV	1	0.95	94.76	65-125	PASS
CCB7	CCB	1	0.94	94.3	65-125	PASS
ICSA3	ICSA	1	0.95	95.13	65-125	PASS
ICSAB3	ICSAB	1	0.96	96.16	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017400
Test Method: EPA 6010B
Analysis Date: 11/04/15

Matrix: Groundwater
Batch No.: 52882

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-004B -DT 500X	Sodium	ug/L	1361856	PASS	1350809	0.82%	10

ASSET Laboratories

Date: *09-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N017400-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID:	**ZZZZZZ**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2126004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1346415.512	50000	10000	1351000	-43.9	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 6010B_Total

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Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52897
ASSET #: N017400

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/3/2015

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			✓		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			✓
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			✓
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X			✓		
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X			✓	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				✓
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

% Rec of Fe in N017400-001C MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	✓		
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date: —

2nd Level Reviewer 11/12/2015 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52897
ASSET #: N017400

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.			X			
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N017400-001 PS rerun only.
% Rec of Fe in N17400-001C PS failed. However LCS passed Criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/11/2015 Date: —

2nd Level Reviewer 11/12/2015 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017400-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.06531 * 1 * (25/25) * 1000

Iron , ug/L = 65.31

Reporting results in two significant figures,

Iron , ug/L = 65



% RSD SUMMARY

RSD SUMMARY: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	16.15	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.23	15	PASS
Standard2	ICAL	1	Fe	0.05	0.0084	15	PASS
Standard3	ICAL	1	Fe	2	0.076	15	PASS
Standard4	ICAL	1	Fe	5	0.12	15	PASS
Standard5	ICAL	1	Fe	7.5	0.28	15	PASS
Standard6	ICAL	1	Fe	10	0.28	15	PASS
Standard7	ICAL	1	Fe	20	0.26	15	PASS
ICV	ICV	1	Fe	10.15	0.19	15	PASS
ICB	ICB	1	Fe	0.00017	531.0095	15	<PQL
LLCCV1	CCV1	1	Fe	0.02	1.63	20	PASS
ICSA1	ICSA	1	Fe	191.1	0.43	15	PASS
ICSAB1	ICSAB	1	Fe	189.08	0.55	15	PASS
LLCCV21	CCV1	1	Fe	0.02	2.44	20	PASS
ICSA1	ICSA	1	Fe	188.97	0.8	15	PASS
ICSAB1	ICSAB	1	Fe	187.79	0.68	15	PASS
CCV1	CCV	1	Fe	9.92	0.27	15	PASS
CCB1	CCB	1	Fe	-0.00012	433.88	15	<PQL
CCV2	CCV	1	Fe	9.83	0.32	15	PASS
CCB2	CCB	1	Fe	-0.00007	1006.53	15	<PQL
MB-52897	MBLK	1	Fe	-0.0028	7.091	15	PASS
LCS-52897	LCS	1	Fe	0.093	0.025	15	PASS
N017400-001C	SAMP	1	Fe	0.065	1.041	15	PASS
N017400-001C	SAMP	5	Fe	0.099	0.25	15	PASS
CCV3	CCV	1	Fe	11.35	0.99	15	PASS
CCV3	CCV	1	Fe	10.25	0.55	15	PASS
CCB3	CCB	1	Fe	-0.00005	1482.075	15	<PQL
LLCCV2	CCV1	1	Fe	0.019	2.71	20	PASS
ICSA2	ICSA	1	Fe	188.14	0.23	15	PASS
ICSAB2	ICSAB	1	Fe	186.36	0.21	15	PASS
LLCCV2	CCV1	1	Fe	0.031	13.012	20	PASS
ICSA2	ICSA	1	Fe	187.52	0.51	15	PASS
ICSAB2	ICSAB	1	Fe	186.41	0.3	15	PASS
N017400-001C-MS1	MS1	1	Fe	0.13	3.43	15	PASS
N017400-001C-MSD1	MSD1	1	Fe	0.13	0.11	15	PASS
N017400-002C	SAMP	1	Fe	0.037	1.48	15	PASS
N017415-001C	SAMP	1	Fe	0.046	0.29	15	PASS
N017415-002C	SAMP	1	Fe	0.031	0.12	15	PASS
N017415-003C	SAMP	1	Fe	0.033	0.72	15	PASS
N017415-004C	SAMP	1	Fe	0.071	0.61	15	PASS
N017415-005C	SAMP	1	Fe	0.086	0.11	15	PASS
N017415-006C	SAMP	1	Fe	0.063	0.59	15	PASS

RSD SUMMARY: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017415-007C	SAMP	1	Fe	0.036	1.55	15	PASS
CCV4	CCV	1	Fe	9.74	0.34	15	PASS
CCB4	CCB	1	Fe	-0.00009	377.44	15	<PQL
N017427-001C	SAMP	1	Fe	0.027	0.27	15	PASS
N017427-002C	SAMP	1	Fe	0.11	0.74	15	PASS
N017427-002C-MS	MS	1	Fe	0.17	0.8	15	PASS
CCV5	CCV	1	Fe	9.38	0.041	15	PASS
CCV5	CCV	1	Fe	9.36	0.19	15	PASS
CCV5	CCV	1	Fe	9.32	0.19	15	PASS
CCB5	CCB	1	Fe	0.00049	180.76	15	<PQL
LLCCV3	CCV1	1	Fe	0.019	0.88	20	PASS
LLCCV3	CCV1	1	Fe	0.018	1.9	20	PASS
ICSA3	ICSA	1	Fe	175.95	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	175.02	0.11	15	PASS

RSD SUMMARY: 151105D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	32.54	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.62	15	PASS
Standard2	ICAL	1	Fe	0.05	1.21	15	PASS
Standard3	ICAL	1	Fe	2	0.91	15	PASS
Standard4	ICAL	1	Fe	5	0.52	15	PASS
Standard5	ICAL	1	Fe	7.5	0.66	15	PASS
Standard6	ICAL	1	Fe	10	0.67	15	PASS
Standard7	ICAL	1	Fe	20	0.55	15	PASS
ICV	ICV	1	Fe	10.29	0.43	15	PASS
LLCCV1	CCV1	1	Fe	0.035	14.34	20	PASS
ICB	ICB	1	Fe	-0.0015	71.61	15	<PQL
LLCCV1	CCV1	1	Fe	0.021	18.66	20	PASS
ICSA1	ICSA	1	Fe	188.34	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	185.12	1.14	15	PASS
N017400-001C-PS	PS	1	Fe	0.18	12.53	15	PASS
CCV1	CCV	1	Fe	10.12	0.88	15	PASS
CCB1	CCB	1	Fe	-0.00027	310.77	15	<PQL
LLCCV2	CCV1	1	Fe	0.021	8.51	20	PASS
ICSA2	ICSA	1	Fe	188.83	0.43	15	PASS
ICSAB2	ICSAB	1	Fe	340.72	78.93	15	NR!
ICSAB2	ICSAB	1	Fe	185.72	0.79	15	PASS
CalBlk	IBLK	1	Y	0	0.59	15	PASS
Standard1	ICAL	1	Y	1.023	0.83	15	PASS
Standard2	ICAL	1	Y	1.066	0.66	15	PASS
Standard3	ICAL	1	Y	1.045	0.93	15	PASS
Standard4	ICAL	1	Y	1.13	0.94	15	PASS
Standard5	ICAL	1	Y	1.21	0.62	15	PASS
Standard6	ICAL	1	Y	1.06	0.73	15	PASS
Standard7	ICAL	1	Y	1.029	0.56	15	PASS
ICV	ICV	1	Y	1.043	0.42	15	PASS
LLCCV1	CCV1	1	Y	1.04	1.22	20	PASS
ICB	ICB	1	Y	1.012	0.91	15	PASS
LLCCV1	CCV1	1	Y	1.0044	0.4	20	PASS
ICSA1	ICSA	1	Y	0.88	0.25	15	PASS
ICSAB1	ICSAB	1	Y	0.93	0.48	15	PASS
N017400-001C-PS	PS	1	Y	0.92	0.53	15	PASS
CCV1	CCV	1	Y	1.058	0.85	15	PASS
CCB1	CCB	1	Y	0.99	0.46	15	PASS
LLCCV2	CCV1	1	Y	1.039	1.71	20	PASS
ICSA2	ICSA	1	Y	0.87	0.19	15	PASS
ICSAB2	ICSAB	1	Y	0.7	55.17	15	NR!
ICSAB2	ICSAB	1	Y	0.88	0.37	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151103C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/03/2015	03:16:19 PM
2	Standard1	ICAL	1	11/03/2015	03:20:39 PM
3	Standard2	ICAL	1	11/03/2015	03:25:28 PM
4	Standard3	ICAL	1	11/03/2015	03:30:19 PM
5	Standard4	ICAL	1	11/03/2015	03:35:11 PM
6	Standard5	ICAL	1	11/03/2015	03:40:38 PM
7	Standard6	ICAL	1	11/03/2015	03:46:01 PM
8	Standard7	ICAL	1	11/03/2015	03:51:24 PM
9	ICV	ICV	1	11/03/2015	03:56:27 PM
1	ICB	ICB	1	11/03/2015	04:01:53 PM
2	LLCCV1	CCV1	1	11/03/2015	04:06:41 PM
4	ICSA1	ICSA	1	11/03/2015	04:11:31 PM
5	ICSAB1	ICSAB	1	11/03/2015	04:17:06 PM
2	LLCCV21	CCV1	1	11/03/2015	04:40:42 PM
4	ICSA1	ICSA	1	11/03/2015	04:45:31 PM
5	ICSAB1	ICSAB	1	11/03/2015	04:51:06 PM
38	MB-52853	MBLK	1	11/03/2015	04:56:41 PM
39	LCS-52853	LCS	1	11/03/2015	05:12:53 PM
40	N017381-004B	SAMP	1	11/03/2015	05:18:45 PM
41	N017381-004B	SAMP	5	11/03/2015	05:22:32 PM
42	N017381-004B-PS	PS	1	11/03/2015	05:27:23 PM
43	N017381-004B-MS	MS	1	11/03/2015	05:32:48 PM
44	N017381-004B-MSD	MSD	1	11/03/2015	05:38:13 PM
45	N017381-008B	SAMP	1	11/03/2015	05:43:38 PM
46	N017381-009B	SAMP	1	11/03/2015	05:48:28 PM
47	N017381-010B	SAMP	1	11/03/2015	05:54:24 PM
7	CCV1	CCV	1	11/03/2015	05:58:45 PM
1	CCB1	CCB	1	11/03/2015	06:04:11 PM



11/6/2015

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N017381-011B	SAMP	1	11/03/2015	06:08:30 PM
49	N017381-012B	SAMP	1	11/03/2015	06:14:32 PM
50	N017381-013B	SAMP	1	11/03/2015	06:19:24 PM
51	N017382-001B	SAMP	1	11/03/2015	06:24:46 PM
52	N017382-002B	SAMP	1	11/03/2015	06:30:10 PM
53	N017382-003B	SAMP	1	11/03/2015	06:35:34 PM
54	N017382-004B	SAMP	1	11/03/2015	06:39:58 PM
55	N017382-004B-MS	MS	1	11/03/2015	06:44:20 PM
56	N017382-005B	SAMP	1	11/03/2015	06:49:45 PM
57	N017382-006B	SAMP	1	11/03/2015	06:55:09 PM
7	CCV2	CCV	1	11/03/2015	07:00:33 PM
1	CCB2	CCB	1	11/03/2015	07:05:59 PM
58	N017382-007B	SAMP	1	11/03/2015	07:10:18 PM
59	N017382-008B	SAMP	1	11/03/2015	07:15:40 PM
60	N017382-009B	SAMP	1	11/03/2015	07:20:05 PM
61	N017382-010B	SAMP	1	11/03/2015	07:24:31 PM
62	N017390-001B	SAMP	1	11/03/2015	07:29:23 PM
63	MB-52897	MBLK	1	11/03/2015	07:34:46 PM
64	LCS-52897	LCS	1	11/03/2015	07:39:07 PM
65	N017400-001C	SAMP	1	11/03/2015	07:44:59 PM
66	N017400-001C	SAMP	5	11/03/2015	07:50:23 PM
7	CCV3	CCV	1	11/03/2015	08:10:05 PM
7	CCV3	CCV	1	11/03/2015	08:14:43 PM
1	CCB3	CCB	1	11/03/2015	08:20:07 PM
2	LLCCV2	CCV1	1	11/03/2015	08:24:56 PM
4	ICSA2	ICSA	1	11/03/2015	08:29:45 PM
5	ICSAB2	ICSAB	1	11/03/2015	08:35:20 PM
2	LLCCV2	CCV1	1	11/03/2015	08:39:53 PM
4	ICSA2	ICSA	1	11/03/2015	08:44:42 PM
5	ICSAB2	ICSAB	1	11/03/2015	08:50:17 PM
68	N017400-001C-MS1	MS1	1	11/03/2015	08:55:52 PM
69	N017400-001C-MSD1	MSD1	1	11/03/2015	09:01:17 PM
70	N017400-002C	SAMP	1	11/03/2015	09:06:42 PM
71	N017415-001C	SAMP	1	11/03/2015	09:12:05 PM
72	N017415-002C	SAMP	1	11/03/2015	09:17:29 PM
73	N017415-003C	SAMP	1	11/03/2015	09:22:53 PM
74	N017415-004C	SAMP	1	11/03/2015	09:27:44 PM
75	N017415-005C	SAMP	1	11/03/2015	09:33:08 PM
76	N017415-006C	SAMP	1	11/03/2015	09:38:30 PM
77	N017415-007C	SAMP	1	11/03/2015	09:43:53 PM
7	CCV4	CCV	1	11/03/2015	09:49:15 PM
1	CCB4	CCB	1	11/03/2015	09:54:40 PM
78	N017427-001C	SAMP	1	11/03/2015	09:59:28 PM
79	N017427-002C	SAMP	1	11/03/2015	10:04:51 PM
80	N017427-002C-MS	MS	1	11/03/2015	10:10:15 PM
7	CCV5	CCV	1	11/03/2015	10:15:40 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	11/03/2015	10:19:47 PM
7	CCV5	CCV	1	11/03/2015	10:23:51 PM
1	CCB5	CCB	1	11/03/2015	10:29:15 PM
2	LLCCV3	CCV1	1	11/03/2015	10:34:04 PM
2	LLCCV3	CCV1	1	11/03/2015	10:38:49 PM
4	ICSA3	ICSA	1	11/03/2015	10:43:38 PM
5	ICSAB3	ICSAB	1	11/03/2015	10:49:42 PM

INJECTION LOG: 151105D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/05/2015	04:31:26 PM
2	Standard1	ICAL	1	11/05/2015	04:35:47 PM
3	Standard2	ICAL	1	11/05/2015	04:40:35 PM
4	Standard3	ICAL	1	11/05/2015	04:44:57 PM
5	Standard4	ICAL	1	11/05/2015	04:49:20 PM
6	Standard5	ICAL	1	11/05/2015	04:53:45 PM
7	Standard6	ICAL	1	11/05/2015	04:58:07 PM
8	Standard7	ICAL	1	11/05/2015	05:02:30 PM
9	ICV	ICV	1	11/05/2015	05:05:02 PM
2	LLCCV1	CCV1	1	11/05/2015	05:10:26 PM
1	ICB	ICB	1	11/05/2015	05:15:15 PM
2	LLCCV1	CCV1	1	11/05/2015	05:18:17 PM
4	ICSA1	ICSA	1	11/05/2015	05:23:32 PM
5	ICSAB1	ICSAB	1	11/05/2015	05:29:06 PM
35	N017381-009B	SAMP	1	11/05/2015	05:34:39 PM
36	N017400-001C-PS	PS	1	11/05/2015	05:40:35 PM
7	CCV1	CCV	1	11/05/2015	05:45:59 PM
1	CCB1	CCB	1	11/05/2015	05:54:03 PM
2	LLCCV2	CCV1	1	11/05/2015	06:00:24 PM
4	ICSA2	ICSA	1	11/05/2015	06:04:24 PM
5	ICSAB2	ICSAB	1	11/05/2015	06:09:56 PM
5	ICSAB2	ICSAB	1	11/05/2015	06:13:52 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:00**
Prep End Date: **11/2/2015 3:00:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52897** Prep Code: **3010_W** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52897	Aqueous		25	☐	0	0	25	1.000		
MB-52897	Aqueous		25	☐	0	0	25	1.000		
N017400-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:00**
Prep End Date: **11/2/2015 3:00:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52897** Prep Code: **3010_W** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017427-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151103C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	11/03/2015	03:16:19 PM	Fe	273.953	-71	0.00	mg/L	
Standard1	11/03/2015	03:20:39 PM	Fe	273.953	1167	0.0200	mg/L	
Standard2	11/03/2015	03:25:28 PM	Fe	273.953	3071	0.050	mg/L	
Standard3	11/03/2015	03:30:19 PM	Fe	273.953	121532	2.000	mg/L	
Standard4	11/03/2015	03:35:11 PM	Fe	273.953	288755	5.000	mg/L	
Standard5	11/03/2015	03:40:38 PM	Fe	273.953	436888	7.500	mg/L	
Standard6	11/03/2015	03:46:01 PM	Fe	273.953	569736	10.000	mg/L	
Standard7	11/03/2015	03:51:24 PM	Fe	273.953	1119134	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151105D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	11/05/2015	04:31:26 PM	Fe	273.953	154	0.00	mg/L	
Standard1	11/05/2015	04:35:47 PM	Fe	273.953	795	0.0200	mg/L	
Standard2	11/05/2015	04:40:35 PM	Fe	273.953	2084	0.050	mg/L	
Standard3	11/05/2015	04:44:57 PM	Fe	273.953	81475	2.000	mg/L	
Standard4	11/05/2015	04:49:20 PM	Fe	273.953	197796	5.000	mg/L	
Standard5	11/05/2015	04:53:45 PM	Fe	273.953	299968	7.500	mg/L	
Standard6	11/05/2015	04:58:07 PM	Fe	273.953	394945	10.000	mg/L	
Standard7	11/05/2015	05:02:30 PM	Fe	273.953	776695	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10149.703	20	10000	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ZZZZZZ**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.048	20	20.00	0	100	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9917.450	20	10000	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9831.217	20	10000	0	98.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10253.870	20	10000	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125069

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.478	20	20.00	0	97.4	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	CCV	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9738.704	20	10000	0	97.4	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	CCV	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9317.973	20	10000	0	93.2	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.090	20	20.00	0	90.4	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICV**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10287.835	20	10000	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ZZZZZZ**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.175	20	20.00	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **CCV**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10121.501	20	10000	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ZZZZZZ**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.550	20	20.00	0	103	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.171	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.116071	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.066817	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.05022	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.0912	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.493	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.473729	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **CCB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.268411	20									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	517928.283	50	500000	0	104	80	120				
Calcium	528749.174	500	500000	0	106	80	120				
Iron	188972.462	20	200000	0	94.5	80	120				
Magnesium	498830.962	100	500000	0	99.8	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516687.832	50	500000	0	103	80	120				
Calcium	518467.337	500	500000	0	104	80	120				
Iron	187787.655	20	200000	0	93.9	80	120				
Magnesium	495377.066	100	500000	0	99.1	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511820.697	50	500000	0	102	80	120				
Calcium	528613.860	500	500000	0	106	80	120				
Iron	188139.807	20	200000	0	94.1	80	120				
Magnesium	530506.249	100	500000	0	106	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509531.192	50	500000	0	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICSAB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	517741.745	500	500000	0	104	80	120				
Iron	186360.276	20	200000	0	93.2	80	120				
Magnesium	524245.526	100	500000	0	105	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICSA**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	485044.316	50	500000	0	97.0	80	120				
Calcium	491576.473	500	500000	0	98.3	80	120				
Iron	175953.287	20	200000	0	88.0	80	120				
Magnesium	487302.097	100	500000	0	97.5	80	120				

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICSAB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484010.434	50	500000	0	96.8	80	120				
Calcium	483361.945	500	500000	0	96.7	80	120				
Iron	175021.966	20	200000	0	87.5	80	120				
Magnesium	484715.603	100	500000	0	96.9	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSA** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	513899.116	50	500000	0	103	80	120				
Calcium	523091.708	500	500000	0	105	80	120				
Iron	188344.143	20	200000	0	94.2	80	120				
Magnesium	488163.189	100	500000	0	97.6	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSAB** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511279.096	50	500000	0	102	80	120				
Calcium	512160.537	500	500000	0	102	80	120				
Iron	185115.938	20	200000	0	92.6	80	120				
Magnesium	477579.616	100	500000	0	95.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSA** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	513872.997	50	500000	0	103	80	120				
Calcium	521978.836	500	500000	0	104	80	120				
Iron	188826.337	20	200000	0	94.4	80	120				
Magnesium	490683.444	100	500000	0	98.1	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSAB** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509450.811	50	500000	0	102	80	120				
Calcium	511985.784	500	500000	0	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICSAB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	185724.915	20	200000	0	92.9	80	120				
Magnesium	477963.988	100	500000	0	95.6	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	97.46	65-125	PASS
Standard2	ICAL	1	1.1	109.97	65-125	PASS
Standard3	ICAL	1	1.058	105.75	65-125	PASS
Standard4	ICAL	1	0.96	96.38	65-125	PASS
Standard5	ICAL	1	1.016	101.61	65-125	PASS
Standard6	ICAL	1	0.97	97.25	65-125	PASS
Standard7	ICAL	1	0.96	96.45	65-125	PASS
ICV	ICV	1	0.97	97.11	65-125	PASS
ICB	ICB	1	0.98	97.88	65-125	PASS
LLCCV1	CCV1	1	0.96	96.38	65-125	PASS
ICSA1	ICSA	1	0.81	80.62	65-125	PASS
ICSAB1	ICSAB	1	0.85	84.68	65-125	PASS
LLCCV21	CCV1	1	1.0006	100.06	65-125	PASS
ICSA1	ICSA	1	0.81	81.48	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.025	65-125	PASS
CCV1	CCV	1	0.99	98.63	65-125	PASS
CCB1	CCB	1	0.99	99.37	65-125	PASS
CCV2	CCV	1	1.0002	100.02	65-125	PASS
CCB2	CCB	1	1.0081	100.81	65-125	PASS
MB-52897	MBLK	1	1.0024	100.24	65-125	PASS
LCS-52897	LCS	1	1.01	101	65-125	PASS
N017400-001C	SAMP	1	0.84	83.78	65-125	PASS
N017400-001C	SAMP	5	0.91	91.11	65-125	PASS
CCV3	CCV	1	0.9	89.54	65-125	PASS
CCV3	CCV	1	0.95	94.69	65-125	PASS
CCB3	CCB	1	0.98	98.39	65-125	PASS
LLCCV2	CCV1	1	0.98	98.25	65-125	PASS
ICSA2	ICSA	1	0.82	81.66	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.13	65-125	PASS
LLCCV2	CCV1	1	1	99.63	65-125	PASS
ICSA2	ICSA	1	0.82	82	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.19	65-125	PASS
N017400-001C-MS1	MS1	1	0.85	84.52	65-125	PASS
N017400-001C-MSD1	MSD1	1	0.83	82.67	65-125	PASS
N017400-002C	SAMP	1	0.84	83.84	65-125	PASS
N017415-001C	SAMP	1	0.84	83.53	65-125	PASS
N017415-002C	SAMP	1	0.83	82.68	65-125	PASS
N017415-003C	SAMP	1	0.84	83.61	65-125	PASS
N017415-004C	SAMP	1	0.8	80.38	65-125	PASS
N017415-005C	SAMP	1	0.82	82.5	65-125	PASS

INTERNAL STANDARD: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017415-006C	SAMP	1	0.82	81.56	65-125	PASS
N017415-007C	SAMP	1	0.78	77.98	65-125	PASS
CCV4	CCV	1	1	99.54	65-125	PASS
CCB4	CCB	1	1.001	100.1	65-125	PASS
N017427-001C	SAMP	1	0.84	84.27	65-125	PASS
N017427-002C	SAMP	1	0.82	82.49	65-125	PASS
N017427-002C-MS	MS	1	0.8	80.021	65-125	PASS
CCV5	CCV	1	0.93	93.49	65-125	PASS
CCV5	CCV	1	0.94	94.043	65-125	PASS
CCV5	CCV	1	0.94	93.63	65-125	PASS
CCB5	CCB	1	0.94	93.91	65-125	PASS
LLCCV3	CCV1	1	0.95	94.5	65-125	PASS
LLCCV3	CCV1	1	0.94	94.12	65-125	PASS
ICSA3	ICSA	1	0.77	77.44	65-125	PASS
ICSAB3	ICSAB	1	0.81	80.55	65-125	PASS

INTERNAL STANDARD: 151105D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.023	102.26	65-125	PASS
Standard2	ICAL	1	1.066	106.64	65-125	PASS
Standard3	ICAL	1	1.045	104.48	65-125	PASS
Standard4	ICAL	1	1.13	112.86	65-125	PASS
Standard5	ICAL	1	1.21	121.01	65-125	PASS
Standard6	ICAL	1	1.06	106.01	65-125	PASS
Standard7	ICAL	1	1.029	102.9	65-125	PASS
ICV	ICV	1	1.043	104.3	65-125	PASS
LLCCV1	CCV1	1	1.04	103.98	65-125	PASS
ICB	ICB	1	1.012	101.2	65-125	PASS
LLCCV1	CCV1	1	1.0044	100.44	65-125	PASS
ICSA1	ICSA	1	0.88	87.52	65-125	PASS
ICSAB1	ICSAB	1	0.93	93.1	65-125	PASS
N017400-001C-PS	PS	1	0.92	91.94	65-125	PASS
CCV1	CCV	1	1.058	105.77	65-125	PASS
CCB1	CCB	1	0.99	99.41	65-125	PASS
LLCCV2	CCV1	1	1.039	103.89	65-125	PASS
ICSA2	ICSA	1	0.87	86.66	65-125	PASS
ICSAB2	ICSAB	1	0.7	70.29	65-125	PASS
ICSAB2	ICSAB	1	0.88	87.65	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017400
Test Method: EPA 6010B
Analysis Date: 11/03/15

Matrix: Groundwater
Batch No.: 52897

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001C -DT 5X	Iron	ug/L	495.5276	NA	65.31289	658.70%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *06-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **N017400-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:					RunNo: **103994**		
Client ID: **ZZZZZZ**	Batch ID: **52897**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/5/2015**					SeqNo: **2128175**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	175.139	20	100.0	0	175	80	120				S

65.3 109.8

11/11/2015
for

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52955
ASSET #: N017400

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 11/10/2015 Date: _____

2nd Level Reviewer _____ 11/10/201 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N017400-005B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 19.27220105 * 1 * (25/25)

Chromium , ug/L = 19.272201

Reporting results in two significant figures,

Chromium , ug/L = 19



% RSD SUMMARY

PERCENT RSD SUMMARY: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	10.86	15	PASS	0.1	3.45	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	8.032	15	PASS	0.5	4.94	15	PASS
Std3-5/50 ppb	ICAL	1	5.29	0.6	15	PASS	5.09	2.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	1.37	15	PASS	10.24	1.081	15	PASS
Std5-20/200 ppb	ICAL	1	20.57	0.54	15	PASS	20.33	0.98	15	PASS
Std6-40/400 ppb	ICAL	1	41.12	2.75	15	PASS	40.15	0.37	15	PASS
Std7-100/1000 ppb	ICAL	1	101.36	2.07	15	PASS	100.17	0.39	15	PASS
Std8-200/2000 ppb	ICAL	1	199.016	0.4	15	PASS	199.84	0.8	15	PASS
ICV	ICV	1	9.66	0.55	15	PASS	9.49	2.48	15	PASS
ICB	ICB	1	0.004	183.18	15	<PQL	0.061	15.49	15	<PQL
LLICV	CCV1	1	1.087	3.13	20	PASS	0.53	6.37	20	PASS
ICSA1	ICSA	1	0.15	19.16	15	<PQL	0.043	15.14	15	<PQL
ICSAB1	ICSAB	1	20.22	1.83	15	PASS	23.18	0.78	15	PASS
LLICV	CCV1	1	1.046	1.53	20	PASS	0.49	4.4	20	PASS
CCV1	CCV	1	20.33	0.59	15	PASS	20.29	2.73	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.14	6.56	15	PASS
CCV2	CCV	1	20.38	1.16	15	PASS	20.38	0.66	15	PASS
CCB2	CCB	1	0.087	21.33	15	<PQL	0.15	10.72	15	PASS
LLCCV1	CCV2	1	1.077	2.87	20	PASS	0.54	3.66	20	PASS
ICSA2	ICSA	1	0.19	0.87	15	PASS	0.059	14.17	15	PASS
ICSAB2	ICSAB	1	20.14	1.12	15	PASS	22.99	0.36	15	PASS
MB-52955	MBLK	1	0.075	10.25	15	PASS	0.053	16.37	15	<PQL
LCS-52955	LCS	1	9.42	0.51	15	PASS	9.49	0.65	15	PASS
N017390-001B	SAMP	1	8.43	0.87	15	PASS	7.4	2.35	15	PASS
N017390-001B	SAMP	5	1.92	2.29	15	PASS	1.62	4.22	15	PASS
N017390-001B-PS	PS	1	17.29	1.39	15	PASS	18.4	1.38	15	PASS
N017390-001B-MS	MS	1	17.24	0.67	15	PASS	18.8	1.75	15	PASS
N017390-001B-MSD	MSD	1	16.89	1.35	15	PASS	18.43	1.91	15	PASS
N017400-003B	SAMP	1	0.37	7.57	15	PASS	24.64	1.61	15	PASS
N017400-004B	SAMP	1	0.81	5.39	15	PASS	17.71	0.16	15	PASS
CCV3	CCV	1	20.053	1.73	15	PASS	20.55	1.31	15	PASS
CCB3	CCB	1	0.064	11.28	15	PASS	0.0014	355.79	15	<PQL
N017400-005B	SAMP	1	19.27	1.65	15	PASS	30.4	0.66	15	PASS
N017400-006B	SAMP	1	18.67	1.055	15	PASS	31.55	1.28	15	PASS
N017400-007B	SAMP	1	0.37	8.82	15	PASS	20.47	0.37	15	PASS
N017400-008B	SAMP	1	1.11	1.89	15	PASS	19.036	1.081	15	PASS
N017415-008B	SAMP	1	14.7	0.99	15	PASS	12.36	3.04	15	PASS
CCV4	CCV	1	19.85	0.4	15	PASS	20.82	0.65	15	PASS
CCB4	CCB	1	0.12	13.85	15	PASS	0.089	9.54	15	PASS
LLCCV2	CCV2	1	1.045	1.33	20	PASS	0.59	8.85	20	PASS

PERCENT RSD SUMMARY: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSA3	ICSA	1	0.18	12.31	15	PASS	0.057	11.37	15	PASS
ICSAB3	ICSAB	1	20.19	1.77	15	PASS	23.28	2.37	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1105001.D	RINSE	RINSE	1	11/05/15 1:53 PM
B1105002.D	Cal Blank	IBLK	1	11/05/15 1:59 PM
B1105003.D	Std1-0.1/1 ppb	ICAL	1	11/05/15 2:04 PM
B1105004.D	Std2-0.5/5 ppb	ICAL	1	11/05/15 2:10 PM
B1105005.D	Std3-5/50 ppb	ICAL	1	11/05/15 2:16 PM
B1105006.D	Std4-10/100 ppb	ICAL	1	11/05/15 2:21 PM
B1105007.D	Std5-20/200 ppb	ICAL	1	11/05/15 2:27 PM
B1105008.D	Std6-40/400 ppb	ICAL	1	11/05/15 2:32 PM
B1105009.D	Std7-100/1000 ppb	ICAL	1	11/05/15 2:38 PM
B1105010.D	Std8-200/2000 ppb	ICAL	1	11/05/15 2:43 PM
B1105011.D	ICV	ICV	1	11/05/15 2:46 PM
B1105012.D	ICB	ICB	1	11/05/15 2:52 PM
B1105013.D	LLICV	CCV1	1	11/05/15 2:57 PM
B1105014.D	ICSA1	ICSA	1	11/05/15 3:03 PM
B1105015.D	ICSAB1	ICSAB	1	11/05/15 3:11 PM
B1105016.D	LLICV	CCV1	1	11/05/15 3:16 PM
B1105017.D	MB-52939	MBLK	1	11/05/15 3:22 PM
B1105018.D	LCS-52939	LCS	1	11/05/15 3:27 PM
B1105019.D	N017381-002B	SAMP	1	11/05/15 3:33 PM
B1105020.D	N017457-016B	SAMP	1	11/05/15 3:38 PM
B1105021.D	N017471-001E	SAMP	1	11/05/15 3:45 PM
B1105022.D	N017471-001E	SAMP	5	11/05/15 3:50 PM
B1105023.D	N017471-001E	SAMP	25	11/05/15 3:56 PM
B1105024.D	N017471-001E-PS	PS	1	11/05/15 4:01 PM
B1105025.D	N017471-001E-PS	PS	5	11/05/15 4:07 PM
B1105026.D	N017471-001E-MS	MS	1	11/05/15 4:13 PM
B1105027.D	CCV1	CCV	1	11/05/15 4:18 PM
B1105028.D	CCB1	CCB	1	11/05/15 4:24 PM
B1105029.D	N017471-001E-MS	MS	5	11/05/15 4:29 PM
B1105030.D	N017471-001E-MSD	MSD	1	11/05/15 4:35 PM
B1105031.D	N017471-001E-MSD	MSD	5	11/05/15 4:40 PM
B1105032.D	N017469-001C	SAMP	1	11/05/15 4:46 PM
B1105033.D	N017469-001C	SAMP	5	11/05/15 4:52 PM
B1105034.D	N017469-002E	SAMP	1	11/05/15 4:57 PM
B1105035.D	N017469-002E	SAMP	5	11/05/15 5:03 PM
B1105036.D	N017470-001B	SAMP	1	11/05/15 5:08 PM
B1105037.D	N017470-001B	SAMP	5	11/05/15 5:14 PM
B1105038.D	N017470-002B	SAMP	1	11/05/15 5:19 PM
B1105039.D	CCV2	CCV	1	11/05/15 5:25 PM
B1105040.D	CCB2	CCB	1	11/05/15 5:30 PM
B1105041.D	LLCCV1	CCV2	1	11/05/15 5:36 PM
B1105042.D	ICSA2	ICSA	1	11/05/15 5:42 PM

INJECTION LOG: 151105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1105043.D	ICSAB2	ICSAB	1	11/05/15 5:47 PM
B1105044.D	N017470-002B	SAMP	5	11/05/15 5:53 PM
B1105045.D	MB-52955	MBLK	1	11/05/15 5:58 PM
B1105046.D	LCS-52955	LCS	1	11/05/15 6:04 PM
B1105047.D	N017390-001B	SAMP	1	11/05/15 6:09 PM
B1105048.D	N017390-001B	SAMP	5	11/05/15 6:15 PM
B1105049.D	N017390-001B-PS	PS	1	11/05/15 6:20 PM
B1105050.D	N017390-001B-MS	MS	1	11/05/15 6:26 PM
B1105051.D	N017390-001B-MSD	MSD	1	11/05/15 6:32 PM
B1105052.D	N017400-003B	SAMP	1	11/05/15 6:37 PM
B1105053.D	N017400-004B	SAMP	1	11/05/15 6:43 PM
B1105054.D	CCV3	CCV	1	11/05/15 6:48 PM
B1105055.D	CCB3	CCB	1	11/05/15 6:51 PM
B1105056.D	N017400-005B	SAMP	1	11/05/15 6:57 PM
B1105057.D	N017400-006B	SAMP	1	11/05/15 7:05 PM
B1105058.D	N017400-007B	SAMP	1	11/05/15 7:10 PM
B1105059.D	N017400-008B	SAMP	1	11/05/15 7:16 PM
B1105060.D	N017415-008B	SAMP	1	11/05/15 7:22 PM
B1105061.D	CCV4	CCV	1	11/05/15 7:27 PM
B1105062.D	CCB4	CCB	1	11/05/15 7:31 PM
B1105063.D	LLCCV2	CCV2	1	11/05/15 7:38 PM
B1105064.D	ICSA3	ICSA	1	11/05/15 7:44 PM
B1105065.D	ICSAB3	ICSAB	1	11/05/15 7:49 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/5/2015 10:21:08**
Prep End Date: **11/5/2015 3:00:00**

Initials/ Date: 11/10/2015

Prep Batch **52955** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52955	Aqueous		25	☐	0	0	25	1.000		
MB-52955	Aqueous		25	☐	0	0	25	1.000		
N017390-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017390-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017390-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-151019	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Nov 2015 09:05:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	40342.70	0.00	
24 Mg	154712.00	0.00	
25 Mg	20840.10	0.00	
26 Mg	24660.30	0.00	
59 Co	433131.00	0.00	
115 In	886048.00	0.00	
206 Pb	221045.00	0.00	
207 Pb	192924.00	0.00	
208 Pb	473894.00	0.00	

RSD (%)

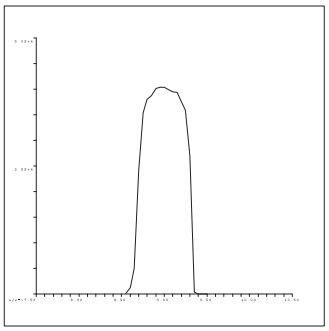
Element	Actual	Required	Flag
9 Be	1.37	5.00	
24 Mg	0.60	5.00	
25 Mg	1.50	5.00	
26 Mg	2.98	5.00	
59 Co	0.81	5.00	
115 In	1.21	5.00	
206 Pb	0.68	5.00	
207 Pb	1.13	5.00	
208 Pb	1.13	5.00	

Ion Ratio

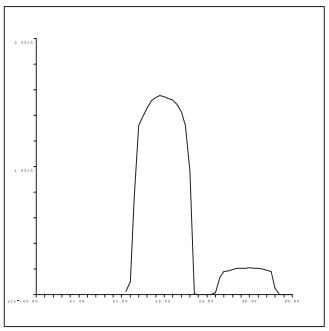
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

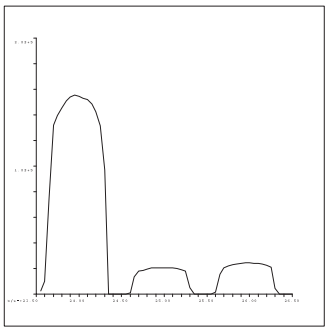
Element	Actual	Required	Flag



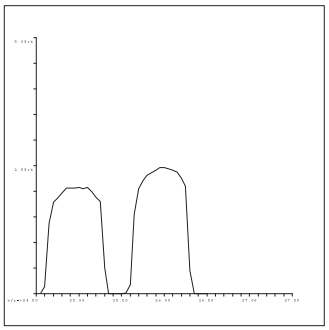
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



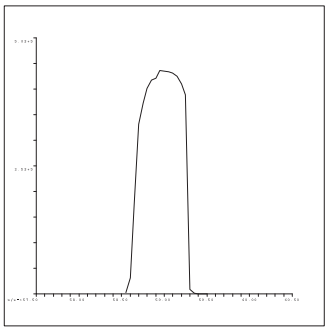
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



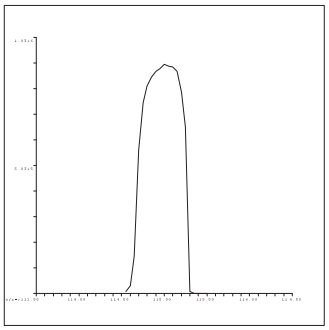
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



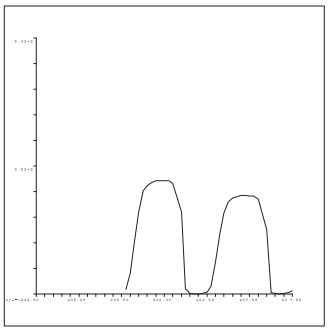
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



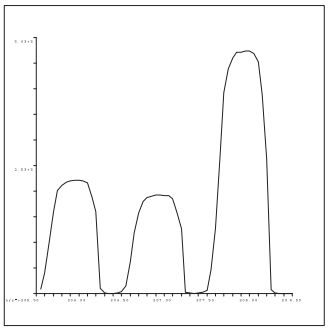
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



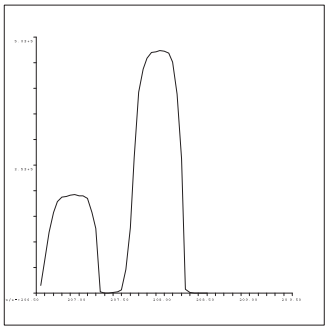
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151105B

Instrument ID: ICPMS-02

Analyte	Data File	B1105002.D	B1105003.D	B1105004.D	B1105005.D	B1105006.D	B1105007.D	B1105008.D	B1105009.D	B1105010.D	
	Acq. Date-Time	11/05/2015 01:59 PM	11/05/2015 02:04 PM	11/05/2015 02:10 PM	11/05/2015 02:16 PM	11/05/2015 02:21 PM	11/05/2015 02:27 PM	11/05/2015 02:32 PM	11/05/2015 02:38 PM	11/05/2015 02:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	61999.7	62749.5	61620.7	62237.3	63477.2	62864.1	63716.3	64767.9	66521.5	
52 Cr [2]	CPS	272.1	756.6	2690.2	25200.9	49823.3	98256.6	198726.1	497642	1003452.3	1.0000
103 Rh (ISTD) [2]	CPS	1462586.3	1464391	1446953.3	1466330.6	1481665.1	1462499.1	1486784.9	1497703.3	1520174.6	
95 Mo [2]	CPS	53.3	403.4	1742.4	17483.6	35492.5	69509.1	139506.1	350483	709698.8	1.0000

STD1- not used

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

11/10/201

for

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.490	0.50	10.00	0	94.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.489	0.50	0.5000	0	97.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.292	0.50	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.382	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.538	0.50	0.5000	0	108	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.548	0.50	20.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.822	0.50	20.00	0	104	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.586	0.50	0.5000	0	117	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.656	1.0	10.00	0	96.6	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.046	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.334	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.375	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.077	1.0	1.000	0	108	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.053	1.0	20.00	0	100	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.852	1.0	20.00	0	99.3	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.045	1.0	1.000	0	104	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.061	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.138	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.150	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.089	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**ICB**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130477**

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

Sample ID	**CCB1**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**CCB**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130493**

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

Sample ID	**CCB2**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**CCB**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.087	1.0									

Sample ID	**CCB3**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**CCB**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130520**

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

Sample ID	**CCB4**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**CCB**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.116	1.0									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.043	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.180	0.50	20.00	0	116	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.059	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	22.995	0.50	20.00	0	115	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.057	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.283	0.50	20.00	0	116	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.154	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSAB	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.224	1.0	20.00	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.191	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSAB	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.142	1.0	20.00	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.183	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.188	1.0	20.00	0	101	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61999.7	61999.7	100	PASS	70-130	1462586.3	1462586.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	62749.5	61999.7	101.21	PASS	70-130	1464391	1462586.3	100.12	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	61620.7	61999.7	99.39	PASS	70-130	1446953.3	1462586.3	98.93	PASS	70-130
Std3-5/50 ppb	ICAL	1	62237.3	61999.7	100.38	PASS	70-130	1466330.6	1462586.3	100.26	PASS	70-130
Std4-10/100 ppb	ICAL	1	63477.2	61999.7	102.38	PASS	70-130	1481665.1	1462586.3	101.3	PASS	70-130
Std5-20/200 ppb	ICAL	1	62864.1	61999.7	101.39	PASS	70-130	1462499.1	1462586.3	99.99	PASS	70-130
Std6-40/400 ppb	ICAL	1	63716.3	61999.7	102.77	PASS	70-130	1486784.9	1462586.3	101.65	PASS	70-130
Std7-100/1000 ppb	ICAL	1	64767.9	61999.7	104.46	PASS	70-130	1497703.3	1462586.3	102.4	PASS	70-130
Std8-200/2000 ppb	ICAL	1	66521.5	61999.7	107.29	PASS	70-130	1520174.6	1462586.3	103.94	PASS	70-130
ICV	ICV	1	57960.1	61999.7	93.48	PASS	70-130	1249316.4	1462586.3	85.42	PASS	70-130
ICB	ICB	1	64692.2	61999.7	104.34	PASS	70-130	1401707.5	1462586.3	95.84	PASS	70-130
LLICV	CCV1	1	60264.5	61999.7	97.2	PASS	70-130	1311481.7	1462586.3	89.67	PASS	70-130
ICSA1	ICSA	1	66916.1	61999.7	107.93	PASS	70-130	1346989.2	1462586.3	92.096	PASS	70-130
ICSAB1	ICSAB	1	70002.3	61999.7	112.91	PASS	70-130	1353738.6	1462586.3	92.56	PASS	70-130
LLICV	CCV1	1	55667.5	61999.7	89.79	PASS	70-130	1215917	1462586.3	83.13	PASS	70-130
CCV1	CCV	1	67773.1	61999.7	109.31	PASS	70-130	1476975.8	1462586.3	100.98	PASS	70-130
CCB1	CCB	1	64189.1	61999.7	103.53	PASS	70-130	1420672.3	1462586.3	97.13	PASS	70-130
CCV2	CCV	1	70373.7	61999.7	113.51	PASS	70-130	1458917.8	1462586.3	99.75	PASS	70-130
CCB2	CCB	1	65758.6	61999.7	106.06	PASS	70-130	1388637.8	1462586.3	94.94	PASS	70-130
LLCCV1	CCV2	1	55759.2	61999.7	89.93	PASS	70-130	1222632.5	1462586.3	83.59	PASS	70-130
ICSA2	ICSA	1	63155.4	61999.7	101.86	PASS	70-130	1243436.4	1462586.3	85.016	PASS	70-130
ICSAB2	ICSAB	1	66479.4	61999.7	107.23	PASS	70-130	1264950.5	1462586.3	86.49	PASS	70-130
MB-52955	MBLK	1	60925.5	61999.7	98.27	PASS	70-130	1288682.2	1462586.3	88.11	PASS	70-130
LCS-52955	LCS	1	57401.1	61999.7	92.58	PASS	70-130	1205438.3	1462586.3	82.42	PASS	70-130
N017390-001B	SAMP	1	65073.7	61999.7	104.96	PASS	70-130	1204011.9	1462586.3	82.32	PASS	70-130
N017390-001B	SAMP	5	65488.6	61999.7	105.63	PASS	70-130	1277567	1462586.3	87.35	PASS	70-130
N017390-001B-PS	PS	1	65716.1	61999.7	105.99	PASS	70-130	1210805	1462586.3	82.79	PASS	70-130
N017390-001B-MS	MS	1	68288.7	61999.7	110.14	PASS	70-130	1221864.9	1462586.3	83.54	PASS	70-130
N017390-001B-MSD	MSD	1	70188.6	61999.7	113.21	PASS	70-130	1266769.7	1462586.3	86.61	PASS	70-130
N017400-003B	SAMP	1	65538.7	61999.7	105.71	PASS	70-130	1166285.5	1462586.3	79.74	PASS	70-130
N017400-004B	SAMP	1	68031.9	61999.7	109.73	PASS	70-130	1210504.3	1462586.3	82.76	PASS	70-130
CCV3	CCV	1	76176.7	61999.7	122.87	PASS	70-130	1522782.6	1462586.3	104.12	PASS	70-130
CCB3	CCB	1	54590.4	61999.7	88.049	PASS	70-130	1205484.3	1462586.3	82.42	PASS	70-130
N017400-005B	SAMP	1	67724.4	61999.7	109.23	PASS	70-130	1318539.7	1462586.3	90.15	PASS	70-130
N017400-006B	SAMP	1	70021.2	61999.7	112.94	PASS	70-130	1323698.9	1462586.3	90.5	PASS	70-130
N017400-007B	SAMP	1	70065.7	61999.7	113.01	PASS	70-130	1244749.7	1462586.3	85.11	PASS	70-130
N017400-008B	SAMP	1	68827.7	61999.7	111.01	PASS	70-130	1224650.5	1462586.3	83.73	PASS	70-130
N017415-008B	SAMP	1	72007.8	61999.7	116.14	PASS	70-130	1334980.4	1462586.3	91.28	PASS	70-130
CCV4	CCV	1	71165.8	61999.7	114.78	PASS	70-130	1429899.4	1462586.3	97.77	PASS	70-130
CCB4	CCB	1	49068.9	61999.7	79.14	PASS	70-130	1095884.5	1462586.3	74.93	PASS	70-130
LLCCV2	CCV2	1	59417.2	61999.7	95.83	PASS	70-130	1224143.5	1462586.3	83.7	PASS	70-130

INTERNAL STANDARD: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSA3	ICSA	1	62882.1	61999.7	101.42	PASS	70-130	1215217	1462586.3	83.087	PASS	70-130
ICSAB3	ICSAB	1	65981.5	61999.7	106.42	PASS	70-130	1252777.1	1462586.3	85.65	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017400
Test Method: EPA 6020
Analysis Date: 11/5/2015

Matrix: Goundwater
Batch No.: 52955

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr & Mo. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N017390-001B DT 5X	Chromium	ug/L	9.585461	NA	8.427588	13.74%	10
N017390-001B DT 5X	Molybdenum	ug/L	8.077557	NA	7.398991	9.17%	10

ASSET Laboratories

Date: *09-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N017390-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID:	**ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.402	0.50	10.00	7.399	110	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017400
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N017390-001B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID:	**ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.287	1.0	10.00	8.428	88.6	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICPMS**
Method Number: EPA 6020/200.8
Preparation Method: EPA 3010/200.8_PR
Analysis Date(s): 3/13/2015; 3/14/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **ICPMS-02**

Acceptance Criteria: MDL < spike < 10XMDL

		Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
27	Al	Aluminum	1.428	1.454	1.368	1.790	1.039	1.487	1.501	1.0	0.22163	3.143	**0.6966**	10	OK,meets criteria
121	Sb	Antimony	0.114	0.097	0.093	0.091	0.109	0.103	0.102	0.10	0.0083	3.143	**0.0262**	0.50	OK,meets criteria
75	As	Arsenic	0.057	0.049	0.046	0.056	0.051	0.059	0.058	0.050	0.00502	3.143	**0.0158**	0.10	OK,meets criteria
137	Ba	Barium	0.116	0.107	0.137	0.115	0.117	0.175	0.126	0.10	0.02298	3.143	**0.0722**	1.0	OK,meets criteria
9	Be	Beryllium	0.102	0.082	0.086	0.081	0.091	0.100	0.094	0.10	0.00834	3.143	**0.0262**	0.50	OK,meets criteria
11	B	Boron	2.773	2.788	2.855	4.317	3.713	3.448	3.231	2.5	0.57291	3.143	**1.801**	50	OK,meets criteria
111	Cd	Cadmium	0.042	0.043	0.049	0.041	0.042	0.048	0.044	0.050	0.00313	3.143	**0.0098**	0.50	OK,meets criteria
52	Cr	Chromium	0.181	0.200	0.197	0.258	0.196	0.191	0.175	0.25	0.02725	3.143	**0.0856**	1.0	OK,meets criteria
59	Co	Cobalt	0.056	0.047	0.055	0.045	0.051	0.049	0.054	0.050	0.00420	3.143	**0.0132**	0.50	OK,meets criteria
63	Cu	Copper	0.437	0.463	0.447	0.423	0.445	0.424	0.659	0.50	0.08399	3.143	**0.2640**	1.0	OK,meets criteria
56	Fe	Iron	1.231	1.163	1.267	1.061	1.088	1.188	1.211	1.0	0.07499	3.143	**0.2357**	10	OK,meets criteria
208	Pb	Lead	0.227	0.237	0.232	0.278	0.246	0.234	0.243	0.25	0.01696	3.143	**0.0533**	1.0	OK,meets criteria
55	Mn	Manganese	0.077	0.082	0.067	0.065	0.081	0.066	0.075	0.10	0.00723	3.143	**0.0227**	0.50	OK,meets criteria
95	Mo	Molybdenum	0.092	0.084	0.090	0.077	0.106	0.094	0.097	0.10	0.00927	3.143	**0.0291**	0.50	OK,meets criteria
60	Ni	Nickel	0.107	0.073	0.074	0.082	0.095	0.091	0.085	0.10	0.01207	3.143	**0.0379**	1.0	OK,meets criteria
78	Se	Selenium	0.094	0.100	0.055	0.078	0.125	0.074	0.092	0.10	0.02217	3.143	**0.0697**	0.50	OK,meets criteria
107	Ag	Silver	0.099	0.084	0.086	0.083	0.095	0.098	0.099	0.10	0.00735	3.143	**0.0231**	0.50	OK,meets criteria
205	Tl	Thallium	0.106	0.077	0.080	0.074	0.089	0.084	0.090	0.10	0.01072	3.143	**0.0337**	0.50	OK,meets criteria
118	Sn	Tin	0.219	0.228	0.218	0.307	0.256	0.235	0.247	0.25	0.03098	3.143	**0.0974**	10	OK,meets criteria
47	Ti	Titanium	0.101	0.136	0.084	0.094	0.105	0.089	0.134	0.10	0.02092	3.143	**0.0658**	10	OK,meets criteria
238	U	Uranium	0.109	0.093	0.094	0.094	0.112	0.104	0.111	0.10	0.00858	3.143	**0.0270**	0.50	OK,meets criteria
51	V	Vanadium	0.136	0.128	0.116	0.135	0.127	0.121	0.136	0.10	0.00785	3.143	**0.0247**	1.0	OK,meets criteria
66	Zn	Zinc	0.075	0.056	0.082	0.078	0.093	0.092	0.082	0.10	0.01242	3.143	**0.0390**	10	OK,meets criteria

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING
Established 1931
3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

REPORT

Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Project Name: **ATL-NV**

Table of Contents

Truesdail Laboratories, Inc. Data Package

For Laboratory Number 15J0459

ITEM	Section
Case Narrative	1.0
Summary of Final Results	2.0
Final Reports	3.0
Chain of Custody and Sample Receipt Records	4.0
Sample Preparation and Analytical Raw Data	5.0

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.
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www.truesdail.com

REPORT

Client: **Advanced Technology Laboratories-NV**
3151 W Post Rd
Las Vegas, NV 89118
Attention: Marlon Cartin
Project Name: ATL-NV

Work Order No.: 15J0459
Printed: 11/09/2015

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia result. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on October 29, 2015, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 201.

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N017400-001F/OW-01D-4Q15	15J0459-01	Water	Grab	10/27/2015 09:49	10/29/2015 10:07
N017400-002F/OW-01M-4Q15	15J0459-02	Water	Grab	10/27/2015 10:49	10/29/2015 10:07

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,



Lyn Phaerakkakit
Project Manager

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Section 2.0

Summary of Final Results

N017400-001F/OW-01D-4Q15

15J0459-01 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:37	AL	SM 4500-NH3 D M	

N017400-002F/OW-01M-4Q15

15J0459-02 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:40	AL	SM 4500-NH3 D M	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.
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3337 MICHELSON DRIVE, SUITE CN750
IRVINE, CALIFORNIA 92612
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

Client: Advanced Technology Laboratories - NV
3151 W Post Road
Las Vegas, NV 89118
Attention: Marlon Cartin
Sample: Two (2) Water Samples
Project Name: PG&E Topock Project
Project No.: N/A

Laboratory No.: 15J0459
Date: November 9, 2015
Collected: October 27, 2015
Received: October 29, 2015

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

Section 3.0

Final Reports

Method: SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017400-001F/OW-01D-4Q15**
Lab Sample ID: **15J0459-01**
Project: **ATL-NV**

Date Sampled: 10/27/15 09:49 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:37	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017400-002F/OW-01M-4Q15**
Lab Sample ID: **15J0459-02**
Project: **ATL-NV**

Date Sampled: 10/27/15 10:49 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:40	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV
Laboratory ID: 1511013-BLK1

Prepared:	11/03/15 10:45	Preparation:	SM 4500-NH3 B	Matrix:	Water
Analyzed:	11/03/15 11:20	Instrument:	TL01	File ID:	5K02003-026
Batch:	1511013	Sequence:	5K02003		

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0318	0.0500	

LCS / LCS DUPLICATE RECOVERY

SM 4500-NH3 D M

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**
Work Order: **15J0459**

Matrix:	Water	Prep Method:	SM 4500-NH3 B
Prep Batch:	1511013	Lab Sample ID:	1511013-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.362	90	90 - 110

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**
Work Order: **15J0459**

Matrix: Water
Prep Batch: 1511013

Analysis Method: SM 4500-NH3 D M
Prep Method: SM 4500-NH3 B
Laboratory ID: 1511013-MS1
Source Sample ID: 15J0470-07

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	ND	0.476	119	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Ammonia	0.400	0.457	114	4	20	75 - 125

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 1508163-002

Sequence: 5H10002 Injection Date: 08/10/15

Lab Sample ID: 5H10002-CCV1 Injection Time: 18:51

	CONC. (mg/L)		RESPONSE FACTOR		CCV	
COMPOUND	STD	CCV	CCV	% Rec	Lower Limit	Upper Limit
Ammonia	0.500	0.494	99.47522	99	90	110

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 5K02003-016

Sequence: 5K02003 Injection Date: 11/03/15

Lab Sample ID: 5K02003-CCV1 Injection Time: 11:59

	CONC. (mg/L)		RESPONSE FACTOR		CCV Lower	Upper
COMPOUND	STD	CCV	CCV	% Rec	Limit	Limit
Ammonia	0.500	0.467	112.4342	**93**	90	110

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 5K02003-002

Sequence: 5K02003 Injection Date: 11/03/15

Lab Sample ID: 5K02003-CCV2 Injection Time: 14:35

	CONC. (mg/L)		RESPONSE FACTOR		CCV Lower	Upper
COMPOUND	STD	CCV	CCV	% Rec	Limit	Limit
Ammonia	0.500	0.466	112.2024	**93**	90	110

* Values outside of QC limits

DUPLICATES

N017400-001F/OW-01D-4Q15

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**

Matrix:	Water	Laboratory ID:	1511013-DUP1
Prep Batch:	1511013	Initial/Final:	50 mL / 50 mL
Prep Method:	SM 4500-NH3 B	Analysis:	SM 4500-NH3 D M

ANALYTE	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	CONTROL LIMIT
Ammonia	ND	0.0323			20

* Values outside of QC limits

Section 4.0

Chain of Custody and Sample Receipt Records

TRUESDAIL LABORATORIES, INC.

Internal Chain of Custody Logbook

Lab Number: 15J0459

Client Name: ATL

Storage Temperature: 3.1°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
OW-01D-4915				10/29/15	10:07		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	20mL	Alex L.	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
OW-01M-4915				10/29/15	10:07		Nirali Patel	Nirali
	NH_3	11/3/15	10:30		14:43/15		Alex L	
				11/3/15	10:30	10mL	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

15J0459

QC Level: Level IV

ALERT !!
Level IV QC

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Nara Tep

28-Oct-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3C		
N017400-001F / OW-01D-4Q15	Groundwater	10/27/2015 9:49:00 AM	4OZP	1		
N017400-002F / OW-01M-4Q15	Groundwater	10/27/2015 10:49:00 AM	4OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N17400A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-DAY TAT.

Please analyze Ammonia by SM4500.

		Date/Time			Date/Time
Relinquished by:	[signature]	10/28/15 1700	**Received by:**	GSO TRK# 529766169	
Relinquished by:			**Received by:**	[signature]	10/29/15 10:07 3.1°C

ALERT !!
Level IV QC

Log-in check list
For level III data package

Client: ATL Lab Number: 15J0459

Received Date: 10/29/15

Sample receiving review	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all sampls temperature measured and recorded on COC?	✓			
Did you measure and record the pH on all metals samples on COC?			✓	
Has sample integrity and analysis discrepancy form been filled out completely?	✓			
Were all interacompany yellow forms generated and stamped with " alert level III QC" note?	✓			
Have check -in and check out lists been filled out and attached to appropriate form?	✓			
Were sample containers labeled with TLI numbers, date, and time sampled?	✓			
Did you notify analyst or group leader about short holding time?	✓			
Was a copy of COC attached to all yellow intracompany form?			✓	
For special clients, have all their samples been logged into the internal COC book?	✓			
Were samples locked in fridge or special storage area?	✓			
Was temperature recorded in the log book?	✓			

Sample receiving Signature: [signature]

ALERT !!
Level IV QC

15J0459

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Project Manager: Lyn Phaerakkakit
Project Number: [none]

Report To:
Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:
Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone :(702) 307-2659
Fax: (702) 307-2691

Date Due: 11/09/2015 16:30 (7 day TAT)

Received By: Nirali Patel
Logged In By: Nirali Patel

Date Received: 10/29/2015 10:07
Date Logged In: 10/29/2015 10:30

Samples Received at: 3.1°C

Chain of Custody rece	Yes	Samples intact?	Yes
Letter (if sent) matche	No	Custody seals (if any)	No
Requested analyses ac	Yes	Analyses within hold t	Yes
Samples received in a	Yes		

Analysis	Due	TAT	Expires	Comments
15J0459-01 N017400-001F/OW-01D-4Q15 [Water] Sampled 10/27/2015 09:49 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/09/2015 12:00	7	11/24/2015 09:49	
15J0459-02 N017400-002F/OW-01M-4Q15 [Water] Sampled 10/27/2015 10:49 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/09/2015 12:00	7	11/24/2015 10:49	

Michelle Reed
Reviewed By

10/30/15
Date

Section 5.0

Sample Preparation, and Analytical Raw Data

PREPARATION BATCH SUMMARY

SM 4500-NH3 D M

Laboratory: Truesdail Laboratories, Inc

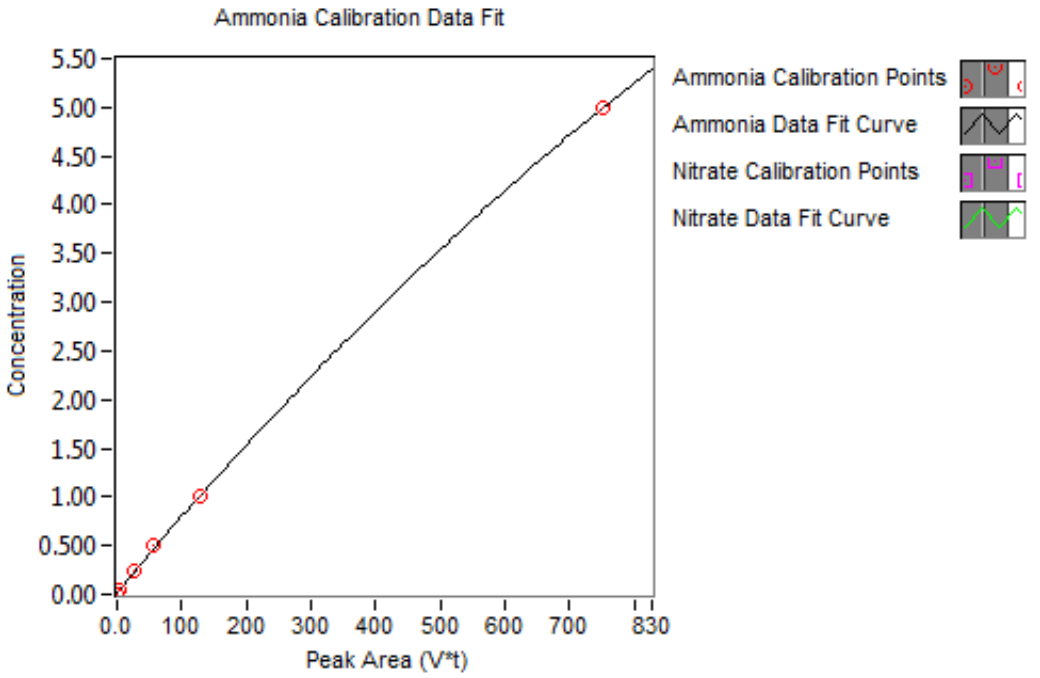
Client: Advanced Technology Laboratories-NV Project: ATL-NV

Batch: 1511013 Batch Matrix: Water Preparation: SM 4500-NH3 B

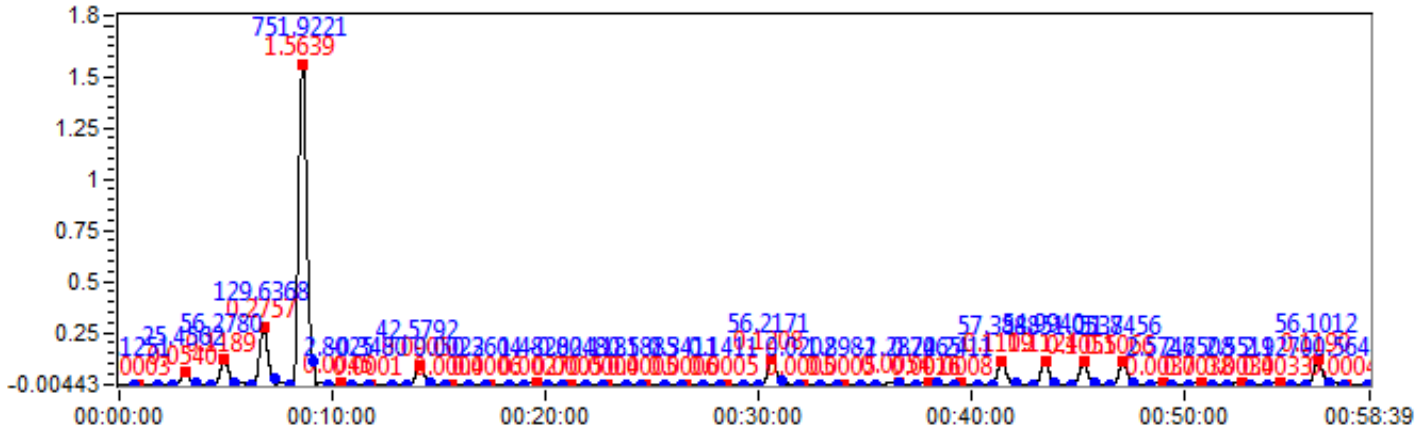
SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	1511013-BLK1	11/03/15 10:45	50.00	50.00
LCS	1511013-BS1	11/03/15 10:45	50.00	50.00
N017400-001F/OW-01D-4Q15	1511013-DUP1	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL1	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL2	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL3	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL4	11/03/15 10:45	50.00	50.00
Matrix Spike	1511013-MS1	11/03/15 10:45	50.00	50.00
Matrix Spike Dup	1511013-MSD1	11/03/15 10:45	50.00	50.00
N017400-001F/OW-01D-4Q15	15J0459-01	11/03/15 10:45	50.00	50.00
N017400-002F/OW-01M-4Q15	15J0459-02	11/03/15 10:45	50.00	50.00

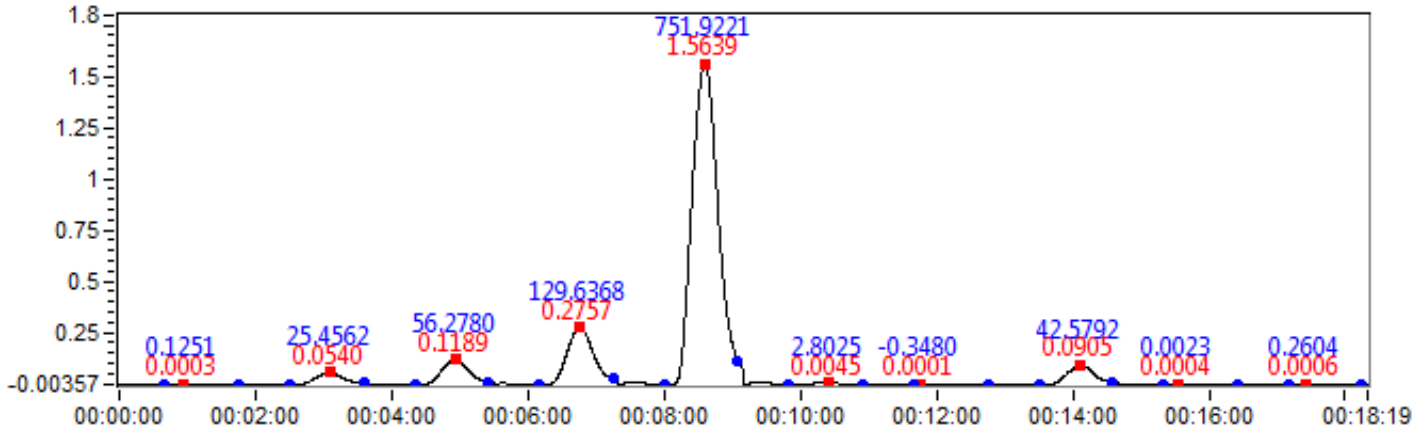
Timberline TL-2100 Summary Report **11/3/2015 2:53 PM**

Injection Time	Wash Time	Integration Start Time	Integration End Time
00:20	01:30	00:40	01:45

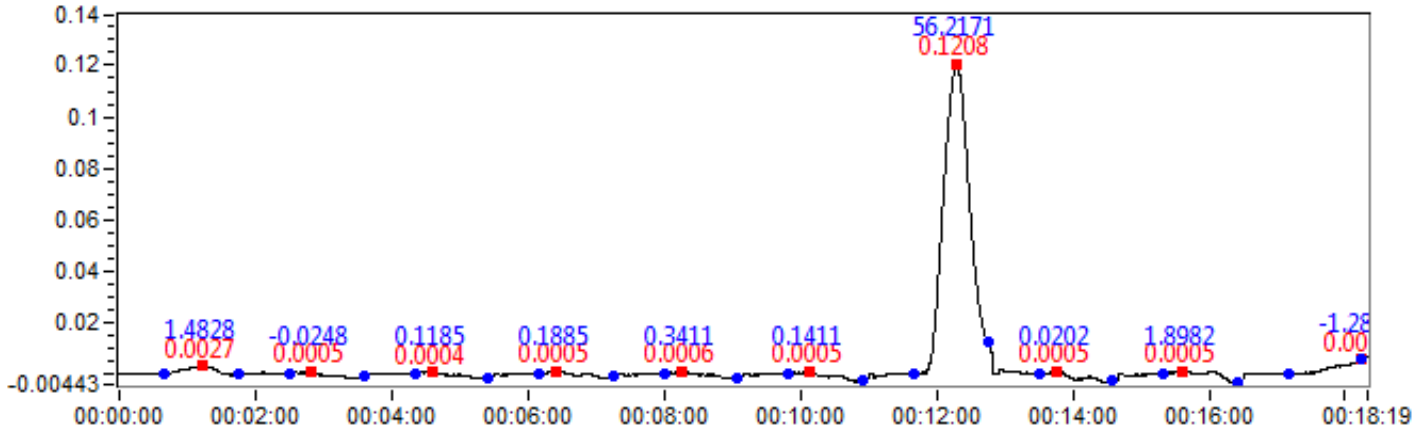


Ammonia Calibration Equation	R^2 Value	Nitrate Calibration Equation	Nitrate R^2 Value
y = +3.027E-2 + 7.855E-3*X - 1.657E-6*X^2	0.999843	y =	NaN

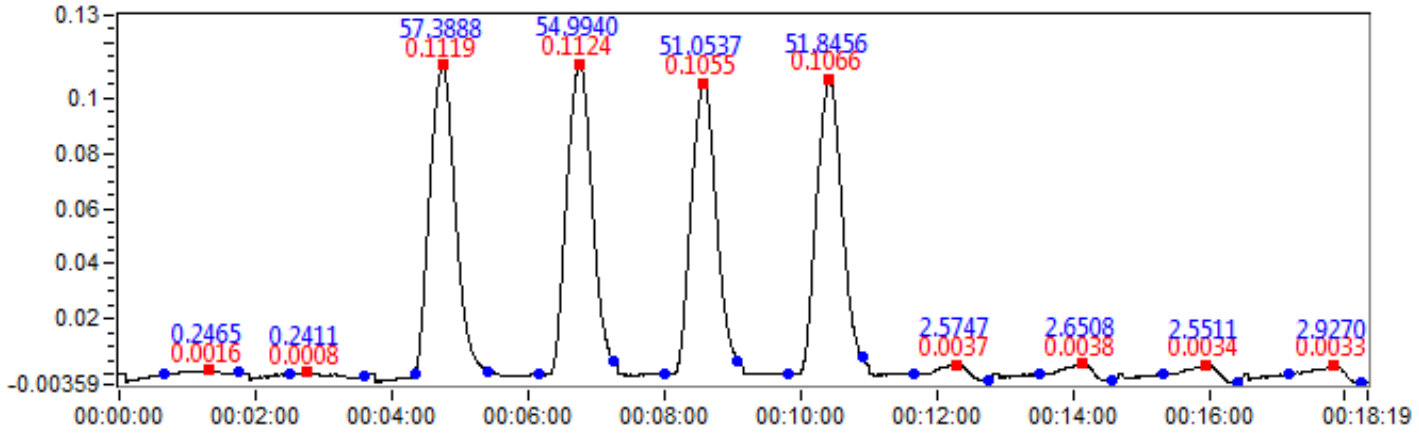




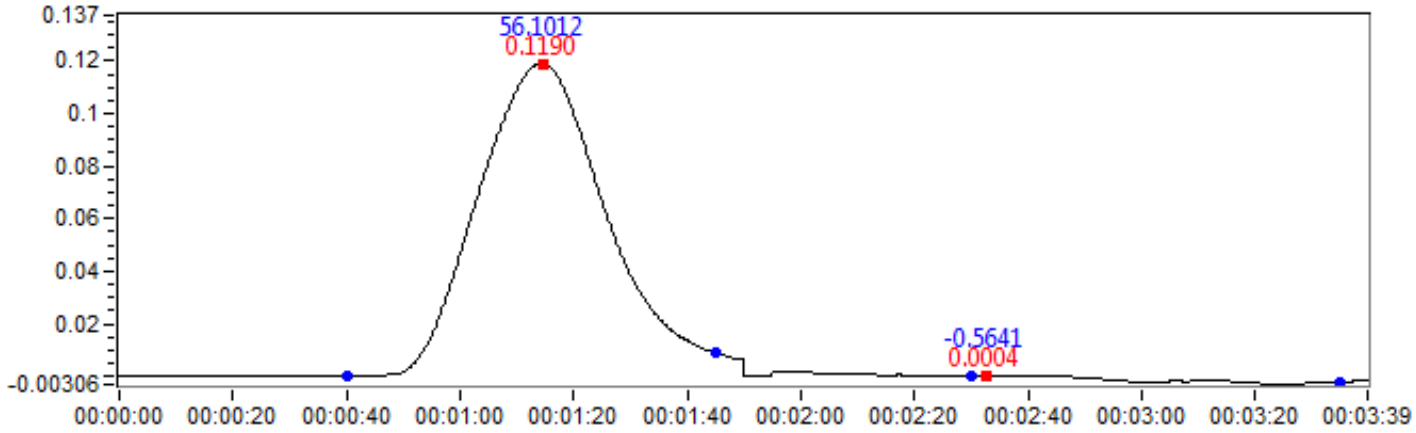
Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 11:38:58	NH3 Sample	1511013-DUP1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.260433	0.032318			
1	11-03-15 11:37:00	NH3 Sample	15J0459-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.002323	0.030291			
8	11-03-15 11:31:39	NH3 Sample	1511013-BS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564882 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	42.579220	0.361710			
7	11-03-15 11:20:18	NH3 Sample	1511013-BLK1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564542 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.347966	0.027539			
2	11-03-15 11:10:48	NH3 Sample	5K02003-CAL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564257 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.802507	.05			
6	11-03-15 11:08:31	NH3 Sample	5K02003-CAL5	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	751.922078	5			
5	11-03-15 11:06:33	NH3 Sample	5K02003-CAL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	129.636768	1			
4	11-03-15 11:04:35	NH3 Sample	5K02003-CAL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.277978	.5			
3	11-03-15 11:02:37	NH3 Sample	5K02003-CAL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	25.456239	.25			
1	11-03-15 10:58:42	NH3 Sample	5K02003-ICB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.125125	0.000000			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 13:42:57	NH3 Sample	15J0470-07	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-1.287234	0.020159			
1	11-03-15 13:40:59	NH3 Sample	15J0470-06	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.898241	0.045176			
10	11-03-15 12:01:17	NH3 Sample	5K02003-CCB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565712 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.020197	0.030431			
9	11-03-15 11:59:19	NH3 Sample	5K02003-CCV1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565712 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.217077	0.466597			
8	11-03-15 11:50:48	NH3 Sample	15J0470-05	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.141093	0.031381			
7	11-03-15 11:48:50	NH3 Sample	15J0470-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.341111	0.032952			
6	11-03-15 11:46:52	NH3 Sample	15J0470-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.188513	0.031753			
5	11-03-15 11:44:55	NH3 Sample	15J0470-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.118455	0.031203			
4	11-03-15 11:42:55	NH3 Sample	15J0470-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.024815	0.030078			
3	11-03-15 11:40:56	NH3 Sample	15J0459-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.482787	0.041915			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
10	11-03-15 14:14:17	NH3 Sample	1511013-MRL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.927023	0.053249			
9	11-03-15 14:12:19	NH3 Sample	1511013-MRL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.551142	0.050300			
8	11-03-15 14:10:20	NH3 Sample	1511013-MRL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.650778	0.051082			
7	11-03-15 14:08:21	NH3 Sample	1511013-MRL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.574724	0.050485			
6	11-03-15 14:01:00	NH3 Sample	1511013-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566706 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	51.845610	0.433043			
5	11-03-15 13:59:02	NH3 Sample	1511013-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566706 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	51.053724	0.426958			
6	11-03-15 13:53:51	NH3 Sample	1511013-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566487 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	54.993966	0.457215			
5	11-03-15 13:51:52	NH3 Sample	1511013-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566487 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	57.388789	0.475579			
4	11-03-15 13:46:53	NH3 Sample	15K0049-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.241081	0.032166			
3	11-03-15 13:44:55	NH3 Sample	15K0049-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.246492	0.032208			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 14:37:17	NH3 Sample	5K02003-CCB2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 567796 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.564100	0.025841			
1	11-03-15 14:35:19	NH3 Sample	5K02003-CCV2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 567796 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.101209	0.465708			

ARCADIS

Project: PG&E TOPOCK - CMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N017415

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N017415

Item	Pages
Cover Page	1-7
Analytical Result / QC Summary Reports	8-124
Sample Receiving Items	125-136
List of Analysts	137
Raw Data	
EPA 120.1	138-141
SM 2540C	142-151
EPA 200.7 Dissolved	152-203
EPA 200.8 Dissolved	204-324
SM 2130B	325-328
EPA 218.6	329-444
SM 2320B	445-454
EPA 245.1 Dissolved	455-471
EPA 300.0	472-514
SM 4500-NO3F	515-528
EPA 6010B Dissolved	529-561
EPA 6010B	562-603
EPA 6020 Dissolved	604-643

November 16, 2015

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N017415

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 28, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Glen Gesmundo
QA Manager

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

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Truesdail-Tustin,CA.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N017399-002B-MS2, N017399-002B-MSD2 and N017415-007B-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017399-001A-MS1, N017399-001A-MSD1 and N017415-006B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017400-001B-MS, N017400-001B-MSD and N017427-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on Beryllium for samples N017415-001, N017415-002, N017415-003, N017415-005, N017415-006 and N017415-007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analyte for this failed internal standard was reported at dilution that meet

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P: 702.307.2659 F: 702.307.2691

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internal standard recovery limit.

Because the results for total dissolved chromium (4.8 ug/L) and hexavalent chromium (6.3 ug/L) for sample N017415-004 (CW-03M-4Q15) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 6.0 and 5.8 ug/L, respectively. Hence, the reanalyzed result is reported.

Because the results for total dissolved chromium (5.0 ug/L) and hexavalent chromium (6.2 ug/L) for sample N017415-005 (OW-070-4Q15) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 5.9 and 5.9 ug/L, respectively. Hence, the reanalyzed result is reported.

Analytical Comments for EPA 300.0:

Dilution was necessary on sample N017415-005 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Sodium on QC sample N017400-004B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 6010B_Total:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron on QC samples N017400-001C-MS1, N017400-001C-MSD1 and N017427-002C-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *16-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017415
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017415-001A	CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	10/28/2015	11/16/2015
N017415-001B	CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	10/28/2015	11/16/2015
N017415-001C	CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	10/28/2015	11/16/2015
N017415-001D	CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	10/28/2015	11/16/2015
N017415-001E	CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	10/28/2015	11/16/2015
N017415-001F	CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	10/28/2015	11/16/2015
N017415-002A	CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	10/28/2015	11/16/2015
N017415-002B	CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	10/28/2015	11/16/2015
N017415-002C	CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	10/28/2015	11/16/2015
N017415-002D	CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	10/28/2015	11/16/2015
N017415-002E	CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	10/28/2015	11/16/2015
N017415-002F	CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	10/28/2015	11/16/2015
N017415-003A	CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	10/28/2015	11/16/2015
N017415-003B	CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	10/28/2015	11/16/2015
N017415-003C	CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	10/28/2015	11/16/2015
N017415-003D	CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	10/28/2015	11/16/2015
N017415-003E	CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	10/28/2015	11/16/2015
N017415-003F	CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	10/28/2015	11/16/2015
N017415-004A	CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	10/28/2015	11/16/2015
N017415-004B	CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	10/28/2015	11/16/2015
N017415-004C	CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	10/28/2015	11/16/2015
N017415-004D	CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	10/28/2015	11/16/2015
N017415-004E	CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	10/28/2015	11/16/2015
N017415-004F	CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	10/28/2015	11/16/2015
N017415-005A	OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	10/28/2015	11/16/2015
N017415-005B	OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	10/28/2015	11/16/2015
N017415-005C	OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	10/28/2015	11/16/2015
N017415-005D	OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	10/28/2015	11/16/2015
N017415-005E	OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	10/28/2015	11/16/2015

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017415
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017415-005F	OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	10/28/2015	11/16/2015
N017415-006A	CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	10/28/2015	11/16/2015
N017415-006B	CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	10/28/2015	11/16/2015
N017415-006C	CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	10/28/2015	11/16/2015
N017415-006D	CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	10/28/2015	11/16/2015
N017415-006E	CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	10/28/2015	11/16/2015
N017415-006F	CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	10/28/2015	11/16/2015
N017415-007A	CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	10/28/2015	11/16/2015
N017415-007B	CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	10/28/2015	11/16/2015
N017415-007C	CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	10/28/2015	11/16/2015
N017415-007D	CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	10/28/2015	11/16/2015
N017415-007E	CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	10/28/2015	11/16/2015
N017415-007F	CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	10/28/2015	11/16/2015
N017415-008A	OW-05S-4Q15	Groundwater	10/28/2015 3:51:00 PM	10/28/2015	11/16/2015
N017415-008B	OW-05S-4Q15	Groundwater	10/28/2015 3:51:00 PM	10/28/2015	11/16/2015
N017415-008C	OW-05S-4Q15	Groundwater	10/28/2015 3:51:00 PM	10/28/2015	11/16/2015
N017415-008D	OW-05S-4Q15	Groundwater	10/28/2015 3:51:00 PM	10/28/2015	11/16/2015
N017415-009A	MW-203-4Q15	Groundwater	10/28/2015 4:05:00 PM	10/28/2015	11/16/2015

ASSET LABORATORIES
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"Serving Clients with Passion and Professionalism"

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-002

Client Sample ID: CW-02M-4Q15
Collection Date: 10/28/2015 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-003

Client Sample ID: CW-03D-4Q15
Collection Date: 10/28/2015 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	8000	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	8200	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-006

Client Sample ID: CW-04D-4Q15
Collection Date: 10/28/2015 9:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-007

Client Sample ID: CW-04M-4Q15
Collection Date: 10/28/2015 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:51:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151029B**	QC Batch: **R103882**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	10/29/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N017415-005DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **103882**
Client ID: **ZZZZZZ** Batch ID: **R103882** TestNo: **EPA 120.1** Analysis Date: **10/29/2015** SeqNo: **2121947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8130.000	0.10						8150	0.246	10	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 2:11:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-002

Client Sample ID: CW-02M-4Q15
Collection Date: 10/28/2015 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 11:40:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate **10/29/2015**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4900	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-006

Client Sample ID: CW-04D-4Q15
Collection Date: 10/28/2015 9:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 10:10:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:51:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151029E**	QC Batch: **52886**				PrepDate	**10/29/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2900	33	33		mg/L	1	10/29/2015 02:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-52886**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **10/29/2015**	RunNo: **103907**
Client ID: **PBW**	Batch ID: **52886**	TestNo: **SM2540C**		Analysis Date: **10/29/2015**	SeqNo: **2123069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-52886**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **10/29/2015**	RunNo: **103907**
Client ID: **LCSW**	Batch ID: **52886**	TestNo: **SM2540C**		Analysis Date: **10/29/2015**	SeqNo: **2123070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	952.000	10	1000	0	95.2	80	120				

Sample ID **N017415-005D-DUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **10/29/2015**	RunNo: **103907**
Client ID: **ZZZZZZ**	Batch ID: **52886**	TestNo: **SM2540C**		Analysis Date: **10/29/2015**	SeqNo: **2123076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4785.000	50						4840	1.14	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_151110A**	QC Batch: **52910**				PrepDate	**11/2/2015**	Analyst: **CEI**
Aluminum	ND	12	50		µg/L	1	11/10/2015 12:01 PM
Boron	950	11	100		µg/L	1	11/10/2015 12:01 PM
Calcium	94000	31	500		µg/L	1	11/10/2015 12:01 PM
Iron	ND	17	20		µg/L	1	11/10/2015 12:01 PM
Magnesium	3900	86	100		µg/L	1	11/10/2015 12:01 PM
Potassium	11000	360	2500		µg/L	5	11/4/2015 09:20 AM
Sodium	1500000	580	25000		µg/L	50	11/4/2015 12:05 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-002

Client Sample ID: CW-02M-4Q15
Collection Date: 10/28/2015 3:01:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_151110A** QC Batch: **52910** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Aluminum	ND	12	50		µg/L	1	11/10/2015 12:06 PM
Boron	1100	11	100		µg/L	1	11/10/2015 12:06 PM
Calcium	150000	31	500		µg/L	1	11/10/2015 12:06 PM
Iron	ND	17	20		µg/L	1	11/10/2015 12:06 PM
Magnesium	8500	86	100		µg/L	1	11/10/2015 12:06 PM
Potassium	12000	360	2500		µg/L	5	11/4/2015 09:24 AM
Sodium	1400000	580	25000		µg/L	50	11/4/2015 12:08 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-003

Client Sample ID: CW-03D-4Q15
Collection Date: 10/28/2015 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_151110A**	QC Batch: **52910**				PrepDate	**11/2/2015**	Analyst: **CEI**
Aluminum	ND	12	50		µg/L	1	11/10/2015 12:11 PM
Boron	1100	11	100		µg/L	1	11/10/2015 12:11 PM
Calcium	93000	31	500		µg/L	1	11/10/2015 12:11 PM
Iron	ND	17	20		µg/L	1	11/10/2015 12:11 PM
Magnesium	5000	86	100		µg/L	1	11/10/2015 12:11 PM
Potassium	11000	360	2500		µg/L	5	11/4/2015 09:29 AM
Sodium	1500000	580	25000		µg/L	50	11/4/2015 12:11 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_151110A**	QC Batch: **52910**				PrepDate	**11/2/2015**	Analyst: **CEI**
Aluminum	ND	12	50		µg/L	1	11/10/2015 12:17 PM
Boron	1100	11	100		µg/L	1	11/10/2015 12:17 PM
Calcium	210000	31	500		µg/L	1	11/10/2015 12:17 PM
Iron	ND	17	20		µg/L	1	11/10/2015 12:17 PM
Magnesium	12000	86	100		µg/L	1	11/10/2015 12:17 PM
Potassium	14000	360	2500		µg/L	5	11/4/2015 09:34 AM
Sodium	1600000	580	25000		µg/L	50	11/4/2015 12:15 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-005

Client Sample ID: OW-070-4Q15
Collection Date: 10/28/2015 12:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **ICP2_151110A**	QC Batch: **52910**				PrepDate	**11/2/2015**	Analyst: **CEI**
Aluminum	ND	12	50		µg/L	1	11/10/2015 12:22 PM
Boron	1100	11	100		µg/L	1	11/10/2015 12:22 PM
Calcium	210000	31	500		µg/L	1	11/10/2015 12:22 PM
Iron	ND	17	20		µg/L	1	11/10/2015 12:22 PM
Magnesium	13000	86	100		µg/L	1	11/10/2015 12:22 PM
Potassium	14000	360	2500		µg/L	5	11/4/2015 09:39 AM
Sodium	1600000	580	25000		µg/L	50	11/4/2015 12:18 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-006

Client Sample ID: CW-04D-4Q15
Collection Date: 10/28/2015 9:16:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_151110A** QC Batch: **52910** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Aluminum	ND	12	50		µg/L	1	11/10/2015 12:27 PM
Boron	1100	11	100		µg/L	1	11/10/2015 12:27 PM
Calcium	150000	31	500		µg/L	1	11/10/2015 12:27 PM
Iron	ND	17	20		µg/L	1	11/10/2015 12:27 PM
Magnesium	7900	86	100		µg/L	1	11/10/2015 12:27 PM
Potassium	13000	360	2500		µg/L	5	11/4/2015 09:44 AM
Sodium	1500000	580	25000		µg/L	50	11/4/2015 12:35 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-007

Client Sample ID: CW-04M-4Q15
Collection Date: 10/28/2015 10:10:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_151110A** QC Batch: **52910** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Aluminum	ND	12	50		µg/L	1	11/10/2015 01:16 PM
Boron	930	11	100		µg/L	1	11/10/2015 01:16 PM
Calcium	210000	31	500		µg/L	1	11/10/2015 01:16 PM
Iron	ND	17	20		µg/L	1	11/10/2015 01:16 PM
Magnesium	13000	86	100		µg/L	1	11/10/2015 01:16 PM
Potassium	13000	360	2500		µg/L	5	11/4/2015 09:56 AM
Sodium	1200000	580	25000		µg/L	50	11/4/2015 12:38 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-52910	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	PBW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-52910	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	LCSW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	20463.164	500	20000	0	102	85	115				
Sodium	19298.304	500	20000	0	96.5	85	115				

Sample ID	N017399-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38656.299	2500	20000	16100	113	75	125				

Sample ID	N017399-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38051.316	2500	20000	16100	110	75	125	38660	1.58	20	

Sample ID	N017399-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1471097.938	25000	20000	1458000	65.2	75	125				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N017399-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1471119.166	25000	20000	1458000	65.3	75	125	1471000	0.00144	20	S

Sample ID	N017415-007B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125852

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	35910.474	2500	20000	13200	114	75	125				

Sample ID	N017415-007B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1340018.611	25000	20000	1220000	601	75	125				S

Sample ID	MB-52910	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	PBW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	50									
Boron	ND	100									
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID	LCS1-52910	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	LCSW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10140.575	50	10000	0	101	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-52910** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **LCSW** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5042.788	100	5000	0	101	85	115				
Calcium	9625.755	500	10000	0	96.3	85	115				
Iron	105.292	20	100.0	0	105	85	115				
Magnesium	9428.515	100	10000	0	94.3	85	115				

Sample ID **N017399-001A-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5272.448	50	10000	0	52.7	75	125				S
Boron	3043.496	100	5000	536.1	50.1	75	125				S
Calcium	120164.092	500	10000	110500	96.5	75	125				
Iron	51.690	20	100.0	0	51.7	75	125				S
Magnesium	25028.529	100	10000	20260	47.7	75	125				S

Sample ID **N017399-001A-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5252.009	50	10000	0	52.5	75	125	5272	0.388	20	S
Boron	3040.700	100	5000	536.1	50.1	75	125	3043	0.0919	20	S
Calcium	120336.291	500	10000	110500	98.2	75	125	120200	0.143	20	
Iron	49.963	20	100.0	0	50.0	75	125	51.69	3.40	20	S
Magnesium	24998.094	100	10000	20260	47.4	75	125	25030	0.122	20	S

Sample ID **N017415-006B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132977**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N017415-006B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5249.573	50	10000	0	52.5	75	125				S
Boron	3441.876	100	5000	1125	46.3	75	125				S
Calcium	148847.810	500	10000	146300	25.0	75	125				S
Iron	58.273	20	100.0	0	58.3	75	125				S
Magnesium	11779.303	100	10000	7906	38.7	75	125				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 12:29 AM
Arsenic	2.8	0.016	0.10		µg/L	1	11/4/2015 11:15 AM
Barium	13	0.072	1.0		µg/L	1	11/4/2015 11:15 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 12:23 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:15 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:15 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 12:29 AM
Lead	ND	0.053	1.0		µg/L	1	11/4/2015 11:15 AM
Manganese	1.0	0.023	0.50		µg/L	1	11/4/2015 11:15 AM
Molybdenum	12	0.029	0.50		µg/L	1	11/10/2015 12:29 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 12:29 AM
Selenium	3.0	0.070	0.50		µg/L	1	11/10/2015 12:29 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 01:54 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 12:29 AM
Vanadium	3.8	0.025	1.0		µg/L	1	11/4/2015 11:15 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:15 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-002

Client Sample ID: CW-02M-4Q15
Collection Date: 10/28/2015 3:01:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 12:40 AM
Arsenic	1.7	0.016	0.10		µg/L	1	11/4/2015 11:21 AM
Barium	64	0.072	1.0		µg/L	1	11/4/2015 11:21 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 12:34 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:21 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:21 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 12:40 AM
Lead	ND	0.053	1.0		µg/L	1	11/4/2015 11:21 AM
Manganese	0.73	0.023	0.50		µg/L	1	11/4/2015 11:21 AM
Molybdenum	14	0.029	0.50		µg/L	1	11/10/2015 12:40 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 12:40 AM
Selenium	2.6	0.070	0.50		µg/L	1	11/10/2015 12:40 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 02:05 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 12:40 AM
Vanadium	3.3	0.025	1.0		µg/L	1	11/4/2015 11:21 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:21 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-003

Client Sample ID: CW-03D-4Q15
Collection Date: 10/28/2015 11:40:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 01:02 AM
Arsenic	1.3	0.016	0.10		µg/L	1	11/4/2015 11:26 AM
Barium	15	0.072	1.0		µg/L	1	11/4/2015 11:26 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 12:56 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:26 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:26 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 01:02 AM
Lead	ND	0.053	1.0		µg/L	1	11/4/2015 11:26 AM
Manganese	1.0	0.023	0.50		µg/L	1	11/4/2015 11:26 AM
Molybdenum	13	0.029	0.50		µg/L	1	11/10/2015 01:02 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 01:02 AM
Selenium	3.0	0.070	0.50		µg/L	1	11/10/2015 01:02 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 02:27 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 01:02 AM
Vanadium	2.4	0.025	1.0		µg/L	1	11/4/2015 11:26 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:26 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 01:13 AM
Arsenic	1.0	0.016	0.10		µg/L	1	11/4/2015 11:32 AM
Barium	42	0.072	1.0		µg/L	1	11/4/2015 11:32 AM
Beryllium	ND	0.026	0.50		µg/L	1	11/10/2015 01:13 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:32 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:32 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 01:13 AM
Lead	ND	0.053	1.0		µg/L	1	11/4/2015 11:32 AM
Manganese	0.76	0.023	0.50		µg/L	1	11/4/2015 11:32 AM
Molybdenum	21	0.029	0.50		µg/L	1	11/10/2015 01:13 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 01:13 AM
Selenium	1.5	0.070	0.50		µg/L	1	11/10/2015 01:13 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 02:38 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 01:13 AM
Vanadium	2.3	0.025	1.0		µg/L	1	11/4/2015 11:32 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:32 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-005

Client Sample ID: OW-070-4Q15
Collection Date: 10/28/2015 12:47:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 01:24 AM
Arsenic	0.98	0.016	0.10		µg/L	1	11/4/2015 11:37 AM
Barium	43	0.072	1.0		µg/L	1	11/4/2015 11:37 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 01:18 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:37 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:37 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 01:24 AM
Lead	ND	0.053	1.0		µg/L	1	11/10/2015 01:24 AM
Manganese	0.56	0.023	0.50		µg/L	1	11/4/2015 11:37 AM
Molybdenum	21	0.029	0.50		µg/L	1	11/10/2015 01:24 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 01:24 AM
Selenium	1.6	0.070	0.50		µg/L	1	11/10/2015 01:24 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 02:49 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 01:24 AM
Vanadium	2.4	0.025	1.0		µg/L	1	11/4/2015 11:37 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:37 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-006

Client Sample ID: CW-04D-4Q15
Collection Date: 10/28/2015 9:16:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 01:35 AM
Arsenic	2.7	0.016	0.10		µg/L	1	11/4/2015 11:43 AM
Barium	18	0.072	1.0		µg/L	1	11/4/2015 11:43 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 01:29 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:43 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:43 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 01:35 AM
Lead	ND	0.053	1.0		µg/L	1	11/10/2015 01:35 AM
Manganese	0.78	0.023	0.50		µg/L	1	11/4/2015 11:43 AM
Molybdenum	17	0.029	0.50		µg/L	1	11/10/2015 01:35 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 01:35 AM
Selenium	2.9	0.070	0.50		µg/L	1	11/10/2015 01:35 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 03:00 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 01:35 AM
Vanadium	3.0	0.025	1.0		µg/L	1	11/4/2015 11:43 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:43 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-007

Client Sample ID: CW-04M-4Q15
Collection Date: 10/28/2015 10:10:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 01:46 AM
Arsenic	1.9	0.016	0.10		µg/L	1	11/4/2015 11:48 AM
Barium	96	0.072	1.0		µg/L	1	11/4/2015 11:48 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 01:40 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:48 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:48 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 01:46 AM
Lead	ND	0.053	1.0		µg/L	1	11/10/2015 01:46 AM
Manganese	ND	0.023	0.50		µg/L	1	11/4/2015 11:48 AM
Molybdenum	8.7	0.029	0.50		µg/L	1	11/10/2015 01:46 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 01:46 AM
Selenium	2.4	0.070	0.50		µg/L	1	11/10/2015 01:46 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 03:11 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 01:46 AM
Vanadium	3.1	0.025	1.0		µg/L	1	11/4/2015 11:48 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:48 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	0.025	1.0									
Zinc	ND	10									

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.719	0.10	10.00	0	107	85	115				
Barium	108.832	1.0	100.0	0	109	85	115				
Cadmium	10.939	0.50	10.00	0	109	85	115				
Chromium	10.527	1.0	10.00	0	105	85	115				
Cobalt	10.062	0.50	10.00	0	101	85	115				
Lead	10.775	1.0	10.00	0	108	85	115				
Manganese	105.464	0.50	100.0	0	105	85	115				
Vanadium	10.671	1.0	10.00	0	107	85	115				
Zinc	107.163	10	100.0	0	107	85	115				

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126137

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.693	0.10	10.00	1.065	86.3	75	125				
Barium	114.939	1.0	100.0	27.44	87.5	75	125				
Cadmium	8.296	0.50	10.00	0	83.0	75	125				
Chromium	8.350	1.0	10.00	0.5062	78.4	75	125				
Cobalt	7.089	0.50	10.00	0	70.9	75	125				S
Lead	8.720	1.0	10.00	0	87.2	75	125				
Manganese	78.975	0.50	100.0	0.3006	78.7	75	125				
Vanadium	10.942	1.0	10.00	2.626	83.2	75	125				
Zinc	80.633	10	100.0	0.3110	80.3	75	125				

Sample ID **N017400-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.784	0.10	10.00	1.065	87.2	75	125	9.693	0.935	20	
Barium	115.625	1.0	100.0	27.44	88.2	75	125	114.9	0.595	20	
Cadmium	8.452	0.50	10.00	0	84.5	75	125	8.296	1.87	20	
Chromium	8.303	1.0	10.00	0.5062	78.0	75	125	8.350	0.562	20	
Cobalt	7.070	0.50	10.00	0	70.7	75	125	7.089	0.281	20	S
Lead	8.759	1.0	10.00	0	87.6	75	125	8.720	0.452	20	
Manganese	78.807	0.50	100.0	0.3006	78.5	75	125	78.98	0.213	20	
Vanadium	10.808	1.0	10.00	2.626	81.8	75	125	10.94	1.23	20	
Zinc	79.837	10	100.0	0.3110	79.5	75	125	80.63	0.991	20	

Sample ID **N017427-002B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.967	0.10	10.00	1.128	88.4	75	125				
Barium	171.802	1.0	100.0	80.77	91.0	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	8.608	0.50	10.00	0	86.1	75	125				
Chromium	8.602	1.0	10.00	0.7762	78.3	75	125				
Cobalt	6.971	0.50	10.00	0	69.7	75	125				S
Manganese	79.375	0.50	100.0	0.5352	78.8	75	125				
Vanadium	10.685	1.0	10.00	2.319	83.7	75	125				
Zinc	81.853	10	100.0	5.388	76.5	75	125				

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104066
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/9/2015	SeqNo:	2132996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.083	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Molybdenum	0.161	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104066
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/9/2015	SeqNo:	2132997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.423	0.50	10.00	0	104	85	115				
Beryllium	10.279	0.50	10.00	0	103	85	115				
Copper	10.479	1.0	10.00	0	105	85	115				
Molybdenum	9.974	0.50	10.00	0	99.7	85	115				
Nickel	10.496	1.0	10.00	0	105	85	115				
Selenium	9.765	0.50	10.00	0	97.6	85	115				
Thallium	9.757	0.50	10.00	0	97.6	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.473	0.50	10.00	0	105	75	125				
Beryllium	10.647	0.50	10.00	0	106	75	125				
Copper	8.637	1.0	10.00	0	86.4	75	125				
Molybdenum	14.242	0.50	10.00	11.58	26.6	75	125				S
Nickel	10.008	1.0	10.00	0.06799	99.4	75	125				
Selenium	9.545	0.50	10.00	3.278	62.7	75	125				S
Thallium	10.156	0.50	10.00	0.05680	101	75	125				

Sample ID **N017400-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.539	0.50	10.00	0	105	75	125	10.47	0.626	20	
Beryllium	10.566	0.50	10.00	0	106	75	125	10.65	0.765	20	
Copper	9.241	1.0	10.00	0	92.4	75	125	8.637	6.75	20	
Molybdenum	14.352	0.50	10.00	11.58	27.7	75	125	14.24	0.767	20	S
Nickel	10.125	1.0	10.00	0.06799	101	75	125	10.01	1.16	20	
Selenium	9.778	0.50	10.00	3.278	65.0	75	125	9.545	2.41	20	S
Thallium	10.119	0.50	10.00	0.05680	101	75	125	10.16	0.359	20	

Sample ID **N017427-002B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.597	0.50	10.00	0	106	75	125				
Beryllium	10.718	0.50	10.00	0	107	75	125				
Copper	9.048	1.0	10.00	0	90.5	75	125				
Lead	10.245	1.0	10.00	0	102	75	125				
Molybdenum	13.433	0.50	10.00	14.55	-11.2	75	125				S
Nickel	10.141	1.0	10.00	0	101	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104066
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.506	0.50	10.00	3.007	65.0	75	125				S
Thallium	10.171	0.50	10.00	0	102	75	125				

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.890	0.50	10.00	0	109	85	115				

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.281	0.50	10.00	0	103	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.239	0.50	10.00	0	102	75	125	10.28	0.410	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.250	0.50	10.00	0	103	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.50	0.015	0.20		µg/L	1	11/4/2015 12:37 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 11:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:01:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	2.2	0.015	0.20		µg/L	1	11/4/2015 12:58 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	1.7	0.086	1.0		µg/L	1	11/4/2015 11:21 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-003

Client Sample ID: CW-03D-4Q15
Collection Date: 10/28/2015 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.59	0.015	0.20		µg/L	1	11/4/2015 01:17 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 11:26 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	6.3	0.015	0.20		µg/L	1	11/4/2015 01:36 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151112B**	QC Batch: **54044**			PrepDate	**11/11/2015**		Analyst: **CEI**
Chromium	6.0	0.086	1.0		µg/L	1	11/12/2015 07:39 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	6.2	0.015	0.20		µg/L	1	11/4/2015 02:14 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151112B**	QC Batch: **54044**			PrepDate	**11/11/2015**		Analyst: **CEI**
Chromium	5.9	0.086	1.0		µg/L	1	11/12/2015 07:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 9:16:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.78	0.015	0.20		µg/L	1	11/4/2015 02:33 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 11:43 AM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 10:10:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	3.2	0.015	0.20		µg/L	1	11/4/2015 02:52 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	2.8	0.086	1.0		µg/L	1	11/4/2015 11:48 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:51:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	16	0.030	0.40		µg/L	2	11/4/2015 04:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **ICP7_151105C**	QC Batch: **52955**			PrepDate	**11/5/2015**		Analyst: **CEI**
Chromium	15	0.086	1.0		µg/L	1	11/5/2015 07:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-203-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 4:05:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC7_151104A**	QC Batch: **R103987**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	11/4/2015 03:29 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126053

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

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.527	1.0	10.00	0	105	85	115				

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126060

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.350	1.0	10.00	0.5062	78.4	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.303	1.0	10.00	0.5062	78.0	75	125	8.350	0.562	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.602	1.0	10.00	0.7762	78.3	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-54044	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/11/2015	RunNo:	104147
Client ID:	PBW	Batch ID:	54044	TestNo:	EPA 200.8			Analysis Date:	11/12/2015	SeqNo:	2137553

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

Sample ID	LCS-54044	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/11/2015	RunNo:	104147
Client ID:	LCSW	Batch ID:	54044	TestNo:	EPA 200.8			Analysis Date:	11/12/2015	SeqNo:	2137554

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.501	1.0	10.00	0	95.0	85	115				

Sample ID	N017457-006B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/11/2015	RunNo:	104147
Client ID:	ZZZZZZ	Batch ID:	54044	TestNo:	EPA 200.8			Analysis Date:	11/12/2015	SeqNo:	2137565

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.560	1.0	10.00	1.941	96.2	75	125				

Sample ID	N017457-006B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/11/2015	RunNo:	104147
Client ID:	ZZZZZZ	Batch ID:	54044	TestNo:	EPA 200.8			Analysis Date:	11/12/2015	SeqNo:	2137566

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.917	1.0	10.00	1.941	110	75	125	11.56	11.1	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N017466-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.743	0.20						1.776	1.93	20	

Sample ID	MB-R103987	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	PBW	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127600

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

Sample ID	LCS-R103987	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	LCSW	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127601

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.848	0.20	5.000	0	97.0	90	110				

Sample ID	N017466-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.844	0.20	5.000	1.776	101	90	110				

Sample ID	N017466-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.843	0.20	5.000	1.776	101	90	110	6.844	0.0161	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N017415-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127811

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.481	0.20	1.000	0.5000	98.1	90	110				

Sample ID	N017415-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.069	0.20	5.000	2.182	97.7	90	110				

Sample ID	N017415-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127815

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.571	0.20	1.000	0.5857	98.5	90	110				

Sample ID	N017415-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.075	0.20	5.000	6.300	95.5	90	110				

Sample ID	N017415-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	103987
Client ID:	ZZZZZZ	Batch ID:	R103987	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2127822

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.817	0.20	1.000	0.7800	104	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N017415-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103987**
Client ID: **ZZZZZZ** Batch ID: **R103987** TestNo: **EPA 218.6** Analysis Date: **11/4/2015** SeqNo: **2127824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.267	0.20	5.000	3.230	101	90	110				

Sample ID **N017415-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103987**
Client ID: **ZZZZZZ** Batch ID: **R103987** TestNo: **EPA 218.6** Analysis Date: **11/4/2015** SeqNo: **2127826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0.03900	105	90	110				

Sample ID **N017415-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103987**
Client ID: **ZZZZZZ** Batch ID: **R103987** TestNo: **EPA 218.6** Analysis Date: **11/4/2015** SeqNo: **2127829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.340	0.20	5.000	6.233	102	90	110				

Sample ID **N017415-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103987**
Client ID: **ZZZZZZ** Batch ID: **R103987** TestNo: **EPA 218.6** Analysis Date: **11/4/2015** SeqNo: **2127831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	25.610	0.40	10.00	15.92	96.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-52955**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **PBW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130510**

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

Sample ID **LCS-52955**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **LCSW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.424	1.0	10.00	0	94.2	85	115				

Sample ID **N017390-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.236	1.0	10.00	8.428	88.1	75	125				

Sample ID **N017390-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	16.889	1.0	10.00	8.428	84.6	75	125	17.24	2.03	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	0.31	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:01:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	0.37	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 11:40:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	0.29	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	1.3	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	1.4	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 9:16:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	0.45	0.10	0.10		NTU	1	10/29/2015 01:50 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 10:10:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	0.49	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:51:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151029C**	QC Batch: **R103883**			PrepDate			Analyst: **LR**
Turbidity	0.65	0.10	0.10		NTU	1	10/29/2015 01:50 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	MB-R103883	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	103883
Client ID:	PBW	Batch ID:	R103883	TestNo:	SM 2130B			Analysis Date:	10/29/2015	SeqNo:	2121953

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID	N017415-005DDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	103883
Client ID:	ZZZZZZ	Batch ID:	R103883	TestNo:	SM 2130B			Analysis Date:	10/29/2015	SeqNo:	2121959

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	1.470	0.10						1.450	1.37	30	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	51	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	51	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-002

Client Sample ID: CW-02M-4Q15
Collection Date: 10/28/2015 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	49	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	49	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-003

Client Sample ID: CW-03D-4Q15
Collection Date: 10/28/2015 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	54	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	54	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	47	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-005

Client Sample ID: OW-070-4Q15
Collection Date: 10/28/2015 12:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	47	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	47	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-006

Client Sample ID: CW-04D-4Q15
Collection Date: 10/28/2015 9:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	53	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	53	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-007

Client Sample ID: CW-04M-4Q15
Collection Date: 10/28/2015 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151029F**	QC Batch: **R103910**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	52	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/29/2015 04:00 PM
Alkalinity, Total (As CaCO3)	52	1.2	5.0		mg/L	1	10/29/2015 04:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R103910** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103910**
Client ID: **LCSW** Batch ID: **R103910** TestNo: **SM 2320 B** Analysis Date: **10/29/2015** SeqNo: **2124280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	96.311	5.0	100.0	0	96.3	85	115				
Alkalinity, Total (As CaCO3)	96.311	5.0	100.0	0	96.3	85	115				

Sample ID **MB-R103910** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103910**
Client ID: **PBW** Batch ID: **R103910** TestNo: **SM 2320 B** Analysis Date: **10/29/2015** SeqNo: **2124281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N017415-001DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103910**
Client ID: **ZZZZZZ** Batch ID: **R103910** TestNo: **SM 2320 B** Analysis Date: **10/29/2015** SeqNo: **2124283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	51.230	5.0						51.23	0	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	51.230	5.0						51.23	0	30	

Sample ID **N017415-003DMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103910**
Client ID: **ZZZZZZ** Batch ID: **R103910** TestNo: **SM 2320 B** Analysis Date: **10/29/2015** SeqNo: **2124286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	142.418	5.0	100.0	54.30	88.1	75	125				
Alkalinity, Total (As CaCO3)	148.566	5.0	100.0	54.30	94.3	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **N017415-003DMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103910**
Client ID: **ZZZZZZ** Batch ID: **R103910** TestNo: **SM 2320 B** Analysis Date: **10/29/2015** SeqNo: **2124287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	141.393	5.0	100.0	54.30	87.1	75	125	142.4	0.722	20	
Alkalinity, Total (As CaCO3)	149.590	5.0	100.0	54.30	95.3	75	125	148.6	0.687	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 2:11:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 12:52 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:01:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 12:55 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 11:40:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 12:58 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:00 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:03 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 9:16:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **AA1_151105A**	QC Batch: **52920**				PrepDate	**11/3/2015**	Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:06 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 10:10:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:14 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID	MB-52920	SampType:	MBLK	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	PBW	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.086	0.20									

Sample ID	N017415-001B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.951	0.20	5.000	0.09477	77.1	75	125				

Sample ID	N017415-001B-MSD	SampType:	MSD	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.951	0.20	5.000	0.09477	77.1	75	125	3.951	0.0152	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.066	0.20	5.000	0.06610	80.0	75	125				

Sample ID	LCS-52920	SampType:	LCS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	LCSW	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.144	0.20	5.000	0	103	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-001

Client Sample ID: CW-02D-4Q15
Collection Date: 10/28/2015 2:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	11/2/2015 02:16 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Fluoride	1.7	0.062	0.50		mg/L	5	11/2/2015 08:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	460	1.6	25		mg/L	50	11/2/2015 05:24 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-002

Client Sample ID: CW-02M-4Q15
Collection Date: 10/28/2015 3:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	1900	16	250		mg/L	500	11/2/2015 02:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Fluoride	2.5	0.062	0.50		mg/L	5	11/2/2015 09:18 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	480	1.6	25		mg/L	50	11/2/2015 05:55 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-003

Client Sample ID: CW-03D-4Q15
Collection Date: 10/28/2015 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	11/2/2015 02:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Fluoride	2.5	0.062	0.50		mg/L	5	11/2/2015 10:05 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	470	1.6	25		mg/L	50	11/2/2015 06:42 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	2300	16	250		mg/L	500	11/2/2015 03:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Fluoride	2.7	0.062	0.50		mg/L	5	11/2/2015 10:20 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	460	1.6	25		mg/L	50	11/2/2015 06:57 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-005

Client Sample ID: OW-070-4Q15
Collection Date: 10/28/2015 12:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	2400	16	250		mg/L	500	11/2/2015 03:19 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151109A** QC Batch: **R104077**				PrepDate			Analyst: **QBM**
Fluoride	2.6	0.062	0.50		mg/L	5	11/9/2015 11:08 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	460	1.6	25		mg/L	50	11/2/2015 07:13 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-006

Client Sample ID: CW-04D-4Q15
Collection Date: 10/28/2015 9:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B**	QC Batch: **R103969**			PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	11/2/2015 03:34 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B**	QC Batch: **R103969**			PrepDate			Analyst: **QBM**
Fluoride	2.6	0.062	0.50		mg/L	5	11/2/2015 11:07 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B**	QC Batch: **R103969**			PrepDate			Analyst: **QBM**
Sulfate	470	1.6	25		mg/L	50	11/2/2015 07:29 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-007

Client Sample ID: CW-04M-4Q15
Collection Date: 10/28/2015 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	1900	16	250		mg/L	500	11/2/2015 03:50 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Fluoride	1.4	0.062	0.50		mg/L	5	11/2/2015 11:23 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	440	1.6	25		mg/L	50	11/2/2015 08:15 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-008

Client Sample ID: OW-05S-4Q15
Collection Date: 10/28/2015 3:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Chloride	1200	6.3	100		mg/L	200	11/2/2015 08:31 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Fluoride	1.3	0.062	0.50		mg/L	5	11/2/2015 11:38 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151102B** QC Batch: **R103969**				PrepDate			Analyst: **QBM**
Sulfate	210	1.6	25		mg/L	50	11/2/2015 02:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	LCS-R103969_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	LCSW	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126557

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.389	0.50	2.500	0	95.6	90	110				

Sample ID	MB-R103969_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	PBW	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126558

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	N017415-002DMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3198.000	250	1250	1938	101	80	120				

Sample ID	N017415-002DMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3185.000	250	1250	1938	99.8	80	120	3198	0.407	20	

Sample ID	N017415-001DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1952.500	250						1961	0.434	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	LCS-R103969_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	LCSW	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126630

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.309	0.10	2.500	0	92.4	90	110				

Sample ID	MB-R103969_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	PBW	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	N017415-001DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126639

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.875	0.50						1.730	8.04	20	

Sample ID	N017415-002DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.680	0.50	12.50	2.490	89.5	80	120				

Sample ID	N017415-002DMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126642

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.635	0.50	12.50	2.490	89.2	80	120	13.68	0.329	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R104077_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	PBW	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/9/2015	SeqNo:	2133316

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R104077_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	LCSW	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/9/2015	SeqNo:	2133317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.277	0.10	2.500	0	91.1	90	110				

Sample ID	N017469-002BMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	ZZZZZZ	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/9/2015	SeqNo:	2133324

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	23.220	1.0	25.00	1.840	85.5	80	120				

Sample ID	N017469-002BMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	ZZZZZZ	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/9/2015	SeqNo:	2133325

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	23.280	1.0	25.00	1.840	85.8	80	120	23.22	0.258	20	

Sample ID	N017415-005DDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	ZZZZZZ	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/9/2015	SeqNo:	2133328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.545	0.50						2.600	2.14	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	N017415-005DMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	ZZZZZZ	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/9/2015	SeqNo:	2133329

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	13.715	0.50	12.50	2.600	88.9	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	LCS-R103969_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	LCSW	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.670	0.50	5.000	0	93.4	90	110				

Sample ID	MB-R103969_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	PBW	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126604

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	N017415-001DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	469.250	25						463.4	1.24	20	

Sample ID	N017415-002DMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126613

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	718.200	25	250.0	475.1	97.2	80	120				

Sample ID	N017415-002DMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103969
Client ID:	ZZZZZZ	Batch ID:	R103969	TestNo:	EPA 300.0			Analysis Date:	11/2/2015	SeqNo:	2126614

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	722.650	25	250.0	475.1	99.0	80	120	718.2	0.618	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 2:11:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:01:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 11:40:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.9	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:37:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.0	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.1	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 9:16:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 10:10:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:51:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151108A**	QC Batch: **R104043**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	11/8/2015

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R104043	**MBLK**	**4500N03F_W**	**mg/L**		**104043**
Client ID: **PBW**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131124**

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R104043	**LCS**	**4500N03F_W**	**mg/L**		**104043**
Client ID: **LCSW**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131125**

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N017390-001DDUP	**DUP**	**4500N03F_W**	**mg/L**		**104043**
Client ID: **ZZZZZZ**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.897	0.25						2.980	2.81	20	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N017390-001DMS	**MS**	**4500N03F_W**	**mg/L**		**104043**
Client ID: **ZZZZZZ**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.526	0.25	2.500	2.980	102	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N017390-001DMSD	**MSD**	**4500N03F_W**	**mg/L**		**104043**
Client ID: **ZZZZZZ**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.289	0.25	2.500	2.980	92.4	75	125	5.526	4.38	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-008

Client Sample ID: OW-05S-4Q15
Collection Date: 10/28/2015 3:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151104A**	QC Batch: **52882**				PrepDate	**10/29/2015**	Analyst: **CEI**
Sodium	500000	290	12000		ug/L	25	11/4/2015 01:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-52882**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **10/29/2015**	RunNo: **103953**
Client ID: **PBW**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2125956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	139.838	500									

Sample ID **LCS2-52882**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **10/29/2015**	RunNo: **103953**
Client ID: **LCSW**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2125997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9627.679	500	10000	0	96.3	85	115				

Sample ID **N017400-004B-MS2**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **10/29/2015**	RunNo: **103953**
Client ID: **ZZZZZZ**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2126005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1362631.918	50000	10000	1351000	118	75	125				

Sample ID **N017400-004B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **10/29/2015**	RunNo: **103953**
Client ID: **ZZZZZZ**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2126006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1337800.448	50000	10000	1351000	-130	75	125	1363000	1.84	20	S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 2:11:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	46	17	20		ug/L	1	11/3/2015 09:12 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-02M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:01:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **ICP2_151103D**	QC Batch: **52897**			PrepDate	**11/2/2015**		Analyst: **CEI**
Iron	31	17	20		ug/L	1	11/3/2015 09:17 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-03D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 11:40:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	33	17	20		ug/L	1	11/3/2015 09:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017415
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017415-004

Client Sample ID: CW-03M-4Q15
Collection Date: 10/28/2015 12:37:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	71	17	20		ug/L	1	11/3/2015 09:27 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-070-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 12:47:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	86	17	20		ug/L	1	11/3/2015 09:33 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04D-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 9:16:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	63	17	20		ug/L	1	11/3/2015 09:38 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-04M-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 10:10:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	36	17	20		ug/L	1	11/3/2015 09:43 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-52897	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	PBW	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125062

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

Sample ID	LCS-52897	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	LCSW	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	92.772	20	100.0	0	92.8	85	115				

Sample ID	N017400-001C-MS1	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	131.065	20	100.0	65.31	65.8	75	125				S

Sample ID	N017400-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.120	20	100.0	65.31	66.8	75	125	131.1	0.802	20	S

Sample ID	N017427-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	11/2/2015	RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	52897	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	11/3/2015	SeqNo:	2125237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	166.778	20	100.0	105.6	61.2	75	125				S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	OW-05S-4Q15
Lab Order:	N017415	**Collection Date:**	10/28/2015 3:51:00 PM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017415-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **ICP7_151105C**	QC Batch: **52955**				PrepDate	**11/5/2015**	Analyst: **CEI**
Molybdenum	12	0.029	0.50		µg/L	1	11/5/2015 07:22 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-52955**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **PBW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.053	0.50									

Sample ID **LCS-52955**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **LCSW**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.494	0.50	10.00	0	94.9	85	115				

Sample ID **N017390-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.799	0.50	10.00	7.399	114	75	125				

Sample ID **N017390-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **11/5/2015**	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.430	0.50	10.00	7.399	110	75	125	18.80	1.98	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	**Report to:** Dan Bush	**Bill to:** Marty Bloes	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address: 1410 Rocky Ridge Dr # 330	**Company:** Arcadis	**Address:**	Excel EDD ☐	RTNE ☐	Y N
Address: Roseville, CA 95661	**Email:** Dan.Bush@arcadis.com; Daniel.Moore@critigen.com		Geotracker ☐	RWQCB ☐	1. Chilled ☑ ☐
Phone: 916.786.3302 **Fax:**	**Address:** 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	**Email to:** mbloes@pivox.com **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By: Jason Mahn			Others ☑	Level III ☐	3. Container Intact ☑ ☐
Title: Sample Tech	**Phone:** 916.786.3302 **Fax:**	**Phone:** 949.727.1400, ext 200 **Fax:**	**Specify:** EQ EDD	LEVEL IV ☑	4. Seal Present ☐ ☑
Signature: **Date:** 10/28/15	**Sampled By:** Nara Tep		**Global ID:**	Regulatory ☐	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling ICE
Project Name: PG&E Topock - CMP	*Signature:*	*Date* 10/28/15			Sample Temp: 2.1°C/3.5°C
Project Number: RC000753.0801					

Matrix: Ground ☑ | Sediment ☐ | Potable ☐ | Soil ☐ | NPDES ☐ | Other Solid ☐ | Surface ☐

Analyses Requested:
- Cr(VI) (E218.6); (NH4)2, SO4, NH4, OH, 4°C, 250 ml Poly
- Metals Dissolved (6010B/Dis) Cr, Mo, Na HNO3, 4°C; 500 ml Poly
- Dissolved metals (Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na) (E200FF); HNO3, 4°C; 500 ml Poly
- Metals Total (SW6010B) Fe; HNO3, 4°C; 500 ml Poly
- Turbidity (SM2130); 4°C; 1000ml Poly
- Specific Conductance (E120.1); 4°C; 100ml Poly
- Anions (E300.0)
- Chloride,Sulfate,Fluoride; 4°C; 1000ml
- Anions (SM4500NO3E) Nitrate/Nitrite; H2SO4, 4°C; 125ml Poly
- TDS (SM2540C); 4°C; 100ml Poly
- Total Alkalinity, speciated (SM2320B); 4°C; 1 L poly
- Ammonia (SM4500NH3); H2SO4, 4°C; 125 mL poly
- Gross Alpha/Beta (E900); HNO3; 2x1000ml Poly
- Metals Dissolved (6020A/FF) Cr; HNO3, 4°C; 500 ml Poly
- Ortho-Phosphate (E300.0); 4°C; 1000ml Poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr(VI)	Metals Dissolved	Dissolved metals	Metals Total	Turbidity	Specific Conductance	Anions	Anions	TDS	Total Alkalinity, speciated	Ammonia	Gross Alpha/Beta	Metals Dissolved	Ortho-Phosphate	Turn Around Time	No. of container	Remarks
1	NO17415-1	CW-02D-4Q15	10/28/15	1411	X			X		X	X	X	X	X	X	X	X	X				10	6	
2	-2	CW-02M-4Q15	10/28/15	1501	X			X		X	X	X	X	X	X	X	X	X				10	6	
3	-3	CW-03D-4Q15	10/28/15	1140	X			X		X	X	X	X	X	X	X	X	X				10	6	
4	-4	CW-03M-4Q15	10/28/15	1237	X			X		X	X	X	X	X	X	X	X	X				10	6	
5	-5	OW-070-4Q15	10/28/15	1247	X			X		X	X	X	X	X	X	X	X	X				10	6	
6	-6	CW-04D-4Q15	10/28/15	0916	X			X		X	X	X	X	X	X	X	X	X				10	6	
7	-7	CW-04M-4Q15	10/28/15	1010	X			X		X	X	X	X	X	X	X	X	X				10	6	
8	-8	OW-05S-4Q15	10/28/15	1551	X			X	X			X	X	X	X	X						10	4	
9																								
10	NO17415-9	MW-203-4Q15	10/28/15	1605	X			X														10	1	
11																								
12																								

Courier:

Tracking No.

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	10/28/15 1645		10/28/15 1645
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	10/28/15 2000		10/28/15 2000
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)
- ☐ A = < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

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

Special Instruction:

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

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C	
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$		
Others/Specify:				

Container Type:

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

ASSET Laboratories

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

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

Cooler Received/Opened On:	10/28/2015	Workorder:	N017415
Rep sample Temp (Deg C):	2.1/3.5	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

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

Comments

Checklist Completed B forMBC 10/30/2015

Reviewed By: 11/4/15

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.ati-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Nara Tep

29-Oct-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3C		
N017415-001F / CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	4OZP	1		
N017415-002F / CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	4OZP	1		
N017415-003F / CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	4OZP	1		
N017415-004F / CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	4OZP	1		
N017415-005F / OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	4OZP	1		
N017415-006F / CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	4OZP	1		
N017415-007F / CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	4OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N17415A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-DAY TAT.

Please analyze Ammonia by SM4500.

		Date/Time			Date/Time
Relinquished by:		10/29/15 1700	**Received by:**	GSO TRK # 529780044	
Relinquished by:			**Received by:**		

ASSET Laboratories

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-001A	CW-02D-4Q15	10/28/2015 2:11:00 PM	11/11/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-001B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-001C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-001D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017415-001E			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017415-001F			11/11/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-001F	CW-02D-4Q15	10/28/2015 2:11:00 PM	11/11/2015	Groundwater		Ammonia Prep	☐	☐	☑	SUB
N017415-002A	CW-02M-4Q15	10/28/2015 3:01:00 PM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-002B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-002C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-002D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017415-002E			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-002F	CW-02M-4Q15	10/28/2015 3:01:00 PM	11/11/2015	Groundwater	SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			11/11/2015			Ammonia Prep	☐	☐	☑	SUB
N017415-003A	CW-03D-4Q15	10/28/2015 11:40:00 AM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-003B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-003C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-003D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017415-003E			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-003F	CW-03D-4Q15	10/28/2015 11:40:00 AM	11/11/2015	Groundwater	SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			11/11/2015			Ammonia Prep	☐	☐	☑	SUB
N017415-004A	CW-03M-4Q15	10/28/2015 12:37:00 PM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-004B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-004C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-004D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-004E	CW-03M-4Q15	10/28/2015 12:37:00 PM	11/11/2015	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017415-004F			11/11/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			11/11/2015			Ammonia Prep	☐	☐	☑	SUB
N017415-005A	OW-070-4Q15	10/28/2015 12:47:00 PM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-005B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-005C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-005D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-005D	OW-070-4Q15	10/28/2015 12:47:00 PM	11/11/2015	Groundwater	SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017415-005E			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017415-005F			11/11/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			11/11/2015			Ammonia Prep	☐	☐	☑	SUB
N017415-006A	CW-04D-4Q15	10/28/2015 9:16:00 AM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-006B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-006C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-006D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

29-Oct-15

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Comments:

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			11/11/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017415-006E			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017415-006F			11/11/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			11/11/2015			Ammonia Prep	☐	☐	☑	SUB
N017415-007A	CW-04M-4Q15	10/28/2015 10:10:00 AM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-007B			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/11/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/11/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/11/2015		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/11/2015			MERCURY PREP	☐	☐	☐	WW
N017415-007C			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017415-007D			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW

WORK ORDER Summary

29-Oct-15

WorkOrder: N017415

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/28/2015

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017415-007D	CW-04M-4Q15	10/28/2015 10:10:00 AM	11/11/2015	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017415-007E			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017415-007F			11/11/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
			11/11/2015			Ammonia Prep	☐	☐	☑	SUB
N017415-008A	OW-05S-4Q15	10/28/2015 3:51:00 PM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-008B			11/11/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/11/2015		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
N017415-008C			11/11/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/11/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/11/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/11/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/11/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N017415-008D			11/11/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017415-009A	MW-203-4Q15	10/28/2015 4:05:00 PM	11/11/2015		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017415-010A	FOLDER		11/11/2015		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N017415

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 200.7, EPA 200.8, EPA 6010B, EPA 6020, EPA 245.1
Ryan Balilu	EPA 218.6, SM4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B, SM 2320B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103882 **Analyst:** LSR

ASSET #: N017415 **Date Analyzed:** 10/29/2015

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MS~~D, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/3/2015

2nd Level Reviewer: 11/12/2015 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 10/29/15 1325
Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 uS/cm	CINV-150619A	9.78 uS/cm @ 22.6°C	% Rec: (90-110%)
1414	-150601B	1416 @ 22.7°C	
10009	-150619B	10096 @ 22.7°C	
99996	-150430A	100200 @ 22.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO17415-001D	Water	7330 uS/cm @ 21.7°C	
2	-002D		7150 @ 21.3°C	
3	-003D		7260 @ 21.4°C	
4	-004D		8040 @ 21.5°C	
5	-005D		8150 @ 21.5°C	
6	-005D DUP		8130 @ 21.6°C	Julia Ramit 11/3/2015
7	-006D		7220 @ 21.5°C	
8	-007D		6960 @ 21.9°C	
9	-008C		4100 @ 22.1°C	
10	1413 1434 uS/cm	CINV-150527A	1434 uS/cm 22.6°C	
Dup	10,000 10310	-141205A	10310 22.6°C	Accept: 10% water, 20% soil
	Std Chk: 102800 100,001	-150309G	102800 22.9°C	% Rec: (90-110%)

Lisa 10/29

Date: 10/30/15 1430
Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 uS/cm	CINV-150619A	9.80 uS/cm @ 22.4°C	% Rec: (90-110%)
1414	-150601B	1417 @ 22.3°C	
10009	-150619B	10050 @ 22.2°C	
99996	-150430A	100500 @ 22.2°C	

	Sample ID	Matrix	Reading	Comments
1	NO17427-001D	Water	6980 uS/cm @ 21.3°C	
2	-002D		7310 @ 20.9°C	
3	-002D DUP		7300 @ 20.9°C	
4				
5				
6				
7				
8	1413 uS/cm	CINV-150527A	1434 uS/cm @ 22.4°C	
9	10,000	-141205A	10366 @ 22.4°C	
10	100,001	-150309G	104500 @ 22.8°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52886 **Analyst:** LSR

ASSET #: N017415 **Date Analyzed:** 10/29/2015

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/5/2015

2nd Level Reviewer: 11/12/2015 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N017415-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(54.0315 - 53.9446)*1000000}{20}$$

= 4345 mg/L

Reporting result in two significant figures,

TDS =4300 mg/L

Julia Ramit 11/5/2015

SAMPLE PREPARATION LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 2:22:19**
Prep End Date: **10/30/2015 11:20:0**

Initials/ Date: Lilia Ramit 11/5/2015

Prep Batch **52886** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52886	Water		100	☐	0	0	100	1.000		
MB-52886	Water		100	☐	0	0	100	1.000		
N017415-001D	Groundwater		20	☐	0	0	100	5.000		
N017415-002D	Groundwater		20	☐	0	0	100	5.000		
N017415-003D	Groundwater		20	☐	0	0	100	5.000		
N017415-004D	Groundwater		20	☐	0	0	100	5.000		
N017415-005D	Groundwater		20	☐	0	0	100	5.000		
N017415-005D-DU	Groundwater		20	☐	0	0	100	5.000		
N017415-006D	Groundwater		20	☐	0	0	100	5.000		
N017415-007D	Groundwater		20	☐	0	0	100	5.000		
N017415-008C	Groundwater		30	☐	0	0	100	3.333		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Spk ID	Spike Name	SampType	AmtAdd
IWST151026A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 2:22:19**
Prep End Date:

Initials/ Date: Lilia Ramit 11/5/2015

Prep Batch **52886** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

	Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check	
L7	LCS-52886	Water	iw5715102-28 A	100	☐	0	0	100	1.000	77.2264 77.2266	77.3217 77.3218	952
8	MB-52886	Water		100	☐	0	0	100	1.000	54.8758 54.8759	54.8760 54.8762	3
61	N017415-001D	Groundwater	7330	100 |20	☐	0	0	100	1.000	53.9446 53.9446	54.0317 54.0315	4345
20	N017415-002D	Groundwater	7150	100 |20	☐	0	0	100	1.000	61.2061 61.2059	61.2957 61.2957	4490
AA	N017415-003D	Groundwater	7260	100 |20	☐	0	0	100	1.000	54.7730 54.7726	54.8600 54.8602	4380
C	N017415-004D	Groundwater	8040	100 |20	☐	0	0	100	1.000	55.7450 55.7451	55.8438 55.8440	4945
42	N017415-005D	Groundwater	8150	100 |30	☐	0	0	100	1.000	54.2756 54.2755	54.3724 54.3723	4840
12	N017415-005D-DUP	Groundwater	↓	100 |20	☐	0	0	100	1.000	57.0293 57.0291	57.1249 57.1248	4785
AC	N017415-006D	Groundwater	7220	100 |20	☐	0	0	100	1.000	64.0796 64.0794	64.1644 64.1647	4265
16	N017415-007D	Groundwater	6960	100 |30	☐	0	0	100	1.000	53.6447 53.6447	53.7278 53.7281	4120
G	N017415-008C	Groundwater	4100	100 |30	☐	0	0	100	1.000	54.6128 54.6127	54.6985 54.6990	2876.6667

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

T50410

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TSS / TS / TDS Preparation and Runlog

Name of Test: TDS QC Batch No.: 52886

Date Prepared: 10/29/15 Date of Weighing: ~~10/30/15~~ 10/30/15 **Oven Temperature:** 180°C

Time Prepared: 1422 (Start Time) Time of Reading: 900 (Start time) Filter Paper Lot #: 150410

Prepared By: LKR Weighings performed by: LKR

	Sample ID	Sample Vol. (ml)	Crucible+Filter 1st Final Tare Wt.(g)	Crucible+Filter 2nd Final Tare Wt.(g)	Crucible+Filter+Sample 1st Final Wt(g)	Crucible+Filter+Sample 2nd Final Wt(g)	TSS/TS/TDS (mg/L)	Comments
	Blank DRB - 52886	100	54.8758	54.8759	54.8760	54.8762	3	TDS/COND RATIO
1	LCS - 52886	100	77.2264	77.2266	77.3217	77.3218	952	
2	N017415 - 001D	20	53.9446	53.9446	54.0317	54.0315	4345	4345 / 7230 = 0.593
3	-002D	20	61.20161	61.2059	61.2959	61.2957	4490	4490 / 7150 = 0.628
4	-003D	20	54.7730	54.7726	54.8600	54.8602	4380	4380 / 7260 = 0.603
5	-004D	20	55.7450	55.7451	55.8438	55.8440	4945	4945 / 8040 = 0.615
6	-005D	20	54.7756	54.7755	54.8754	54.8723	4840	4840 / 8150 = 0.594
7	-005D DUP	20	57.0293	57.0291	57.1249	57.1248	4785	4785 / 8150 = 0.587
8	-006D	20	64.0796	64.0794	64.1644	64.1647	4265	4265 / 7220 = 0.591
9	-007D	20	53.6447	53.6447	53.7278	53.7281	4170	4170 / 6960 = 0.599
10	-008C	30	54.6128	54.6127	54.6985	54.6990	2876.6667	2876.6669 / 4100 = 0.702
11								
12								
13								
14								
15								
16								LKR 10/29/15
17								
18								
19								
20								
Dup								

Julia Ramit 11/5/2015

Logbook #13

Nancy for 11/12/2015

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO
Date Finished:10/30/15								
MB-52886	100	54.8759	54.8762	3	1	3		
LCS-52886	100	77.2266	77.3218	952	1	952		
N017415-001D	20	53.9446	54.0315	869	5	4345	7330	0.593
N017415-002D	20	61.2059	61.2957	898	5	4490	7150	0.628
N017415-003D	20	54.7726	54.8602	876	5	4380	7260	0.603
N017415-004D	20	55.7451	55.844	989	5	4945	8040	0.615
N017415-005D	20	54.2755	54.3723	968	5	4840	8150	0.594
N017415-005DDUP	20	57.0291	57.1248	957	5	4785	8150	0.587
N017415-006D	20	64.0794	64.1647	853	5	4265	7220	0.591
N017415-007D	20	53.6447	53.7281	834	5	4170	6960	0.599
N017415-008C	30	54.6127	54.699	863	3.33333333	2876.66667	4100	0.702

Silvia Ramit 11/5/2015

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52910
ASSET #: N017415

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/4/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N017399-002B PS/MS/MSD & N017415-007B MS failed, due to high analyte cocentration already present in the sample.However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/2015 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52910
ASSET #: N017415

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 11/10/2015

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Dilution test of Mg failed. However LCS passed criteria.
% Rec of Several analytes in N017399-001A PS/MS/MSD & N017415-006B MS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: ____

2nd Level Reviewer 11/16/201 Date: ____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017415-001B** , the concentration in ug/L is calculated as follows:

Calcium , ug/L = 93.7323 * 1 *(25/25) * 1000

Calcium , ug/L = 93732.3

Reporting results in two significant figures,

Calcium , ug/L = 94000



% RSD SUMMARY

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	4.14	15	PASS
Standard1	ICAL	1	K	0.1	8.28	15	PASS
Standard2	ICAL	1	K	1	0.49	15	PASS
Standard3	ICAL	1	K	5	0.38	15	PASS
Standard4	ICAL	1	K	10	0.22	15	PASS
Standard5	ICAL	1	K	20	0.077	15	PASS
Standard6	ICAL	1	K	40	0.096	15	PASS
ICV	ICV	1	K	10.019	0.074	15	PASS
ICB	ICB	1	K	0.046	23.2	15	<PQL
ICSA1	ICSA	1	K	0.024	41.89	15	<PQL
ICSAB1	ICSAB	1	K	9.95	0.15	15	PASS
MB-52910	MBLK	1	K	0.056	18.26	15	<PQL
LCS2-52910	LCS	1	K	20.46	1.049	15	PASS
CCV1	CCV	1	K	9.91	0.12	15	PASS
CCB1	CCB	1	K	0.049	25.67	15	<PQL
N017399-001A	SAMP	5	K	1.84	0.5	15	PASS
N017399-002B	SAMP	5	K	3.22	0.22	15	PASS
N017400-001B	SAMP	5	K	2.54	0.52	15	PASS
N017400-002B	SAMP	5	K	2.69	0.46	15	PASS
N017415-001B	SAMP	5	K	2.14	0.21	15	PASS
N017415-002B	SAMP	5	K	2.41	0.38	15	PASS
N017415-003B	SAMP	5	K	2.24	0.2	15	PASS
N017415-004B	SAMP	5	K	2.76	0.18	15	PASS
N017415-005B	SAMP	5	K	2.79	0.64	15	PASS
N017415-006B	SAMP	5	K	2.53	0.54	15	PASS
CCV2	CCV	1	K	9.82	0.16	15	PASS
CCB2	CCB	1	K	0.085	12.98	15	PASS
N017415-007B	SAMP	5	K	2.64	0.34	15	PASS
N017427-001B	SAMP	5	K	2.3	0.75	15	PASS
N017427-002B	SAMP	5	K	2.53	1.42	15	PASS
CCV3	CCV	1	K	10	0.083	15	PASS
CCB3	CCB	1	K	0.063	10.31	15	PASS
N017399-001A	SAMP	25	K	0.45	2.079	15	PASS
N017399-002B	SAMP	25	K	0.7	2.015	15	PASS
N017399-002B-PS	PS	5	K	7.77	0.17	15	PASS
N017399-002B-MS2	MS	5	K	7.73	0.036	15	PASS
N017399-002B-MSD2	MSD	5	K	7.61	0.16	15	PASS
N017399-002B	SAMP	50	K	0.41	1.73	15	PASS
N017399-002B	SAMP	250	K	0.17	0.68	15	PASS
CCV4	CCV	1	K	9.75	0.38	15	PASS
CCB4	CCB	1	K	0.066	14.65	15	PASS
N017399-002B-PS	PS	50	K	0.81	1.28	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017399-002B-MS2	MS	50	K	0.79	0.39	15	PASS
N017399-002B-MSD2	MSD	50	K	0.79	0.86	15	PASS
N017400-001B	SAMP	50	K	0.32	1.14	15	PASS
N017400-002B	SAMP	50	K	0.35	3.79	15	PASS
N017415-001B	SAMP	50	K	0.28	4.028	15	PASS
N017415-002B	SAMP	50	K	0.3	4.56	15	PASS
N017415-003B	SAMP	50	K	0.29	4.15	15	PASS
N017415-004B	SAMP	100	K	0.35	4.076	15	PASS
N017415-005B	SAMP	100	K	0.34	1.64	15	PASS
CCV5	CCV	1	K	9.93	0.049	15	PASS
CCB5	CCB	1	K	0.072	14.33	15	PASS
ICSA2	ICSA	1	K	0.052	9.45	15	PASS
ICSAB2	ICSAB	1	K	10.014	0.13	15	PASS
N017415-006B	SAMP	100	K	0.33	2.44	15	PASS
N017415-007B	SAMP	50	K	0.31	0.65	15	PASS
N017415-007B-MS2	MS	5	K	7.18	0.15	15	PASS
N017415-007B-MS2	MS	50	K	0.76	2.047	15	PASS
N017427-001B	SAMP	50	K	0.31	3.39	15	PASS
N017427-002B	SAMP	50	K	0.33	4.17	15	PASS
CCV6	CCV	1	K	10.093	0.19	15	PASS
CCB6	CCB	1	K	0.077	13.68	15	PASS
CCV7	CCV	1	K	10.11	0.062	15	PASS
CCB7	CCB	1	K	0.072	4.51	15	PASS
ICSA3	ICSA	1	K	0.068	15.84	15	<PQL
ICSAB3	ICSAB	1	K	9.98	0.15	15	PASS
CalBlk	IBLK	1	Na	0	1.8	15	PASS
Standard1	ICAL	1	Na	0.1	2.83	15	PASS
Standard2	ICAL	1	Na	1	0.4	15	PASS
Standard3	ICAL	1	Na	5	0.29	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.29	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	10.079	0.18	15	PASS
ICB	ICB	1	Na	-0.0041	172.78	15	<PQL
ICSA1	ICSA	1	Na	-0.0061	67.66	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.4	15	PASS
MB-52910	MBLK	1	Na	-0.021	18.51	15	<PQL
LCS2-52910	LCS	1	Na	19.3	1.19	15	PASS
CCV1	CCV	1	Na	9.81	0.19	15	PASS
CCB1	CCB	1	Na	-0.019	13.33	15	PASS
N017399-001A	SAMP	5	Na	152.09	0.61	15	PASS
N017399-002B	SAMP	5	Na	299.62	0.76	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017400-001B	SAMP	5	Na	295.92	0.48	15	PASS
N017400-002B	SAMP	5	Na	281.18	1.031	15	PASS
N017415-001B	SAMP	5	Na	301.22	0.98	15	PASS
N017415-002B	SAMP	5	Na	294.52	0.42	15	PASS
N017415-003B	SAMP	5	Na	307.16	0.33	15	PASS
N017415-004B	SAMP	5	Na	326.62	0.76	15	PASS
N017415-005B	SAMP	5	Na	324.04	0.71	15	PASS
N017415-006B	SAMP	5	Na	313.25	0.84	15	PASS
CCV2	CCV	1	Na	9.68	0.25	15	PASS
CCB2	CCB	1	Na	0.15	3.23	15	PASS
N017415-007B	SAMP	5	Na	268.2	0.44	15	PASS
N017427-001B	SAMP	5	Na	262.4	0.34	15	PASS
N017427-002B	SAMP	5	Na	271.7	7.11	15	PASS
CCV3	CCV	1	Na	9.76	0.25	15	PASS
CCB3	CCB	1	Na	0.07	4.77	15	PASS
N017399-001A	SAMP	25	Na	31.008	0.64	15	PASS
N017399-002B	SAMP	25	Na	59.94	0.85	15	PASS
N017399-002B-PS	PS	5	Na	302.78	0.44	15	PASS
N017399-002B-MS2	MS	5	Na	301.14	0.61	15	PASS
N017399-002B-MSD2	MSD	5	Na	294.59	0.73	15	PASS
N017399-002B	SAMP	50	Na	29.16	0.74	15	PASS
N017399-002B	SAMP	250	Na	5.95	0.78	15	PASS
CCV4	CCV	1	Na	9.48	0.31	15	PASS
CCB4	CCB	1	Na	0.068	3.69	15	PASS
N017399-002B-PS	PS	50	Na	29.98	0.67	15	PASS
N017399-002B-MS2	MS	50	Na	29.42	0.57	15	PASS
N017399-002B-MSD2	MSD	50	Na	29.42	0.79	15	PASS
N017400-001B	SAMP	50	Na	29.087	0.96	15	PASS
N017400-002B	SAMP	50	Na	27.48	0.74	15	PASS
N017415-001B	SAMP	50	Na	29.085	0.57	15	PASS
N017415-002B	SAMP	50	Na	28.83	0.79	15	PASS
N017415-003B	SAMP	50	Na	29.92	0.76	15	PASS
N017415-004B	SAMP	100	Na	31.4	0.96	15	PASS
N017415-005B	SAMP	100	Na	31.83	0.69	15	PASS
CCV5	CCV	1	Na	9.53	0.34	15	PASS
CCB5	CCB	1	Na	0.024	22.21	15	<PQL
ICSA2	ICSA	1	Na	0.017	10.17	15	PASS
ICSAB2	ICSAB	1	Na	9.62	0.11	15	PASS
N017415-006B	SAMP	100	Na	30.36	0.51	15	PASS
N017415-007B	SAMP	50	Na	24.4	0.52	15	PASS
N017415-007B-MS2	MS	5	Na	268.79	0.48	15	PASS
N017415-007B-MS2	MS	50	Na	26.8	0.62	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017427-001B	SAMP	50	Na	26.59	0.68	15	PASS
N017427-002B	SAMP	50	Na	28.33	0.51	15	PASS
CCV6	CCV	1	Na	9.59	0.12	15	PASS
CCB6	CCB	1	Na	0.019	22.17	15	<PQL
CCV7	CCV	1	Na	9.56	0.0099	15	PASS
CCB7	CCB	1	Na	0.0058	83.38	15	<PQL
ICSA3	ICSA	1	Na	0.00055	577.89	15	<PQL
ICSAB3	ICSAB	1	Na	9.44	0.2	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Al	0	81.49	15	<PQL
Standard1	ICAL	1	Al	0.05	0.17	15	PASS
Standard2	ICAL	1	Al	1	0.65	15	PASS
Standard3	ICAL	1	Al	2	0.13	15	PASS
Standard4	ICAL	1	Al	5	0.061	15	PASS
Standard5	ICAL	1	Al	7.5	0.042	15	PASS
Standard6	ICAL	1	Al	10	0.032	15	PASS
Standard7	ICAL	1	Al	20	0.14	15	PASS
ICV	ICV	1	Al	10.12	0.19	15	PASS
ICB	ICB	1	Al	-0.0022	75.43	15	<PQL
LLCCV1	CCV1	1	Al	0.053	4.48	20	PASS
LLCCV1	CCV1	1	Al	0.052	3.0071	20	PASS
ICSA1	ICSA	1	Al	510.33	0.47	15	PASS
ICSAB1	ICSAB	1	Al	505.3	0.34	15	PASS
MB-52910	MBLK	1	Al	0.0011	126.36	15	<PQL
LCS1-52910	LCS	1	Al	10.14	0.077	15	PASS
N017399-001A	SAMP	1	Al	-0.018	13.29	15	PASS
N017399-001A	SAMP	5	Al	-0.007	29.9	15	<PQL
N017399-001A-PS	PS	1	Al	5.25	0.14	15	PASS
N017399-001A-MS1	MS	1	Al	5.27	0.071	15	PASS
N017399-001A-MSD1	MSD	1	Al	5.25	0.14	15	PASS
N017399-002B	SAMP	1	Al	-0.014	26.57	15	<PQL
N017400-001B	SAMP	1	Al	-0.01	12.54	15	PASS
N017400-002B	SAMP	1	Al	0.043	0.83	15	PASS
CCV1	CCV	1	Al	9.87	0.048	15	PASS
CCB1	CCB	1	Al	-0.0044	21.83	15	<PQL
N017415-001B	SAMP	1	Al	-0.01	11.57	15	PASS
N017415-002B	SAMP	1	Al	0.008	6.81	15	PASS
N017415-003B	SAMP	1	Al	-0.011	29.6	15	<PQL
N017415-004B	SAMP	1	Al	-0.01	5.54	15	PASS
N017415-005B	SAMP	1	Al	-0.011	8.0048	15	PASS
N017415-006B	SAMP	1	Al	-0.0085	6.31	15	PASS
N017415-006B-MS1	MS	1	Al	5.25	0.084	15	PASS
N017415-007B	SAMP	1	Al	-0.012	12.77	15	PASS
N017427-001B	SAMP	1	Al	-0.0092	9.24	15	PASS
N017427-002B	SAMP	1	Al	-0.0099	24.79	15	<PQL
CCV2	CCV	1	Al	9.94	0.15	15	PASS
CCB2	CCB	1	Al	-0.0044	5.82	15	PASS
LLCCV2	CCV2	1	Al	0.05	2.95	20	PASS
LLCCV2	CCV2	1	Al	0.051	4.29	20	PASS
ICSA2	ICSA	1	Al	495.26	0.35	15	PASS
ICSAB2	ICSAB	1	Al	491.41	0.65	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.22	15	PASS
Standard1	ICAL	1	B	0.1	0.54	15	PASS
Standard3	ICAL	1	B	1	0.33	15	PASS
Standard4	ICAL	1	B	2.5	0.41	15	PASS
Standard5	ICAL	1	B	3.75	0.34	15	PASS
Standard6	ICAL	1	B	5	0.46	15	PASS
Standard7	ICAL	1	B	10	0.28	15	PASS
ICV	ICV	1	B	5.083	0.41	15	PASS
ICB	ICB	1	B	0.02	12.16	15	PASS
LLCCV1	CCV1	1	B	0.1	0.43	20	PASS
LLCCV1	CCV1	1	B	0.096	1.77	20	PASS
ICSA1	ICSA	1	B	0.038	1.97	15	PASS
ICSAB1	ICSAB	1	B	0.97	0.089	15	PASS
MB-52910	MBLK	1	B	-0.0019	26.93	15	<PQL
LCS1-52910	LCS	1	B	5.043	0.46	15	PASS
N017399-001A	SAMP	1	B	0.54	0.85	15	PASS
N017399-001A	SAMP	5	B	0.12	0.33	15	PASS
N017399-001A-PS	PS	1	B	3.027	0.42	15	PASS
N017399-001A-MS1	MS	1	B	3.043	0.28	15	PASS
N017399-001A-MSD1	MSD	1	B	3.041	0.31	15	PASS
N017399-002B	SAMP	1	B	1.034	0.19	15	PASS
N017400-001B	SAMP	1	B	1.069	0.31	15	PASS
N017400-002B	SAMP	1	B	0.98	0.17	15	PASS
CCV1	CCV	1	B	5.018	0.6	15	PASS
CCB1	CCB	1	B	0.033	10.39	15	PASS
N017415-001B	SAMP	1	B	0.95	0.017	15	PASS
N017415-002B	SAMP	1	B	1.14	0.092	15	PASS
N017415-003B	SAMP	1	B	1.093	0.22	15	PASS
N017415-004B	SAMP	1	B	1.13	0.33	15	PASS
N017415-005B	SAMP	1	B	1.15	0.2	15	PASS
N017415-006B	SAMP	1	B	1.13	0.4	15	PASS
N017415-006B-MS1	MS	1	B	3.44	0.31	15	PASS
N017415-007B	SAMP	1	B	0.93	0.29	15	PASS
N017427-001B	SAMP	1	B	0.93	0.47	15	PASS
N017427-002B	SAMP	1	B	1.0004	0.66	15	PASS
CCV2	CCV	1	B	5.11	0.3	15	PASS
CCB2	CCB	1	B	0.047	4.78	15	PASS
LLCCV2	CCV2	1	B	0.13	1.21	20	PASS
LLCCV2	CCV2	1	B	0.12	1.17	20	PASS
ICSA2	ICSA	1	B	0.063	2.22	15	PASS
ICSAB2	ICSAB	1	B	1	0.085	15	PASS
CalBlk	IBLK	1	Ca	0	14.52	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Ca	0.2	6.94	15	PASS
Standard2	ICAL	1	Ca	1	1.28	15	PASS
Standard3	ICAL	1	Ca	2	1.37	15	PASS
Standard4	ICAL	1	Ca	5	0.34	15	PASS
Standard5	ICAL	1	Ca	7.5	0.71	15	PASS
Standard6	ICAL	1	Ca	10	0.25	15	PASS
Standard7	ICAL	1	Ca	20	0.85	15	PASS
ICV	ICV	1	Ca	10.13	0.46	15	PASS
ICB	ICB	1	Ca	-0.0045	540.23	15	<PQL
LLCCV1	CCV1	1	Ca	0.23	5.19	20	PASS
LLCCV1	CCV1	1	Ca	0.21	3.37	20	PASS
ICSA1	ICSA	1	Ca	518.03	0.038	15	PASS
ICSAB1	ICSAB	1	Ca	505.49	0.27	15	PASS
MB-52910	MBLK	1	Ca	0.029	69.92	15	<PQL
LCS1-52910	LCS	1	Ca	9.63	0.13	15	PASS
N017399-001A	SAMP	1	Ca	110.52	0.43	15	PASS
N017399-001A	SAMP	5	Ca	23.42	0.35	15	PASS
N017399-001A-PS	PS	1	Ca	121.53	0.15	15	PASS
N017399-001A-MS1	MS	1	Ca	120.16	0.35	15	PASS
N017399-001A-MSD1	MSD	1	Ca	120.34	0.072	15	PASS
N017399-002B	SAMP	1	Ca	232.24	0.24	15	PASS
N017400-001B	SAMP	1	Ca	163.38	0.25	15	PASS
N017400-002B	SAMP	1	Ca	144.24	0.19	15	PASS
CCV1	CCV	1	Ca	9.64	0.21	15	PASS
CCB1	CCB	1	Ca	0.025	189.16	15	<PQL
N017415-001B	SAMP	1	Ca	93.73	0.38	15	PASS
N017415-002B	SAMP	1	Ca	150.27	0.23	15	PASS
N017415-003B	SAMP	1	Ca	92.77	0.083	15	PASS
N017415-004B	SAMP	1	Ca	213	0.24	15	PASS
N017415-005B	SAMP	1	Ca	214.56	0.26	15	PASS
N017415-006B	SAMP	1	Ca	146.35	0.31	15	PASS
N017415-006B-MS1	MS	1	Ca	148.85	0.21	15	PASS
N017415-007B	SAMP	1	Ca	208.92	0.66	15	PASS
N017427-001B	SAMP	1	Ca	158.09	0.17	15	PASS
N017427-002B	SAMP	1	Ca	182.53	0.7	15	PASS
CCV2	CCV	1	Ca	9.76	0.92	15	PASS
CCB2	CCB	1	Ca	0.011	532.77	15	<PQL
LLCCV2	CCV2	1	Ca	0.2	6.42	20	PASS
LLCCV2	CCV2	1	Ca	0.16	12.97	20	PASS
ICSA2	ICSA	1	Ca	490.66	0.17	15	PASS
ICSAB2	ICSAB	1	Ca	478.67	0.15	15	PASS
CalBlk	IBLK	1	Fe	0	426.32	15	<PQL

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Fe	0.02	1.98	15	PASS
Standard2	ICAL	1	Fe	0.05	0.94	15	PASS
Standard3	ICAL	1	Fe	2	0.16	15	PASS
Standard4	ICAL	1	Fe	5	0.13	15	PASS
Standard5	ICAL	1	Fe	7.5	0.088	15	PASS
Standard6	ICAL	1	Fe	10	0.14	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.12	0.3	15	PASS
ICB	ICB	1	Fe	-0.0019	34.48	15	<PQL
LLCCV1	CCV1	1	Fe	0.018	2.26	20	PASS
LLCCV1	CCV1	1	Fe	0.017	0.51	20	PASS
ICSA1	ICSA	1	Fe	185.4	0.4	15	PASS
ICSAB1	ICSAB	1	Fe	183.71	0.29	15	PASS
MB-52910	MBLK	1	Fe	0.0046	37.4	15	<PQL
LCS1-52910	LCS	1	Fe	0.11	0.26	15	PASS
N017399-001A	SAMP	1	Fe	0.00019	236.98	15	<PQL
N017399-001A	SAMP	5	Fe	-0.0028	9.6	15	PASS
N017399-001A-PS	PS	1	Fe	0.05	0.97	15	PASS
N017399-001A-MS1	MS	1	Fe	0.052	1.31	15	PASS
N017399-001A-MSD1	MSD	1	Fe	0.05	0.6	15	PASS
N017399-002B	SAMP	1	Fe	-0.00014	88.36	15	<PQL
N017400-001B	SAMP	1	Fe	0.0041	10.55	15	PASS
N017400-002B	SAMP	1	Fe	0.0077	5.49	15	PASS
CCV1	CCV	1	Fe	9.97	0.21	15	PASS
CCB1	CCB	1	Fe	-0.0025	11.4	15	PASS
N017415-001B	SAMP	1	Fe	0.0045	11.46	15	PASS
N017415-002B	SAMP	1	Fe	0.013	2.28	15	PASS
N017415-003B	SAMP	1	Fe	0.0016	10.057	15	PASS
N017415-004B	SAMP	1	Fe	0.0046	12.77	15	PASS
N017415-005B	SAMP	1	Fe	0.0052	2.5	15	PASS
N017415-006B	SAMP	1	Fe	0.0027	8.6	15	PASS
N017415-006B-MS1	MS	1	Fe	0.058	0.71	15	PASS
N017415-007B	SAMP	1	Fe	0.0061	1.63	15	PASS
N017427-001B	SAMP	1	Fe	0.0013	8.8	15	PASS
N017427-002B	SAMP	1	Fe	0.0018	15.95	15	<PQL
CCV2	CCV	1	Fe	10.26	0.064	15	PASS
CCB2	CCB	1	Fe	-0.0024	32.44	15	<PQL
LLCCV2	CCV2	1	Fe	0.018	2.047	20	PASS
LLCCV2	CCV2	1	Fe	0.018	1.63	20	PASS
ICSA2	ICSA	1	Fe	188.31	0.35	15	PASS
ICSAB2	ICSAB	1	Fe	187.01	0.58	15	PASS
CalBlk	IBLK	1	Mg	0	14.94	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Mg	0.1	0.38	15	PASS
Standard2	ICAL	1	Mg	1	0.47	15	PASS
Standard3	ICAL	1	Mg	2	0.23	15	PASS
Standard4	ICAL	1	Mg	5	0.3	15	PASS
Standard5	ICAL	1	Mg	7.5	0.26	15	PASS
Standard6	ICAL	1	Mg	10	0.23	15	PASS
Standard7	ICAL	1	Mg	20	0.18	15	PASS
ICV	ICV	1	Mg	9.88	0.32	15	PASS
ICB	ICB	1	Mg	-0.0024	13.97	15	PASS
LLCCV1	CCV1	1	Mg	0.1	0.45	20	PASS
LLCCV1	CCV1	1	Mg	0.1	0.51	20	PASS
ICSA1	ICSA	1	Mg	475.95	0.53	15	PASS
ICSAB1	ICSAB	1	Mg	468.27	0.15	15	PASS
MB-52910	MBLK	1	Mg	0.0014	71.4	15	<PQL
LCS1-52910	LCS	1	Mg	9.43	0.32	15	PASS
N017399-001A	SAMP	1	Mg	20.26	0.79	15	PASS
N017399-001A	SAMP	5	Mg	4.59	0.53	15	PASS
N017399-001A-PS	PS	1	Mg	25.31	0.028	15	PASS
N017399-001A-MS1	MS	1	Mg	25.029	0.36	15	PASS
N017399-001A-MSD1	MSD	1	Mg	25	0.12	15	PASS
N017399-002B	SAMP	1	Mg	24.61	0.14	15	PASS
N017400-001B	SAMP	1	Mg	14.28	0.34	15	PASS
N017400-002B	SAMP	1	Mg	19.7	0.3	15	PASS
CCV1	CCV	1	Mg	9.19	0.41	15	PASS
CCB1	CCB	1	Mg	-0.0037	14.48	15	PASS
N017415-001B	SAMP	1	Mg	3.87	0.34	15	PASS
N017415-002B	SAMP	1	Mg	8.52	0.2	15	PASS
N017415-003B	SAMP	1	Mg	4.98	0.32	15	PASS
N017415-004B	SAMP	1	Mg	12.45	0.06	15	PASS
N017415-005B	SAMP	1	Mg	12.56	0.18	15	PASS
N017415-006B	SAMP	1	Mg	7.91	0.15	15	PASS
N017415-006B-MS1	MS	1	Mg	11.78	0.13	15	PASS
N017415-007B	SAMP	1	Mg	13.29	0.23	15	PASS
N017427-001B	SAMP	1	Mg	13.22	0.36	15	PASS
N017427-002B	SAMP	1	Mg	12.78	0.35	15	PASS
CCV2	CCV	1	Mg	10.31	0.3	15	PASS
CCB2	CCB	1	Mg	-0.0025	20.008	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.33	20	PASS
LLCCV2	CCV2	1	Mg	0.099	0.9	20	PASS
ICSA2	ICSA	1	Mg	497.31	0.41	15	PASS
ICSAB2	ICSAB	1	Mg	492.91	0.58	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151007B,0.025<50mL
Standard2	MWST-151007B,0.25<50mL
Standard3	MWST-151007B,1.25<50mL
Standard4	MWST-151007B,2.5<50mL
Standard5	MWST-151007B,5<50mL
Standard6	MWST-151007B,10<50mL
ICV	MWST-151007CB,2.5<50mL
CCV	MWST-151007B,2.5<50mL
ICSA/ICSAB	MWST-151028A/151007D
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/MSST-111006A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/04/2015	07:34:35 AM
2	Standard1	ICAL	1	11/04/2015	07:37:52 AM
3	Standard2	ICAL	1	11/04/2015	07:41:09 AM
4	Standard3	ICAL	1	11/04/2015	07:44:57 AM
5	Standard4	ICAL	1	11/04/2015	07:48:49 AM
6	Standard5	ICAL	1	11/04/2015	07:52:42 AM
7	Standard6	ICAL	1	11/04/2015	07:56:37 AM
8	ICV	ICV	1	11/04/2015	07:59:24 AM
1	ICB	ICB	1	11/04/2015	08:03:16 AM
3	ICSA1	ICSA	1	11/04/2015	08:06:32 AM
4	ICSAB1	ICSAB	1	11/04/2015	08:09:51 AM
38	MB-52866	MBLK	1	11/04/2015	08:13:44 AM
39	LCS2-52866	LCS	1	11/04/2015	08:19:36 AM
40	N017404-001A	SAMP	5	11/04/2015	08:23:28 AM
41	N017404-002A	SAMP	5	11/04/2015	08:26:48 AM
42	N017404-002A	SAMP	25	11/04/2015	08:31:27 AM
43	N017404-002A-PS	PS	5	11/04/2015	08:35:15 AM
44	N017404-002A-MS2	MS	5	11/04/2015	08:39:04 AM
45	N017404-002A-MSD2	MSD	5	11/04/2015	08:42:54 AM
46	MB-52910	MBLK	1	11/04/2015	08:46:45 AM
47	LCS2-52910	LCS	1	11/04/2015	08:50:04 AM
5	CCV1	CCV	1	11/04/2015	08:53:24 AM
1	CCB1	CCB	1	11/04/2015	08:57:18 AM
48	N017399-001A	SAMP	5	11/04/2015	09:00:36 AM
49	N017399-002B	SAMP	5	11/04/2015	09:05:28 AM
50	N017400-001B	SAMP	5	11/04/2015	09:10:21 AM
51	N017400-002B	SAMP	5	11/04/2015	09:15:11 AM
52	N017415-001B	SAMP	5	11/04/2015	09:20:03 AM
53	N017415-002B	SAMP	5	11/04/2015	09:24:53 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N017415-003B	SAMP	5	11/04/2015	09:29:45 AM
55	N017415-004B	SAMP	5	11/04/2015	09:34:36 AM
56	N017415-005B	SAMP	5	11/04/2015	09:39:27 AM
57	N017415-006B	SAMP	5	11/04/2015	09:44:19 AM
5	CCV2	CCV	1	11/04/2015	09:49:10 AM
1	CCB2	CCB	1	11/04/2015	09:53:04 AM
58	N017415-007B	SAMP	5	11/04/2015	09:56:21 AM
59	N017427-001B	SAMP	5	11/04/2015	10:01:15 AM
60	N017427-002B	SAMP	5	11/04/2015	10:06:07 AM
61	MB-52882	MBLK	1	11/04/2015	10:11:00 AM
62	LCS2-52882	LCS	1	11/04/2015	10:14:20 AM
63	N017390-001B	SAMP	5	11/04/2015	10:19:10 AM
64	N017400-003B	SAMP	5	11/04/2015	10:24:04 AM
65	N017400-004B	SAMP	5	11/04/2015	10:28:56 AM
66	N017400-005B	SAMP	5	11/04/2015	10:33:47 AM
67	N017400-006B	SAMP	5	11/04/2015	10:38:37 AM
5	CCV3	CCV	1	11/04/2015	10:43:28 AM
1	CCB3	CCB	1	11/04/2015	10:47:22 AM
68	N017400-007B	SAMP	5	11/04/2015	10:50:39 AM
69	N017400-008B	SAMP	5	11/04/2015	10:55:31 AM
70	N017415-008B	SAMP	5	11/04/2015	10:59:51 AM
71	N017399-001A	SAMP	25	11/04/2015	11:04:45 AM
72	N017399-002B	SAMP	25	11/04/2015	11:08:06 AM
73	N017399-002B-PS	PS	5	11/04/2015	11:11:26 AM
74	N017399-002B-MS2	MS	5	11/04/2015	11:16:19 AM
75	N017399-002B-MSD2	MSD	5	11/04/2015	11:21:11 AM
76	N017399-002B	SAMP	50	11/04/2015	11:26:03 AM
77	N017399-002B	SAMP	250	11/04/2015	11:29:23 AM
5	CCV4	CCV	1	11/04/2015	11:41:12 AM
1	CCB4	CCB	1	11/04/2015	11:45:07 AM
78	N017399-002B-PS	PS	50	11/04/2015	11:48:27 AM
79	N017399-002B-MS2	MS	50	11/04/2015	11:51:47 AM
80	N017399-002B-MSD2	MSD	50	11/04/2015	11:55:07 AM
81	N017400-001B	SAMP	50	11/04/2015	11:58:27 AM
82	N017400-002B	SAMP	50	11/04/2015	12:01:46 PM
83	N017415-001B	SAMP	50	11/04/2015	12:05:06 PM
84	N017415-002B	SAMP	50	11/04/2015	12:08:25 PM
85	N017415-003B	SAMP	50	11/04/2015	12:11:44 PM
86	N017415-004B	SAMP	100	11/04/2015	12:15:04 PM
87	N017415-005B	SAMP	100	11/04/2015	12:18:23 PM
5	CCV5	CCV	1	11/04/2015	12:21:43 PM
1	CCB5	CCB	1	11/04/2015	12:25:36 PM
3	ICSA2	ICSA	1	11/04/2015	12:28:53 PM
4	ICSAB2	ICSAB	1	11/04/2015	12:32:10 PM
88	N017415-006B	SAMP	100	11/04/2015	12:35:35 PM
89	N017415-007B	SAMP	50	11/04/2015	12:38:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N017415-007B-MS2	MS	5	11/04/2015	12:42:15 PM
104	N017415-007B-MS2	MS	50	11/04/2015	12:47:10 PM
90	N017427-001B	SAMP	50	11/04/2015	12:50:30 PM
91	N017427-002B	SAMP	50	11/04/2015	12:53:51 PM
62	LCS2-52882	LCS	1	11/04/2015	12:57:12 PM
92	N017390-001B	SAMP	25	11/04/2015	01:01:03 PM
93	N017400-003B	SAMP	100	11/04/2015	01:04:54 PM
94	N017400-004B	SAMP	100	11/04/2015	01:08:13 PM
5	CCV6	CCV	1	11/04/2015	01:11:32 PM
1	CCB6	CCB	1	11/04/2015	01:15:25 PM
95	N017400-004B	SAMP	500	11/04/2015	01:19:02 PM
96	N017400-004B-PS	PS	100	11/04/2015	01:22:21 PM
97	N017400-004B-MS2	MS	100	11/04/2015	01:25:40 PM
98	N017400-004B-MSD2	MSD	100	11/04/2015	01:28:59 PM
99	N017400-005B	SAMP	25	11/04/2015	01:32:19 PM
100	N017400-006B	SAMP	25	11/04/2015	01:35:39 PM
101	N017400-007B	SAMP	100	11/04/2015	01:38:59 PM
102	N017400-008B	SAMP	100	11/04/2015	01:42:18 PM
103	N017415-008B	SAMP	25	11/04/2015	01:45:39 PM
5	CCV7	CCV	1	11/04/2015	01:49:31 PM
1	CCB7	CCB	1	11/04/2015	01:53:26 PM
3	ICSA3	ICSA	1	11/04/2015	01:56:43 PM
4	ICSAB3	ICSAB	1	11/04/2015	02:00:01 PM

INJECTION LOG: 151110A1

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/10/2015	09:36:29 AM
2	Standard1	ICAL	1	11/10/2015	09:40:52 AM
3	Standard2	ICAL	1	11/10/2015	09:45:40 AM
4	Standard3	ICAL	1	11/10/2015	09:50:31 AM
5	Standard4	ICAL	1	11/10/2015	09:54:55 AM
6	Standard5	ICAL	1	11/10/2015	10:00:23 AM
7	Standard6	ICAL	1	11/10/2015	10:05:48 AM
8	Standard7	ICAL	1	11/10/2015	10:11:13 AM
9	ICV	ICV	1	11/10/2015	10:28:11 AM
1	ICB	ICB	1	11/10/2015	10:33:36 AM
2	LLCCV1	CCV1	1	11/10/2015	10:37:56 AM
2	LLCCV1	CCV1	1	11/10/2015	10:43:35 AM
4	ICSA1	ICSA	1	11/10/2015	10:48:24 AM
5	ICSAB1	ICSAB	1	11/10/2015	10:53:58 AM
98	MB-52910	MBLK	1	11/10/2015	10:59:26 AM
99	LCS1-52910	LCS	1	11/10/2015	11:03:47 AM
100	N017399-001A	SAMP	1	11/10/2015	11:09:12 AM
101	N017399-001A	SAMP	5	11/10/2015	11:14:38 AM
102	N017399-001A-PS	PS	1	11/10/2015	11:19:30 AM
103	N017399-001A-MS1	MS	1	11/10/2015	11:24:56 AM
104	N017399-001A-MSD1	MSD	1	11/10/2015	11:30:23 AM
105	N017399-002B	SAMP	1	11/10/2015	11:35:49 AM
106	N017400-001B	SAMP	1	11/10/2015	11:41:15 AM
107	N017400-002B	SAMP	1	11/10/2015	11:46:41 AM
7	CCV1	CCV	1	11/10/2015	11:52:05 AM
1	CCB1	CCB	1	11/10/2015	11:57:30 AM
108	N017415-001B	SAMP	1	11/10/2015	12:01:49 PM
109	N017415-002B	SAMP	1	11/10/2015	12:06:13 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
110	N017415-003B	SAMP	1	11/10/2015	12:11:37 PM
111	N017415-004B	SAMP	1	11/10/2015	12:17:00 PM
112	N017415-005B	SAMP	1	11/10/2015	12:22:24 PM
113	N017415-006B	SAMP	1	11/10/2015	12:27:48 PM
114	N017415-006B-MS1	MS	1	11/10/2015	01:11:01 PM
115	N017415-007B	SAMP	1	11/10/2015	01:16:28 PM
116	N017427-001B	SAMP	1	11/10/2015	01:21:52 PM
117	N017427-002B	SAMP	1	11/10/2015	01:27:17 PM
7	CCV2	CCV	1	11/10/2015	01:32:41 PM
1	CCB2	CCB	1	11/10/2015	01:38:06 PM
2	LLCCV2	CCV2	1	11/10/2015	01:42:55 PM
2	LLCCV2	CCV2	1	11/10/2015	01:53:03 PM
4	ICSA2	ICSA	1	11/10/2015	01:57:52 PM
5	ICSAB2	ICSAB	1	11/10/2015	02:03:27 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:07:48**
Prep End Date: **11/2/2015 3:30:00**
Initials/ Date: 11/16/2015

Prep Batch **52910** Prep Code: **200.7_PR** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-52910	Aqueous		25	☐	0	0	25	1.000		
LCS2-52910	Aqueous		25	☐	0	0	25	1.000		
MB-52910	Aqueous		25	☐	0	0	25	1.000		
N017399-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:07:48**
Prep End Date: **11/2/2015 3:30:00**
Initials/ Date: 11/16/2015

Prep Batch **52910** Prep Code: **200.7_PR** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	11/04/2015	07:34:35 AM	Na	589.594	442	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	Na	589.594	420	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	Na	589.594	5039	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	Na	589.594	24874	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	Na	589.594	49512	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	Na	589.594	99141	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	Na	589.594	197629	40.000	mg/L	1.0000
Potassium								
CalBlk	11/04/2015	07:34:35 AM	K	766.451	-307	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	K	766.451	593	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	K	766.451	5115	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	K	766.451	25371	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	K	766.451	50604	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	K	766.451	101999	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	K	766.451	205216	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 151110A1

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	11/10/2015	09:36:29 AM	B	249.677	11365	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	B	249.677	6740	0.1000	mg/L	
Standard3	11/10/2015	09:50:31 AM	B	249.677	82202	1.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	B	249.677	189884	2.500	mg/L	
Standard5	11/10/2015	10:00:23 AM	B	249.677	284386	3.750	mg/L	
Standard6	11/10/2015	10:05:48 AM	B	249.677	375446	5.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	B	249.677	731126	10.000	mg/L	0.9998
Magnesium								
CalBlk	11/10/2015	09:36:29 AM	Mg	279.079	182	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Mg	279.079	2219	0.1000	mg/L	
Standard2	11/10/2015	09:45:40 AM	Mg	279.079	18072	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Mg	279.079	44603	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Mg	279.079	101202	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Mg	279.079	151360	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Mg	279.079	197743	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Mg	279.079	385619	20.000	mg/L	0.9998
Aluminum								
CalBlk	11/10/2015	09:36:29 AM	Al	237.313	15	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Al	237.313	549	0.0500	mg/L	
Standard2	11/10/2015	09:45:40 AM	Al	237.313	9186	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Al	237.313	23708	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Al	237.313	51160	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Al	237.313	76838	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Al	237.313	100485	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Al	237.313	195893	20.000	mg/L	0.9997
Calcium								
CalBlk	11/10/2015	09:36:29 AM	Ca	227.546	64	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Ca	227.546	113	0.2000	mg/L	
Standard2	11/10/2015	09:45:40 AM	Ca	227.546	502	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Ca	227.546	1250	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Ca	227.546	2879	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Ca	227.546	4327	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Ca	227.546	5663	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Ca	227.546	10997	20.000	mg/L	0.9998
Iron								
CalBlk	11/10/2015	09:36:29 AM	Fe	273.953	77	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Fe	273.953	884	0.0200	mg/L	
Standard2	11/10/2015	09:45:40 AM	Fe	273.953	2562	0.050	mg/L	
Standard3	11/10/2015	09:50:31 AM	Fe	273.953	115010	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Fe	273.953	261908	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Fe	273.953	394094	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Fe	273.953	517059	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Fe	273.953	1009915	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10019.040	500	10000	0	100	90	110				
Sodium	10078.967	500	10000	0	101	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9907.437	500	10000	0	99.1	90	110				
Sodium	9808.247	500	10000	0	98.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9823.547	500	10000	0	98.2	90	110				
Sodium	9680.031	500	10000	0	96.8	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9999.030	500	10000	0	100	90	110				
Sodium	9758.992	500	10000	0	97.6	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125834**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9747.808	500	10000	0	97.5	90	110				
Sodium	9477.942	500	10000	0	94.8	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9929.652	500	10000	0	99.3	90	110				
Sodium	9530.829	500	10000	0	95.3	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10092.984	500	10000	0	101	90	110				
Sodium	9593.983	500	10000	0	95.9	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10111.986	500	10000	0	101	90	110				
Sodium	9556.105	500	10000	0	95.6	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ICV**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10122.277	50	10000	0	101	90	110				
Boron	5083.433	100	5000	0	102	90	110				
Calcium	10126.074	500	10000	0	101	90	110				
Iron	10119.756	20	10000	0	101	90	110				
Magnesium	9883.584	100	10000	0	98.8	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ZZZZZZ**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	52.043	50	50.00	0	104	80	120				
Boron	96.348	100	100.0	0	96.3	80	120				
Calcium	210.631	500	200.0	0	105	80	120				
Iron	17.369	20	20.00	0	86.8	80	120				
Magnesium	103.671	100	100.0	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCV**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9874.750	50	10000	0	98.7	90	110				
Boron	5017.523	100	5000	0	100	90	110				
Calcium	9642.957	500	10000	0	96.4	90	110				
Iron	9966.094	20	10000	0	99.7	90	110				
Magnesium	9185.448	100	10000	0	91.9	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCV**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9935.153	50	10000	0	99.4	90	110				
Boron	5105.957	100	5000	0	102	90	110				
Calcium	9756.907	500	10000	0	97.6	90	110				
Iron	10257.501	20	10000	0	103	90	110				
Magnesium	10306.497	100	10000	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ZZZZZZ**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	51.140	50	50.00	0	102	70	130				
Boron	120.275	100	100.0	0	120	70	130				
Calcium	162.187	500	200.0	0	81.1	70	130				
Iron	17.499	20	20.00	0	87.5	70	130				
Magnesium	98.678	100	100.0	0	98.7	70	130				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	46.364	500									
Sodium	-4.100499	500									

Sample ID	**CCB1**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49.391	500									
Sodium	-18.943199	500									

Sample ID	**CCB2**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	85.105	500									
Sodium	145.637	500									

Sample ID	**CCB3**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	63.177	500									
Sodium	70.296	500									

Sample ID	**CCB4**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125835**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	CCB4	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125835

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	65.503	500									
Sodium	68.198	500									

Sample ID	CCB5	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125847

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	72.291	500									
Sodium	23.500	500									

Sample ID	CCB6	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	76.815	500									
Sodium	18.539	500									

Sample ID	CCB7	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	72.452	500									
Sodium	5.756	500									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ICB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-2.242391	50									
Boron	20.464	100									
Calcium	-4.459163	500									
Iron	-1.874465	20									
Magnesium	-2.419701	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-4.439899	50									
Boron	32.624	100									
Calcium	25.076	500									
Iron	-2.462547	20									
Magnesium	-3.713109	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-4.435265	50									
Boron	47.322	100									
Calcium	10.724	500									
Iron	-2.432628	20									
Magnesium	-2.455502	100									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSA** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	23.496	500									
Sodium	-6.13799	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSAB** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9946.594	500	10000	0	99.5	80	120				
Sodium	9999.827	500	10000	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSA** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.497	500									
Sodium	16.921	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSAB** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10013.782	500	10000	0	100	80	120				
Sodium	9624.486	500	10000	0	96.2	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSA** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125873**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**ICSA3**	SampType:	**ICSA**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	67.815	500									
Sodium	0.551	500									

Sample ID	**ICSAB3**	SampType:	**ICSAB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSAB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9980.581	500	10000	0	99.8	80	120				
Sodium	9440.724	500	10000	0	94.4	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSA** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510333.526	50	500000	0	102	80	120				
Boron	38.420	100									
Calcium	518034.854	500	500000	0	104	80	120				
Iron	185399.041	20	200000	0	92.7	80	120				
Magnesium	475951.115	100	500000	0	95.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSAB** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505300.009	50	500000	0	101	80	120				
Boron	972.086	100	1000	0	97.2	80	120				
Calcium	505488.249	500	500000	0	101	80	120				
Iron	183705.639	20	200000	0	91.9	80	120				
Magnesium	468269.785	100	500000	0	93.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSA** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	495255.705	50	500000	0	99.1	80	120				
Boron	63.074	100									
Calcium	490662.525	500	500000	0	98.1	80	120				
Iron	188308.034	20	200000	0	94.2	80	120				
Magnesium	497310.102	100	500000	0	99.5	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ICSAB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491409.393	50	500000	0	98.3	80	120				
Boron	995.904	100	1000	0	99.6	80	120				
Calcium	478671.922	500	500000	0	95.7	80	120				
Iron	187005.737	20	200000	0	93.5	80	120				
Magnesium	492909.806	100	500000	0	98.6	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.24	124.42	65-125	PASS
Standard2	ICAL	1	1.0091	100.91	65-125	PASS
Standard3	ICAL	1	1	100	65-125	PASS
Standard4	ICAL	1	1.0052	100.52	65-125	PASS
Standard5	ICAL	1	0.99	98.89	65-125	PASS
Standard6	ICAL	1	1	99.59	65-125	PASS
ICV	ICV	1	1.0013	100.13	65-125	PASS
ICB	ICB	1	0.99	99.25	65-125	PASS
ICSA1	ICSA	1	0.99	98.97	65-125	PASS
ICSAB1	ICSAB	1	1.0026	100.26	65-125	PASS
MB-52910	MBLK	1	0.99	99.22	65-125	PASS
LCS2-52910	LCS	1	1.084	108.41	65-125	PASS
CCV1	CCV	1	1.016	101.59	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
N017399-001A	SAMP	5	1.013	101.34	65-125	PASS
N017399-002B	SAMP	5	0.99	99.033	65-125	PASS
N017400-001B	SAMP	5	1.0032	100.32	65-125	PASS
N017400-002B	SAMP	5	1.0008	100.08	65-125	PASS
N017415-001B	SAMP	5	0.98	97.79	65-125	PASS
N017415-002B	SAMP	5	0.95	94.93	65-125	PASS
N017415-003B	SAMP	5	0.93	92.88	65-125	PASS
N017415-004B	SAMP	5	0.94	93.59	65-125	PASS
N017415-005B	SAMP	5	0.91	90.84	65-125	PASS
N017415-006B	SAMP	5	0.87	86.72	65-125	PASS
CCV2	CCV	1	0.85	85.077	65-125	PASS
CCB2	CCB	1	0.85	85.39	65-125	PASS
N017415-007B	SAMP	5	0.82	82.48	65-125	PASS
N017427-001B	SAMP	5	0.83	82.6	65-125	PASS
N017427-002B	SAMP	5	0.93	93.45	65-125	PASS
CCV3	CCV	1	0.97	96.5	65-125	PASS
CCB3	CCB	1	0.95	94.9	65-125	PASS
N017399-001A	SAMP	25	0.97	96.81	65-125	PASS
N017399-002B	SAMP	25	0.98	98.16	65-125	PASS
N017399-002B-PS	PS	5	0.96	96.033	65-125	PASS
N017399-002B-MS2	MS	5	0.93	92.96	65-125	PASS
N017399-002B-MSD2	MSD	5	0.88	87.93	65-125	PASS
N017399-002B	SAMP	50	0.91	90.55	65-125	PASS
N017399-002B	SAMP	250	0.91	91.36	65-125	PASS
CCV4	CCV	1	0.97	96.92	65-125	PASS
CCB4	CCB	1	0.93	93.31	65-125	PASS

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017399-002B-PS	PS	50	0.92	91.67	65-125	PASS
N017399-002B-MS2	MS	50	0.92	92.11	65-125	PASS
N017399-002B-MSD2	MSD	50	0.92	92.23	65-125	PASS
N017400-001B	SAMP	50	0.92	91.87	65-125	PASS
N017400-002B	SAMP	50	0.92	92.025	65-125	PASS
N017415-001B	SAMP	50	0.92	92.086	65-125	PASS
N017415-002B	SAMP	50	0.92	91.73	65-125	PASS
N017415-003B	SAMP	50	0.92	91.75	65-125	PASS
N017415-004B	SAMP	100	0.91	91.12	65-125	PASS
N017415-005B	SAMP	100	0.91	91.052	65-125	PASS
CCV5	CCV	1	0.93	93.2	65-125	PASS
CCB5	CCB	1	0.98	98.49	65-125	PASS
ICSA2	ICSA	1	0.98	98.1	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.19	65-125	PASS
N017415-006B	SAMP	100	0.98	97.54	65-125	PASS
N017415-007B	SAMP	50	0.96	95.87	65-125	PASS
N017415-007B-MS2	MS	5	0.93	93.48	65-125	PASS
N017415-007B-MS2	MS	50	0.94	93.56	65-125	PASS
N017427-001B	SAMP	50	0.94	94.2	65-125	PASS
N017427-002B	SAMP	50	0.95	94.76	65-125	PASS
CCV6	CCV	1	0.96	95.52	65-125	PASS
CCB6	CCB	1	0.95	94.87	65-125	PASS
CCV7	CCV	1	0.95	94.76	65-125	PASS
CCB7	CCB	1	0.94	94.3	65-125	PASS
ICSA3	ICSA	1	0.95	95.13	65-125	PASS
ICSAB3	ICSAB	1	0.96	96.16	65-125	PASS

INTERNAL STANDARD: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0069	100.69	65-125	PASS
Standard2	ICAL	1	1.15	115.41	65-125	PASS
Standard3	ICAL	1	1.13	113.37	65-125	PASS
Standard4	ICAL	1	1.018	101.82	65-125	PASS
Standard5	ICAL	1	1.099	109.92	65-125	PASS
Standard6	ICAL	1	1.032	103.18	65-125	PASS
Standard7	ICAL	1	1.052	105.19	65-125	PASS
ICV	ICV	1	1.051	105.1	65-125	PASS
ICB	ICB	1	1.014	101.36	65-125	PASS
LLCCV1	CCV1	1	1.014	101.43	65-125	PASS
LLCCV1	CCV1	1	1.018	101.8	65-125	PASS
ICSA1	ICSA	1	0.94	94.083	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.035	65-125	PASS
MB-52910	MBLK	1	1.026	102.58	65-125	PASS
LCS1-52910	LCS	1	0.96	96.009	65-125	PASS
N017399-001A	SAMP	1	1.028	102.76	65-125	PASS
N017399-001A	SAMP	5	1.013	101.26	65-125	PASS
N017399-001A-PS	PS	1	1.024	102.44	65-125	PASS
N017399-001A-MS1	MS	1	1.024	102.36	65-125	PASS
N017399-001A-MSD1	MSD	1	1.027	102.66	65-125	PASS
N017399-002B	SAMP	1	0.98	98.26	65-125	PASS
N017400-001B	SAMP	1	0.98	98.096	65-125	PASS
N017400-002B	SAMP	1	1	99.92	65-125	PASS
CCV1	CCV	1	1.027	102.69	65-125	PASS
CCB1	CCB	1	1	99.63	65-125	PASS
N017415-001B	SAMP	1	0.93	93.31	65-125	PASS
N017415-002B	SAMP	1	0.96	95.95	65-125	PASS
N017415-003B	SAMP	1	0.86	86.14	65-125	PASS
N017415-004B	SAMP	1	1.0058	100.58	65-125	PASS
N017415-005B	SAMP	1	1.0086	100.86	65-125	PASS
N017415-006B	SAMP	1	1.035	103.54	65-125	PASS
N017415-006B-MS1	MS	1	1.014	101.42	65-125	PASS
N017415-007B	SAMP	1	1	99.54	65-125	PASS
N017427-001B	SAMP	1	0.94	94.05	65-125	PASS
N017427-002B	SAMP	1	1	99.53	65-125	PASS
CCV2	CCV	1	1.017	101.72	65-125	PASS
CCB2	CCB	1	0.99	99.14	65-125	PASS
LLCCV2	CCV2	1	0.99	99.44	65-125	PASS
LLCCV2	CCV2	1	1	99.5	65-125	PASS
ICSA2	ICSA	1	0.93	93.067	65-125	PASS

INTERNAL STANDARD: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB2	ICSAB	1	0.96	95.53	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 200.7
Analysis Date: 11/04/15

Matrix: Groundwater
Batch No.: 52910

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to K. The calculated concentration is <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017399-002B -DT 25X	Potassium	ug/L	17441.02	NA	16095.72	8.36%	10
N017399-002B -DT 250X	Sodium	ug/L	1487857	PASS	1458068	2.04%	10

Note: NA - Not Applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 200.7
Analysis Date: 11/10/15

Matrix: Groundwater
Batch No.: 52910

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to Al , B & Fe. The calculated concentration is <25XRL.
Dilution test of Mg failed. However LCS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017399-001A -DT 5X	Aluminum	ug/L	0	NA	0		10
N017399-001A -DT 5X	Boron	ug/L	575.5936	NA	536.1142	7.36%	10
N017399-001A -DT 5X	Calcium	ug/L	117090.2	PASS	110515.2	5.95%	10
N017399-001A -DT 5X	Iron	ug/L	0	NA	0		10
N017399-001A -DT 5X	Magnesium	ug/L	22953.83	FAIL	20258.61	13.30%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N017399-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38850.638	2500	20000	16100	114	80	120				

Sample ID **N017399-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1498971.792	25000	20000	1458000	205	80	120				S

Sample ID **N017399-001A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5251.795	50	10000	0	52.5	80	120				S
Boron	3026.964	100	5000	536.1	49.8	80	120				S
Calcium	121527.732	500	10000	110500	110	80	120				
Iron	49.650	20	100.0	0	49.6	80	120				S
Magnesium	25311.227	100	10000	20260	50.5	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017415

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/4/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X				
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?	X					
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Cr, As, Ba, Cd, Co, Pb, Mn, V & Zn only.
%Rec of Bi [IS] in N017415-05B to 07B, N017427-01B,02B/MS failed, low bias. Pb for reanalysis.
Also in ICSA3/ICSAB3. However, samples are closed by ICSA2/ICSAB2.
%RSD of Ba & As in N017400-01B DT (df=5) > 15%. However, %difference of Ba passed criteria and dilution test of As is not applicable.
%Rec of Co in N017400-01B PS/MS/MSD & N017427-02B MS failed, low bias. However, LCS passed criteria.
For Cr confirmation.
N017415-004B (1st run) = 4.8 ug/L & N017415-004A (218.6) = 6.3 ug/L.
N017415-005B (1st run) = 5.0 ug/L & N017415-005A (218.6) = 6.2 ug/L.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/2015 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017415

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/9/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Sb, Be, Cu, Mo, Ni, Se & Tl only. Also for Pb rerun of N017415-05B to 07B, N017427-01B,02B/MS.
%RSD of Se in ICAL Std 0.5 pbb > 15%. Also %RSD in LLCCV1 > 15%. However, %Rec of Se in LLICV passed criteria.
%RSD of Se N017400-001B DT (df=5) > 15% with result > PQL. However, %difference passed criteria.
%RSD of Se in LLCCV1 > 20%. However, %Rec passed criteria.
%Rec of Mo & Se in N017400-01B PS/MS/MSD & N017427-02B MS failed, low bias. However, LCS passed criteria.
Dilution was necessary for Be in N017415-01B,02B,03B,05B,06B & 07B due to failing %Rec of Li [IS]. Samples were reported at dilution which passed the %Rec criteria of IS.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: —

2nd Level Reviewer 11/16/201 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017415
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/10/2015

Method:

- [ ] EPA 6010B / 200.7
- [ ] EPA 7470A / 7471A/245.1
- [X] EPA 6020 / 200.8
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Ag rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/201 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 54044
ASSET #: N017415

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/12/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Cr confirmation. Reported results of confirmation.
N017415-004B (1st run) = 4.8 ug/L :confirmation: 6.0 ug/L ; & N017415-004A (218.6) = 6.3 ug/L :confirmation: 5.8 ug/L
N017415-005B (1st run) = 5.0 ug/L :confirmation: 5.9 ug/L ; & N017415-005A (218.6) = 6.2 ug/L :confirmation: 5.9 ug/L

%RSD of Cr in N017457-06B MSD > 15%. However, %Rec passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: -

2nd Level Reviewer 11/16/201 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N017415-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.687993481 * 1 * (25/25)

Chromium , ug/L = 1.687993

Reporting results in two significant figures,

Chromium , ug/L = 1.7



% RSD SUMMARY

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	111 Cd [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.82	15	PASS	0.14	0.98	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	2.26	15	PASS	0.56	3.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	0.39	15	PASS	5.24	0.4	15	PASS
Std4-10/100 ppb	ICAL	1	10.41	1.41	15	PASS	10.36	1.0027	15	PASS
Std5-20/200 ppb	ICAL	1	20.98	0.79	15	PASS	20.84	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	41.18	0.97	15	PASS	40.84	0.44	15	PASS
Std7-100/1000 ppb	ICAL	1	101.85	0.2	15	PASS	100.87	0.38	15	PASS
Std8-200/2000 ppb	ICAL	1	198.71	3.79	15	PASS	199.29	3.18	15	PASS
ICV	ICV	1	10.62	1.87	15	PASS	104.17	0.29	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.53	2.55	20	PASS	1.096	3.14	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.78	0.68	15	PASS	17.89	0.85	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.94	0.93	15	PASS	108.83	0.57	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	27.44	0.71	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	5.34	34.98	15	NR!
N017400-001B-PS	PS	1	8.65	2.3	15	PASS	118.28	0.4	15	PASS
N017400-001B-MS	MS	1	8.3	0.86	15	PASS	114.94	0.38	15	PASS
N017400-001B-MSD	MSD	1	8.45	0.74	15	PASS	115.62	0.35	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	61.92	0.29	15	PASS
CCV1	CCV	1	20.64	0.97	15	PASS	21.66	1.22	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	12.63	0.53	15	PASS
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	64.16	0.99	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	14.64	0.37	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	42.13	0.37	15	PASS
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	42.9	1.011	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	17.99	0.47	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	95.82	0.85	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	19.18	1.54	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	80.77	0.66	15	PASS
N017427-002B-MS	MS	1	8.61	0.44	15	PASS	171.8	1.1	15	PASS
CCV2	CCV	1	20.83	1.24	15	PASS	21.67	0.27	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.00069	281.8	15	<PQL
LLCCV1	CCV2	1	0.53	10.54	20	PASS	1.12	2.042	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.79	0.73	15	PASS	18.67	0.71	15	PASS
CCV3	CCV	1	20.78	0.24	15	PASS	21.19	0.41	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	111 Cd [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.7	0.41	15	PASS	21.19	0.89	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.64	1.23	15	PASS	20.88	1.46	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0014	83.77	15	<PQL
CCV6	CCV	1	20.56	0.25	15	PASS	21.12	1.24	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.55	3.72	20	PASS	1.11	1.21	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.53	0.76	15	PASS	18.12	0.81	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				51 V [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	1.053	15	PASS	0.09	22.98	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	2.19	15	PASS	0.53	6.94	15	PASS
Std3-5/50 ppb	ICAL	1	5.3	0.9	15	PASS	5.29	0.94	15	PASS
Std4-10/100 ppb	ICAL	1	10.42	0.77	15	PASS	10.28	0.19	15	PASS
Std5-20/200 ppb	ICAL	1	20.72	0.39	15	PASS	20.6	1.096	15	PASS
Std6-40/400 ppb	ICAL	1	41.13	0.3	15	PASS	40.52	0.99	15	PASS
Std7-100/1000 ppb	ICAL	1	101.39	0.43	15	PASS	100.56	1.1	15	PASS
Std8-200/2000 ppb	ICAL	1	198.98	0.9	15	PASS	199.53	1.32	15	PASS
ICV	ICV	1	10.43	0.76	15	PASS	10.098	1.22	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.093	0.65	20	PASS	1.042	5.55	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.011	101.16	15	<PQL
ICSAB1	ICSAB	1	21.55	0.58	15	PASS	21.54	0.099	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	0.025	14.45	15	PASS
LCS-52909	LCS	1	10.77	0.26	15	PASS	10.67	1.29	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	2.63	0.33	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.64	7.3	15	PASS
N017400-001B-PS	PS	1	8.98	0.36	15	PASS	11.17	1.67	15	PASS
N017400-001B-MS	MS	1	8.72	0.54	15	PASS	10.94	0.32	15	PASS
N017400-001B-MSD	MSD	1	8.76	0.62	15	PASS	10.81	1.13	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	2.81	2.5	15	PASS
CCV1	CCV	1	20.66	0.86	15	PASS	20.36	0.49	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.016	34.29	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	3.82	0.66	15	PASS
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	3.29	2.78	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	2.38	1.68	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	2.33	1.85	15	PASS
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	2.38	0.72	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	2.96	1.95	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	3.11	2.22	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	2.056	1.58	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	2.32	2.28	15	PASS
N017427-002B-MS	MS	1	8.95	1.1	15	PASS	10.68	1.17	15	PASS
CCV2	CCV	1	20.9	0.24	15	PASS	20.1	0.75	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0063	73.9	15	<PQL
LLCCV1	CCV2	1	1.086	1.72	20	PASS	1.08	3.86	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0063	148.72	15	<PQL
ICSAB2	ICSAB	1	21.62	0.62	15	PASS	20.88	1.58	15	PASS
CCV3	CCV	1	20.68	0.77	15	PASS	20.51	1.49	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.025	29.38	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				51 V [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.56	0.34	15	PASS	20.43	1.16	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.023	13.61	15	PASS
CCV5	CCV	1	20.62	0.3	15	PASS	20.71	2.68	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.01	111.72	15	<PQL
CCV6	CCV	1	20.76	0.27	15	PASS	20.84	0.91	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.074	0.84	20	PASS	1.07	3.6	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.46	0.63	15	PASS	21.069	0.38	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	12.29	15	PASS	0.13	17.22	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	2.047	15	PASS	0.55	3.59	15	PASS
Std3-5/50 ppb	ICAL	1	5.26	0.56	15	PASS	5.22	1.32	15	PASS
Std4-10/100 ppb	ICAL	1	10.27	0.38	15	PASS	10.43	0.52	15	PASS
Std5-20/200 ppb	ICAL	1	20.62	1.82	15	PASS	20.78	1.44	15	PASS
Std6-40/400 ppb	ICAL	1	40.67	1.91	15	PASS	40.54	2.35	15	PASS
Std7-100/1000 ppb	ICAL	1	100.51	1.68	15	PASS	100.92	1.44	15	PASS
Std8-200/2000 ppb	ICAL	1	199.53	1.16	15	PASS	199.32	0.91	15	PASS
ICV	ICV	1	10.26	1.21	15	PASS	101.043	0.77	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.089	2.2	20	PASS	0.55	7.27	20	PASS
ICSA1	ICSA	1	0.19	16.55	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.32	1.19	15	PASS	19	1.14	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.53	1.46	15	PASS	105.46	0.4	15	PASS
N017400-001B	SAMP	1	0.51	4.011	15	PASS	0.3	3.2	15	PASS
N017400-001B	SAMP	5	0.12	5.46	15	PASS	0.074	2.17	15	PASS
N017400-001B-PS	PS	1	8.52	2.15	15	PASS	80.62	1.23	15	PASS
N017400-001B-MS	MS	1	8.35	0.64	15	PASS	78.98	0.67	15	PASS
N017400-001B-MSD	MSD	1	8.3	0.98	15	PASS	78.81	0.65	15	PASS
N017400-002B	SAMP	1	0.98	3.0073	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.11	1.046	15	PASS	20.61	0.61	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	0.43	0.32	15	PASS	1.036	1.14	15	PASS
N017415-002B	SAMP	1	1.69	3.18	15	PASS	0.73	1.068	15	PASS
N017415-003B	SAMP	1	0.36	6.84	15	PASS	1.034	1.38	15	PASS
N017415-004B	SAMP	1	4.85	1.071	15	PASS	0.76	2.51	15	PASS
N017415-005B	SAMP	1	4.99	0.9	15	PASS	0.56	1.15	15	PASS
N017415-006B	SAMP	1	0.57	7.011	15	PASS	0.78	0.17	15	PASS
N017415-007B	SAMP	1	2.81	2.095	15	PASS	0.42	4.37	15	PASS
N017427-001B	SAMP	1	0.45	9.04	15	PASS	0.46	2.27	15	PASS
N017427-002B	SAMP	1	0.78	1.81	15	PASS	0.54	3.11	15	PASS
N017427-002B-MS	MS	1	8.6	0.62	15	PASS	79.37	0.78	15	PASS
CCV2	CCV	1	19.91	0.57	15	PASS	20.68	0.42	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.062	4.31	20	PASS	0.58	11.25	20	PASS
ICSA2	ICSA	1	0.16	5.58	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.41	1.29	15	PASS	18.18	1.57	15	PASS
CCV3	CCV	1	20.4	1.48	15	PASS	20.61	0.9	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.34	0.47	15	PASS	20.56	0.29	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.4	1.76	15	PASS	20.79	2.32	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.68	2	15	PASS	21.055	3.041	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.0049	152.072	15	<PQL
LLCCV2	CCV2	1	1.098	6.93	20	PASS	0.58	5.36	20	PASS
ICSA3	ICSA	1	0.14	3.89	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.18	1.27	15	PASS	18.017	1.19	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	59 Co [2]				66 Zn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	11.44	15	PASS	<0.000	N/A	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	2.6	15	PASS	<0.000	N/A	15	<PQL
Std3-5/50 ppb	ICAL	1	5.25	0.34	15	PASS	4.24	7.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.4	0.85	15	PASS	9.25	1.62	15	PASS
Std5-20/200 ppb	ICAL	1	20.6	0.089	15	PASS	19.8	1.61	15	PASS
Std6-40/400 ppb	ICAL	1	40.64	1.0077	15	PASS	41.34	0.5	15	PASS
Std7-100/1000 ppb	ICAL	1	100.26	1.61	15	PASS	100.89	0.37	15	PASS
Std8-200/2000 ppb	ICAL	1	199.66	0.53	15	PASS	199.37	0.62	15	PASS
ICV	ICV	1	9.67	0.88	15	PASS	104.46	0.16	15	PASS
ICB	ICB	1	0.00055	103.22	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.54	3.08	20	PASS	9.77	0.96	20	PASS
ICSA1	ICSA	1	0.013	34.59	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.18	1.42	15	PASS	18.52	1.57	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.062	0.51	15	PASS	107.16	0.37	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	0.31	16.67	15	<PQL
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	7.27	1.65	15	PASS	83.27	1.39	15	PASS
N017400-001B-MS	MS	1	7.089	0.44	15	PASS	80.63	1.39	15	PASS
N017400-001B-MSD	MSD	1	7.07	0.56	15	PASS	79.84	0.21	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	2.9	7.78	15	PASS
CCV1	CCV	1	19.81	0.63	15	PASS	19.25	0.8	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	1.24	21.026	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	1.49	7.78	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	2.17	6.38	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	0.65	22.35	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	0.84	1.74	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	2.61	1.81	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	0.73	7.46	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	0.9	9.67	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	5.39	2.4	15	PASS
N017427-002B-MS	MS	1	6.97	0.88	15	PASS	81.85	1.19	15	PASS
CCV2	CCV	1	19.62	0.86	15	PASS	19.027	0.68	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	3.018	20	PASS	9.43	3.86	20	PASS
ICSA2	ICSA	1	0.014	18.53	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.15	1.4	15	PASS	18.088	1.69	15	PASS
CCV3	CCV	1	20.29	1.18	15	PASS	18.84	1.94	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	59 Co [2]				66 Zn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.1	1.25	15	PASS	19.15	1.47	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.7	2.59	15	PASS	19.34	2.2	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.03	1.52	15	PASS	19.0096	0.98	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	2.83	20	PASS	9.72	3.38	20	PASS
ICSA3	ICSA	1	0.0083	60.08	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.43	0.15	15	PASS	17.99	1.42	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	7.26	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	6.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.027	1.94	15	PASS
Std4-10/100 ppb	ICAL	1	10.27	1.29	15	PASS
Std5-20/200 ppb	ICAL	1	20.57	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	40.75	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	100.46	0.72	15	PASS
Std8-200/2000 ppb	ICAL	1	199.55	0.53	15	PASS
ICV	ICV	1	10.47	2.74	15	PASS
ICB	ICB	1	0.0018	414.68	15	<PQL
LLICV	CCV1	1	0.12	3.83	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.66	1.78	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.72	3.077	15	PASS
N017400-001B	SAMP	1	1.065	3.64	15	PASS
N017400-001B	SAMP	5	0.23	17.73	15	NR!
N017400-001B-PS	PS	1	9.99	0.43	15	PASS
N017400-001B-MS	MS	1	9.69	2.58	15	PASS
N017400-001B-MSD	MSD	1	9.78	1.27	15	PASS
N017400-002B	SAMP	1	1.63	5.52	15	PASS
CCV1	CCV	1	20.78	1.2	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	2.79	3.23	15	PASS
N017415-002B	SAMP	1	1.71	6.95	15	PASS
N017415-003B	SAMP	1	1.33	7.84	15	PASS
N017415-004B	SAMP	1	1.0064	4.16	15	PASS
N017415-005B	SAMP	1	0.98	6.79	15	PASS
N017415-006B	SAMP	1	2.7	3.39	15	PASS
N017415-007B	SAMP	1	1.93	2.59	15	PASS
N017427-001B	SAMP	1	1.052	3.87	15	PASS
N017427-002B	SAMP	1	1.13	6.16	15	PASS
N017427-002B-MS	MS	1	9.97	2.96	15	PASS
CCV2	CCV	1	20.61	2.32	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.095	5.51	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.58	2.45	15	PASS
CCV3	CCV	1	20.51	1.58	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.6	1.48	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.65	0.66	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.76	3.3	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.096	3.63	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.99	1.39	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				205 Tl [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	4.19	15	PASS	0.1	2.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	0.9	15	PASS	0.54	1.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	0.89	15	PASS	5.33	0.73	15	PASS
Std4-10/100 ppb	ICAL	1	10.33	0.48	15	PASS	10.45	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	20.51	0.22	15	PASS	20.67	0.7	15	PASS
Std6-40/400 ppb	ICAL	1	40.79	0.43	15	PASS	41.024	1.019	15	PASS
Std7-100/1000 ppb	ICAL	1	100.69	0.24	15	PASS	101.062	1.094	15	PASS
Std8-200/2000 ppb	ICAL	1	199.43	0.8	15	PASS	199.17	0.47	15	PASS
ICV	ICV	1	10.42	0.46	15	PASS	9.33	2.51	15	PASS
ICB	ICB	1	0.15	2.21	15	PASS	0.13	4.32	15	PASS
LLICV	CCV1	1	0.53	1.074	20	PASS	0.45	0.84	20	PASS
ICSA1	ICSA	1	0.057	4.48	15	PASS	0.043	5.41	15	PASS
ICSAB1	ICSAB	1	21.33	0.37	15	PASS	22.58	1.039	15	PASS
MB-52909	MBLK	1	0.083	1.95	15	PASS	0.017	7.87	15	PASS
LCS-52909	LCS	1	10.42	0.57	15	PASS	9.76	1.43	15	PASS
N017400-001B	SAMP	5	0.025	7.72	15	PASS	0.12	3.17	15	PASS
N017400-001B	SAMP	1	0.011	22.49	15	<PQL	0.057	2.88	15	PASS
N017400-002B	SAMP	5	0.014	15.4	15	<PQL	0.034	3.51	15	PASS
N017400-002B	SAMP	1	0.024	15.5	15	<PQL	0.038	7.72	15	PASS
N017415-001B	SAMP	5	0.012	16.11	15	<PQL	0.02	4.18	15	PASS
N017415-001B	SAMP	1	0.013	10.21	15	PASS	0.037	1.38	15	PASS
N017415-002B	SAMP	5	0.0081	17.19	15	<PQL	0.014	6.25	15	PASS
N017415-002B	SAMP	1	0.014	11.11	15	PASS	0.032	10.98	15	PASS
CCV1	CCV	1	20.083	0.57	15	PASS	20.53	0.87	15	PASS
CCB1	CCB	1	0.071	8.75	15	PASS	0.01	4.42	15	PASS
N017415-003B	SAMP	5	0.028	3.66	15	PASS	0.012	12.82	15	PASS
N017415-003B	SAMP	1	0.017	15.12	15	<PQL	0.023	3.7	15	PASS
N017415-004B	SAMP	5	0.0098	21.27	15	<PQL	0.011	1.9	15	PASS
N017415-004B	SAMP	1	0.01	7.93	15	PASS	0.032	8.62	15	PASS
N017415-005B	SAMP	5	0.015	7.84	15	PASS	0.0086	9.63	15	PASS
N017415-005B	SAMP	1	0.011	22.86	15	<PQL	0.03	3.78	15	PASS
N017415-006B	SAMP	5	0.012	20.48	15	<PQL	0.0061	13.74	15	PASS
N017415-006B	SAMP	1	0.0083	17.83	15	<PQL	0.018	2.1	15	PASS
N017415-007B	SAMP	5	0.0011	248.23	15	<PQL	0.0032	8.74	15	PASS
N017415-007B	SAMP	1	0.0043	22.72	15	<PQL	0.0091	7.18	15	PASS
CCV2	CCV	1	20.57	0.57	15	PASS	20.76	0.77	15	PASS
CCB2	CCB	1	0.07	4.7	15	PASS	0.0049	39.64	15	<PQL
N017427-001B	SAMP	5	0.029	8.24	15	PASS	0.0051	21.51	15	<PQL
N017427-001B	SAMP	1	0.014	25.74	15	<PQL	0.0098	32.21	15	<PQL
N017427-002B	SAMP	5	0.0076	29.067	15	<PQL	0.0027	36.078	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				205 Tl [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	0.0059	25.97	15	<PQL	0.0048	20.64	15	<PQL
N017400-001B	SAMP	25	0.027	8.46	15	PASS	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	5	2.26	1.33	15	PASS	1.92	1.47	15	PASS
N017400-001B-PS	PS	1	10.54	0.15	15	PASS	10.029	0.54	15	PASS
N017400-001B-MS	MS	5	2.3	1.29	15	PASS	2	0.6	15	PASS
N017400-001B-MS	MS	1	10.47	0.37	15	PASS	10.16	1.94	15	PASS
N017400-001B-MSD	MSD	5	2.27	0.67	15	PASS	1.99	1.47	15	PASS
CCV3	CCV	1	20.48	0.41	15	PASS	20.71	0.36	15	PASS
CCB3	CCB	1	0.072	8.14	15	PASS	0.023	12.75	15	PASS
N017400-001B-MSD	MSD	1	10.54	0.47	15	PASS	10.12	1.028	15	PASS
N017427-002B-MS	MS	5	2.27	0.13	15	PASS	1.89	0.71	15	PASS
N017427-002B-MS	MS	1	10.6	0.33	15	PASS	10.17	0.86	15	PASS
CCV4	CCV	1	20.53	0.15	15	PASS	20.87	1.47	15	PASS
CCB4	CCB	1	0.043	15.22	15	<PQL	0.025	11.77	15	PASS
LLCCV1	CCV2	1	0.57	1.84	20	PASS	0.46	1.39	20	PASS
ICSA2	ICSA	1	0.018	1.85	15	PASS	0.028	2.37	15	PASS
ICSAB2	ICSAB	1	21.25	0.87	15	PASS	22.76	1.56	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				60 Ni [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	2.58	15	PASS	0.12	4.26	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	0.9	15	PASS	0.53	4.55	15	PASS
Std3-5/50 ppb	ICAL	1	5.31	0.45	15	PASS	5.22	1.67	15	PASS
Std4-10/100 ppb	ICAL	1	10.43	0.49	15	PASS	10.26	1.46	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	0.52	15	PASS	20.35	1.53	15	PASS
Std6-40/400 ppb	ICAL	1	41.023	0.55	15	PASS	40.94	0.67	15	PASS
Std7-100/1000 ppb	ICAL	1	101.52	0.69	15	PASS	101.52	0.56	15	PASS
Std8-200/2000 ppb	ICAL	1	198.94	0.81	15	PASS	199	0.8	15	PASS
ICV	ICV	1	9.92	0.59	15	PASS	10.069	0.72	15	PASS
ICB	ICB	1	0.014	12.58	15	PASS	0.0098	99.82	15	<PQL
LLICV	CCV1	1	1.08	2.059	20	PASS	1.14	6.57	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.32	4.21	15	PASS
ICSAB1	ICSAB	1	22.14	0.47	15	PASS	20.1	1.2	15	PASS
MB-52909	MBLK	1	0.0084	4.45	15	PASS	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.35	0.63	15	PASS	10.5	1.29	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.031	32.35	15	<PQL
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	0.068	42.93	15	<PQL
N017400-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.55	0.98	15	PASS	21.32	1.26	15	PASS
CCB1	CCB	1	0.0051	50.94	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL	0.016	115.18	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	0.013	236.084	15	<PQL
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.68	0.83	15	PASS	19.57	1.25	15	PASS
CCB2	CCB	1	0.0037	16.6	15	<PQL	0.01	66.055	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				60 Ni [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	25	<0.000	N/A	15	<PQL	0.016	58.56	15	<PQL
N017400-001B-PS	PS	5	2.006	0.36	15	PASS	2.24	2.99	15	PASS
N017400-001B-PS	PS	1	10.25	0.54	15	PASS	10.17	1.71	15	PASS
N017400-001B-MS	MS	5	2.027	0.86	15	PASS	2.22	4.4	15	PASS
N017400-001B-MS	MS	1	10.19	0.58	15	PASS	10.0077	1.015	15	PASS
N017400-001B-MSD	MSD	5	2.021	0.58	15	PASS	2.24	0.19	15	PASS
CCV3	CCV	1	20.58	0.69	15	PASS	19.9	0.77	15	PASS
CCB3	CCB	1	0.0042	26.75	15	<PQL	0.025	22.27	15	<PQL
N017400-001B-MSD	MSD	1	10.23	1.17	15	PASS	10.12	0.76	15	PASS
N017427-002B-MS	MS	5	1.97	0.62	15	PASS	2.16	1.76	15	PASS
N017427-002B-MS	MS	1	10.25	0.41	15	PASS	10.14	1.33	15	PASS
CCV4	CCV	1	20.73	1.56	15	PASS	19.89	1.1	15	PASS
CCB4	CCB	1	0.04	8.24	15	PASS	0.13	7.51	15	PASS
LLCCV1	CCV2	1	1.067	0.68	20	PASS	1.15	5.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.34	14.54	15	PASS
ICSAB2	ICSAB	1	22.13	0.63	15	PASS	19.77	0.33	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	63 Cu [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.18	2.3	15	PASS	0.083	42.82	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.66	4.64	15	PASS	0.55	16.021	15	NR!
Std3-5/50 ppb	ICAL	1	5.39	1.17	15	PASS	5.21	9.63	15	PASS
Std4-10/100 ppb	ICAL	1	10.43	0.16	15	PASS	10.69	3.51	15	PASS
Std5-20/200 ppb	ICAL	1	20.46	1.58	15	PASS	20.46	1.75	15	PASS
Std6-40/400 ppb	ICAL	1	40.92	0.36	15	PASS	40.82	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	102.35	0.48	15	PASS	100.93	0.84	15	PASS
Std8-200/2000 ppb	ICAL	1	198.56	1.11	15	PASS	199.28	1.55	15	PASS
ICV	ICV	1	9.97	0.5	15	PASS	10.1	4	15	PASS
ICB	ICB	1	0.028	37.51	15	<PQL	0.027	85.27	15	<PQL
LLICV	CCV1	1	1.17	2.27	20	PASS	0.48	21.61	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.023	79.62	15	<PQL
ICSAB1	ICSAB	1	18.49	0.53	15	PASS	20.65	3.27	15	PASS
MB-52909	MBLK	1	0.025	36.62	15	<PQL	0.017	123.67	15	<PQL
LCS-52909	LCS	1	10.48	0.69	15	PASS	9.76	5.73	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.66	16.11	15	NR!
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	3.28	11.63	15	PASS
N017400-002B	SAMP	5	<0.000	N/A	15	<PQL	0.74	11.96	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	2.72	8.43	15	PASS
N017415-001B	SAMP	5	<0.000	N/A	15	<PQL	0.7	2.41	15	PASS
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	2.97	8.67	15	PASS
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL	0.56	28.91	15	NR!
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	2.55	2.95	15	PASS
CCV1	CCV	1	21.51	0.86	15	PASS	19.51	2.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.065	44.52	15	<PQL
N017415-003B	SAMP	5	<0.000	N/A	15	<PQL	0.63	24.89	15	NR!
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	2.95	5.011	15	PASS
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL	0.36	23.65	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	1.55	3.98	15	PASS
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL	0.35	26.44	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	1.63	6.55	15	PASS
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL	0.64	12.56	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	2.89	9.7	15	PASS
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL	0.53	7.27	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	2.45	9.071	15	PASS
CCV2	CCV	1	19.5	1.072	15	PASS	19.052	3.55	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.018	72.3	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL	0.7	10.2	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	2.82	6.073	15	PASS
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL	0.61	7.59	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	63 Cu [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	3.0074	6.56	15	PASS
N017400-001B	SAMP	25	<0.000	N/A	15	<PQL	0.14	10.62	15	PASS
N017400-001B-PS	PS	5	1.99	1.4	15	PASS	2.04	2.06	15	PASS
N017400-001B-PS	PS	1	9.26	1.14	15	PASS	9.44	6.53	15	PASS
N017400-001B-MS	MS	5	1.89	2.95	15	PASS	1.92	7.7	15	PASS
N017400-001B-MS	MS	1	8.64	0.25	15	PASS	9.54	6.41	15	PASS
N017400-001B-MSD	MSD	5	2.0019	0.8	15	PASS	1.89	9.61	15	PASS
CCV3	CCV	1	20.012	1.09	15	PASS	19.64	0.7	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0025	224.71	15	<PQL
N017400-001B-MSD	MSD	1	9.24	1.096	15	PASS	9.78	2.49	15	PASS
N017427-002B-MS	MS	5	1.93	1.47	15	PASS	1.98	5.088	15	PASS
N017427-002B-MS	MS	1	9.048	0.69	15	PASS	9.51	3.92	15	PASS
CCV4	CCV	1	19.97	1.17	15	PASS	19.3	2.55	15	PASS
CCB4	CCB	1	0.33	2.64	15	PASS	0.14	10.49	15	PASS
LLCCV1	CCV2	1	0.98	0.79	20	PASS	0.5	36.5	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.26	1.0034	15	PASS	19.48	1.32	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	9 Be [3]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	8.34	15	PASS	0.1	11.83	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	0.93	15	PASS	0.51	4.47	15	PASS
Std3-5/50 ppb	ICAL	1	5.18	0.65	15	PASS	5.12	0.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.25	0.94	15	PASS	10.12	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	20.43	0.78	15	PASS	20.37	0.92	15	PASS
Std6-40/400 ppb	ICAL	1	40.74	0.57	15	PASS	39.97	0.84	15	PASS
Std7-100/1000 ppb	ICAL	1	101.071	0.85	15	PASS	100.53	0.84	15	PASS
Std8-200/2000 ppb	ICAL	1	199.26	0.33	15	PASS	199.69	0.93	15	PASS
ICV	ICV	1	9.91	1.067	15	PASS	10.74	1.054	15	PASS
ICB	ICB	1	0.015	21.68	15	<PQL	0.37	3.54	15	PASS
LLICV	CCV1	1	0.51	4.68	20	PASS	0.47	6.2	20	PASS
ICSA1	ICSA	1	0.0077	25.54	15	<PQL	0.13	10.84	15	PASS
ICSAB1	ICSAB	1	22.35	1.083	15	PASS	22.94	1.028	15	PASS
MB-52909	MBLK	1	0.0035	26.69	15	<PQL	0.16	4.32	15	PASS
LCS-52909	LCS	1	10.28	0.9	15	PASS	9.97	0.73	15	PASS
N017400-001B	SAMP	5	0.0031	31.52	15	<PQL	2.87	1.51	15	PASS
N017400-001B	SAMP	1	0.0043	102.81	15	<PQL	11.58	2.007	15	PASS
N017400-002B	SAMP	5	0.0031	64.42	15	<PQL	2.73	0.64	15	PASS
N017400-002B	SAMP	1	0.012	21.65	15	<PQL	11.35	1.36	15	PASS
N017415-001B	SAMP	5	0.0023	75.34	15	<PQL	2.86	2.96	15	PASS
N017415-001B	SAMP	1	0.0051	16.98	15	<PQL	11.91	1.96	15	PASS
N017415-002B	SAMP	5	0.0011	135.71	15	<PQL	3.36	1.84	15	PASS
N017415-002B	SAMP	1	0.0051	17.42	15	<PQL	14.47	1.32	15	PASS
CCV1	CCV	1	19.65	1.1	15	PASS	19.39	0.94	15	PASS
CCB1	CCB	1	0.0024	46.19	15	<PQL	0.29	11.29	15	PASS
N017415-003B	SAMP	5	0.0024	34.18	15	<PQL	3.12	2.41	15	PASS
N017415-003B	SAMP	1	0.0076	28.63	15	<PQL	13.47	2.66	15	PASS
N017415-004B	SAMP	5	0.004	97.24	15	<PQL	5.11	2.39	15	PASS
N017415-004B	SAMP	1	0.0087	16.098	15	<PQL	20.83	1.89	15	PASS
N017415-005B	SAMP	5	0.0022	35.77	15	<PQL	4.98	2.25	15	PASS
N017415-005B	SAMP	1	0.007	60.44	15	<PQL	21.052	1.84	15	PASS
N017415-006B	SAMP	5	0.0014	124.13	15	<PQL	4.11	1.0059	15	PASS
N017415-006B	SAMP	1	0.01	8.96	15	PASS	17.11	2.2	15	PASS
N017415-007B	SAMP	5	0.0017	56.64	15	<PQL	2.13	3.15	15	PASS
N017415-007B	SAMP	1	0.005	74.75	15	<PQL	8.73	0.8	15	PASS
CCV2	CCV	1	20.73	1.052	15	PASS	20.27	1.91	15	PASS
CCB2	CCB	1	0.0034	56.43	15	<PQL	0.25	10.97	15	PASS
N017427-001B	SAMP	5	0.0011	178.85	15	<PQL	3.76	2.85	15	PASS
N017427-001B	SAMP	1	0.006	30.55	15	<PQL	16.76	0.6	15	PASS
N017427-002B	SAMP	5	0.0025	99.61	15	<PQL	3.36	1.44	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	9 Be [3]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	0.0067	48.94	15	<PQL	14.55	0.31	15	PASS
N017400-001B	SAMP	25	0.0008	365.91	15	<PQL	0.78	1.78	15	PASS
N017400-001B-PS	PS	5	2.22	1.34	15	PASS	2.98	2.24	15	PASS
N017400-001B-PS	PS	1	10.7	1.23	15	PASS	14.16	2.26	15	PASS
N017400-001B-MS	MS	5	2.27	1.31	15	PASS	3.052	1.99	15	PASS
N017400-001B-MS	MS	1	10.65	0.55	15	PASS	14.24	2.93	15	PASS
N017400-001B-MSD	MSD	5	2.21	0.41	15	PASS	3.12	1.47	15	PASS
CCV3	CCV	1	20.26	0.95	15	PASS	19.95	0.36	15	PASS
CCB3	CCB	1	0.0038	105.34	15	<PQL	0.25	14.021	15	PASS
N017400-001B-MSD	MSD	1	10.57	1.51	15	PASS	14.35	0.8	15	PASS
N017427-002B-MS	MS	5	2.18	1.63	15	PASS	2.8	1.49	15	PASS
N017427-002B-MS	MS	1	10.72	2.65	15	PASS	13.43	0.47	15	PASS
CCV4	CCV	1	19.78	0.88	15	PASS	19.95	1.39	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.24	20.69	15	<PQL
LLCCV1	CCV2	1	0.52	3.66	20	PASS	0.6	7.03	20	PASS
ICSA2	ICSA	1	0.0026	80.69	15	<PQL	0.063	13.019	15	PASS
ICSAB2	ICSAB	1	22.16	0.12	15	PASS	22.23	1.37	15	PASS

PERCENT RSD SUMMARY: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.046	4.7	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.38	5.97	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	1.37	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	0.34	15	PASS
Std5-20/200 ppb	ICAL	1	20.062	1.039	15	PASS
Std6-40/400 ppb	ICAL	1	40.086	0.78	15	PASS
Std7-100/1000 ppb	ICAL	1	99.93	0.18	15	PASS
Std8-200/2000 ppb	ICAL	1	196.69	0.42	15	PASS
ICV	ICV	1	9.25	0.015	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.52	3.23	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.29	0.68	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.89	1.19	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.014	70.47	15	<PQL
N017400-002B	SAMP	5	0.013	29.7	15	<PQL
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL
N017415-001B	SAMP	5	0.023	13.33	15	PASS
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.88	0.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N017415-003B	SAMP	5	0.055	14.62	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.056	0.49	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]			
			Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	9.93	1.063	15	PASS
N017400-001B-MS	MS	1	10.28	0.88	15	PASS
N017400-001B-MSD	MSD	1	10.24	0.66	15	PASS
N017427-002B-MS	MS	1	10.25	0.21	15	PASS
CCV3	CCV	1	20.18	0.47	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.49	1.85	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.72	0.44	15	PASS

PERCENT RSD SUMMARY: 151112A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	13.81	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	2.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	1.92	15	PASS
Std4-10/100 ppb	ICAL	1	10.52	1.15	15	PASS
Std5-20/200 ppb	ICAL	1	20.24	0.76	15	PASS
Std6-40/400 ppb	ICAL	1	40.99	1.58	15	PASS
Std7-100/1000 ppb	ICAL	1	101.34	0.51	15	PASS
Std8-200/2000 ppb	ICAL	1	199.08	0.3	15	PASS
ICV	ICV	1	9.63	0.56	15	PASS
ICB	ICB	1	0.0084	35.2	15	<PQL
LLICV	CCV1	1	1.088	1.14	20	PASS
ICSA1	ICSA	1	0.2	5.29	15	PASS
ICSAB1	ICSAB	1	21.12	0.44	15	PASS
MB-54044	MBLK	1	0.075	46.089	15	<PQL
LCS-54044	LCS	1	9.5	1.11	15	PASS
N017415-004B	SAMP	1	6.022	1.57	15	PASS
N017415-004A	SAMP	1	5.78	1.2	15	PASS
N017415-005B	SAMP	1	5.86	1.059	15	PASS
N017415-005A	SAMP	1	5.85	1.079	15	PASS
N017457-006B	SAMP	1	1.94	2.78	15	PASS
N017457-006A	SAMP	1	1.88	2.52	15	PASS
N017457-006B	SAMP	5	0.41	5.17	15	PASS
N017457-006B-PS	PS	1	11.68	3.0063	15	PASS
CCV1	CCV	1	20.44	0.17	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N017457-006B-MS	MS	1	11.56	0.58	15	PASS
N017457-006B-MSD	MSD	1	12.92	19.77	15	NR!
CCV2	CCV	1	20.61	0.84	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV1	1	1.057	4.44	20	PASS
ICSA2	ICSA	1	0.16	9.19	15	PASS
ICSAB2	ICSAB	1	21.13	0.83	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104001.D	RINSE	RINSE	1	11/04/15 8:48 AM
A1104002.D	Cal Blank	IBLK	1	11/04/15 8:53 AM
A1104003.D	Std1-0.1/1 ppb	ICAL	1	11/04/15 8:59 AM
A1104004.D	Std2-0.5/5 ppb	ICAL	1	11/04/15 9:04 AM
A1104005.D	Std3-5/50 ppb	ICAL	1	11/04/15 9:10 AM
A1104006.D	Std4-10/100 ppb	ICAL	1	11/04/15 9:16 AM
A1104007.D	Std5-20/200 ppb	ICAL	1	11/04/15 9:21 AM
A1104008.D	Std6-40/400 ppb	ICAL	1	11/04/15 9:27 AM
A1104009.D	Std7-100/1000 ppb	ICAL	1	11/04/15 9:33 AM
A1104010.D	Std8-200/2000 ppb	ICAL	1	11/04/15 9:39 AM
A1104011.D	ICV	ICV	1	11/04/15 9:44 AM
A1104012.D	ICB	ICB	1	11/04/15 9:50 AM
A1104013.D	LLICV	CCV1	1	11/04/15 9:55 AM
A1104014.D	ICSA1	ICSA	1	11/04/15 10:01 AM
A1104015.D	ICSAB1	ICSAB	1	11/04/15 10:06 AM
A1104016.D	MB-52909	MBLK	1	11/04/15 10:12 AM
A1104017.D	LCS-52909	LCS	1	11/04/15 10:17 AM
A1104018.D	N017399-001A	SAMP	1	11/04/15 10:23 AM
A1104019.D	N017399-002B	SAMP	1	11/04/15 10:28 AM
A1104020.D	N017400-001B	SAMP	1	11/04/15 10:31 AM
A1104021.D	N017400-001B	SAMP	5	11/04/15 10:37 AM
A1104022.D	N017400-001B-PS	PS	1	11/04/15 10:42 AM
A1104023.D	N017400-001B-MS	MS	1	11/04/15 10:48 AM
A1104024.D	N017400-001B-MSD	MSD	1	11/04/15 10:53 AM
A1104025.D	N017400-002B	SAMP	1	11/04/15 10:59 AM
A1104026.D	CCV1	CCV	1	11/04/15 11:04 AM
A1104027.D	CCB1	CCB	1	11/04/15 11:10 AM
A1104028.D	N017415-001B	SAMP	1	11/04/15 11:15 AM
A1104029.D	N017415-002B	SAMP	1	11/04/15 11:21 AM
A1104030.D	N017415-003B	SAMP	1	11/04/15 11:26 AM
A1104031.D	N017415-004B	SAMP	1	11/04/15 11:32 AM
A1104032.D	N017415-005B	SAMP	1	11/04/15 11:37 AM
A1104033.D	N017415-006B	SAMP	1	11/04/15 11:43 AM
A1104034.D	N017415-007B	SAMP	1	11/04/15 11:48 AM
A1104035.D	N017427-001B	SAMP	1	11/04/15 11:54 AM
A1104036.D	N017427-002B	SAMP	1	11/04/15 11:59 AM
A1104037.D	N017427-002B-MS	MS	1	11/04/15 12:05 PM
A1104038.D	CCV2	CCV	1	11/04/15 12:10 PM
A1104039.D	CCB2	CCB	1	11/04/15 12:16 PM
A1104040.D	LLCCV1	CCV2	1	11/04/15 12:21 PM
A1104041.D	ICSA2	ICSA	1	11/04/15 12:27 PM
A1104042.D	ICSAB2	ICSAB	1	11/04/15 12:32 PM

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104043.D	N017349-001B	SAMP	1	11/04/15 12:36 PM
A1104044.D	N017349-001A	SAMP	1	11/04/15 12:40 PM
A1104045.D	N017353-009B	SAMP	1	11/04/15 12:44 PM
A1104046.D	N017353-009A	SAMP	1	11/04/15 12:56 PM
A1104047.D	N017396-002B	SAMP	1	11/04/15 1:03 PM
A1104048.D	N017396-002A	SAMP	1	11/04/15 1:08 PM
A1104049.D	N017396-004B	SAMP	1	11/04/15 1:14 PM
A1104050.D	N017396-004A	SAMP	1	11/04/15 1:19 PM
A1104051.D	N017396-005B	SAMP	1	11/04/15 1:25 PM
A1104052.D	N017396-005A	SAMP	1	11/04/15 1:30 PM
A1104053.D	CCV3	CCV	1	11/04/15 1:36 PM
A1104054.D	CCB3	CCB	1	11/04/15 1:41 PM
A1104055.D	N017396-006B	SAMP	1	11/04/15 1:47 PM
A1104056.D	N017396-006A	SAMP	1	11/04/15 1:52 PM
A1104057.D	N017396-007B	SAMP	1	11/04/15 1:58 PM
A1104058.D	N017396-007A	SAMP	1	11/04/15 2:03 PM
A1104059.D	N017396-008B	SAMP	1	11/04/15 2:09 PM
A1104060.D	N017396-008A	SAMP	1	11/04/15 2:13 PM
A1104061.D	N017396-009B	SAMP	1	11/04/15 2:19 PM
A1104062.D	N017396-009A	SAMP	1	11/04/15 2:24 PM
A1104063.D	MB-52931	MBLK	1	11/04/15 2:30 PM
A1104064.D	LCS-52931	LCS	1	11/04/15 2:35 PM
A1104065.D	CCV4	CCV	1	11/04/15 2:41 PM
A1104066.D	CCB4	CCB	1	11/04/15 2:47 PM
A1104067.D	N017466-001B	SAMP	1	11/04/15 2:52 PM
A1104068.D	N017466-001B	SAMP	5	11/04/15 2:58 PM
A1104069.D	N017466-001B-PS	PS	1	11/04/15 3:03 PM
A1104070.D	N017466-001B-MS	MS	1	11/04/15 3:09 PM
A1104071.D	N017466-001B-MSD	MSD	1	11/04/15 3:15 PM
A1104072.D	N017381-001B	SAMP	5	11/04/15 3:20 PM
A1104073.D	N017399-002B	SAMP	5	11/04/15 3:26 PM
A1104074.D	MB-52922	MBLK	1	11/04/15 3:31 PM
A1104075.D	LCS-52922	LCS	1	11/04/15 3:37 PM
A1104076.D	N017437-005A	SAMP	1	11/04/15 3:43 PM
A1104077.D	CCV5	CCV	1	11/04/15 3:48 PM
A1104078.D	CCB5	CCB	1	11/04/15 3:54 PM
A1104079.D	N017437-005A	SAMP	5	11/04/15 3:59 PM
A1104080.D	N017437-005A-PS	PS	1	11/04/15 4:05 PM
A1104081.D	N017437-005A-MS	MS	1	11/04/15 4:10 PM
A1104082.D	N017437-005A-MSD	MSD	1	11/04/15 4:16 PM
A1104083.D	CCV6	CCV	1	11/04/15 4:21 PM
A1104084.D	CCB6	CCB	1	11/04/15 4:27 PM

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104085.D	LLCCV2	CCV2	1	11/04/15 4:33 PM
A1104086.D	ICSA3	ICSA	1	11/04/15 4:38 PM
A1104087.D	ICSAB3	ICSAB	1	11/04/15 4:44 PM
A1104088.D	RINSE	RINSE	1	11/04/15 4:49 PM
A1104089.D	RINSE	RINSE	1	11/04/15 4:55 PM

INJECTION LOG: 151109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1109001.D	RINSE	RINSE	1	11/09/15 10:24 PM
A1109002.D	Cal Blank	IBLK	1	11/09/15 10:33 PM
A1109003.D	Std1-0.1/1 ppb	ICAL	1	11/09/15 10:39 PM
A1109004.D	Std2-0.5/5 ppb	ICAL	1	11/09/15 10:44 PM
A1109005.D	Std3-5/50 ppb	ICAL	1	11/09/15 10:50 PM
A1109006.D	Std4-10/100 ppb	ICAL	1	11/09/15 10:55 PM
A1109007.D	Std5-20/200 ppb	ICAL	1	11/09/15 11:01 PM
A1109008.D	Std6-40/400 ppb	ICAL	1	11/09/15 11:06 PM
A1109009.D	Std7-100/1000 ppb	ICAL	1	11/09/15 11:12 PM
A1109010.D	Std8-200/2000 ppb	ICAL	1	11/09/15 11:17 PM
A1109011.D	ICV	ICV	1	11/09/15 11:23 PM
A1109012.D	ICB	ICB	1	11/09/15 11:28 PM
A1109013.D	LLICV	CCV1	1	11/09/15 11:32 PM
A1109014.D	ICSA1	ICSA	1	11/09/15 11:39 PM
A1109015.D	ICSAB1	ICSAB	1	11/09/15 11:45 PM
A1109016.D	MB-52909	MBLK	1	11/09/15 11:50 PM
A1109017.D	LCS-52909	LCS	1	11/09/15 11:56 PM
A1109018.D	N017400-001B	SAMP	5	11/10/15 12:01 AM
A1109019.D	N017400-001B	SAMP	1	11/10/15 12:07 AM
A1109020.D	N017400-002B	SAMP	5	11/10/15 12:12 AM
A1109021.D	N017400-002B	SAMP	1	11/10/15 12:18 AM
A1109022.D	N017415-001B	SAMP	5	11/10/15 12:23 AM
A1109023.D	N017415-001B	SAMP	1	11/10/15 12:29 AM
A1109024.D	N017415-002B	SAMP	5	11/10/15 12:34 AM
A1109025.D	N017415-002B	SAMP	1	11/10/15 12:40 AM
A1109026.D	CCV1	CCV	1	11/10/15 12:44 AM
A1109027.D	CCB1	CCB	1	11/10/15 12:51 AM
A1109028.D	N017415-003B	SAMP	5	11/10/15 12:56 AM
A1109029.D	N017415-003B	SAMP	1	11/10/15 1:02 AM
A1109030.D	N017415-004B	SAMP	5	11/10/15 1:07 AM
A1109031.D	N017415-004B	SAMP	1	11/10/15 1:13 AM
A1109032.D	N017415-005B	SAMP	5	11/10/15 1:18 AM
A1109033.D	N017415-005B	SAMP	1	11/10/15 1:24 AM
A1109034.D	N017415-006B	SAMP	5	11/10/15 1:29 AM
A1109035.D	N017415-006B	SAMP	1	11/10/15 1:35 AM
A1109036.D	N017415-007B	SAMP	5	11/10/15 1:40 AM
A1109037.D	N017415-007B	SAMP	1	11/10/15 1:46 AM
A1109038.D	CCV2	CCV	1	11/10/15 1:51 AM
A1109039.D	CCB2	CCB	1	11/10/15 1:57 AM
A1109040.D	N017427-001B	SAMP	5	11/10/15 2:02 AM
A1109041.D	N017427-001B	SAMP	1	11/10/15 2:08 AM
A1109042.D	N017427-002B	SAMP	5	11/10/15 2:13 AM

INJECTION LOG: 151109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1109043.D	N017427-002B	SAMP	1	11/10/15 2:19 AM
A1109044.D	N017400-001B	SAMP	25	11/10/15 2:24 AM
A1109045.D	N017400-001B-PS	PS	5	11/10/15 2:30 AM
A1109046.D	N017400-001B-PS	PS	1	11/10/15 2:35 AM
A1109047.D	N017400-001B-MS	MS	5	11/10/15 2:41 AM
A1109048.D	N017400-001B-MS	MS	1	11/10/15 2:46 AM
A1109049.D	N017400-001B-MSD	MSD	5	11/10/15 2:52 AM
A1109050.D	CCV3	CCV	1	11/10/15 2:57 AM
A1109051.D	CCB3	CCB	1	11/10/15 3:03 AM
A1109052.D	N017400-001B-MSD	MSD	1	11/10/15 3:08 AM
A1109053.D	N017427-002B-MS	MS	5	11/10/15 3:14 AM
A1109054.D	N017427-002B-MS	MS	1	11/10/15 3:19 AM
A1109055.D	CCV4	CCV	1	11/10/15 3:25 AM
A1109056.D	CCB4	CCB	1	11/10/15 3:29 AM
A1109057.D	LLCCV1	CCV2	1	11/10/15 3:36 AM
A1109058.D	ICSA2	ICSA	1	11/10/15 3:42 AM
A1109059.D	ICSAB2	ICSAB	1	11/10/15 3:47 AM

INJECTION LOG: 151110A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1110001.D	RINSE	RINSE	1	11/10/15 11:53 AM
A1110002.D	Cal Blank	IBLK	1	11/10/15 11:59 AM
A1110003.D	Std1-0.1/1 ppb	ICAL	1	11/10/15 12:04 PM
A1110004.D	Std2-0.5/5 ppb	ICAL	1	11/10/15 12:10 PM
A1110005.D	Std3-5/50 ppb	ICAL	1	11/10/15 12:15 PM
A1110006.D	Std4-10/100 ppb	ICAL	1	11/10/15 12:21 PM
A1110007.D	Std5-20/200 ppb	ICAL	1	11/10/15 12:26 PM
A1110008.D	Std6-40/400 ppb	ICAL	1	11/10/15 12:32 PM
A1110009.D	Std7-100/1000 ppb	ICAL	1	11/10/15 12:37 PM
A1110010.D	Std8-200/2000 ppb	ICAL	1	11/10/15 12:43 PM
A1110011.D	ICV	ICV	1	11/10/15 12:47 PM
A1110012.D	ICB	ICB	1	11/10/15 12:51 PM
A1110013.D	LLICV	CCV1	1	11/10/15 12:56 PM
A1110014.D	ICSA1	ICSA	1	11/10/15 1:05 PM
A1110015.D	ICSAB1	ICSAB	1	11/10/15 1:10 PM
A1110016.D	MB-52909	MBLK	1	11/10/15 1:13 PM
A1110017.D	LCS-52909	LCS	1	11/10/15 1:21 PM
A1110018.D	N017400-001B	SAMP	5	11/10/15 1:24 PM
A1110019.D	N017400-001B	SAMP	1	11/10/15 1:32 PM
A1110020.D	N017400-002B	SAMP	5	11/10/15 1:38 PM
A1110021.D	N017400-002B	SAMP	1	11/10/15 1:43 PM
A1110022.D	N017415-001B	SAMP	5	11/10/15 1:49 PM
A1110023.D	N017415-001B	SAMP	1	11/10/15 1:54 PM
A1110024.D	N017415-002B	SAMP	5	11/10/15 2:00 PM
A1110025.D	N017415-002B	SAMP	1	11/10/15 2:05 PM
A1110026.D	CCV1	CCV	1	11/10/15 2:11 PM
A1110027.D	CCB1	CCB	1	11/10/15 2:14 PM
A1110028.D	N017415-003B	SAMP	5	11/10/15 2:22 PM
A1110029.D	N017415-003B	SAMP	1	11/10/15 2:27 PM
A1110030.D	N017415-004B	SAMP	5	11/10/15 2:33 PM
A1110031.D	N017415-004B	SAMP	1	11/10/15 2:38 PM
A1110032.D	N017415-005B	SAMP	5	11/10/15 2:44 PM
A1110033.D	N017415-005B	SAMP	1	11/10/15 2:49 PM
A1110034.D	N017415-006B	SAMP	5	11/10/15 2:55 PM
A1110035.D	N017415-006B	SAMP	1	11/10/15 3:00 PM
A1110036.D	N017415-007B	SAMP	5	11/10/15 3:06 PM
A1110037.D	N017415-007B	SAMP	1	11/10/15 3:11 PM
A1110038.D	CCV2	CCV	1	11/10/15 3:17 PM
A1110039.D	CCB2	CCB	1	11/10/15 3:21 PM
A1110040.D	N017427-001B	SAMP	5	11/10/15 3:28 PM
A1110041.D	N017427-001B	SAMP	1	11/10/15 3:33 PM
A1110042.D	N017427-002B	SAMP	5	11/10/15 3:39 PM

INJECTION LOG: 151110A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1110043.D	N017427-002B	SAMP	1	11/10/15 3:44 PM
A1110044.D	N017400-001B-PS	PS	1	11/10/15 3:50 PM
A1110045.D	N017400-001B-MS	MS	1	11/10/15 3:55 PM
A1110046.D	N017400-001B-MSD	MSD	1	11/10/15 3:59 PM
A1110047.D	N017427-002B-MS	MS	1	11/10/15 4:05 PM
A1110048.D	CCV3	CCV	1	11/10/15 4:10 PM
A1110049.D	CCB3	CCB	1	11/10/15 4:13 PM
A1110050.D	LLCCV1	CCV2	1	11/10/15 4:21 PM
A1110051.D	ICSA2	ICSA	1	11/10/15 4:27 PM
A1110052.D	ICSAB2	ICSAB	1	11/10/15 4:32 PM

INJECTION LOG: 151112A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1112001.D	RINSE	RINSE	1	11/12/15 10:07 AM
A1112002.D	Cal Blank	IBLK	1	11/12/15 10:12 AM
A1112003.D	Std1-0.1/1 ppb	ICAL	1	11/12/15 10:18 AM
A1112004.D	Std2-0.5/5 ppb	ICAL	1	11/12/15 10:23 AM
A1112005.D	Std3-5/50 ppb	ICAL	1	11/12/15 10:29 AM
A1112006.D	Std4-10/100 ppb	ICAL	1	11/12/15 10:34 AM
A1112007.D	Std5-20/200 ppb	ICAL	1	11/12/15 10:40 AM
A1112008.D	Std6-40/400 ppb	ICAL	1	11/12/15 10:45 AM
A1112009.D	Std7-100/1000 ppb	ICAL	1	11/12/15 10:51 AM
A1112010.D	Std8-200/2000 ppb	ICAL	1	11/12/15 10:57 AM
A1112011.D	ICV	ICV	1	11/12/15 11:25 AM
A1112012.D	ICB	ICB	1	11/12/15 11:30 AM
A1112013.D	LLICV	CCV1	1	11/12/15 11:34 AM
A1112014.D	ICSA1	ICSA	1	11/12/15 11:40 AM
A1112015.D	ICSAB1	ICSAB	1	11/12/15 11:48 AM
A1112016.D	MB-54044	MBLK	1	11/12/15 7:28 PM
A1112017.D	LCS-54044	LCS	1	11/12/15 7:33 PM
A1112018.D	N017415-004B	SAMP	1	11/12/15 7:39 PM
A1112019.D	N017415-004A	SAMP	1	11/12/15 7:44 PM
A1112020.D	N017415-005B	SAMP	1	11/12/15 7:50 PM
A1112021.D	N017415-005A	SAMP	1	11/12/15 7:55 PM
A1112022.D	N017457-006B	SAMP	1	11/12/15 8:01 PM
A1112023.D	N017457-006A	SAMP	1	11/12/15 8:06 PM
A1112024.D	N017457-006B	SAMP	5	11/12/15 8:12 PM
A1112025.D	N017457-006B-PS	PS	1	11/12/15 8:17 PM
A1112026.D	CCV1	CCV	1	11/12/15 8:23 PM
A1112027.D	CCB1	CCB	1	11/12/15 8:28 PM
A1112028.D	N017457-006B-MS	MS	1	11/12/15 8:34 PM
A1112029.D	N017457-006B-MSD	MSD	1	11/12/15 8:39 PM
A1112030.D	MB-54037	MBLK	1	11/12/15 8:45 PM
A1112031.D	LCS-54037	LCS	1	11/12/15 8:50 PM
A1112032.D	N017490-001B	SAMP	1	11/12/15 8:56 PM
A1112033.D	N017490-001B	SAMP	5	11/12/15 9:01 PM
A1112034.D	N017490-001B-PS	PS	1	11/12/15 9:07 PM
A1112035.D	N017490-001B-MS	MS	1	11/12/15 9:12 PM
A1112036.D	N017490-001B-MSD	MSD	1	11/12/15 9:18 PM
A1112037.D	N017490-002B	SAMP	1	11/12/15 9:23 PM
A1112041.D	CCV2	CCV	1	11/12/15 9:45 PM
A1112042.D	CCB2	CCB	1	11/12/15 9:51 PM
A1112043.D	LLCCV1	CCV1	1	11/12/15 9:56 PM
A1112044.D	ICSA2	ICSA	1	11/12/15 10:02 PM
A1112045.D	ICSAB2	ICSAB	1	11/12/15 10:07 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:13**
Prep End Date: **11/2/2015 3:30:00**
Initials/ Date: 11/16/2015

Prep Batch **52909** Prep Code: **200.8_DISS_P** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52909	Aqueous		25	☐	0	0	25	1.000		
MB-52909	Aqueous		25	☐	0	0	25	1.000		
N017399-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:13**
Prep End Date: **11/2/2015 3:30:00**
Initials/ Date: 11/16/2015

Prep Batch **52909** Prep Code: **200.8_DISS_P** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/11/2015 10:00:0**
Prep End Date: **11/11/2015 2:00:00**

Initials/ Date: 11/16/2015

Prep Batch **54044** Prep Code: **200.8_DISS_P** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-11**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-54044	Aqueous		25	☐	0	0	25	1.000		
MB-54044	Aqueous		25	☐	0	0	25	1.000		
N017415-004A	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005A	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017457-006A	Groundwater	<2	25	☐	0	0	25	1.000		
N017457-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017457-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017457-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-151019	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 Nov 2015 08:33:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	61608.20	0.00	
24 Mg	235494.00	0.00	
25 Mg	31429.50	0.00	
26 Mg	37246.30	0.00	
59 Co	549927.00	0.00	
115 In	1050520.00	0.00	
206 Pb	259650.00	0.00	
207 Pb	225306.00	0.00	
208 Pb	551269.00	0.00	

RSD (%)

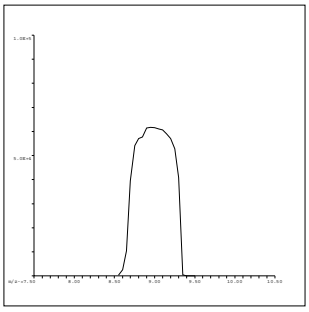
Element	Actual	Required	Flag
9 Be	0.74	5.00	
24 Mg	0.48	5.00	
25 Mg	2.36	5.00	
26 Mg	1.31	5.00	
59 Co	0.83	5.00	
115 In	0.35	5.00	
206 Pb	0.63	5.00	
207 Pb	0.69	5.00	
208 Pb	0.37	5.00	

Ion Ratio

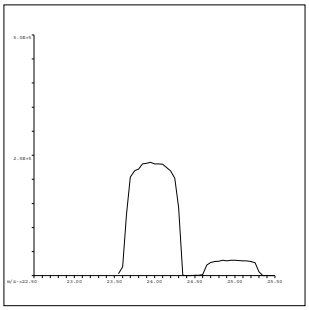
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

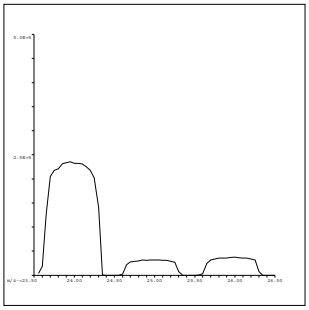
Element	Actual	Required	Flag



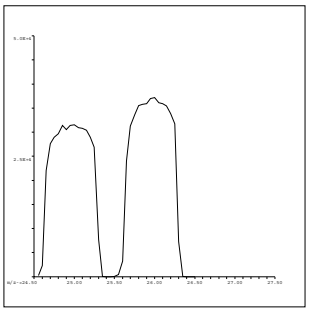
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



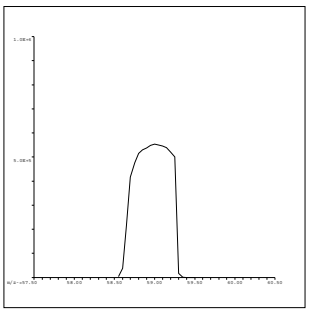
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



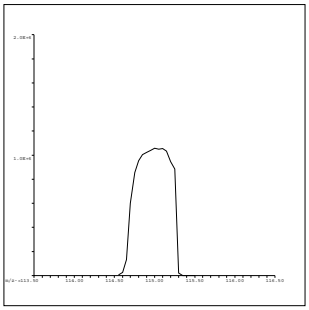
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



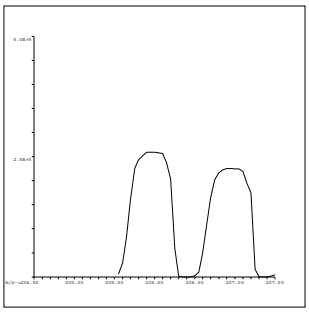
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



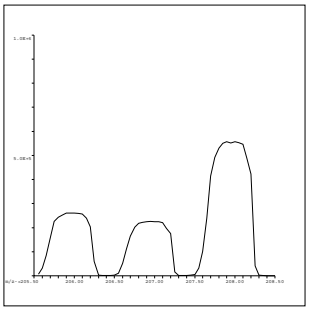
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



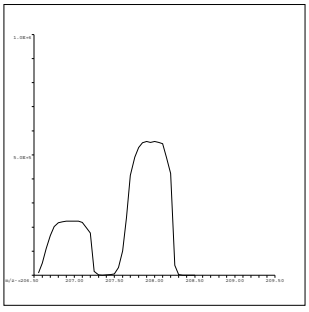
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 Nov 2015 07:54:10 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	54889.00	0.00	
24 Mg	177716.00	0.00	
25 Mg	23525.60	0.00	
26 Mg	28430.10	0.00	
59 Co	338768.00	0.00	
115 In	616528.00	0.00	
206 Pb	144988.00	0.00	
207 Pb	125433.00	0.00	
208 Pb	309753.00	0.00	

RSD (%)

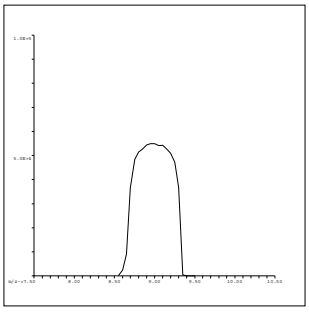
Element	Actual	Required	Flag
9 Be	0.95	5.00	
24 Mg	1.20	5.00	
25 Mg	1.95	5.00	
26 Mg	1.89	5.00	
59 Co	0.81	5.00	
115 In	0.56	5.00	
206 Pb	0.99	5.00	
207 Pb	1.07	5.00	
208 Pb	0.87	5.00	

Ion Ratio

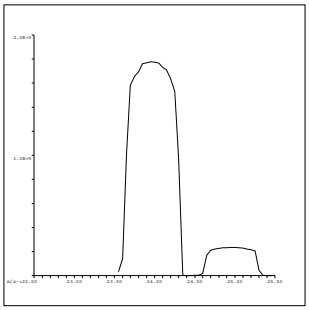
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

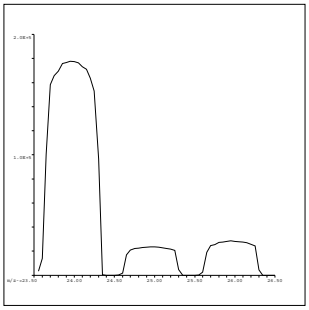
Element	Actual	Required	Flag



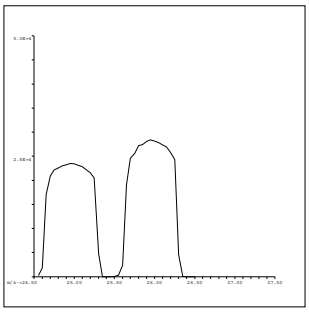
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



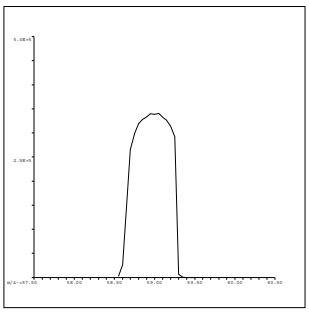
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



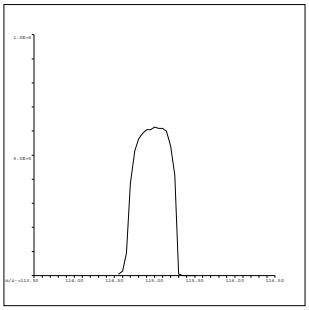
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



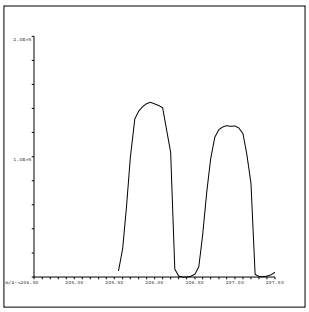
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



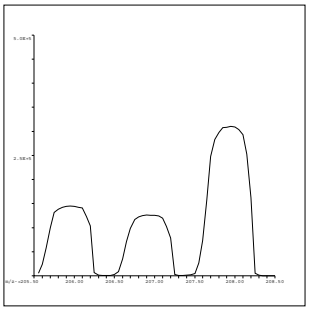
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



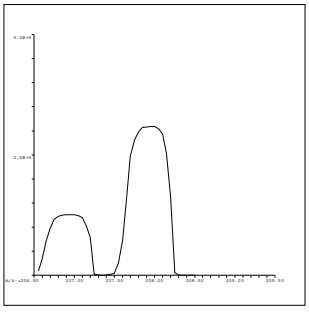
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 10 Nov 2015 09:21:09 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	277925.00	0.00	
24 Mg	819628.00	0.00	
25 Mg	108617.00	0.00	
26 Mg	127052.00	0.00	
59 Co	1413430.00	0.00	
115 In	2057570.00	0.00	
206 Pb	445442.00	0.00	
207 Pb	385361.00	0.00	
208 Pb	945531.00	0.00	

RSD (%)

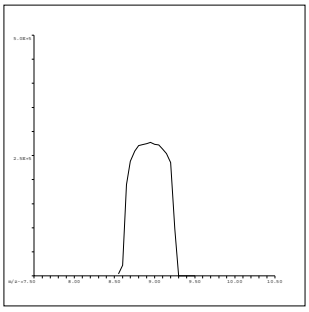
Element	Actual	Required	Flag
9 Be	0.20	5.00	
24 Mg	0.79	5.00	
25 Mg	2.47	5.00	
26 Mg	0.73	5.00	
59 Co	0.98	5.00	
115 In	1.36	5.00	
206 Pb	0.48	5.00	
207 Pb	0.87	5.00	
208 Pb	0.44	5.00	

Ion Ratio

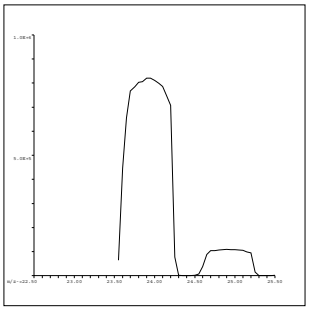
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

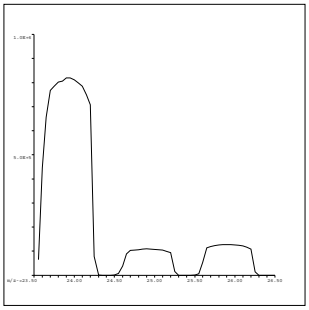
Element	Actual	Required	Flag



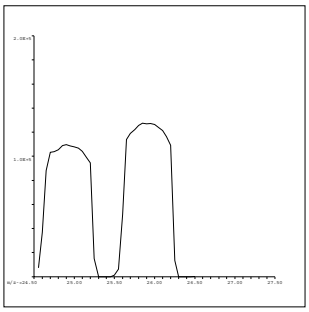
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



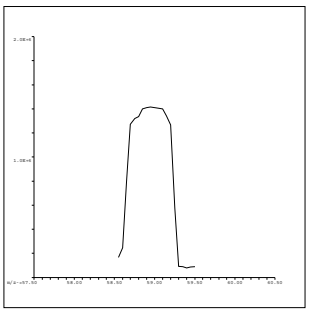
24 Mg
Mass Calib.
Actual: 23.90
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



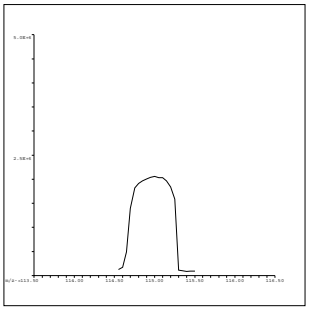
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



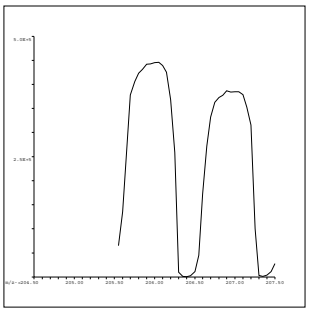
26 Mg
Mass Calib.
Actual: 25.90
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



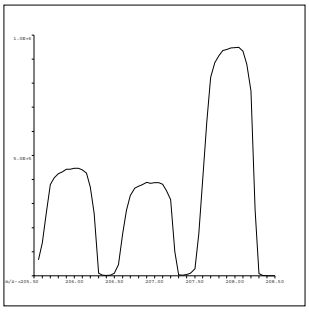
59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



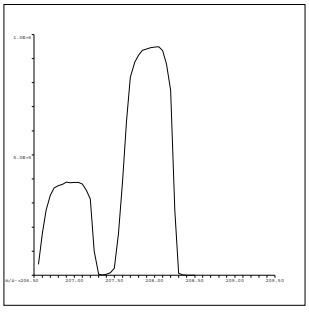
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 12 Nov 2015 09:49:17 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	77708.50	0.00	
24 Mg	274896.00	0.00	
25 Mg	36316.00	0.00	
26 Mg	42514.50	0.00	
59 Co	380536.00	0.00	
115 In	595589.00	0.00	
206 Pb	122081.00	0.00	
207 Pb	105875.00	0.00	
208 Pb	257220.00	0.00	

RSD (%)

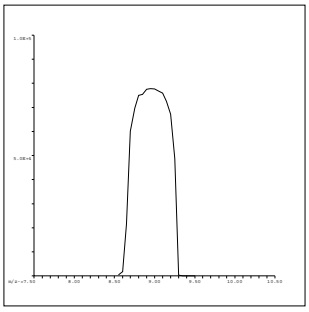
Element	Actual	Required	Flag
9 Be	0.65	5.00	
24 Mg	1.97	5.00	
25 Mg	1.95	5.00	
26 Mg	1.74	5.00	
59 Co	0.87	5.00	
115 In	0.39	5.00	
206 Pb	1.31	5.00	
207 Pb	0.93	5.00	
208 Pb	0.84	5.00	

Ion Ratio

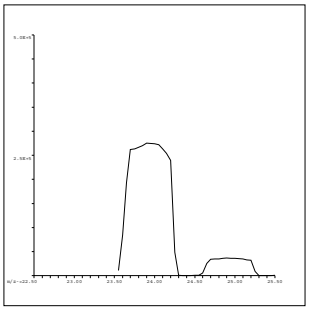
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

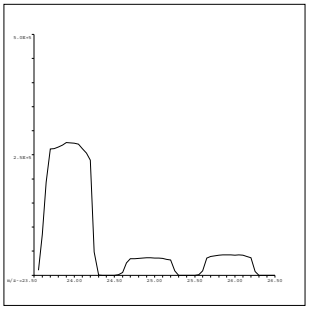
Element	Actual	Required	Flag



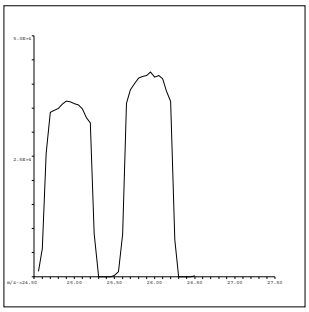
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



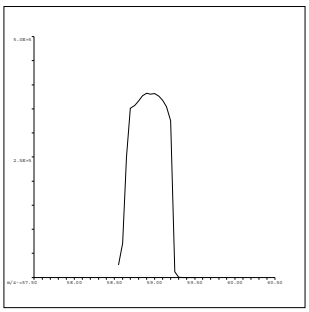
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



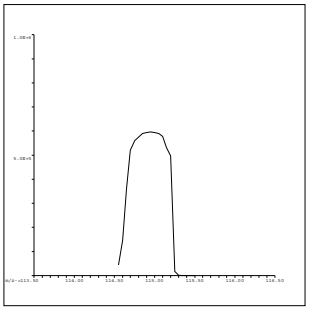
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



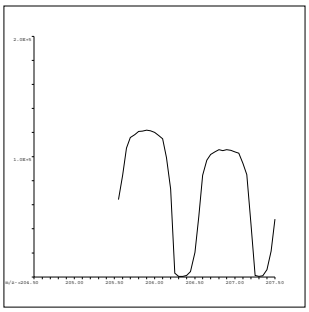
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



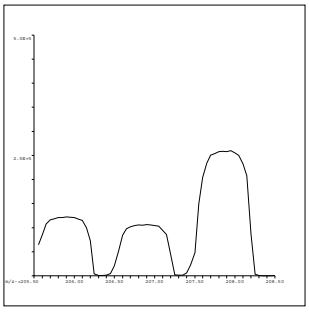
59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



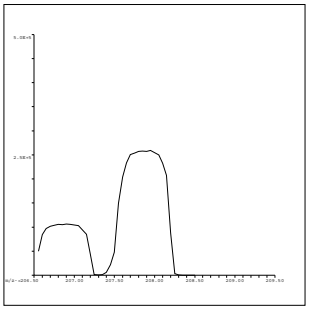
115 In
Mass Calib.
Actual: 114.95
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.90
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.90
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.90
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICPMS-02

Analyte	Data File	A1104002.D	A1104003.D	A1104004.D	A1104005.D	A1104006.D	A1104007.D	A1104008.D	A1104009.D	A1104010.D	
	Acq. Date-Time	11/04/2015 08:53 AM	11/04/2015 08:59 AM	11/04/2015 09:04 AM	11/04/2015 09:10 AM	11/04/2015 09:16 AM	11/04/2015 09:21 AM	11/04/2015 09:27 AM	11/04/2015 09:33 AM	11/04/2015 09:39 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	74381.4		73437	72604.8	73583.1	73394.6	74930.3	75030.9	75834.2	
59 Co [2]	CPS	61		5702.2	56270.4	112946	223152.9	449215.9	1109641.3	2233760.9	1.0000
55 Mn [2]	CPS	137.3		1730.3	15056.4	30323.8	60112.5	119633.1	298017	594788.2	1.0000
52 Cr [2]	CPS	333.3		3201.5	29767.3	58605.4	116951.3	235165.9	581508.2	1166624.6	1.0000
51 V [2]	CPS	188.9		2537	23422.9	45975.9	91731.4	184051	457095.6	916535.6	1.0000
72 Ge (ISTD) [2]	CPS	61364	62199.2	61451.2	61844.7	61274	61250.2	62152.5	61941.7	62571	
75 As [2]	CPS	34.7	152	503.6	4690.5	9459.3	18897.8	37958.8	93210	186988.1	1.0000
66 Zn [2]	CPS	1805.9		985.8	7354.8	13772.9	27418.7	56077.6	133783.5	265251.9	0.9999
115 In (ISTD) [3]	CPS	4120344.3		4048100.7	4044176.8	3997649	4000927.6	4024085.7	3989625.4	3996609.8	
111 Cd [3]	CPS	56.1		3896.6	37143.9	72798.1	146769.2	289723.9	710432.5	1388874.3	0.9999
159 Tb (ISTD) [3]	CPS	5948159.1		5885553.8	5917339.4	5879781.1	5838893	5893339.1	5842619.5	5903055.8	
137 Ba [3]	CPS	452.8		6206.2	54992.3	107543.6	214523	423810.4	1037057.8	2069991.8	1.0000
209 Bi (ISTD) [3]	CPS	3661582.8		3629819.8	3644920.1	3658334.6	3666602.1	3684831.8	3675623.4	3685377.2	
208 Pb [3]	CPS	2348.9		46703.6	439362.2	864439.5	1721027.7	3431240.6	8432632.5	16590208.7	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151109A

Instrument ID: ICPMS-02

Analyte	Data File	A1109002.D	A1109004.D	A1109005.D	A1109006.D	A1109007.D	A1109008.D	A1109009.D	A1109010.D	
	Acq. Date-Time	11/09/2015 10:33 PM	11/09/2015 10:44 PM	11/09/2015 10:50 PM	11/09/2015 10:55 PM	11/09/2015 11:01 PM	11/09/2015 11:06 PM	11/09/2015 11:12 PM	11/09/2015 11:17 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1419177.5	1526928.5	1527572	1527812.8	1547085.4	1622856.1	1639925.9	1664305.5	
9 Be [3]	CPS	68.9	6624.9	63422.9	125349.2	252829.1	528977.9	1325866.1	2652721.8	1.0000
72 Ge (ISTD) [1]	CPS	124583.4	129809	128649.1	128306.2	129159.5	134939.2	135452.3	137491.8	
78 Se [1]	CPS	7.8	255.6	2344.7	4784.3	9215.3	19205.5	47646.7	95473.6	1.0000
72 Ge (ISTD) [2]	CPS	93890.7	99290.1	99192.6	100440.5	101433.1	105079.6	105660.8	107776	
63 Cu [2]	CPS	1994.3	11142.2	75719.8	146242.6	287779.7	593962.7	1490565.3	2947384	0.9999
60 Ni [2]	CPS	115.3	2696.7	25260.1	50150.7	100299.2	208979.7	520855.8	1041313.8	1.0000
103 Rh (ISTD) [2]	CPS	2222556	2410396.3	2404745.9	2433146.8	2446941.5	2583046.8	2591061.9	2615738.5	
95 Mo [2]	CPS	200	3247.1	30457.6	60655.6	122650.2	253795.3	639881.1	1282997.8	1.0000
103 Rh (ISTD) [3]	CPS	4471264	4846966.5	4845001.3	4896251.7	4997024.5	5211537.1	5304365.8	5399566.6	
107 Ag [3]	CPS	3863.8	19164.1	205738.3	428290.8	864557.7	1806027.3	4467625.3	9056473.2	0.9999
115 In (ISTD) [3]	CPS	4388228.9	4758950.9	4775737.7	4863832.7	4935042.4	5173079	5228314.3	5344142.6	
121 Sb [3]	CPS	561.1	19431.7	184897.1	369616.7	744040.2	1550544.9	3867612.6	7829470.2	1.0000
209 Bi (ISTD) [3]	CPS	3510049	3807805.7	3827910.6	3911084.3	3981637.8	4166584.8	4219867.3	4319905.3	
208 Pb [3]	CPS	744.2	48814.8	469445.2	940890.5	1898522	3941254.2	9877107.1	19812769.9	0.9999
205 Tl [3]	CPS	596.7	34971.2	343546.9	688035.8	1385299.6	2875838.3	7174334.7	14473293.1	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151110A1

Instrument ID: ICPMS-02

Analyte	Data File	A1110002.D	A1110004.D	A1110005.D	A1110006.D	A1110007.D	A1110008.D	A1110009.D	A1110010.D	
	Acq. Date-Time	11/10/2015 11:59 AM	11/10/2015 12:10 PM	11/10/2015 12:15 PM	11/10/2015 12:21 PM	11/10/2015 12:26 PM	11/10/2015 12:32 PM	11/10/2015 12:37 PM	11/10/2015 12:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
103 Rh (ISTD) [3]	CPS	3561197	4079095.9	4026530.7	4059910	3360140.6	4087403.7	4082419.9	4108948	
107 Ag [3]	CPS	2839.5	16292.2	172876.1	355994	574557.3	1393338.2	3464368.6	6859851.8	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151112A

Instrument ID: ICPMS-02

Analyte	Data File	A1112002.D	A1112004.D	A1112005.D	A1112006.D	A1112007.D	A1112008.D	A1112009.D	A1112010.D	
	Acq. Date-Time	11/12/2015 10:12 AM	11/12/2015 10:23 AM	11/12/2015 10:29 AM	11/12/2015 10:34 AM	11/12/2015 10:40 AM	11/12/2015 10:45 AM	11/12/2015 10:51 AM	11/12/2015 10:57 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	76652.3	79961.8	80973.4	79016.4	83315	81787.3	81828.5	84394.9	
52 Cr [2]	CPS	226.6	3009.2	28411.6	56405.1	114141.8	226671	560437.5	1135287.6	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.466	0.10	10.00	0	105	90	110				
Barium	104.174	1.0	100.0	0	104	90	110				
Cadmium	10.623	0.50	10.00	0	106	90	110				
Chromium	10.263	1.0	10.00	0	103	90	110				
Cobalt	9.668	0.50	10.00	0	96.7	90	110				
Lead	10.431	1.0	10.00	0	104	90	110				
Manganese	101.043	0.50	100.0	0	101	90	110				
Vanadium	10.098	1.0	10.00	0	101	90	110				
Zinc	104.464	10	100.0	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Barium	1.096	1.0	1.000	0	110	80	120				
Cadmium	0.534	0.50	0.5000	0	107	80	120				
Chromium	1.089	1.0	1.000	0	109	80	120				
Cobalt	0.539	0.50	0.5000	0	108	80	120				
Lead	1.093	1.0	1.000	0	109	80	120				
Manganese	0.548	0.50	0.5000	0	110	80	120				
Vanadium	1.042	1.0	1.000	0	104	80	120				
Zinc	9.766	10	10.00	0	97.7	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126140**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.781	0.10	20.00	0	104	90	110				
Barium	21.656	1.0	20.00	0	108	90	110				
Cadmium	20.636	0.50	20.00	0	103	90	110				
Chromium	20.114	1.0	20.00	0	101	90	110				
Cobalt	19.809	0.50	20.00	0	99.0	90	110				
Lead	20.663	1.0	20.00	0	103	90	110				
Manganese	20.615	0.50	20.00	0	103	90	110				
Vanadium	20.360	1.0	20.00	0	102	90	110				
Zinc	19.253	10	20.00	0	96.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.607	0.10	20.00	0	103	90	110				
Barium	21.666	1.0	20.00	0	108	90	110				
Cadmium	20.832	0.50	20.00	0	104	90	110				
Chromium	19.907	1.0	20.00	0	99.5	90	110				
Cobalt	19.625	0.50	20.00	0	98.1	90	110				
Lead	20.905	1.0	20.00	0	105	90	110				
Manganese	20.678	0.50	20.00	0	103	90	110				
Vanadium	20.104	1.0	20.00	0	101	90	110				
Zinc	19.027	10	20.00	0	95.1	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.9	70	130				
Barium	1.116	1.0	1.000	0	112	70	130				

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.535	0.50	0.5000	0	107	70	130				
Chromium	1.062	1.0	1.000	0	106	70	130				
Cobalt	0.512	0.50	0.5000	0	102	70	130				
Lead	1.086	1.0	1.000	0	109	70	130				
Manganese	0.578	0.50	0.5000	0	116	70	130				
Vanadium	1.080	1.0	1.000	0	108	70	130				
Zinc	9.434	10	10.00	0	94.3	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.508	0.10	20.00	0	103	90	110				
Barium	21.187	1.0	20.00	0	106	90	110				
Cadmium	20.783	0.50	20.00	0	104	90	110				
Chromium	20.398	1.0	20.00	0	102	90	110				
Cobalt	20.288	0.50	20.00	0	101	90	110				
Lead	20.678	1.0	20.00	0	103	90	110				
Manganese	20.608	0.50	20.00	0	103	90	110				
Vanadium	20.513	1.0	20.00	0	103	90	110				
Zinc	18.836	10	20.00	0	94.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.596	0.10	20.00	0	103	90	110				
Barium	21.190	1.0	20.00	0	106	90	110				
Cadmium	20.698	0.50	20.00	0	103	90	110				
Chromium	20.336	1.0	20.00	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCV**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	20.103	0.50	20.00	0	101	90	110				
Lead	20.561	1.0	20.00	0	103	90	110				
Manganese	20.556	0.50	20.00	0	103	90	110				
Vanadium	20.428	1.0	20.00	0	102	90	110				
Zinc	19.155	10	20.00	0	95.8	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCV**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.649	0.10	20.00	0	103	90	110				
Barium	20.877	1.0	20.00	0	104	90	110				
Cadmium	20.636	0.50	20.00	0	103	90	110				
Chromium	20.403	1.0	20.00	0	102	90	110				
Cobalt	20.703	0.50	20.00	0	104	90	110				
Lead	20.623	1.0	20.00	0	103	90	110				
Manganese	20.795	0.50	20.00	0	104	90	110				
Vanadium	20.711	1.0	20.00	0	104	90	110				
Zinc	19.345	10	20.00	0	96.7	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCV**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.757	0.10	20.00	0	104	90	110				
Barium	21.120	1.0	20.00	0	106	90	110				
Cadmium	20.560	0.50	20.00	0	103	90	110				
Chromium	20.685	1.0	20.00	0	103	90	110				
Cobalt	21.030	0.50	20.00	0	105	90	110				
Lead	20.757	1.0	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	103960
Client ID:	CCV	Batch ID:	R103960	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.055	0.50	20.00	0	105	90	110				
Vanadium	20.845	1.0	20.00	0	104	90	110				
Zinc	19.010	10	20.00	0	95.0	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	R103960	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.096	0.10	0.1000	0	95.6	70	130				
Barium	1.109	1.0	1.000	0	111	70	130				
Cadmium	0.549	0.50	0.5000	0	110	70	130				
Chromium	1.098	1.0	1.000	0	110	70	130				
Cobalt	0.520	0.50	0.5000	0	104	70	130				
Lead	1.074	1.0	1.000	0	107	70	130				
Manganese	0.584	0.50	0.5000	0	117	70	130				
Vanadium	1.070	1.0	1.000	0	107	70	130				
Zinc	9.716	10	10.00	0	97.2	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.423	0.50	10.00	0	104	90	110				
Beryllium	9.909	0.50	10.00	0	99.1	90	110				
Copper	9.968	1.0	10.00	0	99.7	90	110				
Lead	9.918	1.0	10.00	0	99.2	90	110				
Molybdenum	10.738	0.50	10.00	0	107	90	110				
Nickel	10.069	1.0	10.00	0	101	90	110				
Selenium	10.100	0.50	10.00	0	101	90	110				
Thallium	9.332	0.50	10.00	0	93.3	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.531	0.50	0.5000	0	106	80	120				
Beryllium	0.512	0.50	0.5000	0	102	80	120				
Copper	1.175	1.0	1.000	0	117	80	120				
Lead	1.080	1.0	1.000	0	108	80	120				
Molybdenum	0.471	0.50	0.5000	0	94.2	80	120				
Nickel	1.136	1.0	1.000	0	114	80	120				
Selenium	0.477	0.50	0.5000	0	95.5	80	120				
Thallium	0.449	0.50	0.5000	0	89.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.083	0.50	20.00	0	100	90	110				
Beryllium	19.651	0.50	20.00	0	98.3	90	110				
Copper	21.505	1.0	20.00	0	108	90	110				
Lead	20.554	1.0	20.00	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.395	0.50	20.00	0	97.0	90	110				
Nickel	21.317	1.0	20.00	0	107	90	110				
Selenium	19.513	0.50	20.00	0	97.6	90	110				
Thallium	20.532	0.50	20.00	0	103	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.568	0.50	20.00	0	103	90	110				
Beryllium	20.731	0.50	20.00	0	104	90	110				
Copper	19.498	1.0	20.00	0	97.5	90	110				
Lead	20.681	1.0	20.00	0	103	90	110				
Molybdenum	20.269	0.50	20.00	0	101	90	110				
Nickel	19.571	1.0	20.00	0	97.9	90	110				
Selenium	19.052	0.50	20.00	0	95.3	90	110				
Thallium	20.757	0.50	20.00	0	104	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.484	0.50	20.00	0	102	90	110				
Beryllium	20.260	0.50	20.00	0	101	90	110				
Copper	20.012	1.0	20.00	0	100	90	110				
Lead	20.577	1.0	20.00	0	103	90	110				
Molybdenum	19.948	0.50	20.00	0	99.7	90	110				
Nickel	19.897	1.0	20.00	0	99.5	90	110				
Selenium	19.637	0.50	20.00	0	98.2	90	110				
Thallium	20.710	0.50	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **CCV**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.535	0.50	20.00	0	103	90	110				
Beryllium	19.785	0.50	20.00	0	98.9	90	110				
Copper	19.971	1.0	20.00	0	99.9	90	110				
Lead	20.726	1.0	20.00	0	104	90	110				
Molybdenum	19.949	0.50	20.00	0	99.7	90	110				
Nickel	19.886	1.0	20.00	0	99.4	90	110				
Selenium	19.303	0.50	20.00	0	96.5	90	110				
Thallium	20.871	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **ZZZZZZ**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.575	0.50	0.5000	0	115	70	130				
Beryllium	0.521	0.50	0.5000	0	104	70	130				
Copper	0.984	1.0	1.000	0	98.4	70	130				
Lead	1.067	1.0	1.000	0	107	70	130				
Molybdenum	0.596	0.50	0.5000	0	119	70	130				
Nickel	1.147	1.0	1.000	0	115	70	130				
Selenium	0.502	0.50	0.5000	0	100	70	130				
Thallium	0.455	0.50	0.5000	0	91.1	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.251	0.50	10.00	0	92.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ZZZZZZ**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.519	0.50	0.5000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	19.877	0.50	20.00	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.056	0.50	20.00	0	100	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.176	0.50	20.00	0	101	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ZZZZZZ**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.491	0.50	0.5000	0	98.1	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.263	1.0	10.00	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.089	1.0	1.000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.114	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.907	1.0	20.00	0	99.5	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.062	1.0	1.000	0	106	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	CCV3	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126090

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.398	1.0	20.00	0	102	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.336	1.0	20.00	0	102	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.403	1.0	20.00	0	102	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.685	1.0	20.00	0	103	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126122

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.098	1.0	1.000	0	110	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ICV**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.628	1.0	10.00	0	96.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ZZZZZZ**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.088	1.0	1.000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **CCV**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.436	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **CCV**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.613	1.0	20.00	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ZZZZZZ**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.057	1.0	1.000	0	106	80	120				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **ICB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126153**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	0.025	1.0									
Zinc	ND	10									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126180**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126198**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **ICB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/9/2015**	SeqNo: **2132992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.151	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.375	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	0.126	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **CCB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.071	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.293	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **CCB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.070	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **CCB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.245	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **CCB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.072	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.252	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **CCB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.043	0.50									
Beryllium	ND	0.50									
Copper	0.327	1.0									
Lead	ND	1.0									
Molybdenum	0.242	0.50									
Nickel	0.127	1.0									
Selenium	0.137	0.50									
Thallium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126049**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126064**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126076**

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

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126091**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126103**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126115**

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

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126121**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ICB**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137549**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **CCB**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137564**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **CCB**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137576**

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	0.190	1.0									
Cobalt	0.013	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSAB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.662	0.10	20.00	0	108	80	120				
Barium	17.889	1.0	20.00	0	89.4	80	120				
Cadmium	19.781	0.50	20.00	0	98.9	80	120				
Chromium	21.317	1.0	20.00	0	107	80	120				
Cobalt	20.182	0.50	20.00	0	101	80	120				
Lead	21.553	1.0	20.00	0	108	80	120				
Manganese	18.995	0.50	20.00	0	95.0	80	120				
Vanadium	21.542	1.0	20.00	0	108	80	120				
Zinc	18.516	10	20.00	0	92.6	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126155**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	0.162	1.0									
Cobalt	0.014	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSAB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.581	0.10	20.00	0	108	80	120				
Barium	18.672	1.0	20.00	0	93.4	80	120				
Cadmium	19.794	0.50	20.00	0	99.0	80	120				
Chromium	20.415	1.0	20.00	0	102	80	120				
Cobalt	19.149	0.50	20.00	0	95.7	80	120				
Lead	21.621	1.0	20.00	0	108	80	120				
Manganese	18.177	0.50	20.00	0	90.9	80	120				
Vanadium	20.876	1.0	20.00	0	104	80	120				
Zinc	18.088	10	20.00	0	90.4	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126200**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	103960
Client ID:	ICSA	Batch ID:	R103960	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Chromium	0.140	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	103960
Client ID:	ICSAB	Batch ID:	R103960	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.985	0.10	20.00	0	110	80	120				
Barium	18.124	1.0	20.00	0	90.6	80	120				
Cadmium	19.529	0.50	20.00	0	97.6	80	120				
Chromium	20.180	1.0	20.00	0	101	80	120				
Cobalt	19.429	0.50	20.00	0	97.1	80	120				
Lead	21.459	1.0	20.00	0	107	80	120				
Manganese	18.017	0.50	20.00	0	90.1	80	120				
Vanadium	21.069	1.0	20.00	0	105	80	120				
Zinc	17.991	10	20.00	0	90.0	80	120				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.057	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.133	0.50									
Nickel	0.315	1.0									
Selenium	ND	0.50									
Thallium	0.043	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSAB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.333	0.50	20.00	0	107	80	120				
Beryllium	22.347	0.50	20.00	0	112	80	120				
Copper	18.493	1.0	20.00	0	92.5	80	120				
Lead	22.141	1.0	20.00	0	111	80	120				
Molybdenum	22.945	0.50	20.00	0	115	80	120				
Nickel	20.101	1.0	20.00	0	101	80	120				
Selenium	20.654	0.50	20.00	0	103	80	120				
Thallium	22.575	0.50	20.00	0	113	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **ICSA**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.063	0.50									
Nickel	0.338	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **ICSAB**	Batch ID: **R104066**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.253	0.50	20.00	0	106	80	120				
Beryllium	22.157	0.50	20.00	0	111	80	120				
Copper	18.257	1.0	20.00	0	91.3	80	120				
Lead	22.127	1.0	20.00	0	111	80	120				
Molybdenum	22.228	0.50	20.00	0	111	80	120				
Nickel	19.773	1.0	20.00	0	98.9	80	120				
Selenium	19.478	0.50	20.00	0	97.4	80	120				
Thallium	22.756	0.50	20.00	0	114	80	120				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSA**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSAB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	19.291	0.50	20.00	0	96.5	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSA**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICSAB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.724	0.50	20.00	0	104	80	120				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSA**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.190	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.317	1.0	20.00	0	107	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSA**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.162	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.415	1.0	20.00	0	102	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSA**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.140	1.0									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.180	1.0	20.00	0	101	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ICSA**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.200	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ICSAB**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.122	1.0	20.00	0	106	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ICSA**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.165	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **104147**
Client ID: **ICSAB**	Batch ID: **R104147**	TestNo: **EPA 200.8**		Analysis Date: **11/12/2015**	SeqNo: **2137579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.133	1.0	20.00	0	106	80	120				

Qualifiers:

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

Calculations are based on raw values

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					159 Tb (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4120344.3	4120344.3	100	PASS	70-130	5948159.1	5948159.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4074409.1	4120344.3	98.89	PASS	70-130	5951037.3	5948159.1	100.05	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4048100.7	4120344.3	98.25	PASS	70-130	5885553.8	5948159.1	98.95	PASS	70-130
Std3-5/50 ppb	ICAL	1	4044176.8	4120344.3	98.15	PASS	70-130	5917339.4	5948159.1	99.48	PASS	70-130
Std4-10/100 ppb	ICAL	1	3997649	4120344.3	97.022	PASS	70-130	5879781.1	5948159.1	98.85	PASS	70-130
Std5-20/200 ppb	ICAL	1	4000927.6	4120344.3	97.1	PASS	70-130	5838893	5948159.1	98.16	PASS	70-130
Std6-40/400 ppb	ICAL	1	4024085.7	4120344.3	97.66	PASS	70-130	5893339.1	5948159.1	99.078	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3989625.4	4120344.3	96.83	PASS	70-130	5842619.5	5948159.1	98.23	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3996609.8	4120344.3	97	PASS	70-130	5903055.8	5948159.1	99.24	PASS	70-130
ICV	ICV	1	3831046.8	4120344.3	92.98	PASS	70-130	5620720.6	5948159.1	94.5	PASS	70-130
ICB	ICB	1	3875010.5	4120344.3	94.046	PASS	70-130	5703337	5948159.1	95.88	PASS	70-130
LLICV	CCV1	1	3872835.8	4120344.3	93.99	PASS	70-130	5628474.4	5948159.1	94.63	PASS	70-130
ICSA1	ICSA	1	3619708.7	4120344.3	87.85	PASS	70-130	5333459.2	5948159.1	89.67	PASS	70-130
ICSAB1	ICSAB	1	3661820.5	4120344.3	88.87	PASS	70-130	5330621.8	5948159.1	89.62	PASS	70-130
MB-52909	MBLK	1	3984445.1	4120344.3	96.7	PASS	70-130	5757836.6	5948159.1	96.8	PASS	70-130
LCS-52909	LCS	1	3831646.3	4120344.3	92.99	PASS	70-130	5564370.1	5948159.1	93.55	PASS	70-130
N017400-001B	SAMP	1	3719863.4	4120344.3	90.28	PASS	70-130	5244297.5	5948159.1	88.17	PASS	70-130
N017400-001B	SAMP	5	3639862.9	4120344.3	88.34	PASS	70-130	5132011.3	5948159.1	86.28	PASS	70-130
N017400-001B-PS	PS	1	3772815.1	4120344.3	91.57	PASS	70-130	5272690.3	5948159.1	88.64	PASS	70-130
N017400-001B-MS	MS	1	3833044.4	4120344.3	93.027	PASS	70-130	5289578.2	5948159.1	88.93	PASS	70-130
N017400-001B-MSD	MSD	1	3778608.7	4120344.3	91.71	PASS	70-130	5223782.4	5948159.1	87.82	PASS	70-130
N017400-002B	SAMP	1	3816636.8	4120344.3	92.63	PASS	70-130	5257652.5	5948159.1	88.39	PASS	70-130
CCV1	CCV	1	4096182.4	4120344.3	99.41	PASS	70-130	5608643.3	5948159.1	94.29	PASS	70-130
CCB1	CCB	1	3934335.7	4120344.3	95.49	PASS	70-130	5581087.8	5948159.1	93.83	PASS	70-130
N017415-001B	SAMP	1	3388784.5	4120344.3	82.25	PASS	70-130	4754115.9	5948159.1	79.93	PASS	70-130
N017415-002B	SAMP	1	3585868.2	4120344.3	87.028	PASS	70-130	4968241.4	5948159.1	83.53	PASS	70-130
N017415-003B	SAMP	1	3597498.8	4120344.3	87.31	PASS	70-130	4939598.1	5948159.1	83.044	PASS	70-130
N017415-004B	SAMP	1	3625809.6	4120344.3	88	PASS	70-130	4932231.5	5948159.1	82.92	PASS	70-130
N017415-005B	SAMP	1	3174767.3	4120344.3	77.051	PASS	70-130	4329879.5	5948159.1	72.79	PASS	70-130
N017415-006B	SAMP	1	3142647	4120344.3	76.27	PASS	70-130	4279904.8	5948159.1	71.95	PASS	70-130
N017415-007B	SAMP	1	3055529.1	4120344.3	74.16	PASS	70-130	4175387.8	5948159.1	70.2	PASS	70-130
N017427-001B	SAMP	1	3143274.8	4120344.3	76.29	PASS	70-130	4294177.3	5948159.1	72.19	PASS	70-130
N017427-002B	SAMP	1	3300502.1	4120344.3	80.1	PASS	70-130	4511428.1	5948159.1	75.85	PASS	70-130
N017427-002B-MS	MS	1	3440606.3	4120344.3	83.5	PASS	70-130	4651419.9	5948159.1	78.2	PASS	70-130
CCV2	CCV	1	4055519.6	4120344.3	98.43	PASS	70-130	5531215.8	5948159.1	92.99	PASS	70-130
CCB2	CCB	1	3923149.3	4120344.3	95.21	PASS	70-130	5532086.9	5948159.1	93.005	PASS	70-130
LLCCV1	CCV2	1	3870888.4	4120344.3	93.95	PASS	70-130	5505466.2	5948159.1	92.56	PASS	70-130
ICSA2	ICSA	1	3557176.3	4120344.3	86.33	PASS	70-130	5105597.6	5948159.1	85.83	PASS	70-130
ICSAB2	ICSAB	1	3606608.1	4120344.3	87.53	PASS	70-130	5119332.3	5948159.1	86.066	PASS	70-130
CCV3	CCV	1	3612091.8	4120344.3	87.66	PASS	70-130	5222914.4	5948159.1	87.81	PASS	70-130
CCB3	CCB	1	3640098.2	4120344.3	88.34	PASS	70-130	5304029.9	5948159.1	89.17	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					159 Tb (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	3507261.1	4120344.3	85.12	PASS	70-130	5021466.9	5948159.1	84.42	PASS	70-130
CCB4	CCB	1	3426063.6	4120344.3	83.15	PASS	70-130	4981731.8	5948159.1	83.75	PASS	70-130
CCV5	CCV	1	3373670.7	4120344.3	81.88	PASS	70-130	4950946.4	5948159.1	83.23	PASS	70-130
CCB5	CCB	1	3402970.4	4120344.3	82.59	PASS	70-130	5009961.6	5948159.1	84.23	PASS	70-130
CCV6	CCV	1	3428622.2	4120344.3	83.21	PASS	70-130	4915903.5	5948159.1	82.65	PASS	70-130
CCB6	CCB	1	3328476.1	4120344.3	80.78	PASS	70-130	4883927	5948159.1	82.11	PASS	70-130
LLCCV2	CCV2	1	3351374.7	4120344.3	81.34	PASS	70-130	4870517.1	5948159.1	81.88	PASS	70-130
ICSA3	ICSA	1	3092997.7	4120344.3	75.066	PASS	70-130	4515680.5	5948159.1	75.92	PASS	70-130
ICSAB3	ICSAB	1	3165273.6	4120344.3	76.82	PASS	70-130	4523909.7	5948159.1	76.056	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	209 Bi (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3661582.8	3661582.8	100	PASS	70-130	74381.4	74381.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	3631545.8	3661582.8	99.18	PASS	70-130	73197.2	74381.4	98.41	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	3629819.8	3661582.8	99.13	PASS	70-130	73437	74381.4	98.73	PASS	70-130
Std3-5/50 ppb	ICAL	1	3644920.1	3661582.8	99.54	PASS	70-130	72604.8	74381.4	97.61	PASS	70-130
Std4-10/100 ppb	ICAL	1	3658334.6	3661582.8	99.91	PASS	70-130	73583.1	74381.4	98.93	PASS	70-130
Std5-20/200 ppb	ICAL	1	3666602.1	3661582.8	100.14	PASS	70-130	73394.6	74381.4	98.67	PASS	70-130
Std6-40/400 ppb	ICAL	1	3684831.8	3661582.8	100.63	PASS	70-130	74930.3	74381.4	100.74	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3675623.4	3661582.8	100.38	PASS	70-130	75030.9	74381.4	100.87	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3685377.2	3661582.8	100.65	PASS	70-130	75834.2	74381.4	101.95	PASS	70-130
ICV	ICV	1	3490188.4	3661582.8	95.32	PASS	70-130	72458.4	74381.4	97.41	PASS	70-130
ICB	ICB	1	3498592.9	3661582.8	95.55	PASS	70-130	73982.7	74381.4	99.46	PASS	70-130
LLICV	CCV1	1	3494957.4	3661582.8	95.45	PASS	70-130	73327.5	74381.4	98.58	PASS	70-130
ICSA1	ICSA	1	2942733.8	3661582.8	80.37	PASS	70-130	74396.8	74381.4	100.02	PASS	70-130
ICSAB1	ICSAB	1	2924057	3661582.8	79.86	PASS	70-130	75787.2	74381.4	101.89	PASS	70-130
MB-52909	MBLK	1	3488493.5	3661582.8	95.27	PASS	70-130	78504.3	74381.4	105.54	PASS	70-130
LCS-52909	LCS	1	3435213.6	3661582.8	93.82	PASS	70-130	74271.2	74381.4	99.85	PASS	70-130
N017400-001B	SAMP	1	2666490.7	3661582.8	72.82	PASS	70-130	82759.7	74381.4	111.26	PASS	70-130
N017400-001B	SAMP	5	2928188.4	3661582.8	79.97	PASS	70-130	76920	74381.4	103.41	PASS	70-130
N017400-001B-PS	PS	1	2872110.6	3661582.8	78.44	PASS	70-130	83524.1	74381.4	112.29	PASS	70-130
N017400-001B-MS	MS	1	2871743	3661582.8	78.43	PASS	70-130	84490.2	74381.4	113.59	PASS	70-130
N017400-001B-MSD	MSD	1	2827691.9	3661582.8	77.23	PASS	70-130	87726.8	74381.4	117.94	PASS	70-130
N017400-002B	SAMP	1	2807784.2	3661582.8	76.68	PASS	70-130	88968.6	74381.4	119.61	PASS	70-130
CCV1	CCV	1	3382099	3661582.8	92.37	PASS	70-130	85139.8	74381.4	114.46	PASS	70-130
CCB1	CCB	1	3335025.9	3661582.8	91.082	PASS	70-130	78958.7	74381.4	106.15	PASS	70-130
N017415-001B	SAMP	1	2642686.9	3661582.8	72.17	PASS	70-130	74555.6	74381.4	100.23	PASS	70-130
N017415-002B	SAMP	1	2696107	3661582.8	73.63	PASS	70-130	82393.3	74381.4	110.77	PASS	70-130
N017415-003B	SAMP	1	2667232.3	3661582.8	72.84	PASS	70-130	85104.3	74381.4	114.42	PASS	70-130
N017415-004B	SAMP	1	2634235.6	3661582.8	71.94	PASS	70-130	86207.7	74381.4	115.9	PASS	70-130
N017415-005B	SAMP	1	2304720.3	3661582.8	62.94	NR!	70-130	75558.6	74381.4	101.58	PASS	70-130
N017415-006B	SAMP	1	2300963	3661582.8	62.84	NR!	70-130	74982.5	74381.4	100.81	PASS	70-130
N017415-007B	SAMP	1	2250018.1	3661582.8	61.45	NR!	70-130	72614.4	74381.4	97.62	PASS	70-130
N017427-001B	SAMP	1	2305989.9	3661582.8	62.98	NR!	70-130	73269.5	74381.4	98.51	PASS	70-130
N017427-002B	SAMP	1	2415587.3	3661582.8	65.97	NR!	70-130	77915	74381.4	104.75	PASS	70-130
N017427-002B-MS	MS	1	2520009.8	3661582.8	68.82	NR!	70-130	79013.2	74381.4	106.23	PASS	70-130
CCV2	CCV	1	3277286	3661582.8	89.5	PASS	70-130	87451.8	74381.4	117.57	PASS	70-130
CCB2	CCB	1	3269201.8	3661582.8	89.28	PASS	70-130	81436.2	74381.4	109.48	PASS	70-130
LLCCV1	CCV2	1	3295246.1	3661582.8	90	PASS	70-130	76999.9	74381.4	103.52	PASS	70-130
ICSA2	ICSA	1	2772044.3	3661582.8	75.71	PASS	70-130	75957.7	74381.4	102.12	PASS	70-130
ICSAB2	ICSAB	1	2772852.7	3661582.8	75.73	PASS	70-130	77742.9	74381.4	104.52	PASS	70-130
CCV3	CCV	1	3280081.7	3661582.8	89.58	PASS	70-130	70354	74381.4	94.59	PASS	70-130
CCB3	CCB	1	3287835.2	3661582.8	89.79	PASS	70-130	69498	74381.4	93.43	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	209 Bi (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	3142039.7	3661582.8	85.81	PASS	70-130	69047.4	74381.4	92.83	PASS	70-130
CCB4	CCB	1	3057061.1	3661582.8	83.49	PASS	70-130	65769.7	74381.4	88.42	PASS	70-130
CCV5	CCV	1	3112948.5	3661582.8	85.016	PASS	70-130	62878.4	74381.4	84.54	PASS	70-130
CCB5	CCB	1	3075562	3661582.8	84	PASS	70-130	62726.7	74381.4	84.33	PASS	70-130
CCV6	CCV	1	3087666.7	3661582.8	84.33	PASS	70-130	63544.2	74381.4	85.43	PASS	70-130
CCB6	CCB	1	2982878.2	3661582.8	81.46	PASS	70-130	62440.4	74381.4	83.95	PASS	70-130
LLCCV2	CCV2	1	3006479.4	3661582.8	82.11	PASS	70-130	62403.3	74381.4	83.9	PASS	70-130
ICSA3	ICSA	1	2519666.9	3661582.8	68.81	NR!	70-130	66396.3	74381.4	89.26	PASS	70-130
ICSAB3	ICSAB	1	2499267.2	3661582.8	68.26	NR!	70-130	67361.5	74381.4	90.56	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61364	61364	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	62199.2	61364	101.36	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	61451.2	61364	100.14	PASS	70-130
Std3-5/50 ppb	ICAL	1	61844.7	61364	100.78	PASS	70-130
Std4-10/100 ppb	ICAL	1	61274	61364	99.85	PASS	70-130
Std5-20/200 ppb	ICAL	1	61250.2	61364	99.81	PASS	70-130
Std6-40/400 ppb	ICAL	1	62152.5	61364	101.28	PASS	70-130
Std7-100/1000 ppb	ICAL	1	61941.7	61364	100.94	PASS	70-130
Std8-200/2000 ppb	ICAL	1	62571	61364	101.97	PASS	70-130
ICV	ICV	1	59976.6	61364	97.74	PASS	70-130
ICB	ICB	1	62417.1	61364	101.72	PASS	70-130
LLICV	CCV1	1	62527.2	61364	101.9	PASS	70-130
ICSA1	ICSA	1	59596.2	61364	97.12	PASS	70-130
ICSAB1	ICSAB	1	61643.8	61364	100.46	PASS	70-130
MB-52909	MBLK	1	66140.6	61364	107.78	PASS	70-130
LCS-52909	LCS	1	62284.3	61364	101.5	PASS	70-130
N017400-001B	SAMP	1	64675.8	61364	105.4	PASS	70-130
N017400-001B	SAMP	5	63246.8	61364	103.07	PASS	70-130
N017400-001B-PS	PS	1	65540.3	61364	106.81	PASS	70-130
N017400-001B-MS	MS	1	65900.9	61364	107.39	PASS	70-130
N017400-001B-MSD	MSD	1	68510.1	61364	111.65	PASS	70-130
N017400-002B	SAMP	1	67900.9	61364	110.65	PASS	70-130
CCV1	CCV	1	70018.6	61364	114.1	PASS	70-130
CCB1	CCB	1	65320.5	61364	106.45	PASS	70-130
N017415-001B	SAMP	1	60175.1	61364	98.063	PASS	70-130
N017415-002B	SAMP	1	64146.7	61364	104.53	PASS	70-130
N017415-003B	SAMP	1	65820.4	61364	107.26	PASS	70-130
N017415-004B	SAMP	1	66439.5	61364	108.27	PASS	70-130
N017415-005B	SAMP	1	59114.5	61364	96.33	PASS	70-130
N017415-006B	SAMP	1	57964.9	61364	94.46	PASS	70-130
N017415-007B	SAMP	1	55866.7	61364	91.041	PASS	70-130
N017427-001B	SAMP	1	56953.7	61364	92.81	PASS	70-130
N017427-002B	SAMP	1	58908.2	61364	96	PASS	70-130
N017427-002B-MS	MS	1	60863.5	61364	99.18	PASS	70-130
CCV2	CCV	1	71646.8	61364	116.76	PASS	70-130
CCB2	CCB	1	68261.5	61364	111.24	PASS	70-130
LLCCV1	CCV2	1	66460.5	61364	108.31	PASS	70-130
ICSA2	ICSA	1	60857.8	61364	99.18	PASS	70-130
ICSAB2	ICSAB	1	62475.9	61364	101.81	PASS	70-130
CCV3	CCV	1	60621.4	61364	98.79	PASS	70-130
CCB3	CCB	1	58713.1	61364	95.68	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	57986.1	61364	94.5	PASS	70-130
CCB4	CCB	1	55236.6	61364	90.015	PASS	70-130
CCV5	CCV	1	54690.4	61364	89.12	PASS	70-130
CCB5	CCB	1	54978	61364	89.59	PASS	70-130
CCV6	CCV	1	56353.8	61364	91.84	PASS	70-130
CCB6	CCB	1	55128.7	61364	89.84	PASS	70-130
LLCCV2	CCV2	1	54983.6	61364	89.6	PASS	70-130
ICSA3	ICSA	1	52968.2	61364	86.32	PASS	70-130
ICSAB3	ICSAB	1	55081.7	61364	89.76	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4388228.9	4388228.9	100	PASS	70-130	3510049	3510049	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4826660.1	4388228.9	109.99	PASS	70-130	3850607.5	3510049	109.7	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4758950.9	4388228.9	108.45	PASS	70-130	3807805.7	3510049	108.48	PASS	70-130
Std3-5/50 ppb	ICAL	1	4775737.7	4388228.9	108.83	PASS	70-130	3827910.6	3510049	109.06	PASS	70-130
Std4-10/100 ppb	ICAL	1	4863832.7	4388228.9	110.84	PASS	70-130	3911084.3	3510049	111.43	PASS	70-130
Std5-20/200 ppb	ICAL	1	4935042.4	4388228.9	112.46	PASS	70-130	3981637.8	3510049	113.44	PASS	70-130
Std6-40/400 ppb	ICAL	1	5173079	4388228.9	117.89	PASS	70-130	4166584.8	3510049	118.7	PASS	70-130
Std7-100/1000 ppb	ICAL	1	5228314.3	4388228.9	119.14	PASS	70-130	4219867.3	3510049	120.22	PASS	70-130
Std8-200/2000 ppb	ICAL	1	5344142.6	4388228.9	121.78	PASS	70-130	4319905.3	3510049	123.07	PASS	70-130
ICV	ICV	1	4671728.1	4388228.9	106.46	PASS	70-130	3752133.5	3510049	106.9	PASS	70-130
ICB	ICB	1	4494470.9	4388228.9	102.42	PASS	70-130	3619735.1	3510049	103.12	PASS	70-130
LLICV	CCV1	1	5121998.7	4388228.9	116.72	PASS	70-130	3932740	3510049	112.04	PASS	70-130
ICSA1	ICSA	1	4949144.1	4388228.9	112.78	PASS	70-130	3585705.2	3510049	102.16	PASS	70-130
ICSAB1	ICSAB	1	4980354	4388228.9	113.49	PASS	70-130	3547712.8	3510049	101.07	PASS	70-130
MB-52909	MBLK	1	4697512.9	4388228.9	107.05	PASS	70-130	3646902.1	3510049	103.9	PASS	70-130
LCS-52909	LCS	1	4747098.4	4388228.9	108.18	PASS	70-130	3772544.6	3510049	107.48	PASS	70-130
N017400-001B	SAMP	5	4931236.6	4388228.9	112.37	PASS	70-130	3652842.2	3510049	104.07	PASS	70-130
N017400-001B	SAMP	1	4568340.4	4388228.9	104.1	PASS	70-130	3039148.8	3510049	86.58	PASS	70-130
N017400-002B	SAMP	5	4351115.1	4388228.9	99.15	PASS	70-130	3227136.9	3510049	91.94	PASS	70-130
N017400-002B	SAMP	1	4050524.8	4388228.9	92.3	PASS	70-130	2879924.9	3510049	82.048	PASS	70-130
N017415-001B	SAMP	5	4377625.3	4388228.9	99.76	PASS	70-130	3236746.4	3510049	92.21	PASS	70-130
N017415-001B	SAMP	1	3893746	4388228.9	88.73	PASS	70-130	2791267.7	3510049	79.52	PASS	70-130
N017415-002B	SAMP	5	3922053.6	4388228.9	89.38	PASS	70-130	2895174.7	3510049	82.48	PASS	70-130
N017415-002B	SAMP	1	3479869.5	4388228.9	79.3	PASS	70-130	2476737.2	3510049	70.56	PASS	70-130
CCV1	CCV	1	4643021	4388228.9	105.81	PASS	70-130	3674034.1	3510049	104.67	PASS	70-130
CCB1	CCB	1	3457121.3	4388228.9	78.78	PASS	70-130	2680546.7	3510049	76.37	PASS	70-130
N017415-003B	SAMP	5	3444738.3	4388228.9	78.5	PASS	70-130	2586698	3510049	73.69	PASS	70-130
N017415-003B	SAMP	1	3849259.5	4388228.9	87.72	PASS	70-130	2740638.2	3510049	78.08	PASS	70-130
N017415-004B	SAMP	5	3749864.4	4388228.9	85.45	PASS	70-130	2762883.3	3510049	78.71	PASS	70-130
N017415-004B	SAMP	1	4595211.7	4388228.9	104.72	PASS	70-130	3241003.6	3510049	92.33	PASS	70-130
N017415-005B	SAMP	5	4314285.7	4388228.9	98.31	PASS	70-130	3171136.6	3510049	90.34	PASS	70-130
N017415-005B	SAMP	1	4374431.9	4388228.9	99.69	PASS	70-130	3113337.7	3510049	88.7	PASS	70-130
N017415-006B	SAMP	5	4660847.8	4388228.9	106.21	PASS	70-130	3452919.8	3510049	98.37	PASS	70-130
N017415-006B	SAMP	1	4297943.9	4388228.9	97.94	PASS	70-130	3030635.9	3510049	86.34	PASS	70-130
N017415-007B	SAMP	5	4069274.9	4388228.9	92.73	PASS	70-130	2994298.4	3510049	85.31	PASS	70-130
N017415-007B	SAMP	1	4003160.1	4388228.9	91.22	PASS	70-130	2849108.5	3510049	81.17	PASS	70-130
CCV2	CCV	1	4737094.6	4388228.9	107.95	PASS	70-130	3634603.2	3510049	103.55	PASS	70-130
CCB2	CCB	1	4095063.5	4388228.9	93.32	PASS	70-130	3199169.4	3510049	91.14	PASS	70-130
N017427-001B	SAMP	5	3843193.6	4388228.9	87.58	PASS	70-130	2889500.8	3510049	82.32	PASS	70-130
N017427-001B	SAMP	1	3846435.1	4388228.9	87.65	PASS	70-130	2730797.9	3510049	77.8	PASS	70-130
N017427-002B	SAMP	5	4179551	4388228.9	95.24	PASS	70-130	3065422.8	3510049	87.33	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	4339696.3	4388228.9	98.89	PASS	70-130	3064634	3510049	87.31	PASS	70-130
N017400-001B	SAMP	25	4504482.7	4388228.9	102.65	PASS	70-130	3390614.5	3510049	96.6	PASS	70-130
N017400-001B-PS	PS	5	4508013.3	4388228.9	102.73	PASS	70-130	3482681	3510049	99.22	PASS	70-130
N017400-001B-PS	PS	1	4383607.3	4388228.9	99.89	PASS	70-130	3323184	3510049	94.68	PASS	70-130
N017400-001B-MS	MS	5	4417716.4	4388228.9	100.67	PASS	70-130	3400075	3510049	96.87	PASS	70-130
N017400-001B-MS	MS	1	4455377.8	4388228.9	101.53	PASS	70-130	3390133.7	3510049	96.58	PASS	70-130
N017400-001B-MSD	MSD	5	4372617.3	4388228.9	99.64	PASS	70-130	3389971.3	3510049	96.58	PASS	70-130
CCV3	CCV	1	4742207.7	4388228.9	108.07	PASS	70-130	3774001.9	3510049	107.52	PASS	70-130
CCB3	CCB	1	4095160.5	4388228.9	93.32	PASS	70-130	3268957.1	3510049	93.13	PASS	70-130
N017400-001B-MSD	MSD	1	4126342.3	4388228.9	94.032	PASS	70-130	3168438.5	3510049	90.27	PASS	70-130
N017427-002B-MS	MS	5	4381343.5	4388228.9	99.84	PASS	70-130	3447778.4	3510049	98.23	PASS	70-130
N017427-002B-MS	MS	1	4139939.8	4388228.9	94.34	PASS	70-130	3161127.1	3510049	90.059	PASS	70-130
CCV4	CCV	1	4964730.5	4388228.9	113.14	PASS	70-130	3951841.6	3510049	112.59	PASS	70-130
CCB4	CCB	1	4981608	4388228.9	113.52	PASS	70-130	3799380.2	3510049	108.24	PASS	70-130
LLCCV1	CCV2	1	4373380.7	4388228.9	99.66	PASS	70-130	3489954.3	3510049	99.43	PASS	70-130
ICSA2	ICSA	1	4716816.4	4388228.9	107.49	PASS	70-130	3441173.7	3510049	98.038	PASS	70-130
ICSAB2	ICSAB	1	4548214.7	4388228.9	103.65	PASS	70-130	3234723.3	3510049	92.16	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	93890.7	93890.7	100	PASS	70-130	124583.4	124583.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	101811.1	93890.7	108.44	PASS	70-130	132611.3	124583.4	106.44	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	99290.1	93890.7	105.75	PASS	70-130	129809	124583.4	104.19	PASS	70-130
Std3-5/50 ppb	ICAL	1	99192.6	93890.7	105.65	PASS	70-130	128649.1	124583.4	103.26	PASS	70-130
Std4-10/100 ppb	ICAL	1	100440.5	93890.7	106.98	PASS	70-130	128306.2	124583.4	102.99	PASS	70-130
Std5-20/200 ppb	ICAL	1	101433.1	93890.7	108.03	PASS	70-130	129159.5	124583.4	103.67	PASS	70-130
Std6-40/400 ppb	ICAL	1	105079.6	93890.7	111.92	PASS	70-130	134939.2	124583.4	108.31	PASS	70-130
Std7-100/1000 ppb	ICAL	1	105660.8	93890.7	112.54	PASS	70-130	135452.3	124583.4	108.72	PASS	70-130
Std8-200/2000 ppb	ICAL	1	107776	93890.7	114.79	PASS	70-130	137491.8	124583.4	110.36	PASS	70-130
ICV	ICV	1	96443.4	93890.7	102.72	PASS	70-130	122551.7	124583.4	98.37	PASS	70-130
ICB	ICB	1	94594	93890.7	100.75	PASS	70-130	121660.6	124583.4	97.65	PASS	70-130
LLICV	CCV1	1	93815.8	93890.7	99.92	PASS	70-130	116822.3	124583.4	93.77	PASS	70-130
ICSA1	ICSA	1	105415.7	93890.7	112.27	PASS	70-130	133424.3	124583.4	107.1	PASS	70-130
ICSAB1	ICSAB	1	108871.3	93890.7	115.96	PASS	70-130	142403.4	124583.4	114.3	PASS	70-130
MB-52909	MBLK	1	100692.9	93890.7	107.24	PASS	70-130	136869.5	124583.4	109.86	PASS	70-130
LCS-52909	LCS	1	96797.5	93890.7	103.1	PASS	70-130	132649.6	124583.4	106.47	PASS	70-130
N017400-001B	SAMP	5	104001.3	93890.7	110.77	PASS	70-130	135762.1	124583.4	108.97	PASS	70-130
N017400-001B	SAMP	1	107152.1	93890.7	114.12	PASS	70-130	153181.8	124583.4	122.96	PASS	70-130
N017400-002B	SAMP	5	102016.7	93890.7	108.65	PASS	70-130	137448.9	124583.4	110.33	PASS	70-130
N017400-002B	SAMP	1	97702.4	93890.7	104.06	PASS	70-130	135320.5	124583.4	108.62	PASS	70-130
N017415-001B	SAMP	5	95965.2	93890.7	102.21	PASS	70-130	132325	124583.4	106.21	PASS	70-130
N017415-001B	SAMP	1	98347.7	93890.7	104.75	PASS	70-130	130521.3	124583.4	104.77	PASS	70-130
N017415-002B	SAMP	5	84740.2	93890.7	90.25	PASS	70-130	110196.5	124583.4	88.45	PASS	70-130
N017415-002B	SAMP	1	95488.3	93890.7	101.7	PASS	70-130	122656.7	124583.4	98.45	PASS	70-130
CCV1	CCV	1	84353.3	93890.7	89.84	PASS	70-130	104161.3	124583.4	83.61	PASS	70-130
CCB1	CCB	1	73928.3	93890.7	78.74	PASS	70-130	100496.3	124583.4	80.67	PASS	70-130
N017415-003B	SAMP	5	81000	93890.7	86.27	PASS	70-130	105976.9	124583.4	85.065	PASS	70-130
N017415-003B	SAMP	1	89064.3	93890.7	94.86	PASS	70-130	117220.2	124583.4	94.09	PASS	70-130
N017415-004B	SAMP	5	90874.9	93890.7	96.79	PASS	70-130	116443.4	124583.4	93.47	PASS	70-130
N017415-004B	SAMP	1	107680.3	93890.7	114.69	PASS	70-130	137635.2	124583.4	110.48	PASS	70-130
N017415-005B	SAMP	5	95931.4	93890.7	102.17	PASS	70-130	128734.2	124583.4	103.33	PASS	70-130
N017415-005B	SAMP	1	102497.6	93890.7	109.17	PASS	70-130	138057.2	124583.4	110.82	PASS	70-130
N017415-006B	SAMP	5	102320.7	93890.7	108.98	PASS	70-130	135899.2	124583.4	109.08	PASS	70-130
N017415-006B	SAMP	1	100308.7	93890.7	106.84	PASS	70-130	134541.5	124583.4	107.99	PASS	70-130
N017415-007B	SAMP	5	93970.7	93890.7	100.09	PASS	70-130	129999.2	124583.4	104.35	PASS	70-130
N017415-007B	SAMP	1	97909.6	93890.7	104.28	PASS	70-130	136406	124583.4	109.49	PASS	70-130
CCV2	CCV	1	102316.8	93890.7	108.97	PASS	70-130	137173.3	124583.4	110.11	PASS	70-130
CCB2	CCB	1	87452.2	93890.7	93.14	PASS	70-130	117134.6	124583.4	94.021	PASS	70-130
N017427-001B	SAMP	5	83173.3	93890.7	88.59	PASS	70-130	116630	124583.4	93.62	PASS	70-130
N017427-001B	SAMP	1	85199.2	93890.7	90.74	PASS	70-130	115037.9	124583.4	92.34	PASS	70-130
N017427-002B	SAMP	5	94351.6	93890.7	100.49	PASS	70-130	124809.7	124583.4	100.18	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	100615.2	93890.7	107.16	PASS	70-130	135722.3	124583.4	108.94	PASS	70-130
N017400-001B	SAMP	25	96904.4	93890.7	103.21	PASS	70-130	129028.2	124583.4	103.57	PASS	70-130
N017400-001B-PS	PS	5	92022.4	93890.7	98.01	PASS	70-130	123049.7	124583.4	98.77	PASS	70-130
N017400-001B-PS	PS	1	90938.5	93890.7	96.86	PASS	70-130	123281.1	124583.4	98.95	PASS	70-130
N017400-001B-MS	MS	5	91328.6	93890.7	97.27	PASS	70-130	122867.1	124583.4	98.62	PASS	70-130
N017400-001B-MS	MS	1	91778.7	93890.7	97.75	PASS	70-130	124310.1	124583.4	99.78	PASS	70-130
N017400-001B-MSD	MSD	5	90135.2	93890.7	96	PASS	70-130	113993.2	124583.4	91.5	PASS	70-130
CCV3	CCV	1	95495.3	93890.7	101.71	PASS	70-130	127998.3	124583.4	102.74	PASS	70-130
CCB3	CCB	1	84026.5	93890.7	89.49	PASS	70-130	109931.9	124583.4	88.24	PASS	70-130
N017400-001B-MSD	MSD	1	84592.9	93890.7	90.097	PASS	70-130	112969.8	124583.4	90.68	PASS	70-130
N017427-002B-MS	MS	5	88868.5	93890.7	94.65	PASS	70-130	119881.7	124583.4	96.23	PASS	70-130
N017427-002B-MS	MS	1	84852.8	93890.7	90.37	PASS	70-130	112249.5	124583.4	90.1	PASS	70-130
CCV4	CCV	1	100627.8	93890.7	107.18	PASS	70-130	135624.8	124583.4	108.86	PASS	70-130
CCB4	CCB	1	95783	93890.7	102.02	PASS	70-130	133948.3	124583.4	107.52	PASS	70-130
LLCCV1	CCV2	1	89555.8	93890.7	95.38	PASS	70-130	121496.2	124583.4	97.52	PASS	70-130
ICSA2	ICSA	1	97661.6	93890.7	104.02	PASS	70-130	124908.1	124583.4	100.26	PASS	70-130
ICSAB2	ICSAB	1	95868.9	93890.7	102.11	PASS	70-130	128121.3	124583.4	102.84	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	6 Li (ISTD) [3]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1419177.5	1419177.5	100	PASS	70-130	2222556	2222556	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	1553340.2	1419177.5	109.45	PASS	70-130	2465400.2	2222556	110.93	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	1526928.5	1419177.5	107.59	PASS	70-130	2410396.3	2222556	108.45	PASS	70-130
Std3-5/50 ppb	ICAL	1	1527572	1419177.5	107.64	PASS	70-130	2404745.9	2222556	108.2	PASS	70-130
Std4-10/100 ppb	ICAL	1	1527812.8	1419177.5	107.65	PASS	70-130	2433146.8	2222556	109.48	PASS	70-130
Std5-20/200 ppb	ICAL	1	1547085.4	1419177.5	109.01	PASS	70-130	2446941.5	2222556	110.1	PASS	70-130
Std6-40/400 ppb	ICAL	1	1622856.1	1419177.5	114.35	PASS	70-130	2583046.8	2222556	116.22	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1639925.9	1419177.5	115.55	PASS	70-130	2591061.9	2222556	116.58	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1664305.5	1419177.5	117.27	PASS	70-130	2615738.5	2222556	117.69	PASS	70-130
ICV	ICV	1	1460009.9	1419177.5	102.88	PASS	70-130	2353754.9	2222556	105.9	PASS	70-130
ICB	ICB	1	1413300.2	1419177.5	99.59	PASS	70-130	2313981.7	2222556	104.11	PASS	70-130
LLICV	CCV1	1	1733739.9	1419177.5	122.17	PASS	70-130	2348266.7	2222556	105.66	PASS	70-130
ICSA1	ICSA	1	1554711.3	1419177.5	109.55	PASS	70-130	2367589.1	2222556	106.53	PASS	70-130
ICSAB1	ICSAB	1	1513319.1	1419177.5	106.63	PASS	70-130	2410653.2	2222556	108.46	PASS	70-130
MB-52909	MBLK	1	1477035.6	1419177.5	104.08	PASS	70-130	2387195.1	2222556	107.41	PASS	70-130
LCS-52909	LCS	1	1546179.7	1419177.5	108.95	PASS	70-130	2374839.5	2222556	106.85	PASS	70-130
N017400-001B	SAMP	5	1419150.5	1419177.5	100	PASS	70-130	2370278.1	2222556	106.65	PASS	70-130
N017400-001B	SAMP	1	1099908.8	1419177.5	77.5	PASS	70-130	2264964.6	2222556	101.91	PASS	70-130
N017400-002B	SAMP	5	1281737.7	1419177.5	90.32	PASS	70-130	2237305.7	2222556	100.66	PASS	70-130
N017400-002B	SAMP	1	982613.1	1419177.5	69.24	NR!	70-130	2080621.6	2222556	93.61	PASS	70-130
N017415-001B	SAMP	5	1271457.7	1419177.5	89.59	PASS	70-130	2102580.6	2222556	94.6	PASS	70-130
N017415-001B	SAMP	1	915725.4	1419177.5	64.53	NR!	70-130	2098609	2222556	94.42	PASS	70-130
N017415-002B	SAMP	5	1126175	1419177.5	79.35	PASS	70-130	1846717.3	2222556	83.09	PASS	70-130
N017415-002B	SAMP	1	822386.9	1419177.5	57.95	NR!	70-130	2033971.3	2222556	91.51	PASS	70-130
CCV1	CCV	1	1599185.1	1419177.5	112.68	PASS	70-130	2158791	2222556	97.13	PASS	70-130
CCB1	CCB	1	1100114.1	1419177.5	77.52	PASS	70-130	1727699.5	2222556	77.73	PASS	70-130
N017415-003B	SAMP	5	1004445.9	1419177.5	70.78	PASS	70-130	1808907.7	2222556	81.39	PASS	70-130
N017415-003B	SAMP	1	895623.9	1419177.5	63.11	NR!	70-130	1861453.7	2222556	83.75	PASS	70-130
N017415-004B	SAMP	5	1068666.3	1419177.5	75.3	PASS	70-130	1989869.4	2222556	89.53	PASS	70-130
N017415-004B	SAMP	1	1035850.5	1419177.5	72.99	PASS	70-130	2267040.4	2222556	102	PASS	70-130
N017415-005B	SAMP	5	1203160.1	1419177.5	84.78	PASS	70-130	2119569.1	2222556	95.37	PASS	70-130
N017415-005B	SAMP	1	990925.5	1419177.5	69.82	NR!	70-130	2197901.6	2222556	98.89	PASS	70-130
N017415-006B	SAMP	5	1299840.3	1419177.5	91.59	PASS	70-130	2249860	2222556	101.23	PASS	70-130
N017415-006B	SAMP	1	983417.4	1419177.5	69.29	NR!	70-130	2119931.5	2222556	95.38	PASS	70-130
N017415-007B	SAMP	5	1127435.4	1419177.5	79.44	PASS	70-130	2086568.5	2222556	93.88	PASS	70-130
N017415-007B	SAMP	1	927207.4	1419177.5	65.33	NR!	70-130	2100149.6	2222556	94.49	PASS	70-130
CCV2	CCV	1	1433082.8	1419177.5	100.98	PASS	70-130	2362687.1	2222556	106.3	PASS	70-130
CCB2	CCB	1	1244288.3	1419177.5	87.68	PASS	70-130	2051227	2222556	92.29	PASS	70-130
N017427-001B	SAMP	5	1081411.3	1419177.5	76.2	PASS	70-130	1857734.1	2222556	83.59	PASS	70-130
N017427-001B	SAMP	1	931416.1	1419177.5	65.63	NR!	70-130	1840146.9	2222556	82.79	PASS	70-130
N017427-002B	SAMP	5	1148582.5	1419177.5	80.93	PASS	70-130	2087875.1	2222556	93.94	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	6 Li (ISTD) [3]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	1017140.6	1419177.5	71.67	PASS	70-130	2145251.2	2222556	96.52	PASS	70-130
N017400-001B	SAMP	25	1299681.4	1419177.5	91.58	PASS	70-130	2175171.5	2222556	97.87	PASS	70-130
N017400-001B-PS	PS	5	1339082	1419177.5	94.36	PASS	70-130	2118457.3	2222556	95.32	PASS	70-130
N017400-001B-PS	PS	1	1336973.6	1419177.5	94.21	PASS	70-130	2072147	2222556	93.23	PASS	70-130
N017400-001B-MS	MS	5	1337648.3	1419177.5	94.26	PASS	70-130	2089296.7	2222556	94.004	PASS	70-130
N017400-001B-MS	MS	1	1360708.7	1419177.5	95.88	PASS	70-130	2073869.3	2222556	93.31	PASS	70-130
N017400-001B-MSD	MSD	5	1340669.4	1419177.5	94.47	PASS	70-130	2081272.7	2222556	93.64	PASS	70-130
CCV3	CCV	1	1450656.7	1419177.5	102.22	PASS	70-130	2266559.7	2222556	101.98	PASS	70-130
CCB3	CCB	1	1249411.5	1419177.5	88.038	PASS	70-130	1998011.6	2222556	89.9	PASS	70-130
N017400-001B-MSD	MSD	1	1271871.1	1419177.5	89.62	PASS	70-130	1932233.4	2222556	86.94	PASS	70-130
N017427-002B-MS	MS	5	1358152.3	1419177.5	95.7	PASS	70-130	2051821.8	2222556	92.32	PASS	70-130
N017427-002B-MS	MS	1	1267172.4	1419177.5	89.29	PASS	70-130	1906767.4	2222556	85.79	PASS	70-130
CCV4	CCV	1	1581537.1	1419177.5	111.44	PASS	70-130	2392956	2222556	107.67	PASS	70-130
CCB4	CCB	1	1545277.7	1419177.5	108.89	PASS	70-130	2343381	2222556	105.44	PASS	70-130
LLCCV1	CCV2	1	1380646.2	1419177.5	97.28	PASS	70-130	2132263.3	2222556	95.94	PASS	70-130
ICSA2	ICSA	1	1404320.3	1419177.5	98.95	PASS	70-130	2187043.1	2222556	98.4	PASS	70-130
ICSAB2	ICSAB	1	1298545.4	1419177.5	91.5	PASS	70-130	2119140.2	2222556	95.35	PASS	70-130

INTERNAL STANDARD: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3561197	3561197	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4091756.9	3561197	114.9	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4079095.9	3561197	114.54	PASS	70-130
Std3-5/50 ppb	ICAL	1	4026530.7	3561197	113.07	PASS	70-130
Std4-10/100 ppb	ICAL	1	4059910	3561197	114	PASS	70-130
Std5-20/200 ppb	ICAL	1	3360140.6	3561197	94.35	PASS	70-130
Std6-40/400 ppb	ICAL	1	4087403.7	3561197	114.78	PASS	70-130
Std7-100/1000 ppb	ICAL	1	4082419.9	3561197	114.64	PASS	70-130
Std8-200/2000 ppb	ICAL	1	4108948	3561197	115.38	PASS	70-130
ICV	ICV	1	3958530.2	3561197	111.16	PASS	70-130
ICB	ICB	1	3703443.4	3561197	103.99	PASS	70-130
LLICV	CCV1	1	3684920	3561197	103.47	PASS	70-130
ICSA1	ICSA	1	3560511.2	3561197	99.98	PASS	70-130
ICSAB1	ICSAB	1	3273762.2	3561197	91.93	PASS	70-130
MB-52909	MBLK	1	3637967.7	3561197	102.16	PASS	70-130
LCS-52909	LCS	1	3226418.6	3561197	90.6	PASS	70-130
N017400-001B	SAMP	5	3920133.8	3561197	110.08	PASS	70-130
N017400-001B	SAMP	1	2911286.7	3561197	81.75	PASS	70-130
N017400-002B	SAMP	5	2966939.5	3561197	83.31	PASS	70-130
N017400-002B	SAMP	1	2996165.8	3561197	84.13	PASS	70-130
N017415-001B	SAMP	5	3428851.3	3561197	96.28	PASS	70-130
N017415-001B	SAMP	1	2657799.9	3561197	74.63	PASS	70-130
N017415-002B	SAMP	5	2968774	3561197	83.36	PASS	70-130
N017415-002B	SAMP	1	2818763.4	3561197	79.15	PASS	70-130
CCV1	CCV	1	3965322.5	3561197	111.35	PASS	70-130
CCB1	CCB	1	4057033.7	3561197	113.92	PASS	70-130
N017415-003B	SAMP	5	3217233.9	3561197	90.34	PASS	70-130
N017415-003B	SAMP	1	3186580.3	3561197	89.48	PASS	70-130
N017415-004B	SAMP	5	2971359.3	3561197	83.44	PASS	70-130
N017415-004B	SAMP	1	2859617.2	3561197	80.3	PASS	70-130
N017415-005B	SAMP	5	2689212	3561197	75.51	PASS	70-130
N017415-005B	SAMP	1	2696948.8	3561197	75.73	PASS	70-130
N017415-006B	SAMP	5	3413709.9	3561197	95.86	PASS	70-130
N017415-006B	SAMP	1	3243051.4	3561197	91.066	PASS	70-130
N017415-007B	SAMP	5	3037796.7	3561197	85.3	PASS	70-130
N017415-007B	SAMP	1	3488015.4	3561197	97.95	PASS	70-130
CCV2	CCV	1	3919445.7	3561197	110.06	PASS	70-130
CCB2	CCB	1	4121491.7	3561197	115.73	PASS	70-130
N017427-001B	SAMP	5	3512974.8	3561197	98.65	PASS	70-130
N017427-001B	SAMP	1	2822220.9	3561197	79.25	PASS	70-130
N017427-002B	SAMP	5	3566034.7	3561197	100.14	PASS	70-130

INTERNAL STANDARD: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	3474421.9	3561197	97.56	PASS	70-130
N017400-001B-PS	PS	1	4137716.3	3561197	116.19	PASS	70-130
N017400-001B-MS	MS	1	4072836	3561197	114.37	PASS	70-130
N017400-001B-MSD	MSD	1	4213042.6	3561197	118.3	PASS	70-130
N017427-002B-MS	MS	1	4137710.1	3561197	116.19	PASS	70-130
CCV3	CCV	1	3514437.2	3561197	98.69	PASS	70-130
CCB3	CCB	1	4220070.3	3561197	118.5	PASS	70-130
LLCCV1	CCV2	1	3804526.9	3561197	106.83	PASS	70-130
ICSA2	ICSA	1	3958707.9	3561197	111.16	PASS	70-130
ICSAB2	ICSAB	1	4176040.8	3561197	117.27	PASS	70-130

INTERNAL STANDARD: 151112A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	76652.3	76652.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	79243.1	76652.3	103.38	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	79961.8	76652.3	104.32	PASS	70-130
Std3-5/50 ppb	ICAL	1	80973.4	76652.3	105.64	PASS	70-130
Std4-10/100 ppb	ICAL	1	79016.4	76652.3	103.08	PASS	70-130
Std5-20/200 ppb	ICAL	1	83315	76652.3	108.69	PASS	70-130
Std6-40/400 ppb	ICAL	1	81787.3	76652.3	106.7	PASS	70-130
Std7-100/1000 ppb	ICAL	1	81828.5	76652.3	106.75	PASS	70-130
Std8-200/2000 ppb	ICAL	1	84394.9	76652.3	110.1	PASS	70-130
ICV	ICV	1	75525.2	76652.3	98.53	PASS	70-130
ICB	ICB	1	79778.7	76652.3	104.08	PASS	70-130
LLICV	CCV1	1	78660.7	76652.3	102.62	PASS	70-130
ICSA1	ICSA	1	97947.9	76652.3	127.78	PASS	70-130
ICSAB1	ICSAB	1	86750.2	76652.3	113.17	PASS	70-130
MB-54044	MBLK	1	81608.2	76652.3	106.47	PASS	70-130
LCS-54044	LCS	1	98207.5	76652.3	128.12	PASS	70-130
N017415-004B	SAMP	1	83238.7	76652.3	108.59	PASS	70-130
N017415-004A	SAMP	1	80698.8	76652.3	105.28	PASS	70-130
N017415-005B	SAMP	1	84895.2	76652.3	110.75	PASS	70-130
N017415-005A	SAMP	1	82205.3	76652.3	107.24	PASS	70-130
N017457-006B	SAMP	1	87045.4	76652.3	113.56	PASS	70-130
N017457-006A	SAMP	1	90179.8	76652.3	117.65	PASS	70-130
N017457-006B	SAMP	5	83928.4	76652.3	109.49	PASS	70-130
N017457-006B-PS	PS	1	83388.6	76652.3	108.79	PASS	70-130
CCV1	CCV	1	82389.4	76652.3	107.48	PASS	70-130
CCB1	CCB	1	79948	76652.3	104.3	PASS	70-130
N017457-006B-MS	MS	1	82016.5	76652.3	107	PASS	70-130
N017457-006B-MSD	MSD	1	82557.2	76652.3	107.7	PASS	70-130
CCV2	CCV	1	80069.2	76652.3	104.46	PASS	70-130
CCB2	CCB	1	78928.7	76652.3	102.97	PASS	70-130
LLCCV1	CCV1	1	78723.1	76652.3	102.7	PASS	70-130
ICSA2	ICSA	1	86367.2	76652.3	112.67	PASS	70-130
ICSAB2	ICSAB	1	83017.9	76652.3	108.3	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 200.8
Analysis Date: 11/4/2015

Matrix: Groundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, As, Cd, Co, Pb, Mn, V & Zn. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001B DT 5X	Chromium	ug/L	0.583170	NA	0.506225	15.20%	10
N017400-001B DT 5X	Arsenic	ug/L	1.166552	NA	1.065165	9.52%	10
N017400-001B DT 5X	Barium	ug/L	26.681482	PASS	27.442941	2.77%	10
N017400-001B DT 5X	Cadmium	ug/L	0	NA	0		10
N017400-001B DT 5X	Cobalt	ug/L	0	NA	0		10
N017400-001B DT 5X	Lead	ug/L	0	NA	0		10
N017400-001B DT 5X	Manganese	ug/L	0.370024	NA	0.300620	23.09%	10
N017400-001B DT 5X	Vanadium	ug/L	3.198626	NA	2.626412	21.79%	10
N017400-001B DT 5X	Zinc	ug/L	0	NA	0.311025	100.00%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 200.8
Analysis Date: 11/9/2015

Matrix: Groundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Sb,Be,Cu,Mo,Ni,Se & Tl. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001B DT 5X	Antimony	ug/L	0.000000	NA	0		10
N017400-001B DT 5X	Beryllium	ug/L	0.000000	NA	0		10
N017400-001B DT 5X	Copper	ug/L	0.000000	NA	0		10
N017400-001B DT 5X	Molybdenum	ug/L	14.332115	NA	11.579524	23.77%	10
N017400-001B DT 5X	Nickel	ug/L	0.000000	NA	0.067993	100.00%	10
N017400-001B DT 5X	Selenium	ug/L	3.279730	NA	3.278219	0.05%	10
N017400-001B DT 5X	Thallium	ug/L	0.593478	NA	0.056803	944.81%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 200.8
Analysis Date: 11/10/2015

Matrix: Groundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Ag. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001B DT 5X	Silver	ug/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 200.8
Analysis Date: 11/12/2015

Matrix: Groundwater
Batch No.: 54044

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017457-006B DT 5X	Chromium	ug/L	2.047539	NA	1.940652	5.51%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017400-001B-PS**	SampType: **PS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **ZZZZZZ**	Batch ID: **52909**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.985	0.10	10.00	1.065	89.2	80	120				
Barium	118.281	1.0	100.0	27.44	90.8	80	120				
Cadmium	8.654	0.50	10.00	0	86.5	80	120				
Chromium	8.516	1.0	10.00	0.5062	80.1	80	120				
Cobalt	7.266	0.50	10.00	0	72.7	80	120				S
Lead	8.976	1.0	10.00	0	89.8	80	120				
Manganese	80.622	0.50	100.0	0.3006	80.3	80	120				
Vanadium	11.171	1.0	10.00	2.626	85.4	80	120				
Zinc	83.268	10	100.0	0.3110	83.0	80	120				

Sample ID **N017400-001B-PS**	SampType: **PS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104066**
Client ID: **ZZZZZZ**	Batch ID: **52909**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.537	0.50	10.00	0	105	80	120				
Beryllium	10.705	0.50	10.00	0	107	80	120				
Copper	9.258	1.0	10.00	0	92.6	80	120				
Molybdenum	14.162	0.50	10.00	11.58	25.8	80	120				S
Nickel	10.168	1.0	10.00	0.06799	101	80	120				
Selenium	9.440	0.50	10.00	3.278	61.6	80	120				S
Thallium	10.029	0.50	10.00	0.05680	99.7	80	120				

Sample ID **N017400-001B-PS**	SampType: **PS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ZZZZZZ**	Batch ID: **52909**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.929	0.50	10.00	0	99.3	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**N017400-001B-PS**	SampType: **PS**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID:	**ZZZZZZ**	Batch ID: **52909**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.516	1.0	10.00	0.5062	80.1	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N017457-006B-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	104147
Client ID:	ZZZZZZ	Batch ID:	54044	TestNo:	EPA 200.8			Analysis Date:	11/12/2015	SeqNo:	2137562

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.676	1.0	10.00	1.941	97.3	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICPMS**
Method Number: EPA 6020/200.8
Preparation Method: EPA 3010/200.8_PR
Analysis Date(s): 3/13/2015; 3/14/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **ICPMS-02**

Acceptance Criteria: MDL < spike < 10XMDL

		Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
27	Al	Aluminum	1.428	1.454	1.368	1.790	1.039	1.487	1.501	1.0	0.22163	3.143	**0.6966**	10	OK,meets criteria
121	Sb	Antimony	0.114	0.097	0.093	0.091	0.109	0.103	0.102	0.10	0.0083	3.143	**0.0262**	0.50	OK,meets criteria
75	As	Arsenic	0.057	0.049	0.046	0.056	0.051	0.059	0.058	0.050	0.00502	3.143	**0.0158**	0.10	OK,meets criteria
137	Ba	Barium	0.116	0.107	0.137	0.115	0.117	0.175	0.126	0.10	0.02298	3.143	**0.0722**	1.0	OK,meets criteria
9	Be	Beryllium	0.102	0.082	0.086	0.081	0.091	0.100	0.094	0.10	0.00834	3.143	**0.0262**	0.50	OK,meets criteria
11	B	Boron	2.773	2.788	2.855	4.317	3.713	3.448	3.231	2.5	0.57291	3.143	**1.801**	50	OK,meets criteria
111	Cd	Cadmium	0.042	0.043	0.049	0.041	0.042	0.048	0.044	0.050	0.00313	3.143	**0.0098**	0.50	OK,meets criteria
52	Cr	Chromium	0.181	0.200	0.197	0.258	0.196	0.191	0.175	0.25	0.02725	3.143	**0.0856**	1.0	OK,meets criteria
59	Co	Cobalt	0.056	0.047	0.055	0.045	0.051	0.049	0.054	0.050	0.00420	3.143	**0.0132**	0.50	OK,meets criteria
63	Cu	Copper	0.437	0.463	0.447	0.423	0.445	0.424	0.659	0.50	0.08399	3.143	**0.2640**	1.0	OK,meets criteria
56	Fe	Iron	1.231	1.163	1.267	1.061	1.088	1.188	1.211	1.0	0.07499	3.143	**0.2357**	10	OK,meets criteria
208	Pb	Lead	0.227	0.237	0.232	0.278	0.246	0.234	0.243	0.25	0.01696	3.143	**0.0533**	1.0	OK,meets criteria
55	Mn	Manganese	0.077	0.082	0.067	0.065	0.081	0.066	0.075	0.10	0.00723	3.143	**0.0227**	0.50	OK,meets criteria
95	Mo	Molybdenum	0.092	0.084	0.090	0.077	0.106	0.094	0.097	0.10	0.00927	3.143	**0.0291**	0.50	OK,meets criteria
60	Ni	Nickel	0.107	0.073	0.074	0.082	0.095	0.091	0.085	0.10	0.01207	3.143	**0.0379**	1.0	OK,meets criteria
78	Se	Selenium	0.094	0.100	0.055	0.078	0.125	0.074	0.092	0.10	0.02217	3.143	**0.0697**	0.50	OK,meets criteria
107	Ag	Silver	0.099	0.084	0.086	0.083	0.095	0.098	0.099	0.10	0.00735	3.143	**0.0231**	0.50	OK,meets criteria
205	Tl	Thallium	0.106	0.077	0.080	0.074	0.089	0.084	0.090	0.10	0.01072	3.143	**0.0337**	0.50	OK,meets criteria
118	Sn	Tin	0.219	0.228	0.218	0.307	0.256	0.235	0.247	0.25	0.03098	3.143	**0.0974**	10	OK,meets criteria
47	Ti	Titanium	0.101	0.136	0.084	0.094	0.105	0.089	0.134	0.10	0.02092	3.143	**0.0658**	10	OK,meets criteria
238	U	Uranium	0.109	0.093	0.094	0.094	0.112	0.104	0.111	0.10	0.00858	3.143	**0.0270**	0.50	OK,meets criteria
51	V	Vanadium	0.136	0.128	0.116	0.135	0.127	0.121	0.136	0.10	0.00785	3.143	**0.0247**	1.0	OK,meets criteria
66	Zn	Zinc	0.075	0.056	0.082	0.078	0.093	0.092	0.082	0.10	0.01242	3.143	**0.0390**	10	OK,meets criteria

SM 2130B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103883 **Analyst:** LSR

ASSET #: N017415 **Date Analyzed:** 10/29/2015

Method: EPA 2130

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/3/2015

2nd Level Reviewer: Mary 11/12/2015 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Turbidity Preparation and Runlog

Date Analyzed: 10/29/15
Time Analyzed: 1350
Analyzed By: LSR

Sample ID.	Matrix	Sample Vol (ml)	Std Code	Dilution (F/I)	Reading	Calculations	Comments
0.02 NTU			CMW-150528 A		0.02 NTU		
20			B		19.47		
100			C		99.9		
800			D		792		

1)	MB	H_2O	10		1	0 NTU		
2)	X01741S-001D					0.31		
3)	-002D					0.37		
4)	-003D					0.29		
5)	-004D					1.30		
6)	-005D					1.45		
7)	-005D DUP					1.47		
8)	-006D					0.45		
9)	-007D					0.49		
10)	-008DC					0.65		
11)								
12)								
13)	5 NTU			CMW-150119A		5.18 NTU		
14)	20			-150520 A		20.7		
15)	100			-150520 B		100		
16)								
17)							Julia Ramit	11/3/2015
18)								
19)								
20)								

Advanced Technology laboratories - Las Vegas Book #2

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103987
ASSET #: N017415

Instrument ID: IC-07
Analyst: REB
Date Analyzed: 11/4/2015

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/12/2015 Date: —

2nd Level Reviewer 11/12/2015 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N017415-001A** concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.5 * 1$$

$$= 0.5$$

Reporting result in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 0.50}$$



ANALYSIS RUN LOG

INJECTION LOG: 151103A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:20 PM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:31 PM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/03/15 2:41 PM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/03/15 2:54 PM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:05 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:14 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:24 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/03/15 3:57 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/03/15 4:08 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/03/15 4:17 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151103A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Nov/15 14:56:43**
No. of Injections:	**15**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		11/03/2015 14:20	Finished	BLANK
2	Blank	2	1000	Unknown		11/03/2015 14:31	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/03/2015 14:41	Finished	INSTRUMENT BLANK
4	0.2 ppb	4	1000	Calibration Standard	01	11/03/2015 14:54	Finished	0.2 ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	02	11/03/2015 15:05	Finished	1.0 ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	03	11/03/2015 15:14	Finished	5.0 ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	04	11/03/2015 15:24	Finished	10 ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	05	11/03/2015 15:33	Finished	15 ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	06	11/03/2015 15:43	Finished	20 ppb, IWST151103A
10	ICV,ICV,1,	10	1000	Unknown		11/03/2015 15:57	Finished	ICV @ 5ppb, IWST 151103B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		11/03/2015 16:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		11/03/2015 16:17	Finished	ICB R151005A
13	SHUTDOWN	13	1000	Unknown		11/03/2015 16:27	Finished	BLANK
14	Eluent: R151103A	14	1000	Unknown		n.a.	Finished	Eluent
15	PCR: R151030A	15	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 151104A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:20 PM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:31 PM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/03/15 2:41 PM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/03/15 2:54 PM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:05 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:14 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:24 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	11/04/15 9:42 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	11/04/15 9:53 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/04/15 10:03 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	11/04/15 10:12 AM	Reported
14	MB-R103987	MBLK	1	Hexavalent Chromium	11/04/15 10:21 AM	Reported
15	LCS-R103987	LCS	1	Hexavalent Chromium	11/04/15 10:31 AM	Reported
16	N017466-001A	SAMP	1	Hexavalent Chromium	11/04/15 10:40 AM	Reported
17	N017466-001ADUP	DUP	1	Hexavalent Chromium	11/04/15 10:50 AM	Reported
18	N017466-001AMS	MS	1	Hexavalent Chromium	11/04/15 10:59 AM	Reported
19	N017466-001AMSD	MSD	1	Hexavalent Chromium	11/04/15 11:09 AM	Reported
20	N017353-009A	SAMP	1	Hexavalent Chromium	11/04/15 11:18 AM	Not Reported
21	N017353-009AMS	MS	1	Hexavalent Chromium	11/04/15 11:28 AM	Not Reported
22	N017349-001A	SAMP	1	Hexavalent Chromium	11/04/15 11:37 AM	Not Reported
23	N017349-001AMS	MS	1	Hexavalent Chromium	11/04/15 11:47 AM	Not Reported
24	CCV-1	CCV	1	Hexavalent Chromium	11/04/15 11:56 AM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	11/04/15 12:06 PM	Reported
26	N017471-001F	SAMP	1	Hexavalent Chromium	11/04/15 12:15 PM	Reported
27	N017471-001FREP	DUP	1	Hexavalent Chromium	11/04/15 12:24 PM	Reported
28	N017415-001A	SAMP	1	Hexavalent Chromium	11/04/15 12:37 PM	Reported
29	N017415-001AMS	MS	1	Hexavalent Chromium	11/04/15 12:49 PM	Reported
30	N017415-002A	SAMP	1	Hexavalent Chromium	11/04/15 12:58 PM	Reported
31	N017415-002AMS	MS	1	Hexavalent Chromium	11/04/15 1:07 PM	Reported
32	N017415-003A	SAMP	1	Hexavalent Chromium	11/04/15 1:17 PM	Reported
33	N017415-003AMS	MS	1	Hexavalent Chromium	11/04/15 1:26 PM	Reported
34	N017415-004A	SAMP	1	Hexavalent Chromium	11/04/15 1:36 PM	Reported
35	N017415-004AMS	MS	1	Hexavalent Chromium	11/04/15 1:45 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	11/04/15 1:55 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	11/04/15 2:04 PM	Reported
38	N017415-005A	SAMP	1	Hexavalent Chromium	11/04/15 2:14 PM	Reported
39	N017415-005A	SAMP	1	Hexavalent Chromium	11/04/15 2:23 PM	Not Reported
40	N017415-006A	SAMP	1	Hexavalent Chromium	11/04/15 2:33 PM	Reported
41	N017415-006AMS	MS	1	Hexavalent Chromium	11/04/15 2:42 PM	Reported
42	N017415-007A	SAMP	1	Hexavalent Chromium	11/04/15 2:52 PM	Reported
43	N017415-007AMS	MS	1	Hexavalent Chromium	11/04/15 3:01 PM	Reported
44	N017415-008A	SAMP	1	Hexavalent Chromium	11/04/15 3:10 PM	Not Reported

INJECTION LOG: 151104A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
45	N017415-008AMS	MS	1	Hexavalent Chromium	11/04/15 3:20 PM	Not Reported
46	N017415-009A	SAMP	1	Hexavalent Chromium	11/04/15 3:29 PM	Reported
47	N017415-009AMS	MS	1	Hexavalent Chromium	11/04/15 3:48 PM	Reported
48	CCV-4	CCV	1	Hexavalent Chromium	11/04/15 4:00 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	11/04/15 4:09 PM	Reported
50	N017415-005AMS	MS	1	Hexavalent Chromium	11/04/15 4:19 PM	Reported
51	N017415-008A	SAMP	2	Hexavalent Chromium	11/04/15 4:28 PM	Reported
52	N017415-008AMS	MS	2	Hexavalent Chromium	11/04/15 4:37 PM	Reported
53	N017458-001A	SAMP	1	Hexavalent Chromium	11/04/15 4:56 PM	Reported
54	N017458-002A	SAMP	1	Hexavalent Chromium	11/04/15 5:07 PM	Reported
55	N017458-003A	SAMP	20	Hexavalent Chromium	11/04/15 5:17 PM	Reported
56	N017458-004A	SAMP	1	Hexavalent Chromium	11/04/15 5:26 PM	Reported
57	N017458-005A	SAMP	50	Hexavalent Chromium	11/04/15 5:35 PM	Reported
58	N017458-006A	SAMP	1	Hexavalent Chromium	11/04/15 5:45 PM	Not Reported
59	N017458-007A	SAMP	1	Hexavalent Chromium	11/04/15 5:54 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	11/04/15 6:04 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	11/04/15 6:13 PM	Reported
62	MB-R103990	MBLK	1	Hexavalent Chromium	11/04/15 6:23 PM	Reported
63	LCS-R103990	LCS	1	Hexavalent Chromium	11/04/15 6:32 PM	Reported
64	N017458-006A	SAMP	2	Hexavalent Chromium	11/04/15 6:42 PM	Reported
65	N017458-006ADUP	DUP	2	Hexavalent Chromium	11/04/15 6:51 PM	Reported
66	N017458-006AMS	MS	2	Hexavalent Chromium	11/04/15 7:01 PM	Reported
67	N017458-006AMSD	MSD	2	Hexavalent Chromium	11/04/15 7:10 PM	Reported
68	N017458-008A	SAMP	100	Hexavalent Chromium	11/04/15 7:20 PM	Not Reported
69	N017458-009A	SAMP	1000	Hexavalent Chromium	11/04/15 7:29 PM	Reported
70	N017458-010A	SAMP	20	Hexavalent Chromium	11/04/15 7:38 PM	Reported
71	N017458-011A	SAMP	50	Hexavalent Chromium	11/04/15 7:48 PM	Reported
72	CCV-6	CCV	1	Hexavalent Chromium	11/04/15 7:57 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	11/04/15 8:07 PM	Reported
74	N017458-012A	SAMP	200	Hexavalent Chromium	11/04/15 8:16 PM	Reported
75	N017458-013A	SAMP	10	Hexavalent Chromium	11/04/15 8:26 PM	Not Reported
76	N017458-014A	SAMP	1	Hexavalent Chromium	11/04/15 8:35 PM	Reported
77	N017458-015A	SAMP	1	Hexavalent Chromium	11/04/15 8:45 PM	Reported
78	N017458-016A	SAMP	1	Hexavalent Chromium	11/04/15 8:54 PM	Reported
79	N017458-017A	SAMP	1	Hexavalent Chromium	11/04/15 9:04 PM	Reported
80	N017458-018A	SAMP	1	Hexavalent Chromium	11/04/15 9:13 PM	Reported
81	N017459-001A	SAMP	1	Hexavalent Chromium	11/04/15 9:23 PM	Reported
82	N017459-001AMS	MS	1	Hexavalent Chromium	11/04/15 9:32 PM	Reported
83	CCV-7	CCV	1	Hexavalent Chromium	11/04/15 9:41 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	11/04/15 9:51 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151104A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Nov/15 20:23:42**
No. of Injections:	**87**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		11/03/2015 14:20	Finished	BLANK
2	Blank	2	1000	Unknown		11/03/2015 14:31	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/03/2015 14:41	Finished	INSTRUMENT BLANK
4	0.2 ppb	4	1000	Calibration Standard	01	11/03/2015 14:54	Finished	0.2 ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	02	11/03/2015 15:05	Finished	1.0 ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	03	11/03/2015 15:14	Finished	5.0 ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	04	11/03/2015 15:24	Finished	10 ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	05	11/03/2015 15:33	Finished	15 ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	06	11/03/2015 15:43	Finished	20 ppb, IWST151103A
10	BLANK	1	1000	Unknown		11/04/2015 09:42	Finished	BLANK
11	CCV-1,CCV,1,	2	1000	Unknown		11/04/2015 09:53	Finished	ICV @ 5ppb, IWST 151103B
12	PQL@0.2ppb,CCV2,1	3	1000	Unknown		11/04/2015 10:03	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	4	1000	Unknown		11/04/2015 10:12	Finished	CCB
14	MB-H2O,MBLK,1	5	1000	Unknown		11/04/2015 10:21	Finished	MB
15	LCS-H2O,LCS,1	6	1000	Unknown		11/04/2015 10:31	Finished	LCS,5ppb, IWST-151103B
16	N017466-001A,SAMP	7	1000	Unknown		11/04/2015 10:40	Finished	SAMP, 10mL
17	N017466-001ADUP,D	8	1000	Unknown		11/04/2015 10:50	Finished	DUP, 10mL
18	N017466-001AMS,MS	9	1000	Unknown		11/04/2015 10:59	Finished	MS(5ppb), IWST-151103B, 10r
19	N017466-001AMSD,M	10	1000	Unknown		11/04/2015 11:09	Finished	MSD(5ppb), IWST-151103B, 1
20	N017353-009A,SAMP	11	1000	Unknown		11/04/2015 11:18	Finished	SAMP, 10mL
21	N017353-009AMS,MS	12	1000	Unknown		11/04/2015 11:28	Finished	MS(5ppb), IWST-151103B, 10r
22	N017349-001A,SAMP	13	1000	Unknown		11/04/2015 11:37	Finished	SAMP, 10mL
23	N017349-001AMS,MS	14	1000	Unknown		11/04/2015 11:47	Finished	MS(5ppb), IWST-151103B, 10r
24	CCV-1,CCV,1,	15	1000	Unknown		11/04/2015 11:56	Finished	CCV @10ppb, IWST-151103A
25	CCB-1,CCB,1,	16	1000	Unknown		11/04/2015 12:06	Finished	CCB
26	~~N017471-001A,SAMP~~	17	1000	Unknown		11/04/2015 12:15	Finished	SAMP, 10mL N017471-001F,SAMP,1
27	~~N017471-001AREP,D~~	18	1000	Unknown		11/04/2015 12:24	Finished	REP, 10mL N017471-001FREP,DUP,1
28	N017415-001A,SAMP	19	1000	Unknown		11/04/2015 12:37	Finished	SAMP, 10mL
29	N017415-001AMS,MS	20	1000	Unknown		11/04/2015 12:49	Finished	MS(1ppb), IWST-151103B, 10r
30	N017415-002A,SAMP	21	1000	Unknown		11/04/2015 12:58	Finished	SAMP, 10mL
31	N017415-002AMS,MS	22	1000	Unknown		11/04/2015 13:07	Finished	MS(1ppb), IWST-151103B, 10r
32	N017415-003A,SAMP	23	1000	Unknown		11/04/2015 13:17	Finished	SAMP, 10mL
33	N017415-003AMS,MS	24	1000	Unknown		11/04/2015 13:26	Finished	MS(1ppb), IWST-151103B, 10r
34	N017415-004A,SAMP	25	1000	Unknown		11/04/2015 13:36	Finished	SAMP, 10mL
35	N017415-004AMS,MS	26	1000	Unknown		11/04/2015 13:45	Finished	MS(1ppb), IWST-151103B, 10r
36	CCV-3,CCV,1,	27	1000	Unknown		11/04/2015 13:55	Finished	CCV @5ppb, IWST-151103A
37	CCB-3,CCB,1,	28	1000	Unknown		11/04/2015 14:04	Finished	CCB
38	N017415-005A,SAMP	29	1000	Unknown		11/04/2015 14:14	Finished	SAMP, 10mL
39	N017415-005A,SAMP	30	1000	Unknown		11/04/2015 14:23	Finished	MS(1ppb), IWST-151103B, 10r
40	N017415-006A,SAMP	31	1000	Unknown		11/04/2015 14:33	Finished	SAMP, 10mL
41	N017415-006AMS,MS	32	1000	Unknown		11/04/2015 14:42	Finished	MS(1ppb), IWST-151103B, 10r
42	N017415-007A,SAMP	33	1000	Unknown		11/04/2015 14:52	Finished	SAMP, 10mL
43	N017415-007AMS,MS	34	1000	Unknown		11/04/2015 15:01	Finished	MS(1ppb), IWST-151103B, 10r
44	N017415-008A,SAMP	35	1000	Unknown		11/04/2015 15:10	Finished	SAMP, 10mL
45	N017415-008AMS,MS	36	1000	Unknown		11/04/2015 15:20	Finished	MS(1ppb), IWST-151103B, 10r
46	N017415-009A,SAMP	37	1000	Unknown		11/04/2015 15:29	Finished	SAMP, 10mL
47	N017415-009AMS,MS	38	1000	Unknown		11/04/2015 15:48	Finished	MS(1ppb), IWST-151103B, 10r
48	CCV-4,CCV,1,	39	1000	Unknown		11/04/2015 16:00	Finished	CCV @10ppb, IWST-151103A
49	CCB-4,CCB,1,	40	1000	Unknown		11/04/2015 16:09	Finished	CCB
50	N017415-005AMS,MS	41	1000	Unknown		11/04/2015 16:19	Finished	MS(5ppb), IWST-151103B, 10r
51	N017415-008A,SAMP	42	1000	Unknown		11/04/2015 16:28	Finished	SAMP, 5mL to 10mL
52	N017415-008AMS,MS	43	1000	Unknown		11/04/2015 16:37	Finished	MS(5ppb), IWST-151103B, 10r
53	N017458-001A,SAMP	1	1000	Unknown		11/04/2015 16:56	Finished	SAMP, 10mL
54	N017458-002A,SAMP	2	1000	Unknown		11/04/2015 17:07	Finished	SAMP, 10mL
55	N017458-003A,SAMP	3	1000	Unknown		11/04/2015 17:17	Finished	SAMP, 0.5mL to 10mL
56	N017458-004A,SAMP	4	1000	Unknown		11/04/2015 17:26	Finished	SAMP, 10mL
57	N017458-005A,SAMP	5	1000	Unknown		11/04/2015 17:35	Finished	SAMP, 0.2mL to 10mL
58	N017458-006A,SAMP	6	1000	Unknown		11/04/2015 17:45	Finished	SAMP, 10mL
59	N017458-007A,SAMP	7	1000	Unknown		11/04/2015 17:54	Finished	SAMP, 10mL
60	CCV-5,CCV,1,	8	1000	Unknown		11/04/2015 18:04	Finished	CCV @5ppb, IWST-151103A

61	CCB-5,CCB,1,	9	1000	Unknown		11/04/2015 18:13	Finished	CCB
62	MB-H2O,MBLK,1	10	1000	Unknown		11/04/2015 18:23	Finished	MB
63	LCS-H2O.LCS,1	11	1000	Unknown		11/04/2015 18:32	Finished	LCS,5ppb, IWST-151103B
64	N017458-006A,SAMP	12	1000	Unknown		11/04/2015 18:42	Finished	SAMP, 5mL to 10mL
65	N017458-006ADUP,D	13	1000	Unknown		11/04/2015 18:51	Finished	DUP, 5mL to 10mL
66	N017458-006AMS,MS	14	1000	Unknown		11/04/2015 19:01	Finished	MS(5ppb), IWST-151103B, 10r
67	N017458-006AMSD,M	15	1000	Unknown		11/04/2015 19:10	Finished	MSD(5ppb), IWST-151103B, 1
68	N017458-008A,SAMP	16	1000	Unknown		11/04/2015 19:20	Finished	SAMP, 0.1mL to 10mL
69	N017458-009A,SAMP	17	1000	Unknown		11/04/2015 19:29	Finished	SAMP, 0.01mL to 10mL
70	N017458-010A,SAMP	18	1000	Unknown		11/04/2015 19:38	Finished	SAMP, 0.5mL to 10mL
71	N017458-011A,SAMP	19	1000	Unknown		11/04/2015 19:48	Finished	SAMP, 0.2mL to 10mL
72	CCV-6,CCV,1,	20	1000	Unknown		11/04/2015 19:57	Finished	CCV @10ppb, IWST-151103A
73	CCB-6,CCB,1,	21	1000	Unknown		11/04/2015 20:07	Finished	CCB
74	N017458-012A,SAMP	22	1000	Unknown		11/04/2015 20:16	Finished	SAMP, 0.05mL to 10mL
75	N017458-013A,SAMP	23	1000	Unknown		11/04/2015 20:26	Finished	SAMP, 1mL to 10mL
76	N017458-014A,SAMP	24	1000	Unknown		11/04/2015 20:35	Finished	SAMP, 10mL
77	N017458-015A,SAMP	25	1000	Unknown		11/04/2015 20:45	Finished	SAMP, 10mL
78	N017458-016A,SAMP	26	1000	Unknown		11/04/2015 20:54	Finished	SAMP, 10mL
79	N017458-017A,SAMP	27	1000	Unknown		11/04/2015 21:04	Finished	SAMP, 10mL
80	N017458-018A,SAMP	28	1000	Unknown		11/04/2015 21:13	Finished	SAMP, 10mL
81	N017459-001A,SAMP	29	1000	Unknown		11/04/2015 21:23	Finished	SAMP, 10mL
82	N017459-001AMS,MS	30	1000	Unknown		11/04/2015 21:32	Finished	SAMP, 10mL
83	CCV-7,CCV,1,	31	1000	Unknown		11/04/2015 21:41	Finished	CCV @5ppb, IWST-151103A
84	CCB-7,CCB,1,	32	1000	Unknown		11/04/2015 21:51	Finished	CCB
85	SHUTDOWN	33	1000	Unknown		11/04/2015 22:00	Finished	BLANK
86	Eluent: R151103A	34	1000	Unknown		n.a.	Finished	Eluent
87	PCR: R151104B	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 10/29/15
Time Prepared: 01:00pm
Prepared By: MEM

slope: 96.6%
pH4 - 4.00
7 - 6.99
10 - 10.05
LCS - 7.03

Reagent ID:
Sulfuric Acid: CIW-150715G
Diphenylcarbazide: CIW-150414B
NH4OH + NH4SO4 eluent: R151103A
NH4OH + NH4SO4 buffer: R151018C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N017415-002A	9.53	-	-	-	-	R-151018C
2)	2A	9.54	-	-	-	-	
3)	3A	9.54	-	-	-	-	
4)	4A	9.53	-	-	-	-	
5)	5A	9.52	-	-	-	-	
6)	6A	9.55	-	-	-	-	
7)	7A	9.51	-	-	-	-	
8)	8A	9.58	-	-	-	-	
9)	9A	9.58	-	-	-	-	
10)							
11)							
12)							
13)							
14)							
15)							MEM 10/29/15

Sample Preparation

Date Prepared: 10/30/15
Time Prepared: 01:30pm
Prepared By: MEM

slope: 96.2%
pH4 - 4.01
7 - 6.99
10 - 10.04
LCS - 7.00

Reagent ID:
Sulfuric Acid: CIW-150715G
Diphenylcarbazide: CIW-150414B
NH4OH + NH4SO4 eluent: R151103A
NH4OH + NH4SO4 buffer: R151018C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N017427-001A	9.51	-	-	-	-	R-151018C
2)	2A	9.49	-	-	-	-	
3)	3A	9.59	-	-	-	-	
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							MEM 10/30/15
15)							

Logbook No. 9

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 11/3/2015

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0494	0.2326	1.1868	2.3404	3.5067	4.7278	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST151103A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **ICV**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/3/2015**	SeqNo: **2127794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.891	0.20	5.000	0	97.8	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **ZZZZZZ**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/3/2015**	SeqNo: **2127795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.207	0.20	0.2000	0	104	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCV**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.914	0.20	5.000	0	98.3	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **ZZZZZZ**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.198	0.20	0.2000	0	98.9	80	120				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCV**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.885	0.20	10.00	0	98.9	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCV**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.028	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCV**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.190	0.20	10.00	0	102	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCV**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.020	0.20	5.000	0	100	95	105				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **ICB**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/3/2015**	SeqNo: **2127796**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCB**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127799**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCB**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127807**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCB**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127819**

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

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **103987**
Client ID: **CCB**	Batch ID: **R103987**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2127828**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **103987**
Client ID: **CCB** Batch ID: **R103987** TestNo: **EPA 218.6** Analysis Date: **11/4/2015** SeqNo: **2127839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.016	0.20									

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 11/4/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.073	
CCV-1	5.057	
CCV-3	5.065	
CCV-4	5.065	
CCV-5	5.065	
CCV-6	5.065	
CCV-7	5.065	
Average	5.065	
Actual RT Window	4.985 - 5.145	
Applied RT Window	4.865 - 5.265	
MB-R103987	N.A.	N.A.
LCS-R103987	5.065	PASS
N017466-001A	5.048	PASS
N017466-001ADUP	5.048	PASS
N017466-001AMS	5.048	PASS
N017466-001AMSD	5.048	PASS
N017353-009A	5.065	PASS
N017353-009AMS	5.057	PASS
N017349-001A	4.940	PASS
N017349-001AMS	4.932	PASS
N017471-001F	5.057	PASS
N017471-001FREP	5.040	PASS
N017415-001A	4.948	PASS
N017415-001AMS	4.957	PASS
N017415-002A	4.957	PASS
N017415-002AMS	4.957	PASS
N017415-003A	4.957	PASS
N017415-003AMS	4.948	PASS
N017415-004A	4.932	PASS
N017415-004AMS	4.932	PASS
N017415-005A	4.932	PASS
N017415-005A	4.932	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 11/4/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.073	
CCV-1	5.057	
CCV-3	5.065	
CCV-4	5.065	
CCV-5	5.065	
CCV-6	5.065	
CCV-7	5.065	
Average	5.065	
Actual RT Window	4.985 - 5.145	
Applied RT Window	4.865 - 5.265	
N017415-006A	4.948	PASS
N017415-006AMS	4.957	PASS
N017415-007A	4.957	PASS
N017415-007AMS	4.957	PASS
N017415-008A	5.015	PASS
N017415-008AMS	4.998	PASS
N017415-009A	5.073	PASS
N017415-009AMS	5.065	PASS
N017415-005AMS	4.932	PASS
N017415-008A	5.040	PASS
N017415-008AMS	5.040	PASS
N017458-001A	5.048	PASS
N017458-002A	5.057	PASS
N017458-003A	5.065	PASS
N017458-004A	5.048	PASS
N017458-005A	5.065	PASS
N017458-006A	5.048	PASS
N017458-007A	5.048	PASS
MB-R103990	N.A.	N.A.
LCS-R103990	5.065	PASS
N017458-006A	5.057	PASS
N017458-006ADUP	5.057	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 11/4/2015

Sample Name	Retention Time	Evaluation
CCV-1	5.073	
CCV-1	5.057	
CCV-3	5.065	
CCV-4	5.065	
CCV-5	5.065	
CCV-6	5.065	
CCV-7	5.065	
Average	5.065	
Actual RT Window	4.985 - 5.145	
Applied RT Window	4.865 - 5.265	
N017458-006AMS	5.057	PASS
N017458-006AMSD	5.057	PASS
N017458-008A	5.065	PASS
N017458-009A	5.065	PASS
N017458-010A	5.065	PASS
N017458-011A	5.065	PASS
N017458-012A	5.065	PASS
N017458-013A	5.065	PASS
N017458-014A	N.A.	N.A.
N017458-015A	N.A.	N.A.
N017458-016A	N.A.	N.A.
N017458-017A	N.A.	N.A.
N017458-018A	5.057	PASS
N017459-001A	5.057	PASS
N017459-001AMS	5.065	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography**
Method Number: EPA 218.6 / EPA 7199
Analysis Date(s): 2/26/2015
Analyst: Ryan Balilu

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0329	0.0375	0.0281	0.0325	0.0403	0.0276	0.0265	0.0301	0.030	0.0049	2.998	**0.015**	**0.20**	OK,meets criteria

Students't Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 / EPA 7199 Unit: ug/L
Analysis Date(s): 3/16/2015
Analyst: Ryan Balilu

Instrument Name: **IC-07** **Acceptance Criteria:** MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0617	0.0578	0.0592	0.0604	0.0606	0.0686	0.0567	0.050	0.0039	3.143	**0.012**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 / EPA 7199 Unit: ug/L
Analysis Date(s): 3/5/2015
Analyst: Ryan Balilu

Instrument Name: **IC-01** **Acceptance Criteria:** MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0672	0.0679	0.0615	0.0664	0.0620	0.0637	0.0610	0.050	0.0029	3.143	**0.0090**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 151103A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:20 PM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:31 PM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/03/15 2:41 PM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/03/15 2:54 PM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:05 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:14 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:24 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:43 PM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/03/15 3:57 PM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/03/15 4:08 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/03/15 4:17 PM	Reported

11/10/201

Injection Log Summary

Sequence Details

Name:	**IC-07_151103A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Nov/15 14:56:43**
No. of Injections:	**15**	*Updated By:*	**ics 5000**

Injection Details

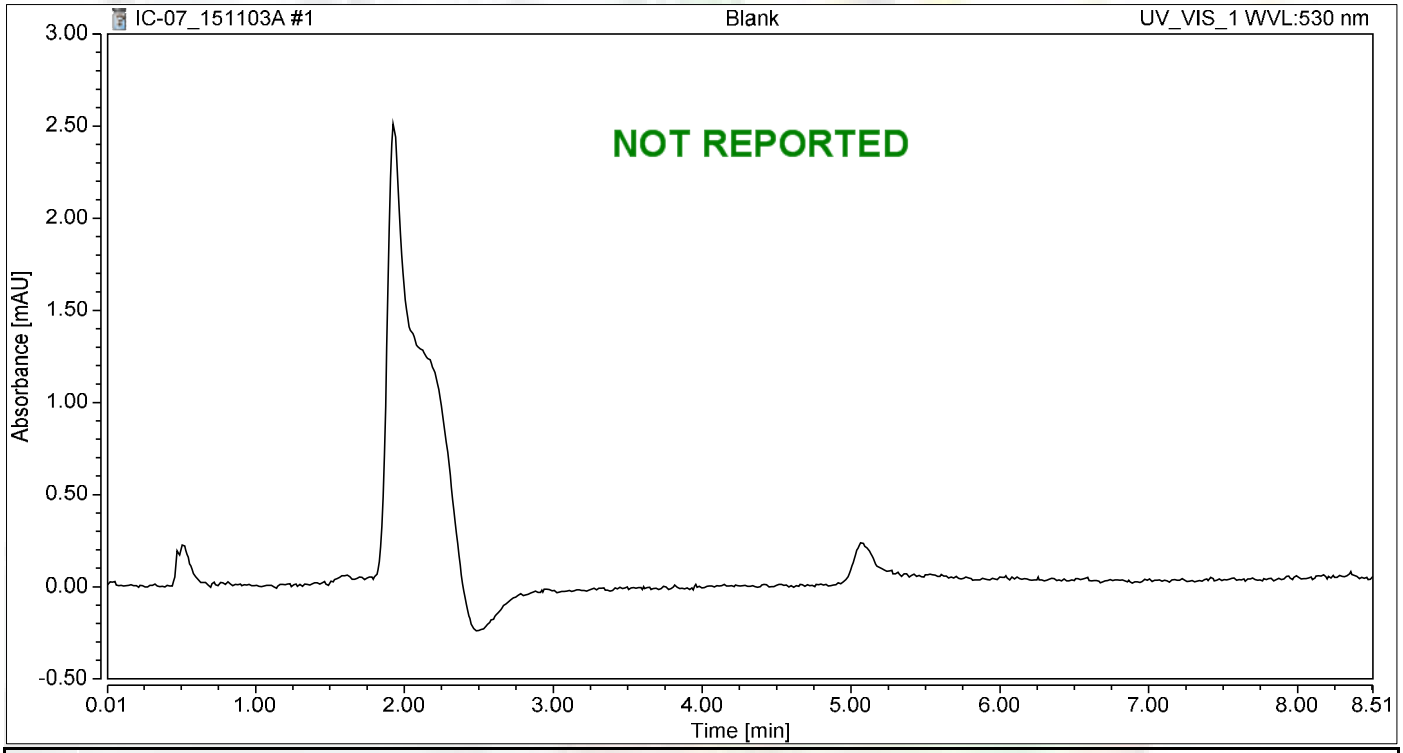
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		11/03/2015 14:20	Finished	BLANK
2	Blank	2	1000	Unknown		11/03/2015 14:31	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/03/2015 14:41	Finished	INSTRUMENT BLANK
4	0.2 ppb	4	1000	Calibration Standard	01	11/03/2015 14:54	Finished	0.2 ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	02	11/03/2015 15:05	Finished	1.0 ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	03	11/03/2015 15:14	Finished	5.0 ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	04	11/03/2015 15:24	Finished	10 ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	05	11/03/2015 15:33	Finished	15 ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	06	11/03/2015 15:43	Finished	20 ppb, IWST151103A
10	ICV,ICV,1,	10	1000	Unknown		11/03/2015 15:57	Finished	ICV @ 5ppb, IWST 151103B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		11/03/2015 16:08	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		11/03/2015 16:17	Finished	ICB R151005A
13	SHUTDOWN	13	1000	Unknown		11/03/2015 16:27	Finished	BLANK
14	Eluent: R151103A	14	1000	Unknown		n.a.	Finished	Eluent
15	PCR: R151030A	15	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**Blank**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

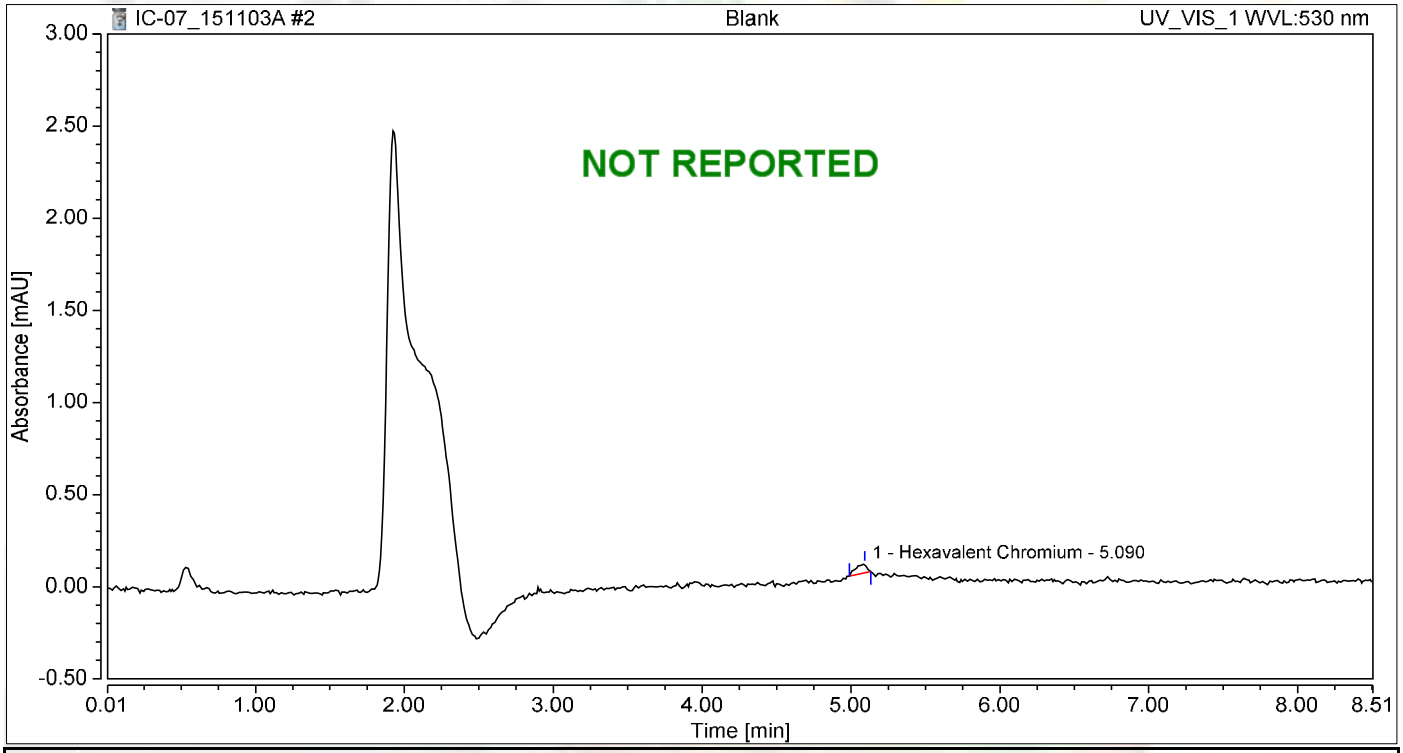
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**Blank**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

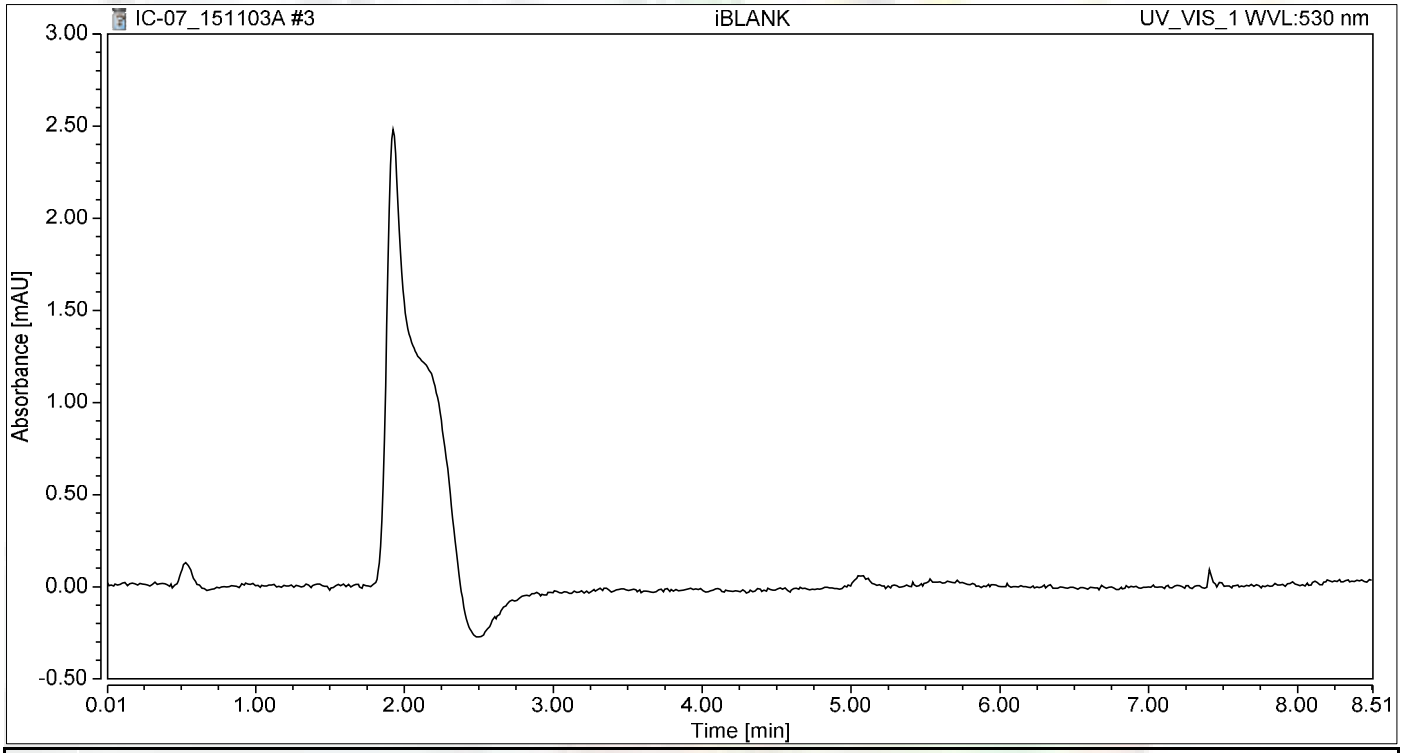
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.090	0.004	0.048	100.00	100.00	0.0183
Total:			**0.004**	**0.048**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

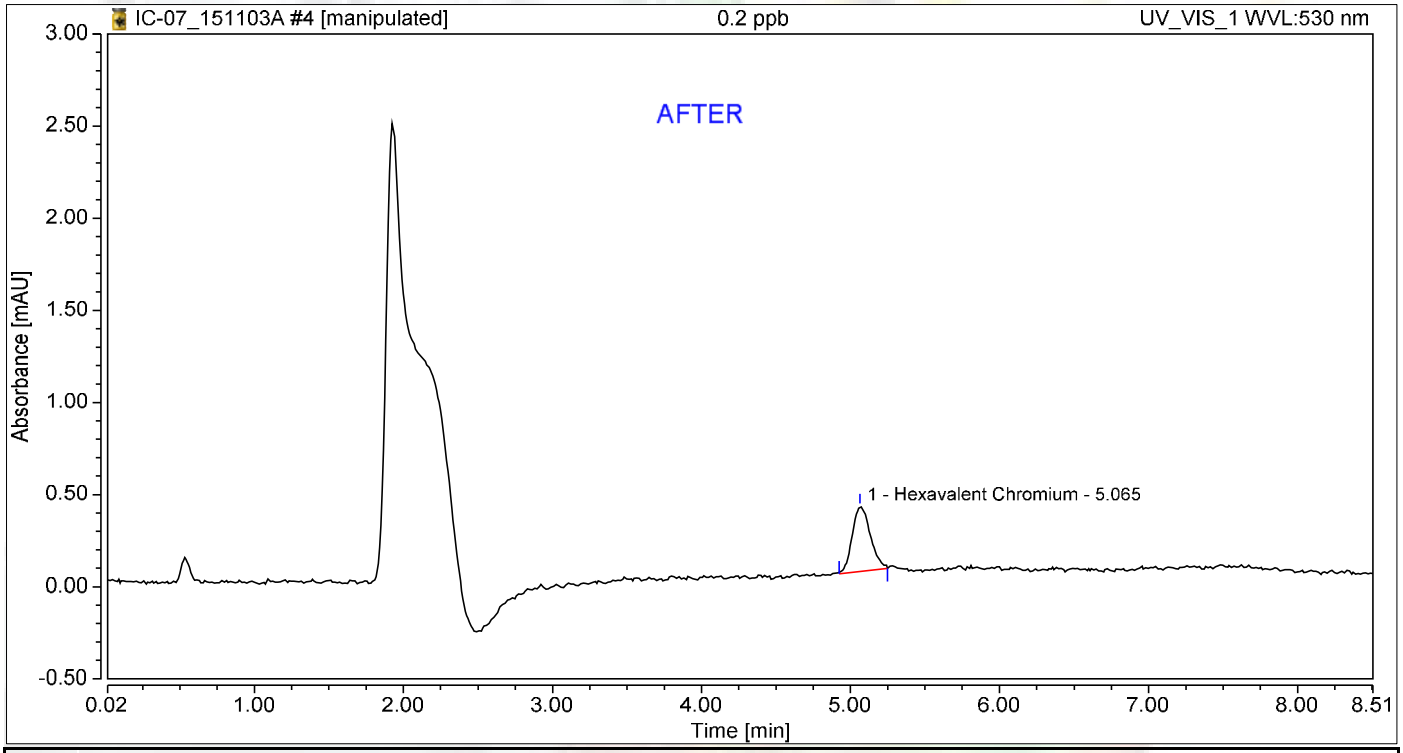
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.049	0.353	100.00	100.00	0.2100
Total:			**0.049**	**0.353**	**100.00**	**100.00**	

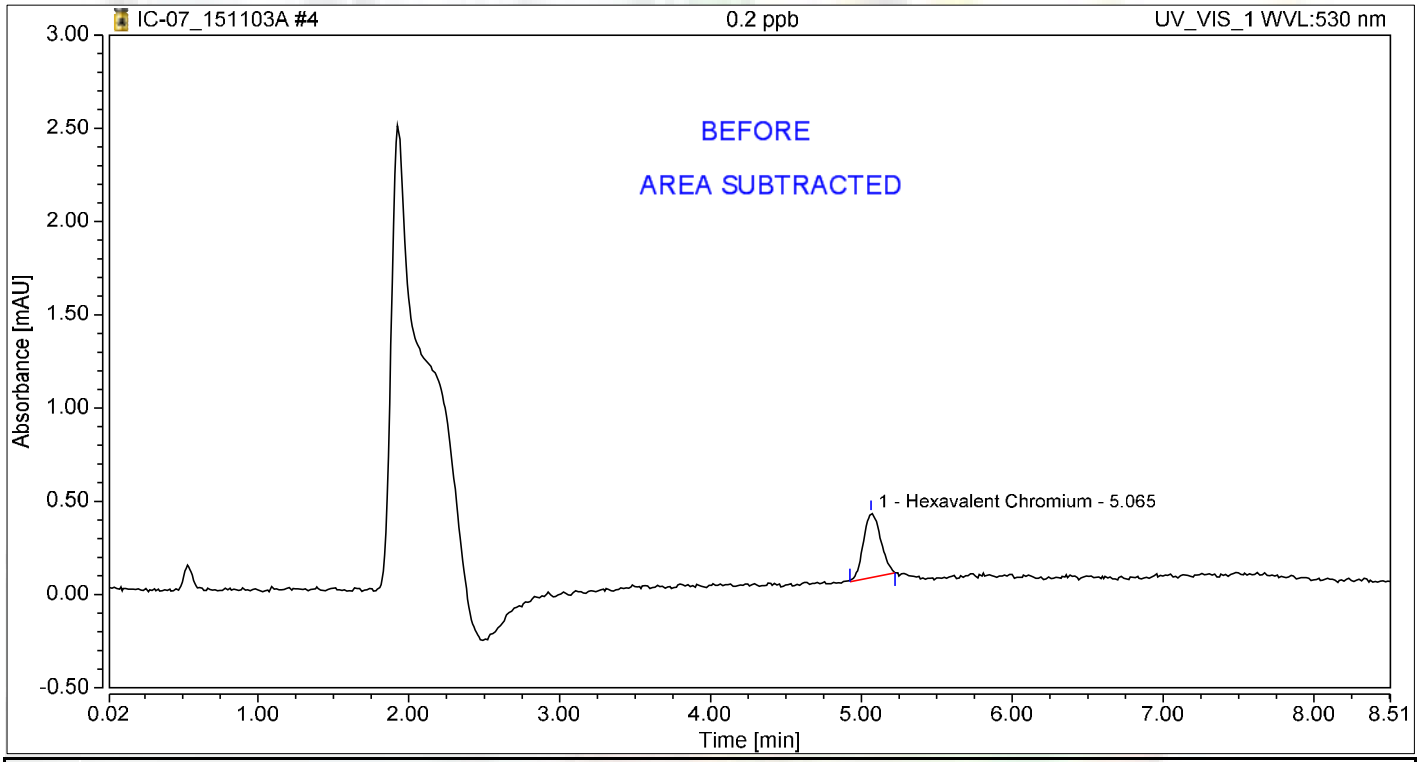
11/10/201

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

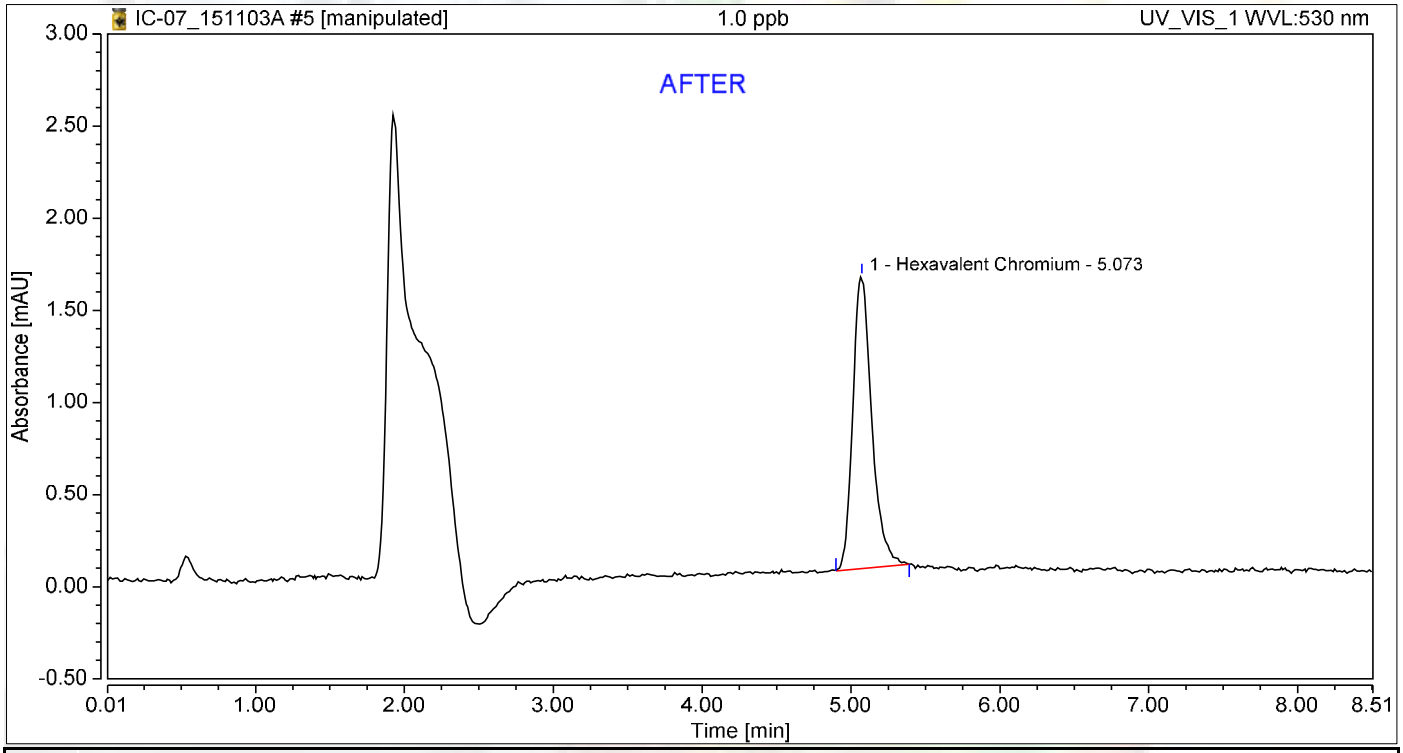
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.046	0.344	100.00	100.00	0.1960
Total:			**0.046**	**0.344**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.233	1.586	100.00	100.00	0.9884
Total:			**0.233**	**1.586**	**100.00**	**100.00**	

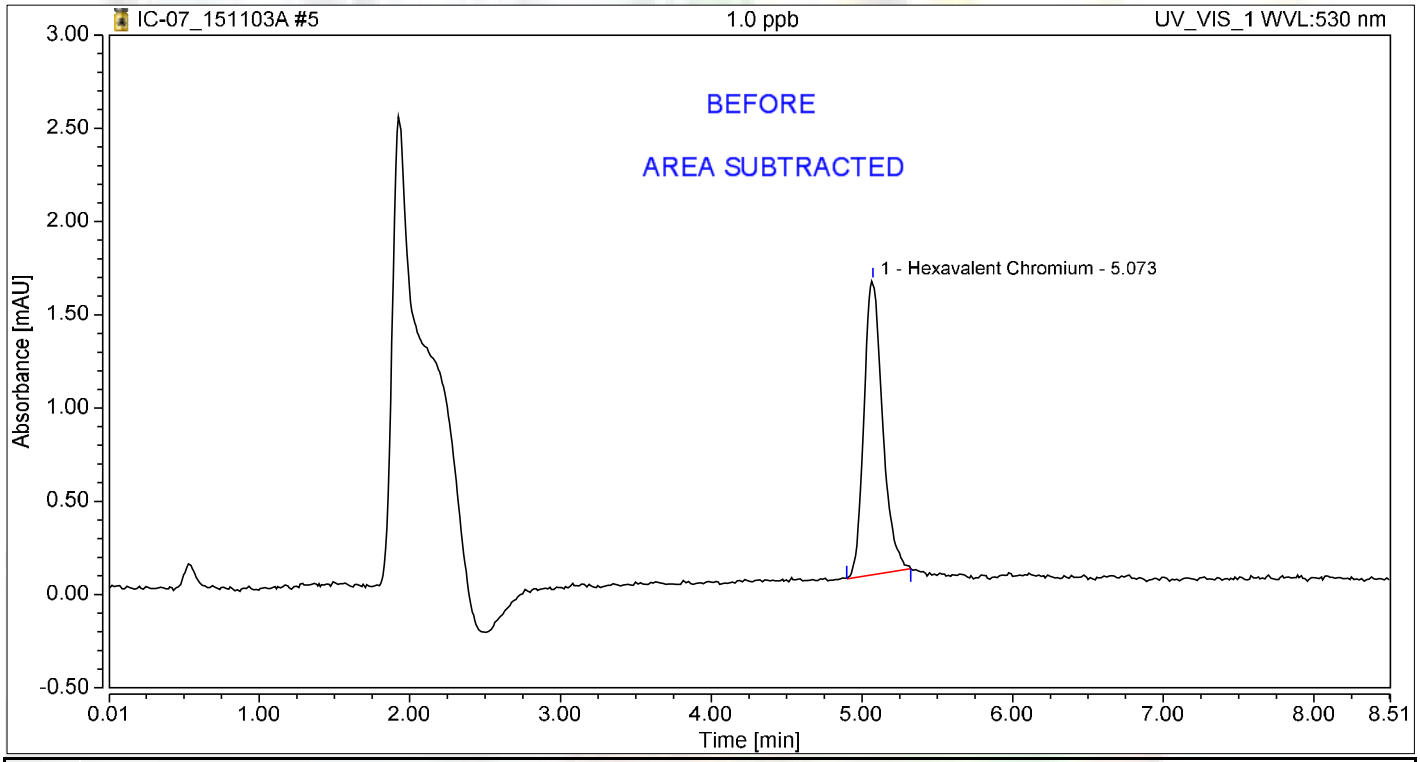
11/10/201

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

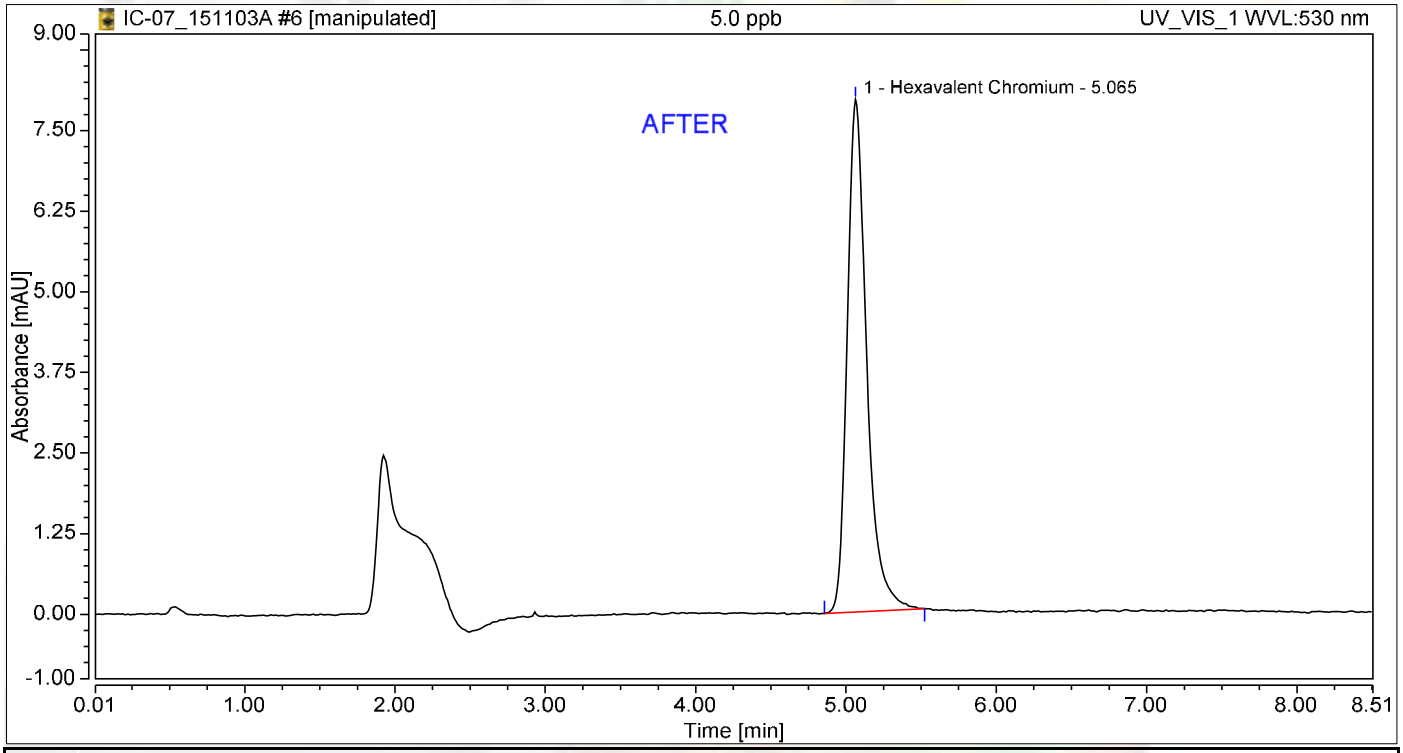
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.227	1.576	100.00	100.00	0.9634
Total:			**0.227**	**1.576**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.187	7.949	100.00	100.00	5.0434
Total:			**1.187**	**7.949**	**100.00**	**100.00**	

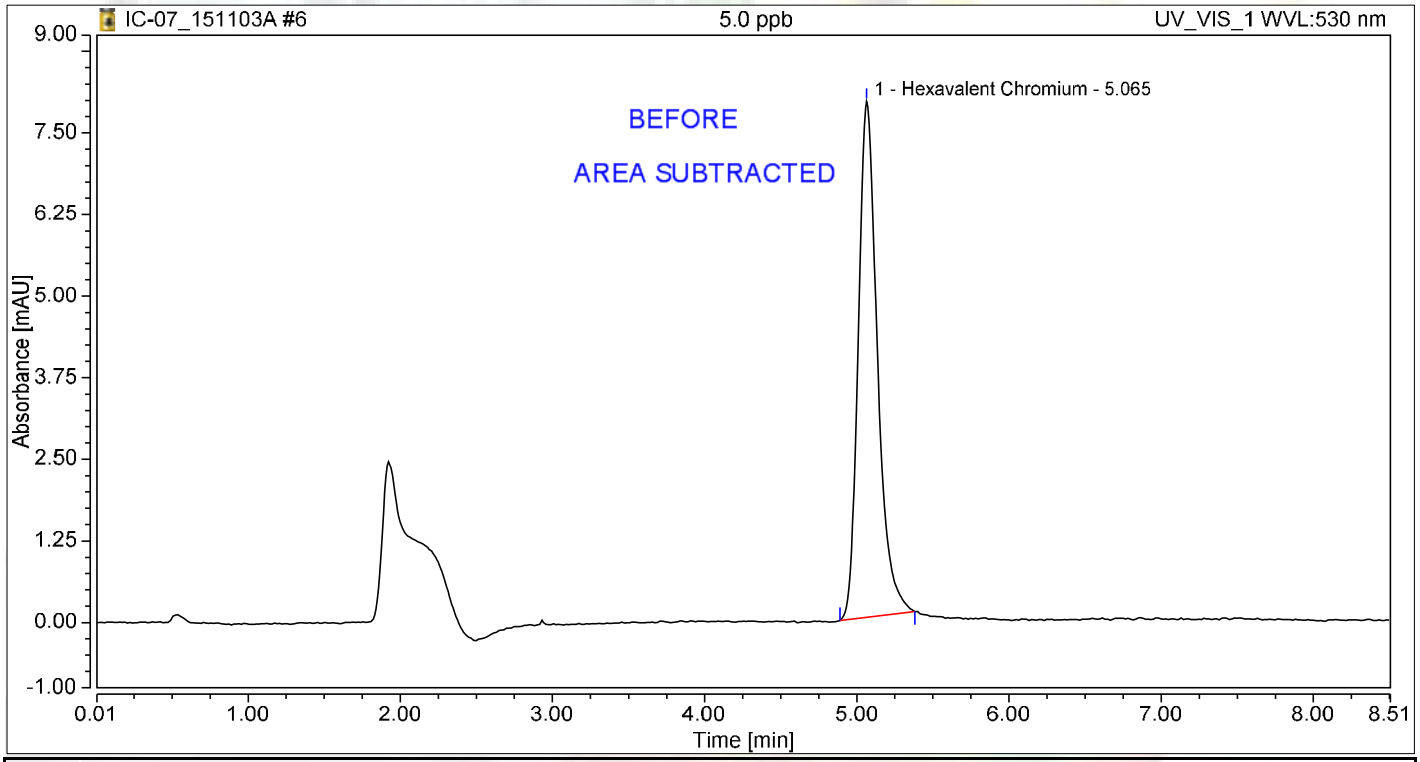
11/10/201

Chromatogram and Results

Injection Details

Injection Name:	**5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

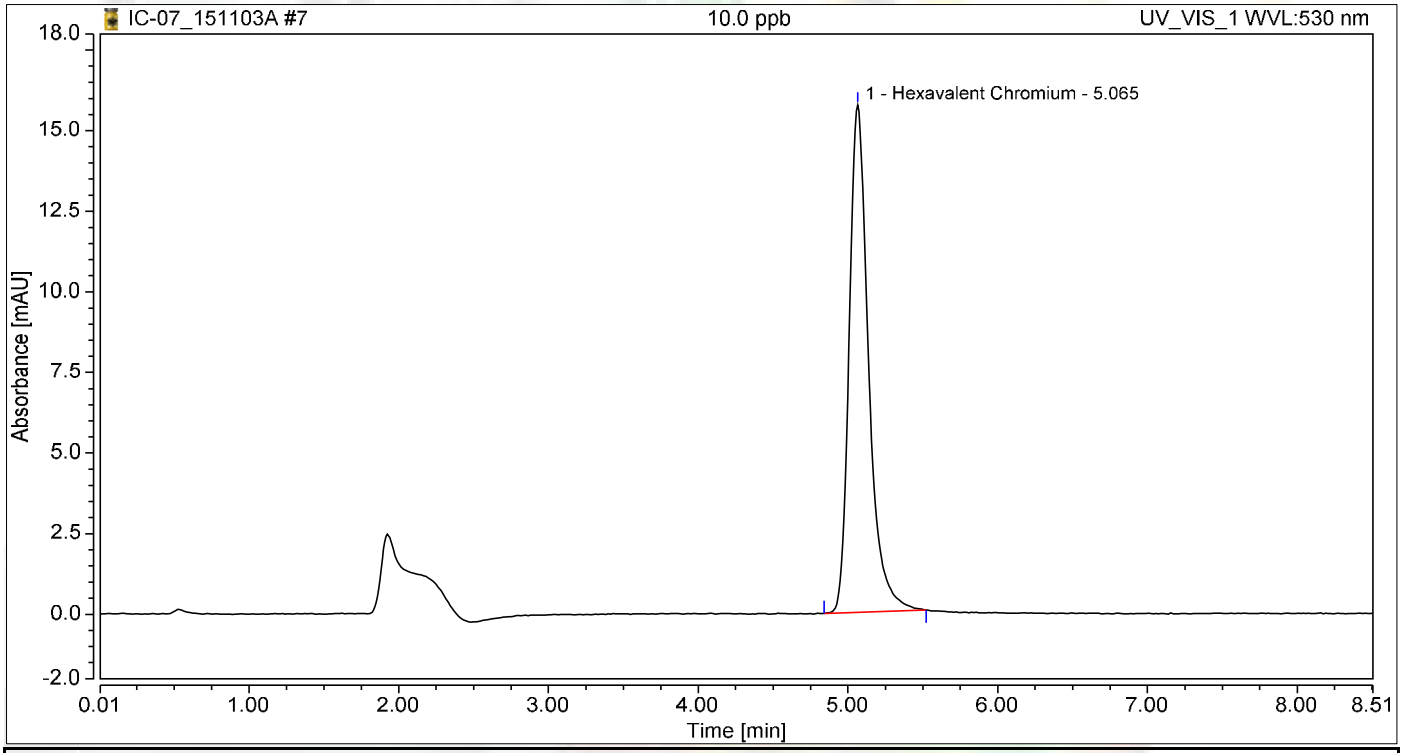
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.153	7.903	100.00	100.00	4.9025
Total:			**1.153**	**7.903**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

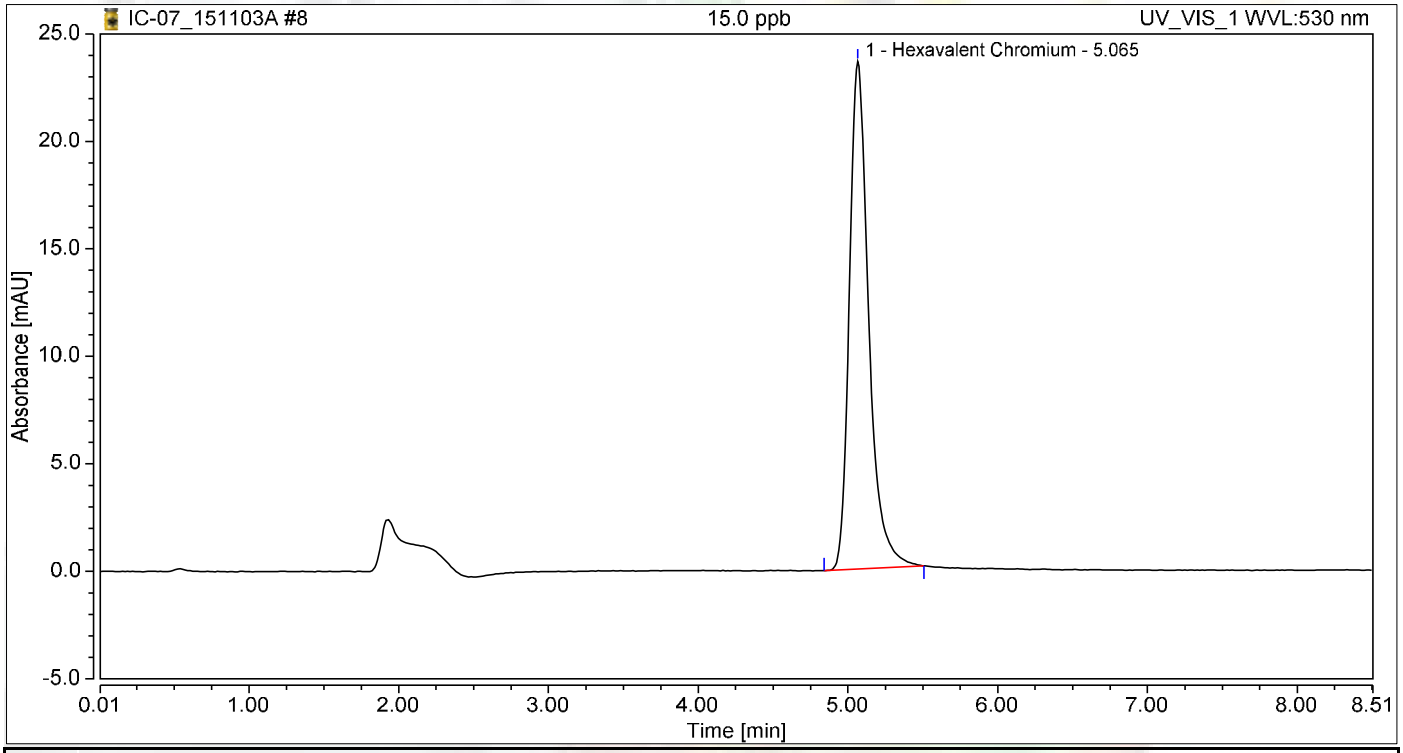
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.340	15.736	100.00	100.00	9.9455
Total:			**2.340**	**15.736**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

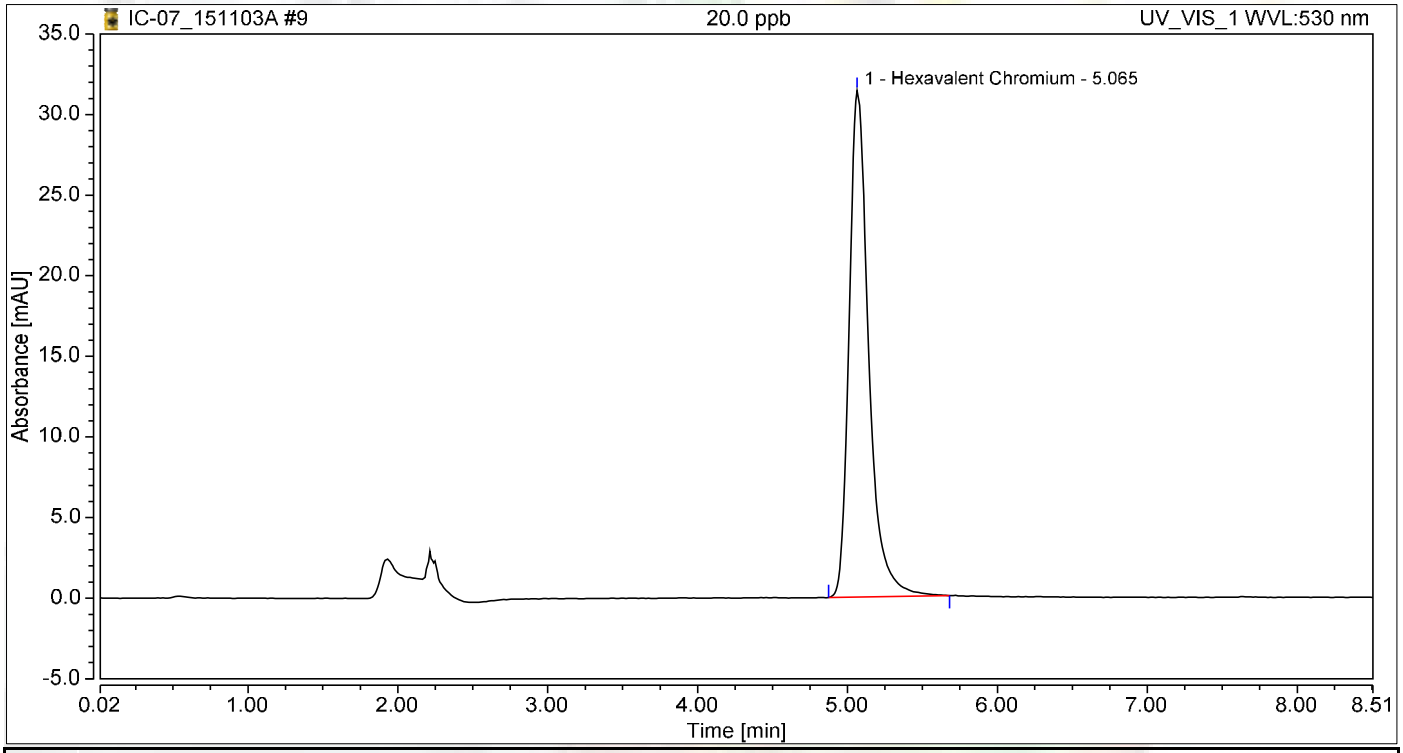
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	3.507	23.611	100.00	100.00	14.9018
Total:			**3.507**	**23.611**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



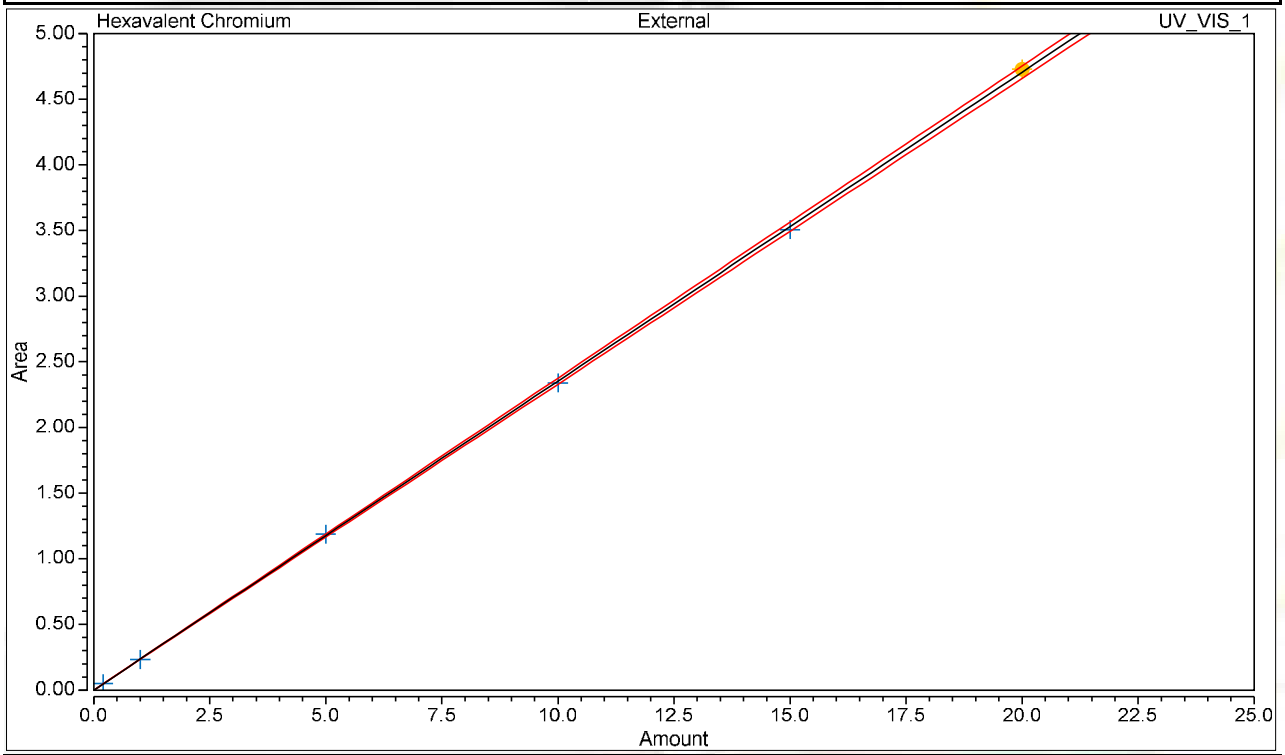
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	4.728	31.422	100.00	100.00	20.0905
Total:			**4.728**	**31.422**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2353
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99993

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

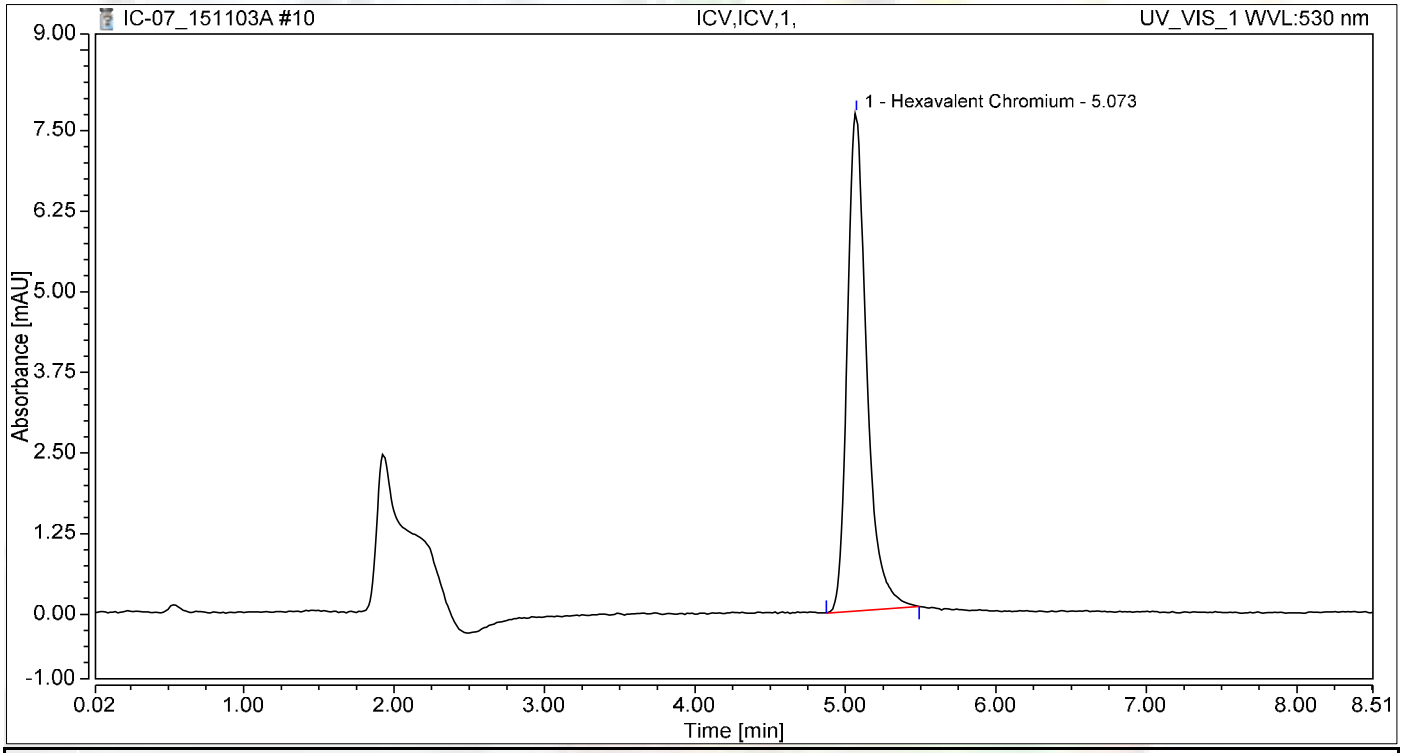
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	0.2 ppb	01	0.2000	0.0494	0.049	0.353
5	1.0 ppb	02	1.0000	0.2326	0.233	1.586
6	5.0 ppb	03	5.0000	1.1868	1.187	7.949
7	10.0 ppb	04	10.0000	2.3404	2.340	15.736
8	15.0 ppb	05	15.0000	3.5067	3.507	23.611
9	20.0 ppb	06	20.0000	4.7278	4.728	31.422

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

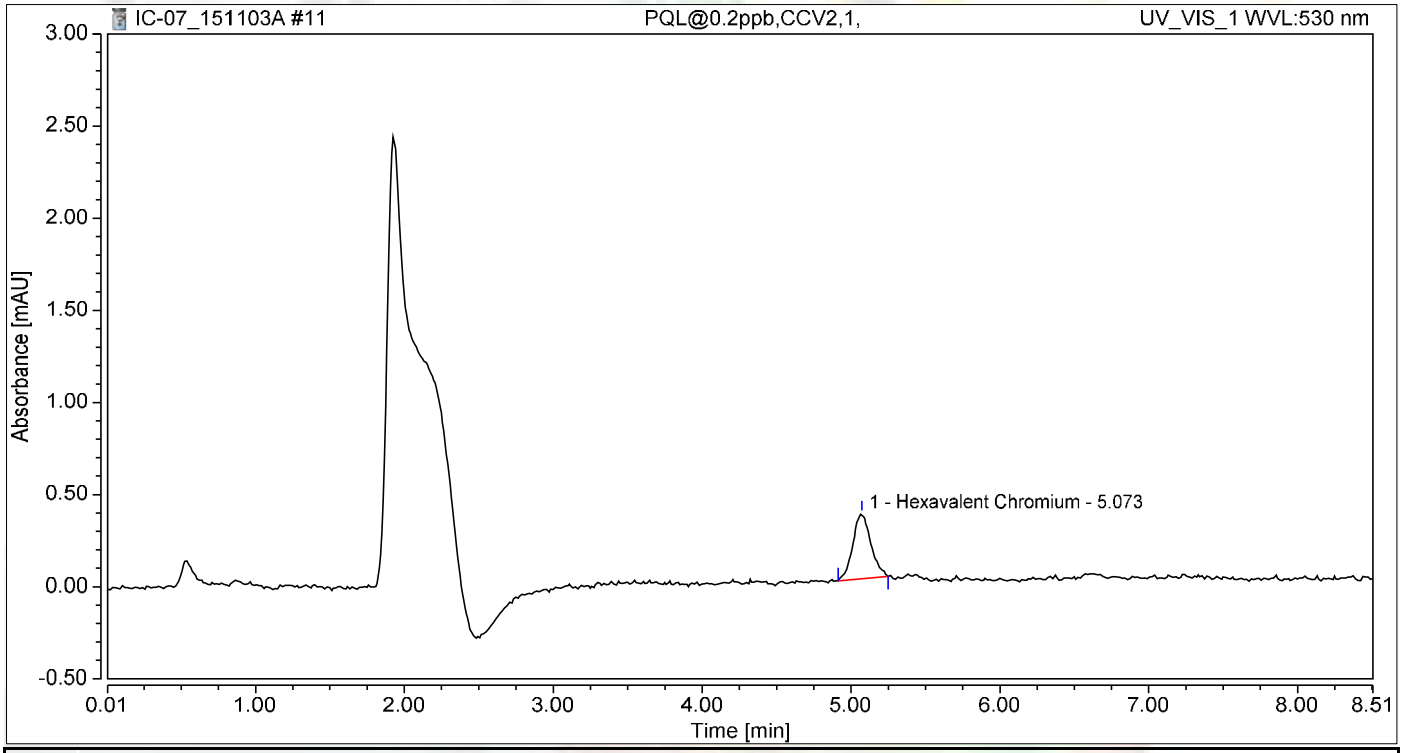
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.151	7.718	100.00	100.00	4.8912
Total:			**1.151**	**7.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 16:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

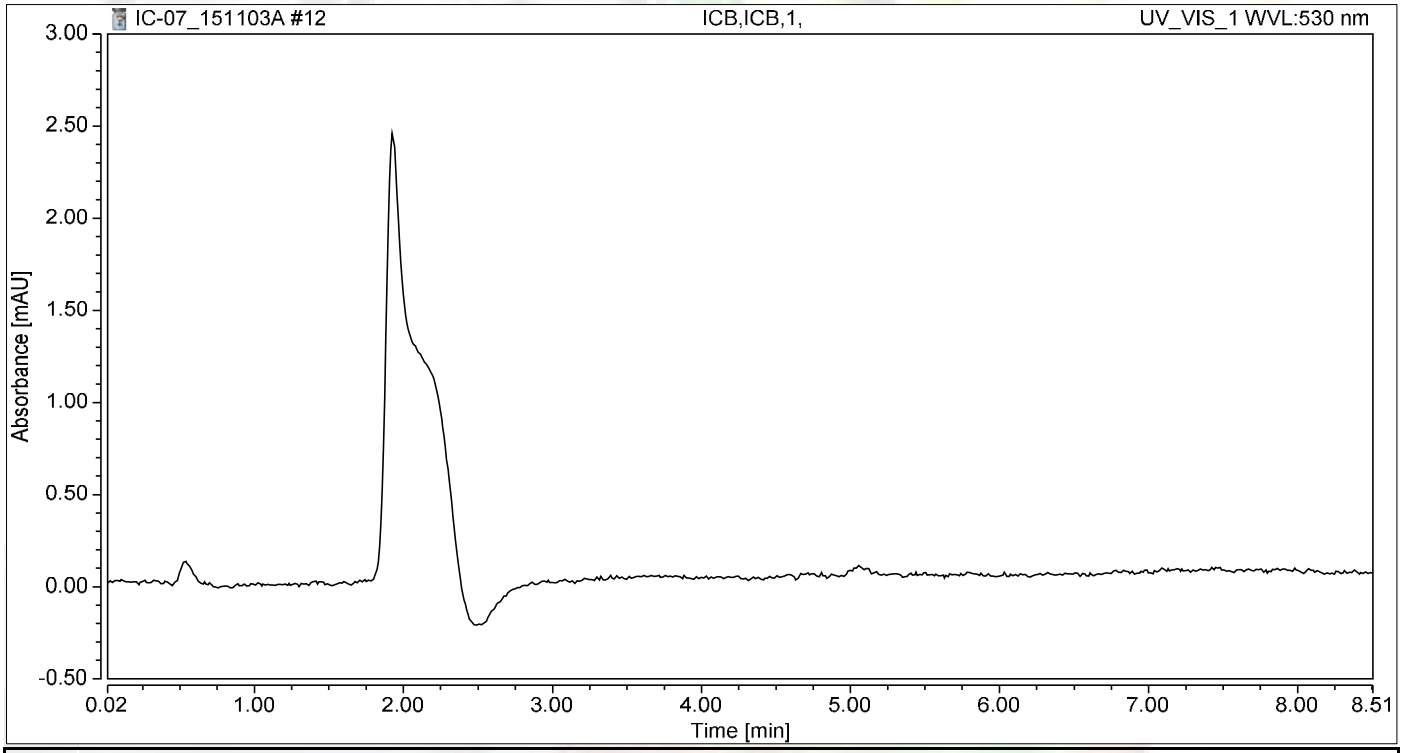
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.049	0.353	100.00	100.00	0.2071
Total:			**0.049**	**0.353**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/Nov/15 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 151104A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:20 PM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	11/03/15 2:31 PM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/03/15 2:41 PM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/03/15 2:54 PM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:05 PM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:14 PM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:24 PM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:33 PM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/03/15 3:43 PM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	11/04/15 9:42 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	11/04/15 9:53 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	11/04/15 10:03 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	11/04/15 10:12 AM	Reported
14	MB-R103987	MBLK	1	Hexavalent Chromium	11/04/15 10:21 AM	Reported
15	LCS-R103987	LCS	1	Hexavalent Chromium	11/04/15 10:31 AM	Reported
16	N017466-001A	SAMP	1	Hexavalent Chromium	11/04/15 10:40 AM	Reported
17	N017466-001ADUP	DUP	1	Hexavalent Chromium	11/04/15 10:50 AM	Reported
18	N017466-001AMS	MS	1	Hexavalent Chromium	11/04/15 10:59 AM	Reported
19	N017466-001AMSD	MSD	1	Hexavalent Chromium	11/04/15 11:09 AM	Reported
20	N017353-009A	SAMP	1	Hexavalent Chromium	11/04/15 11:18 AM	Not Reported
21	N017353-009AMS	MS	1	Hexavalent Chromium	11/04/15 11:28 AM	Not Reported
22	N017349-001A	SAMP	1	Hexavalent Chromium	11/04/15 11:37 AM	Not Reported
23	N017349-001AMS	MS	1	Hexavalent Chromium	11/04/15 11:47 AM	Not Reported
24	CCV-12	CCV	1	Hexavalent Chromium	11/04/15 11:56 AM	Reported
25	CCB-12	CCB	1	Hexavalent Chromium	11/04/15 12:06 PM	Reported
26	N017471-001F	SAMP	1	Hexavalent Chromium	11/04/15 12:15 PM	Reported
27	N017471-001FREP	DUP	1	Hexavalent Chromium	11/04/15 12:24 PM	Reported
28	N017415-001A	SAMP	1	Hexavalent Chromium	11/04/15 12:37 PM	Reported
29	N017415-001AMS	MS	1	Hexavalent Chromium	11/04/15 12:49 PM	Reported
30	N017415-002A	SAMP	1	Hexavalent Chromium	11/04/15 12:58 PM	Reported
31	N017415-002AMS	MS	1	Hexavalent Chromium	11/04/15 1:07 PM	Reported
32	N017415-003A	SAMP	1	Hexavalent Chromium	11/04/15 1:17 PM	Reported
33	N017415-003AMS	MS	1	Hexavalent Chromium	11/04/15 1:26 PM	Reported
34	N017415-004A	SAMP	1	Hexavalent Chromium	11/04/15 1:36 PM	Reported
35	N017415-004AMS	MS	1	Hexavalent Chromium	11/04/15 1:45 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	11/04/15 1:55 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	11/04/15 2:04 PM	Reported
38	N017415-005A	SAMP	1	Hexavalent Chromium	11/04/15 2:14 PM	Reported
39	N017415-005A	SAMP	1	Hexavalent Chromium	11/04/15 2:23 PM	Not Reported
40	N017415-006A	SAMP	1	Hexavalent Chromium	11/04/15 2:33 PM	Reported
41	N017415-006AMS	MS	1	Hexavalent Chromium	11/04/15 2:42 PM	Reported
42	N017415-007A	SAMP	1	Hexavalent Chromium	11/04/15 2:52 PM	Reported
43	N017415-007AMS	MS	1	Hexavalent Chromium	11/04/15 3:01 PM	Reported
44	N017415-008A	SAMP	1	Hexavalent Chromium	11/04/15 3:10 PM	Not Reported

11/10/201

INJECTION LOG: 151104A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
45	N017415-008AMS	MS	1	Hexavalent Chromium	11/04/15 3:20 PM	Not Reported
46	N017415-009A	SAMP	1	Hexavalent Chromium	11/04/15 3:29 PM	Reported
47	N017415-009AMS	MS	1	Hexavalent Chromium	11/04/15 3:48 PM	Reported
48	CCV-4	CCV	1	Hexavalent Chromium	11/04/15 4:00 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	11/04/15 4:09 PM	Reported
50	N017415-005AMS	MS	1	Hexavalent Chromium	11/04/15 4:19 PM	Reported
51	N017415-008A	SAMP	2	Hexavalent Chromium	11/04/15 4:28 PM	Reported
52	N017415-008AMS	MS	2	Hexavalent Chromium	11/04/15 4:37 PM	Reported
53	N017458-001A	SAMP	1	Hexavalent Chromium	11/04/15 4:56 PM	Reported
54	N017458-002A	SAMP	1	Hexavalent Chromium	11/04/15 5:07 PM	Reported
55	N017458-003A	SAMP	20	Hexavalent Chromium	11/04/15 5:17 PM	Reported
56	N017458-004A	SAMP	1	Hexavalent Chromium	11/04/15 5:26 PM	Reported
57	N017458-005A	SAMP	50	Hexavalent Chromium	11/04/15 5:35 PM	Reported
58	N017458-006A	SAMP	1	Hexavalent Chromium	11/04/15 5:45 PM	Not Reported
59	N017458-007A	SAMP	1	Hexavalent Chromium	11/04/15 5:54 PM	Reported
60	CCV-5	CCV	1	Hexavalent Chromium	11/04/15 6:04 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	11/04/15 6:13 PM	Reported
62	MB-R103990	MBLK	1	Hexavalent Chromium	11/04/15 6:23 PM	Reported
63	LCS-R103990	LCS	1	Hexavalent Chromium	11/04/15 6:32 PM	Reported
64	N017458-006A	SAMP	2	Hexavalent Chromium	11/04/15 6:42 PM	Reported
65	N017458-006ADUP	DUP	2	Hexavalent Chromium	11/04/15 6:51 PM	Reported
66	N017458-006AMS	MS	2	Hexavalent Chromium	11/04/15 7:01 PM	Reported
67	N017458-006AMSD	MSD	2	Hexavalent Chromium	11/04/15 7:10 PM	Reported
68	N017458-008A	SAMP	100	Hexavalent Chromium	11/04/15 7:20 PM	Not Reported
69	N017458-009A	SAMP	1000	Hexavalent Chromium	11/04/15 7:29 PM	Reported
70	N017458-010A	SAMP	20	Hexavalent Chromium	11/04/15 7:38 PM	Reported
71	N017458-011A	SAMP	50	Hexavalent Chromium	11/04/15 7:48 PM	Reported
72	CCV-6	CCV	1	Hexavalent Chromium	11/04/15 7:57 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	11/04/15 8:07 PM	Reported
74	N017458-012A	SAMP	200	Hexavalent Chromium	11/04/15 8:16 PM	Reported
75	N017458-013A	SAMP	10	Hexavalent Chromium	11/04/15 8:26 PM	Not Reported
76	N017458-014A	SAMP	1	Hexavalent Chromium	11/04/15 8:35 PM	Reported
77	N017458-015A	SAMP	1	Hexavalent Chromium	11/04/15 8:45 PM	Reported
78	N017458-016A	SAMP	1	Hexavalent Chromium	11/04/15 8:54 PM	Reported
79	N017458-017A	SAMP	1	Hexavalent Chromium	11/04/15 9:04 PM	Reported
80	N017458-018A	SAMP	1	Hexavalent Chromium	11/04/15 9:13 PM	Reported
81	N017459-001A	SAMP	1	Hexavalent Chromium	11/04/15 9:23 PM	Reported
82	N017459-001AMS	MS	1	Hexavalent Chromium	11/04/15 9:32 PM	Reported
83	CCV-7	CCV	1	Hexavalent Chromium	11/04/15 9:41 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	11/04/15 9:51 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_151104A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**05/Nov/15 20:23:42**
No. of Injections:	**87**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	Blank	1	1000	Unknown		11/03/2015 14:20	Finished	BLANK
2	Blank	2	1000	Unknown		11/03/2015 14:31	Finished	BLANK
3	iBLANK	3	1000	Unknown		11/03/2015 14:41	Finished	INSTRUMENT BLANK
4	0.2 ppb	4	1000	Calibration Standard	01	11/03/2015 14:54	Finished	0.2 ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	02	11/03/2015 15:05	Finished	1.0 ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	03	11/03/2015 15:14	Finished	5.0 ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	04	11/03/2015 15:24	Finished	10 ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	05	11/03/2015 15:33	Finished	15 ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	06	11/03/2015 15:43	Finished	20 ppb, IWST151103A
10	BLANK	1	1000	Unknown		11/04/2015 09:42	Finished	BLANK
11	CCV-1,CCV,1,	2	1000	Unknown		11/04/2015 09:53	Finished	ICV @ 5ppb, IWST 151103B
12	PQL@0.2ppb,CCV2,1	3	1000	Unknown		11/04/2015 10:03	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	4	1000	Unknown		11/04/2015 10:12	Finished	CCB
14	MB-H2O,MBLK,1	5	1000	Unknown		11/04/2015 10:21	Finished	MB
15	LCS-H2O.LCS,1	6	1000	Unknown		11/04/2015 10:31	Finished	LCS,5ppb, IWST-151103B
16	N017466-001A,SAMP	7	1000	Unknown		11/04/2015 10:40	Finished	SAMP, 10mL
17	N017466-001ADUP,D	8	1000	Unknown		11/04/2015 10:50	Finished	DUP, 10mL
18	N017466-001AMS,MS	9	1000	Unknown		11/04/2015 10:59	Finished	MS(5ppb), IWST-151103B, 10r
19	N017466-001AMSD,M	10	1000	Unknown		11/04/2015 11:09	Finished	MSD(5ppb), IWST-151103B, 1
20	N017353-009A,SAMP	11	1000	Unknown		11/04/2015 11:18	Finished	SAMP, 10mL
21	N017353-009AMS,MS	12	1000	Unknown		11/04/2015 11:28	Finished	MS(5ppb), IWST-151103B, 10r
22	N017349-001A,SAMP	13	1000	Unknown		11/04/2015 11:37	Finished	SAMP, 10mL
23	N017349-001AMS,MS	14	1000	Unknown		11/04/2015 11:47	Finished	MS(5ppb), IWST-151103B, 10r
CCV-2 24	CCV-1,CCV,1,	15	1000	Unknown		11/04/2015 11:56	Finished	CCV @10ppb, IWST-151103A
CCB-2 25	CCB-1,CCB,1,	16	1000	Unknown		11/04/2015 12:06	Finished	CCB
26	~~N017471-001A,SAMP~~	17	1000	Unknown		11/04/2015 12:15	Finished	SAMP, 10mL N017471-001F,SAMP,1
27	~~N017471-001AREP,D~~	18	1000	Unknown		11/04/2015 12:24	Finished	REP, 10mL N017471-001FREP,DUP,1
28	N017415-001A,SAMP	19	1000	Unknown		11/04/2015 12:37	Finished	SAMP, 10mL
29	N017415-001AMS,MS	20	1000	Unknown		11/04/2015 12:49	Finished	MS(1ppb), IWST-151103B, 10r
30	N017415-002A,SAMP	21	1000	Unknown		11/04/2015 12:58	Finished	SAMP, 10mL
31	N017415-002AMS,MS	22	1000	Unknown		11/04/2015 13:07	Finished	MS(1ppb), IWST-151103B, 10r
32	N017415-003A,SAMP	23	1000	Unknown		11/04/2015 13:17	Finished	SAMP, 10mL
33	N017415-003AMS,MS	24	1000	Unknown		11/04/2015 13:26	Finished	MS(1ppb), IWST-151103B, 10r
34	N017415-004A,SAMP	25	1000	Unknown		11/04/2015 13:36	Finished	SAMP, 10mL
35	N017415-004AMS,MS	26	1000	Unknown		11/04/2015 13:45	Finished	MS(1ppb), IWST-151103B, 10r
36	CCV-3,CCV,1,	27	1000	Unknown		11/04/2015 13:55	Finished	CCV @5ppb, IWST-151103A
37	CCB-3,CCB,1,	28	1000	Unknown		11/04/2015 14:04	Finished	CCB
38	N017415-005A,SAMP	29	1000	Unknown		11/04/2015 14:14	Finished	SAMP, 10mL
39	N017415-005A,SAMP	30	1000	Unknown		11/04/2015 14:23	Finished	MS(1ppb), IWST-151103B, 10r
40	N017415-006A,SAMP	31	1000	Unknown		11/04/2015 14:33	Finished	SAMP, 10mL
41	N017415-006AMS,MS	32	1000	Unknown		11/04/2015 14:42	Finished	MS(1ppb), IWST-151103B, 10r
42	N017415-007A,SAMP	33	1000	Unknown		11/04/2015 14:52	Finished	SAMP, 10mL
43	N017415-007AMS,MS	34	1000	Unknown		11/04/2015 15:01	Finished	MS(1ppb), IWST-151103B, 10r
44	N017415-008A,SAMP	35	1000	Unknown		11/04/2015 15:10	Finished	SAMP, 10mL
45	N017415-008AMS,MS	36	1000	Unknown		11/04/2015 15:20	Finished	MS(1ppb), IWST-151103B, 10r
46	N017415-009A,SAMP	37	1000	Unknown		11/04/2015 15:29	Finished	SAMP, 10mL
47	N017415-009AMS,MS	38	1000	Unknown		11/04/2015 15:48	Finished	MS(1ppb), IWST-151103B, 10r
48	CCV-4,CCV,1,	39	1000	Unknown		11/04/2015 16:00	Finished	CCV @10ppb, IWST-151103A
49	CCB-4,CCB,1,	40	1000	Unknown		11/04/2015 16:09	Finished	CCB
50	N017415-005AMS,MS	41	1000	Unknown		11/04/2015 16:19	Finished	MS(5ppb), IWST-151103B, 10r
51	N017415-008A,SAMP	42	1000	Unknown		11/04/2015 16:28	Finished	SAMP, 5mL to 10mL
52	N017415-008AMS,MS	43	1000	Unknown		11/04/2015 16:37	Finished	MS(5ppb), IWST-151103B, 10r
53	N017458-001A,SAMP	1	1000	Unknown		11/04/2015 16:56	Finished	SAMP, 10mL
54	N017458-002A,SAMP	2	1000	Unknown		11/04/2015 17:07	Finished	SAMP, 10mL
55	N017458-003A,SAMP	3	1000	Unknown		11/04/2015 17:17	Finished	SAMP, 0.5mL to 10mL
56	N017458-004A,SAMP	4	1000	Unknown		11/04/2015 17:26	Finished	SAMP, 10mL
57	N017458-005A,SAMP	5	1000	Unknown		11/04/2015 17:35	Finished	SAMP, 0.2mL to 10mL
58	N017458-006A,SAMP	6	1000	Unknown		11/04/2015 17:45	Finished	SAMP, 10mL
59	N017458-007A,SAMP	7	1000	Unknown		11/04/2015 17:54	Finished	SAMP, 10mL
60	CCV-5,CCV,1,	8	1000	Unknown		11/04/2015 18:04	Finished	CCV @5ppb, IWST-151103A

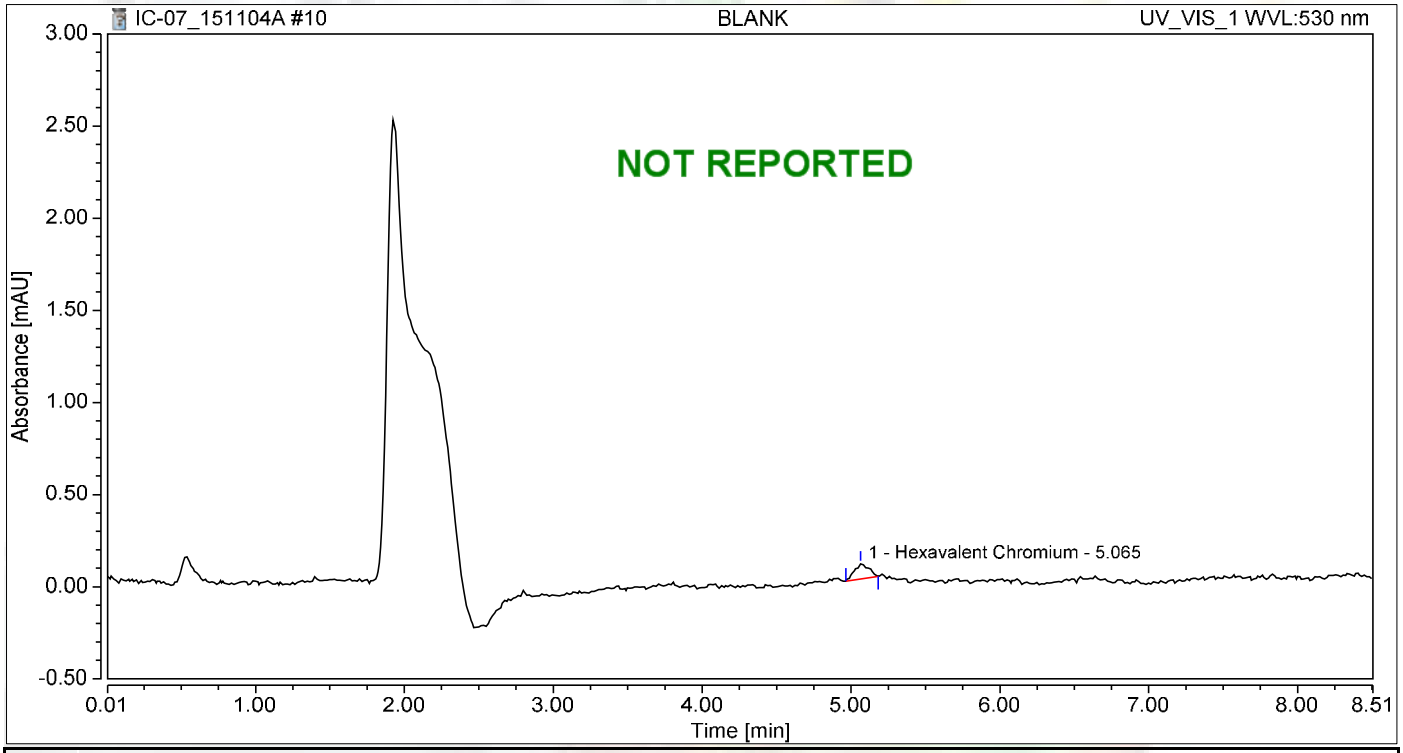
61	CCB-5,CCB,1,	9	1000	Unknown		11/04/2015 18:13	Finished	CCB
62	MB-H2O,MBLK,1	10	1000	Unknown		11/04/2015 18:23	Finished	MB
63	LCS-H2O.LCS,1	11	1000	Unknown		11/04/2015 18:32	Finished	LCS,5ppb, IWST-151103B
64	N017458-006A,SAMF	12	1000	Unknown		11/04/2015 18:42	Finished	SAMP, 5mL to 10mL
65	N017458-006ADUP,D	13	1000	Unknown		11/04/2015 18:51	Finished	DUP, 5mL to 10mL
66	N017458-006AMS,MS	14	1000	Unknown		11/04/2015 19:01	Finished	MS(5ppb), IWST-151103B, 10r
67	N017458-006AMSD,M	15	1000	Unknown		11/04/2015 19:10	Finished	MSD(5ppb), IWST-151103B, 1(
68	N017458-008A,SAMF	16	1000	Unknown		11/04/2015 19:20	Finished	SAMP, 0.1mL to 10mL
69	N017458-009A,SAMF	17	1000	Unknown		11/04/2015 19:29	Finished	SAMP, 0.01mL to 10mL
70	N017458-010A,SAMF	18	1000	Unknown		11/04/2015 19:38	Finished	SAMP, 0.5mL to 10mL
71	N017458-011A,SAMF	19	1000	Unknown		11/04/2015 19:48	Finished	SAMP, 0.2mL to 10mL
72	CCV-6,CCV,1,	20	1000	Unknown		11/04/2015 19:57	Finished	CCV @10ppb, IWST-151103A
73	CCB-6,CCB,1,	21	1000	Unknown		11/04/2015 20:07	Finished	CCB
74	N017458-012A,SAMF	22	1000	Unknown		11/04/2015 20:16	Finished	SAMP, 0.05mL to 10mL
75	N017458-013A,SAMF	23	1000	Unknown		11/04/2015 20:26	Finished	SAMP, 1mL to 10mL
76	N017458-014A,SAMF	24	1000	Unknown		11/04/2015 20:35	Finished	SAMP, 10mL
77	N017458-015A,SAMF	25	1000	Unknown		11/04/2015 20:45	Finished	SAMP, 10mL
78	N017458-016A,SAMF	26	1000	Unknown		11/04/2015 20:54	Finished	SAMP, 10mL
79	N017458-017A,SAMF	27	1000	Unknown		11/04/2015 21:04	Finished	SAMP, 10mL
80	N017458-018A,SAMF	28	1000	Unknown		11/04/2015 21:13	Finished	SAMP, 10mL
81	N017459-001A,SAMF	29	1000	Unknown		11/04/2015 21:23	Finished	SAMP, 10mL
82	N017459-001AMS,MS	30	1000	Unknown		11/04/2015 21:32	Finished	SAMP, 10mL
83	CCV-7,CCV,1,	31	1000	Unknown		11/04/2015 21:41	Finished	CCV @5ppb, IWST-151103A
84	CCB-7,CCB,1,	32	1000	Unknown		11/04/2015 21:51	Finished	CCB
85	SHUTDOWN	33	1000	Unknown		11/04/2015 22:00	Finished	BLANK
86	Eluent: R151103A	34	1000	Unknown		n.a.	Finished	Eluent
87	PCR: R151104B	35	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

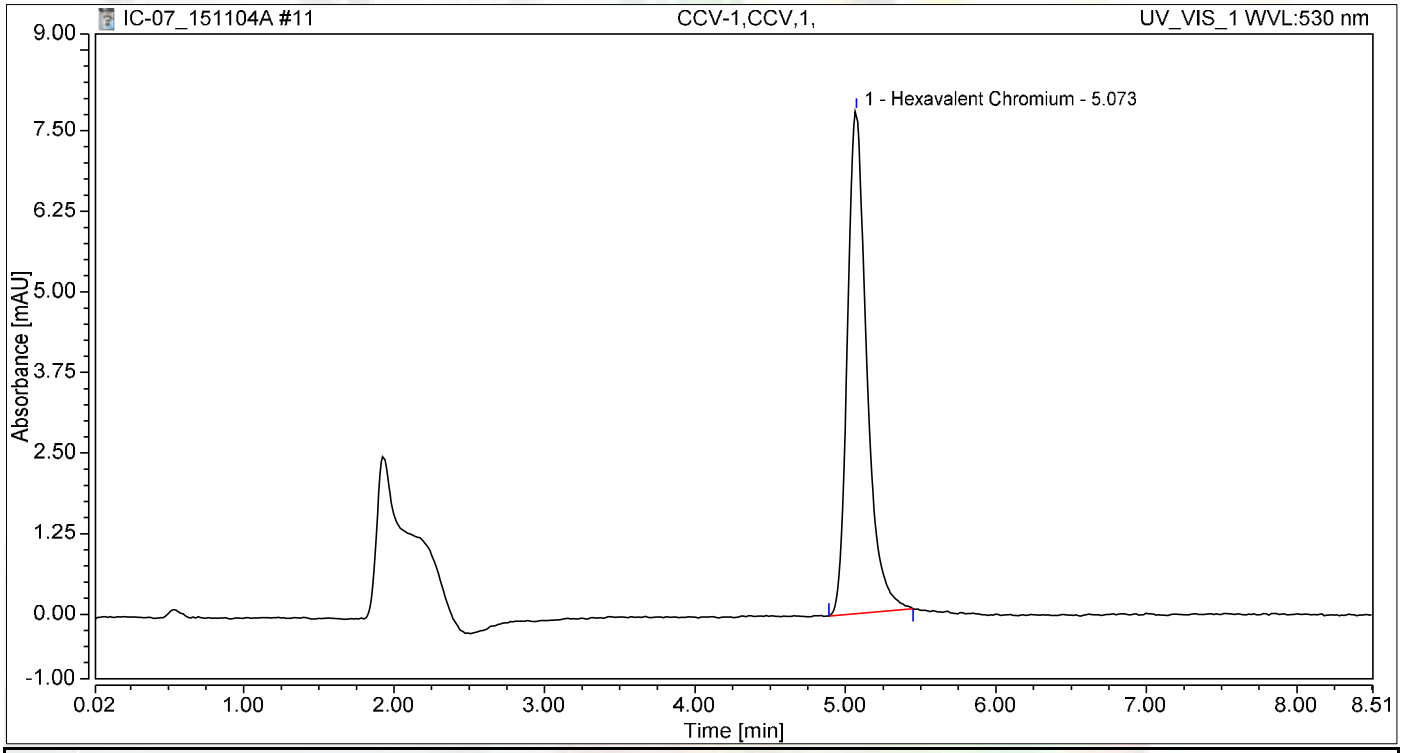
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.009	0.080	100.00	100.00	0.0379
Total:			**0.009**	**0.080**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 09:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

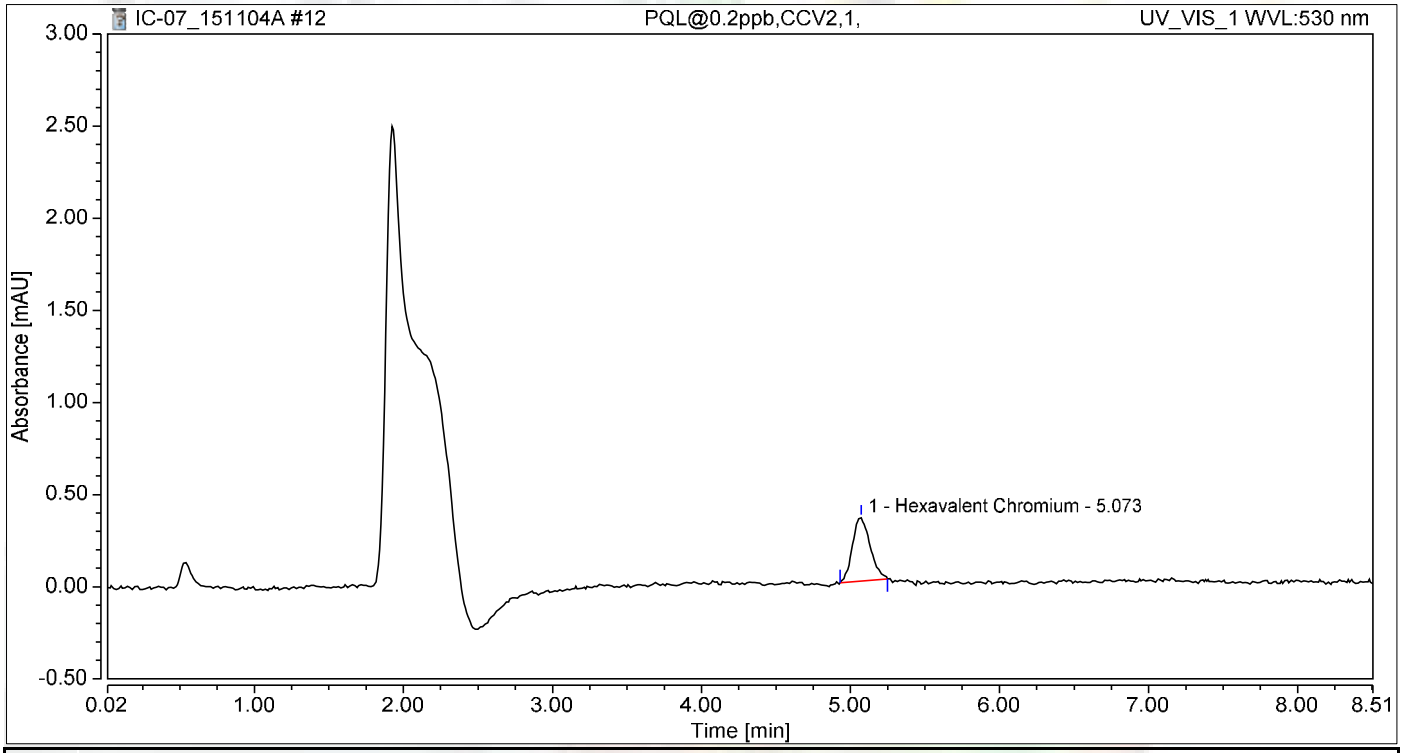
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	1.156	7.795	100.00	100.00	4.9142
Total:			**1.156**	**7.795**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

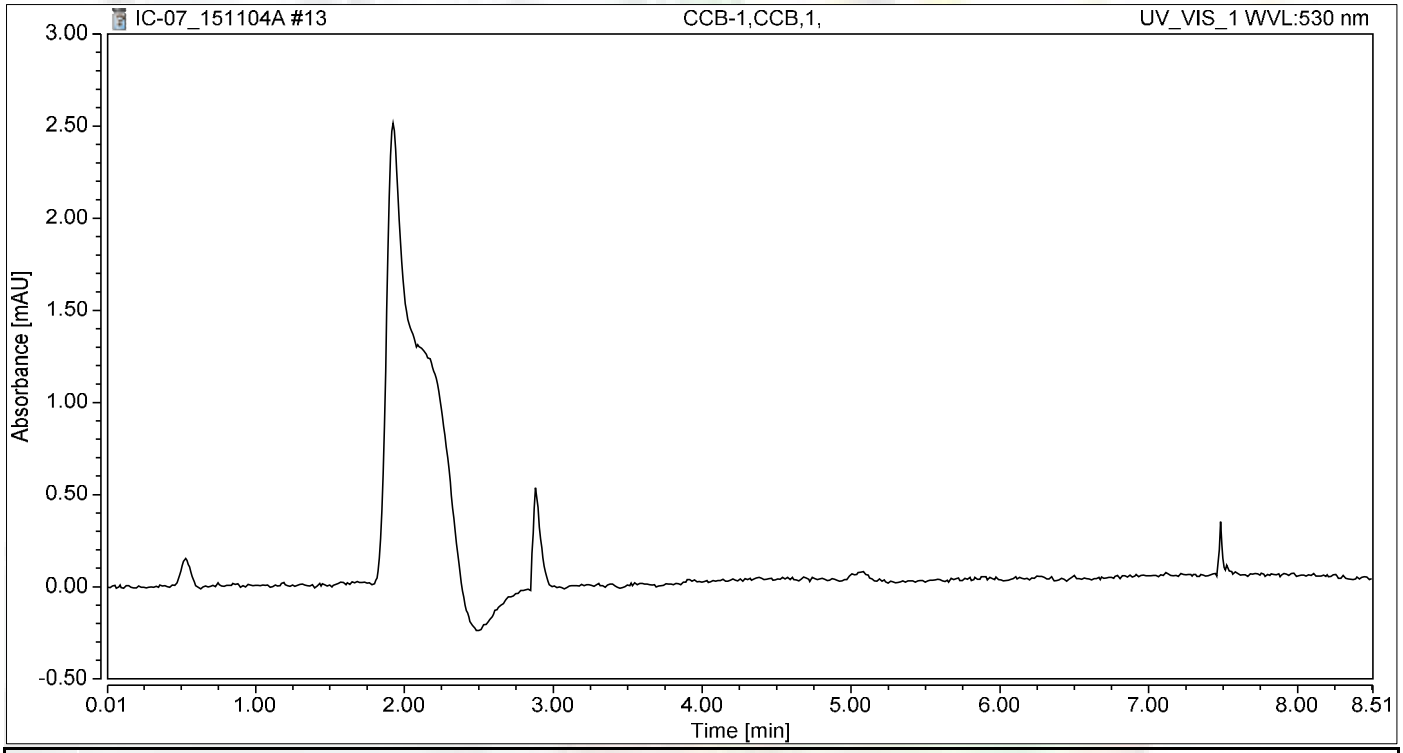
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.047	0.342	100.00	100.00	0.1978
Total:			**0.047**	**0.342**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

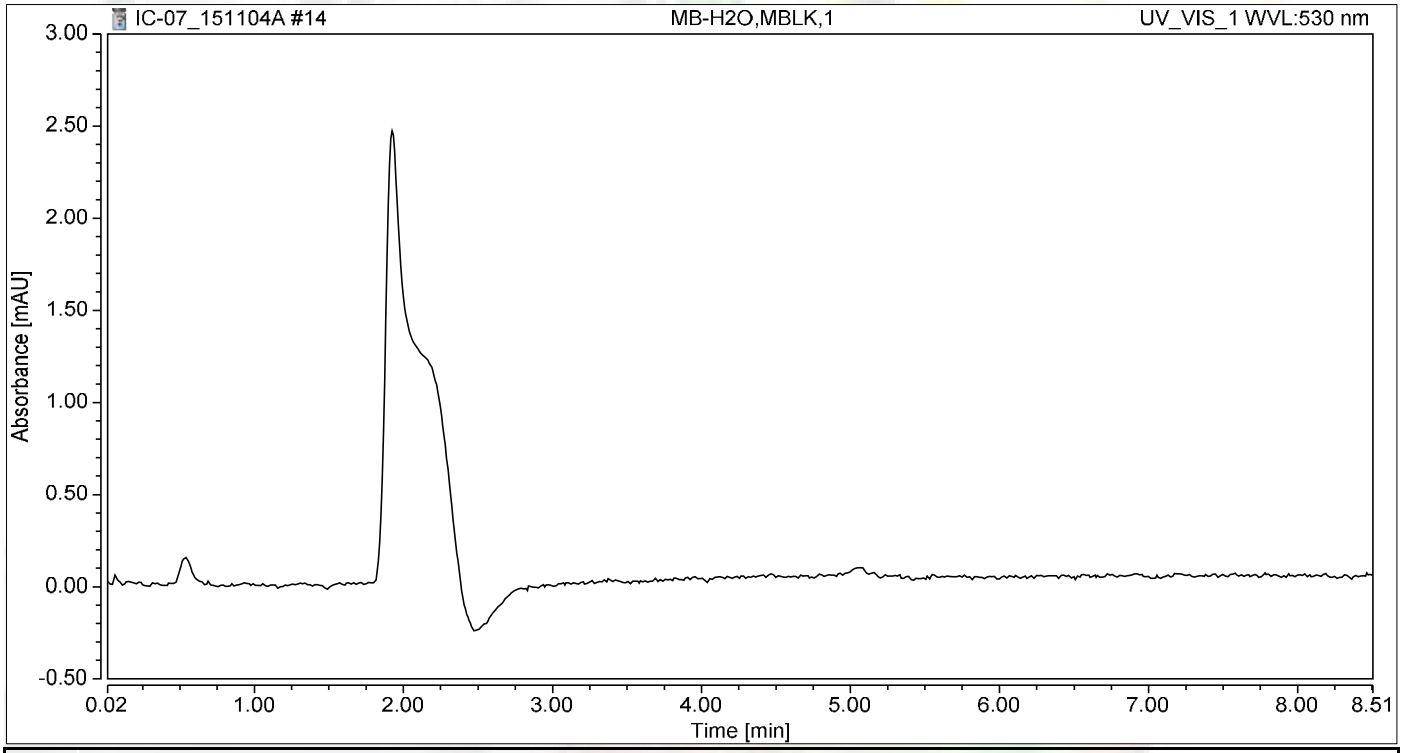
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

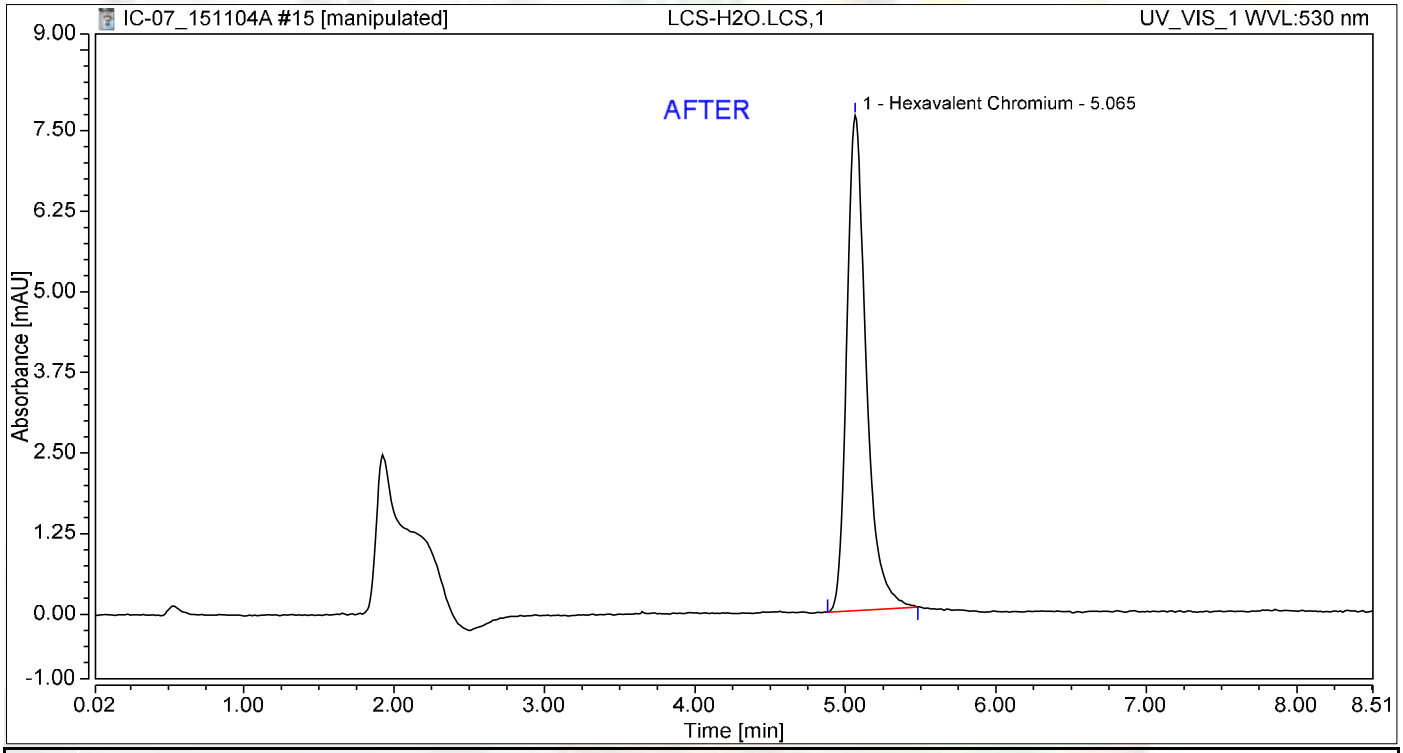
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O.LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.141	7.676	100.00	100.00	4.8484
Total:			**1.141**	**7.676**	**100.00**	**100.00**	

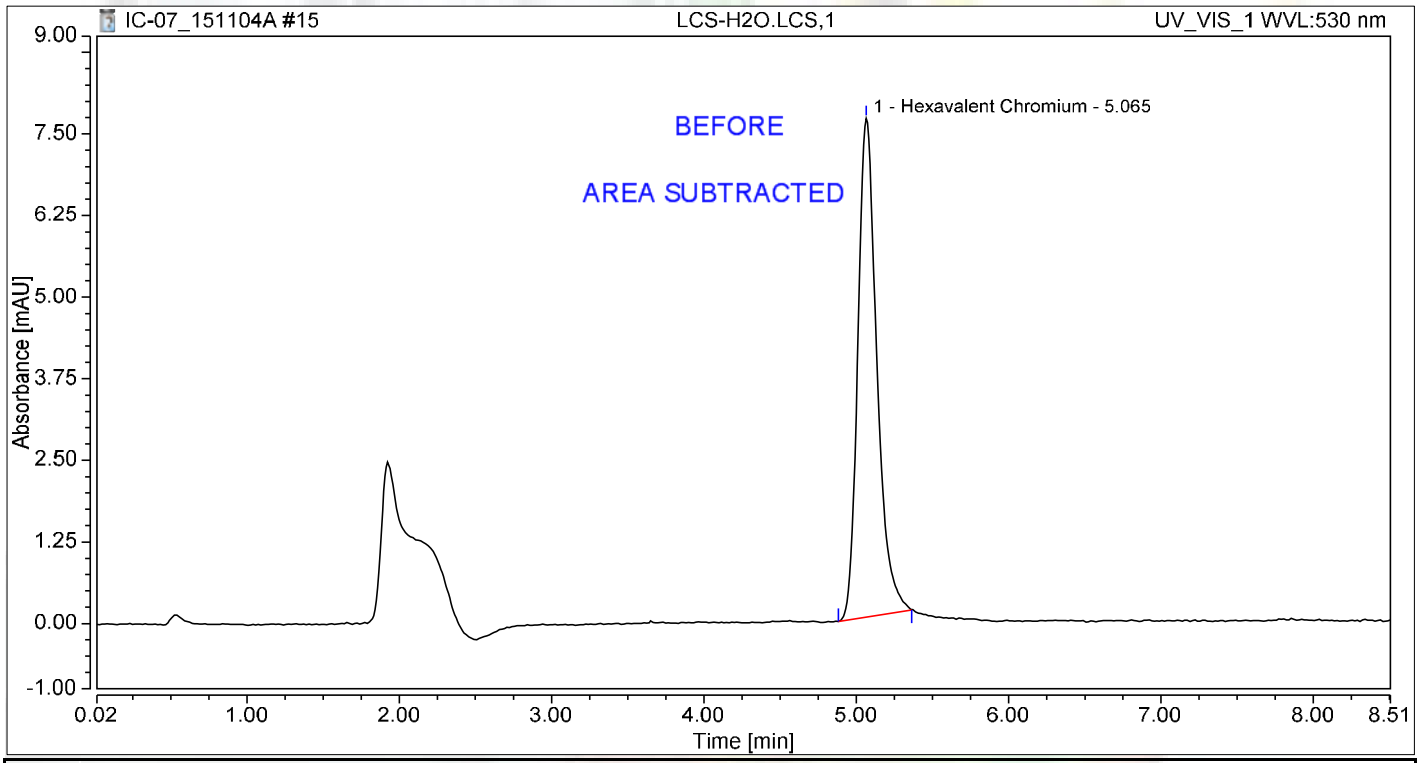
11/10/201

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O.LCS,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

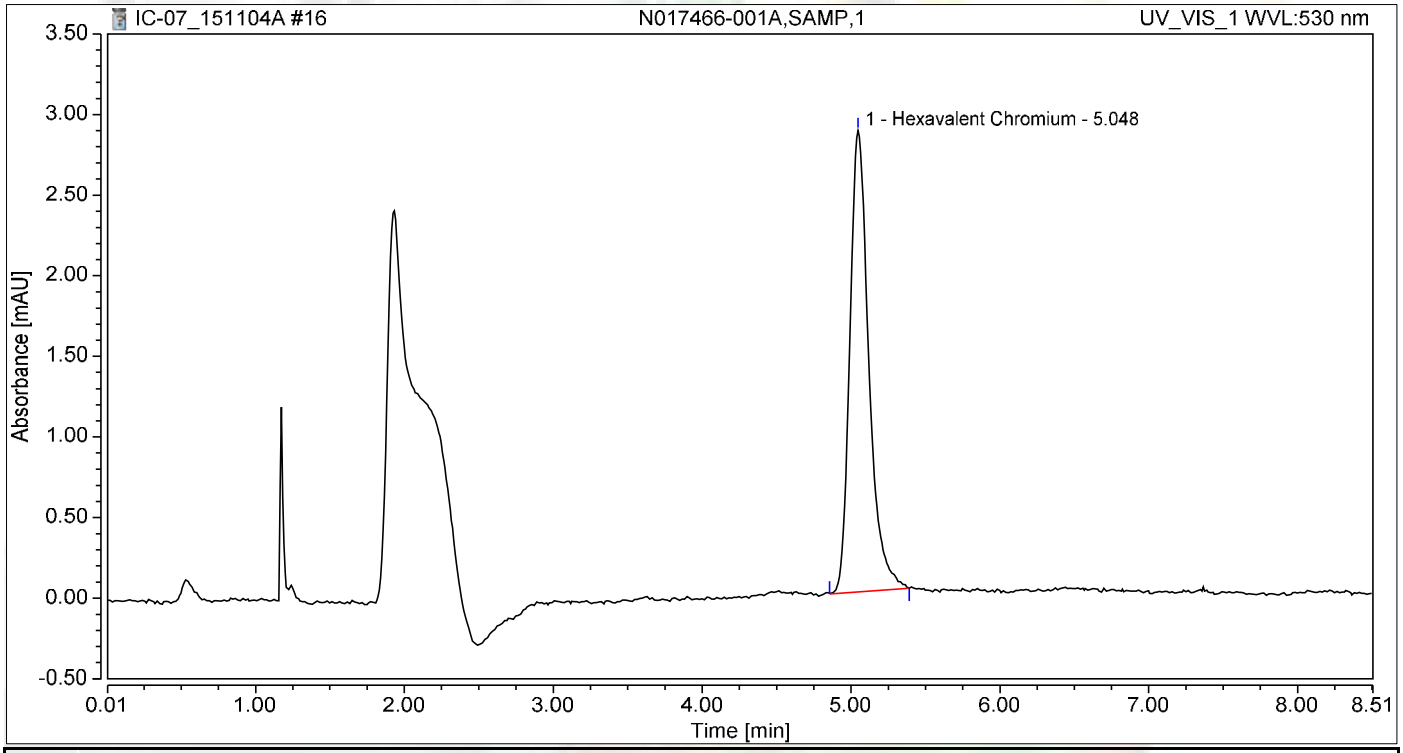
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.109	7.635	100.00	100.00	4.7113
Total:			**1.109**	**7.635**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017466-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

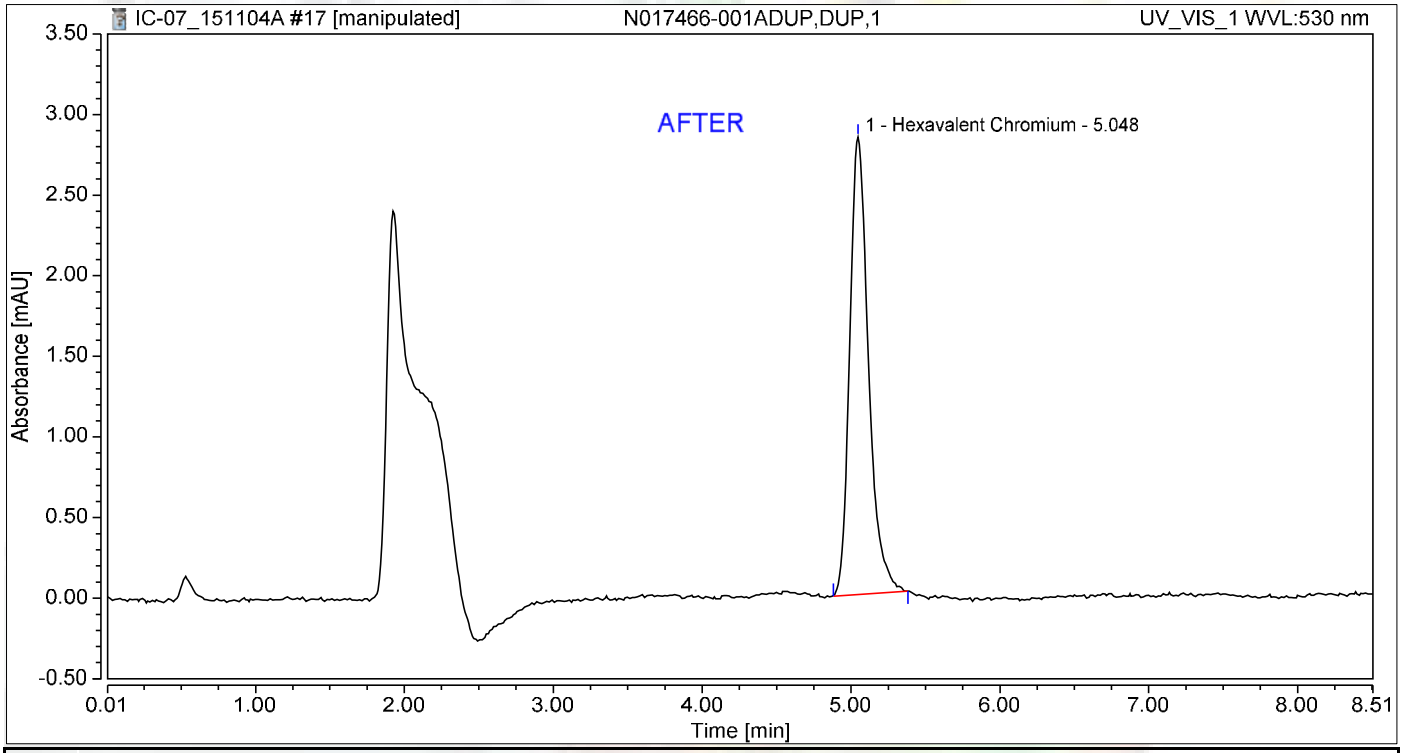
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.418	2.859	100.00	100.00	1.7765
Total:			**0.418**	**2.859**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017466-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.410	2.836	100.00	100.00	1.7426
Total:			**0.410**	**2.836**	**100.00**	**100.00**	

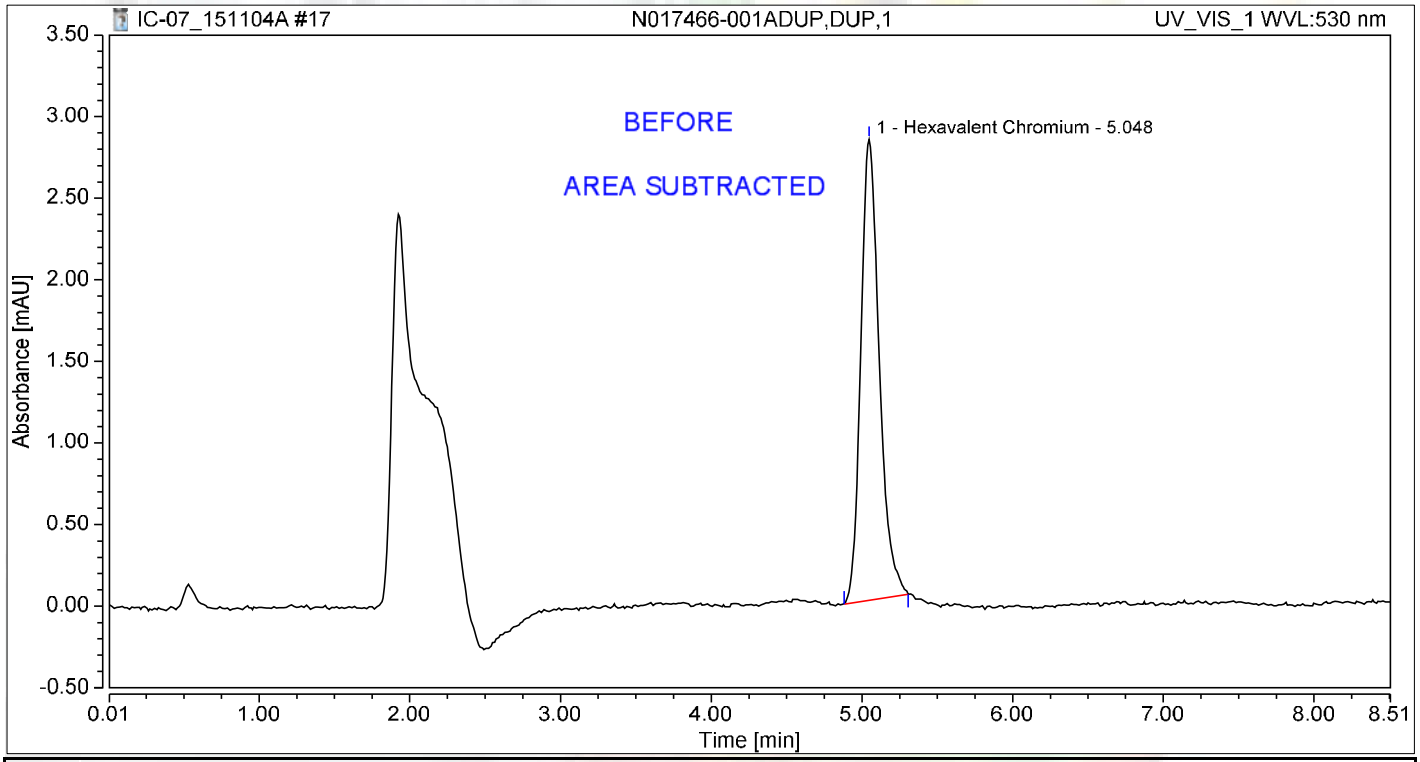
11/10/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017466-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

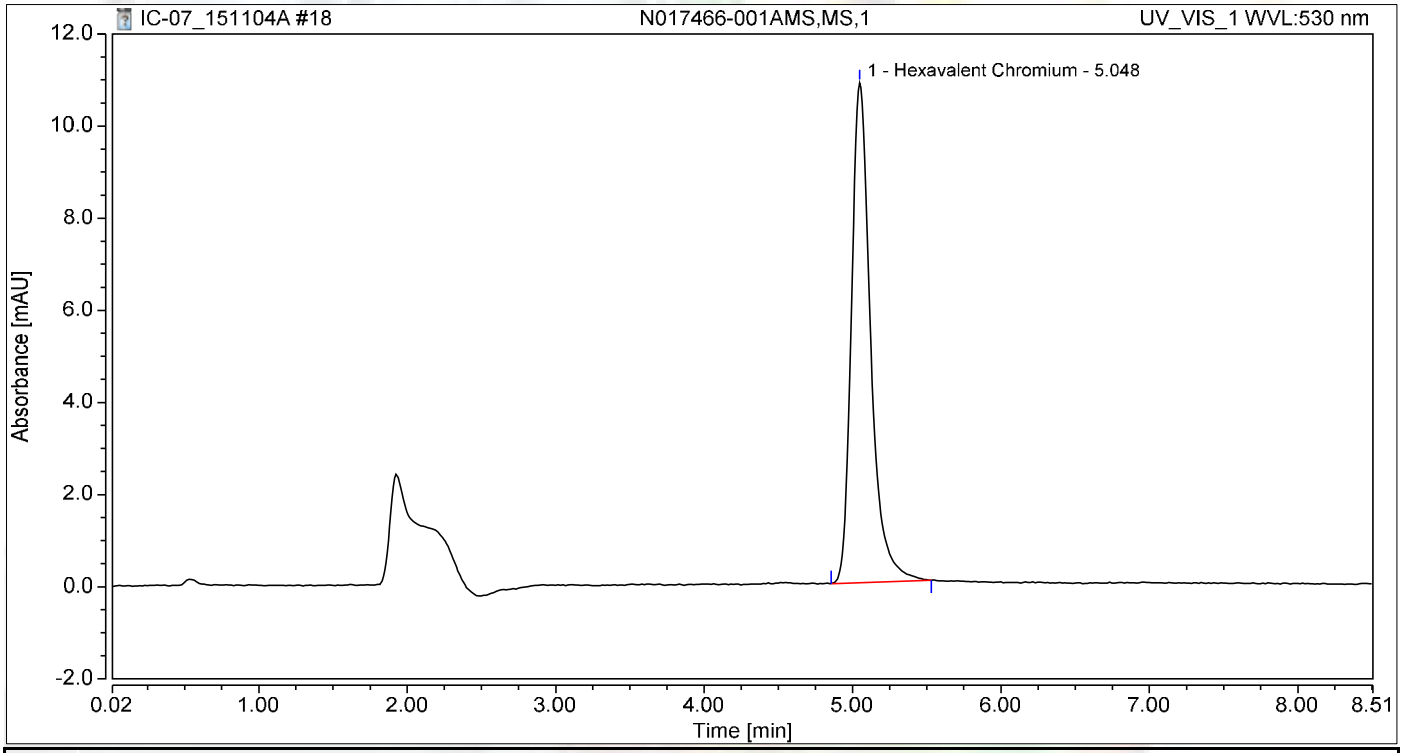
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.402	2.824	100.00	100.00	1.7075
Total:			**0.402**	**2.824**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017466-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

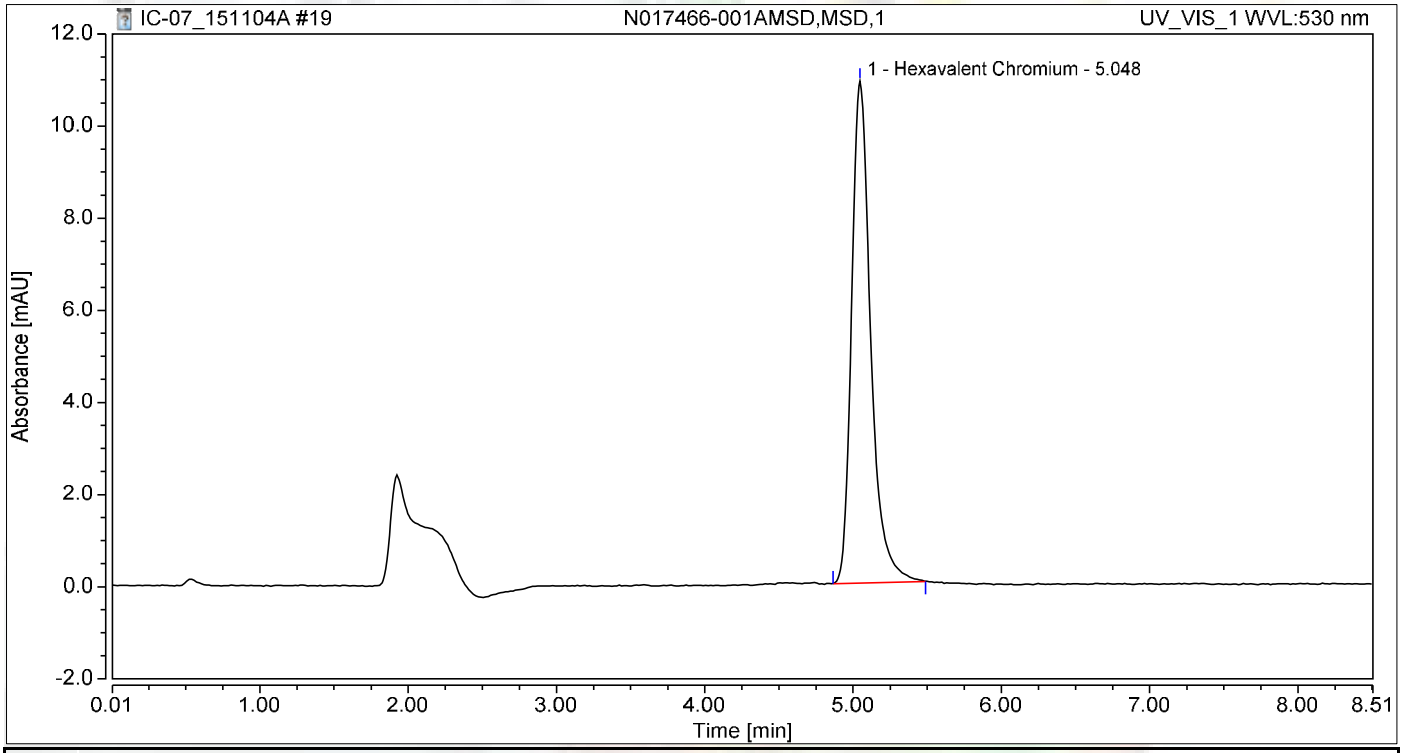
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.610	10.856	100.00	100.00	6.8436
Total:			**1.610**	**10.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017466-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

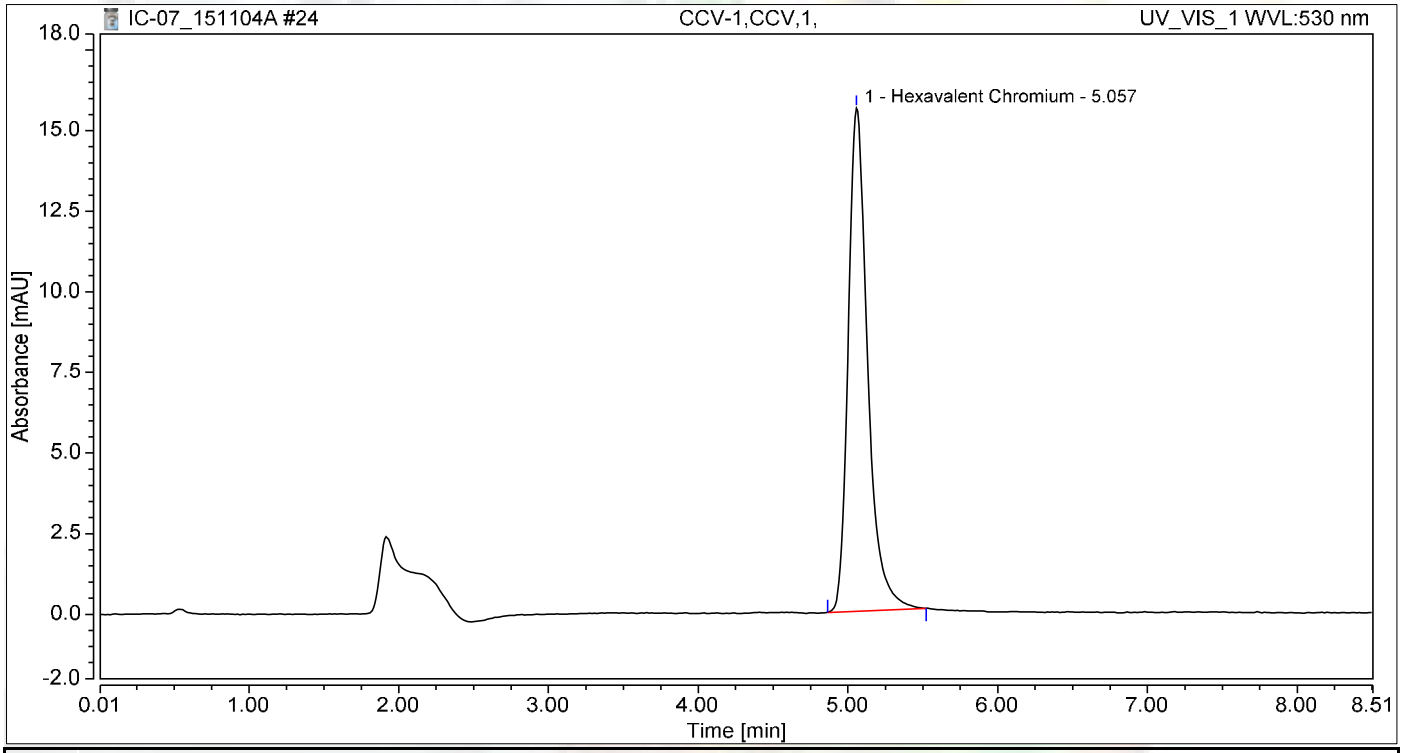
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	1.610	10.896	100.00	100.00	6.8425
Total:			**1.610**	**10.896**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details 2

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	2.326	15.602	100.00	100.00	9.8851
Total:			**2.326**	**15.602**	**100.00**	**100.00**	

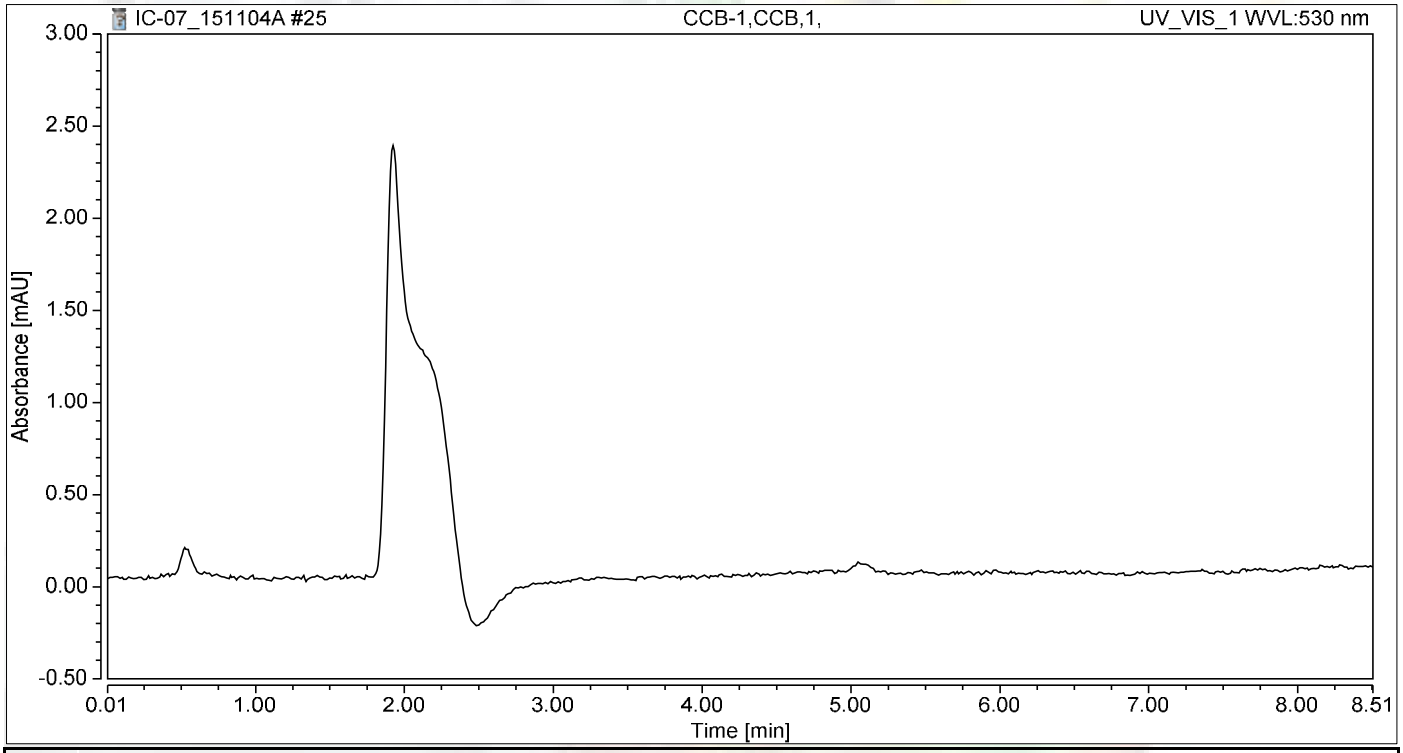
11/10/201
for Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



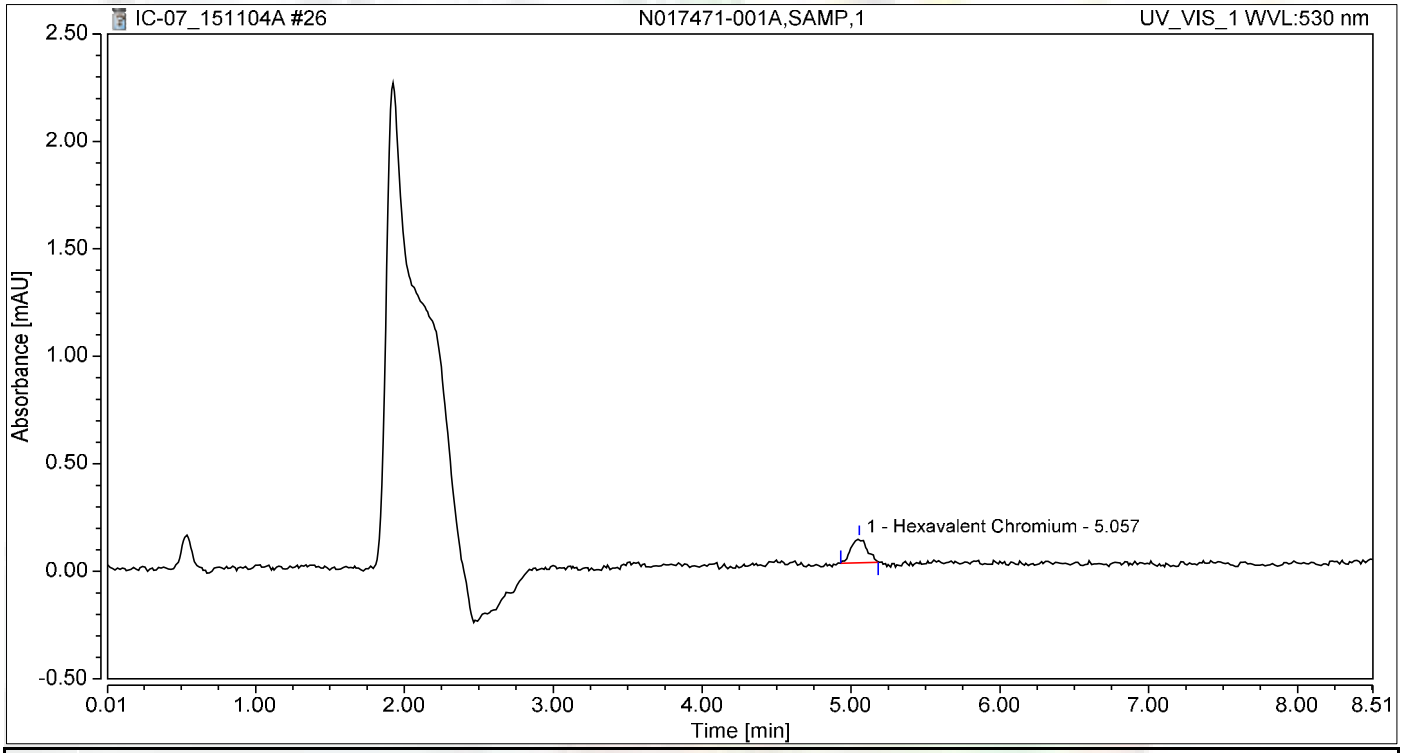
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details	N017471-001F,SAMP,1		
Injection Name:	~~N017471-001A,SAMP,1~~	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:15**	*Sample Weight:*	**1.0000**

Chromatogram



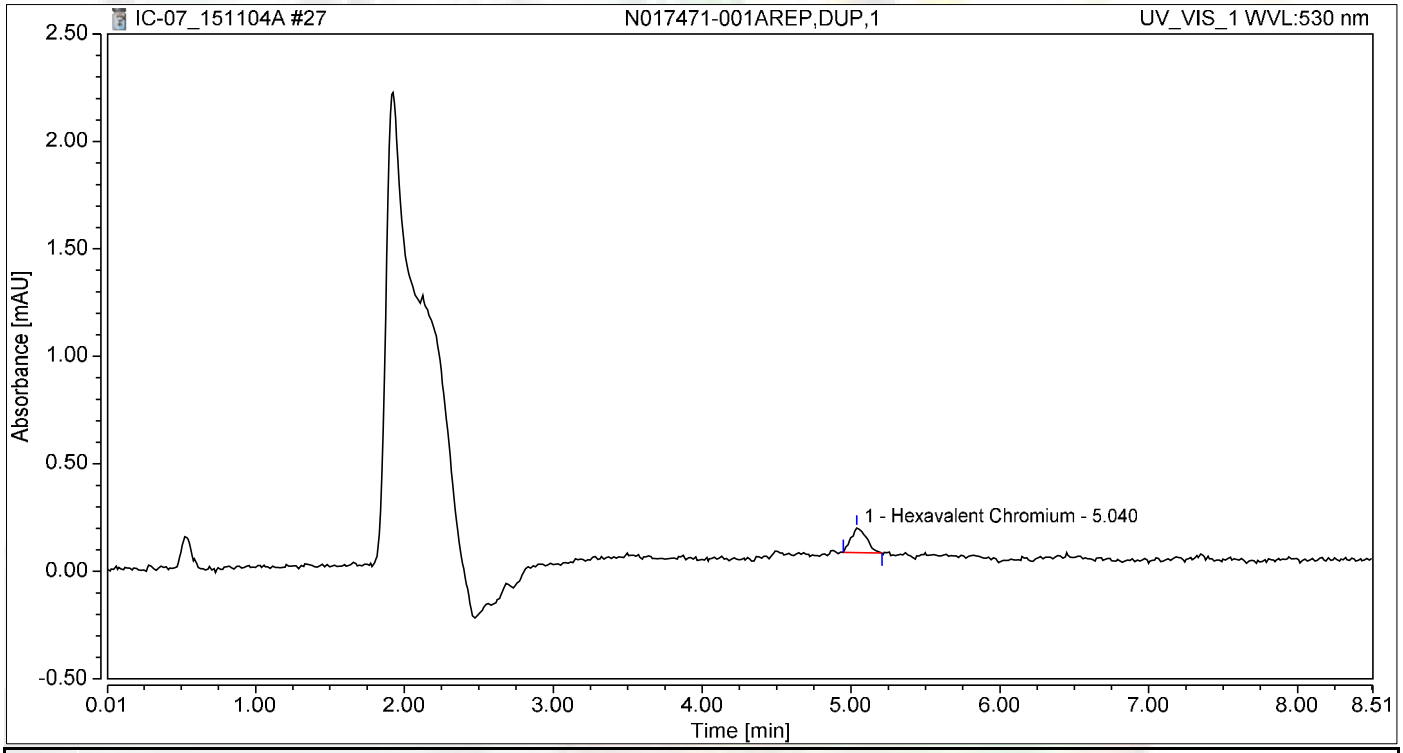
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.014	0.114	100.00	100.00	0.0584
Total:			**0.014**	**0.114**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details	N017471-001FREP,DUP,1		
Injection Name:	~~N017471-001AREP,DUP,1~~	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

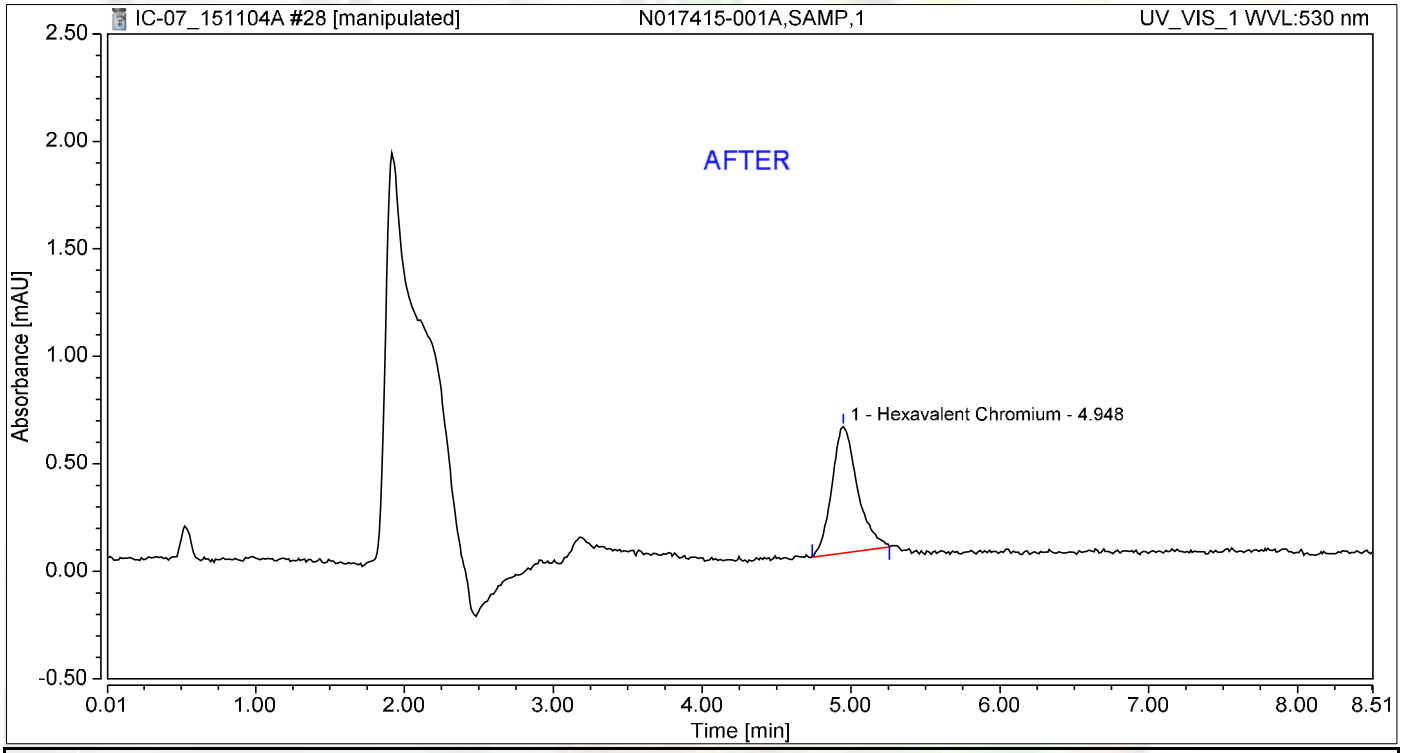
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	0.014	0.115	100.00	100.00	0.0590
Total:			**0.014**	**0.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.118	0.589	100.00	100.00	0.5000
Total:			**0.118**	**0.589**	**100.00**	**100.00**	

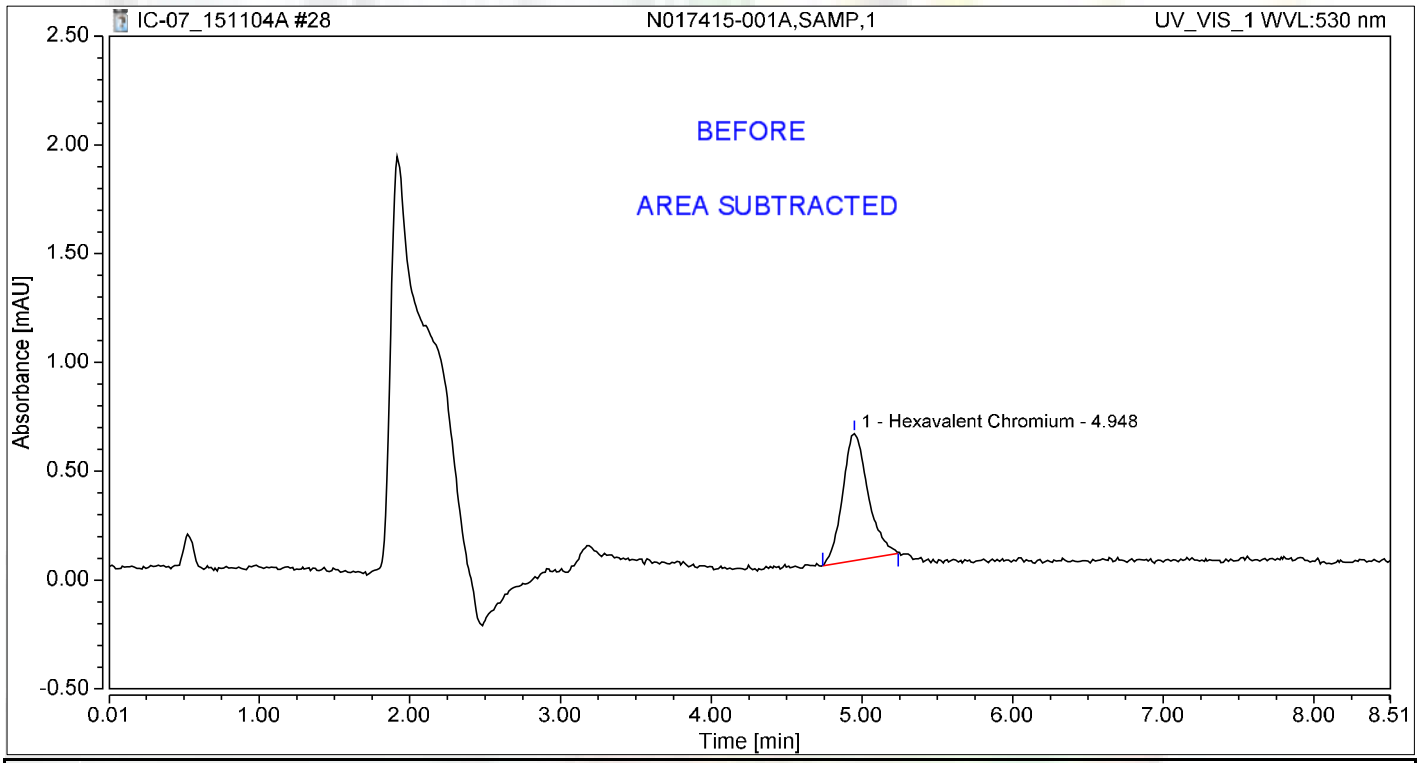
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

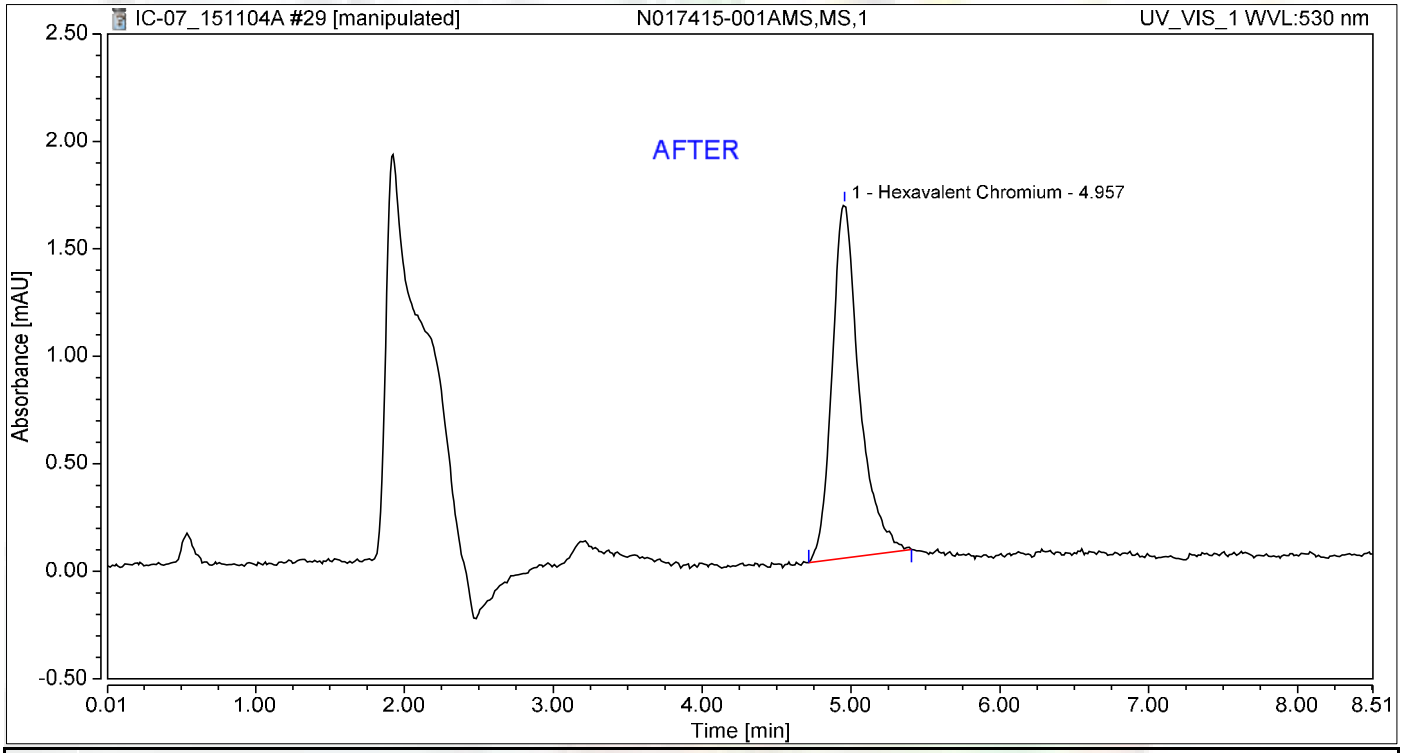
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.115	0.585	100.00	100.00	0.4891
Total:			**0.115**	**0.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.348	1.646	100.00	100.00	1.4807
Total:			**0.348**	**1.646**	**100.00**	**100.00**	

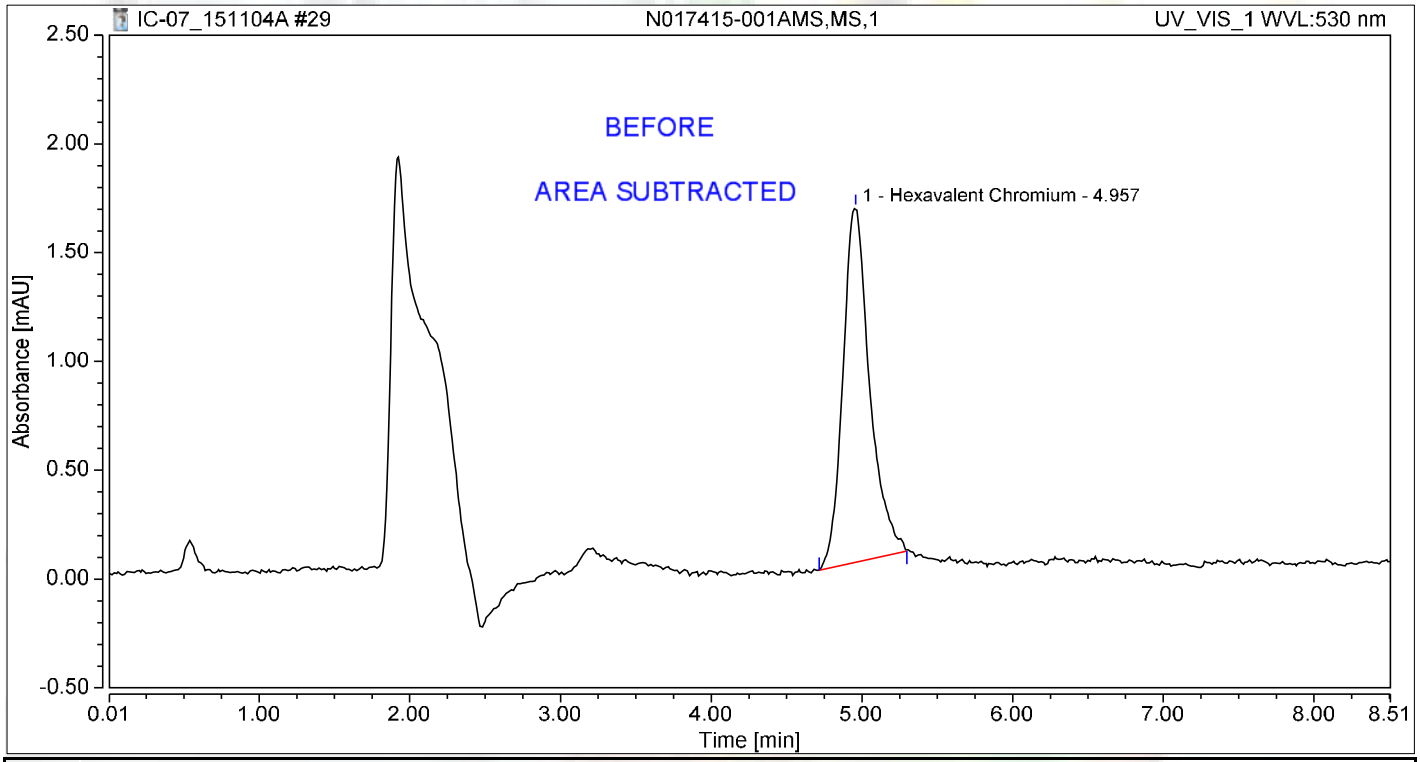
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

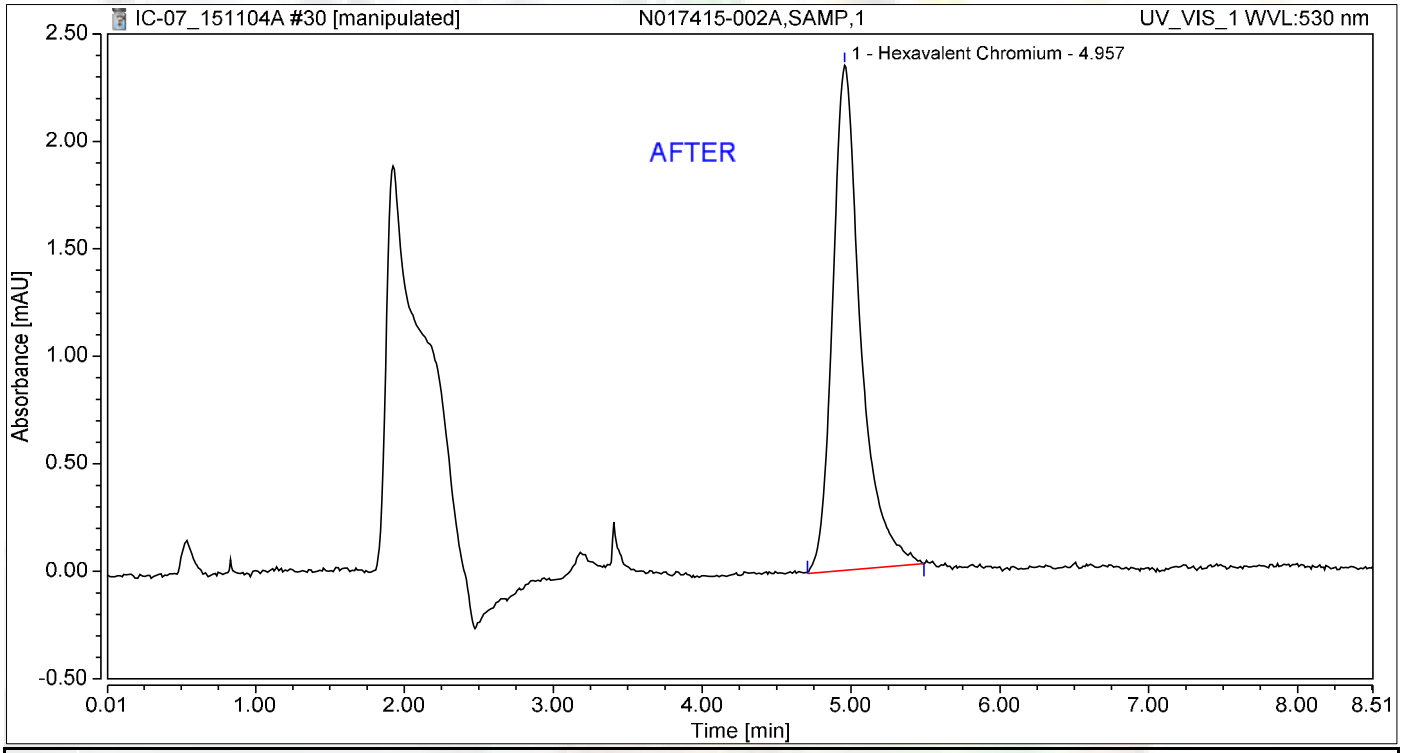
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.335	1.631	100.00	100.00	1.4257
Total:			**0.335**	**1.631**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.513	2.350	100.00	100.00	2.1816
Total:			**0.513**	**2.350**	**100.00**	**100.00**	

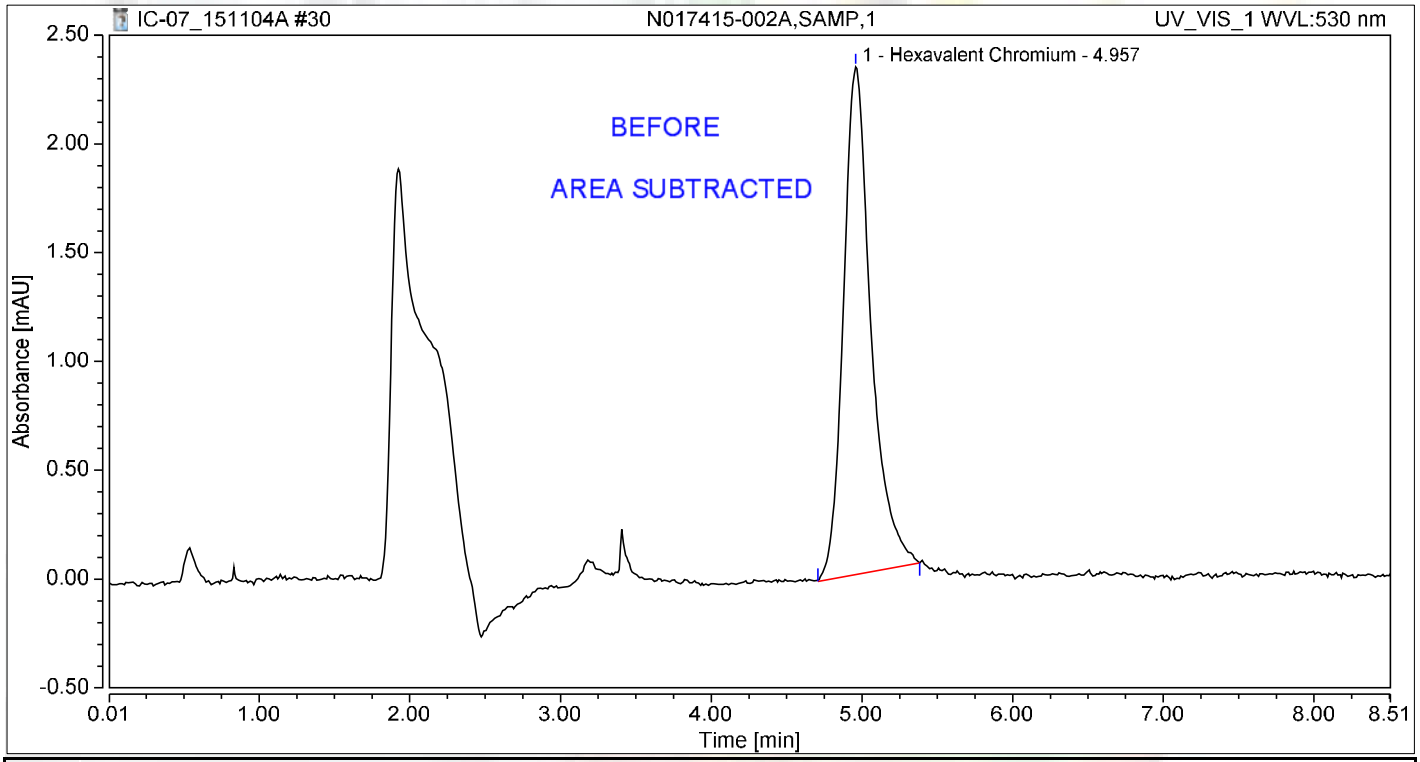
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

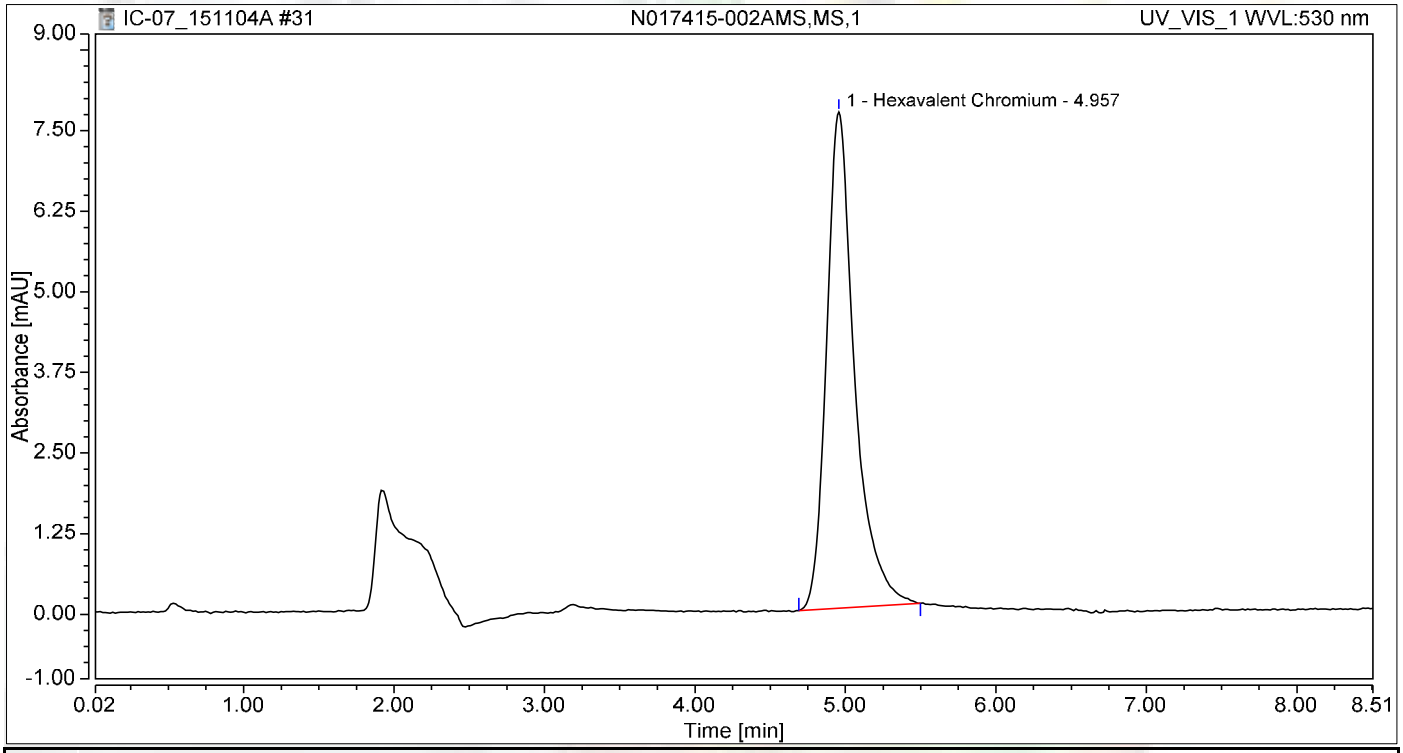
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.495	2.333	100.00	100.00	2.1051
Total:			**0.495**	**2.333**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

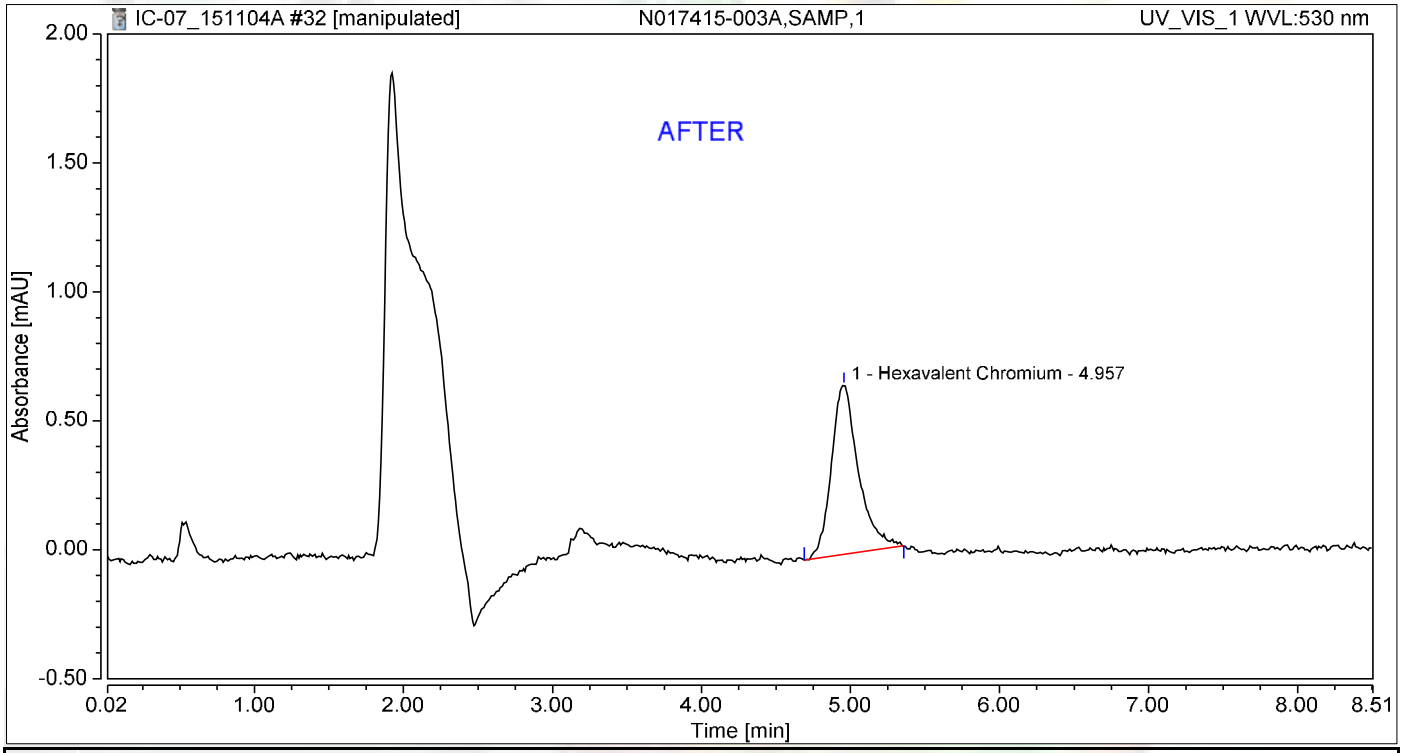
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	1.663	7.694	100.00	100.00	7.0689
Total:			**1.663**	**7.694**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.138	0.655	100.00	100.00	0.5857
Total:			**0.138**	**0.655**	**100.00**	**100.00**	

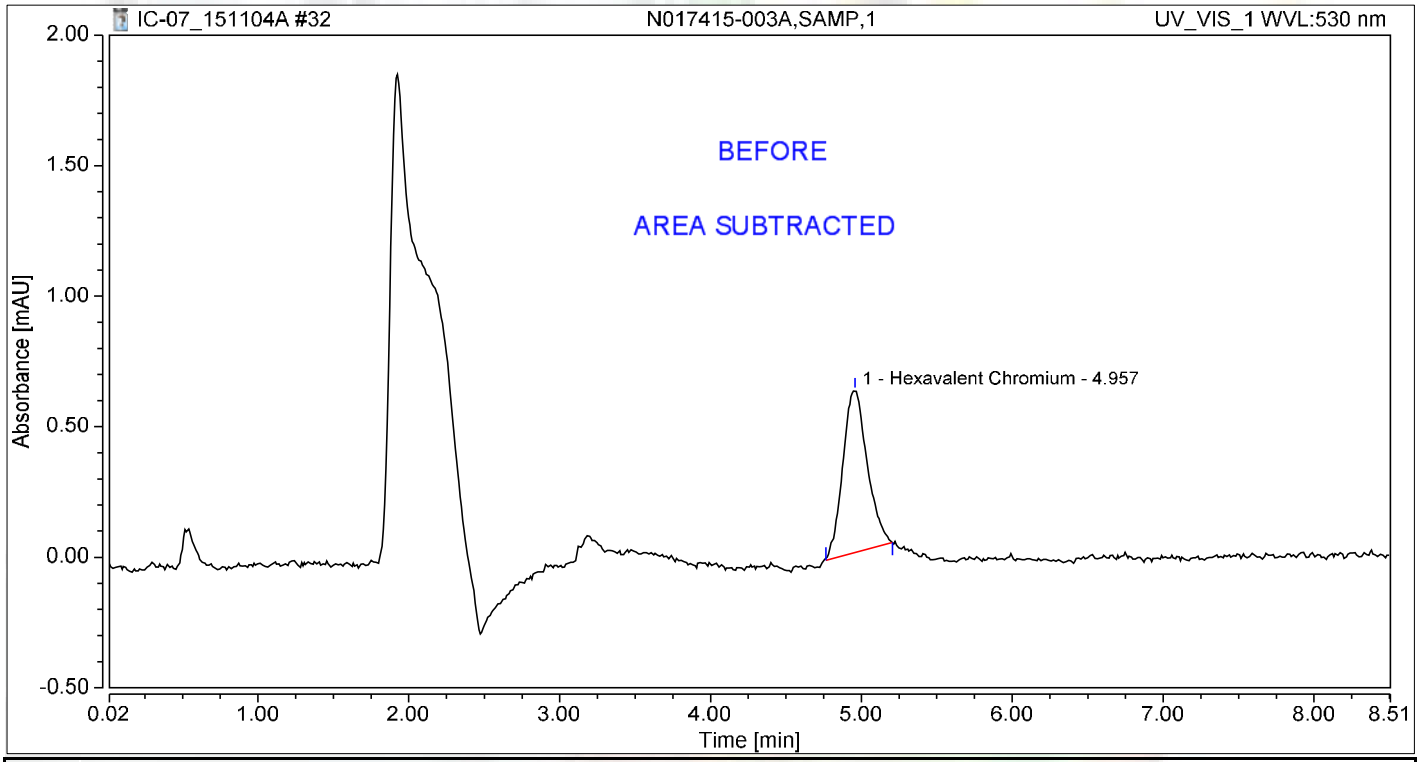
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

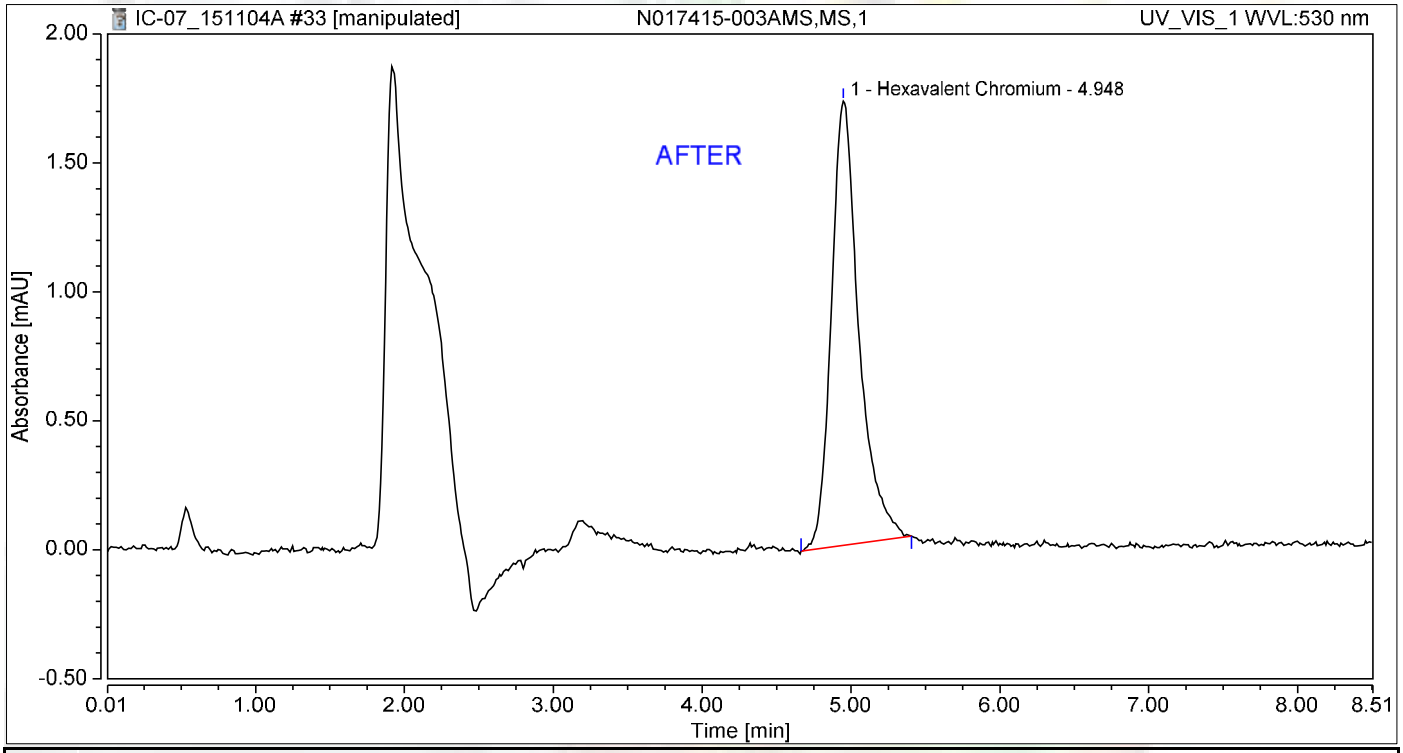
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.117	0.619	100.00	100.00	0.4956
Total:			**0.117**	**0.619**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.370	1.723	100.00	100.00	1.5707
Total:			**0.370**	**1.723**	**100.00**	**100.00**	

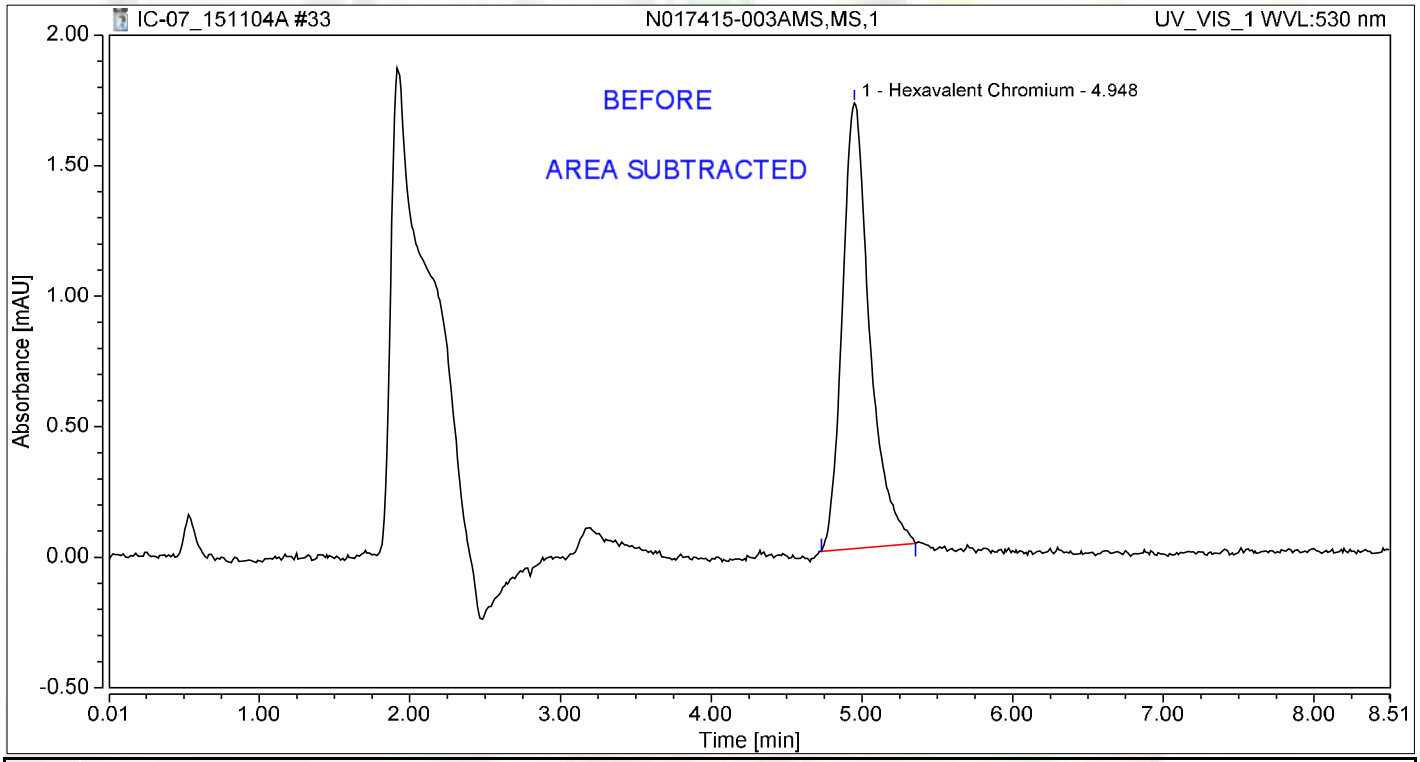
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

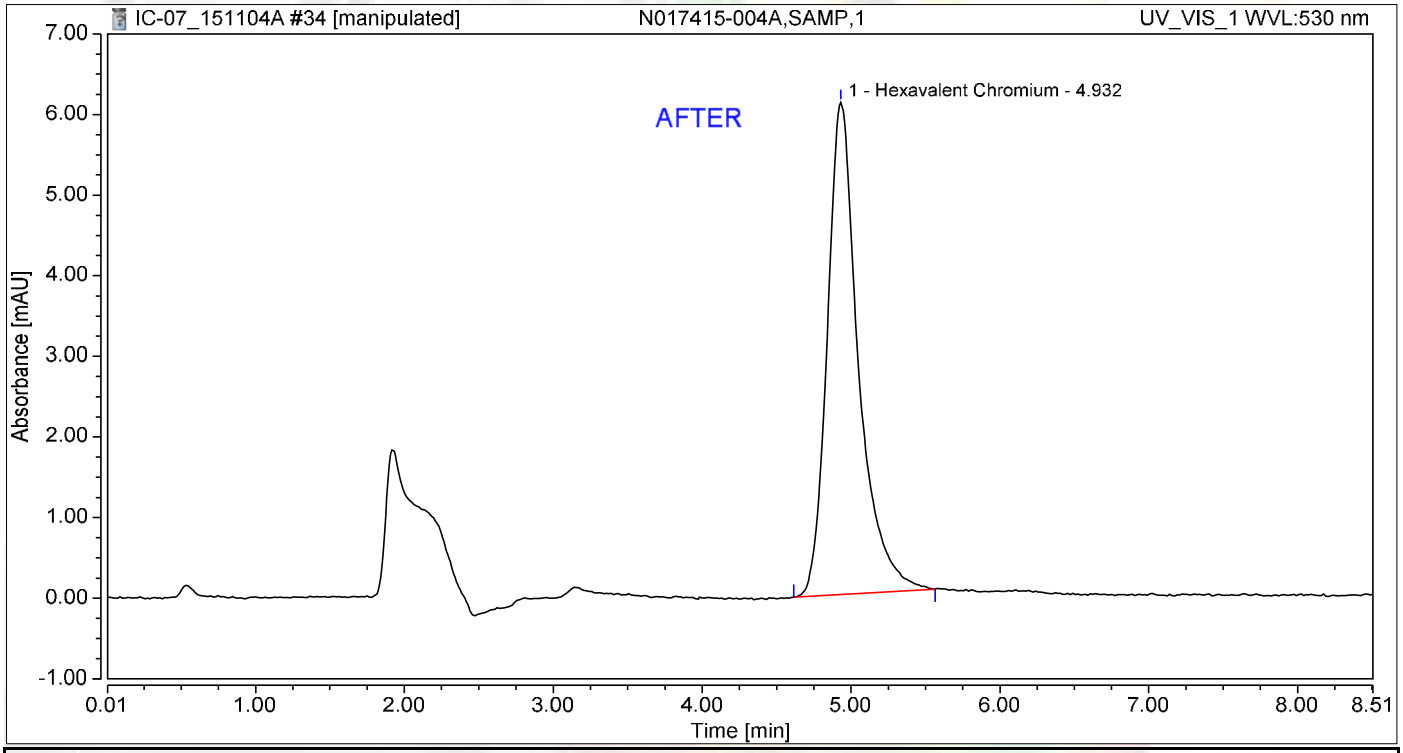
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.360	1.707	100.00	100.00	1.5310
Total:			**0.360**	**1.707**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	1.482	6.106	100.00	100.00	6.2996
Total:			**1.482**	**6.106**	**100.00**	**100.00**	

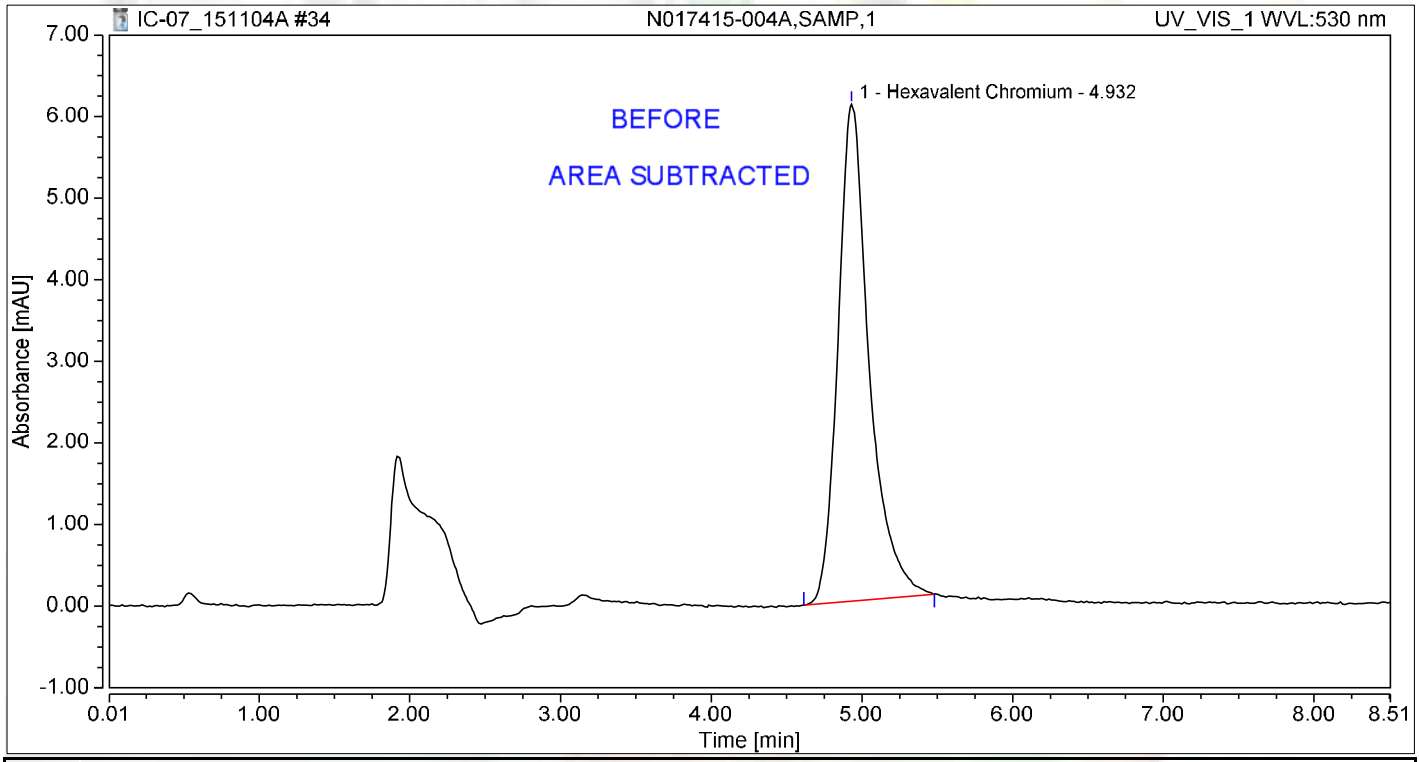
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

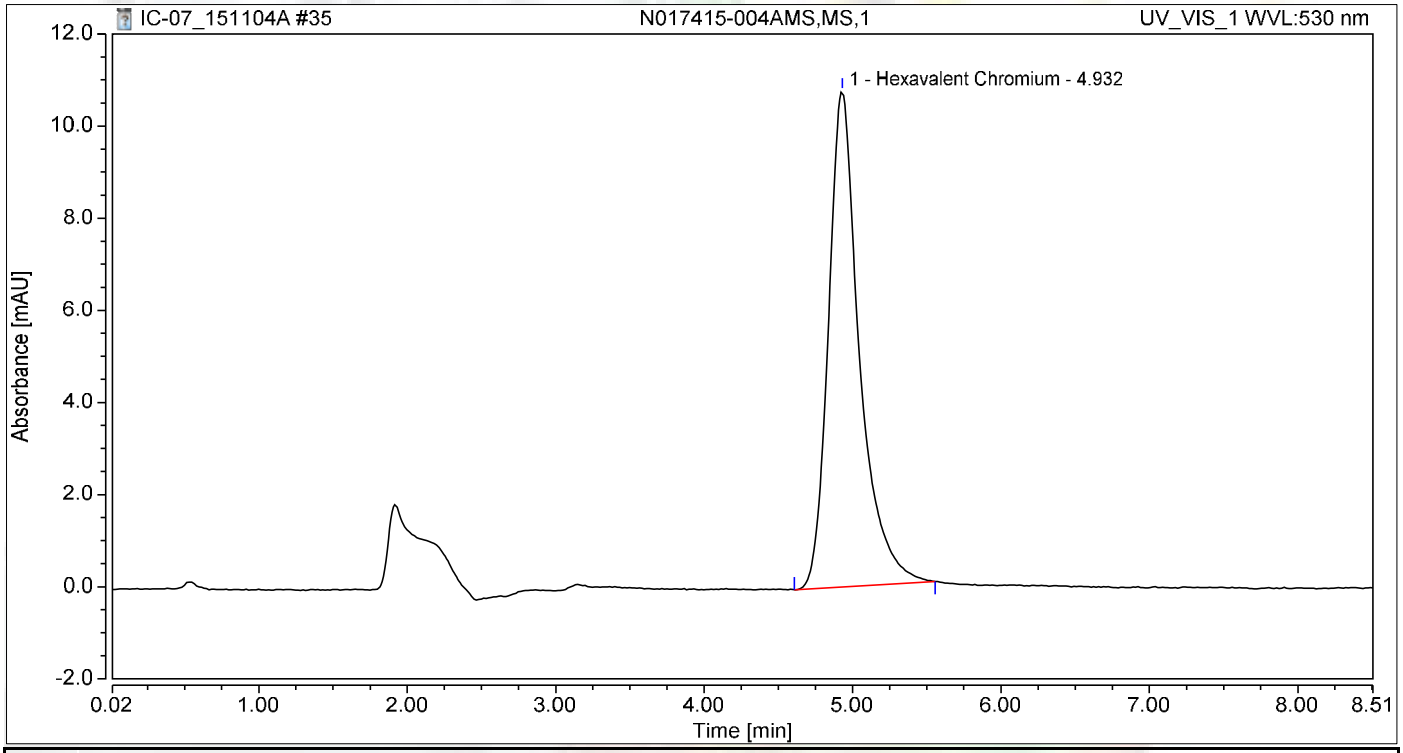
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	1.462	6.091	100.00	100.00	6.2126
Total:			**1.462**	**6.091**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

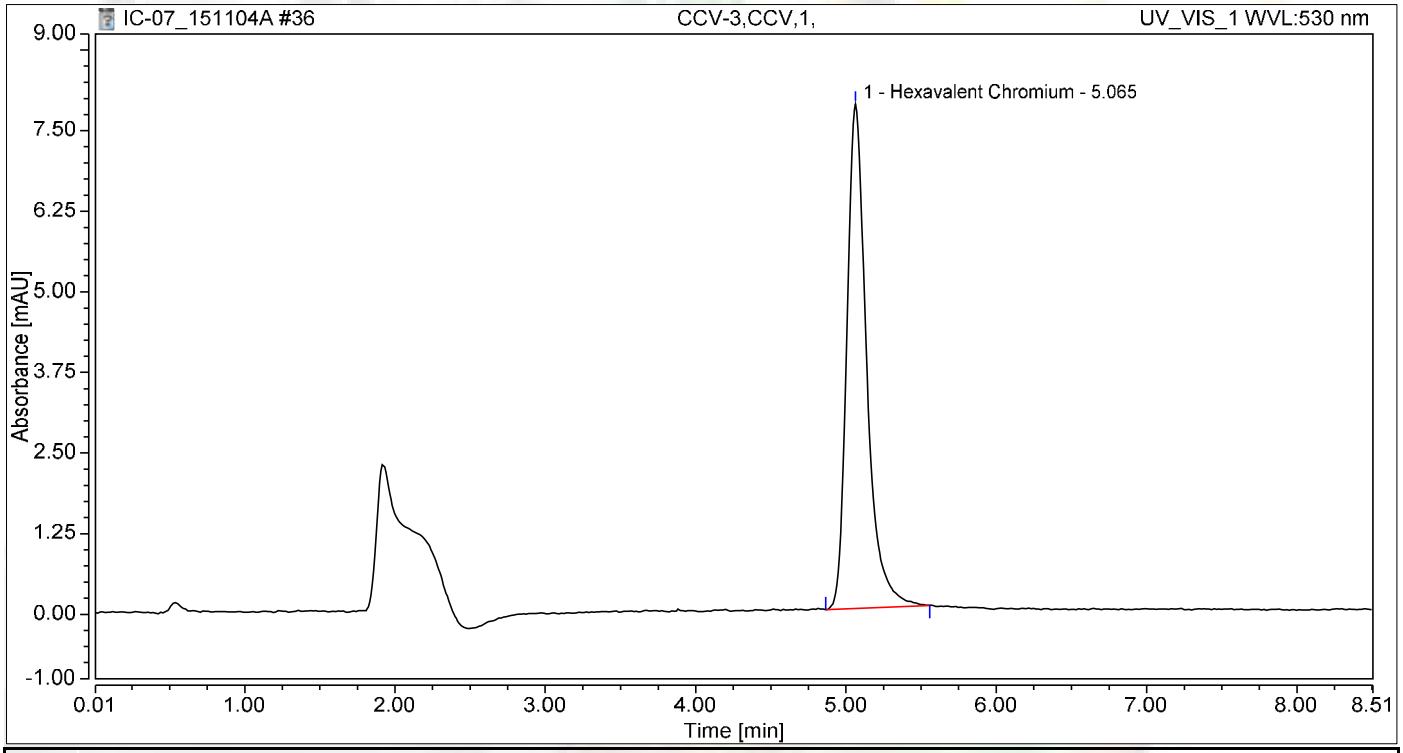
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	2.606	10.768	100.00	100.00	11.0753
Total:			**2.606**	**10.768**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

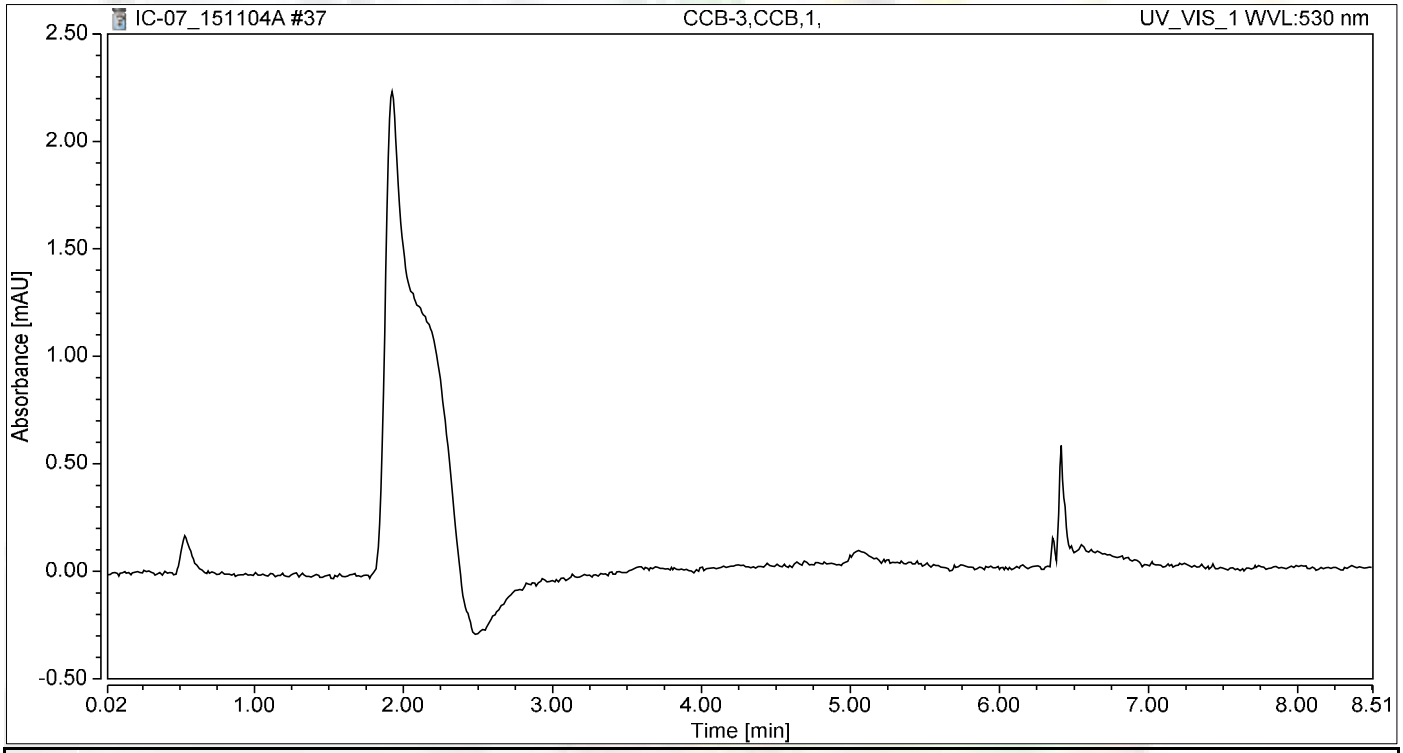
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.183	7.823	100.00	100.00	5.0281
Total:			**1.183**	**7.823**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

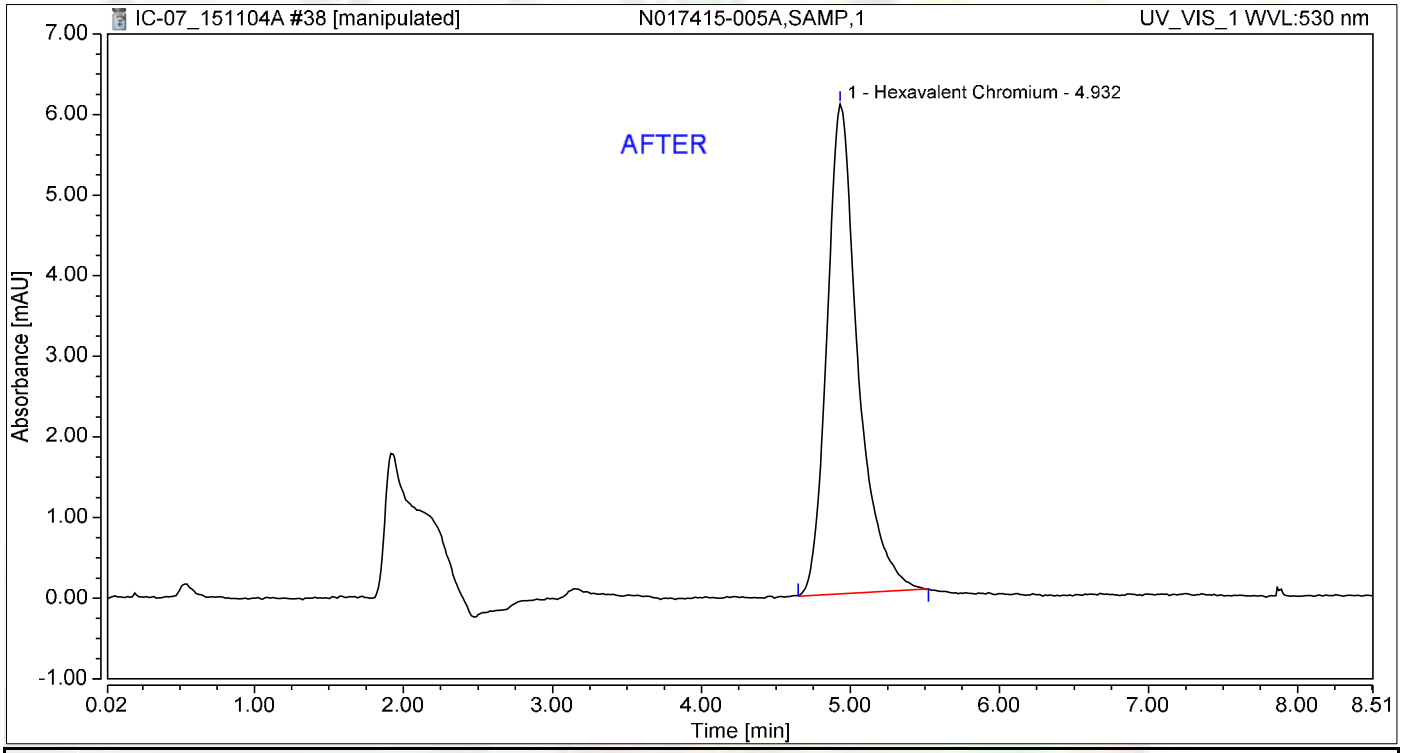
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	1.467	6.076	100.00	100.00	6.2333
Total:			**1.467**	**6.076**	**100.00**	**100.00**	

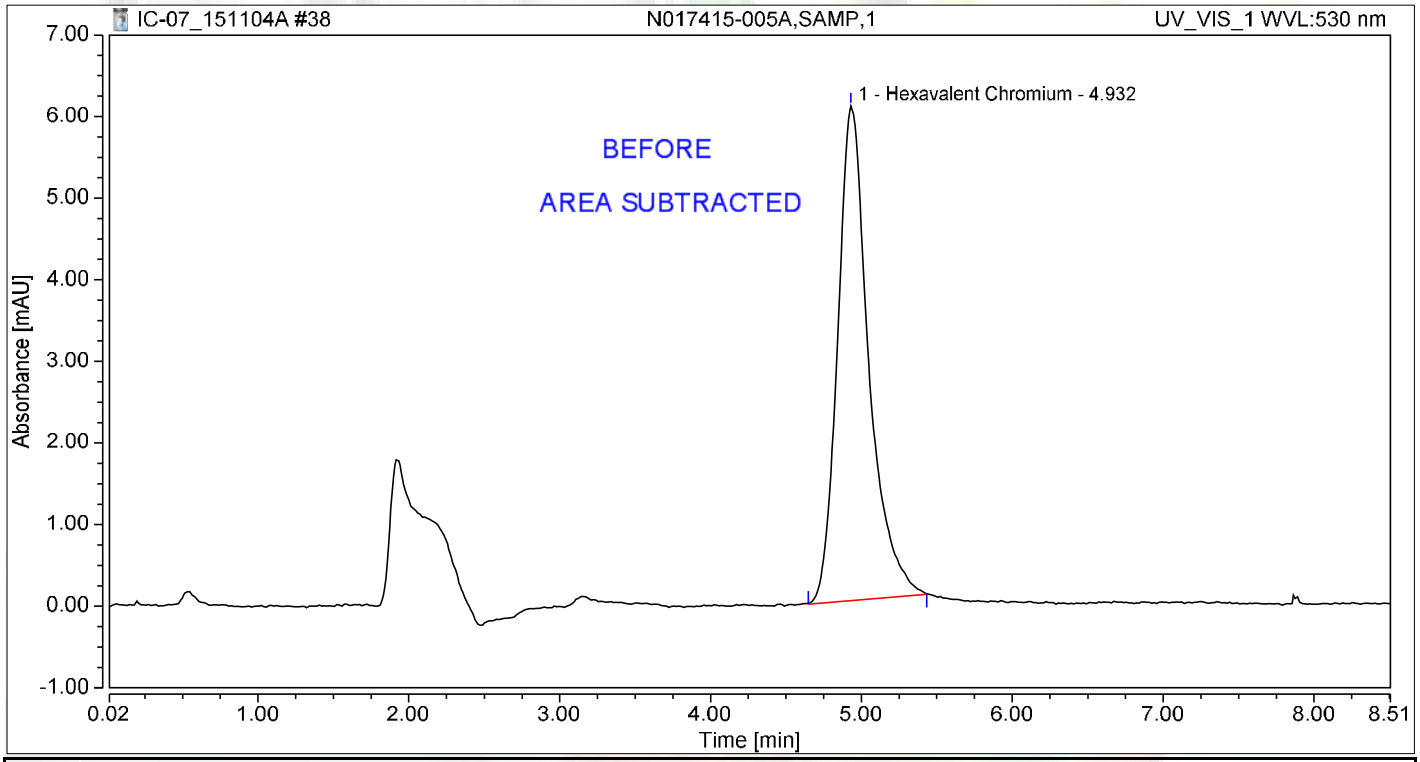
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

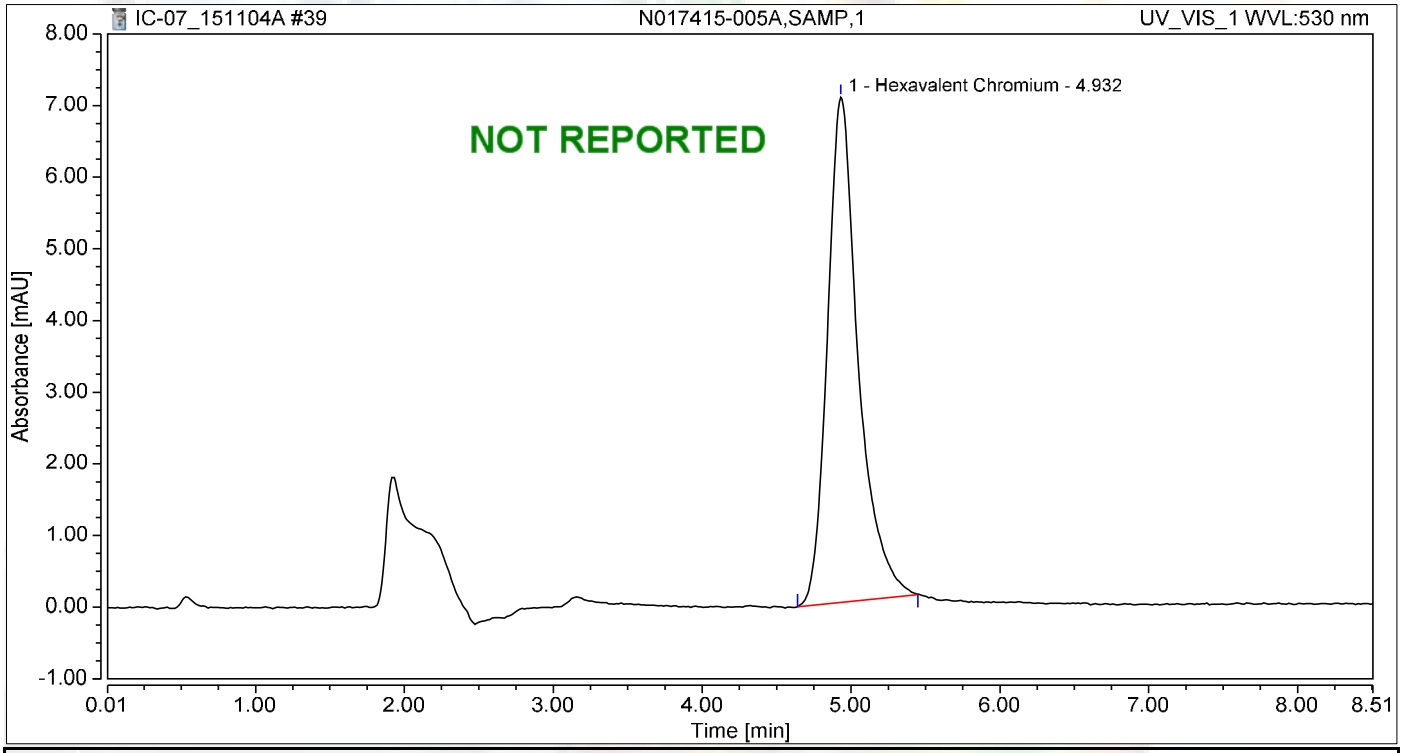
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	1.450	6.063	100.00	100.00	6.1633
Total:			**1.450**	**6.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

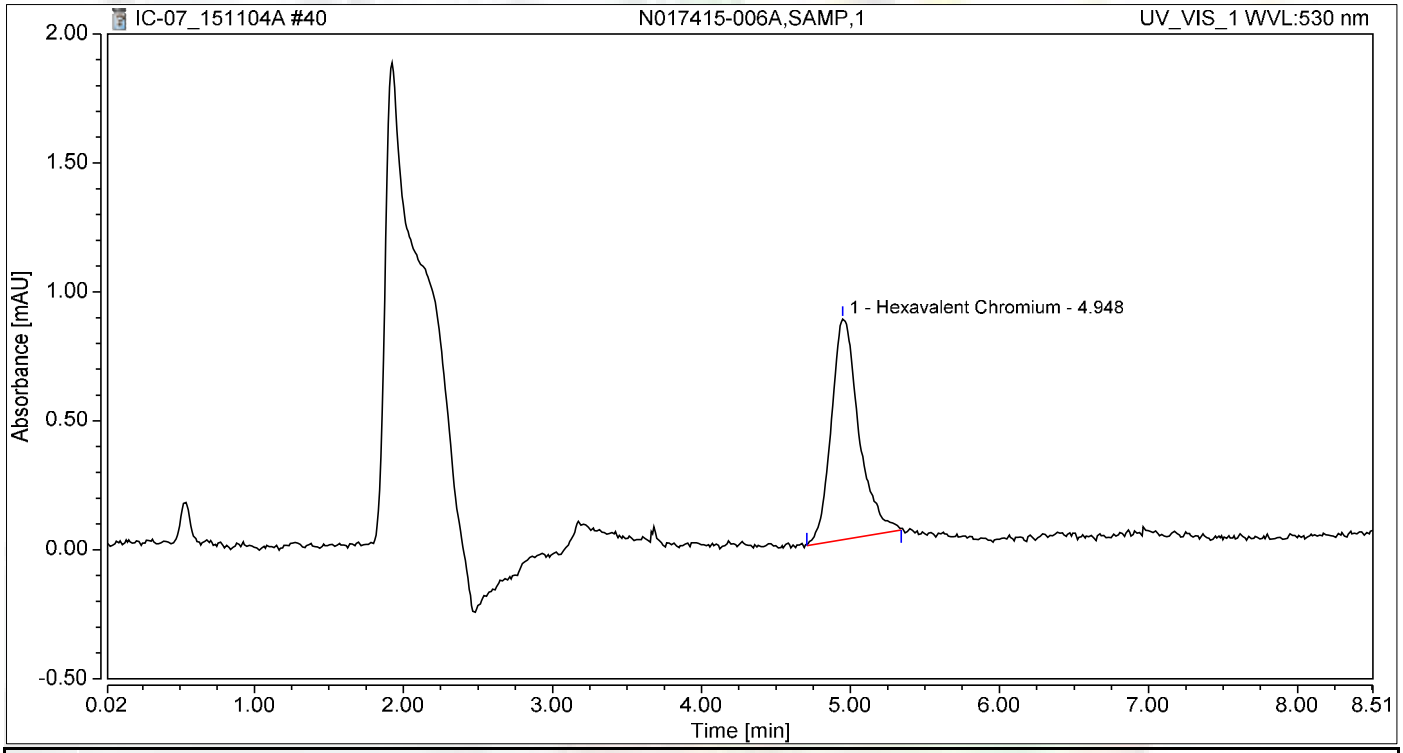
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	1.691	7.049	100.00	100.00	7.1875
Total:			**1.691**	**7.049**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

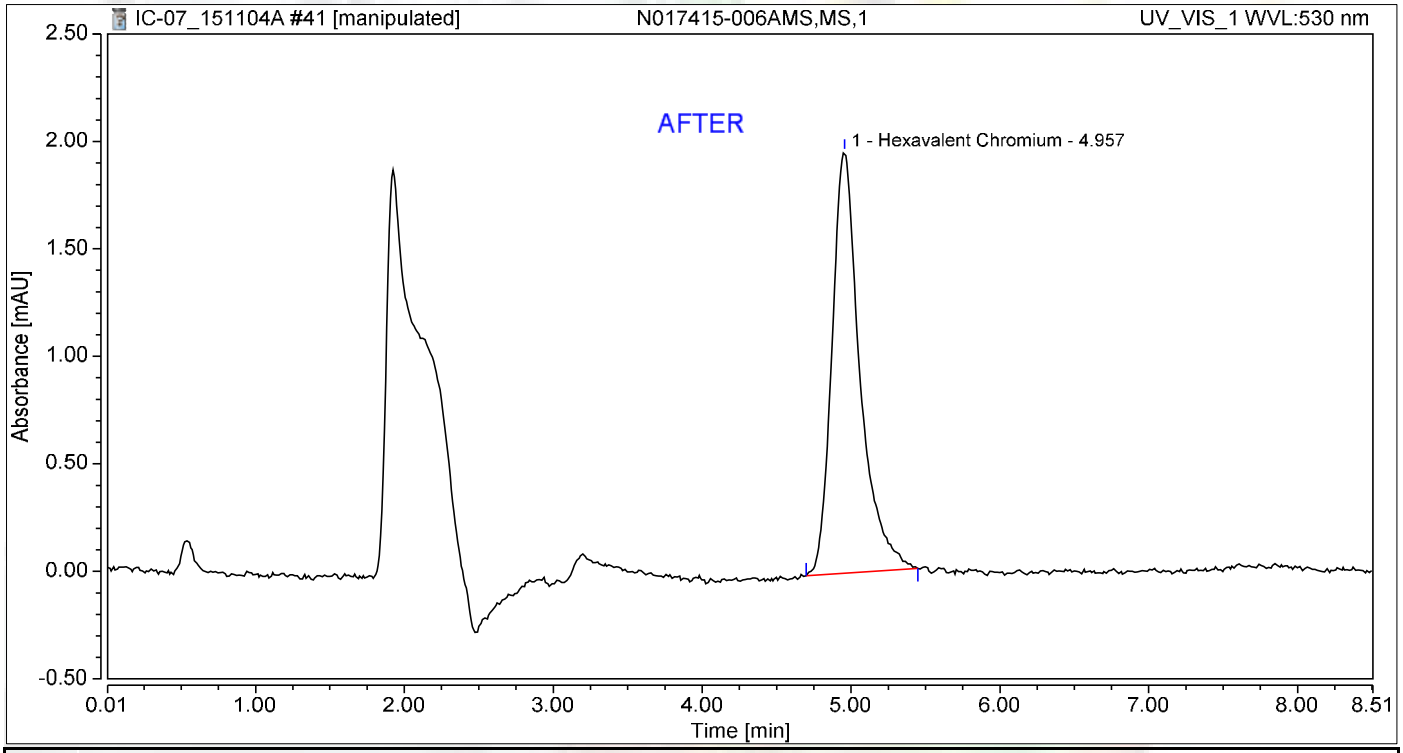
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.948	0.184	0.855	100.00	100.00	0.7800
Total:			**0.184**	**0.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.427	1.960	100.00	100.00	1.8165
Total:			**0.427**	**1.960**	**100.00**	**100.00**	

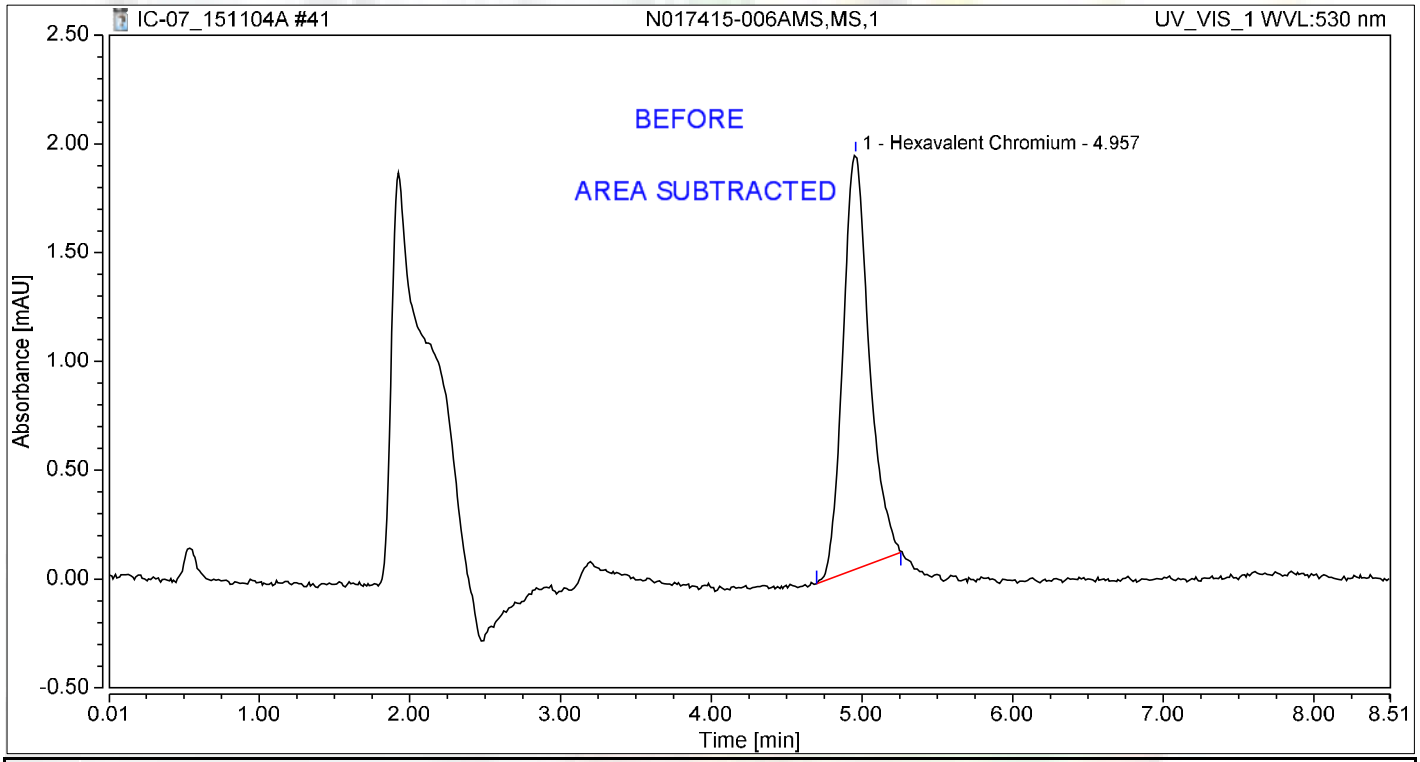
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

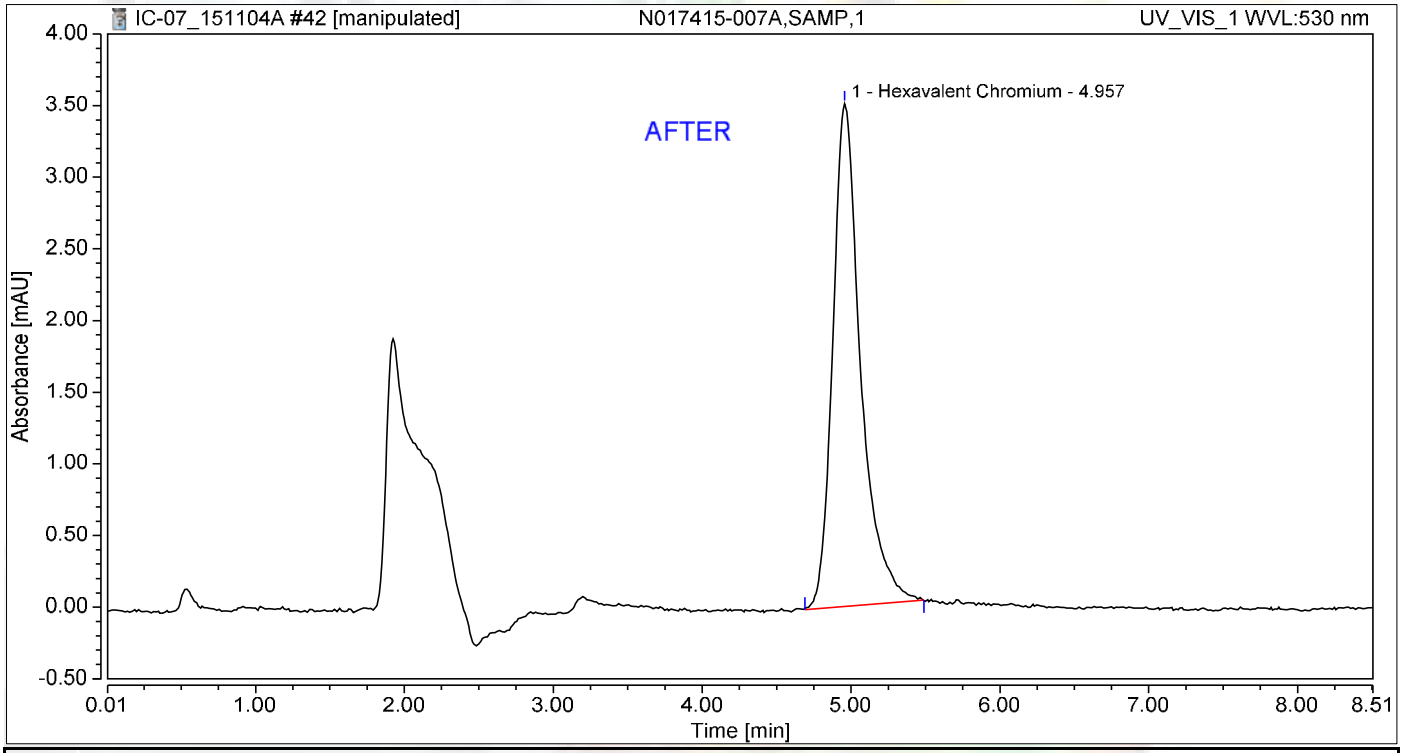
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.385	1.905	100.00	100.00	1.6372
Total:			**0.385**	**1.905**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.760	3.509	100.00	100.00	3.2295
Total:			**0.760**	**3.509**	**100.00**	**100.00**	

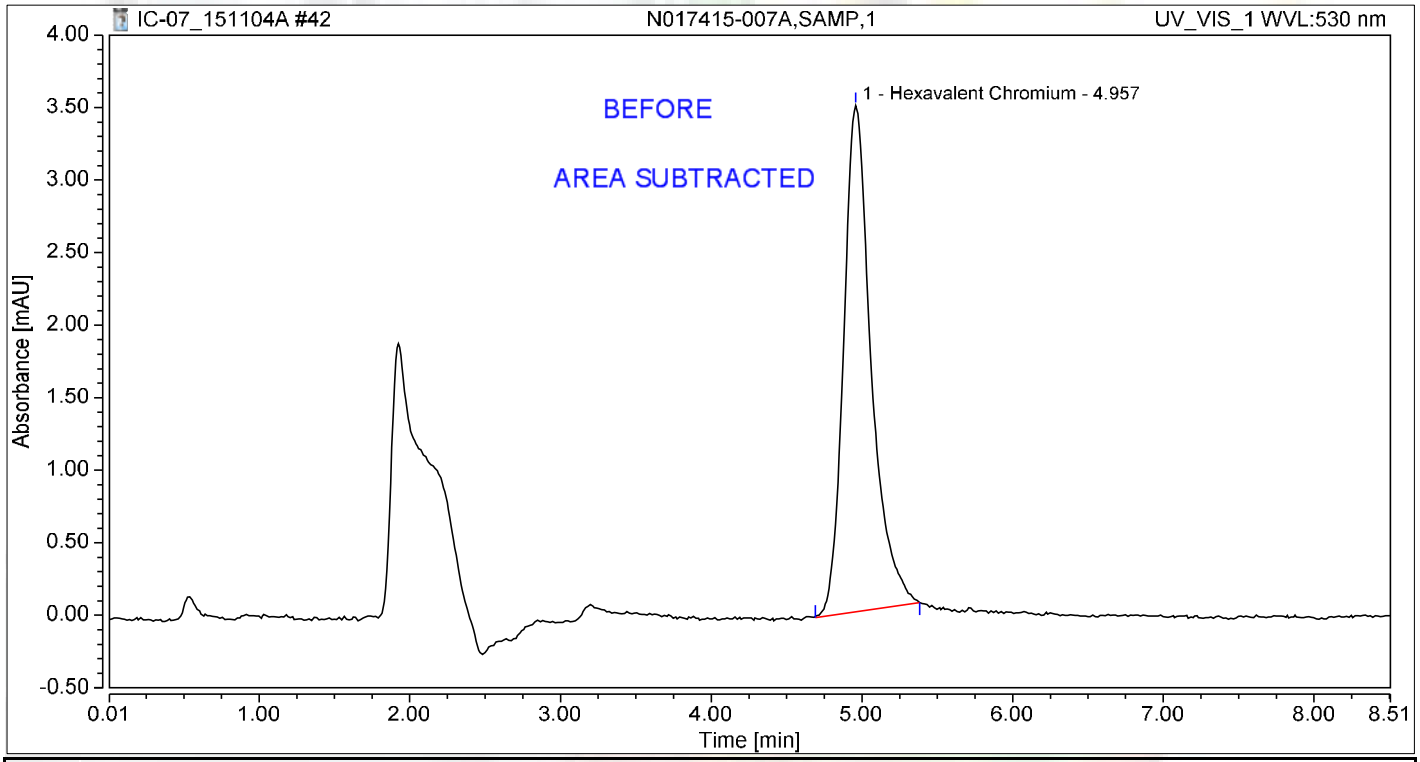
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

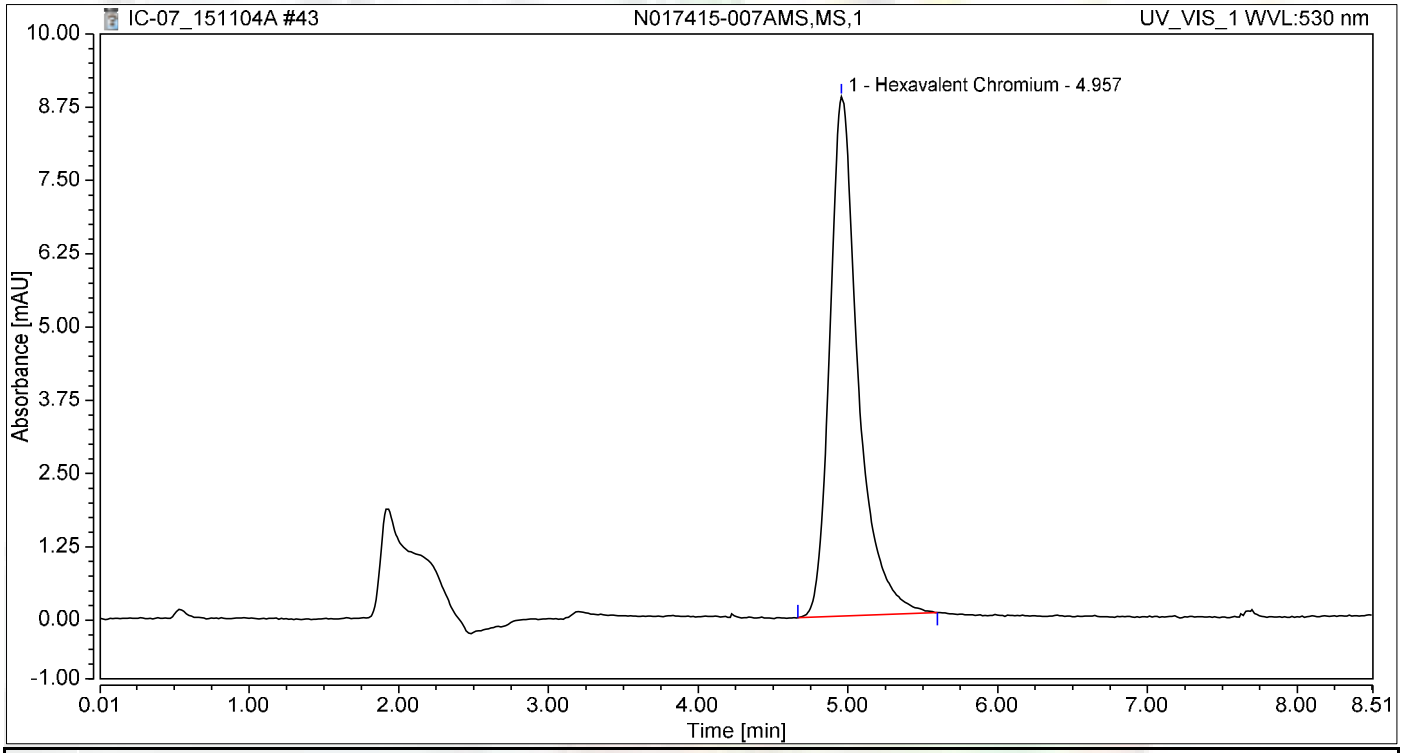
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	0.740	3.490	100.00	100.00	3.1462
Total:			**0.740**	**3.490**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

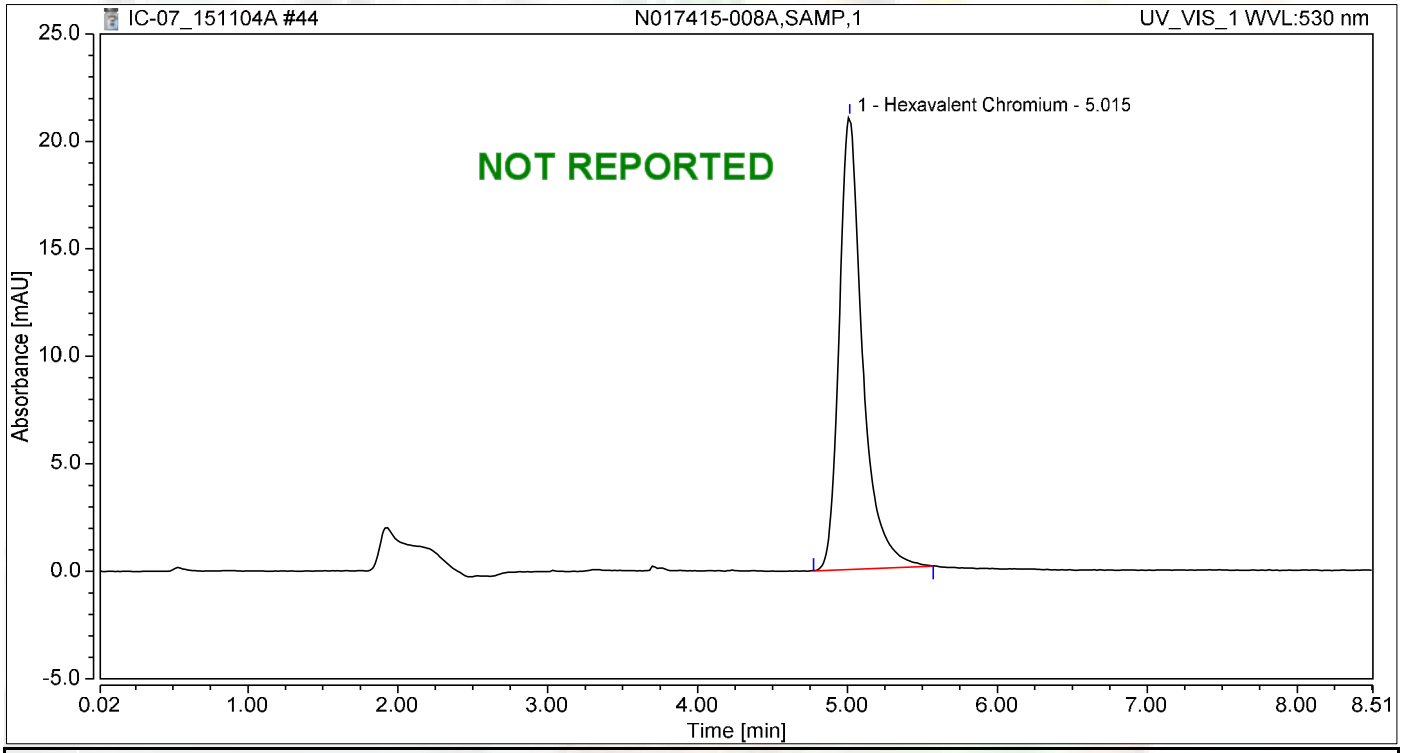
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.957	1.945	8.859	100.00	100.00	8.2667
Total:			**1.945**	**8.859**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

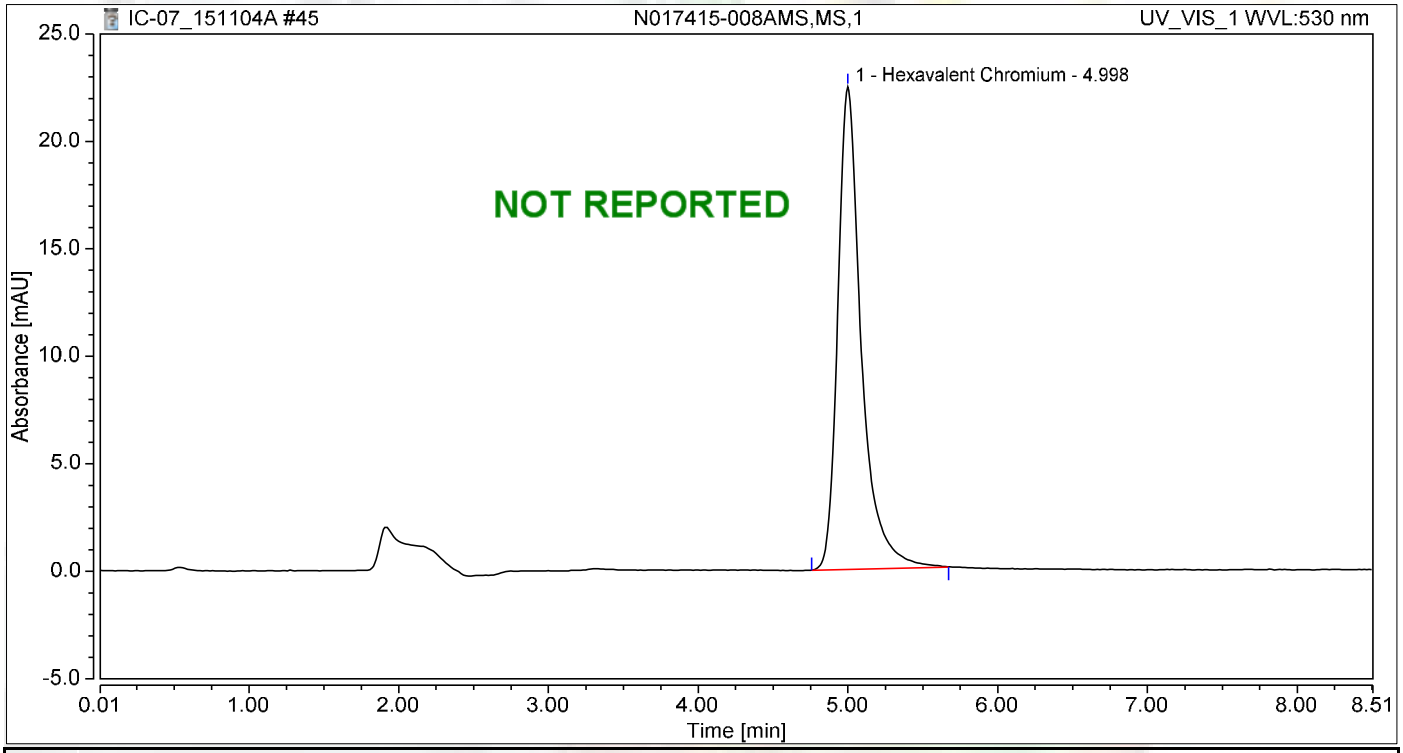
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.015	3.803	21.063	100.00	100.00	16.1608
Total:			**3.803**	**21.063**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

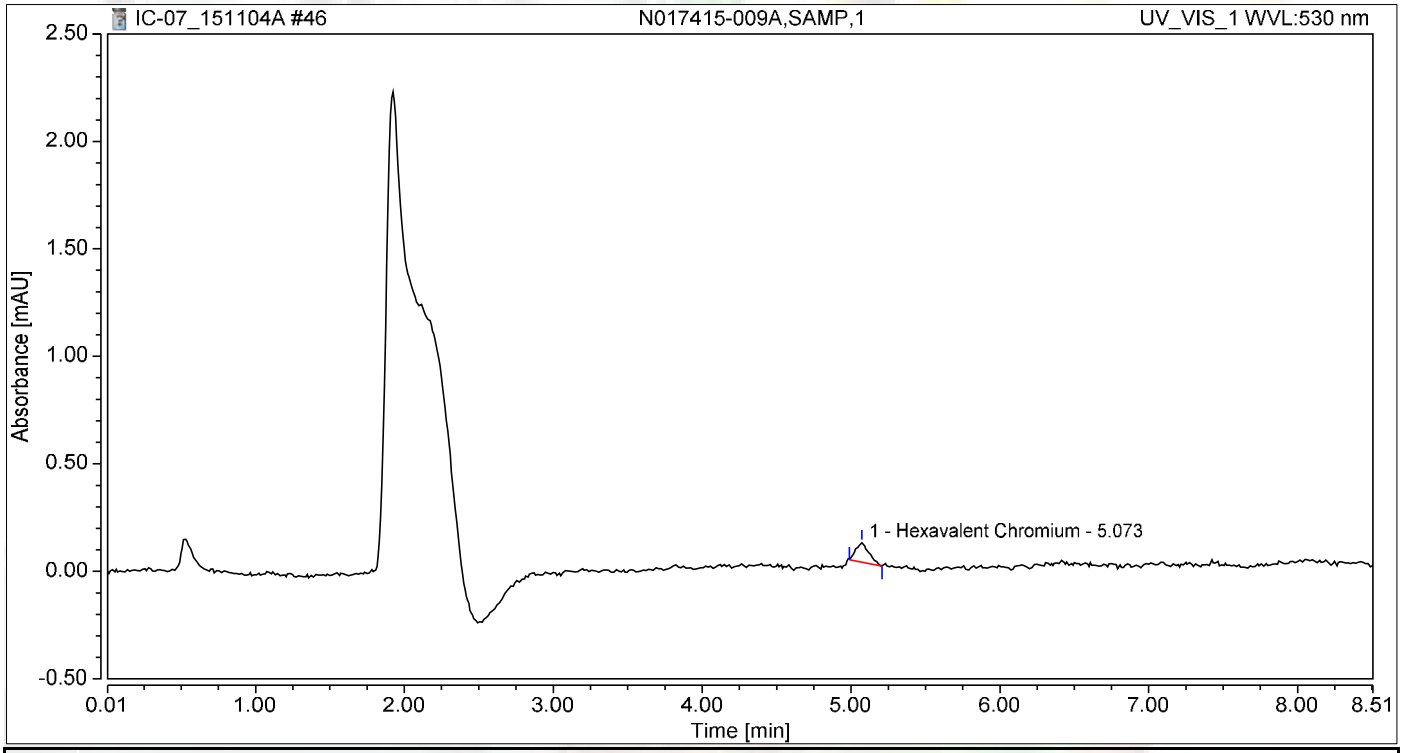
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.998	4.089	22.465	100.00	100.00	17.3757
Total:			**4.089**	**22.465**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

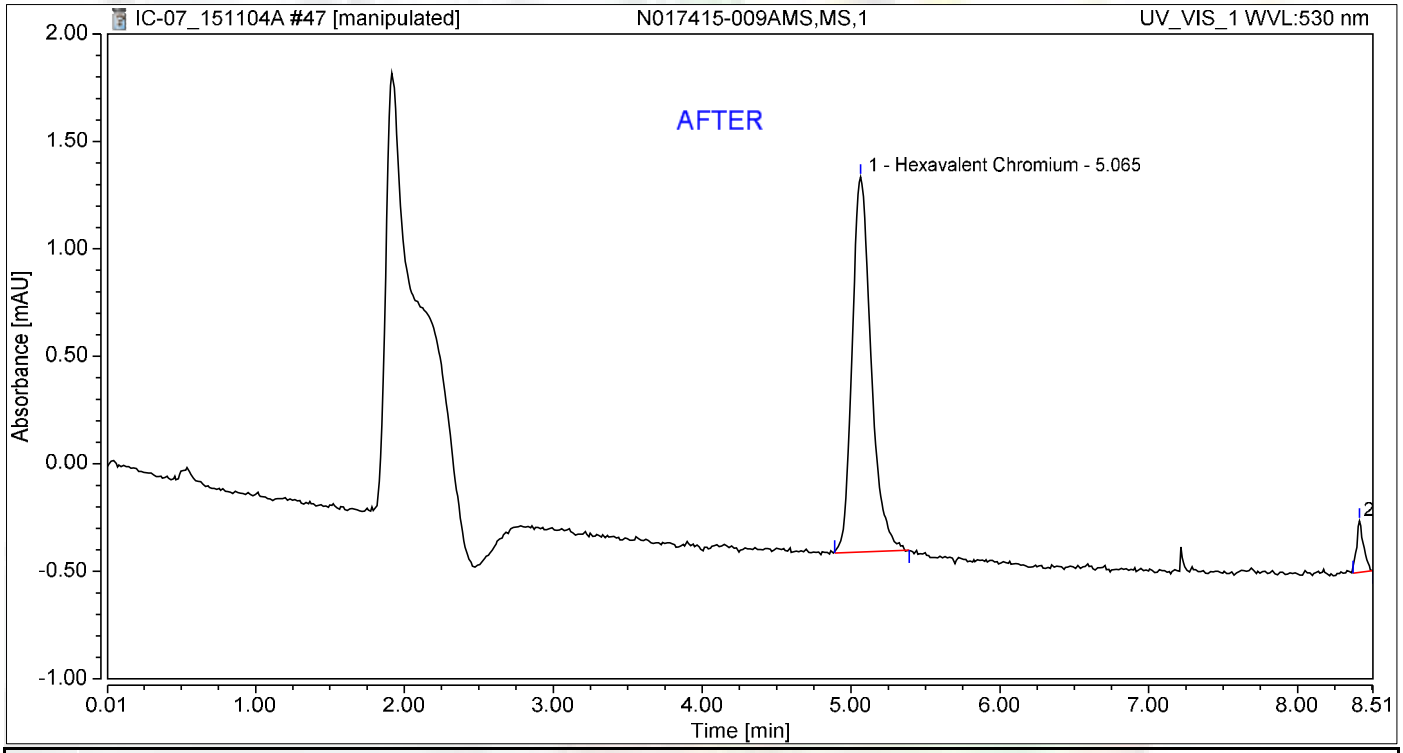
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.073	0.009	0.091	100.00	100.00	0.0390
Total:			**0.009**	**0.091**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.255	1.745	95.15	87.92	1.0842
2		8.415	0.013	0.240	4.85	12.08	n.a.
Total:			**0.268**	**1.985**	**100.00**	**100.00**	

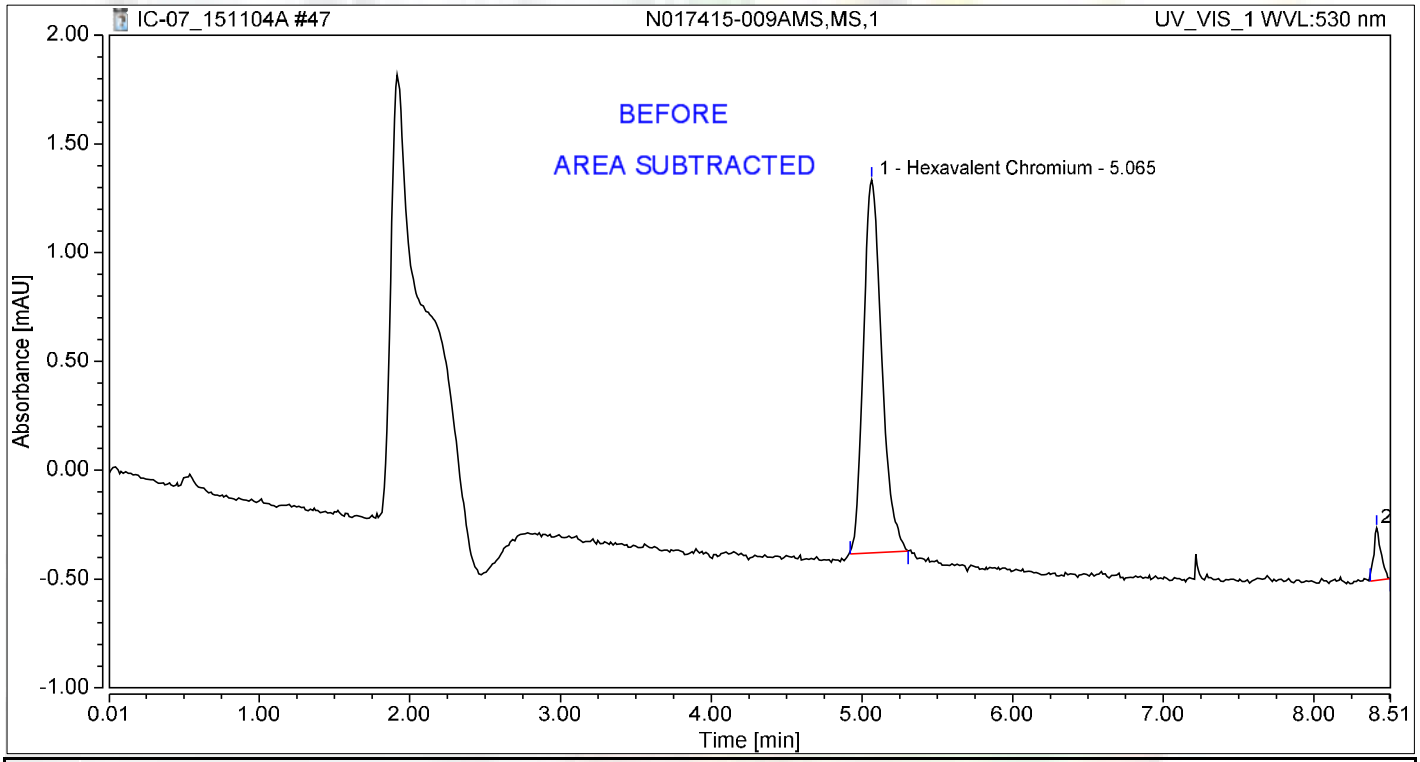
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017415-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

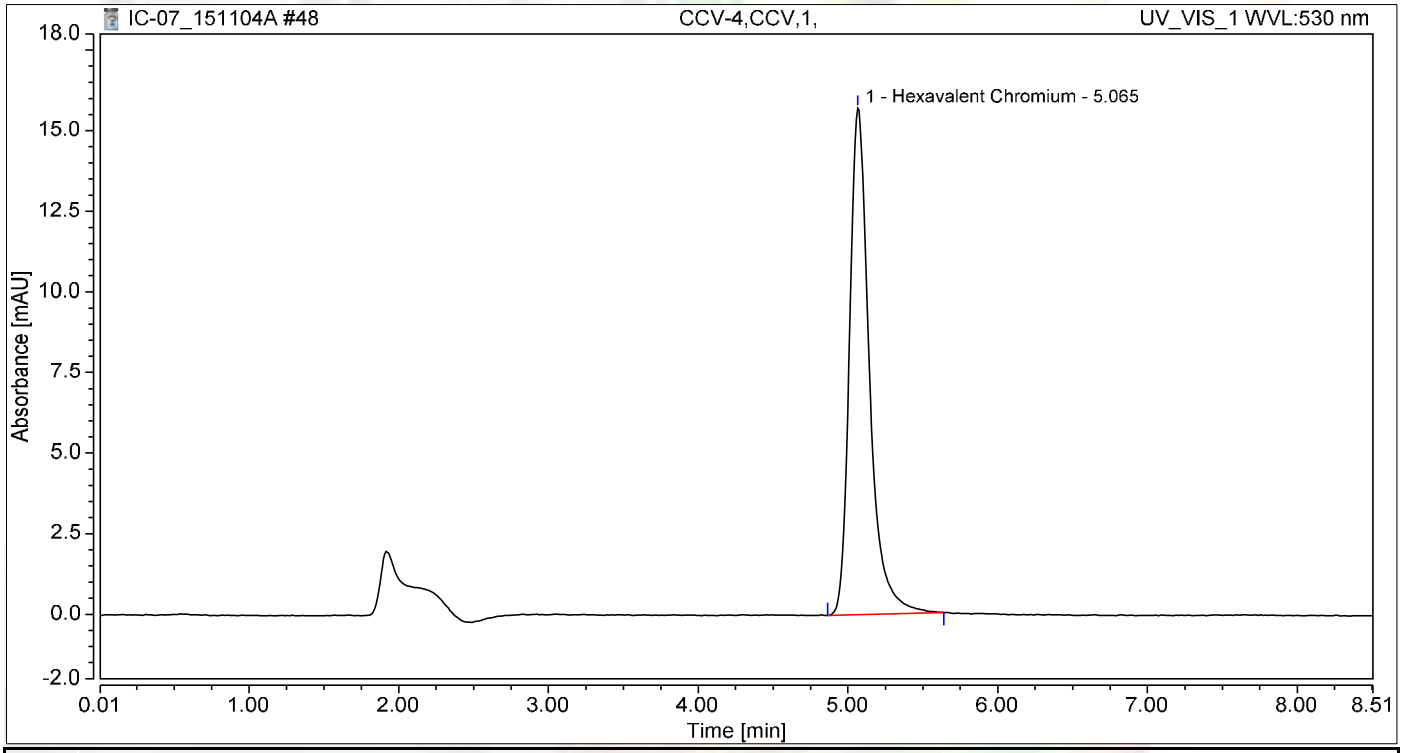
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	0.242	1.715	94.89	87.74	1.0266
2		8.415	0.013	0.240	5.11	12.26	n.a.
Total:			**0.255**	**1.955**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

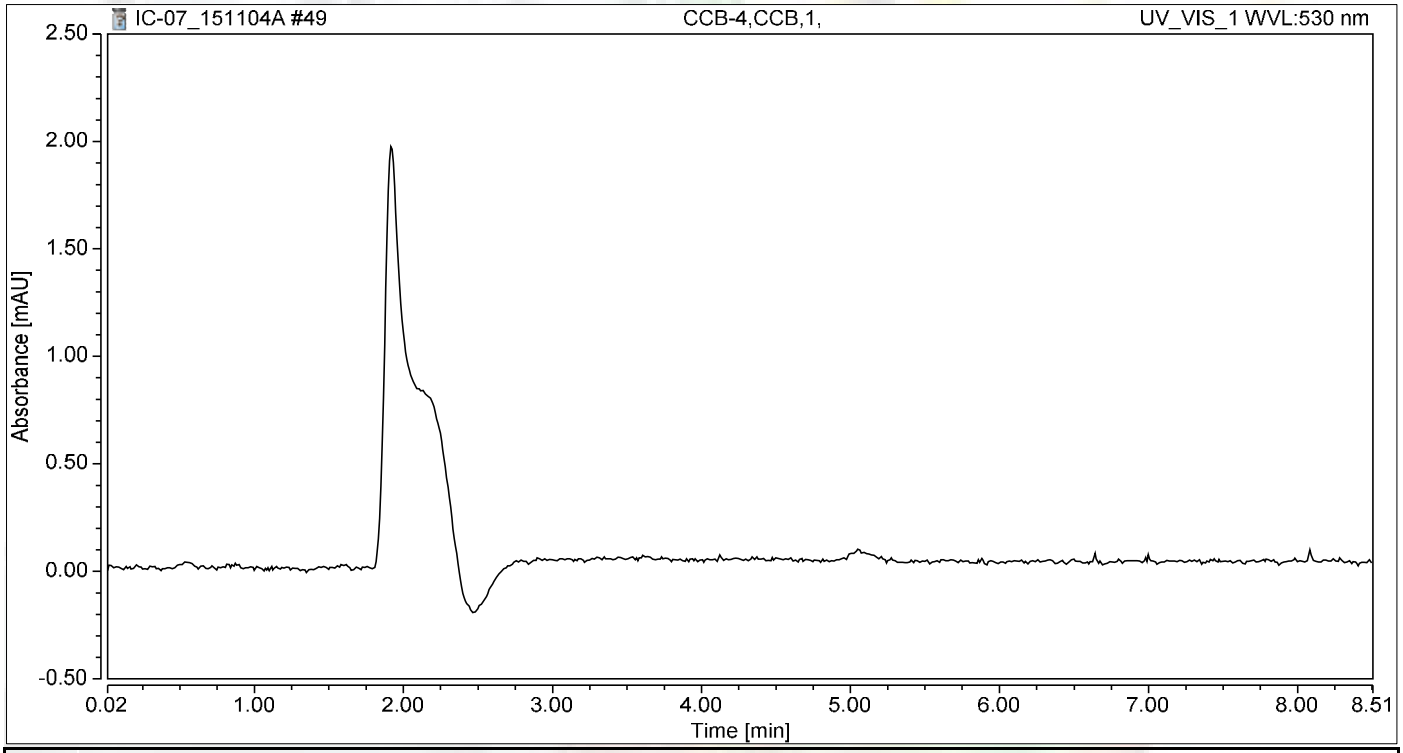
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.398	15.711	100.00	100.00	10.1896
Total:			**2.398**	**15.711**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

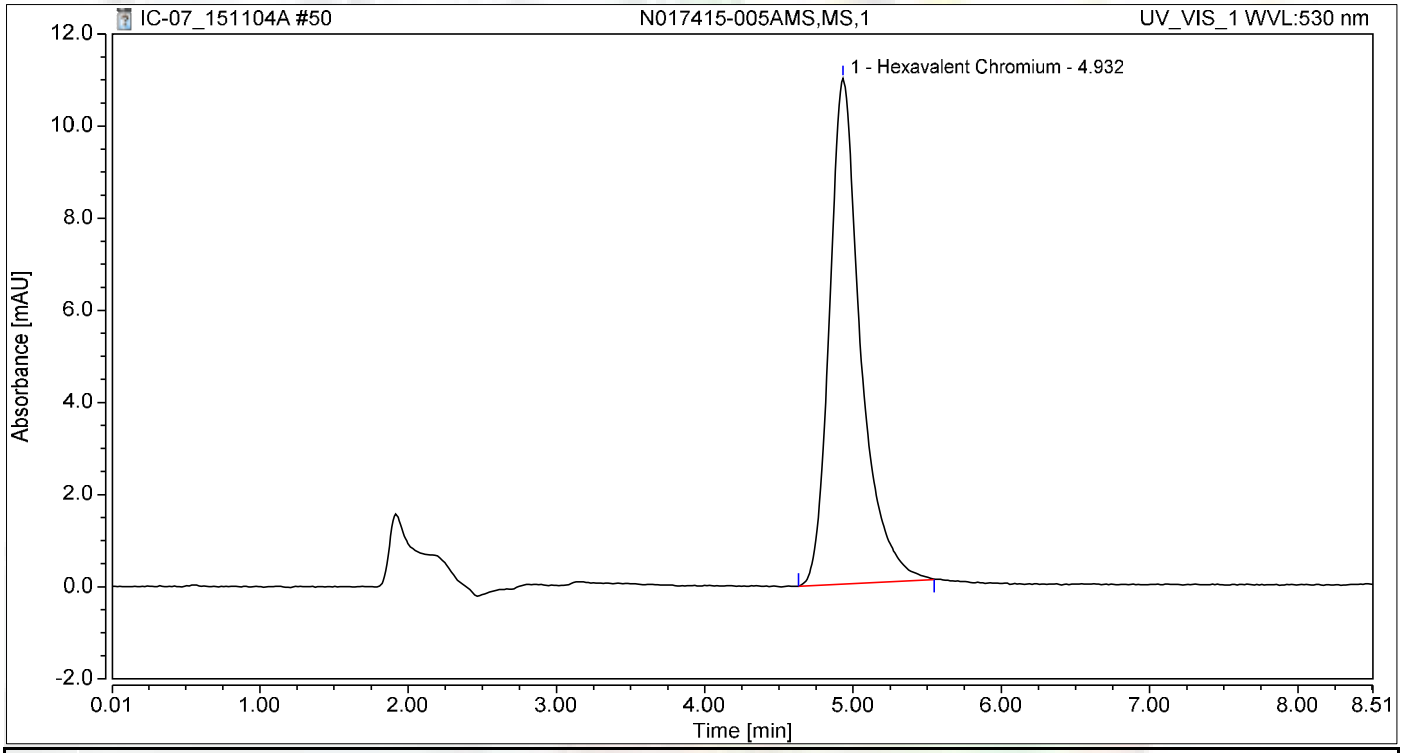
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

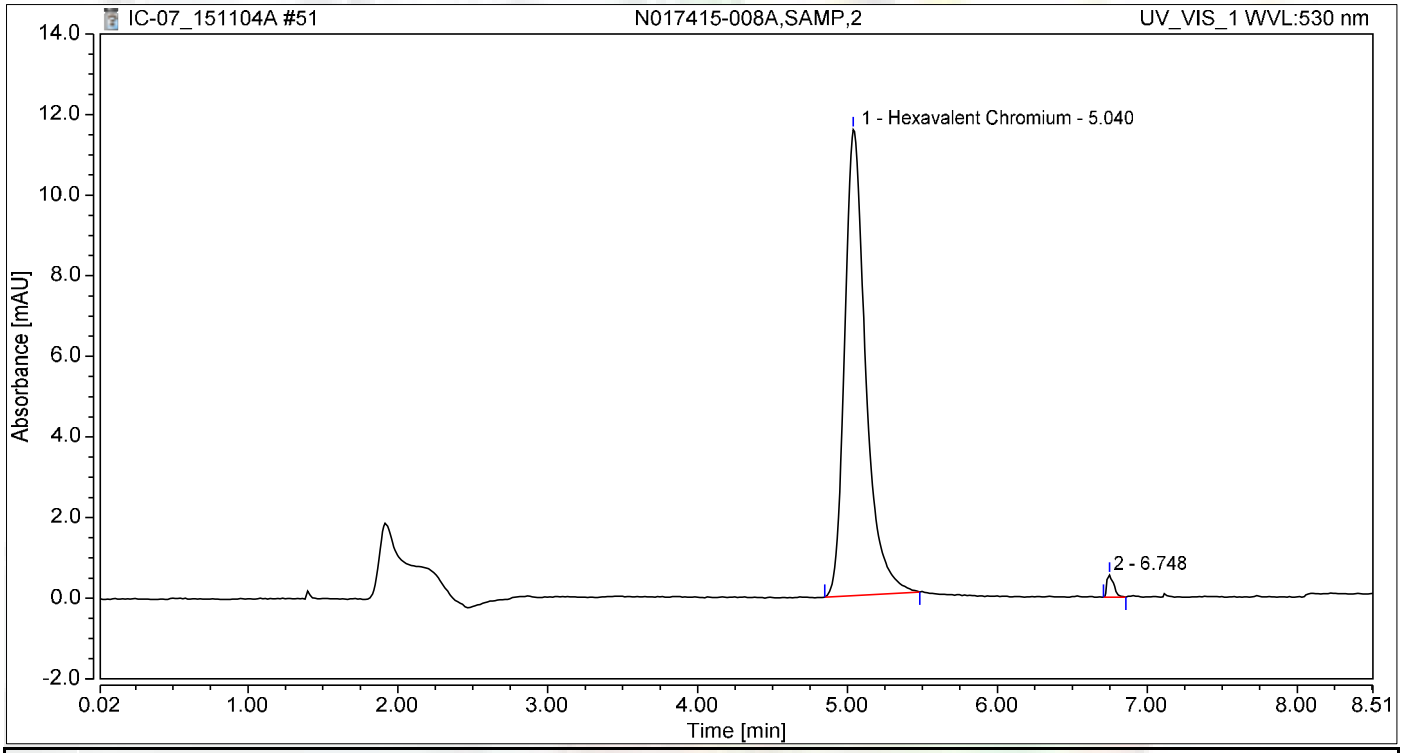
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.932	2.669	10.967	100.00	100.00	11.3398
Total:			**2.669**	**10.967**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-008A,SAMP,2**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

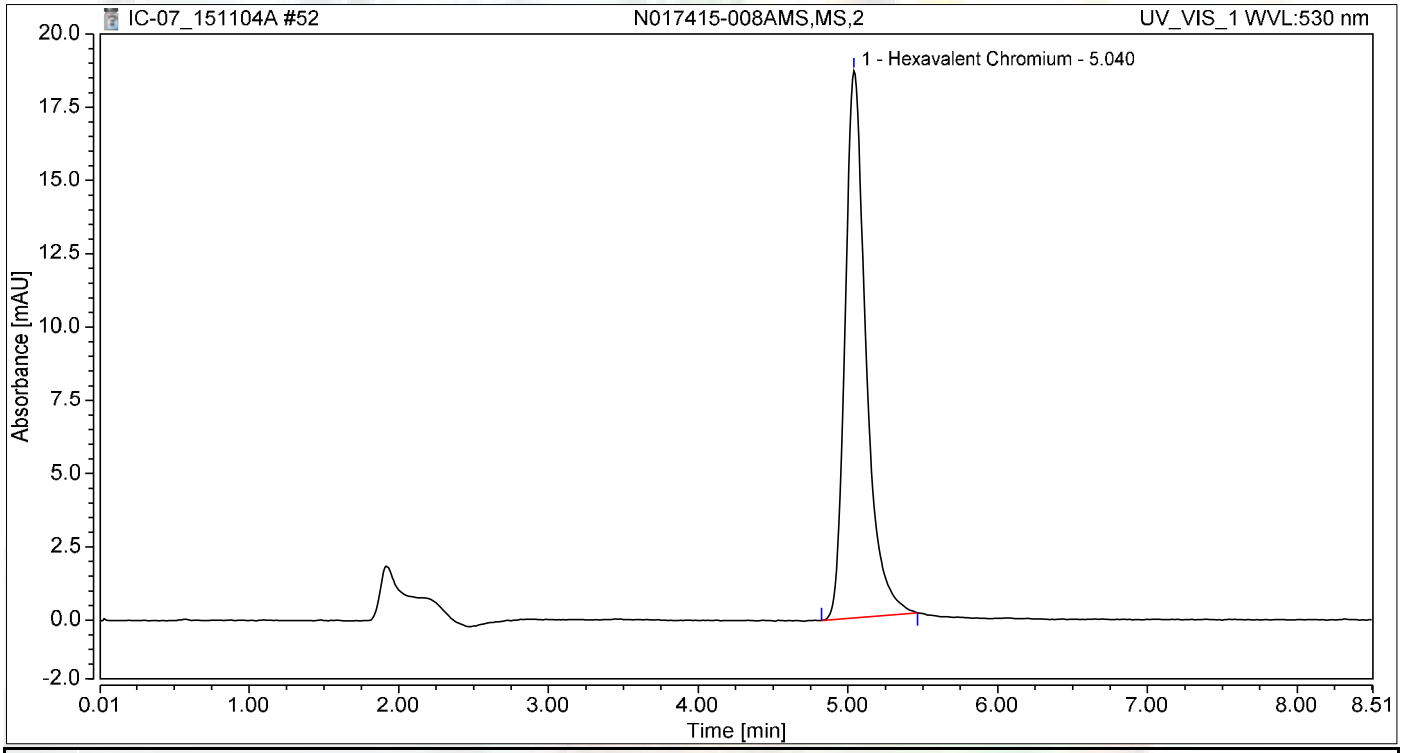
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	1.873	11.556	98.47	95.51	7.9594
2		6.748	0.029	0.543	1.53	4.49	n.a.
Total:			**1.902**	**12.099**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017415-008AMS,MS,2**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

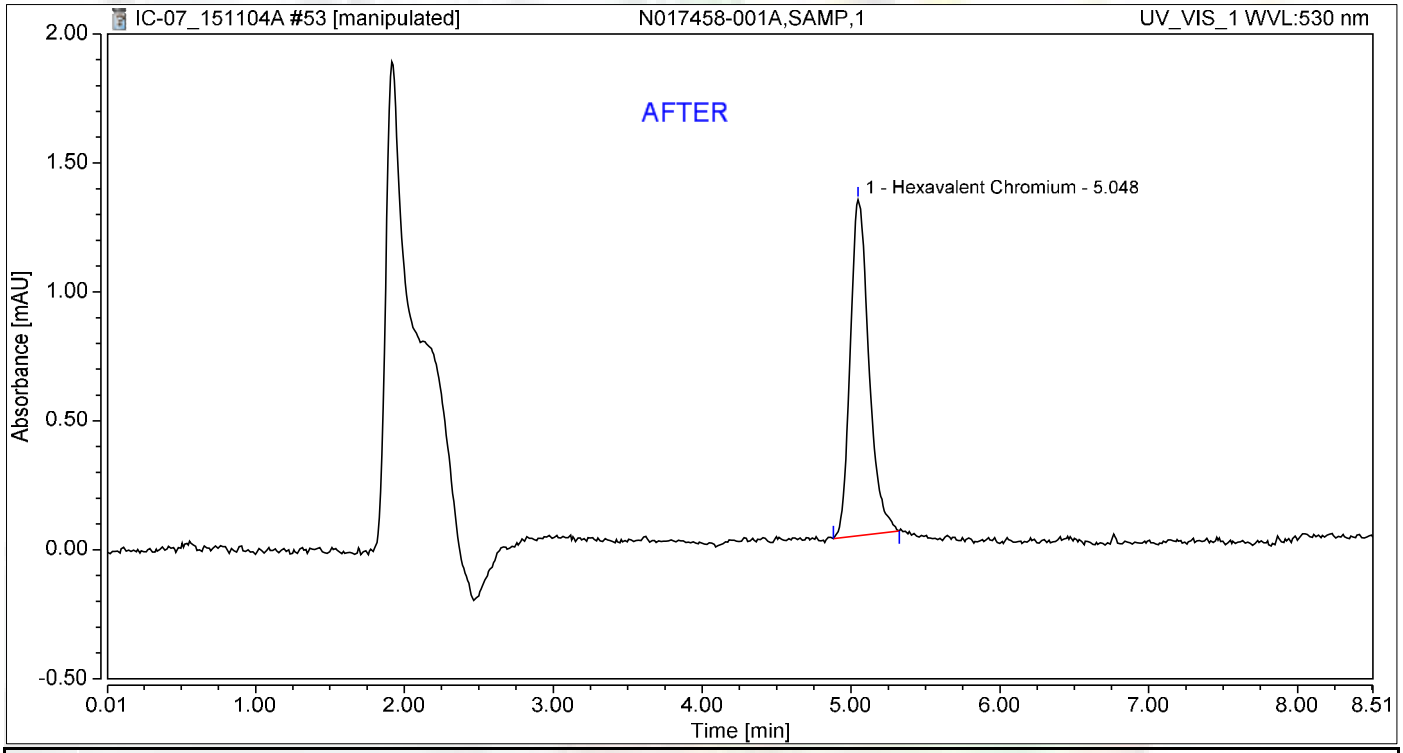
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.040	3.013	18.664	100.00	100.00	12.8049
Total:			**3.013**	**18.664**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.188	1.303	100.00	100.00	0.8000
Total:			**0.188**	**1.303**	**100.00**	**100.00**	

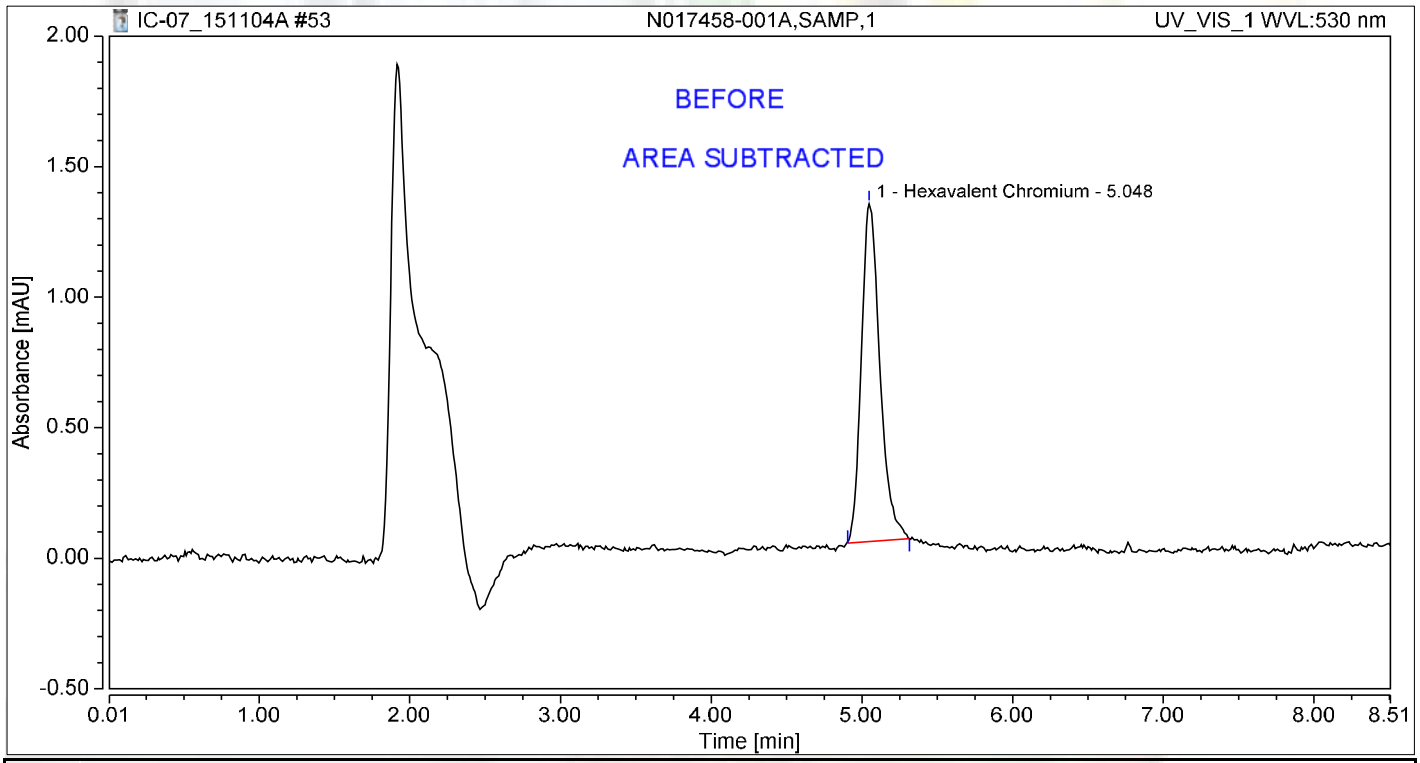
11/12/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017458-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

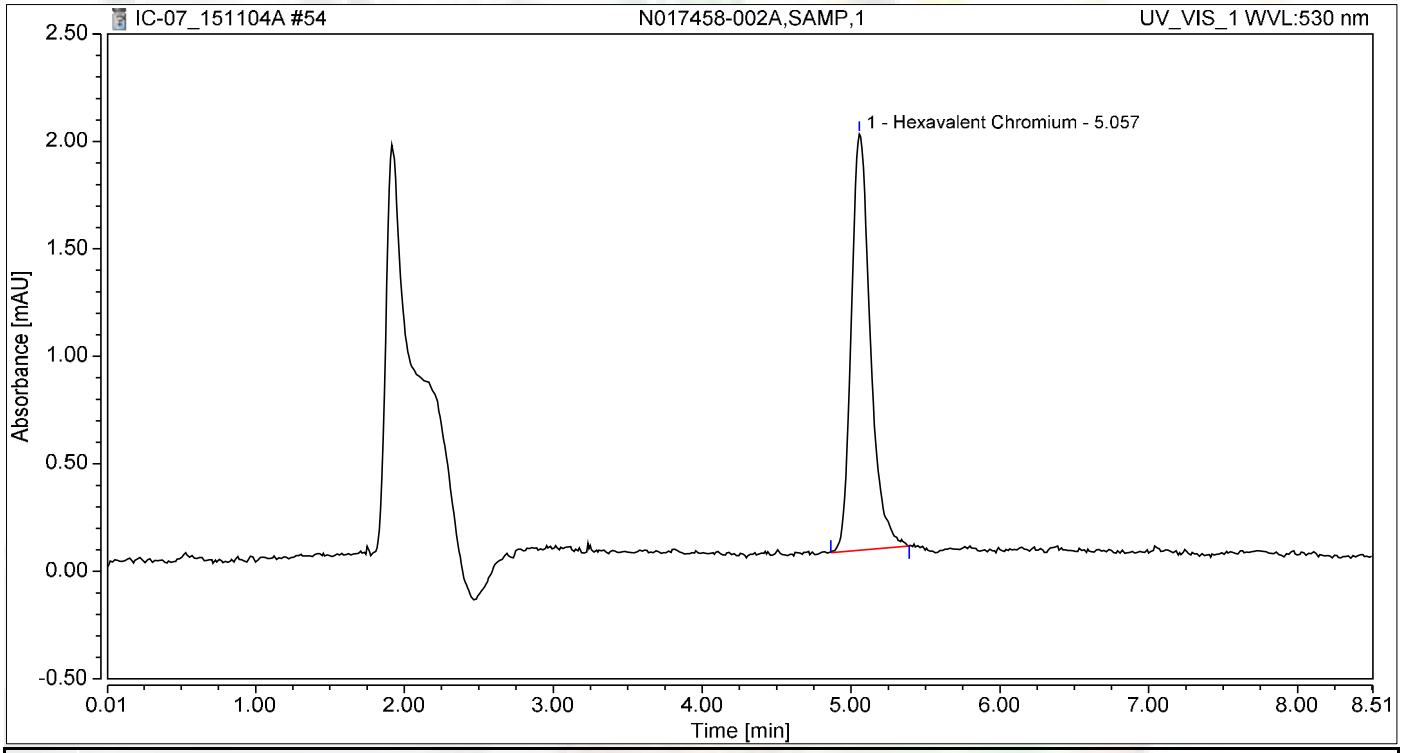
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.185	1.293	100.00	100.00	0.7850
Total:			**0.185**	**1.293**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

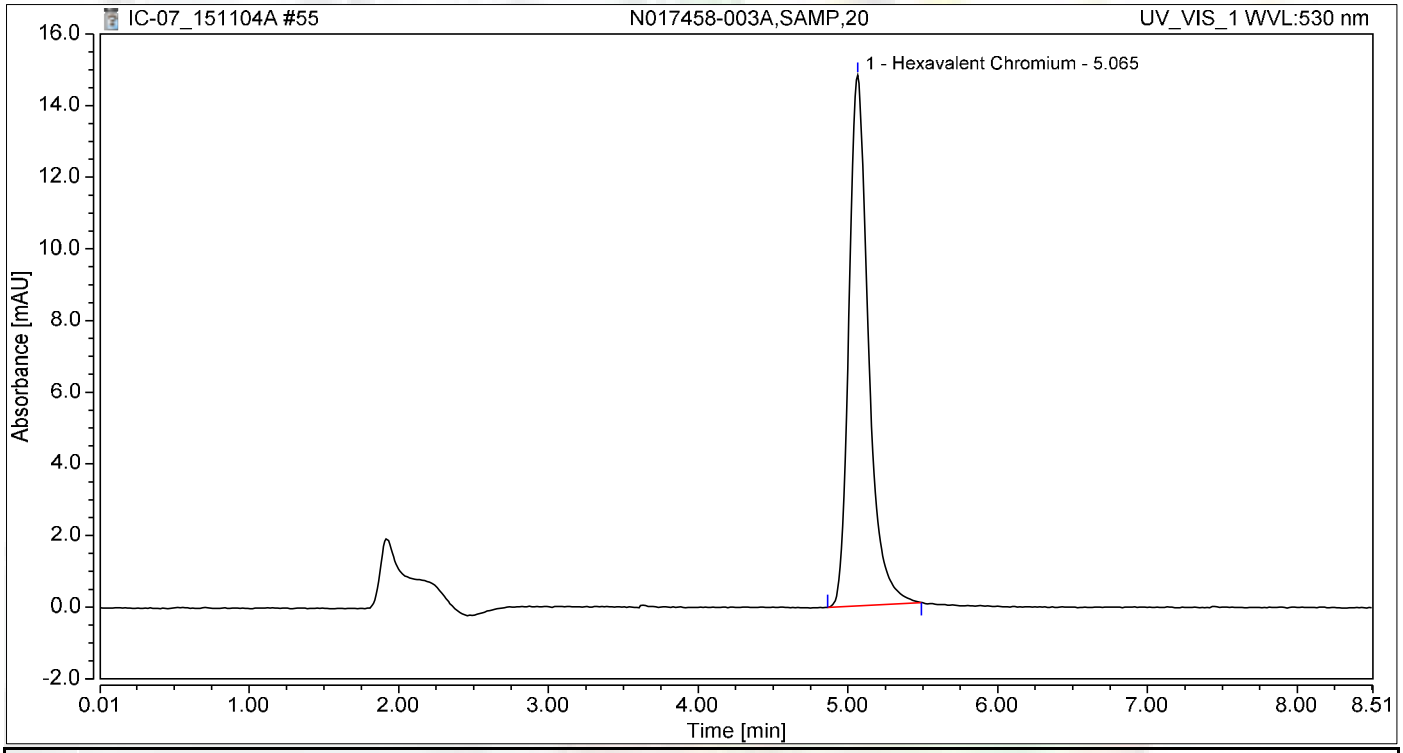
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.286	1.936	100.00	100.00	1.2137
Total:			**0.286**	**1.936**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-003A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

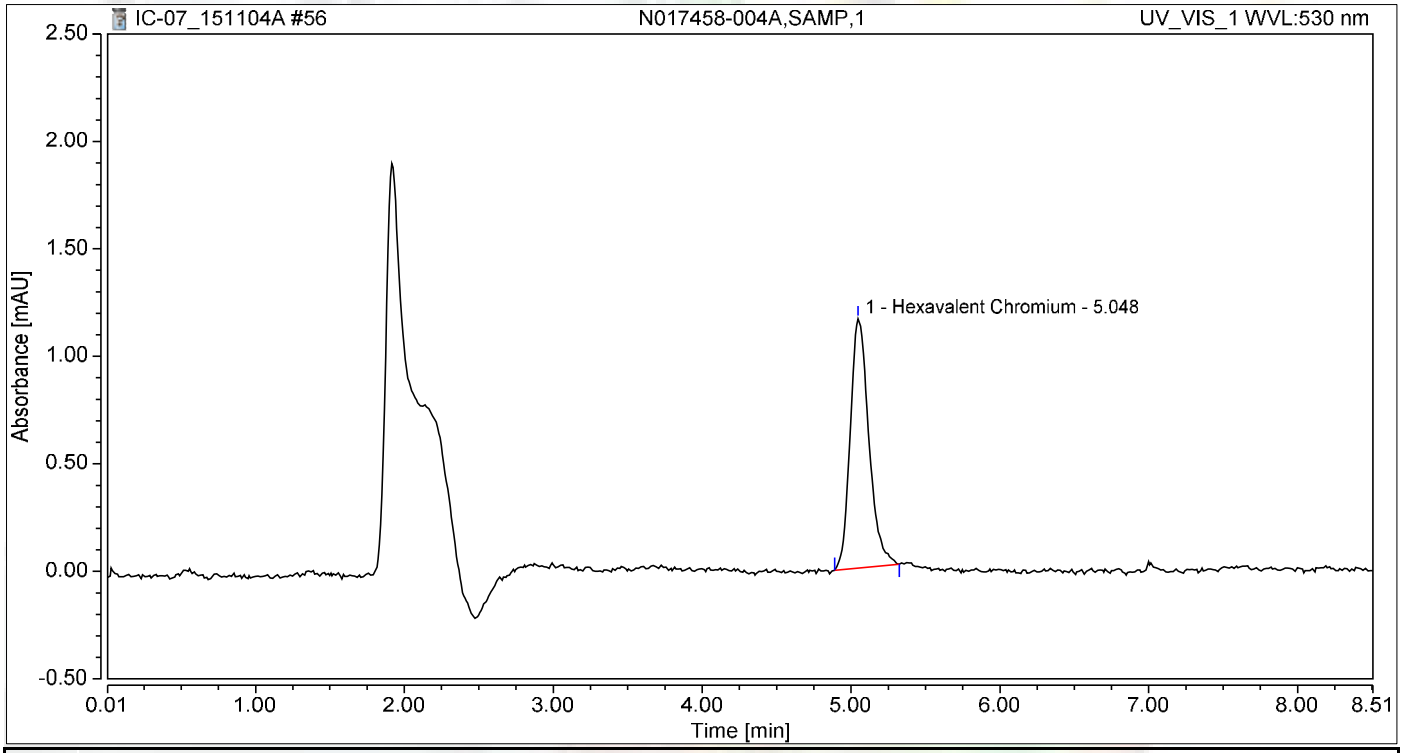
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	2.226	14.809	100.00	100.00	9.4595
Total:			**2.226**	**14.809**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

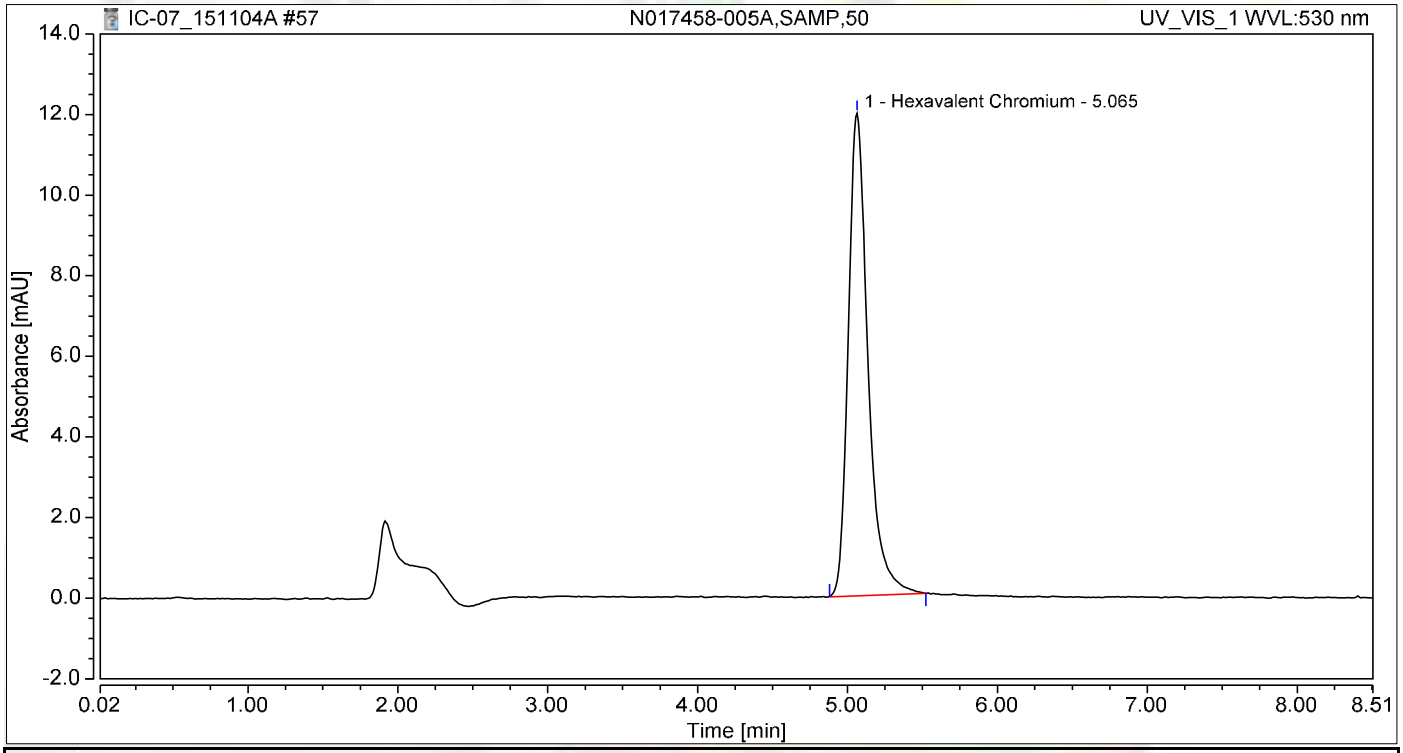
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.167	1.161	100.00	100.00	0.7093
Total:			**0.167**	**1.161**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-005A,SAMP,50**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

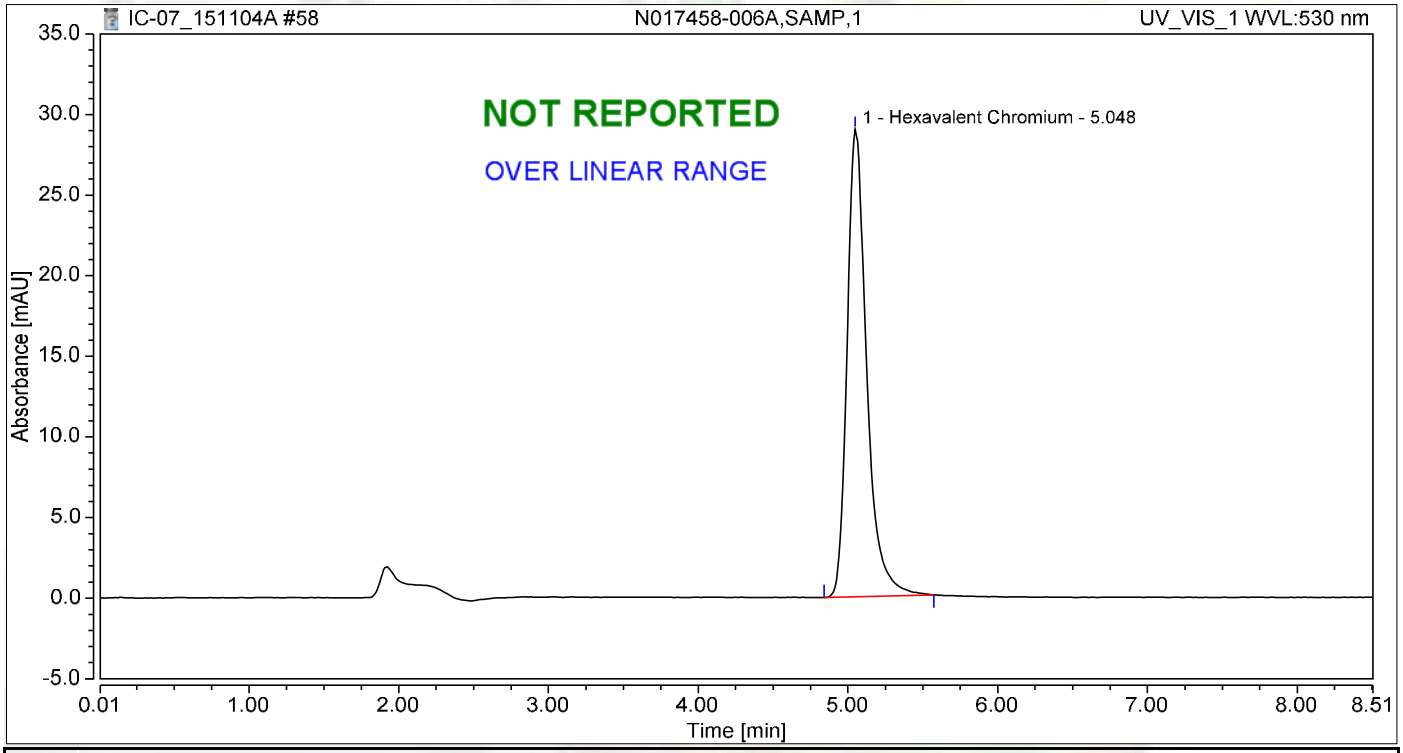
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.811	11.972	100.00	100.00	7.6952
Total:			**1.811**	**11.972**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

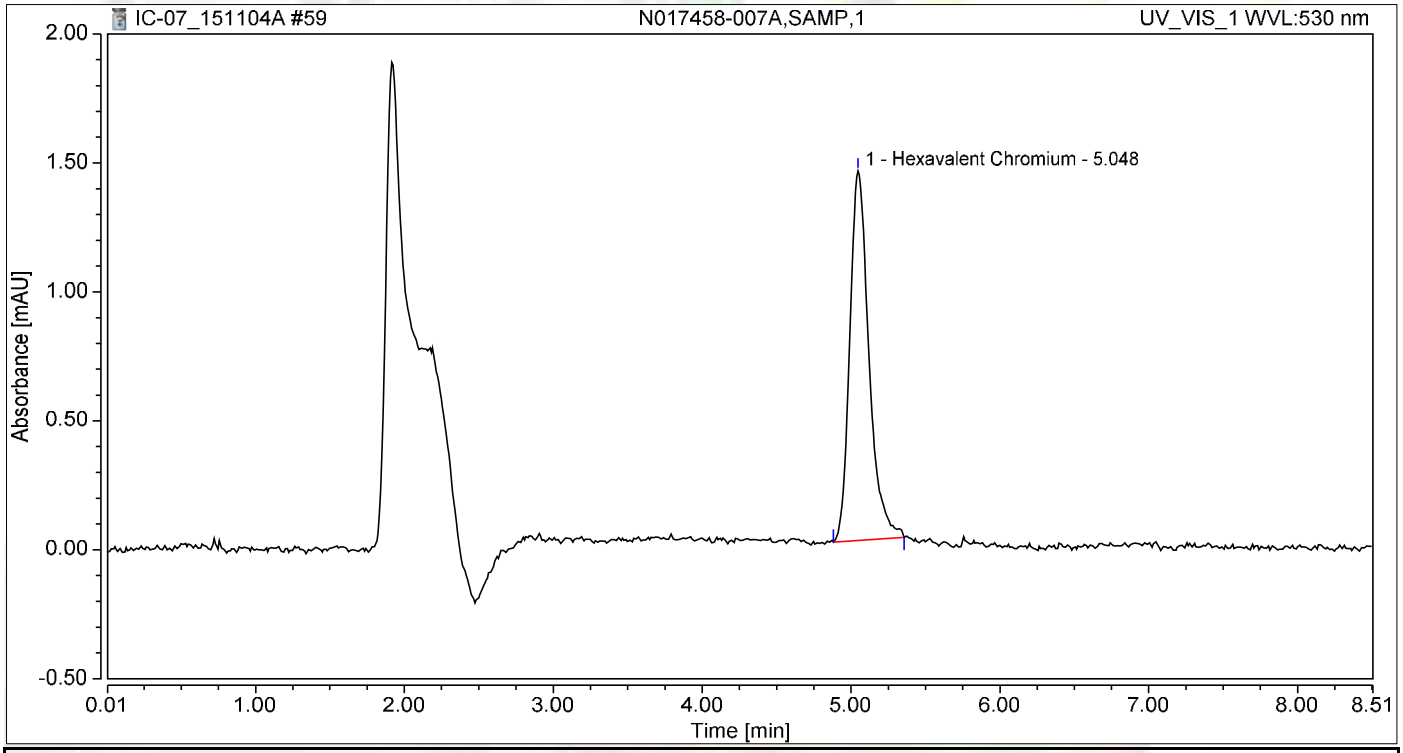
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	4.363	28.988	100.00	100.00	18.5411
Total:			**4.363**	**28.988**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017458-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

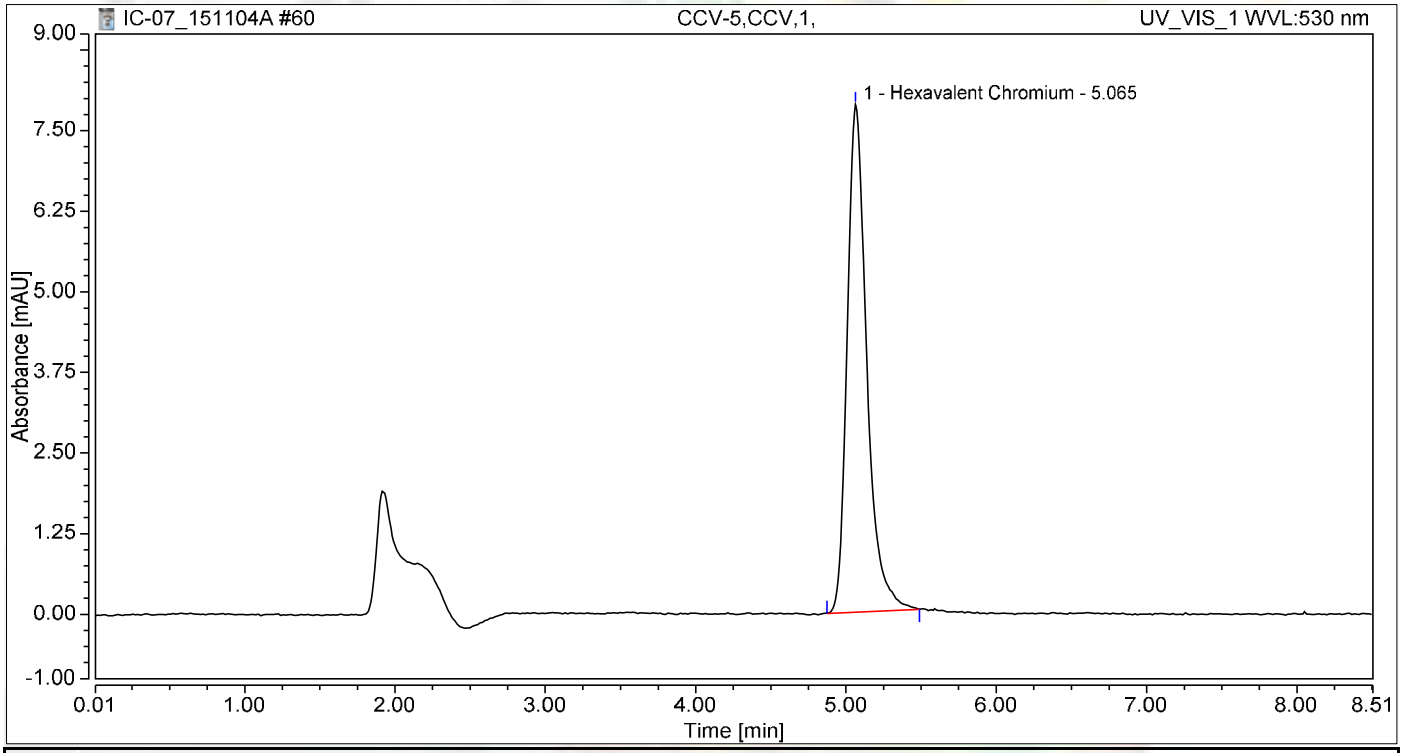
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.048	0.212	1.432	100.00	100.00	0.8992
Total:			**0.212**	**1.432**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

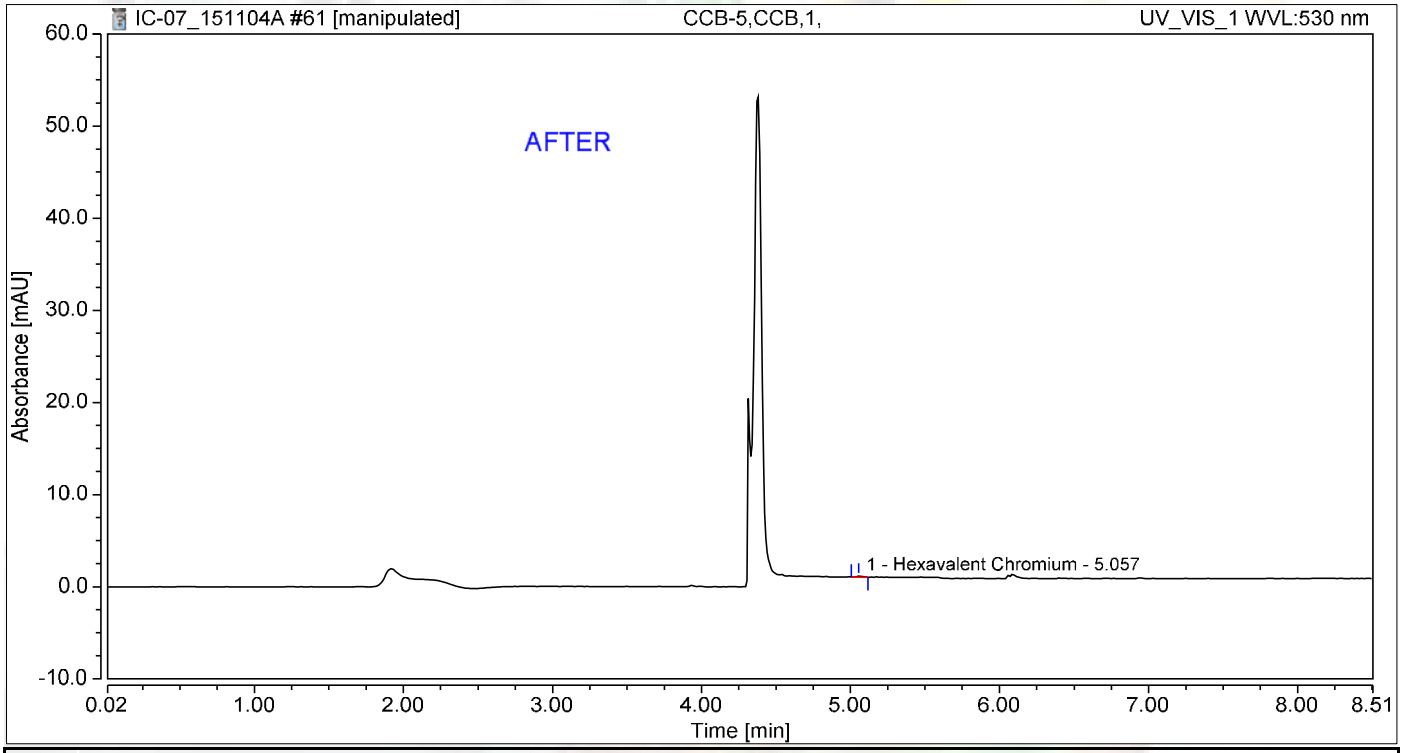
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.065	1.181	7.870	100.00	100.00	5.0197
Total:			**1.181**	**7.870**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	5.057	0.004	0.102	100.00	100.00	0.0162
Total:			**0.004**	**0.102**	**100.00**	**100.00**	

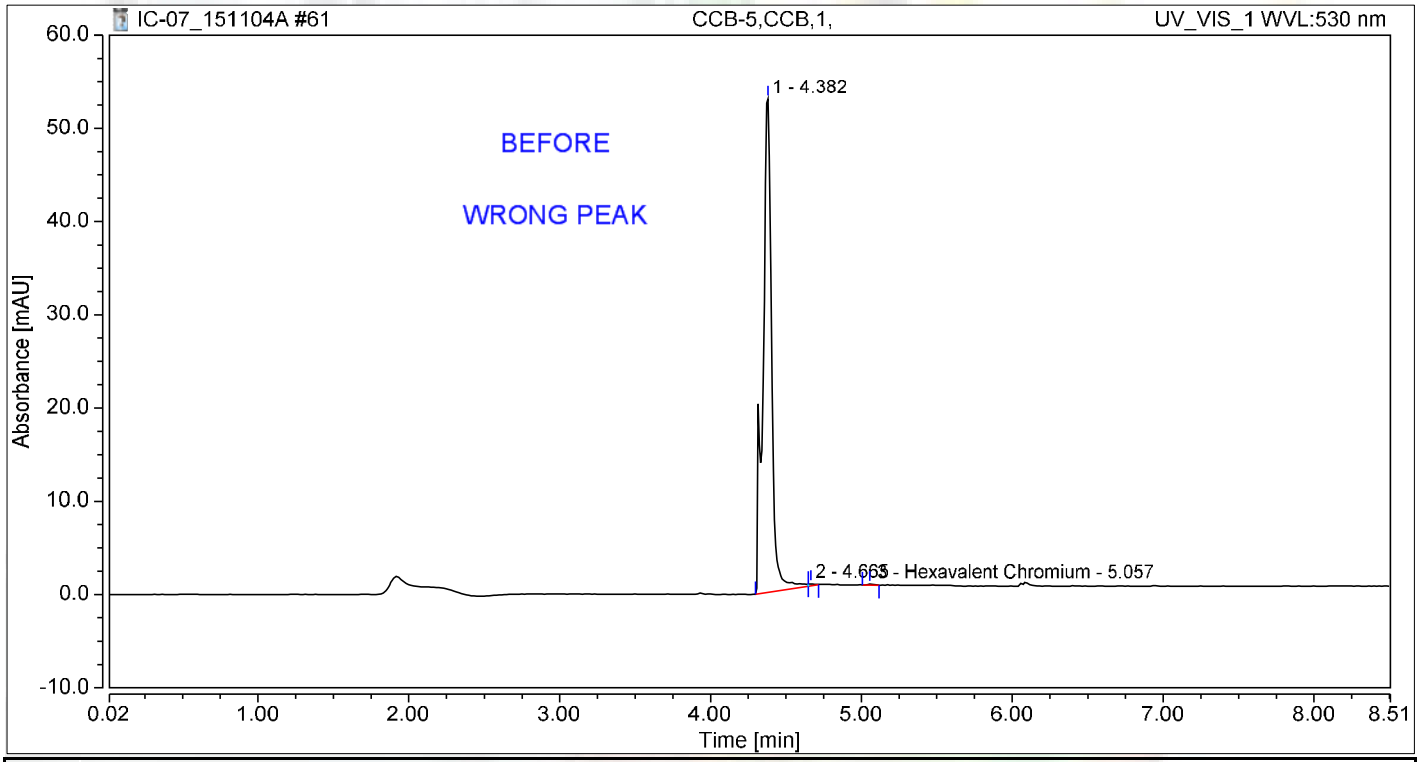
11/10/201

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151103_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.382	3.498	52.946	99.64	99.33	n.a.
2		4.665	0.009	0.256	0.25	0.48	n.a.
3	Hexavalent Chromium	5.057	0.004	0.102	0.11	0.19	0.0162
Total:			**3.511**	**53.304**	**100.00**	**100.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103910 **Analyst:** LSR

ASSET #: N017415 **Date Analyzed:** 10/29/2015

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/4/2015

2nd Level Reviewer: Nancy 11/13/2015 Date: _____

SAMPLE CALCULATION

Sample ID: **N017415-001D @ pH 7.79**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (12.20mL)

= **0.020492 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (2.50) (0.020492 N) (1) * 1000

= 51.2300 **mg/L**

Reporting results in two significant figures,

= **51 mg/L** as CaCO3

Julia Ramit 11/4/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.020492 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (2.50 mL) (0.020492) (1) * 1000

= 51.2300 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 51.2300 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 51 **mg/L**

Julia Ramit 11/4/2015

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.66	50	0.00	0.05	MBLK
LCS-1	8.30	50	0.00	4.70	LCS
N017415-001D	7.79	50	0.00	2.50	SAMP
N017415-002D	7.67	50	0.00	2.40	SAMP
N017415-003D	7.85	50	0.00	2.65	SAMP
N017415-004D	7.59	50	0.00	2.30	SAMP
N017415-005D	7.60	50	0.00	2.30	SAMP
N017415-006D	7.77	50	0.00	2.60	SAMP
N017415-007D	7.62	50	0.00	2.55	SAMP
N017419-004F	7.40	50	0.00	19.50	SAMP
N017420-005F	7.24	50	0.00	24.50	SAMP
N017420-006F	7.21	50	0.00	21.70	SAMP
N017420-007F	7.04	50	0.00	16.50	SAMP
N017415-001DDUP	7.81	50	0.00	2.50	DUP
N017415-003DMS	8.42	50	0.15	7.25	MS
N017415-003DMSD	8.44	50	0.20	7.30	MSD

Standardization:

Spike amt:	**5**	ml
Titrant used:	**12.2**	ml
N H2SO4	**0.02049**	Normal
Date Analyzed:	**10/29/15**	
Time:	**16:00**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-150202G**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R151029C**	

Julia Ramit 11/4/2015

Date Analyzed:	10/29/15		Reagents:					Standardization:					P = 0
Time Started:	4:00 PM			Sodium Carbonate:		CINV-150202G			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	12.2	mL		P = 1/2 T
				Sulfuric Acid:		R151029C							P > 1/2 T
									N H2SO4	0.02049	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.66				0.02049	0.00	0.05	0.05	1	0.00	1.02	
LCS-1	50	8.3				0.02049	0.00	4.70	4.70	1	0.00	96.31	
N017415-001D	50	7.79				0.02049	0.00	2.50	2.50	1	0.00	51.23	
N017415-002D	50	7.67				0.02049	0.00	2.40	2.40	1	0.00	49.18	
N017415-003D	50	7.85				0.02049	0.00	2.65	2.65	1	0.00	54.30	
N017415-004D	50	7.59				0.02049	0.00	2.30	2.30	1	0.00	47.13	
N017415-005D	50	7.6				0.02049	0.00	2.30	2.30	1	0.00	47.13	
N017415-006D	50	7.77				0.02049	0.00	2.60	2.60	1	0.00	53.28	
N017415-007D	50	7.62				0.02049	0.00	2.55	2.55	1	0.00	52.25	
N017419-004F	50	7.4				0.02049	0.00	19.50	19.50	1	0.00	399.59	
N017420-005F	50	7.24				0.02049	0.00	24.50	24.50	1	0.00	502.05	
N017420-006F	50	7.21				0.02049	0.00	21.70	21.70	1	0.00	444.67	
N017420-007F	50	7.04				0.02049	0.00	16.50	16.50	1	0.00	338.11	
N017415-001DDU	50	7.81				0.02049	0.00	2.50	2.50	1	0.00	51.23	
N017415-003DMS	50	8.42				0.02049	0.15	7.10	7.25	1	3.07	148.57	
N017415-003DMS	50	8.44				0.02049	0.20	7.10	7.30	1	4.10	149.59	

Silvia Ramit 11/4/2015

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	10/29/15
Time:	4:00 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.02	1.02	1.02		P = 0
LCS-1	0.00	0.00	96.31	96.31	96.31		P = 0
N017415-001D	0.00	0.00	51.23	51.23	51.23		P = 0
N017415-002D	0.00	0.00	49.18	49.18	49.18		P = 0
N017415-003D	0.00	0.00	54.30	54.30	54.30		P = 0
N017415-004D	0.00	0.00	47.13	47.13	47.13		P = 0
N017415-005D	0.00	0.00	47.13	47.13	47.13		P = 0
N017415-006D	0.00	0.00	53.28	53.28	53.28		P = 0
N017415-007D	0.00	0.00	52.25	52.25	52.25		P = 0
N017419-004F	0.00	0.00	399.59	399.59	399.59		P = 0
N017420-005F	0.00	0.00	502.05	502.05	502.05		P = 0
N017420-006F	0.00	0.00	444.67	444.67	444.67		P = 0
N017420-007F	0.00	0.00	338.11	338.11	338.11		P = 0
N017415-001DDUP	0.00	0.00	51.23	51.23	51.23		P = 0
N017415-003DMS	0.00	6.15	142.42	148.57	148.57		P < 1/2 T
N017415-003DMSD	0.00	8.20	141.39	149.59	149.59		P < 1/2 T

Julia Ramit 11/4/2015

Alkalinity Preparation and Runlog

Book #5

Matrix: H20

Date Extracted: 10/29/15
Time Extracted: 7
Extracted By: LLR

Date Analyzed: 10/29/15
Time Analyzed: 11000
Analyzed By: LLR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-150202G
Hydrochloric Acid: —
Sulfuric Acid: P1510296
$NaHCO_3$: CINV150601A

pH Meter Calibration:
SLOPE: 96.6%
pH 4 - 4.00 — CINV150126 (was 1503A) use 10.0
7 - 6.99 — 150898A
10 - 10.05 — 150708A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.71	IWST150202A	5 mL	0.05N	—	—	12.20	50/50	$N_{H_2SO_4} = \frac{(2.65\,g/L)(5\,mL)}{(53)(V\ titrant)}$	0.02049 1803
	#2	↓	10.64	↓	↓	↓	—	—	12.20	↓		
1)	MBLK	50 mL	5.66	—	—	—	0.02049	0	0.05	50/50		
2)	LCS		8.30	IWST150202B	1 mL	0.05N		0	4.70			
3)	N017415-001D		7.79	-	-	-		0	2.50			
4)	-002D		7.67	-	-	-		0	2.40			
5)	-003D		7.85	-	-	-		0	2.65			
6)	-004D		7.59	-	-	-		0	2.30			
7)	-005D		7.60	-	-	-		0	2.30			
8)	-006D		7.77	-	-	-		0	2.60			
9)	-007D		7.62	-	-	-		0	2.55			
10)	N017419-001F		7.40	-	-	-		0	19.50			
11)	N017420-005F		7.34	-	-	-		0	24.50			
12)	-006F		7.21	-	-	-		0	21.70			
13)	-007F		7.04	-	-	-		0	16.50			
14)	N017415-001D DUP		7.81	-	-	-		0	2.50			
15)	-003D MS		8.42	IWST150202B	1 mL	0.05N		0.15	7.25			
16)	-003D MSD	↓	8.44	↓	↓	↓	↓	0.20	7.3	↓		
17)												
18)				$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$								
19)												
20)				$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50{,}000)}{V_{SX}}$								
	MS											
	MSD											
	LCS											

EPA 245.1
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52920
ASSET #: N017415

Instrument ID: AA1
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[X] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)			X			
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?			X			
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)			X			
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.			X			
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/2015 Date:

SAMPLE CALCULATION

ASSET Laboratories

Sample Calculation

Work Order No.: N017415
Test Method: EPA ~~7470~~ 245.1
Matrix: Groundwater

FORMULA:

Calculate the Mercury concentration in ug/L in the original sample as follows:

Hg = [A][DF]

where:

A = ppt, instrument calculated concentration
DF = dilution factor

For: **N017415-001B**

The concentration in ug/L is calculated as follows:

Hg = [A][DF]

Hg = [0.09477][1]

Hg = 0.09477 ug/L

Since result is less than 0.2 ug/L reporting limit.

Hg = ND ug/L



ANALYSIS RUN LOG

INJECTION LOG: 151105WA

Instrument ID: AA-01

Sample ID	Type	DF	Date	Time	Comments
Calibration Zero	IBLK	1	11/5/2015	12:20:04	Reported
Standard #1	ICAL	1	11/5/2015	12:22:46	Reported
Standard #2	ICAL	1	11/5/2015	12:25:28	Reported
Standard #3	ICAL	1	11/5/2015	12:28:11	Reported
Standard #4	ICAL	1	11/5/2015	12:30:55	Reported
Standard #5	ICAL	1	11/5/2015	12:33:39	Reported
ICV	ICV	1	11/5/2015	12:36:24	Reported
ICB	ICB	1	11/5/2015	12:39:05	Reported
MB-52920	MBLK	1	11/5/2015	12:41:47	Reported
LCS-52920	LCS	1	11/5/2015	12:44:30	Not Reported
N017415-001B-MS	MS	1	11/5/2015	12:47:14	Reported
N017415-001B-MSD	MSD	1	11/5/2015	12:49:57	Reported
N017415-001B	SAMP	1	11/5/2015	12:52:38	Reported
N017415-002B	SAMP	1	11/5/2015	12:55:21	Reported
N017415-003B	SAMP	1	11/5/2015	12:58:03	Reported
N017415-004B	SAMP	1	11/5/2015	13:00:47	Reported
N017415-005B	SAMP	1	11/5/2015	13:03:31	Reported
N017415-006B	SAMP	1	11/5/2015	13:06:15	Reported
CCV1	CCV	1	11/5/2015	13:08:59	Reported
CCB1	CCB	1	11/5/2015	13:11:41	Reported
N017415-007B	SAMP	1	11/5/2015	13:14:23	Reported
N017400-001B	SAMP	1	11/5/2015	13:17:05	Reported
N017400-002B	SAMP	1	11/5/2015	13:19:48	Reported
N017427-001B	SAMP	1	11/5/2015	13:22:32	Reported
N017427-002B	SAMP	1	11/5/2015	13:25:16	Reported
N017427-002B-MS	MS	1	11/5/2015	13:28:00	Reported
N017424-001A	SAMP	1	11/5/2015	13:30:45	Reported
N017425-001A	SAMP	1	11/5/2015	13:33:30	Reported
N017425-002A	SAMP	1	11/5/2015	13:36:13	Reported
N017425-003A	SAMP	1	11/5/2015	13:38:57	Reported
CCV2	CCV	1	11/5/2015	13:41:39	Reported
CCB2	CCB	1	11/5/2015	13:56:01	Reported
LCS-52920	LCS	1	11/5/2015	13:58:44	Reported
N017425-004A	SAMP	1	11/5/2015	14:01:28	Reported
N017456-001B	SAMP	1	11/5/2015	14:04:13	Reported
CCV3	CCV	1	11/5/2015	14:06:56	Reported
CCV3	CCV	1	11/5/2015	14:12:23	Reported
CCB3	CCB	1	11/5/2015	14:15:05	Reported

NR

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/3/2015 7:53:18**
Prep End Date: **11/3/2015 11:00:00**
Initials/ Date: NS for CI 11/16/15
Prep Batch **52920** Prep Code: **7470_PR** Technician **Claire Ignacio**
Prep Factor Units **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52920	Aqueous		25	☐	0	0	50	2.000		
MB-52920	Aqueous		25	☐	0	0	50	2.000		
N017400-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017400-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-003B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-004B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-005B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-006B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-007B	Groundwater	<2	25	☐	0	0	50	2.000		
N017424-001A	Water	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
6712	POTASSIUM PERMANGANATE
6757	HYDROXYLAMINE HCl
6837	Potassium Persulfate
6972	SODIUM CHLORIDE
7028	sulfuric acid
7399	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151008	500ppb Hg PRIMARY	ICAL/CCV	0.25
2MWST-151008	500ppb Hg SECONDARY	ICV/LCS/MS/M	0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/3/2015 7:53:18**
Prep End Date: **11/3/2015 11:00:00**

Initials/ Date: NS for CI 11/16/15

Prep Batch **52920** Prep Code: **7470_PR** Technician **Claire Ignacio**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017425-001A	Water	<2	25	☐	0	0	50	2.000		
N017425-002A	Water	<2	25	☐	0	0	50	2.000		
N017425-003A	Water	<2	25	☐	0	0	50	2.000		
N017425-004A	Water	<2	25	☐	0	0	50	2.000		
N017427-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017427-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017427-002B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017456-001B	Wastewater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
6712	POTASSIUM PERMANGANATE
6757	HYDROXYLAMINE HCl
6837	Potassium Persulfate
6972	SODIUM CHLORIDE
7028	sulfuric acid
7399	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151008	500ppb Hg PRIMARY	ICAL/CCV	0.25
2MWST-151008	500ppb Hg SECONDARY	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151105WA

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-150310A	2MWST-1501008A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	11/05/2015	12:20:04	0	PPB	26.62393	Reported	
Standard #1	11/05/2015	12:22:46	0.2	PPB	115.62846	Reported	
Standard #2	11/05/2015	12:25:28	1	PPB	706.13316	Reported	
Standard #3	11/05/2015	12:28:11	5	PPB	3808.99145	Reported	
Standard #4	11/05/2015	12:30:55	10	PPB	7952.69128	Reported	
Standard #5	11/05/2015	12:33:39	20	PPB	16010.4442	Reported	0.99993

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID **ICV**	SampType: **ICV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **ICV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.169	0.20	10.00	0	102	95	105				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.686	0.20	10.00	0	96.9	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.984	0.20	10.00	0	99.8	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.068	0.20	10.00	0	101	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID **ICB**	SampType: **ICB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **ICB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.092	0.20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.088	0.20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.103	0.20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.119	0.20									

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Mercury by Cold Vapor Technique**
Method Number: EPA 7470/245.1
Analysis Date(s): 3/23/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **HG-01**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Mercury	0.03523	0.05801	0.04800	0.05661	0.04472	0.04975	0.04420	0.050	0.0078	3.143	**0.025**	**0.20**	OK,meets criteria

Students' t Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

* Please note that the instrument printout for Conc were represented in two decimal places. The exact values are represented in the MDL summary for calculation purposes.

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103969
ASSET #: N017415

Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 11/2/2015

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 11/6/2015

2nd Level Reviewer 11/12/2015 Date: —

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R104077
ASSET # N017415 / N017499 / N017521

Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 11/9/2015

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.		X				
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:
~~% RPD of Cl in N017521-006A DUP failed. Also, % Rec of Cl in N017521-006AMS/MSD failed, low bias. However, LCS passed criteria.~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: —

2nd Level Reviewer 11/12/2015 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N017415-001D** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 9.269 * 50

= 463.45

Reporting result in two significant figures,

Sulfate, mg/L = 460



ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\151012.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15101201.D01	1	1	1
2	,BLANK,	..\151012.M	..\15101201.D02	1	1	1
3	AUTOCAL1R	..\151012.M	..\15101201.D03	1	1	1
4	AUTOCAL2R	..\151012.M	..\15101201.D04	1	1	1
5	AUTOCAL3R	..\151012.M	..\15101201.D05	1	1	1
6	AUTOCAL4R	..\151012.M	..\15101201.D06	1	1	1
7	AUTOCAL5R	..\151012.M	..\15101201.D07	1	1	1
8	AUTOCAL6R	..\151012.M	..\15101201.D08	1	1	1
9	,ICV,ICV,1,	..\151012.M	..\15101201.D09	1	1	1
10	,ICB,ICB,1,	..\151012.M	..\15101201.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\151012.M	..\15101201.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\151012.M	..\15101201.D12	1	1	1
13	,MDL-1,1,	..\151012.M	..\15101201.D13	1	1	1
14	,MDL-2,1,	..\151012.M	..\15101201.D14	1	1	1
15	,MDL-3,1,	..\151012.M	..\15101201.D15	1	1	1
16	,MDL-4,1,	..\151012.M	..\15101201.D16	1	1	1
17	,MDL-5,1,	..\151012.M	..\15101201.D17	1	1	1
18	,MDL-6,1,	..\151012.M	..\15101201.D18	1	1	1
19	,MDL-7,1,	..\151012.M	..\15101201.D19	1	1	1
20	,CCV-1,CCV,1,	..\151012.M	..\15101201.D20	1	1	1
21	,CCB-1,CCB,1,	..\151012.M	..\15101201.D21	1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

10/21/2015

DIONEX SCHEDULE - C:\DX\SCHEDULE\151102.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.	
1	,BLANK,	..\151012.M	..\15110201.D01	1	1	1	
2	,CCV-1,CCV,1,	..\151012.M	..\15110201.D02	1	1	1	
3	,CCB-1,CCB,1,	..\151012.M	..\15110201.D03	1	1	1	
4	,MB-SOIL,MBLK,1,	..\151012.M	..\15110201.D04	1	1	1	
5	,LCS-SOIL,LCS,1,	..\151012.M	..\15110201.D05	1	1	1	
6	,N017404-002A,SAMP,	..\151012.M	..\15110201.D06	1	1	1	
7	,N017404-001A,SAMP,	..\151012.M	..\15110201.D07	1	1	1	
8	,N017404-002A,SAMP,	..\151012.M	..\15110201.D08	1	1	1	
9	,N017404-002ADUP,DU	..\151012.M	..\15110201.D09	1	1	1	
10	,N017404-002AMS,MS,	..\151012.M	..\15110201.D10	1	1	1	
11	,N017404-002AMSD,MS	..\151012.M	..\15110201.D11	1	1	1	
12	,LCS-H2O,LCS,1,	..\151012.M	..\15110201.D12	1	1	1	
13	,MB-H2O,MBLK,1,	..\151012.M	..\15110201.D13	1	1	1	
14	,CCV-2,CCV,1,	..\151012.M	..\15110201.D14	1	1	1	
15	,CCB-2,CCB,1,	..\151012.M	..\15110201.D15	1	1	1	
16	,N017415-008C,SAMP,	..\151012.M	..\15110201.D16	1	1	1	
17	,N017415-001D,SAMP,	..\151012.M	..\15110201.D17	1	1	1	
18	,N017415-002D,SAMP,	..\151012.M	..\15110201.D18	1	1	1	
19	,N017415-003D,SAMP,	..\151012.M	..\15110201.D19	1	1	1	
20	,N017415-004D,SAMP,	..\151012.M	..\15110201.D20	1	1	1	
21	,N017415-005D,SAMP,	..\151012.M	..\15110201.D21	1	1	1	
22	,N017415-006D,SAMP,	..\151012.M	..\15110201.D22	1	1	1	
23	,N017415-007D,SAMP,	..\151012.M	..\15110201.D23	1	1	1	
24	,N017415-002DMS,MS,	..\151012.M	..\15110201.D24	1	1	1	
25	,N017415-002DMSD,MS	..\151012.M	..\15110201.D25	1	1	1	
26	,CCV-3,CCV,1,	..\151012.M	..\15110201.D26	1	1	1	
27	,CCB-3,CCB,1,	..\151012.M	..\15110201.D27	1	1	1	
28	,N017415-001DDUP,DU	..\151012.M	..\15110201.D28	1	1	1	
29	,N017415-001D,SAMP,	..\151012.M	..\15110201.D29	1	1	1	
30	,N017415-001DDUP,DU	..\151012.M	..\15110201.D30	1	1	1	
31	,N017415-002D,SAMP,	..\151012.M	..\15110201.D31	1	1	1	
32	,N017415-002DMS,MS,	..\151012.M	..\15110201.D32	1	1	1	
33	,N017415-002DMSD,MS	..\151012.M	..\15110201.D33	1	1	1	
34	,N017415-003D,SAMP,	..\151012.M	..\15110201.D34	1	1	1	
35	,N017415-004D,SAMP,	..\151012.M	..\15110201.D35	1	1	1	
36	,N017415-005D,SAMP,	..\151012.M	..\15110201.D36	1	1	1	
37	,N017415-006D,SAMP,	..\151012.M	..\15110201.D37	1	1	1	
38	,CCV-4,CCV,1,	..\151012.M	..\15110201.D38	1	1	1	
39	,CCB-4,CCB,1,	..\151012.M	..\15110201.D39	1	1	1	
40	,N017415-007D,SAMP,	..\151012.M	..\15110201.D40	1	1	1	
41	,N017415-008C,SAMP,	..\151012.M	..\15110201.D41	1	1	1	
42	,N017415-001D,SAMP,	..\151012.M	..\15110201.D42	1	1	1	
43	,N017415-001DDUP,DU	..\151012.M	..\15110201.D43	1	1	1	
44	,N017415-002D,SAMP,	..\151012.M	..\15110201.D44	1	1	1	
45	,N017415-002DMS,MS,	..\151012.M	..\15110201.D45	1	1	1	
46	,N017415-002DMSD,MS	..\151012.M	..\15110201.D46	1	1	1	
47	,N017415-003D,SAMP,	..\151012.M	..\15110201.D47	1	1	1	
48	,N017415-004D,SAMP,	..\151012.M	..\15110201.D48	1	1	1	
49	~~,N017415-005D,SAMP,~~	..\151012.M	..\15110201.D49	1	1	1	CCV-5,CCV,1
50	~~,CCV-5,CCV,1,~~	..\151012.M	..\15110201.D50	1	1	1	CCB-5,CCB,1
51	~~,CCB-5,CCB,1,~~	..\151012.M	..\15110201.D51	1	1	1	N017415-006D,SAMP,5
52	~~,N017415-006D,SAMP,~~	..\151012.M	..\15110201.D52	1	1	1	N017415-007D,SAMP,5
53	~~,N017415-007D,SAMP,~~	..\151012.M	..\15110201.D53	1	1	1	N017415-008C,SAMP,5
54	~~,N017415-008C,SAMP~~	..\151012.M	..\15110201.D54	1	1	1	CCV-6,CCV,1
55	~~,CCV-6,CCV,1,~~	..\151012.M	..\15110201.D55	1	1	1	CCB-6,CCB,1
56	~~,CCB-6,CCB,1,~~	..\151012.M	..\15110201.D56	1	1	1	
57	SHUTDOWN	..\SHUTDOWN		1	1	1	

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

11/6/2015

DIONEX SCHEDULE - C:\DX\SCHEDULE\151109.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15110901.D01	1	1	1
2	,CCV-1,CCV,1,	..\151012.M	..\15110901.D02	1	1	1
3	,CCB-1,CCB,1,	..\151012.M	..\15110901.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\151012.M	..\15110901.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\151012.M	..\15110901.D05	1	1	1
6	,N017415-005D,SAMP,	..\151012.M	..\15110901.D06	1	1	1
7	,N017469-002B,SAMP,	..\151012.M	..\15110901.D07	1	1	1
8	,N017499-010A,SAMP,	..\151012.M	..\15110901.D08	1	1	1
9	,N017499-011A,SAMP,	..\151012.M	..\15110901.D09	1	1	1
10	,N017499-012A,SAMP,	..\151012.M	..\15110901.D10	1	1	1
11	,N017499-013A,SAMP,	..\151012.M	..\15110901.D11	1	1	1
12	,N017469-002BMS,MS,	..\151012.M	..\15110901.D12	1	1	1
13	,N017469-002BMSD,MS	..\151012.M	..\15110901.D13	1	1	1
14	,CCV-2,CCV,1,	..\151012.M	..\15110901.D14	1	1	1
15	,CCB-2,CCB,1,	..\151012.M	..\15110901.D15	1	1	1
16	,N017415-005DDUP,DU	..\151012.M	..\15110901.D16	1	1	1
17	,N017415-005DMS,MS,	..\151012.M	..\15110901.D17	1	1	1
18	,N017521-001A,SAMP,	..\151012.M	..\15110901.D18	1	1	1
19	,N017521-002A,SAMP,	..\151012.M	..\15110901.D19	1	1	1
20	,N017521-003A,SAMP,	..\151012.M	..\15110901.D20	1	1	1
21	,N017521-004A,SAMP,	..\151012.M	..\15110901.D21	1	1	1
22	,N017521-005A,SAMP,	..\151012.M	..\15110901.D22	1	1	1
23	,N017521-006A,SAMP,	..\151012.M	..\15110901.D23	1	1	1
24	,N017521-007A,SAMP,	..\151012.M	..\15110901.D24	1	1	1
25	,N017521-008A,SAMP,	..\151012.M	..\15110901.D25	1	1	1
26	,CCV-3,CCV,1,	..\151012.M	..\15110901.D26	1	1	1
27	,CCB-3,CCB,1,	..\151012.M	..\15110901.D27	1	1	1
28	,N017521-009A,SAMP,	..\151012.M	..\15110901.D28	1	1	1
29	,N017521-010A,SAMP,	..\151012.M	..\15110901.D29	1	1	1
30	,N017521-011A,SAMP,	..\151012.M	..\15110901.D30	1	1	1
31	,N017521-012A,SAMP,	..\151012.M	..\15110901.D31	1	1	1
32	,N017521-013A,SAMP,	..\151012.M	..\15110901.D32	1	1	1
33	,N017469-002B,SAMP,	..\151012.M	..\15110901.D33	1	1	1
34	,N017521-006A,SAMP,	..\151012.M	..\15110901.D34	1	1	1
35	,N017521-006ADUP,DU	..\151012.M	..\15110901.D35	1	1	1
36	,N017521-006AMS,MS,	..\151012.M	..\15110901.D36	1	1	1
37	,N017521-006AMSD,MS	..\151012.M	..\15110901.D37	1	1	1
38	,CCV-4,CCV,1,	..\151012.M	..\15110901.D38	1	1	1
39	,CCB-4,CCB,1,	..\151012.M	..\15110901.D39	1	1	1
40	,N017521-001A,SAMP,	..\151012.M	..\15110901.D40	1	1	1
41	,N017521-002A,SAMP,	..\151012.M	..\15110901.D41	1	1	1
42	,N017521-003A,SAMP,	..\151012.M	..\15110901.D42	1	1	1
43	,N017521-003AMS,MS,	..\151012.M	..\15110901.D43	1	1	1
44	,N017521-004A,SAMP,	..\151012.M	..\15110901.D44	1	1	1
45	,N017521-007A,SAMP,	..\151012.M	..\15110901.D45	1	1	1
46	,N017521-008A,SAMP,	..\151012.M	..\15110901.D46	1	1	1
47	,N017521-009A,SAMP,	..\151012.M	..\15110901.D47	1	1	1
48	,N017521-010A,SAMP,	..\151012.M	..\15110901.D48	1	1	1
49	,N017521-011A,SAMP,	..\151012.M	..\15110901.D49	1	1	1
50	,CCV-5,CCV,1,	..\151012.M	..\15110901.D50	1	1	1
51	,CCB-5,CCB,1,	..\151012.M	..\15110901.D51	1	1	1
52	,N017521-012A,SAMP,	..\151012.M	..\15110901.D52	1	1	1
53	,N017521-013A,SAMP,	..\151012.M	..\15110901.D53	1	1	1
54	,CCV-6,CCV,1,	..\151012.M	..\15110901.D54	1	1	1
55	,CCB-6,CCB,1,	..\151012.M	..\15110901.D55	1	1	1
56	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 151012.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

10/21/2015

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

10/21/2015

Component Table -- Last Modified: 16:44 on Mon, 12 Oct 2015

Component # 1 Fluoride Retention Time 2.71
Reference Comp. Fluoride Window Size 0.05 min.
Amount = K0 + K1*Area
K0 = 1.21838E-002
K1 = 2.39369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	22404	2579
3	5.00000E-001	196348	23135
4	1.00000E+000	405665	47246
5	2.50000E+000	1040848	129618
6	5.00000E+000	2084965	275326

Component # 2 Chloride Retention Time 4.12
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.51893E-002
K1 = 3.31876E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	142077	16162
3	1.00000E+000	281846	33232
4	2.50000E+000	734644	85716
5	5.00000E+000	1427982	175887
6	1.00000E+001	3020632	387582

Component # 3 Nitrite Retention Time 5.05
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 5.00308E-003
K1 = 1.85944E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	31734	2012
3	5.00000E-001	263959	18839
4	1.00000E+000	531236	38584
5	2.50000E+000	1331892	110811
6	5.00000E+000	2692079	240029

Component # 4 Bromide Retention Time 6.15
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -5.14938E-002
K1 = 7.25458E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	30666	2325
3	5.00000E-001	75718	5314
4	1.00000E+000	156766	11014
5	2.50000E+000	355924	26859
6	5.00000E+000	691679	56045

10/21/2015

Component # 5 Nitrate Retention Time 6.96
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.93433E-002
K1 = 1.32929E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	40317	2890
3	5.00000E-001	341615	25397
4	1.00000E+000	742823	51841
5	2.50000E+000	1831956	140466
6	5.00000E+000	3764108	298846

Component # 6 Phosphate Retention Time 9.11
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -5.25613E-003
K1 = 4.04495E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	21773	1555
3	5.00000E-001	120032	6390
4	1.00000E+000	256903	13753
5	2.50000E+000	625939	35044
6	5.00000E+000	1232870	71866

Component # 7 Sulfate Retention Time 10.43
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.09722E-001
K1 = 4.73420E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	105494	5187
3	2.00000E+000	376299	19426
4	5.00000E+000	1046779	50229
5	1.00000E+001	2021874	102155
6	2.00000E+001	4231586	220606

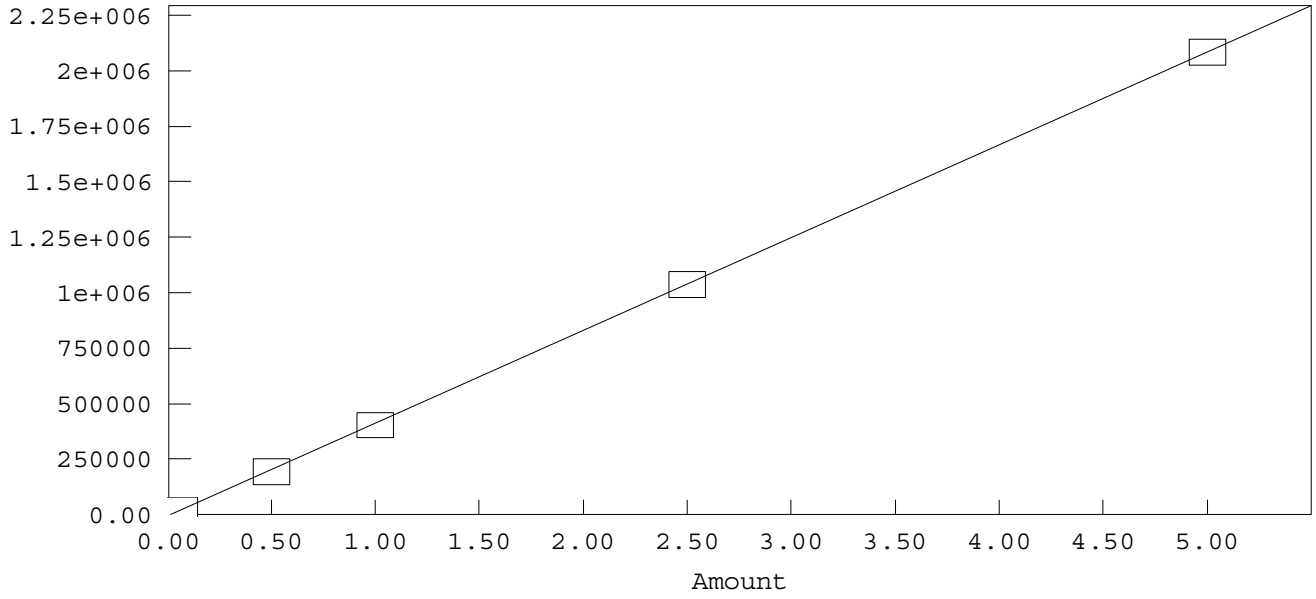
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

10/21/2015

Method: 151012.MET - Last Updated: 16:44 on Mon, 12 Oct 2015

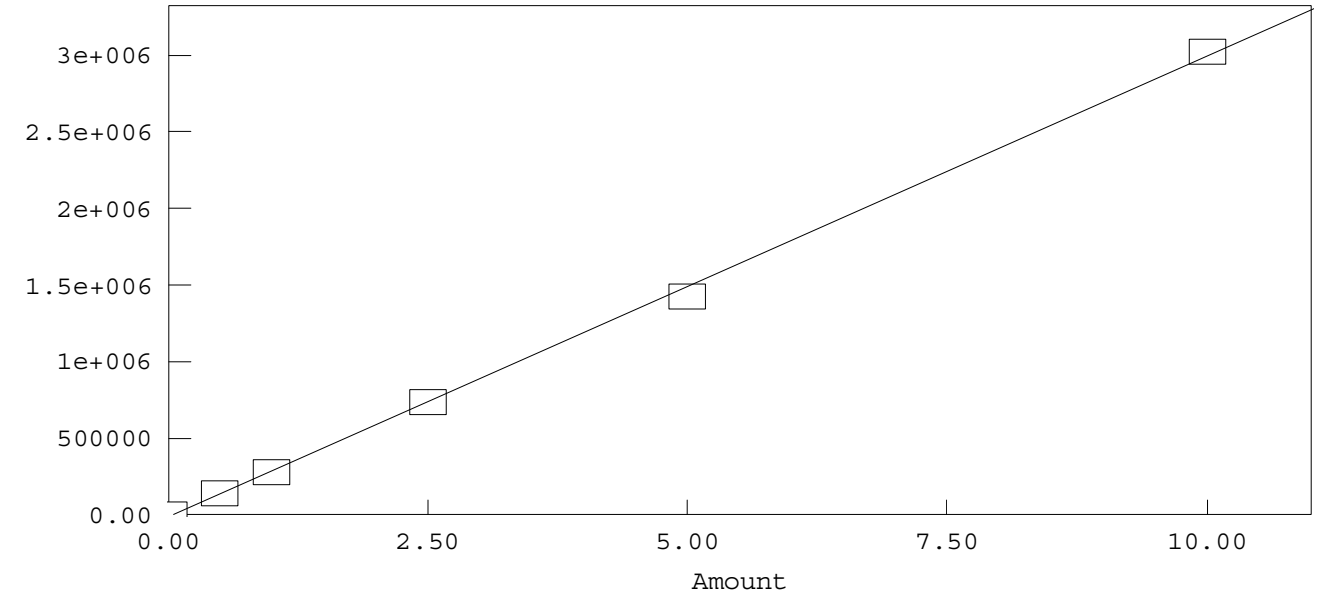
Component: Fluoride
Fit Type: Linear
r^2 = 0.999946
Amt = Resp * 2.394e-006 + 0.01218
Resp = Amt * 4.178e+005 + -5090
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

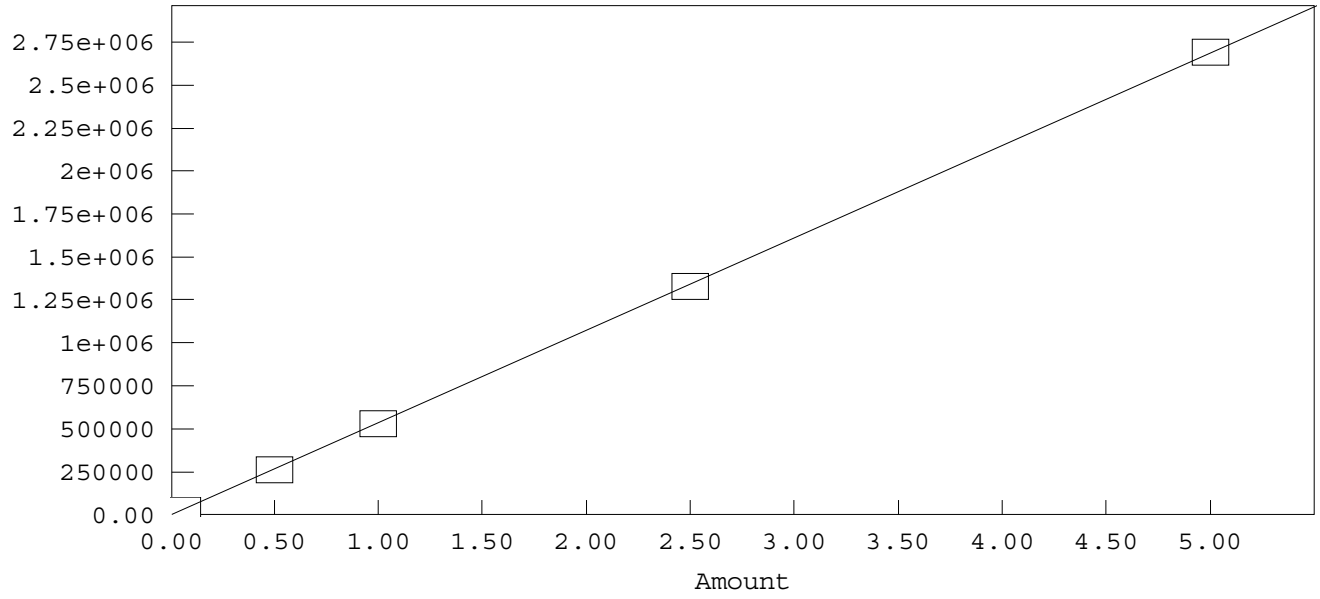
Component: Chloride
Fit Type: Linear
r^2 = 0.999281
Amt = Resp * 3.319e-006 + 0.06519
Resp = Amt * 3.013e+005 + -1.964e+004
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

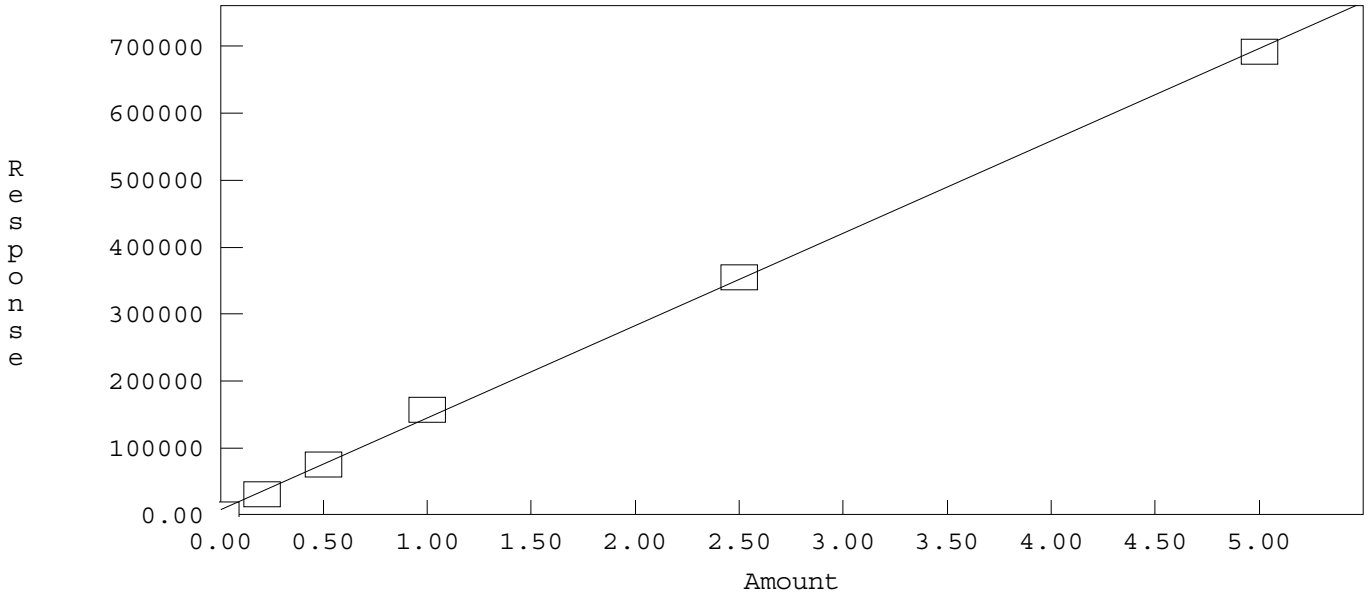
Component: Nitrite
Fit Type: Linear
r² = 0.999960
Amt = Resp * 1.859e-006 + 0.005003
Resp = Amt * 5.378e+005 + -2691
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

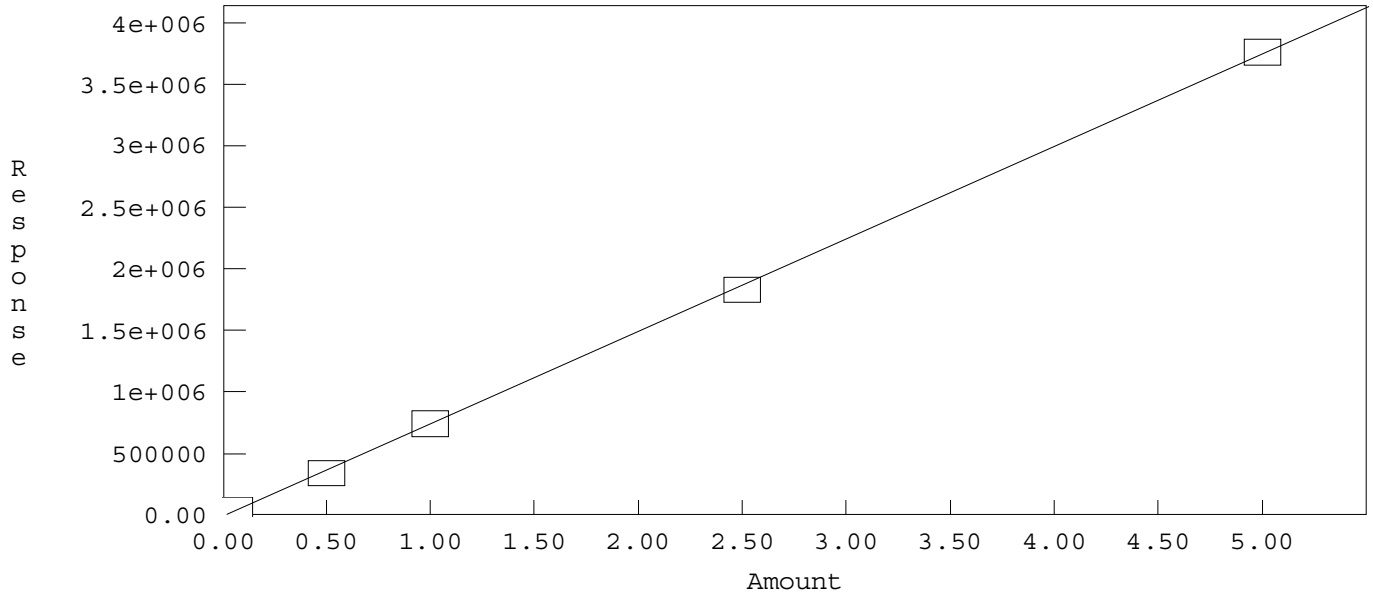
Component: Bromide
Fit Type: Linear
r² = 0.999299
Amt = Resp * 7.255e-006 + -0.05149
Resp = Amt * 1.378e+005 + 7098
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

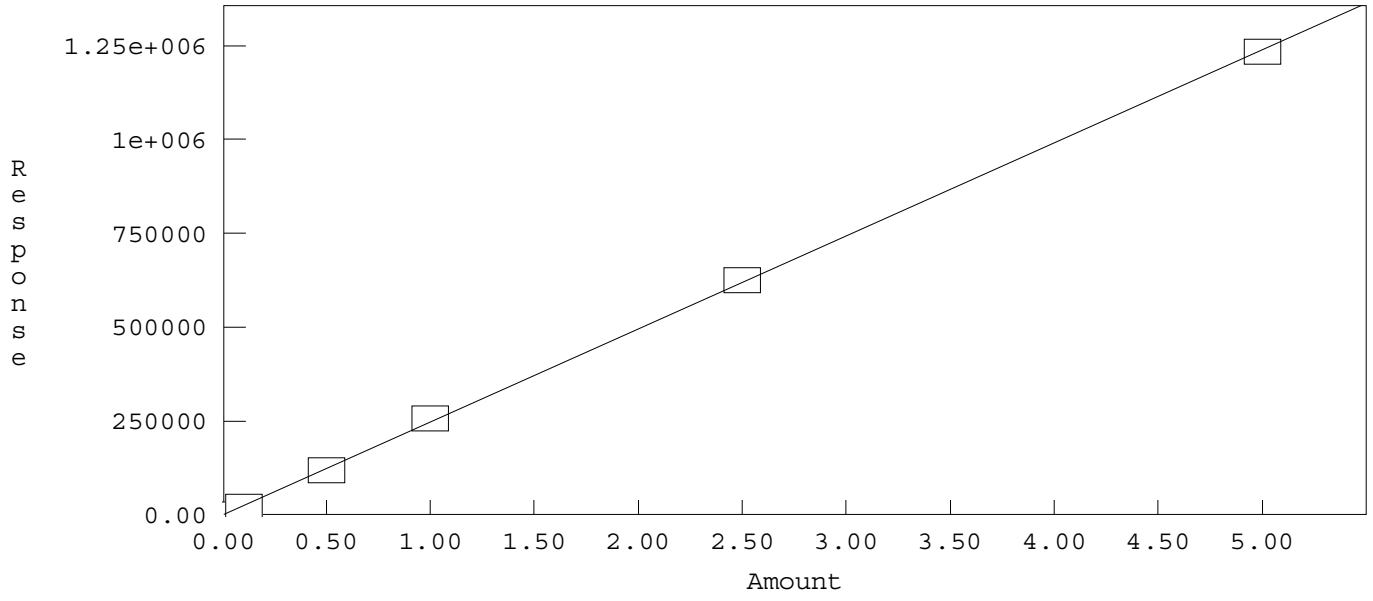
Component: Nitrate
Fit Type: Linear
r² = 0.999775
Amt = Resp * 1.329e-006 + 0.01934
Resp = Amt * 7.523e+005 + -1.455e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

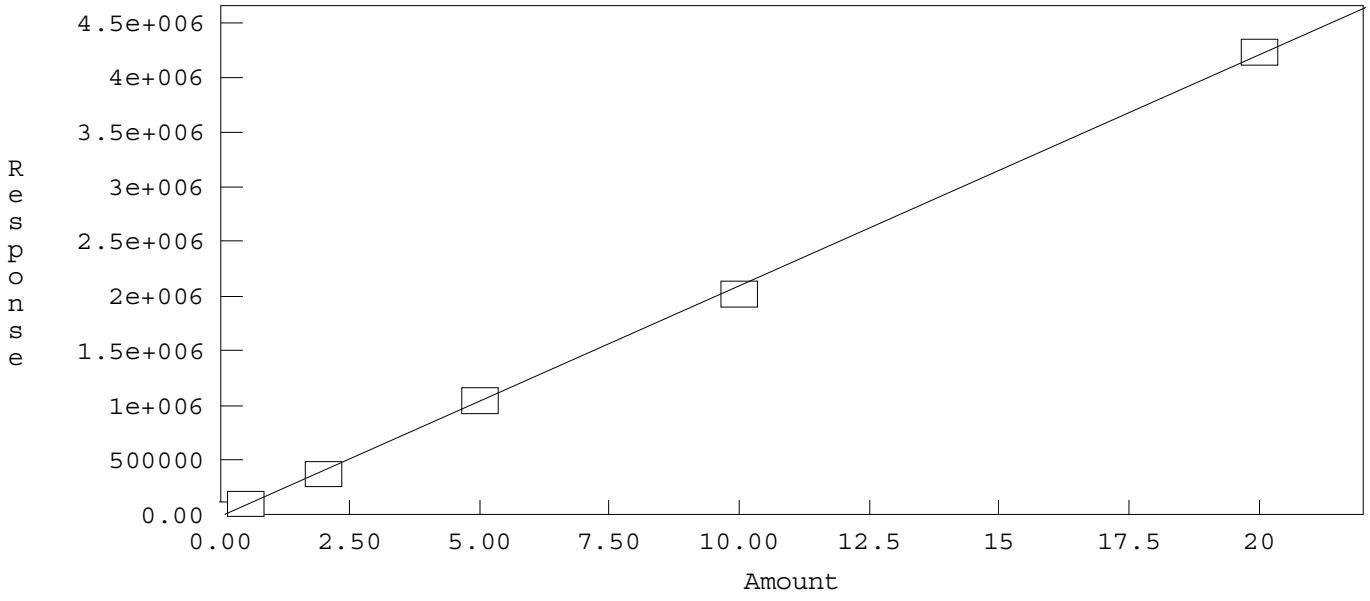
Component: Phosphate
Fit Type: Linear
r² = 0.999845
Amt = Resp * 4.045e-006 + -0.005256
Resp = Amt * 2.472e+005 + 1299
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999451
Amt = Resp * 4.734e-006 + 0.1097
Resp = Amt * 2.112e+005 + -2.318e+004
Standardization: External
Calibration: Area



10/21/2015

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **ICV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2126553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.442	0.50	2.500	0	97.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.403	0.50	2.500	0	96.1	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.380	0.50	2.500	0	95.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.510	0.50	2.500	0	100	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.452	0.50	2.500	0	98.1	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.404	0.50	2.500	0	96.2	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.398	0.50	2.500	0	95.9	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **ICV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2126626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.348	0.10	2.500	0	93.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.334	0.10	2.500	0	93.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.288	0.10	2.500	0	91.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.380	0.10	2.500	0	95.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.373	0.10	2.500	0	94.9	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.303	0.10	2.500	0	92.1	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.319	0.10	2.500	0	92.8	90	110				

Qualifiers:

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

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **ICV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2133312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.348	0.10	2.500	0	93.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.256	0.10	2.500	0	90.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.250	0.10	2.500	0	90.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.293	0.10	2.500	0	91.7	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.336	0.10	2.500	0	93.4	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/10/2015**	SeqNo: **2133347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.406	0.10	2.500	0	96.2	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCV**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/10/2015**	SeqNo: **2133349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.284	0.10	2.500	0	91.4	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **ICV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2126599**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.841	0.50	5.000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.751	0.50	5.000	0	95.0	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.650	0.50	5.000	0	93.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	5.239	0.50	5.000	0	105	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.869	0.50	5.000	0	97.4	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.764	0.50	5.000	0	95.3	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCV**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.827	0.50	5.000	0	96.5	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **ICB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2126554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/3/2015**	SeqNo: **2126598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **ICB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2126627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/3/2015**	SeqNo: **2126651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **ICB**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2133313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCB**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCB**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCB**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **104077**
Client ID: **CCB**	Batch ID: **R104077**	TestNo: **EPA 300.0**		Analysis Date: **11/9/2015**	SeqNo: **2133346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	CCB-5	SampType:	CCB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	CCB	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/10/2015	SeqNo:	2133348

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	CCB-6	SampType:	CCB	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	104077
Client ID:	CCB	Batch ID:	R104077	TestNo:	EPA 300.0			Analysis Date:	11/10/2015	SeqNo:	2133350

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **ICB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2126600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/2/2015**	SeqNo: **2126623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103969**
Client ID: **CCB**	Batch ID: **R103969**	TestNo: **EPA 300.0**		Analysis Date: **11/3/2015**	SeqNo: **2126625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 11/2/2015

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.71	
CCV-2	Fluoride	2.71	
CCV-3	Fluoride	2.71	
CCV-4	Fluoride	2.73	
CCV-5	Fluoride	2.71	
CCV-6	Fluoride	2.71	
	Average	2.713	
	Lower Limit	2.513	
	Upper Limit	2.913	
LCS-R103969_F	Fluoride	2.69	PASS
MB-R103969_F	Fluoride	N.A.	N.A.
N017415-001D	Fluoride	2.69	PASS
N017415-001DDUP	Fluoride	2.69	PASS
N017415-002D	Fluoride	2.71	PASS
N017415-002DMS	Fluoride	2.68	PASS
N017415-002DMSD	Fluoride	2.70	PASS
N017415-003D	Fluoride	2.69	PASS
N017415-004D	Fluoride	2.67	PASS
N017415-006D	Fluoride	2.69	PASS
N017415-007D	Fluoride	2.69	PASS
N017415-008C	Fluoride	2.67	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 11/9/2015

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.72	
CCV-2	Fluoride	2.67	
CCV-3	Fluoride	2.70	
CCV-4	Fluoride	2.70	
CCV-5	Fluoride	2.73	
CCV-6	Fluoride	2.67	
	Average	2.698	
	Lower Limit	2.498	
	Upper Limit	2.898	
MB-R104077_F	Fluoride	N.A.	N.A.
LCS-R104077_F	Fluoride	2.72	PASS
N017415-005D	Fluoride	2.69	PASS
N017469-002BMS	Fluoride	2.67	PASS
N017469-002BMSD	Fluoride	2.72	PASS
N017415-005DDUP	Fluoride	2.72	PASS
N017415-005DMS	Fluoride	2.69	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 11/2/2015

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.06	
CCV-2	Chloride	4.06	
CCV-3	Chloride	4.07	
CCV-4	Chloride	4.10	
CCV-5	Chloride	4.03	
CCV-6	Chloride	4.04	
	Average	4.060	
	Lower Limit	3.860	
	Upper Limit	4.260	
LCS-R103969_CL	Chloride	4.04	PASS
MB-R103969_CL	Chloride	N.A.	N.A.
N017415-001D	Chloride	4.05	PASS
N017415-002D	Chloride	4.07	PASS
N017415-003D	Chloride	4.06	PASS
N017415-004D	Chloride	4.05	PASS
N017415-005D	Chloride	4.09	PASS
N017415-006D	Chloride	4.04	PASS
N017415-007D	Chloride	4.08	PASS
N017415-002DMS	Chloride	4.07	PASS
N017415-002DMSD	Chloride	4.05	PASS
N017415-001DDUP	Chloride	4.03	PASS
N017415-008C	Chloride	4.10	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 11/2/2015

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.10	
CCV-2	Sulfate	10.15	
CCV-3	Sulfate	10.11	
CCV-4	Sulfate	10.16	
CCV-5	Sulfate	10.11	
CCV-6	Sulfate	10.13	
	Average	10.127	
	Lower Limit	9.927	
	Upper Limit	10.327	
LCS-R103969_SO4	Sulfate	10.08	PASS
MB-R103969_SO4	Sulfate	N.A.	N.A.
N017415-008C	Sulfate	10.15	PASS
N017415-001D	Sulfate	10.13	PASS
N017415-001DDUP	Sulfate	10.15	PASS
N017415-002D	Sulfate	10.11	PASS
N017415-002DMS	Sulfate	10.17	PASS
N017415-002DMSD	Sulfate	10.12	PASS
N017415-003D	Sulfate	10.11	PASS
N017415-004D	Sulfate	10.14	PASS
N017415-005D	Sulfate	10.11	PASS
N017415-006D	Sulfate	10.09	PASS
N017415-007D	Sulfate	10.08	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 3/23/2015 & 10/12/2015
Analyst: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile: 15032301.D06 15032301.D07 15032301.D08 15032301.D09 15032301.D10 15032301.D11 15032301.D12

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Fluoride	0.039	0.047	0.046	0.038	0.039	0.046	0.045	0.020	0.0040	3.143	**0.0125**	**0.10**	OK,meets criteria
Chloride	0.159	0.149	0.158	0.169	0.149	0.142	0.141	0.10	0.0101	3.143	**0.0317**	**0.50**	OK,meets criteria
Nitrite	0.033	0.027	0.030	0.027	0.030	0.026	0.026	0.020	0.0026	3.143	**0.0083**	**0.050**	OK,meets criteria
Nitrate	0.034	0.027	0.036	0.033	0.028	0.027	0.030	0.020	0.0036	3.143	**0.0114**	**0.050**	OK,meets criteria
Phosphate	0.050	0.053	0.060	0.046	0.049	0.062	0.044	0.050	0.0068	3.143	**0.0214**	**0.10**	OK,meets criteria
Sulfate	0.267	0.246	0.243	0.238	0.250	0.245	0.235	0.10	0.0104	3.143	**0.0327**	**0.50**	OK,meets criteria

Datafile: 15101201.D13 15101201.D14 15101201.D15 15101201.D16 15101201.D17 15101201.D18 15101201.D19

Bromide	0.074	0.045	0.102	0.055	0.057	0.071	0.061	0.10	0.0185	3.143	**0.0581**	**0.50**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R104043 **Analyst:** REB

ASSET #: N017415 **Date Analyzed:** 11/8/2015

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/9/2015 Date: —

2nd Level Reviewer 11/13/2015 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N017415-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5531*5

= 2.7655 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.8 mg/L

REB 11/9/2015

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

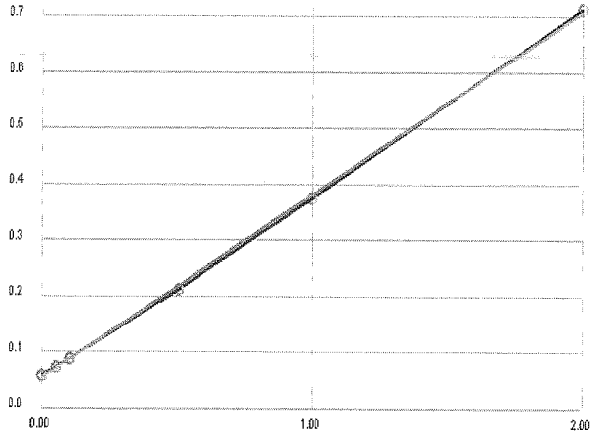
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.327x + 0.0544
Correlation	.999769

Calibrant	Energy	Set	Conc
1	0.0586	0.0000	0.0127
2	0.0734	0.0500	0.0580
3	0.0691	0.1000	0.1060
4	0.2114	0.5000	0.4800
5	0.3741	1.0000	0.9776
6	0.7135	2.0000	2.0157



Notes:

R1 Buffer – R151019D
R2 Colorimg Rgt. – R151107A
1% $CuSO_4$ – R151019C

STD1 – 1SST-150206D
STD2 – 1SST-150730E

REB 11/9/2015

520

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **ICV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.510	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.480	0.050	0.5000	0	95.9	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCV**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **ICB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131123**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131135**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131147**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104043**
Client ID: **CCB**	Batch ID: **R104043**	TestNo: **SM4500-NO3**		Analysis Date: **11/8/2015**	SeqNo: **2131156**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 11/08/2015
Time Analyzed: 22:16 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R151019D
Color reagent: R151107A
2% Copper Sulfate: R151019C
Ammonium Hydroxide: CINV-150924A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N017390-001D		8.65						
2)	N017399-001C		8.48						
3)	N017399-002D		8.71						
4)	N017400-001E		8.53						
5)	N017400-002E		8.95						
6)	N017400-003D		8.55						
7)	N017400-004D		8.34						
8)	N017400-005D		7.66						
9)	N017400-006D		7.87						
10)	N017400-007D		7.02						
11)	N017400-008D		8.41						
12)	N017415-001E		8.64						
13)	N017415-002E		8.81						
14)	N017415-003E		8.91						
15)	N017415-004E		8.81						
16)	N017415-005E		7.36						
17)	N017415-006E		8.52						
18)	N017415-007E		8.31						
19)	N017415-008D		7.62						
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

REB 11/9/2015

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
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Time start: 11-08-2015 22:16
Time end: 11-09-2015 01:04

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	00:25:22	0.0228		0.0619
2	<BLANK>	00:26:16	0.0136		0.0589
3	<CAL1>	00:27:16	0.0127	[0]	0.0586
4	<CAL2>	00:28:12	0.0580	[0.05]	0.0734
5	<CAL3>	00:29:13	0.1060	[0.1]	0.0891
6	<CAL4>	00:30:08	0.4800	[0.5]	0.2114
7	<CAL5>	00:31:02	0.9776	[1]	0.3741
8	<CAL6>	00:32:04	2.0157	[2]	0.7135
9	,BLANK,BLANK,1,	00:32:59	0.0249		0.0626
10	,ICV,ICV,1,	00:33:59	0.5097		0.2211
11	,ICB,ICB,1,	00:34:55	0.0130		0.0587
12	,MB-H2O,MBLK,1,	00:35:50	0.0103		0.0578
13	,LCS-H2O,LCS,1,	00:36:45	0.5219		0.2251
14	,N017390-001D,SAMP,5,	00:37:45	0.5959		0.2493
15	,N017390-001DDUP,DUP,5,	00:38:41	0.5794		0.2439
16	,N017390-001DMS,MS,5,	00:39:42	1.1052		0.4158
17	,N017390-001DMSD,MSD,5,	00:40:36	1.0578		0.4003
18	,N017399-001C,SAMP,1,	00:41:32	0.0439		0.0688
19	,N017399-002D,SAMP,5,	00:42:33	0.6556		0.2688
20	,N017400-001E,SAMP,5,	00:43:28	0.5394		0.2308
21	,BLANK,BLANK,1	00:44:22	0.0203		0.0611
22	,CCV-1,CCV,1,	00:45:24	0.4797		0.2113
23	,CCB-1,CCB,1,	00:46:19	0.0170		0.0600
24	,N017400-002E,SAMP,5,	00:47:21	0.5320		0.2284
25	,N017400-003D,SAMP,5,	00:48:15	0.5250		0.2261
26	,N017400-004D,SAMP,5,	00:49:04	0.5394		0.2308

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N017400-005D,SAMP,5,	00:49:46	0.6632		0.2713
28	,N017400-006D,SAMP,5,	00:50:36	0.6507		0.2672
29	,N017400-007D,SAMP,5,	00:51:19	0.5011		0.2183
30	,N017400-008D,SAMP,5,	00:52:01	0.5207		0.2247
31	,N017415-001E,SAMP,5,	00:52:50	0.5531		0.2353
32	,N017415-002E,SAMP,5,	00:53:32	0.5681		0.2402
33	,BLANK,BLANK,1	00:54:16	0.0103		0.0578
34	,CCV-2,CCV,1,	00:55:04	0.5014		0.2184
35	,CCB-2,CCB,1,	00:55:47	0.0090		0.0574
36	,N017415-003E,SAMP,5,	00:56:36	0.5776		0.2433
37	,N017415-004E,SAMP,5,	00:57:18	0.4100		0.1885
38	,N017415-005E,SAMP,5,	00:58:02	0.4299		0.1950
39	,N017415-006E,SAMP,5,	00:58:50	0.5510		0.2346
40	,N017415-007E,SAMP,5,	00:59:33	0.5696		0.2407
41	,N017415-008D,SAMP,5,	01:00:15	0.5519		0.2349
42	,BLANK,BLANK,1	01:00:58	0.0103		0.0578
43	,CCV-3,CCV,1,	01:01:46	0.4987		0.2175
44	,CCB-3,CCB,1,	01:02:30	0.0081		0.0571

REB 11/9/2015

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52882
ASSET #: N017415

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/4/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N017400-04B PS/MSD failed, due to high analyte cocentration already present in the sample.
However, LCS & dilution test passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/10/2015 Date:

2nd Level Reviewer 11/12/2015 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Sodium concentration, in ug/L , in the original sample as follows:

Sodium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017415-008B** , the concentration in ug/L is calculated as follows:

Sodium , ug/L = 20.1797 * 25 *(25/25) * 1000

Sodium , ug/L = 504492.5

Reporting results in two significant figures,

Sodium , ug/L = 500000

% RSD SUMMARY

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.8	15	PASS
Standard1	ICAL	1	Na	0.1	2.83	15	PASS
Standard2	ICAL	1	Na	1	0.4	15	PASS
Standard3	ICAL	1	Na	5	0.29	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.29	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	10.079	0.18	15	PASS
ICB	ICB	1	Na	-0.0041	172.78	15	<PQL
ICSA1	ICSA	1	Na	-0.0061	67.66	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.4	15	PASS
CCV1	CCV	1	Na	9.81	0.19	15	PASS
CCB1	CCB	1	Na	-0.019	13.33	15	PASS
CCV2	CCV	1	Na	9.68	0.25	15	PASS
CCB2	CCB	1	Na	0.15	3.23	15	PASS
MB-52882	MBLK	1	Na	0.14	5.59	15	PASS
LCS2-52882	LCS	1	Na	2260.1	23.76	15	NR!
N017390-001B	SAMP	5	Na	141.03	0.15	15	PASS
N017400-003B	SAMP	5	Na	331.08	0.46	15	PASS
N017400-004B	SAMP	5	Na	347.66	0.27	15	PASS
N017400-005B	SAMP	5	Na	103.92	0.83	15	PASS
N017400-006B	SAMP	5	Na	104	0.37	15	PASS
CCV3	CCV	1	Na	9.76	0.25	15	PASS
CCB3	CCB	1	Na	0.07	4.77	15	PASS
N017400-007B	SAMP	5	Na	342.57	1.83	15	PASS
N017400-008B	SAMP	5	Na	333.68	0.35	15	PASS
N017415-008B	SAMP	5	Na	124.65	0.16	15	PASS
CCV4	CCV	1	Na	9.48	0.31	15	PASS
CCB4	CCB	1	Na	0.068	3.69	15	PASS
CCV5	CCV	1	Na	9.53	0.34	15	PASS
CCB5	CCB	1	Na	0.024	22.21	15	<PQL
ICSA2	ICSA	1	Na	0.017	10.17	15	PASS
ICSAB2	ICSAB	1	Na	9.62	0.11	15	PASS
LCS2-52882	LCS	1	Na	9.63	0.064	15	PASS
N017390-001B	SAMP	25	Na	28.93	0.2	15	PASS
N017400-003B	SAMP	100	Na	12.97	0.42	15	PASS
N017400-004B	SAMP	100	Na	13.51	0.56	15	PASS
CCV6	CCV	1	Na	9.59	0.12	15	PASS
CCB6	CCB	1	Na	0.019	22.17	15	<PQL
N017400-004B	SAMP	500	Na	2.72	0.43	15	PASS
N017400-004B-PS	PS	100	Na	13.46	0.36	15	PASS
N017400-004B-MS2	MS	100	Na	13.63	0.49	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017400-004B-MSD2	MSD	100	Na	13.38	0.35	15	PASS
N017400-005B	SAMP	25	Na	16.88	0.64	15	PASS
N017400-006B	SAMP	25	Na	17.14	0.39	15	PASS
N017400-007B	SAMP	100	Na	13.19	0.35	15	PASS
N017400-008B	SAMP	100	Na	13.063	0.39	15	PASS
N017415-008B	SAMP	25	Na	20.18	0.13	15	PASS
CCV7	CCV	1	Na	9.56	0.0099	15	PASS
CCB7	CCB	1	Na	0.0058	83.38	15	<PQL
ICSA3	ICSA	1	Na	0.00055	577.89	15	<PQL
ICSAB3	ICSAB	1	Na	9.44	0.2	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151007B,0.025<50mL
Standard2	MWST-151007B,0.25<50mL
Standard3	MWST-151007B,1.25<50mL
Standard4	MWST-151007B,2.5<50mL
Standard5	MWST-151007B,5<50mL
Standard6	MWST-151007B,10<50mL
ICV	MWST-151007CB,2.5<50mL
CCV	MWST-151007B,2.5<50mL
ICSA/ICSAB	MWST-151028A/151007D
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/MSST-111006A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/04/2015	07:34:35 AM
2	Standard1	ICAL	1	11/04/2015	07:37:52 AM
3	Standard2	ICAL	1	11/04/2015	07:41:09 AM
4	Standard3	ICAL	1	11/04/2015	07:44:57 AM
5	Standard4	ICAL	1	11/04/2015	07:48:49 AM
6	Standard5	ICAL	1	11/04/2015	07:52:42 AM
7	Standard6	ICAL	1	11/04/2015	07:56:37 AM
8	ICV	ICV	1	11/04/2015	07:59:24 AM
1	ICB	ICB	1	11/04/2015	08:03:16 AM
3	ICSA1	ICSA	1	11/04/2015	08:06:32 AM
4	ICSAB1	ICSAB	1	11/04/2015	08:09:51 AM
38	MB-52866	MBLK	1	11/04/2015	08:13:44 AM
39	LCS2-52866	LCS	1	11/04/2015	08:19:36 AM
40	N017404-001A	SAMP	5	11/04/2015	08:23:28 AM
41	N017404-002A	SAMP	5	11/04/2015	08:26:48 AM
42	N017404-002A	SAMP	25	11/04/2015	08:31:27 AM
43	N017404-002A-PS	PS	5	11/04/2015	08:35:15 AM
44	N017404-002A-MS2	MS	5	11/04/2015	08:39:04 AM
45	N017404-002A-MSD2	MSD	5	11/04/2015	08:42:54 AM
46	MB-52910	MBLK	1	11/04/2015	08:46:45 AM
47	LCS2-52910	LCS	1	11/04/2015	08:50:04 AM
5	CCV1	CCV	1	11/04/2015	08:53:24 AM
1	CCB1	CCB	1	11/04/2015	08:57:18 AM
48	N017399-001A	SAMP	5	11/04/2015	09:00:36 AM
49	N017399-002B	SAMP	5	11/04/2015	09:05:28 AM
50	N017400-001B	SAMP	5	11/04/2015	09:10:21 AM
51	N017400-002B	SAMP	5	11/04/2015	09:15:11 AM
52	N017415-001B	SAMP	5	11/04/2015	09:20:03 AM
53	N017415-002B	SAMP	5	11/04/2015	09:24:53 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N017415-003B	SAMP	5	11/04/2015	09:29:45 AM
55	N017415-004B	SAMP	5	11/04/2015	09:34:36 AM
56	N017415-005B	SAMP	5	11/04/2015	09:39:27 AM
57	N017415-006B	SAMP	5	11/04/2015	09:44:19 AM
5	CCV2	CCV	1	11/04/2015	09:49:10 AM
1	CCB2	CCB	1	11/04/2015	09:53:04 AM
58	N017415-007B	SAMP	5	11/04/2015	09:56:21 AM
59	N017427-001B	SAMP	5	11/04/2015	10:01:15 AM
60	N017427-002B	SAMP	5	11/04/2015	10:06:07 AM
61	MB-52882	MBLK	1	11/04/2015	10:11:00 AM
62	LCS2-52882	LCS	1	11/04/2015	10:14:20 AM
63	N017390-001B	SAMP	5	11/04/2015	10:19:10 AM
64	N017400-003B	SAMP	5	11/04/2015	10:24:04 AM
65	N017400-004B	SAMP	5	11/04/2015	10:28:56 AM
66	N017400-005B	SAMP	5	11/04/2015	10:33:47 AM
67	N017400-006B	SAMP	5	11/04/2015	10:38:37 AM
5	CCV3	CCV	1	11/04/2015	10:43:28 AM
1	CCB3	CCB	1	11/04/2015	10:47:22 AM
68	N017400-007B	SAMP	5	11/04/2015	10:50:39 AM
69	N017400-008B	SAMP	5	11/04/2015	10:55:31 AM
70	N017415-008B	SAMP	5	11/04/2015	10:59:51 AM
71	N017399-001A	SAMP	25	11/04/2015	11:04:45 AM
72	N017399-002B	SAMP	25	11/04/2015	11:08:06 AM
73	N017399-002B-PS	PS	5	11/04/2015	11:11:26 AM
74	N017399-002B-MS2	MS	5	11/04/2015	11:16:19 AM
75	N017399-002B-MSD2	MSD	5	11/04/2015	11:21:11 AM
76	N017399-002B	SAMP	50	11/04/2015	11:26:03 AM
77	N017399-002B	SAMP	250	11/04/2015	11:29:23 AM
5	CCV4	CCV	1	11/04/2015	11:41:12 AM
1	CCB4	CCB	1	11/04/2015	11:45:07 AM
78	N017399-002B-PS	PS	50	11/04/2015	11:48:27 AM
79	N017399-002B-MS2	MS	50	11/04/2015	11:51:47 AM
80	N017399-002B-MSD2	MSD	50	11/04/2015	11:55:07 AM
81	N017400-001B	SAMP	50	11/04/2015	11:58:27 AM
82	N017400-002B	SAMP	50	11/04/2015	12:01:46 PM
83	N017415-001B	SAMP	50	11/04/2015	12:05:06 PM
84	N017415-002B	SAMP	50	11/04/2015	12:08:25 PM
85	N017415-003B	SAMP	50	11/04/2015	12:11:44 PM
86	N017415-004B	SAMP	100	11/04/2015	12:15:04 PM
87	N017415-005B	SAMP	100	11/04/2015	12:18:23 PM
5	CCV5	CCV	1	11/04/2015	12:21:43 PM
1	CCB5	CCB	1	11/04/2015	12:25:36 PM
3	ICSA2	ICSA	1	11/04/2015	12:28:53 PM
4	ICSAB2	ICSAB	1	11/04/2015	12:32:10 PM
88	N017415-006B	SAMP	100	11/04/2015	12:35:35 PM
89	N017415-007B	SAMP	50	11/04/2015	12:38:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N017415-007B-MS2	MS	5	11/04/2015	12:42:15 PM
104	N017415-007B-MS2	MS	50	11/04/2015	12:47:10 PM
90	N017427-001B	SAMP	50	11/04/2015	12:50:30 PM
91	N017427-002B	SAMP	50	11/04/2015	12:53:51 PM
62	LCS2-52882	LCS	1	11/04/2015	12:57:12 PM
92	N017390-001B	SAMP	25	11/04/2015	01:01:03 PM
93	N017400-003B	SAMP	100	11/04/2015	01:04:54 PM
94	N017400-004B	SAMP	100	11/04/2015	01:08:13 PM
5	CCV6	CCV	1	11/04/2015	01:11:32 PM
1	CCB6	CCB	1	11/04/2015	01:15:25 PM
95	N017400-004B	SAMP	500	11/04/2015	01:19:02 PM
96	N017400-004B-PS	PS	100	11/04/2015	01:22:21 PM
97	N017400-004B-MS2	MS	100	11/04/2015	01:25:40 PM
98	N017400-004B-MSD2	MSD	100	11/04/2015	01:28:59 PM
99	N017400-005B	SAMP	25	11/04/2015	01:32:19 PM
100	N017400-006B	SAMP	25	11/04/2015	01:35:39 PM
101	N017400-007B	SAMP	100	11/04/2015	01:38:59 PM
102	N017400-008B	SAMP	100	11/04/2015	01:42:18 PM
103	N017415-008B	SAMP	25	11/04/2015	01:45:39 PM
5	CCV7	CCV	1	11/04/2015	01:49:31 PM
1	CCB7	CCB	1	11/04/2015	01:53:26 PM
3	ICSA3	ICSA	1	11/04/2015	01:56:43 PM
4	ICSAB3	ICSAB	1	11/04/2015	02:00:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 9:38:31**
Prep End Date: **10/29/2015 2:00:00**

Initials/ Date: 11/10/2015

Prep Batch **52882** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-52882	Aqueous		25	☐	0	0	25	1.000		
LCS2-52882	Aqueous		25	☐	0	0	25	1.000		
MB-52882	Aqueous		25	☐	0	0	25	1.000		
N017390-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **10/29/2015 9:38:31**
Prep End Date: **10/29/2015 2:00:00**

Initials/ Date: 11/10/2015

Prep Batch **52882** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	11/04/2015	07:34:35 AM	Na	589.594	442	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	Na	589.594	420	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	Na	589.594	5039	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	Na	589.594	24874	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	Na	589.594	49512	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	Na	589.594	99141	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	Na	589.594	197629	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **ICV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10078.967	500	10000	0	101	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9808.247	500	10000	0	98.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9680.031	500	10000	0	96.8	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9758.992	500	10000	0	97.6	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 6010B** Analysis Date: **11/4/2015** SeqNo: **2125975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9477.942	500	10000	0	94.8	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9530.829	500	10000	0	95.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9593.983	500	10000	0	95.9	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9556.105	500	10000	0	95.6	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.100499	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-18.943199	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	145.637	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	70.296	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **CCB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2125976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	68.198	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**CCB5**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.500	500									

Sample ID	**CCB6**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	18.539	500									

Sample ID	**CCB7**	SampType:	**CCB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	5.756	500									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**ICSA1**	SampType:	**ICSA**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-6.13799	500									

Sample ID	**ICSAB1**	SampType:	**ICSAB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSAB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9999.827	500	10000	0	100	80	120				

Sample ID	**ICSA2**	SampType:	**ICSA**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	16.921	500									

Sample ID	**ICSAB2**	SampType:	**ICSAB**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSAB**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2125990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9624.486	500	10000	0	96.2	80	120				

Sample ID	**ICSA3**	SampType:	**ICSA**	TestCode:	**6010_WDPG**	Units:	**ug/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 6010B**			Analysis Date:	**11/4/2015**	SeqNo:	**2126014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.551	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID: **ICSAB**	Batch ID: **R103953**	TestNo: **EPA 6010B**		Analysis Date: **11/4/2015**	SeqNo: **2126015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9440.724	500	10000	0	94.4	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.24	124.42	65-125	PASS
Standard2	ICAL	1	1.0091	100.91	65-125	PASS
Standard3	ICAL	1	1	100	65-125	PASS
Standard4	ICAL	1	1.0052	100.52	65-125	PASS
Standard5	ICAL	1	0.99	98.89	65-125	PASS
Standard6	ICAL	1	1	99.59	65-125	PASS
ICV	ICV	1	1.0013	100.13	65-125	PASS
ICB	ICB	1	0.99	99.25	65-125	PASS
ICSA1	ICSA	1	0.99	98.97	65-125	PASS
ICSAB1	ICSAB	1	1.0026	100.26	65-125	PASS
CCV1	CCV	1	1.016	101.59	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
CCV2	CCV	1	0.85	85.077	65-125	PASS
CCB2	CCB	1	0.85	85.39	65-125	PASS
MB-52882	MBLK	1	1.0076	100.76	65-125	PASS
LCS2-52882	LCS	1	0.0092	0.92	65-125	NR!
N017390-001B	SAMP	5	1	100	65-125	PASS
N017400-003B	SAMP	5	0.75	75.35	65-125	PASS
N017400-004B	SAMP	5	0.76	76.16	65-125	PASS
N017400-005B	SAMP	5	0.76	75.5	65-125	PASS
N017400-006B	SAMP	5	0.77	77.2	65-125	PASS
CCV3	CCV	1	0.97	96.5	65-125	PASS
CCB3	CCB	1	0.95	94.9	65-125	PASS
N017400-007B	SAMP	5	0.75	74.99	65-125	PASS
N017400-008B	SAMP	5	0.76	76.4	65-125	PASS
N017415-008B	SAMP	5	0.76	76.007	65-125	PASS
CCV4	CCV	1	0.97	96.92	65-125	PASS
CCB4	CCB	1	0.93	93.31	65-125	PASS
CCV5	CCV	1	0.93	93.2	65-125	PASS
CCB5	CCB	1	0.98	98.49	65-125	PASS
ICSA2	ICSA	1	0.98	98.1	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.19	65-125	PASS
LCS2-52882	LCS	1	0.96	95.71	65-125	PASS
N017390-001B	SAMP	25	0.94	94.48	65-125	PASS
N017400-003B	SAMP	100	0.93	92.63	65-125	PASS
N017400-004B	SAMP	100	0.94	93.83	65-125	PASS
CCV6	CCV	1	0.96	95.52	65-125	PASS
CCB6	CCB	1	0.95	94.87	65-125	PASS
N017400-004B	SAMP	500	0.94	93.59	65-125	PASS
N017400-004B-PS	PS	100	0.94	93.87	65-125	PASS

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017400-004B-MS2	MS	100	0.94	93.8	65-125	PASS
N017400-004B-MSD2	MSD	100	0.93	93.27	65-125	PASS
N017400-005B	SAMP	25	0.91	91.43	65-125	PASS
N017400-006B	SAMP	25	0.91	90.78	65-125	PASS
N017400-007B	SAMP	100	0.94	93.91	65-125	PASS
N017400-008B	SAMP	100	0.94	93.95	65-125	PASS
N017415-008B	SAMP	25	0.91	90.83	65-125	PASS
CCV7	CCV	1	0.95	94.76	65-125	PASS
CCB7	CCB	1	0.94	94.3	65-125	PASS
ICSA3	ICSA	1	0.95	95.13	65-125	PASS
ICSAB3	ICSAB	1	0.96	96.16	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 6010B
Analysis Date: 11/04/15

Matrix: Groundwater
Batch No.: 52882

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-004B -DT 500X	Sodium	ug/L	1361856	PASS	1350809	0.82%	10

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N017400-004B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **103953**
Client ID:	**ZZZZZZ**	Batch ID: **52882**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/4/2015**	SeqNo: **2126004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1346415.512	50000	10000	1351000	-43.9	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52897
ASSET #: N017415
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/3/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N017415 only.
% Rec of Fe in N017400-001C MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/201 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52897
ASSET #: N017415

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 11/5/2015

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.			X			
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N017400-001 PS rerun only.
% Rec of Fe in N17400-001C PS failed. However LCS passed Criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/2015 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017415-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.04592 * 1 * (25/25) * 1000

Iron , ug/L = 45.92

Reporting results in two significant figures,

Iron , ug/L = 46



% RSD SUMMARY

RSD SUMMARY: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	16.15	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.23	15	PASS
Standard2	ICAL	1	Fe	0.05	0.0084	15	PASS
Standard3	ICAL	1	Fe	2	0.076	15	PASS
Standard4	ICAL	1	Fe	5	0.12	15	PASS
Standard5	ICAL	1	Fe	7.5	0.28	15	PASS
Standard6	ICAL	1	Fe	10	0.28	15	PASS
Standard7	ICAL	1	Fe	20	0.26	15	PASS
ICV	ICV	1	Fe	10.15	0.19	15	PASS
ICB	ICB	1	Fe	0.00017	531.0095	15	<PQL
LLCCV1	CCV1	1	Fe	0.02	1.63	20	PASS
ICSA1	ICSA	1	Fe	191.1	0.43	15	PASS
ICSAB1	ICSAB	1	Fe	189.08	0.55	15	PASS
LLCCV21	CCV1	1	Fe	0.02	2.44	20	PASS
ICSA1	ICSA	1	Fe	188.97	0.8	15	PASS
ICSAB1	ICSAB	1	Fe	187.79	0.68	15	PASS
CCV1	CCV	1	Fe	9.92	0.27	15	PASS
CCB1	CCB	1	Fe	-0.00012	433.88	15	<PQL
CCV2	CCV	1	Fe	9.83	0.32	15	PASS
CCB2	CCB	1	Fe	-0.00007	1006.53	15	<PQL
MB-52897	MBLK	1	Fe	-0.0028	7.091	15	PASS
LCS-52897	LCS	1	Fe	0.093	0.025	15	PASS
N017400-001C	SAMP	1	Fe	0.065	1.041	15	PASS
N017400-001C	SAMP	5	Fe	0.099	0.25	15	PASS
CCV3	CCV	1	Fe	11.35	0.99	15	PASS
CCV3	CCV	1	Fe	10.25	0.55	15	PASS
CCB3	CCB	1	Fe	-0.00005	1482.075	15	<PQL
LLCCV2	CCV1	1	Fe	0.019	2.71	20	PASS
ICSA2	ICSA	1	Fe	188.14	0.23	15	PASS
ICSAB2	ICSAB	1	Fe	186.36	0.21	15	PASS
LLCCV2	CCV1	1	Fe	0.031	13.012	20	PASS
ICSA2	ICSA	1	Fe	187.52	0.51	15	PASS
ICSAB2	ICSAB	1	Fe	186.41	0.3	15	PASS
N017400-001C-MS1	MS1	1	Fe	0.13	3.43	15	PASS
N017400-001C-MSD1	MSD1	1	Fe	0.13	0.11	15	PASS
N017400-002C	SAMP	1	Fe	0.037	1.48	15	PASS
N017415-001C	SAMP	1	Fe	0.046	0.29	15	PASS
N017415-002C	SAMP	1	Fe	0.031	0.12	15	PASS
N017415-003C	SAMP	1	Fe	0.033	0.72	15	PASS
N017415-004C	SAMP	1	Fe	0.071	0.61	15	PASS
N017415-005C	SAMP	1	Fe	0.086	0.11	15	PASS
N017415-006C	SAMP	1	Fe	0.063	0.59	15	PASS

RSD SUMMARY: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017415-007C	SAMP	1	Fe	0.036	1.55	15	PASS
CCV4	CCV	1	Fe	9.74	0.34	15	PASS
CCB4	CCB	1	Fe	-0.00009	377.44	15	<PQL
N017427-001C	SAMP	1	Fe	0.027	0.27	15	PASS
N017427-002C	SAMP	1	Fe	0.11	0.74	15	PASS
N017427-002C-MS	MS	1	Fe	0.17	0.8	15	PASS
CCV5	CCV	1	Fe	9.38	0.041	15	PASS
CCV5	CCV	1	Fe	9.36	0.19	15	PASS
CCV5	CCV	1	Fe	9.32	0.19	15	PASS
CCB5	CCB	1	Fe	0.00049	180.76	15	<PQL
LLCCV3	CCV1	1	Fe	0.019	0.88	20	PASS
LLCCV3	CCV1	1	Fe	0.018	1.9	20	PASS
ICSA3	ICSA	1	Fe	175.95	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	175.02	0.11	15	PASS

RSD SUMMARY: 151105D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	32.54	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.62	15	PASS
Standard2	ICAL	1	Fe	0.05	1.21	15	PASS
Standard3	ICAL	1	Fe	2	0.91	15	PASS
Standard4	ICAL	1	Fe	5	0.52	15	PASS
Standard5	ICAL	1	Fe	7.5	0.66	15	PASS
Standard6	ICAL	1	Fe	10	0.67	15	PASS
Standard7	ICAL	1	Fe	20	0.55	15	PASS
ICV	ICV	1	Fe	10.29	0.43	15	PASS
LLCCV1	CCV1	1	Fe	0.035	14.34	20	PASS
ICB	ICB	1	Fe	-0.0015	71.61	15	<PQL
LLCCV1	CCV1	1	Fe	0.021	18.66	20	PASS
ICSA1	ICSA	1	Fe	188.34	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	185.12	1.14	15	PASS
N017400-001C-PS	PS	1	Fe	0.18	12.53	15	PASS
CCV1	CCV	1	Fe	10.12	0.88	15	PASS
CCB1	CCB	1	Fe	-0.00027	310.77	15	<PQL
LLCCV2	CCV1	1	Fe	0.021	8.51	20	PASS
ICSA2	ICSA	1	Fe	188.83	0.43	15	PASS
ICSAB2	ICSAB	1	Fe	340.72	78.93	15	NR!
ICSAB2	ICSAB	1	Fe	185.72	0.79	15	PASS
CalBlk	IBLK	1	Y	0	0.59	15	PASS
Standard1	ICAL	1	Y	1.023	0.83	15	PASS
Standard2	ICAL	1	Y	1.066	0.66	15	PASS
Standard3	ICAL	1	Y	1.045	0.93	15	PASS
Standard4	ICAL	1	Y	1.13	0.94	15	PASS
Standard5	ICAL	1	Y	1.21	0.62	15	PASS
Standard6	ICAL	1	Y	1.06	0.73	15	PASS
Standard7	ICAL	1	Y	1.029	0.56	15	PASS
ICV	ICV	1	Y	1.043	0.42	15	PASS
LLCCV1	CCV1	1	Y	1.04	1.22	20	PASS
ICB	ICB	1	Y	1.012	0.91	15	PASS
LLCCV1	CCV1	1	Y	1.0044	0.4	20	PASS
ICSA1	ICSA	1	Y	0.88	0.25	15	PASS
ICSAB1	ICSAB	1	Y	0.93	0.48	15	PASS
N017400-001C-PS	PS	1	Y	0.92	0.53	15	PASS
CCV1	CCV	1	Y	1.058	0.85	15	PASS
CCB1	CCB	1	Y	0.99	0.46	15	PASS
LLCCV2	CCV1	1	Y	1.039	1.71	20	PASS
ICSA2	ICSA	1	Y	0.87	0.19	15	PASS
ICSAB2	ICSAB	1	Y	0.7	55.17	15	NR!
ICSAB2	ICSAB	1	Y	0.88	0.37	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151103C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/03/2015	03:16:19 PM
2	Standard1	ICAL	1	11/03/2015	03:20:39 PM
3	Standard2	ICAL	1	11/03/2015	03:25:28 PM
4	Standard3	ICAL	1	11/03/2015	03:30:19 PM
5	Standard4	ICAL	1	11/03/2015	03:35:11 PM
6	Standard5	ICAL	1	11/03/2015	03:40:38 PM
7	Standard6	ICAL	1	11/03/2015	03:46:01 PM
8	Standard7	ICAL	1	11/03/2015	03:51:24 PM
9	ICV	ICV	1	11/03/2015	03:56:27 PM
1	ICB	ICB	1	11/03/2015	04:01:53 PM
2	LLCCV1	CCV1	1	11/03/2015	04:06:41 PM
4	ICSA1	ICSA	1	11/03/2015	04:11:31 PM
5	ICSAB1	ICSAB	1	11/03/2015	04:17:06 PM
2	LLCCV21	CCV1	1	11/03/2015	04:40:42 PM
4	ICSA1	ICSA	1	11/03/2015	04:45:31 PM
5	ICSAB1	ICSAB	1	11/03/2015	04:51:06 PM
38	MB-52853	MBLK	1	11/03/2015	04:56:41 PM
39	LCS-52853	LCS	1	11/03/2015	05:12:53 PM
40	N017381-004B	SAMP	1	11/03/2015	05:18:45 PM
41	N017381-004B	SAMP	5	11/03/2015	05:22:32 PM
42	N017381-004B-PS	PS	1	11/03/2015	05:27:23 PM
43	N017381-004B-MS	MS	1	11/03/2015	05:32:48 PM
44	N017381-004B-MSD	MSD	1	11/03/2015	05:38:13 PM
45	N017381-008B	SAMP	1	11/03/2015	05:43:38 PM
46	N017381-009B	SAMP	1	11/03/2015	05:48:28 PM
47	N017381-010B	SAMP	1	11/03/2015	05:54:24 PM
7	CCV1	CCV	1	11/03/2015	05:58:45 PM
1	CCB1	CCB	1	11/03/2015	06:04:11 PM



11/6/2015

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N017381-011B	SAMP	1	11/03/2015	06:08:30 PM
49	N017381-012B	SAMP	1	11/03/2015	06:14:32 PM
50	N017381-013B	SAMP	1	11/03/2015	06:19:24 PM
51	N017382-001B	SAMP	1	11/03/2015	06:24:46 PM
52	N017382-002B	SAMP	1	11/03/2015	06:30:10 PM
53	N017382-003B	SAMP	1	11/03/2015	06:35:34 PM
54	N017382-004B	SAMP	1	11/03/2015	06:39:58 PM
55	N017382-004B-MS	MS	1	11/03/2015	06:44:20 PM
56	N017382-005B	SAMP	1	11/03/2015	06:49:45 PM
57	N017382-006B	SAMP	1	11/03/2015	06:55:09 PM
7	CCV2	CCV	1	11/03/2015	07:00:33 PM
1	CCB2	CCB	1	11/03/2015	07:05:59 PM
58	N017382-007B	SAMP	1	11/03/2015	07:10:18 PM
59	N017382-008B	SAMP	1	11/03/2015	07:15:40 PM
60	N017382-009B	SAMP	1	11/03/2015	07:20:05 PM
61	N017382-010B	SAMP	1	11/03/2015	07:24:31 PM
62	N017390-001B	SAMP	1	11/03/2015	07:29:23 PM
63	MB-52897	MBLK	1	11/03/2015	07:34:46 PM
64	LCS-52897	LCS	1	11/03/2015	07:39:07 PM
65	N017400-001C	SAMP	1	11/03/2015	07:44:59 PM
66	N017400-001C	SAMP	5	11/03/2015	07:50:23 PM
7	CCV3	CCV	1	11/03/2015	08:10:05 PM
7	CCV3	CCV	1	11/03/2015	08:14:43 PM
1	CCB3	CCB	1	11/03/2015	08:20:07 PM
2	LLCCV2	CCV1	1	11/03/2015	08:24:56 PM
4	ICSA2	ICSA	1	11/03/2015	08:29:45 PM
5	ICSAB2	ICSAB	1	11/03/2015	08:35:20 PM
2	LLCCV2	CCV1	1	11/03/2015	08:39:53 PM
4	ICSA2	ICSA	1	11/03/2015	08:44:42 PM
5	ICSAB2	ICSAB	1	11/03/2015	08:50:17 PM
68	N017400-001C-MS1	MS1	1	11/03/2015	08:55:52 PM
69	N017400-001C-MSD1	MSD1	1	11/03/2015	09:01:17 PM
70	N017400-002C	SAMP	1	11/03/2015	09:06:42 PM
71	N017415-001C	SAMP	1	11/03/2015	09:12:05 PM
72	N017415-002C	SAMP	1	11/03/2015	09:17:29 PM
73	N017415-003C	SAMP	1	11/03/2015	09:22:53 PM
74	N017415-004C	SAMP	1	11/03/2015	09:27:44 PM
75	N017415-005C	SAMP	1	11/03/2015	09:33:08 PM
76	N017415-006C	SAMP	1	11/03/2015	09:38:30 PM
77	N017415-007C	SAMP	1	11/03/2015	09:43:53 PM
7	CCV4	CCV	1	11/03/2015	09:49:15 PM
1	CCB4	CCB	1	11/03/2015	09:54:40 PM
78	N017427-001C	SAMP	1	11/03/2015	09:59:28 PM
79	N017427-002C	SAMP	1	11/03/2015	10:04:51 PM
80	N017427-002C-MS	MS	1	11/03/2015	10:10:15 PM
7	CCV5	CCV	1	11/03/2015	10:15:40 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	11/03/2015	10:19:47 PM
7	CCV5	CCV	1	11/03/2015	10:23:51 PM
1	CCB5	CCB	1	11/03/2015	10:29:15 PM
2	LLCCV3	CCV1	1	11/03/2015	10:34:04 PM
2	LLCCV3	CCV1	1	11/03/2015	10:38:49 PM
4	ICSA3	ICSA	1	11/03/2015	10:43:38 PM
5	ICSAB3	ICSAB	1	11/03/2015	10:49:42 PM

INJECTION LOG: 151105D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/05/2015	04:31:26 PM
2	Standard1	ICAL	1	11/05/2015	04:35:47 PM
3	Standard2	ICAL	1	11/05/2015	04:40:35 PM
4	Standard3	ICAL	1	11/05/2015	04:44:57 PM
5	Standard4	ICAL	1	11/05/2015	04:49:20 PM
6	Standard5	ICAL	1	11/05/2015	04:53:45 PM
7	Standard6	ICAL	1	11/05/2015	04:58:07 PM
8	Standard7	ICAL	1	11/05/2015	05:02:30 PM
9	ICV	ICV	1	11/05/2015	05:05:02 PM
2	LLCCV1	CCV1	1	11/05/2015	05:10:26 PM
1	ICB	ICB	1	11/05/2015	05:15:15 PM
2	LLCCV1	CCV1	1	11/05/2015	05:18:17 PM
4	ICSA1	ICSA	1	11/05/2015	05:23:32 PM
5	ICSAB1	ICSAB	1	11/05/2015	05:29:06 PM
35	N017381-009B	SAMP	1	11/05/2015	05:34:39 PM
36	N017400-001C-PS	PS	1	11/05/2015	05:40:35 PM
7	CCV1	CCV	1	11/05/2015	05:45:59 PM
1	CCB1	CCB	1	11/05/2015	05:54:03 PM
2	LLCCV2	CCV1	1	11/05/2015	06:00:24 PM
4	ICSA2	ICSA	1	11/05/2015	06:04:24 PM
5	ICSAB2	ICSAB	1	11/05/2015	06:09:56 PM
5	ICSAB2	ICSAB	1	11/05/2015	06:13:52 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:00**
Prep End Date: **11/2/2015 3:00:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52897** Prep Code: **3010_W** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52897	Aqueous		25	☐	0	0	25	1.000		
MB-52897	Aqueous		25	☐	0	0	25	1.000		
N017400-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:00**
Prep End Date: **11/2/2015 3:00:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52897** Prep Code: **3010_W** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017427-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151103C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	11/03/2015	03:16:19 PM	Fe	273.953	-71	0.00	mg/L	
Standard1	11/03/2015	03:20:39 PM	Fe	273.953	1167	0.0200	mg/L	
Standard2	11/03/2015	03:25:28 PM	Fe	273.953	3071	0.050	mg/L	
Standard3	11/03/2015	03:30:19 PM	Fe	273.953	121532	2.000	mg/L	
Standard4	11/03/2015	03:35:11 PM	Fe	273.953	288755	5.000	mg/L	
Standard5	11/03/2015	03:40:38 PM	Fe	273.953	436888	7.500	mg/L	
Standard6	11/03/2015	03:46:01 PM	Fe	273.953	569736	10.000	mg/L	
Standard7	11/03/2015	03:51:24 PM	Fe	273.953	1119134	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151105D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	11/05/2015	04:31:26 PM	Fe	273.953	154	0.00	mg/L	
Standard1	11/05/2015	04:35:47 PM	Fe	273.953	795	0.0200	mg/L	
Standard2	11/05/2015	04:40:35 PM	Fe	273.953	2084	0.050	mg/L	
Standard3	11/05/2015	04:44:57 PM	Fe	273.953	81475	2.000	mg/L	
Standard4	11/05/2015	04:49:20 PM	Fe	273.953	197796	5.000	mg/L	
Standard5	11/05/2015	04:53:45 PM	Fe	273.953	299968	7.500	mg/L	
Standard6	11/05/2015	04:58:07 PM	Fe	273.953	394945	10.000	mg/L	
Standard7	11/05/2015	05:02:30 PM	Fe	273.953	776695	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10149.703	20	10000	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ZZZZZZ**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.048	20	20.00	0	100	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9917.450	20	10000	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9831.217	20	10000	0	98.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10253.870	20	10000	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125069

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.478	20	20.00	0	97.4	70	130				

Sample ID	CCV4	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	CCV	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125233

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9738.704	20	10000	0	97.4	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	CCV	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9317.973	20	10000	0	93.2	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:		RunNo:	103949
Client ID:	ZZZZZZ	Batch ID:	R103949	TestNo:	EPA 6010B			Analysis Date:	11/3/2015	SeqNo:	2125243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.090	20	20.00	0	90.4	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICV**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10287.835	20	10000	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ZZZZZZ**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.175	20	20.00	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **CCV**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10121.501	20	10000	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ZZZZZZ**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.550	20	20.00	0	103	70	130				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.171	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.116071	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.066817	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.05022	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.0912	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.493	20									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.473729	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **CCB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.268411	20									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	517928.283	50	500000	0	104	80	120				
Calcium	528749.174	500	500000	0	106	80	120				
Iron	188972.462	20	200000	0	94.5	80	120				
Magnesium	498830.962	100	500000	0	99.8	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	516687.832	50	500000	0	103	80	120				
Calcium	518467.337	500	500000	0	104	80	120				
Iron	187787.655	20	200000	0	93.9	80	120				
Magnesium	495377.066	100	500000	0	99.1	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511820.697	50	500000	0	102	80	120				
Calcium	528613.860	500	500000	0	106	80	120				
Iron	188139.807	20	200000	0	94.1	80	120				
Magnesium	530506.249	100	500000	0	106	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509531.192	50	500000	0	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	517741.745	500	500000	0	104	80	120				
Iron	186360.276	20	200000	0	93.2	80	120				
Magnesium	524245.526	100	500000	0	105	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	485044.316	50	500000	0	97.0	80	120				
Calcium	491576.473	500	500000	0	98.3	80	120				
Iron	175953.287	20	200000	0	88.0	80	120				
Magnesium	487302.097	100	500000	0	97.5	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484010.434	50	500000	0	96.8	80	120				
Calcium	483361.945	500	500000	0	96.7	80	120				
Iron	175021.966	20	200000	0	87.5	80	120				
Magnesium	484715.603	100	500000	0	96.9	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSA** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	513899.116	50	500000	0	103	80	120				
Calcium	523091.708	500	500000	0	105	80	120				
Iron	188344.143	20	200000	0	94.2	80	120				
Magnesium	488163.189	100	500000	0	97.6	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSAB** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511279.096	50	500000	0	102	80	120				
Calcium	512160.537	500	500000	0	102	80	120				
Iron	185115.938	20	200000	0	92.6	80	120				
Magnesium	477579.616	100	500000	0	95.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSA** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	513872.997	50	500000	0	103	80	120				
Calcium	521978.836	500	500000	0	104	80	120				
Iron	188826.337	20	200000	0	94.4	80	120				
Magnesium	490683.444	100	500000	0	98.1	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSAB** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509450.811	50	500000	0	102	80	120				
Calcium	511985.784	500	500000	0	102	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICSAB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	185724.915	20	200000	0	92.9	80	120				
Magnesium	477963.988	100	500000	0	95.6	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	97.46	65-125	PASS
Standard2	ICAL	1	1.1	109.97	65-125	PASS
Standard3	ICAL	1	1.058	105.75	65-125	PASS
Standard4	ICAL	1	0.96	96.38	65-125	PASS
Standard5	ICAL	1	1.016	101.61	65-125	PASS
Standard6	ICAL	1	0.97	97.25	65-125	PASS
Standard7	ICAL	1	0.96	96.45	65-125	PASS
ICV	ICV	1	0.97	97.11	65-125	PASS
ICB	ICB	1	0.98	97.88	65-125	PASS
LLCCV1	CCV1	1	0.96	96.38	65-125	PASS
ICSA1	ICSA	1	0.81	80.62	65-125	PASS
ICSAB1	ICSAB	1	0.85	84.68	65-125	PASS
LLCCV21	CCV1	1	1.0006	100.06	65-125	PASS
ICSA1	ICSA	1	0.81	81.48	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.025	65-125	PASS
CCV1	CCV	1	0.99	98.63	65-125	PASS
CCB1	CCB	1	0.99	99.37	65-125	PASS
CCV2	CCV	1	1.0002	100.02	65-125	PASS
CCB2	CCB	1	1.0081	100.81	65-125	PASS
MB-52897	MBLK	1	1.0024	100.24	65-125	PASS
LCS-52897	LCS	1	1.01	101	65-125	PASS
N017400-001C	SAMP	1	0.84	83.78	65-125	PASS
N017400-001C	SAMP	5	0.91	91.11	65-125	PASS
CCV3	CCV	1	0.9	89.54	65-125	PASS
CCV3	CCV	1	0.95	94.69	65-125	PASS
CCB3	CCB	1	0.98	98.39	65-125	PASS
LLCCV2	CCV1	1	0.98	98.25	65-125	PASS
ICSA2	ICSA	1	0.82	81.66	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.13	65-125	PASS
LLCCV2	CCV1	1	1	99.63	65-125	PASS
ICSA2	ICSA	1	0.82	82	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.19	65-125	PASS
N017400-001C-MS1	MS1	1	0.85	84.52	65-125	PASS
N017400-001C-MSD1	MSD1	1	0.83	82.67	65-125	PASS
N017400-002C	SAMP	1	0.84	83.84	65-125	PASS
N017415-001C	SAMP	1	0.84	83.53	65-125	PASS
N017415-002C	SAMP	1	0.83	82.68	65-125	PASS
N017415-003C	SAMP	1	0.84	83.61	65-125	PASS
N017415-004C	SAMP	1	0.8	80.38	65-125	PASS
N017415-005C	SAMP	1	0.82	82.5	65-125	PASS

INTERNAL STANDARD: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017415-006C	SAMP	1	0.82	81.56	65-125	PASS
N017415-007C	SAMP	1	0.78	77.98	65-125	PASS
CCV4	CCV	1	1	99.54	65-125	PASS
CCB4	CCB	1	1.001	100.1	65-125	PASS
N017427-001C	SAMP	1	0.84	84.27	65-125	PASS
N017427-002C	SAMP	1	0.82	82.49	65-125	PASS
N017427-002C-MS	MS	1	0.8	80.021	65-125	PASS
CCV5	CCV	1	0.93	93.49	65-125	PASS
CCV5	CCV	1	0.94	94.043	65-125	PASS
CCV5	CCV	1	0.94	93.63	65-125	PASS
CCB5	CCB	1	0.94	93.91	65-125	PASS
LLCCV3	CCV1	1	0.95	94.5	65-125	PASS
LLCCV3	CCV1	1	0.94	94.12	65-125	PASS
ICSA3	ICSA	1	0.77	77.44	65-125	PASS
ICSAB3	ICSAB	1	0.81	80.55	65-125	PASS

INTERNAL STANDARD: 151105D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.023	102.26	65-125	PASS
Standard2	ICAL	1	1.066	106.64	65-125	PASS
Standard3	ICAL	1	1.045	104.48	65-125	PASS
Standard4	ICAL	1	1.13	112.86	65-125	PASS
Standard5	ICAL	1	1.21	121.01	65-125	PASS
Standard6	ICAL	1	1.06	106.01	65-125	PASS
Standard7	ICAL	1	1.029	102.9	65-125	PASS
ICV	ICV	1	1.043	104.3	65-125	PASS
LLCCV1	CCV1	1	1.04	103.98	65-125	PASS
ICB	ICB	1	1.012	101.2	65-125	PASS
LLCCV1	CCV1	1	1.0044	100.44	65-125	PASS
ICSA1	ICSA	1	0.88	87.52	65-125	PASS
ICSAB1	ICSAB	1	0.93	93.1	65-125	PASS
N017400-001C-PS	PS	1	0.92	91.94	65-125	PASS
CCV1	CCV	1	1.058	105.77	65-125	PASS
CCB1	CCB	1	0.99	99.41	65-125	PASS
LLCCV2	CCV1	1	1.039	103.89	65-125	PASS
ICSA2	ICSA	1	0.87	86.66	65-125	PASS
ICSAB2	ICSAB	1	0.7	70.29	65-125	PASS
ICSAB2	ICSAB	1	0.88	87.65	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 6010B
Analysis Date: 11/03/15

Matrix: Groundwater
Batch No.: 52897

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001C -DT 5X	Iron	ug/L	495.5276	NA	65.31289	658.70%	10

Note: NA - Not Applicable

ASSET Laboratories

Date: *06-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **N017400-001C-PS** SampType: **PS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ZZZZZZ** Batch ID: **52897** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **11/5/2015** SeqNo: **2128175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	175.139	20	100.0	65.3 0	109.8 175	80	120				S

11/11/2015
for

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52955
ASSET #: N017415

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/10/2015 Date: —
2nd Level Reviewer 11/12/2015 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N017415-008B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 14.7017589 * 1 * (25/25)

Chromium , ug/L = 14.701759

Reporting results in two significant figures,

Chromium , ug/L = 15



% RSD SUMMARY

PERCENT RSD SUMMARY: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	10.86	15	PASS	0.1	3.45	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	8.032	15	PASS	0.5	4.94	15	PASS
Std3-5/50 ppb	ICAL	1	5.29	0.6	15	PASS	5.09	2.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	1.37	15	PASS	10.24	1.081	15	PASS
Std5-20/200 ppb	ICAL	1	20.57	0.54	15	PASS	20.33	0.98	15	PASS
Std6-40/400 ppb	ICAL	1	41.12	2.75	15	PASS	40.15	0.37	15	PASS
Std7-100/1000 ppb	ICAL	1	101.36	2.07	15	PASS	100.17	0.39	15	PASS
Std8-200/2000 ppb	ICAL	1	199.016	0.4	15	PASS	199.84	0.8	15	PASS
ICV	ICV	1	9.66	0.55	15	PASS	9.49	2.48	15	PASS
ICB	ICB	1	0.004	183.18	15	<PQL	0.061	15.49	15	<PQL
LLICV	CCV1	1	1.087	3.13	20	PASS	0.53	6.37	20	PASS
ICSA1	ICSA	1	0.15	19.16	15	<PQL	0.043	15.14	15	<PQL
ICSAB1	ICSAB	1	20.22	1.83	15	PASS	23.18	0.78	15	PASS
LLICV	CCV1	1	1.046	1.53	20	PASS	0.49	4.4	20	PASS
CCV1	CCV	1	20.33	0.59	15	PASS	20.29	2.73	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.14	6.56	15	PASS
CCV2	CCV	1	20.38	1.16	15	PASS	20.38	0.66	15	PASS
CCB2	CCB	1	0.087	21.33	15	<PQL	0.15	10.72	15	PASS
LLCCV1	CCV2	1	1.077	2.87	20	PASS	0.54	3.66	20	PASS
ICSA2	ICSA	1	0.19	0.87	15	PASS	0.059	14.17	15	PASS
ICSAB2	ICSAB	1	20.14	1.12	15	PASS	22.99	0.36	15	PASS
MB-52955	MBLK	1	0.075	10.25	15	PASS	0.053	16.37	15	<PQL
LCS-52955	LCS	1	9.42	0.51	15	PASS	9.49	0.65	15	PASS
N017390-001B	SAMP	1	8.43	0.87	15	PASS	7.4	2.35	15	PASS
N017390-001B	SAMP	5	1.92	2.29	15	PASS	1.62	4.22	15	PASS
N017390-001B-PS	PS	1	17.29	1.39	15	PASS	18.4	1.38	15	PASS
N017390-001B-MS	MS	1	17.24	0.67	15	PASS	18.8	1.75	15	PASS
N017390-001B-MSD	MSD	1	16.89	1.35	15	PASS	18.43	1.91	15	PASS
N017400-003B	SAMP	1	0.37	7.57	15	PASS	24.64	1.61	15	PASS
N017400-004B	SAMP	1	0.81	5.39	15	PASS	17.71	0.16	15	PASS
CCV3	CCV	1	20.053	1.73	15	PASS	20.55	1.31	15	PASS
CCB3	CCB	1	0.064	11.28	15	PASS	0.0014	355.79	15	<PQL
N017400-005B	SAMP	1	19.27	1.65	15	PASS	30.4	0.66	15	PASS
N017400-006B	SAMP	1	18.67	1.055	15	PASS	31.55	1.28	15	PASS
N017400-007B	SAMP	1	0.37	8.82	15	PASS	20.47	0.37	15	PASS
N017400-008B	SAMP	1	1.11	1.89	15	PASS	19.036	1.081	15	PASS
N017415-008B	SAMP	1	14.7	0.99	15	PASS	12.36	3.04	15	PASS
CCV4	CCV	1	19.85	0.4	15	PASS	20.82	0.65	15	PASS
CCB4	CCB	1	0.12	13.85	15	PASS	0.089	9.54	15	PASS
LLCCV2	CCV2	1	1.045	1.33	20	PASS	0.59	8.85	20	PASS

PERCENT RSD SUMMARY: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSA3	ICSA	1	0.18	12.31	15	PASS	0.057	11.37	15	PASS
ICSAB3	ICSAB	1	20.19	1.77	15	PASS	23.28	2.37	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1105001.D	RINSE	RINSE	1	11/05/15 1:53 PM
B1105002.D	Cal Blank	IBLK	1	11/05/15 1:59 PM
B1105003.D	Std1-0.1/1 ppb	ICAL	1	11/05/15 2:04 PM
B1105004.D	Std2-0.5/5 ppb	ICAL	1	11/05/15 2:10 PM
B1105005.D	Std3-5/50 ppb	ICAL	1	11/05/15 2:16 PM
B1105006.D	Std4-10/100 ppb	ICAL	1	11/05/15 2:21 PM
B1105007.D	Std5-20/200 ppb	ICAL	1	11/05/15 2:27 PM
B1105008.D	Std6-40/400 ppb	ICAL	1	11/05/15 2:32 PM
B1105009.D	Std7-100/1000 ppb	ICAL	1	11/05/15 2:38 PM
B1105010.D	Std8-200/2000 ppb	ICAL	1	11/05/15 2:43 PM
B1105011.D	ICV	ICV	1	11/05/15 2:46 PM
B1105012.D	ICB	ICB	1	11/05/15 2:52 PM
B1105013.D	LLICV	CCV1	1	11/05/15 2:57 PM
B1105014.D	ICSA1	ICSA	1	11/05/15 3:03 PM
B1105015.D	ICSAB1	ICSAB	1	11/05/15 3:11 PM
B1105016.D	LLICV	CCV1	1	11/05/15 3:16 PM
B1105017.D	MB-52939	MBLK	1	11/05/15 3:22 PM
B1105018.D	LCS-52939	LCS	1	11/05/15 3:27 PM
B1105019.D	N017381-002B	SAMP	1	11/05/15 3:33 PM
B1105020.D	N017457-016B	SAMP	1	11/05/15 3:38 PM
B1105021.D	N017471-001E	SAMP	1	11/05/15 3:45 PM
B1105022.D	N017471-001E	SAMP	5	11/05/15 3:50 PM
B1105023.D	N017471-001E	SAMP	25	11/05/15 3:56 PM
B1105024.D	N017471-001E-PS	PS	1	11/05/15 4:01 PM
B1105025.D	N017471-001E-PS	PS	5	11/05/15 4:07 PM
B1105026.D	N017471-001E-MS	MS	1	11/05/15 4:13 PM
B1105027.D	CCV1	CCV	1	11/05/15 4:18 PM
B1105028.D	CCB1	CCB	1	11/05/15 4:24 PM
B1105029.D	N017471-001E-MS	MS	5	11/05/15 4:29 PM
B1105030.D	N017471-001E-MSD	MSD	1	11/05/15 4:35 PM
B1105031.D	N017471-001E-MSD	MSD	5	11/05/15 4:40 PM
B1105032.D	N017469-001C	SAMP	1	11/05/15 4:46 PM
B1105033.D	N017469-001C	SAMP	5	11/05/15 4:52 PM
B1105034.D	N017469-002E	SAMP	1	11/05/15 4:57 PM
B1105035.D	N017469-002E	SAMP	5	11/05/15 5:03 PM
B1105036.D	N017470-001B	SAMP	1	11/05/15 5:08 PM
B1105037.D	N017470-001B	SAMP	5	11/05/15 5:14 PM
B1105038.D	N017470-002B	SAMP	1	11/05/15 5:19 PM
B1105039.D	CCV2	CCV	1	11/05/15 5:25 PM
B1105040.D	CCB2	CCB	1	11/05/15 5:30 PM
B1105041.D	LLCCV1	CCV2	1	11/05/15 5:36 PM
B1105042.D	ICSA2	ICSA	1	11/05/15 5:42 PM

INJECTION LOG: 151105B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B1105043.D	ICSAB2	ICSAB	1	11/05/15 5:47 PM
B1105044.D	N017470-002B	SAMP	5	11/05/15 5:53 PM
B1105045.D	MB-52955	MBLK	1	11/05/15 5:58 PM
B1105046.D	LCS-52955	LCS	1	11/05/15 6:04 PM
B1105047.D	N017390-001B	SAMP	1	11/05/15 6:09 PM
B1105048.D	N017390-001B	SAMP	5	11/05/15 6:15 PM
B1105049.D	N017390-001B-PS	PS	1	11/05/15 6:20 PM
B1105050.D	N017390-001B-MS	MS	1	11/05/15 6:26 PM
B1105051.D	N017390-001B-MSD	MSD	1	11/05/15 6:32 PM
B1105052.D	N017400-003B	SAMP	1	11/05/15 6:37 PM
B1105053.D	N017400-004B	SAMP	1	11/05/15 6:43 PM
B1105054.D	CCV3	CCV	1	11/05/15 6:48 PM
B1105055.D	CCB3	CCB	1	11/05/15 6:51 PM
B1105056.D	N017400-005B	SAMP	1	11/05/15 6:57 PM
B1105057.D	N017400-006B	SAMP	1	11/05/15 7:05 PM
B1105058.D	N017400-007B	SAMP	1	11/05/15 7:10 PM
B1105059.D	N017400-008B	SAMP	1	11/05/15 7:16 PM
B1105060.D	N017415-008B	SAMP	1	11/05/15 7:22 PM
B1105061.D	CCV4	CCV	1	11/05/15 7:27 PM
B1105062.D	CCB4	CCB	1	11/05/15 7:31 PM
B1105063.D	LLCCV2	CCV2	1	11/05/15 7:38 PM
B1105064.D	ICSA3	ICSA	1	11/05/15 7:44 PM
B1105065.D	ICSAB3	ICSAB	1	11/05/15 7:49 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/5/2015 10:21:08**
Prep End Date: **11/5/2015 3:00:00**
Initials/ Date: 11/10/2015

Prep Batch **52955** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**01-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52955	Aqueous		25	☐	0	0	25	1.000		
MB-52955	Aqueous		25	☐	0	0	25	1.000		
N017390-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017390-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017390-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-008B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-151019	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 5 Nov 2015 09:05:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	40342.70	0.00	
24	Mg	154712.00	0.00	
25	Mg	20840.10	0.00	
26	Mg	24660.30	0.00	
59	Co	433131.00	0.00	
115	In	886048.00	0.00	
206	Pb	221045.00	0.00	
207	Pb	192924.00	0.00	
208	Pb	473894.00	0.00	

RSD (%)

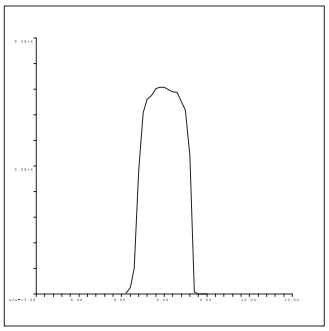
Element		Actual	Required	Flag
9	Be	1.37	5.00	
24	Mg	0.60	5.00	
25	Mg	1.50	5.00	
26	Mg	2.98	5.00	
59	Co	0.81	5.00	
115	In	1.21	5.00	
206	Pb	0.68	5.00	
207	Pb	1.13	5.00	
208	Pb	1.13	5.00	

Ion Ratio

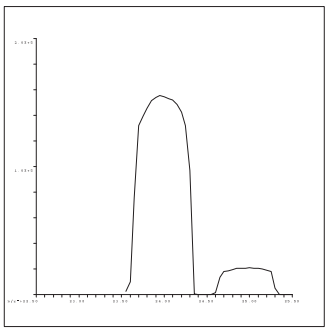
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

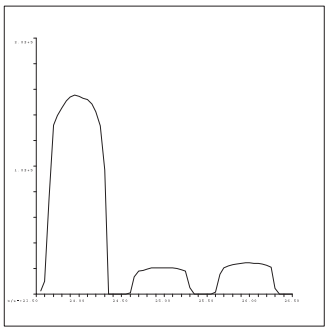
Element	Actual	Required	Flag



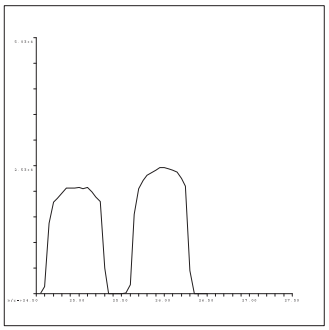
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



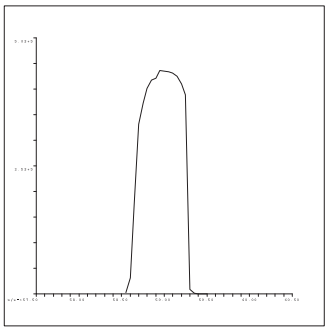
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



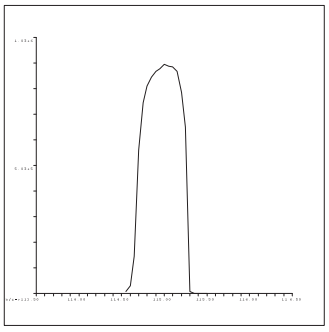
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



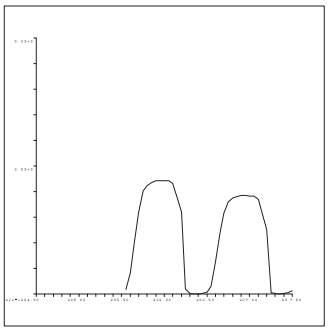
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



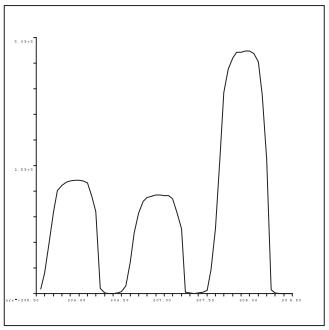
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



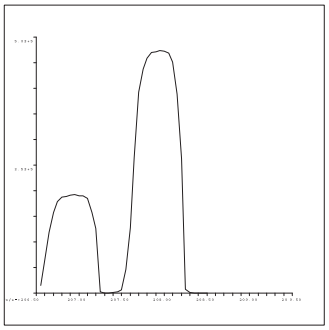
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151105B

Instrument ID: ICPMS-02

Analyte	Data File	B1105002.D	B1105003.D	B1105004.D	B1105005.D	B1105006.D	B1105007.D	B1105008.D	B1105009.D	B1105010.D	
	Acq. Date-Time	11/05/2015 01:59 PM	11/05/2015 02:04 PM	11/05/2015 02:10 PM	11/05/2015 02:16 PM	11/05/2015 02:21 PM	11/05/2015 02:27 PM	11/05/2015 02:32 PM	11/05/2015 02:38 PM	11/05/2015 02:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	61999.7	62749.5	61620.7	62237.3	63477.2	62864.1	63716.3	64767.9	66521.5	
52 Cr [2]	CPS	272.1	756.6	2690.2	25200.9	49823.3	98256.6	198726.1	497642	1003452.3	1.0000
103 Rh (ISTD) [2]	CPS	1462586.3	1464391	1446953.3	1466330.6	1481665.1	1462499.1	1486784.9	1497703.3	1520174.6	
95 Mo [2]	CPS	53.3	403.4	1742.4	17483.6	35492.5	69509.1	139506.1	350483	709698.8	1.0000

STD1-not used

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

Nancy 11/12/2015

for

621

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	9.490	0.50	10.00	0	94.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.489	0.50	0.5000	0	97.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.292	0.50	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.382	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.538	0.50	0.5000	0	108	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.548	0.50	20.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.822	0.50	20.00	0	104	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.586	0.50	0.5000	0	117	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.656	1.0	10.00	0	96.6	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.046	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.334	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCV**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.375	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ZZZZZZ**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.077	1.0	1.000	0	108	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**CCV3**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**CCV**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.053	1.0	20.00	0	100	90	110				

Sample ID	**CCV4**	SampType:	**CCV**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**CCV**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.852	1.0	20.00	0	99.3	90	110				

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**104036**
Client ID:	**ZZZZZZ**	Batch ID:	**R104036**	TestNo:	**EPA 6020**			Analysis Date:	**11/5/2015**	SeqNo:	**2130528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.045	1.0	1.000	0	104	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.061	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.138	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.150	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.089	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130477**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130493**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.087	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130520**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **CCB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.116	1.0									

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.043	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.180	0.50	20.00	0	116	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.059	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	22.995	0.50	20.00	0	115	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSA**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.057	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.283	0.50	20.00	0	116	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.154	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSAB	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.224	1.0	20.00	0	101	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130507

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.191	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSAB	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.142	1.0	20.00	0	101	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ICSA	Batch ID:	R104036	TestNo:	EPA 6020			Analysis Date:	11/5/2015	SeqNo:	2130529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.183	1.0									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID: **ICSAB**	Batch ID: **R104036**	TestNo: **EPA 6020**		Analysis Date: **11/5/2015**	SeqNo: **2130530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.188	1.0	20.00	0	101	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61999.7	61999.7	100	PASS	70-130	1462586.3	1462586.3	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	62749.5	61999.7	101.21	PASS	70-130	1464391	1462586.3	100.12	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	61620.7	61999.7	99.39	PASS	70-130	1446953.3	1462586.3	98.93	PASS	70-130
Std3-5/50 ppb	ICAL	1	62237.3	61999.7	100.38	PASS	70-130	1466330.6	1462586.3	100.26	PASS	70-130
Std4-10/100 ppb	ICAL	1	63477.2	61999.7	102.38	PASS	70-130	1481665.1	1462586.3	101.3	PASS	70-130
Std5-20/200 ppb	ICAL	1	62864.1	61999.7	101.39	PASS	70-130	1462499.1	1462586.3	99.99	PASS	70-130
Std6-40/400 ppb	ICAL	1	63716.3	61999.7	102.77	PASS	70-130	1486784.9	1462586.3	101.65	PASS	70-130
Std7-100/1000 ppb	ICAL	1	64767.9	61999.7	104.46	PASS	70-130	1497703.3	1462586.3	102.4	PASS	70-130
Std8-200/2000 ppb	ICAL	1	66521.5	61999.7	107.29	PASS	70-130	1520174.6	1462586.3	103.94	PASS	70-130
ICV	ICV	1	57960.1	61999.7	93.48	PASS	70-130	1249316.4	1462586.3	85.42	PASS	70-130
ICB	ICB	1	64692.2	61999.7	104.34	PASS	70-130	1401707.5	1462586.3	95.84	PASS	70-130
LLICV	CCV1	1	60264.5	61999.7	97.2	PASS	70-130	1311481.7	1462586.3	89.67	PASS	70-130
ICSA1	ICSA	1	66916.1	61999.7	107.93	PASS	70-130	1346989.2	1462586.3	92.096	PASS	70-130
ICSAB1	ICSAB	1	70002.3	61999.7	112.91	PASS	70-130	1353738.6	1462586.3	92.56	PASS	70-130
LLICV	CCV1	1	55667.5	61999.7	89.79	PASS	70-130	1215917	1462586.3	83.13	PASS	70-130
CCV1	CCV	1	67773.1	61999.7	109.31	PASS	70-130	1476975.8	1462586.3	100.98	PASS	70-130
CCB1	CCB	1	64189.1	61999.7	103.53	PASS	70-130	1420672.3	1462586.3	97.13	PASS	70-130
CCV2	CCV	1	70373.7	61999.7	113.51	PASS	70-130	1458917.8	1462586.3	99.75	PASS	70-130
CCB2	CCB	1	65758.6	61999.7	106.06	PASS	70-130	1388637.8	1462586.3	94.94	PASS	70-130
LLCCV1	CCV2	1	55759.2	61999.7	89.93	PASS	70-130	1222632.5	1462586.3	83.59	PASS	70-130
ICSA2	ICSA	1	63155.4	61999.7	101.86	PASS	70-130	1243436.4	1462586.3	85.016	PASS	70-130
ICSAB2	ICSAB	1	66479.4	61999.7	107.23	PASS	70-130	1264950.5	1462586.3	86.49	PASS	70-130
MB-52955	MBLK	1	60925.5	61999.7	98.27	PASS	70-130	1288682.2	1462586.3	88.11	PASS	70-130
LCS-52955	LCS	1	57401.1	61999.7	92.58	PASS	70-130	1205438.3	1462586.3	82.42	PASS	70-130
N017390-001B	SAMP	1	65073.7	61999.7	104.96	PASS	70-130	1204011.9	1462586.3	82.32	PASS	70-130
N017390-001B	SAMP	5	65488.6	61999.7	105.63	PASS	70-130	1277567	1462586.3	87.35	PASS	70-130
N017390-001B-PS	PS	1	65716.1	61999.7	105.99	PASS	70-130	1210805	1462586.3	82.79	PASS	70-130
N017390-001B-MS	MS	1	68288.7	61999.7	110.14	PASS	70-130	1221864.9	1462586.3	83.54	PASS	70-130
N017390-001B-MSD	MSD	1	70188.6	61999.7	113.21	PASS	70-130	1266769.7	1462586.3	86.61	PASS	70-130
N017400-003B	SAMP	1	65538.7	61999.7	105.71	PASS	70-130	1166285.5	1462586.3	79.74	PASS	70-130
N017400-004B	SAMP	1	68031.9	61999.7	109.73	PASS	70-130	1210504.3	1462586.3	82.76	PASS	70-130
CCV3	CCV	1	76176.7	61999.7	122.87	PASS	70-130	1522782.6	1462586.3	104.12	PASS	70-130
CCB3	CCB	1	54590.4	61999.7	88.049	PASS	70-130	1205484.3	1462586.3	82.42	PASS	70-130
N017400-005B	SAMP	1	67724.4	61999.7	109.23	PASS	70-130	1318539.7	1462586.3	90.15	PASS	70-130
N017400-006B	SAMP	1	70021.2	61999.7	112.94	PASS	70-130	1323698.9	1462586.3	90.5	PASS	70-130
N017400-007B	SAMP	1	70065.7	61999.7	113.01	PASS	70-130	1244749.7	1462586.3	85.11	PASS	70-130
N017400-008B	SAMP	1	68827.7	61999.7	111.01	PASS	70-130	1224650.5	1462586.3	83.73	PASS	70-130
N017415-008B	SAMP	1	72007.8	61999.7	116.14	PASS	70-130	1334980.4	1462586.3	91.28	PASS	70-130
CCV4	CCV	1	71165.8	61999.7	114.78	PASS	70-130	1429899.4	1462586.3	97.77	PASS	70-130
CCB4	CCB	1	49068.9	61999.7	79.14	PASS	70-130	1095884.5	1462586.3	74.93	PASS	70-130
LLCCV2	CCV2	1	59417.2	61999.7	95.83	PASS	70-130	1224143.5	1462586.3	83.7	PASS	70-130

INTERNAL STANDARD: 151105B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSA3	ICSA	1	62882.1	61999.7	101.42	PASS	70-130	1215217	1462586.3	83.087	PASS	70-130
ICSAB3	ICSAB	1	65981.5	61999.7	106.42	PASS	70-130	1252777.1	1462586.3	85.65	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017415
Test Method: EPA 6020
Analysis Date: 11/5/2015

Matrix: Goundwater
Batch No.: 52955

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr & Mo. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N017390-001B DT 5X	Chromium	ug/L	9.585461	NA	8.427588	13.74%	10
N017390-001B DT 5X	Molybdenum	ug/L	8.077557	NA	7.398991	9.17%	10

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N017390-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **104036**
Client ID:	**ZZZZZZ**	Batch ID: **52955**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **11/5/2015**	SeqNo: **2130569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	18.402	0.50	10.00	7.399	110	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017415
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N017390-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	104036
Client ID:	ZZZZZZ	Batch ID:	52955	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	11/5/2015	SeqNo:	2130514

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	17.287	1.0	10.00	8.428	88.6	80	120				

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICPMS**
Method Number: EPA 6020/200.8
Preparation Method: EPA 3010/200.8_PR
Analysis Date(s): 3/13/2015; 3/14/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **ICPMS-02**

Acceptance Criteria: MDL < spike < 10XMDL

		Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
27	Al	Aluminum	1.428	1.454	1.368	1.790	1.039	1.487	1.501	1.0	0.22163	3.143	**0.6966**	10	OK,meets criteria
121	Sb	Antimony	0.114	0.097	0.093	0.091	0.109	0.103	0.102	0.10	0.0083	3.143	**0.0262**	0.50	OK,meets criteria
75	As	Arsenic	0.057	0.049	0.046	0.056	0.051	0.059	0.058	0.050	0.00502	3.143	**0.0158**	0.10	OK,meets criteria
137	Ba	Barium	0.116	0.107	0.137	0.115	0.117	0.175	0.126	0.10	0.02298	3.143	**0.0722**	1.0	OK,meets criteria
9	Be	Beryllium	0.102	0.082	0.086	0.081	0.091	0.100	0.094	0.10	0.00834	3.143	**0.0262**	0.50	OK,meets criteria
11	B	Boron	2.773	2.788	2.855	4.317	3.713	3.448	3.231	2.5	0.57291	3.143	**1.801**	50	OK,meets criteria
111	Cd	Cadmium	0.042	0.043	0.049	0.041	0.042	0.048	0.044	0.050	0.00313	3.143	**0.0098**	0.50	OK,meets criteria
52	Cr	Chromium	0.181	0.200	0.197	0.258	0.196	0.191	0.175	0.25	0.02725	3.143	**0.0856**	1.0	OK,meets criteria
59	Co	Cobalt	0.056	0.047	0.055	0.045	0.051	0.049	0.054	0.050	0.00420	3.143	**0.0132**	0.50	OK,meets criteria
63	Cu	Copper	0.437	0.463	0.447	0.423	0.445	0.424	0.659	0.50	0.08399	3.143	**0.2640**	1.0	OK,meets criteria
56	Fe	Iron	1.231	1.163	1.267	1.061	1.088	1.188	1.211	1.0	0.07499	3.143	**0.2357**	10	OK,meets criteria
208	Pb	Lead	0.227	0.237	0.232	0.278	0.246	0.234	0.243	0.25	0.01696	3.143	**0.0533**	1.0	OK,meets criteria
55	Mn	Manganese	0.077	0.082	0.067	0.065	0.081	0.066	0.075	0.10	0.00723	3.143	**0.0227**	0.50	OK,meets criteria
95	Mo	Molybdenum	0.092	0.084	0.090	0.077	0.106	0.094	0.097	0.10	0.00927	3.143	**0.0291**	0.50	OK,meets criteria
60	Ni	Nickel	0.107	0.073	0.074	0.082	0.095	0.091	0.085	0.10	0.01207	3.143	**0.0379**	1.0	OK,meets criteria
78	Se	Selenium	0.094	0.100	0.055	0.078	0.125	0.074	0.092	0.10	0.02217	3.143	**0.0697**	0.50	OK,meets criteria
107	Ag	Silver	0.099	0.084	0.086	0.083	0.095	0.098	0.099	0.10	0.00735	3.143	**0.0231**	0.50	OK,meets criteria
205	Tl	Thallium	0.106	0.077	0.080	0.074	0.089	0.084	0.090	0.10	0.01072	3.143	**0.0337**	0.50	OK,meets criteria
118	Sn	Tin	0.219	0.228	0.218	0.307	0.256	0.235	0.247	0.25	0.03098	3.143	**0.0974**	10	OK,meets criteria
47	Ti	Titanium	0.101	0.136	0.084	0.094	0.105	0.089	0.134	0.10	0.02092	3.143	**0.0658**	10	OK,meets criteria
238	U	Uranium	0.109	0.093	0.094	0.094	0.112	0.104	0.111	0.10	0.00858	3.143	**0.0270**	0.50	OK,meets criteria
51	V	Vanadium	0.136	0.128	0.116	0.135	0.127	0.121	0.136	0.10	0.00785	3.143	**0.0247**	1.0	OK,meets criteria
66	Zn	Zinc	0.075	0.056	0.082	0.078	0.093	0.092	0.082	0.10	0.01242	3.143	**0.0390**	10	OK,meets criteria

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REPORT

Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Project Name: **ATL-NV**

Table of Contents

Truesdail Laboratories, Inc. Data Package

For Laboratory Number 15J0470

ITEM	Section
Case Narrative	1.0
Summary of Final Results	2.0
Final Reports	3.0
Chain of Custody and Sample Receipt Records	4.0
Sample Preparation and Analytical Raw Data	5.0

Section 1.0

Case Narrative

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REPORT

Client: **Advanced Technology Laboratories-NV**
3151 W Post Rd
Las Vegas, NV 89118
Attention: Marlon Cartin
Project Name: ATL-NV

Work Order No.: 15J0470
Printed: 11/09/2015

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia result. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on October 30, 2015, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 201.

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
N017415-001F / CW-02D-4Q15	15J0470-01	Water	Grab	10/28/2015 11:00	10/30/2015 08:50
N017415-002F / CW-02M-4Q15	15J0470-02	Water	Grab	10/28/2015 15:01	10/30/2015 08:50
N017415-003F / CW-03D-4Q15	15J0470-03	Water	Grab	10/28/2015 11:40	10/30/2015 08:50
N017415-004F / CW-03M-4Q15	15J0470-04	Water	Grab	10/28/2015 12:37	10/30/2015 08:50
N017415-005F / OW-070-4Q15	15J0470-05	Water	Grab	10/28/2015 12:47	10/30/2015 08:50
N017415-006F / CW-04D-4Q15	15J0470-06	Water	Grab	10/28/2015 09:16	10/30/2015 08:50
N017415-007F / CW-04M-4Q15	15J0470-07	Water	Grab	10/28/2015 10:10	10/30/2015 08:50

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Lyn Phaerakkakit
Project Manager

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Section 2.0

Summary of Final Results

N017415-001F / CW-02D-4Q15

15J0470-01 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:42	AL	SM 4500-NH3 D M	

N017415-002F / CW-02M-4Q15

15J0470-02 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:44	AL	SM 4500-NH3 D M	

N017415-003F / CW-03D-4Q15

15J0470-03 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:46	AL	SM 4500-NH3 D M	

N017415-004F / CW-03M-4Q15

15J0470-04 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:48	AL	SM 4500-NH3 D M	

N017415-005F / OW-070-4Q15

15J0470-05 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									

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N017415-005F / OW-070-4Q15 (Continued)

15J0470-05 (Water) (Continued)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 11:50	AL	SM 4500-NH3 D M	

N017415-006F / CW-04D-4Q15

15J0470-06 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 13:40	AL	SM 4500-NH3 D M	

N017415-007F / CW-04M-4Q15

15J0470-07 (Water)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 13:42	AL	SM 4500-NH3 D M	

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Client: Advanced Technology Laboratories - NV
3151 W Post Road
Las Vegas, NV 89118
Attention: Marlon Cartin
Sample: Seven (7) Water Samples
Project Name: PG&E Topock Project
Project No.: N/A

Laboratory No.: 15J0470
Date: November 9, 2015
Collected: October 28, 2015
Received: October 30, 2015

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

Section 3.0

Final Reports

Method: SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-001F / CW-02D-4Q15**
Lab Sample ID: **15J0470-01**
Project: **ATL-NV**

Date Sampled: 10/28/15 11:00 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:42	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-002F / CW-02M-4Q15**
Lab Sample ID: **15J0470-02**
Project: **ATL-NV**

Date Sampled: 10/28/15 15:01 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:44	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-003F / CW-03D-4Q15**
Lab Sample ID: **15J0470-03**
Project: **ATL-NV**

Date Sampled: 10/28/15 11:40 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:46	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-004F / CW-03M-4Q15**
Lab Sample ID: **15J0470-04**
Project: **ATL-NV**

Date Sampled: 10/28/15 12:37 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:48	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-005F / OW-070-4Q15**
Lab Sample ID: **15J0470-05**
Project: **ATL-NV**

Date Sampled: 10/28/15 12:47 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 11:50	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-006F / CW-04D-4Q15**
Lab Sample ID: **15J0470-06**
Project: **ATL-NV**

Date Sampled: 10/28/15 09:16 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 13:40	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **N017415-007F / CW-04M-4Q15**
Lab Sample ID: **15J0470-07**
Project: **ATL-NV**

Date Sampled: 10/28/15 10:10 Matrix: Water

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 13:42	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV
Laboratory ID: 1511013-BLK1

Prepared:	11/03/15 10:45	Preparation:	SM 4500-NH3 B	Matrix:	Water
Analyzed:	11/03/15 11:20	Instrument:	TL01	File ID:	5K02003-026
Batch:	1511013	Sequence:	5K02003		

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0318	0.0500	

LCS / LCS DUPLICATE RECOVERY

SM 4500-NH3 D M

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**
Work Order: **15J0470**

Matrix:	Water	Prep Method:	SM 4500-NH3 B
Prep Batch:	1511013	Lab Sample ID:	1511013-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.362	90	90 - 110

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

N017415-007F / CW-04M-4Q15

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**
Work Order: **15J0470**

Matrix: Water
Prep Batch: 1511013

Analysis Method: SM 4500-NH3 D M
Prep Method: SM 4500-NH3 B
Laboratory ID: 1511013-MS1
Source Sample ID: 15J0470-07

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	ND	0.476	119	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Ammonia	0.400	0.457	114	4	20	75 - 125

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 1508163-002

Sequence: 5H10002 Injection Date: 08/10/15

Lab Sample ID: 5H10002-CCV1 Injection Time: 18:51

	CONC. (mg/L)		RESPONSE FACTOR		CCV	
COMPOUND	STD	CCV	CCV	% Rec	Lower Limit	Upper Limit
Ammonia	0.500	0.494	99.47522	99	90	110

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 5K02003-016

Sequence: 5K02003 Injection Date: 11/03/15

Lab Sample ID: 5K02003-CCV1 Injection Time: 11:59

	CONC. (mg/L)		RESPONSE FACTOR		CCV Lower	Upper
COMPOUND	STD	CCV	CCV	% Rec	Limit	Limit
Ammonia	0.500	0.467	112.4342	**93**	90	110

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 5K02003-002

Sequence: 5K02003 Injection Date: 11/03/15

Lab Sample ID: 5K02003-CCV2 Injection Time: 14:35

	CONC. (mg/L)		RESPONSE FACTOR		CCV Lower	Upper
COMPOUND	STD	CCV	CCV	% Rec	Limit	Limit
Ammonia	0.500	0.466	112.2024	**93**	90	110

* Values outside of QC limits

DUPLICATES

Duplicate

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**

Matrix:	Water	Laboratory ID:	1511013-DUP1
Prep Batch:	1511013	Initial/Final:	50 mL / 50 mL
Prep Method:	SM 4500-NH3 B	Analysis:	SM 4500-NH3 D M

ANALYTE	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	CONTROL LIMIT
Ammonia	ND	0.0323			20

* Values outside of QC limits

Section 4.0

Chain of Custody and Sample Receipt Records

TRUESDAIL LABORATORIES, INC.

Internal Chain of Custody Logbook

Lab Number: 15J0470

Client Name: ATL

Storage Temperature: 5.6°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
CW-02D-4Q15				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	10	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
CW-02M-4Q15				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	10	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
CW-03D-4Q15				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	10	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
CW-03M-4Q15				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	10	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

TRUESDAIL LABORATORIES, INC.

Internal Chain of Custody Logbook

Lab Number: 15J0470

Client Name: ATL

Storage Temperature: 5.6°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
OW-070-4015				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	a=2
				11/3/15	14:30	10	Alex L	a=2

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
OW-04D-4015				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	a=2
				11/3/15	14:30	10	Alex L	a=2

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
OW-04M-4015				10/30/15	8:50 AM		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	60	Alex L	a=2

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

15J0470

QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Nara Tep

29-Oct-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3C		
N017415-001F / CW-02D-4Q15	Groundwater	10/28/2015 2:11:00 PM	4OZP	1		
N017415-002F / CW-02M-4Q15	Groundwater	10/28/2015 3:01:00 PM	4OZP	1		
N017415-003F / CW-03D-4Q15	Groundwater	10/28/2015 11:40:00 AM	4OZP	1		
N017415-004F / CW-03M-4Q15	Groundwater	10/28/2015 12:37:00 PM	4OZP	1		
N017415-005F / OW-070-4Q15	Groundwater	10/28/2015 12:47:00 PM	4OZP	1		
N017415-006F / CW-04D-4Q15	Groundwater	10/28/2015 9:16:00 AM	4OZP	1		
N017415-007F / CW-04M-4Q15	Groundwater	10/28/2015 10:10:00 AM	4OZP	1		

ALERT !!
Level IV QC

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N17415A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-DAY TAT.

Please analyze Ammonia by SM4500.

		Date/Time			Date/Time
Relinquished by:	[signature]	10/29/15 1700	**Received by:**	GSO TRK # 529780044	
Relinquished by:			**Received by:**	Darrell	10/30/15 8:50 AM 5.6° C

ALERT !!
Level IV QC

Log-in check list
For level III data package

Client: ATL Lab Number: 15J0470

Received Date: 10/30/15

Sample receiving review	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all sampls temperature measured and recorded on COC?	✓			
Did you measure and record the pH on all metals samples on COC?			✓	
Has sample integrity and analysis discrepancy form been filled out completely?	✓			
Were all interacompany yellow forms generated and stamped with "" alert level III QC" note?	✓			
Have check -in and check out lists been filled out and attached to appropriate form?	✓			
Were sample containers labeled with TLI numbers, date, and time sampled?	✓			
Did you notify analyst or group leader about short holding time?	✓			
Was a copy of COC attached to all yellow intracompany form?	✓			
For special clients, have all their samples been logged into the internal COC book?	✓			
Were samples locked in fridge or special storage area?	✓			
Was temperature recorded in the log book?	✓			

Sample receiving Signature: [signature]

ALERT !!
Level IV QC

15J0470

Truesdail Laboratories, Inc

Client: Advanced Technology Laboratories-NV
Project: ATL-NV

Project Manager: Lyn Phaerakkakit
Project Number: [none]

Report To:
Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:
Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone :(702) 307-2659
Fax: (702) 307-2691

Date Due: 11/10/2015 16:30 (7 day TAT)
Received By: Nirali Patel
Logged In By: Nirali Patel
Date Received: 10/30/2015 08:50
Date Logged In: 10/30/2015 09:10

Samples Received at: 5.6°C

Chain of Custody rece	Yes	Samples intact?	Yes
Letter (if sent) matche	No	Custody seals (if any)	No
Requested analyses ac	Yes	Analyses within hold t	Yes
Samples received in a	Yes		

Analysis	Due	TAT	Expires	Comments
15J0470-01 N017415-001F / CW-02D-4Q15 [Water] Sampled 10/28/2015 11:00 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 11:00	
15J0470-02 N017415-002F / CW-02M-4Q15 [Water] Sampled 10/28/2015 15:01 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 15:01	
15J0470-03 N017415-003F / CW-03D-4Q15 [Water] Sampled 10/28/2015 11:40 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 11:40	
15J0470-04 N017415-004F / CW-03M-4Q15 [Water] Sampled 10/28/2015 12:37 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 12:37	
15J0470-05 N017415-005F / OW-070-4Q15 [Water] Sampled 10/28/2015 12:47 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 12:47	
15J0470-06 N017415-006F / CW-04D-4Q15 [Water] Sampled 10/28/2015 09:16 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 09:16	
15J0470-07 N017415-007F / CW-04M-4Q15 [Water] Sampled 10/28/2015 10:10 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/10/2015 12:00	7	11/25/2015 10:10	

Reviewed By

Date

15J0470

Truesdail Laboratories, Inc

Client:	**Advanced Technology Laboratories-NV**	**Project Manager:**	**Lyn Phaerakkakit**
Project:	**ATL-NV**	**Project Number:**	**[none]**

Michelle Reed
Reviewed By

11/2/15
Date

Section 5.0

Sample Preparation, and Analytical Raw Data

PREPARATION BATCH SUMMARY

SM 4500-NH3 D M

Laboratory: Truesdail Laboratories, Inc

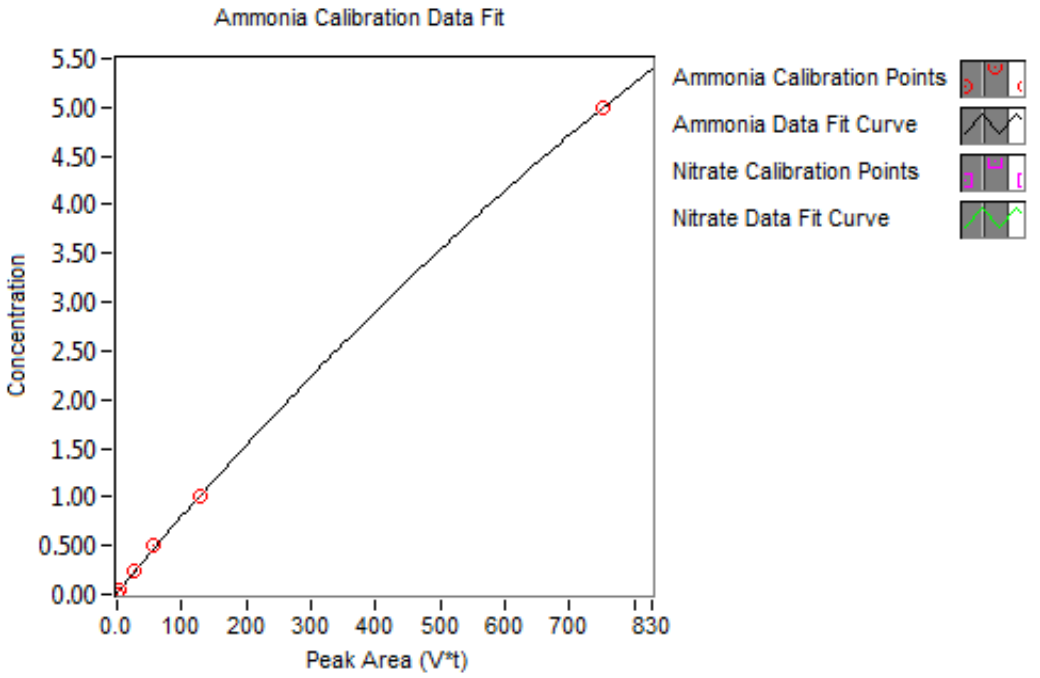
Client: Advanced Technology Laboratories-NV Project: ATL-NV

Batch: 1511013 Batch Matrix: Water Preparation: SM 4500-NH3 B

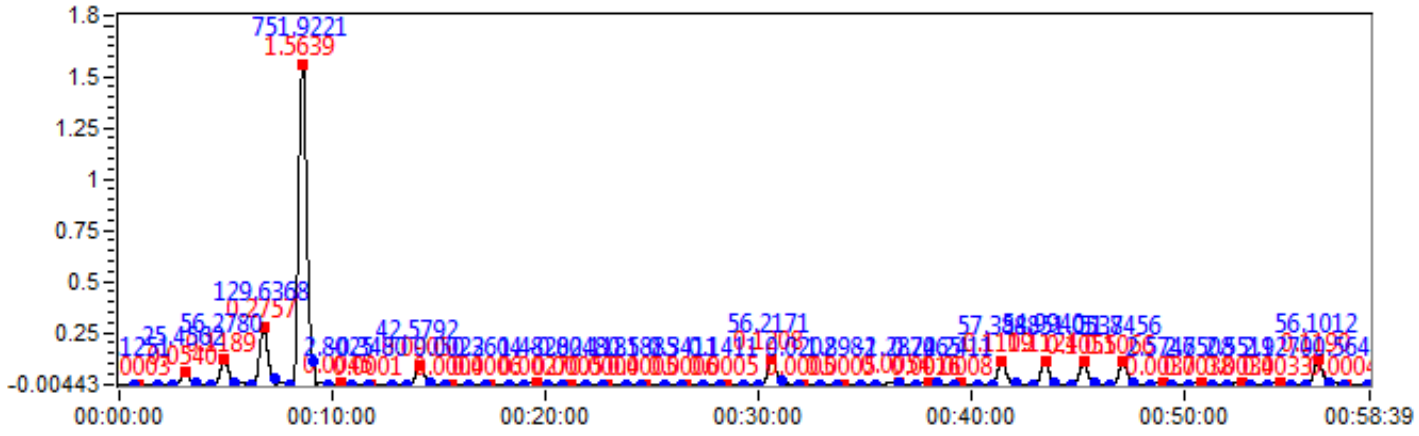
SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	1511013-BLK1	11/03/15 10:45	50.00	50.00
LCS	1511013-BS1	11/03/15 10:45	50.00	50.00
Duplicate	1511013-DUP1	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL1	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL2	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL3	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL4	11/03/15 10:45	50.00	50.00
N017415-007F / CW-04M-4Q15	1511013-MS1	11/03/15 10:45	50.00	50.00
N017415-007F / CW-04M-4Q15	1511013-MSD1	11/03/15 10:45	50.00	50.00
N017415-001F / CW-02D-4Q15	15J0470-01	11/03/15 10:45	50.00	50.00
N017415-002F / CW-02M-4Q15	15J0470-02	11/03/15 10:45	50.00	50.00
N017415-003F / CW-03D-4Q15	15J0470-03	11/03/15 10:45	50.00	50.00
N017415-004F / CW-03M-4Q15	15J0470-04	11/03/15 10:45	50.00	50.00
N017415-005F / OW-070-4Q15	15J0470-05	11/03/15 10:45	50.00	50.00
N017415-006F / CW-04D-4Q15	15J0470-06	11/03/15 10:45	50.00	50.00
N017415-007F / CW-04M-4Q15	15J0470-07	11/03/15 10:45	50.00	50.00

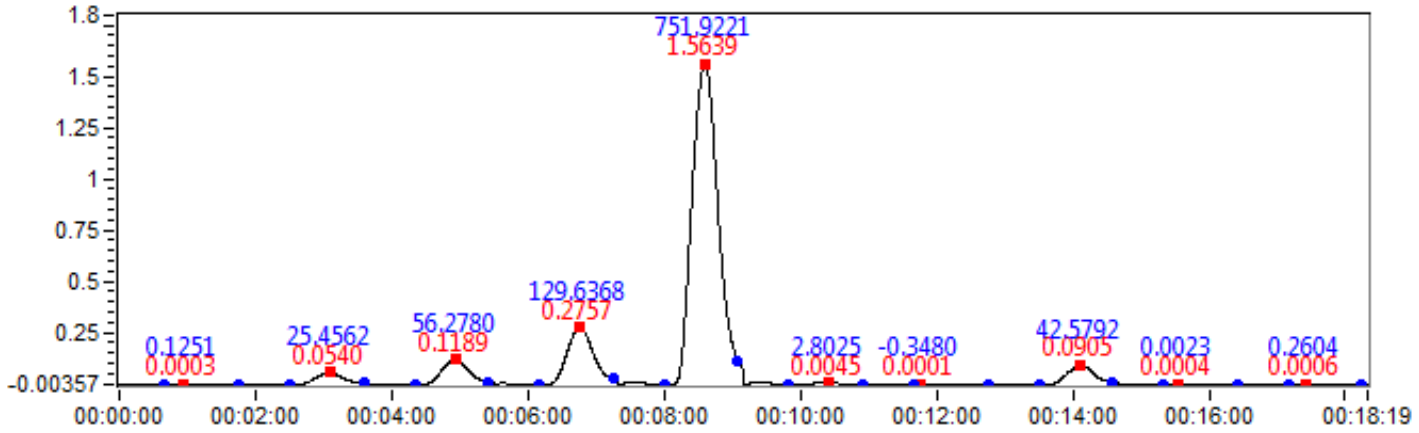
Timberline TL-2100 Summary Report **11/3/2015 2:53 PM**

Injection Time	Wash Time	Integration Start Time	Integration End Time
00:20	01:30	00:40	01:45

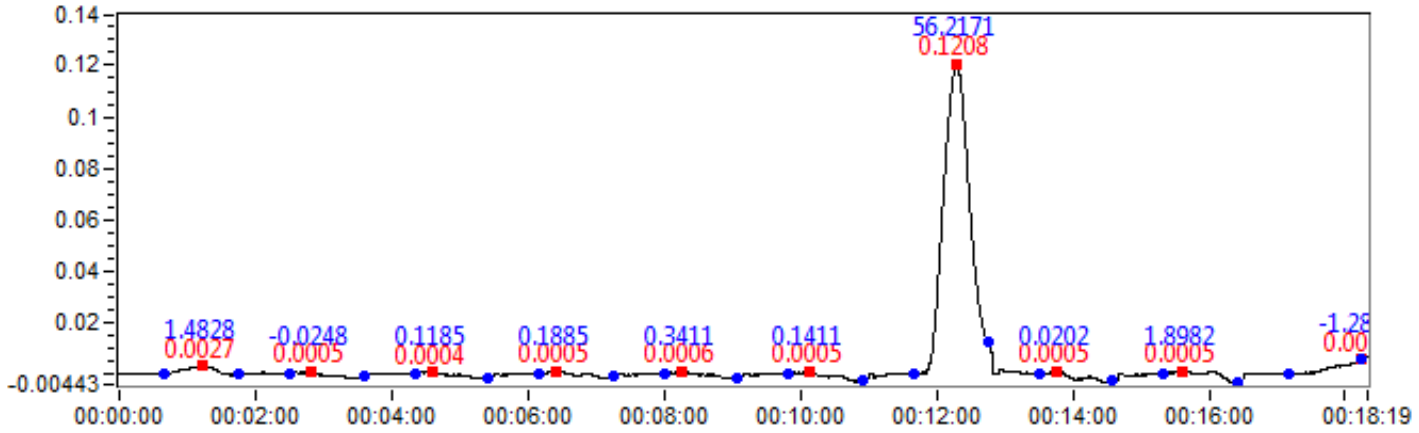


Ammonia Calibration Equation	R^2 Value	Nitrate Calibration Equation	Nitrate R^2 Value
y = +3.027E-2 + 7.855E-3*X - 1.657E-6*X^2	0.999843	y =	NaN

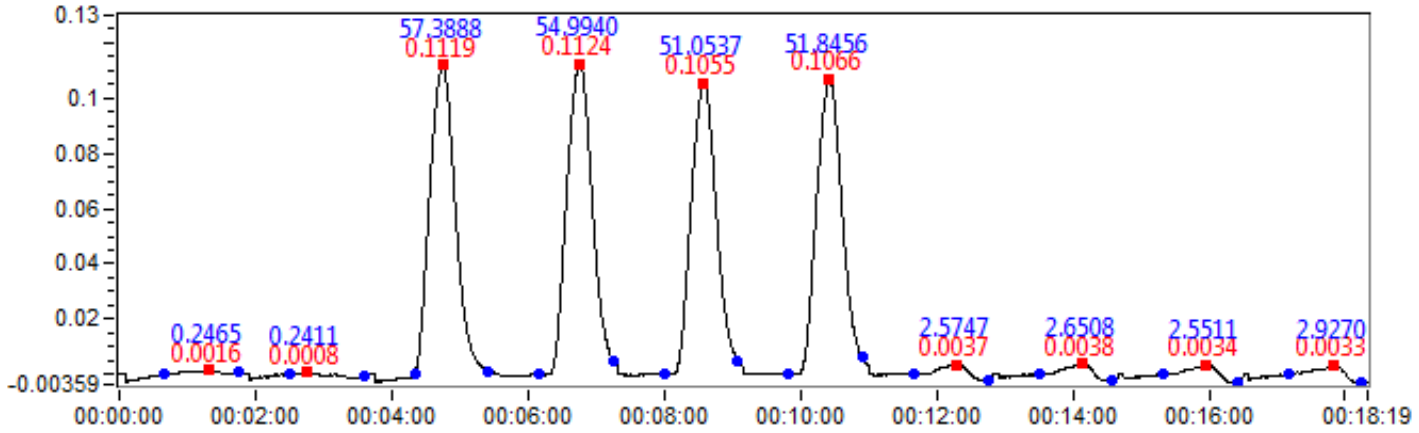




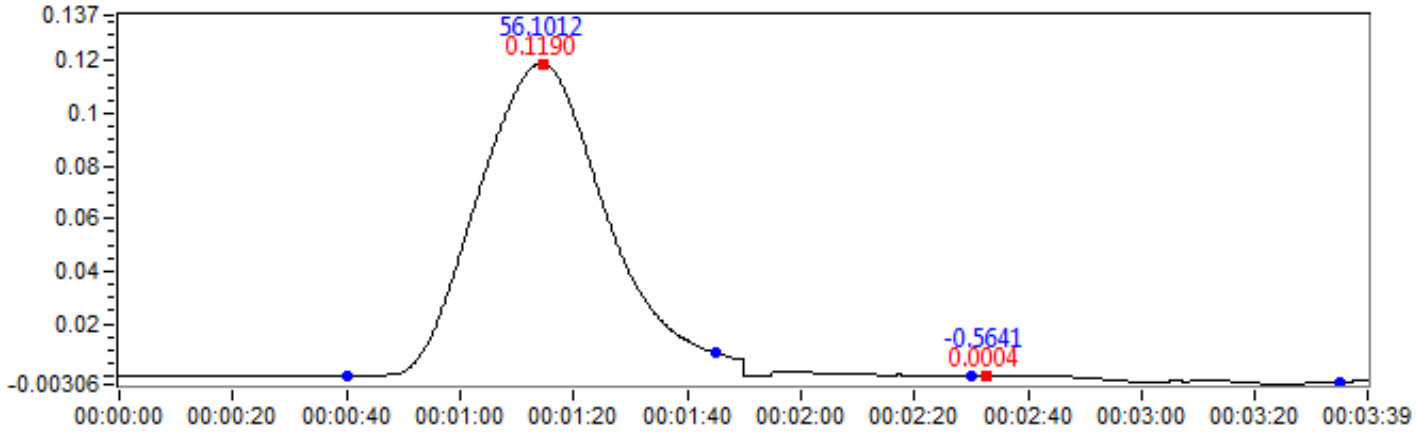
Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 11:38:58	NH3 Sample	1511013-DUP1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.260433	0.032318			
1	11-03-15 11:37:00	NH3 Sample	15J0459-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.002323	0.030291			
8	11-03-15 11:31:39	NH3 Sample	1511013-BS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564882 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	42.579220	0.361710			
7	11-03-15 11:20:18	NH3 Sample	1511013-BLK1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564542 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.347966	0.027539			
2	11-03-15 11:10:48	NH3 Sample	5K02003-CAL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564257 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.802507	.05			
6	11-03-15 11:08:31	NH3 Sample	5K02003-CAL5	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	751.922078	5			
5	11-03-15 11:06:33	NH3 Sample	5K02003-CAL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	129.636768	1			
4	11-03-15 11:04:35	NH3 Sample	5K02003-CAL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.277978	.5			
3	11-03-15 11:02:37	NH3 Sample	5K02003-CAL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	25.456239	.25			
1	11-03-15 10:58:42	NH3 Sample	5K02003-ICB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.125125	0.000000			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 13:42:57	NH3 Sample	15J0470-07	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-1.287234	0.020159			
1	11-03-15 13:40:59	NH3 Sample	15J0470-06	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.898241	0.045176			
10	11-03-15 12:01:17	NH3 Sample	5K02003-CCB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565712 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.020197	0.030431			
9	11-03-15 11:59:19	NH3 Sample	5K02003-CCV1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565712 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.217077	0.466597			
8	11-03-15 11:50:48	NH3 Sample	15J0470-05	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.141093	0.031381			
7	11-03-15 11:48:50	NH3 Sample	15J0470-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.341111	0.032952			
6	11-03-15 11:46:52	NH3 Sample	15J0470-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.188513	0.031753			
5	11-03-15 11:44:55	NH3 Sample	15J0470-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.118455	0.031203			
4	11-03-15 11:42:55	NH3 Sample	15J0470-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.024815	0.030078			
3	11-03-15 11:40:56	NH3 Sample	15J0459-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.482787	0.041915			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
10	11-03-15 14:14:17	NH3 Sample	1511013-MRL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.927023	0.053249			
9	11-03-15 14:12:19	NH3 Sample	1511013-MRL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.551142	0.050300			
8	11-03-15 14:10:20	NH3 Sample	1511013-MRL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.650778	0.051082			
7	11-03-15 14:08:21	NH3 Sample	1511013-MRL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.574724	0.050485			
6	11-03-15 14:01:00	NH3 Sample	1511013-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566706 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	51.845610	0.433043			
5	11-03-15 13:59:02	NH3 Sample	1511013-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566706 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	51.053724	0.426958			
6	11-03-15 13:53:51	NH3 Sample	1511013-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566487 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	54.993966	0.457215			
5	11-03-15 13:51:52	NH3 Sample	1511013-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566487 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	57.388789	0.475579			
4	11-03-15 13:46:53	NH3 Sample	15K0049-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.241081	0.032166			
3	11-03-15 13:44:55	NH3 Sample	15K0049-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.246492	0.032208			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 14:37:17	NH3 Sample	5K02003-CCB2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 567796 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.564100	0.025841			
1	11-03-15 14:35:19	NH3 Sample	5K02003-CCV2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 567796 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.101209	0.465708			

ARCADIS

Project: PG&E TOPOCK - CMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N017427

ANALYTICAL and QC RESULTS

SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N017427

Item	Pages
Cover Page	1-6
Analytical Result / QC Summary Reports	7-53
Sample Receiving Items	54-60
List of Analysts	61
Raw Data	
EPA 120.1	62-65
SM 2540C	66-75
EPA 200.7 Dissolved	76-127
EPA 200.8 Dissolved	128-234
SM 2130B	235-238
EPA 218.6	239-332
SM 2320B	333-342
EPA 245.1 Dissolved	343-359
EPA 300.0	360-396
SM 4500-NO3F	397-410
EPA 6010B	411-452

November 16, 2015

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N017427

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on October 29, 2015 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Glen Gesmundo
QA Manager

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

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Truesdail-Tustin,CA.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N017399-002B-MS2, N017399-002B-MSD2 and N017415-007B-MS2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017399-001A-MS1, N017399-001A-MSD1 and N017415-006B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N017400-001B-MS, N017400-001B-MSD and N017427-002B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary on Beryllium for samples N017427-001 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analyte for this failed internal standard was reported at dilution that meet internal standard recovery limit.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

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CASE NARRATIVE

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N017427-001 and N017427-002 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6010B_Total:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron on QC samples N017400-001C-MS1, N017400-001C-MSD1 and N017427-002C-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *16-Nov-15*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - CMP, RC000753.0801
Lab Order: N017427
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017427-001A	CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	10/29/2015	11/16/2015
N017427-001B	CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	10/29/2015	11/16/2015
N017427-001C	CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	10/29/2015	11/16/2015
N017427-001D	CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	10/29/2015	11/16/2015
N017427-001E	CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	10/29/2015	11/16/2015
N017427-001F	CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	10/29/2015	11/16/2015
N017427-002A	CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	10/29/2015	11/16/2015
N017427-002B	CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	10/29/2015	11/16/2015
N017427-002C	CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	10/29/2015	11/16/2015
N017427-002D	CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	10/29/2015	11/16/2015
N017427-002E	CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	10/29/2015	11/16/2015
N017427-002F	CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	10/29/2015	11/16/2015
N017427-003A	MW-204-4Q15	Groundwater	10/29/2015 9:35:00 AM	10/29/2015	11/16/2015

ASSET LABORATORIES
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P: 702.307.2659 F: 702.307.2691

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01D-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 8:32:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151030C**	QC Batch: **R103890**			PrepDate			Analyst: **LR**
Specific Conductance	7000	0.10	0.10		umhos/cm	1	10/30/2015 02:30 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:21:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **WETCHEM_151030C**	QC Batch: **R103890**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	10/30/2015 02:30 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N017427-002DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **103890**
Client ID: **ZZZZZZ** Batch ID: **R103890** TestNo: **EPA 120.1** Analysis Date: **10/30/2015** SeqNo: **2122193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7300.000	0.10						7310	0.137	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-001

Client Sample ID: CW-01D-4Q15
Collection Date: 10/29/2015 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151102C**	QC Batch: **52914**				PrepDate	**11/2/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	11/2/2015 02:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-002

Client Sample ID: CW-01M-4Q15
Collection Date: 10/29/2015 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **WETCHEM_151102C**	QC Batch: **52914**				PrepDate	**11/2/2015**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4200	50	50		mg/L	1	11/2/2015 02:21 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **MB-52914**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **11/2/2015**	RunNo: **103931**
Client ID: **PBW**	Batch ID: **52914**	TestNo: **SM2540C**		Analysis Date: **11/2/2015**	SeqNo: **2124306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **LCS-52914**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **11/2/2015**	RunNo: **103931**
Client ID: **LCSW**	Batch ID: **52914**	TestNo: **SM2540C**		Analysis Date: **11/2/2015**	SeqNo: **2124307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	973.000	10	1000	0	97.3	80	120				

Sample ID **N017427-001DDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **11/2/2015**	RunNo: **103931**
Client ID: **ZZZZZZ**	Batch ID: **52914**	TestNo: **SM2540C**		Analysis Date: **11/2/2015**	SeqNo: **2124310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4045.000	50						4095	1.23	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-001

Client Sample ID: CW-01D-4Q15
Collection Date: 10/29/2015 8:32:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_151110A** QC Batch: **52910** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Aluminum	ND	12	50		µg/L	1	11/10/2015 01:21 PM
Boron	930	11	100		µg/L	1	11/10/2015 01:21 PM
Calcium	160000	31	500		µg/L	1	11/10/2015 01:21 PM
Iron	ND	17	20		µg/L	1	11/10/2015 01:21 PM
Magnesium	13000	86	100		µg/L	1	11/10/2015 01:21 PM
Potassium	12000	360	2500		µg/L	5	11/4/2015 10:01 AM
Sodium	1300000	580	25000		µg/L	50	11/4/2015 12:50 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-002

Client Sample ID: CW-01M-4Q15
Collection Date: 10/29/2015 9:21:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **ICP2_151110A** QC Batch: **52910** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Aluminum	ND	12	50		µg/L	1	11/10/2015 01:27 PM
Boron	1000	11	100		µg/L	1	11/10/2015 01:27 PM
Calcium	180000	31	500		µg/L	1	11/10/2015 01:27 PM
Iron	ND	17	20		µg/L	1	11/10/2015 01:27 PM
Magnesium	13000	86	100		µg/L	1	11/10/2015 01:27 PM
Potassium	13000	360	2500		µg/L	5	11/4/2015 10:06 AM
Sodium	1400000	580	25000		µg/L	50	11/4/2015 12:53 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-52910	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	PBW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	500									
Sodium	ND	500									

Sample ID	LCS2-52910	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	LCSW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	20463.164	500	20000	0	102	85	115				
Sodium	19298.304	500	20000	0	96.5	85	115				

Sample ID	N017399-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125830

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38656.299	2500	20000	16100	113	75	125				

Sample ID	N017399-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125831

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38051.316	2500	20000	16100	110	75	125	38660	1.58	20	

Sample ID	N017399-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125837

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1471097.938	25000	20000	1458000	65.2	75	125				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	N017399-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1471119.166	25000	20000	1458000	65.3	75	125	1471000	0.00144	20	S

Sample ID	N017415-007B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125852

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	35910.474	2500	20000	13200	114	75	125				

Sample ID	N017415-007B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103953
Client ID:	ZZZZZZ	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125853

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1340018.611	25000	20000	1220000	601	75	125				S

Sample ID	MB-52910	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	PBW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132959

Analyte	Result	PQL
Aluminum	ND	50
Boron	ND	100
Calcium	ND	500
Iron	ND	20
Magnesium	ND	100

Sample ID	LCS1-52910	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104064
Client ID:	LCSW	Batch ID:	52910	TestNo:	EPA 200.7			Analysis Date:	11/10/2015	SeqNo:	2132960

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10140.575	50	10000	0	101	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-52910** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **LCSW** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	5042.788	100	5000	0	101	85	115				
Calcium	9625.755	500	10000	0	96.3	85	115				
Iron	105.292	20	100.0	0	105	85	115				
Magnesium	9428.515	100	10000	0	94.3	85	115				

Sample ID **N017399-001A-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5272.448	50	10000	0	52.7	75	125				S
Boron	3043.496	100	5000	536.1	50.1	75	125				S
Calcium	120164.092	500	10000	110500	96.5	75	125				
Iron	51.690	20	100.0	0	51.7	75	125				S
Magnesium	25028.529	100	10000	20260	47.7	75	125				S

Sample ID **N017399-001A-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5252.009	50	10000	0	52.5	75	125	5272	0.388	20	S
Boron	3040.700	100	5000	536.1	50.1	75	125	3043	0.0919	20	S
Calcium	120336.291	500	10000	110500	98.2	75	125	120200	0.143	20	
Iron	49.963	20	100.0	0	50.0	75	125	51.69	3.40	20	S
Magnesium	24998.094	100	10000	20260	47.4	75	125	25030	0.122	20	S

Sample ID **N017415-006B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132977**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N017415-006B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5249.573	50	10000	0	52.5	75	125				S
Boron	3441.876	100	5000	1125	46.3	75	125				S
Calcium	148847.810	500	10000	146300	25.0	75	125				S
Iron	58.273	20	100.0	0	58.3	75	125				S
Magnesium	11779.303	100	10000	7906	38.7	75	125				S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-001

Client Sample ID: CW-01D-4Q15
Collection Date: 10/29/2015 8:32:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 02:08 AM
Arsenic	1.1	0.016	0.10		µg/L	1	11/4/2015 11:54 AM
Barium	19	0.072	1.0		µg/L	1	11/4/2015 11:54 AM
Beryllium	ND	0.13	2.5		µg/L	5	11/10/2015 02:02 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:54 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:54 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 02:08 AM
Lead	ND	0.053	1.0		µg/L	1	11/10/2015 02:08 AM
Manganese	ND	0.023	0.50		µg/L	1	11/4/2015 11:54 AM
Molybdenum	17	0.029	0.50		µg/L	1	11/10/2015 02:08 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 02:08 AM
Selenium	2.8	0.070	0.50		µg/L	1	11/10/2015 02:08 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 03:33 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 02:08 AM
Vanadium	2.1	0.025	1.0		µg/L	1	11/4/2015 11:54 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:54 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-002

Client Sample ID: CW-01M-4Q15
Collection Date: 10/29/2015 9:21:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICPMS

EPA 200.8

RunID: **ICP7_151109A** QC Batch: **52909** PrepDate **11/2/2015** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.026	0.50		µg/L	1	11/10/2015 02:19 AM
Arsenic	1.1	0.016	0.10		µg/L	1	11/4/2015 11:59 AM
Barium	81	0.072	1.0		µg/L	1	11/4/2015 11:59 AM
Beryllium	ND	0.026	0.50		µg/L	1	11/10/2015 02:19 AM
Cadmium	ND	0.0098	0.50		µg/L	1	11/4/2015 11:59 AM
Cobalt	ND	0.013	0.50		µg/L	1	11/4/2015 11:59 AM
Copper	ND	0.26	1.0		µg/L	1	11/10/2015 02:19 AM
Lead	ND	0.053	1.0		µg/L	1	11/10/2015 02:19 AM
Manganese	0.54	0.023	0.50		µg/L	1	11/4/2015 11:59 AM
Molybdenum	15	0.029	0.50		µg/L	1	11/10/2015 02:19 AM
Nickel	ND	0.038	1.0		µg/L	1	11/10/2015 02:19 AM
Selenium	3.0	0.070	0.50		µg/L	1	11/10/2015 02:19 AM
Silver	ND	0.023	0.50		µg/L	1	11/10/2015 03:44 PM
Thallium	ND	0.034	0.50		µg/L	1	11/10/2015 02:19 AM
Vanadium	2.3	0.025	1.0		µg/L	1	11/4/2015 11:59 AM
Zinc	ND	0.039	10		µg/L	1	11/4/2015 11:59 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-52909** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **PBW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	0.025	1.0									
Zinc	ND	10									

Sample ID **LCS-52909** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **LCSW** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.719	0.10	10.00	0	107	85	115				
Barium	108.832	1.0	100.0	0	109	85	115				
Cadmium	10.939	0.50	10.00	0	109	85	115				
Chromium	10.527	1.0	10.00	0	105	85	115				
Cobalt	10.062	0.50	10.00	0	101	85	115				
Lead	10.775	1.0	10.00	0	108	85	115				
Manganese	105.464	0.50	100.0	0	105	85	115				
Vanadium	10.671	1.0	10.00	0	107	85	115				
Zinc	107.163	10	100.0	0	107	85	115				

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126137**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126137

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.693	0.10	10.00	1.065	86.3	75	125				
Barium	114.939	1.0	100.0	27.44	87.5	75	125				
Cadmium	8.296	0.50	10.00	0	83.0	75	125				
Chromium	8.350	1.0	10.00	0.5062	78.4	75	125				
Cobalt	7.089	0.50	10.00	0	70.9	75	125				S
Lead	8.720	1.0	10.00	0	87.2	75	125				
Manganese	78.975	0.50	100.0	0.3006	78.7	75	125				
Vanadium	10.942	1.0	10.00	2.626	83.2	75	125				
Zinc	80.633	10	100.0	0.3110	80.3	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126138

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.784	0.10	10.00	1.065	87.2	75	125	9.693	0.935	20	
Barium	115.625	1.0	100.0	27.44	88.2	75	125	114.9	0.595	20	
Cadmium	8.452	0.50	10.00	0	84.5	75	125	8.296	1.87	20	
Chromium	8.303	1.0	10.00	0.5062	78.0	75	125	8.350	0.562	20	
Cobalt	7.070	0.50	10.00	0	70.7	75	125	7.089	0.281	20	S
Lead	8.759	1.0	10.00	0	87.6	75	125	8.720	0.452	20	
Manganese	78.807	0.50	100.0	0.3006	78.5	75	125	78.98	0.213	20	
Vanadium	10.808	1.0	10.00	2.626	81.8	75	125	10.94	1.23	20	
Zinc	79.837	10	100.0	0.3110	79.5	75	125	80.63	0.991	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.967	0.10	10.00	1.128	88.4	75	125				
Barium	171.802	1.0	100.0	80.77	91.0	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103960
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	8.608	0.50	10.00	0	86.1	75	125				
Chromium	8.602	1.0	10.00	0.7762	78.3	75	125				
Cobalt	6.971	0.50	10.00	0	69.7	75	125				S
Manganese	79.375	0.50	100.0	0.5352	78.8	75	125				
Vanadium	10.685	1.0	10.00	2.319	83.7	75	125				
Zinc	81.853	10	100.0	5.388	76.5	75	125				

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104066
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/9/2015	SeqNo:	2132996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.083	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Molybdenum	0.161	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104066
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/9/2015	SeqNo:	2132997

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.423	0.50	10.00	0	104	85	115				
Beryllium	10.279	0.50	10.00	0	103	85	115				
Copper	10.479	1.0	10.00	0	105	85	115				
Molybdenum	9.974	0.50	10.00	0	99.7	85	115				
Nickel	10.496	1.0	10.00	0	105	85	115				
Selenium	9.765	0.50	10.00	0	97.6	85	115				
Thallium	9.757	0.50	10.00	0	97.6	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017400-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.473	0.50	10.00	0	105	75	125				
Beryllium	10.647	0.50	10.00	0	106	75	125				
Copper	8.637	1.0	10.00	0	86.4	75	125				
Molybdenum	14.242	0.50	10.00	11.58	26.6	75	125				S
Nickel	10.008	1.0	10.00	0.06799	99.4	75	125				
Selenium	9.545	0.50	10.00	3.278	62.7	75	125				S
Thallium	10.156	0.50	10.00	0.05680	101	75	125				

Sample ID **N017400-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.539	0.50	10.00	0	105	75	125	10.47	0.626	20	
Beryllium	10.566	0.50	10.00	0	106	75	125	10.65	0.765	20	
Copper	9.241	1.0	10.00	0	92.4	75	125	8.637	6.75	20	
Molybdenum	14.352	0.50	10.00	11.58	27.7	75	125	14.24	0.767	20	S
Nickel	10.125	1.0	10.00	0.06799	101	75	125	10.01	1.16	20	
Selenium	9.778	0.50	10.00	3.278	65.0	75	125	9.545	2.41	20	S
Thallium	10.119	0.50	10.00	0.05680	101	75	125	10.16	0.359	20	

Sample ID **N017427-002B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **11/2/2015** RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.597	0.50	10.00	0	106	75	125				
Beryllium	10.718	0.50	10.00	0	107	75	125				
Copper	9.048	1.0	10.00	0	90.5	75	125				
Lead	10.245	1.0	10.00	0	102	75	125				
Molybdenum	13.433	0.50	10.00	14.55	-11.2	75	125				S
Nickel	10.141	1.0	10.00	0	101	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104066
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133034

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.506	0.50	10.00	3.007	65.0	75	125				S
Thallium	10.171	0.50	10.00	0	102	75	125				

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.890	0.50	10.00	0	109	85	115				

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.281	0.50	10.00	0	103	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.239	0.50	10.00	0	102	75	125	10.28	0.410	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	104074
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.250	0.50	10.00	0	103	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-001

Client Sample ID: CW-01D-4Q15
Collection Date: 10/29/2015 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_151104B**	QC Batch: **R104041**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.38	0.015	0.20		µg/L	1	11/4/2015 01:02 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 11:54 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-002

Client Sample ID: CW-01M-4Q15
Collection Date: 10/29/2015 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_151104B**	QC Batch: **R104041**			PrepDate			Analyst: **RB**
Hexavalent Chromium	0.96	0.015	0.20		µg/L	1	11/4/2015 01:43 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **ICP7_151104A**	QC Batch: **52909**			PrepDate	**11/2/2015**		Analyst: **CEI**
Chromium	ND	0.086	1.0		µg/L	1	11/4/2015 11:59 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-204-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:35:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **IC6_151104B**	QC Batch: **R104041**			PrepDate			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	11/4/2015 02:03 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-52909	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	PBW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126053

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

Sample ID	LCS-52909	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	LCSW	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126054

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.527	1.0	10.00	0	105	85	115				

Sample ID	N017400-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126060

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.350	1.0	10.00	0.5062	78.4	75	125				

Sample ID	N017400-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126061

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.303	1.0	10.00	0.5062	78.0	75	125	8.350	0.562	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	11/2/2015	RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	52909	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126074

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.602	1.0	10.00	0.7762	78.3	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R104041**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **PBW**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131066**

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

Sample ID **LCS-R104041**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **LCSW**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.952	0.20	5.000	0	99.0	90	110				

Sample ID **N017427-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **ZZZZZZ**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.419	0.20						0.3810	9.57	20	

Sample ID **N017427-001A-MS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **ZZZZZZ**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.420	0.20	1.000	0.3810	104	90	110				

Sample ID **N017427-001A-MSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **ZZZZZZ**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.439	0.20	1.000	0.3810	106	90	110	1.420	1.39	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N017427-002A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	104041
Client ID:	ZZZZZZ	Batch ID:	R104041	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2131073

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.990	0.20	1.000	0.9565	103	90	110				

Sample ID	N017427-003A-MS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	104041
Client ID:	ZZZZZZ	Batch ID:	R104041	TestNo:	EPA 218.6			Analysis Date:	11/4/2015	SeqNo:	2131075

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.038	0.20	1.000	0	104	90	110				

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01D-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 8:32:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151030D**	QC Batch: **R103891**			PrepDate			Analyst: **LR**
Turbidity	0.27	0.10	0.10		NTU	1	10/30/2015 03:00 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:21:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_151030D**	QC Batch: **R103891**			PrepDate			Analyst: **LR**
Turbidity	1.6	0.10	0.10		NTU	1	10/30/2015 03:00 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	**MB-R103891**	SampType:	**MBLK**	TestCode:	**2130_W**	Units:	**NTU**	Prep Date:		RunNo:	**103891**
Client ID:	**PBW**	Batch ID:	**R103891**	TestNo:	**SM 2130B**			Analysis Date:	**10/30/2015**	SeqNo:	**2122194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID	**N017427-001DDUP**	SampType:	**DUP**	TestCode:	**2130_W**	Units:	**NTU**	Prep Date:		RunNo:	**103891**
Client ID:	**ZZZZZZ**	Batch ID:	**R103891**	TestNo:	**SM 2130B**			Analysis Date:	**10/30/2015**	SeqNo:	**2122196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.280	0.10						0.2700	3.64	30	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-001

Client Sample ID: CW-01D-4Q15
Collection Date: 10/29/2015 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151030E**	QC Batch: **R103911**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	65	1.2	5.0		mg/L	1	10/30/2015 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/30/2015 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/30/2015 03:30 PM
Alkalinity, Total (As CaCO3)	65	1.2	5.0		mg/L	1	10/30/2015 03:30 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:21:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **WETCHEM_151030E**	QC Batch: **R103911**			PrepDate			Analyst: **LR**
Alkalinity, Bicarbonate (As CaCO3)	69	1.2	5.0		mg/L	1	10/30/2015 03:30 PM
Alkalinity, Carbonate (As CaCO3)	ND	1.2	5.0		mg/L	1	10/30/2015 03:30 PM
Alkalinity, Hydroxide (As CaCO3)	ND	1.2	5.0		mg/L	1	10/30/2015 03:30 PM
Alkalinity, Total (As CaCO3)	69	1.2	5.0		mg/L	1	10/30/2015 03:30 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R103911** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103911**
Client ID: **LCSW** Batch ID: **R103911** TestNo: **SM 2320 B** Analysis Date: **10/30/2015** SeqNo: **2123182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	95.833	5.0	100.0	0	95.8	85	115				
Alkalinity, Total (As CaCO3)	97.917	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R103911** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103911**
Client ID: **PBW** Batch ID: **R103911** TestNo: **SM 2320 B** Analysis Date: **10/30/2015** SeqNo: **2123183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.0									
Alkalinity, Carbonate (As CaCO3)	ND	5.0									
Alkalinity, Hydroxide (As CaCO3)	ND	5.0									
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N017427-001DUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103911**
Client ID: **ZZZZZZ** Batch ID: **R103911** TestNo: **SM 2320 B** Analysis Date: **10/30/2015** SeqNo: **2123185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	66.667	5.0						64.58	3.17	30	
Alkalinity, Carbonate (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Hydroxide (As CaCO3)	ND	5.0						0	0	30	
Alkalinity, Total (As CaCO3)	66.667	5.0						64.58	3.17	30	

Sample ID **N017427-002MS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **103911**
Client ID: **ZZZZZZ** Batch ID: **R103911** TestNo: **SM 2320 B** Analysis Date: **10/30/2015** SeqNo: **2123187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	168.750	5.0	100.0	68.75	100	75	125				
Alkalinity, Total (As CaCO3)	168.750	5.0	100.0	68.75	100	75	125				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	N017427-002MSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	103911
Client ID:	ZZZZZZ	Batch ID:	R103911	TestNo:	SM 2320 B			Analysis Date:	10/30/2015	SeqNo:	2123188

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	166.667	5.0	100.0	68.75	97.9	75	125	168.8	1.24	20	
Alkalinity, Total (As CaCO3)	166.667	5.0	100.0	68.75	97.9	75	125	168.8	1.24	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01D-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 8:32:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:21:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_151105A**	QC Batch: **52920**			PrepDate	**11/3/2015**		Analyst: **CEI**
Mercury	ND	0.025	0.20		µg/L	1	11/5/2015 01:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID	MB-52920	SampType:	MBLK	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	PBW	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.086	0.20									

Sample ID	N017415-001B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.951	0.20	5.000	0.09477	77.1	75	125				

Sample ID	N017415-001B-MSD	SampType:	MSD	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.951	0.20	5.000	0.09477	77.1	75	125	3.951	0.0152	20	

Sample ID	N017427-002B-MS	SampType:	MS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	ZZZZZZ	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133184

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.066	0.20	5.000	0.06610	80.0	75	125				

Sample ID	LCS-52920	SampType:	LCS	TestCode:	245.1_WD	Units:	µg/L	Prep Date:	11/3/2015	RunNo:	103981
Client ID:	LCSW	Batch ID:	52920	TestNo:	EPA 245.1			Analysis Date:	11/5/2015	SeqNo:	2133191

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	5.144	0.20	5.000	0	103	85	115				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-001

Client Sample ID: CW-01D-4Q15
Collection Date: 10/29/2015 8:32:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	1900	16	250		mg/L	500	10/31/2015 05:52 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	2.1	0.062	0.50		mg/L	5	11/1/2015 01:26 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	450	1.6	25		mg/L	50	10/31/2015 09:15 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N017427
Project: PG&E Topock - CMP, RC000753.0801
Lab ID: N017427-002

Client Sample ID: CW-01M-4Q15
Collection Date: 10/29/2015 9:21:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Chloride	2000	16	250		mg/L	500	10/31/2015 06:08 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Fluoride	1.9	0.062	0.50		mg/L	5	11/1/2015 02:12 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **IC2_151031A** QC Batch: **R103951**				PrepDate			Analyst: **QBM**
Sulfate	460	1.6	25		mg/L	50	10/31/2015 09:31 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R103951_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125489

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	LCS-R103951	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125490

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.428	0.50	2.500	0	97.1	90	110				

Sample ID	N017400-002DDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2008.000	250						1973	1.76	20	

Sample ID	N017400-003CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3205.500	250	1250	1975	98.4	80	120				

Sample ID	N017400-003CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3261.000	250	1250	1975	103	80	120	3206	1.72	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID	MB-R103951_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID	LCS-R103951_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.413	0.10	2.500	0	96.5	90	110				

Sample ID	N017390-001CMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	11.745	0.50	12.50	1.315	83.4	80	120				

Sample ID	N017390-001CMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	12.100	0.50	12.50	1.315	86.3	80	120	11.74	2.98	20	

Sample ID	N017400-005CDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	11/1/2015	SeqNo:	2125475

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	3.320	0.20						3.298	0.665	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R103951_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	PBW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125520

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R103951_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	LCSW	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125521

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.848	0.50	5.000	0	97.0	90	110				

Sample ID	N017400-002DDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125529

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	457.050	25						453.0	0.879	20	

Sample ID	N017400-003CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	727.000	25	250.0	457.2	108	80	120				

Sample ID	N017400-003CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	103951
Client ID:	ZZZZZZ	Batch ID:	R103951	TestNo:	EPA 300.0			Analysis Date:	10/31/2015	SeqNo:	2125534

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	720.100	25	250.0	457.2	105	80	120	727.0	0.954	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01D-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 8:32:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151110B**	QC Batch: **R104112**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.7	0.11	0.25		mg/L	5	11/10/2015

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:21:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **WETCHEM_151110B**	QC Batch: **R104112**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	11/10/2015

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R104112	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104112
Client ID:	PBW	Batch ID:	R104112	TestNo:	SM4500-NO3			Analysis Date:	11/10/2015	SeqNo:	2135658

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

Sample ID	LCS-R104112	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104112
Client ID:	LCSW	Batch ID:	R104112	TestNo:	SM4500-NO3			Analysis Date:	11/10/2015	SeqNo:	2135659

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.8	85	115				

Sample ID	N017427-001EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104112
Client ID:	ZZZZZZ	Batch ID:	R104112	TestNo:	SM4500-NO3			Analysis Date:	11/10/2015	SeqNo:	2135662

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.588	0.25						2.656	2.63	20	

Sample ID	N017427-001EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104112
Client ID:	ZZZZZZ	Batch ID:	R104112	TestNo:	SM4500-NO3			Analysis Date:	11/10/2015	SeqNo:	2135663

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.187	0.25	2.500	2.656	101	75	125				

Sample ID	N017427-001EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	104112
Client ID:	ZZZZZZ	Batch ID:	R104112	TestNo:	SM4500-NO3			Analysis Date:	11/10/2015	SeqNo:	2135664

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.648	0.25	2.500	2.656	120	75	125	5.187	8.51	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-Nov-15*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01D-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 8:32:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	27	17	20		ug/L	1	11/3/2015 09:59 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	CW-01M-4Q15
Lab Order:	N017427	**Collection Date:**	10/29/2015 9:21:00 AM
Project:	PG&E Topock - CMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N017427-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL METALS BY ICP							
	EPA 3010A				**EPA 6010B**		
RunID: **ICP2_151103D**	QC Batch: **52897**				PrepDate	**11/2/2015**	Analyst: **CEI**
Iron	110	17	20		ug/L	1	11/3/2015 10:04 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**MB-52897**	SampType:	**MBLK**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:	**11/2/2015**	RunNo:	**103949**
Client ID:	**PBW**	Batch ID:	**52897**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**11/3/2015**	SeqNo:	**2125062**

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

Sample ID	**LCS-52897**	SampType:	**LCS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:	**11/2/2015**	RunNo:	**103949**
Client ID:	**LCSW**	Batch ID:	**52897**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**11/3/2015**	SeqNo:	**2125063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	92.772	20	100.0	0	92.8	85	115				

Sample ID	**N017400-001C-MS1**	SampType:	**MS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:	**11/2/2015**	RunNo:	**103949**
Client ID:	**ZZZZZZ**	Batch ID:	**52897**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**11/3/2015**	SeqNo:	**2125223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	131.065	20	100.0	65.31	65.8	75	125				S

Sample ID	**N017400-001C-MSD**	SampType:	**MSD**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:	**11/2/2015**	RunNo:	**103949**
Client ID:	**ZZZZZZ**	Batch ID:	**52897**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**11/3/2015**	SeqNo:	**2125224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.120	20	100.0	65.31	66.8	75	125	131.1	0.802	20	S

Sample ID	**N017427-002C-MS**	SampType:	**MS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:	**11/2/2015**	RunNo:	**103949**
Client ID:	**ZZZZZZ**	Batch ID:	**52897**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**11/3/2015**	SeqNo:	**2125237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	166.778	20	100.0	105.6	61.2	75	125				S

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sampe Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD ☐	RTNE ☐	Y N
Address: Roseville, CA 95661	Email: Dan.Bush@arcadis.com; Daniel.Moore@critigen.com		Geotracker ☐	RWQCB ☐	1. Chilled ☑ ☐
Phone: 916.786.3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com PO#	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By: Jason Mahn		Phone: 949.727.1400, ext 200 Fax:	Others ☑	Level III ☐	3. Container Intact ☑ ☐
Title: Sample Tech	Phone: 916.786.3302 Fax:		Specify: EQ EDD	LEVEL IV ☑	4. Seal Present ☐ ☑
Signature: Date: 10/29/15	Sampled By: Nava Tep		Global ID:	Regulatory ☐	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*			Specify State:	6. Method of Cooling Ice
Project Name: PG&E Topock - CMP	Signature:	Date 10/29/15			Sample Temp: 3.1 °C
Project Number: RC000753.0801					

Matrix: Ground ☑, Sediment ☐, Potable ☐, Soil ☐, NPDES ☐, Other Solid ☐, Surface ☐

Analyses Requested: Cr(VI) (E218.6) (NH4)2, SO4, NH4, OH, 4°C, 250 ml Poly; Metals Dissolved (6010B/ds) Cr, Mo, Na HNO3, 4°C; 500 ml Poly; Dissolved metals (Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na) (E200.8); HNO3, 4°C; 500 ml Poly; Metals Total (SW6010B) Fe; HNO3, 4°C; 500 ml Poly; Turbidity (SM2130); 4°C; 1000ml Poly; Specific Conductance (E120.1); 4°C; 1000ml Poly; Anions (E300.0) Chloride,Sulfate,Fluoride; 4°C; 1000ml; Anions (SM4500NO3E) Nitrate/Nitrite. H2SO4, 4°C; 125ml Poly; TDS (SM2540C); 4°C; 1000ml Poly; Total Alkalinity, speciated (SM2320B); 4°C; 1 L poly; Ammonia (SM4500NH3); H2SO4, 4°C; 125 mL poly; Gross Alpha/Beta (E900); HNO3; 2x1000ml Poly; Metals Dissolved (6020A/EF) Cr; HNO3, 4°C; 500 ml Poly; Ortho-Phosphate (E300.0); 4°C; 1000ml Poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr(VI)	Metals Dissolved Cr, Mo, Na	Dissolved metals	Metals Total Fe; HNO3, 4°C;	Turbidity	Specific Conductance	Anions	Nitrate/Nitrite	TDS	Total Alkalinity, speciated	Ammonia	Gross Alpha/Beta	Metals Dissolved Cr; HNO3,	Ortho-Phosphate	Turn Around Time	No. of container	Remarks
1	N017427-1	CW-01D-4Q15	10/29/15	0832	X			X		X	X	X	X	X	X	X	X	X				10	6	
2	-2	CW-01M-4Q15	10/29/15	0921	X			X		X	X	X	X	X	X	X	X	X				10	6	
3	-3	MW-204-4Q15	10/29/15	0935	X			X														10	1	
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Courier:

Tracking No.

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Nava Tep	10/29/15 1215	Dmgalang	10/29/15 1852
Dmgalang	10/29/15 2220	Dmgalang	10/29/15 2220

Turn Around Time (TAT)
- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

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

Special Instruction:

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

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; C = 4°C; Z = $Zn(AC)_2$; O = NaOH; T = $Na_2S_2O_3$; Others/Specify:

Container Type: T = Tube; V = VOA; P = Pint; J = Jar; B = Tedlar; G = Glass; M = Metal; P = Plastic; C = Can

ASSET Laboratories

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

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

Cooler Received/Opened On: 10/29/2015 Workorder: N017427

Rep sample Temp (Deg C): 2.1 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

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

Comments

Checklist Completed B for MBC 10/30/2015

Reviewed By: 11/12/15

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Nara Tep

02-Nov-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3C		
N017427-001F / CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	32OZP	1		
N017427-002F / CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N17427A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-DAY TAT.

Please analyze Ammonia by SM4500.

		Date/Time		Date/Time
Relinquished by:		11/2/15 1700	**Received by:**	GSO IRK# 529813159
Relinquished by:			**Received by:**	

ASSET Laboratories

WORK ORDER Summary

30-Oct-15

WorkOrder: N017427

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/29/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017427-001A	CW-01D-4Q15	10/29/2015 8:32:00 AM	11/12/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017427-001B			11/12/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/12/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/12/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/12/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/12/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/12/2015		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/12/2015			DISSOLVED MERCURY PREP	☐	☐	☐	WW
N017427-001C			11/12/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/12/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017427-001D			11/12/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/12/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/12/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/12/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/12/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/12/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/12/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/12/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/12/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017427-001E			11/12/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017427-001F			11/12/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

30-Oct-15

WorkOrder: N017427

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/29/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017427-002A	CW-01M-4Q15	10/29/2015 9:21:00 AM	11/12/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017427-002B			11/12/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/12/2015		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			11/12/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/12/2015		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			11/12/2015		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			11/12/2015		EPA 245.1	DISSOLVED MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/12/2015			DISSOLVED MERCURY PREP	☐	☐	☐	WW
N017427-002C			11/12/2015		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/12/2015		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N017427-002D			11/12/2015		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			11/12/2015		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			11/12/2015			Total Dissolved Solids Prep	☐	☐	☐	WW
			11/12/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
			11/12/2015		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			11/12/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/12/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/12/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			11/12/2015		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N017427-002E			11/12/2015		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N017427-002F			11/12/2015		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

30-Oct-15

WorkOrder: N017427

Client ID: ARCUS02

Project: PG&E Topock - CMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 10/29/2015

Comments: EQ EDD

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017427-003A	MW-204-4Q15	10/29/2015 9:35:00 AM	11/12/2015	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N017427-004A	FOLDER		11/12/2015		EDD	Client specific project	☐	☐	☐	LAB
			11/12/2015		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N017427

NAME	TEST METHOD
Quennie Manimtim	EPA 300.0
Claire Ignacio	EPA 200.7, EPA 200.8, EPA 6010B, EPA 245.1
Ryan Balilu	EPA 218.6, SM4500-NO3F
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B, SM 2320B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103890 **Analyst:** LSR

ASSET #: N017427 **Date Analyzed:** 10/30/2015

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 11/3/2015

2nd Level Reviewer Nancy 11/13/2015 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 10/29/15 1325
Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 uS/cm	CINV-150619A	9.78 uS/cm @ 22.6°C	% Rec: (90-110%)
1414	-150601B	1416 @ 22.7°C	
10009	-150619B	10090 @ 22.7°C	
99996	-150430A	100200 @ 22.7°C	

	Sample ID	Matrix	Reading	Comments
1	NO17415-001D	Water	7330 uS/cm @ 21.7°C	
2	-002D		7150 @ 21.3°C	
3	-003D		7260 @ 21.4°C	
4	-004D		8040 @ 21.5°C	
5	-005D		8150 @ 21.5°C	
6	-005D DUP		8130 @ 21.6°C	
7	-006D		7220 @ 21.5°C	
8	-007D		6960 @ 21.9°C	
9	-008D		4100 @ 22.1°C	
10	1413 1434 uS/cm	CINV-150527A	1434 uS/cm 22.6°C	
Dup	10,000 10310	-141205A	10310 22.6°C	Accept: 10% water, 20% soil
	Std Chk: 102800 100,000	-150309G	102800 22.9°C	% Rec: (90-110%)

Lisa 10/29

Date: 10/30/15 1430
Analyst: LSR

Standard	Std ID	Reading	Comments
9.78 uS/cm	CINV-150619A	9.80 uS/cm @ 22.4°C	% Rec: (90-110%)
1414	-150601B	1417 @ 22.3°C	
10009	-150619B	10050 @ 22.2°C	
99996	-150430A	100500 @ 22.2°C	

	Sample ID	Matrix	Reading	Comments
1	NO17427-001D	Water	6980 uS/cm @ 21.3°C	
2	-002D		7310 @ 20.9°C	
3	-002D DUP		7300 @ 20.9°C	
4				
5				Julia Ramit 11/3/2015
6				
7				
8	1413 uS/cm	CINV-150527A	1434 uS/cm @ 22.4°C	
9	10,000	-141205A	10366 @ 22.4°C	
10	100,001	-150309G	104500 @ 22.8°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52914 **Analyst:** LSR

ASSET #: N017427 **Date Analyzed:** 11/2/2015

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/~~MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 11/5/2015

2nd Level Reviewer: Nancy 11/13/2015 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N017427-001D,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.2860 - 61.2041)*1000000}{20}$$

= 4095 mg/L

Reporting result in two significant figures,

TDS =4100 mg/L

Julia Ramit 11/5/2015

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 2:21:46 P**
Prep End Date: **11/3/2015 11:10:00**

Initials/ Date: Lilia Ramit 11/5/2015

Prep Batch **52914** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52914	Water		100	☐	0	0	100	1.000		
MB-52914	Water		100	☐	0	0	100	1.000		
N017402-006D	Water		200	☐	0	0	100	0.500		
N017427-001D	Groundwater		20	☐	0	0	100	5.000		
N017427-001D-DU	Groundwater		20	☐	0	0	100	5.000		
N017427-002D	Groundwater		20	☐	0	0	100	5.000		
N017434-004D	Water		75	☐	0	0	100	1.333		
N017434-008F	Water		40	☐	0	0	100	2.500		
N017434-009F	Water		40	☐	0	0	100	2.500		
N017435-003E	Water		100	☐	0	0	100	1.000		
N017435-008E	Water		100	☐	0	0	100	1.000		
N017435-010F	Water		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Spk ID	Spike Name	SampType	AmtAdd
IWST151026A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 2:21:46 P**
Prep End Date:

Initials/ Date: Lilia Ramit 11/5/2015

Prep Batch **52914** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

	Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check	
L7	LCS-52914	Water	IWST170226A	100	☐	0	0	100	1.000	77.3254 77.2251	77.3220 77.3224	973
G	MB-52914	Water		100	☐	0	0	100	1.000	54.6130 54.6131	54.6132 54.6133	2
1	N017402-006D	Water	36.2	100 /200	☐	0	0	100	1.000	97.2630 97.2632	97.3690 97.3694	31
20	N017427-001D	Groundwater	7110	100 /20	☐	0	0	100	1.000	61.2041 61.2041	61.2856 61.2860	4095
C	N017427-001D-DUP	Groundwater	↓	100 /20	☐	0	0	100	1.000	55.2413 55.2413	55.2283 55.2282	4045
AR	N017427-002D	Groundwater	7340	100 /20	☐	0	0	100	1.000	53.6751 53.6753	53.7597 53.7601	4240
42	N017434-004D	Water	1779	100 /75	☐	0	0	100	1.000	54.2714 54.2712	54.3236 54.3540	1104
AA	N017434-008F	Water	3230	100 /40	☐	0	0	100	1.000	54.7742 54.7744	54.8672 54.8652	2270
AC	N017434-009F	Water	3800	100 /40	☐	0	0	100	1.000	64.0797 64.0797	64.2013 64.2017	3050
2	N017435-003E	Water	1450	100	☐	0	0	100	1.000	55.0865 55.0863	55.1764 55.1767	904
4	N017435-008E	Water	1324	100	☐	0	0	100	1.000	53.9286 53.9284	54.0062 54.0067	777
BC	N017435-010F	Water	5140	100 /20	☐	0	0	100	1.000	62.9413 62.9414	63.0506 63.0502	4440

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

T50413

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

TSS / TS / TDS Preparation and Runlog

Name of Test: TDS

QC Batch No.: 52914

Date Prepared: 11/2/15
Time Prepared: 1421 (Start Time)
Prepared By: LSR

Date of Weighing: 11/3/15
Time of Reading: 845 (Start time)
Weighings performed by: LSR

Oven Temperature: 180°C
Filter Paper Lot #: T50410

	Sample ID	Sample Vol. (ml)	Crucible+Filter 1st Final Tare Wt.(g)	Crucible+Filter 2nd Final Tare Wt.(g)	Crucible+Filter+Sample 1st Final Wt(g)	Crucible+Filter+Sample 2nd Final Wt(g)	TSS/TS/TDS (mg/L)	Comments
	Blank MB-52914	100	54.6130	54.6131	54.6132	54.6133	2	TDS/COND RATIO
1	LCS-52914	100	77.2254	77.2251	77.3220	77.3224	973	
2	N017402-006D	200	97.2630	97.2632	97.2690	97.2694	31	31/36.2 = 0.856
3	N017427-001D	20	61.2041	61.2041	61.2856	61.2860	4095	4095/7110 = 0.576
4	-001D DUP	20	55.7412	55.7413	55.8223	55.8222	4045	4045/7110 = 0.569
5	-002D	20	53.6751	53.6753	53.7597	53.7601	4240	4240/7340 = 0.578
6	N017434-004D	75	54.2714	54.2712	54.3536	54.3540	1104	1104/1779 = 0.621
7	-008F	40	54.7743	54.7744	54.8652	54.8652	2270	2270/3330 = 0.682
8	-009F	40	64.0797	64.0797	64.2013	64.2017	3050	3050/3800 = 0.803
9	N017435-003E	100	55.0865	55.0863	55.1764	55.1767	904	904/1450 = 0.623
10	-008E	100	53.9286	53.9284	54.0062	54.0061	777	777/1324 = 0.587
11	-010F	20	62.9613	62.9614	63.0506	63.0502	4440	4440/5140 = 0.864
12								
13								
14								
15								
16								
17								
18								LSR 11/3/15
19								
20								
Dup								

Julia Ramit 11/5/2015

Logbook #13

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO
Date Finished:11/03/15								
MB-52914	100	54.6131	54.6133	2	1	2		
LCS-52914	100	77.2251	77.3224	973	1	973		
N017402-006D	200	97.2632	97.2694	62	0.5	31	36.2	0.856
N017427-001D	20	61.2041	61.286	819	5	4095	7110	0.576
N017427-001D DUP	20	55.7413	55.8222	809	5	4045	7110	0.569
N017427-002D	20	53.6753	53.7601	848	5	4240	7340	0.578
N017434-004D	75	54.2712	54.354	828	1.33333333	1104	1779	0.621
N017434-008F	40	54.7744	54.8652	908	2.5	2270	3330	0.682
N017434-009F	40	64.0797	64.2017	1220	2.5	3050	3800	0.803
N017435-003E	100	55.0863	55.1767	904	1	904	1450	0.623
N017435-008E	100	53.9284	54.0061	777	1	777	1324	0.587
N017435-010F	20	62.9614	63.0502	888	5	4440	5140	0.864

Julia Ramit 11/5/2015

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52910
ASSET #: N017427

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/4/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N017399-002B PS/MS/MSD & N017415-007B MS failed, due to high analyte cocentration already present in the sample.However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: ____

2nd Level Reviewer 11/16/201 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52910
ASSET #: N017427

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/10/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Dilution test of Mg failed. However LCS passed criteria.
% Rec of Several analytes in N017399-001A PS/MS/MSD & N017415-006B MS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: _____

2nd Level Reviewer 11/16/201 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017427-001B** , the concentration in ug/L is calculated as follows:

Calcium , ug/L = 158.088 * 1 *(25/25) * 1000

Calcium , ug/L = 158088

Reporting results in two significant figures,

Calcium , ug/L = 160000



% RSD SUMMARY

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	K	0	4.14	15	PASS
Standard1	ICAL	1	K	0.1	8.28	15	PASS
Standard2	ICAL	1	K	1	0.49	15	PASS
Standard3	ICAL	1	K	5	0.38	15	PASS
Standard4	ICAL	1	K	10	0.22	15	PASS
Standard5	ICAL	1	K	20	0.077	15	PASS
Standard6	ICAL	1	K	40	0.096	15	PASS
ICV	ICV	1	K	10.019	0.074	15	PASS
ICB	ICB	1	K	0.046	23.2	15	<PQL
ICSA1	ICSA	1	K	0.024	41.89	15	<PQL
ICSAB1	ICSAB	1	K	9.95	0.15	15	PASS
MB-52910	MBLK	1	K	0.056	18.26	15	<PQL
LCS2-52910	LCS	1	K	20.46	1.049	15	PASS
CCV1	CCV	1	K	9.91	0.12	15	PASS
CCB1	CCB	1	K	0.049	25.67	15	<PQL
N017399-001A	SAMP	5	K	1.84	0.5	15	PASS
N017399-002B	SAMP	5	K	3.22	0.22	15	PASS
N017400-001B	SAMP	5	K	2.54	0.52	15	PASS
N017400-002B	SAMP	5	K	2.69	0.46	15	PASS
N017415-001B	SAMP	5	K	2.14	0.21	15	PASS
N017415-002B	SAMP	5	K	2.41	0.38	15	PASS
N017415-003B	SAMP	5	K	2.24	0.2	15	PASS
N017415-004B	SAMP	5	K	2.76	0.18	15	PASS
N017415-005B	SAMP	5	K	2.79	0.64	15	PASS
N017415-006B	SAMP	5	K	2.53	0.54	15	PASS
CCV2	CCV	1	K	9.82	0.16	15	PASS
CCB2	CCB	1	K	0.085	12.98	15	PASS
N017415-007B	SAMP	5	K	2.64	0.34	15	PASS
N017427-001B	SAMP	5	K	2.3	0.75	15	PASS
N017427-002B	SAMP	5	K	2.53	1.42	15	PASS
CCV3	CCV	1	K	10	0.083	15	PASS
CCB3	CCB	1	K	0.063	10.31	15	PASS
N017399-001A	SAMP	25	K	0.45	2.079	15	PASS
N017399-002B	SAMP	25	K	0.7	2.015	15	PASS
N017399-002B-PS	PS	5	K	7.77	0.17	15	PASS
N017399-002B-MS2	MS	5	K	7.73	0.036	15	PASS
N017399-002B-MSD2	MSD	5	K	7.61	0.16	15	PASS
N017399-002B	SAMP	50	K	0.41	1.73	15	PASS
N017399-002B	SAMP	250	K	0.17	0.68	15	PASS
CCV4	CCV	1	K	9.75	0.38	15	PASS
CCB4	CCB	1	K	0.066	14.65	15	PASS
N017399-002B-PS	PS	50	K	0.81	1.28	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017399-002B-MS2	MS	50	K	0.79	0.39	15	PASS
N017399-002B-MSD2	MSD	50	K	0.79	0.86	15	PASS
N017400-001B	SAMP	50	K	0.32	1.14	15	PASS
N017400-002B	SAMP	50	K	0.35	3.79	15	PASS
N017415-001B	SAMP	50	K	0.28	4.028	15	PASS
N017415-002B	SAMP	50	K	0.3	4.56	15	PASS
N017415-003B	SAMP	50	K	0.29	4.15	15	PASS
N017415-004B	SAMP	100	K	0.35	4.076	15	PASS
N017415-005B	SAMP	100	K	0.34	1.64	15	PASS
CCV5	CCV	1	K	9.93	0.049	15	PASS
CCB5	CCB	1	K	0.072	14.33	15	PASS
ICSA2	ICSA	1	K	0.052	9.45	15	PASS
ICSAB2	ICSAB	1	K	10.014	0.13	15	PASS
N017415-006B	SAMP	100	K	0.33	2.44	15	PASS
N017415-007B	SAMP	50	K	0.31	0.65	15	PASS
N017415-007B-MS2	MS	5	K	7.18	0.15	15	PASS
N017415-007B-MS2	MS	50	K	0.76	2.047	15	PASS
N017427-001B	SAMP	50	K	0.31	3.39	15	PASS
N017427-002B	SAMP	50	K	0.33	4.17	15	PASS
CCV6	CCV	1	K	10.093	0.19	15	PASS
CCB6	CCB	1	K	0.077	13.68	15	PASS
CCV7	CCV	1	K	10.11	0.062	15	PASS
CCB7	CCB	1	K	0.072	4.51	15	PASS
ICSA3	ICSA	1	K	0.068	15.84	15	<PQL
ICSAB3	ICSAB	1	K	9.98	0.15	15	PASS
CalBlk	IBLK	1	Na	0	1.8	15	PASS
Standard1	ICAL	1	Na	0.1	2.83	15	PASS
Standard2	ICAL	1	Na	1	0.4	15	PASS
Standard3	ICAL	1	Na	5	0.29	15	PASS
Standard4	ICAL	1	Na	10	0.22	15	PASS
Standard5	ICAL	1	Na	20	0.29	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	10.079	0.18	15	PASS
ICB	ICB	1	Na	-0.0041	172.78	15	<PQL
ICSA1	ICSA	1	Na	-0.0061	67.66	15	<PQL
ICSAB1	ICSAB	1	Na	10	0.4	15	PASS
MB-52910	MBLK	1	Na	-0.021	18.51	15	<PQL
LCS2-52910	LCS	1	Na	19.3	1.19	15	PASS
CCV1	CCV	1	Na	9.81	0.19	15	PASS
CCB1	CCB	1	Na	-0.019	13.33	15	PASS
N017399-001A	SAMP	5	Na	152.09	0.61	15	PASS
N017399-002B	SAMP	5	Na	299.62	0.76	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017400-001B	SAMP	5	Na	295.92	0.48	15	PASS
N017400-002B	SAMP	5	Na	281.18	1.031	15	PASS
N017415-001B	SAMP	5	Na	301.22	0.98	15	PASS
N017415-002B	SAMP	5	Na	294.52	0.42	15	PASS
N017415-003B	SAMP	5	Na	307.16	0.33	15	PASS
N017415-004B	SAMP	5	Na	326.62	0.76	15	PASS
N017415-005B	SAMP	5	Na	324.04	0.71	15	PASS
N017415-006B	SAMP	5	Na	313.25	0.84	15	PASS
CCV2	CCV	1	Na	9.68	0.25	15	PASS
CCB2	CCB	1	Na	0.15	3.23	15	PASS
N017415-007B	SAMP	5	Na	268.2	0.44	15	PASS
N017427-001B	SAMP	5	Na	262.4	0.34	15	PASS
N017427-002B	SAMP	5	Na	271.7	7.11	15	PASS
CCV3	CCV	1	Na	9.76	0.25	15	PASS
CCB3	CCB	1	Na	0.07	4.77	15	PASS
N017399-001A	SAMP	25	Na	31.008	0.64	15	PASS
N017399-002B	SAMP	25	Na	59.94	0.85	15	PASS
N017399-002B-PS	PS	5	Na	302.78	0.44	15	PASS
N017399-002B-MS2	MS	5	Na	301.14	0.61	15	PASS
N017399-002B-MSD2	MSD	5	Na	294.59	0.73	15	PASS
N017399-002B	SAMP	50	Na	29.16	0.74	15	PASS
N017399-002B	SAMP	250	Na	5.95	0.78	15	PASS
CCV4	CCV	1	Na	9.48	0.31	15	PASS
CCB4	CCB	1	Na	0.068	3.69	15	PASS
N017399-002B-PS	PS	50	Na	29.98	0.67	15	PASS
N017399-002B-MS2	MS	50	Na	29.42	0.57	15	PASS
N017399-002B-MSD2	MSD	50	Na	29.42	0.79	15	PASS
N017400-001B	SAMP	50	Na	29.087	0.96	15	PASS
N017400-002B	SAMP	50	Na	27.48	0.74	15	PASS
N017415-001B	SAMP	50	Na	29.085	0.57	15	PASS
N017415-002B	SAMP	50	Na	28.83	0.79	15	PASS
N017415-003B	SAMP	50	Na	29.92	0.76	15	PASS
N017415-004B	SAMP	100	Na	31.4	0.96	15	PASS
N017415-005B	SAMP	100	Na	31.83	0.69	15	PASS
CCV5	CCV	1	Na	9.53	0.34	15	PASS
CCB5	CCB	1	Na	0.024	22.21	15	<PQL
ICSA2	ICSA	1	Na	0.017	10.17	15	PASS
ICSAB2	ICSAB	1	Na	9.62	0.11	15	PASS
N017415-006B	SAMP	100	Na	30.36	0.51	15	PASS
N017415-007B	SAMP	50	Na	24.4	0.52	15	PASS
N017415-007B-MS2	MS	5	Na	268.79	0.48	15	PASS
N017415-007B-MS2	MS	50	Na	26.8	0.62	15	PASS

RSD SUMMARY: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017427-001B	SAMP	50	Na	26.59	0.68	15	PASS
N017427-002B	SAMP	50	Na	28.33	0.51	15	PASS
CCV6	CCV	1	Na	9.59	0.12	15	PASS
CCB6	CCB	1	Na	0.019	22.17	15	<PQL
CCV7	CCV	1	Na	9.56	0.0099	15	PASS
CCB7	CCB	1	Na	0.0058	83.38	15	<PQL
ICSA3	ICSA	1	Na	0.00055	577.89	15	<PQL
ICSAB3	ICSAB	1	Na	9.44	0.2	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Al	0	81.49	15	<PQL
Standard1	ICAL	1	Al	0.05	0.17	15	PASS
Standard2	ICAL	1	Al	1	0.65	15	PASS
Standard3	ICAL	1	Al	2	0.13	15	PASS
Standard4	ICAL	1	Al	5	0.061	15	PASS
Standard5	ICAL	1	Al	7.5	0.042	15	PASS
Standard6	ICAL	1	Al	10	0.032	15	PASS
Standard7	ICAL	1	Al	20	0.14	15	PASS
ICV	ICV	1	Al	10.12	0.19	15	PASS
ICB	ICB	1	Al	-0.0022	75.43	15	<PQL
LLCCV1	CCV1	1	Al	0.053	4.48	20	PASS
LLCCV1	CCV1	1	Al	0.052	3.0071	20	PASS
ICSA1	ICSA	1	Al	510.33	0.47	15	PASS
ICSAB1	ICSAB	1	Al	505.3	0.34	15	PASS
MB-52910	MBLK	1	Al	0.0011	126.36	15	<PQL
LCS1-52910	LCS	1	Al	10.14	0.077	15	PASS
N017399-001A	SAMP	1	Al	-0.018	13.29	15	PASS
N017399-001A	SAMP	5	Al	-0.007	29.9	15	<PQL
N017399-001A-PS	PS	1	Al	5.25	0.14	15	PASS
N017399-001A-MS1	MS	1	Al	5.27	0.071	15	PASS
N017399-001A-MSD1	MSD	1	Al	5.25	0.14	15	PASS
N017399-002B	SAMP	1	Al	-0.014	26.57	15	<PQL
N017400-001B	SAMP	1	Al	-0.01	12.54	15	PASS
N017400-002B	SAMP	1	Al	0.043	0.83	15	PASS
CCV1	CCV	1	Al	9.87	0.048	15	PASS
CCB1	CCB	1	Al	-0.0044	21.83	15	<PQL
N017415-001B	SAMP	1	Al	-0.01	11.57	15	PASS
N017415-002B	SAMP	1	Al	0.008	6.81	15	PASS
N017415-003B	SAMP	1	Al	-0.011	29.6	15	<PQL
N017415-004B	SAMP	1	Al	-0.01	5.54	15	PASS
N017415-005B	SAMP	1	Al	-0.011	8.0048	15	PASS
N017415-006B	SAMP	1	Al	-0.0085	6.31	15	PASS
N017415-006B-MS1	MS	1	Al	5.25	0.084	15	PASS
N017415-007B	SAMP	1	Al	-0.012	12.77	15	PASS
N017427-001B	SAMP	1	Al	-0.0092	9.24	15	PASS
N017427-002B	SAMP	1	Al	-0.0099	24.79	15	<PQL
CCV2	CCV	1	Al	9.94	0.15	15	PASS
CCB2	CCB	1	Al	-0.0044	5.82	15	PASS
LLCCV2	CCV2	1	Al	0.05	2.95	20	PASS
LLCCV2	CCV2	1	Al	0.051	4.29	20	PASS
ICSA2	ICSA	1	Al	495.26	0.35	15	PASS
ICSAB2	ICSAB	1	Al	491.41	0.65	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	B	0	0.22	15	PASS
Standard1	ICAL	1	B	0.1	0.54	15	PASS
Standard3	ICAL	1	B	1	0.33	15	PASS
Standard4	ICAL	1	B	2.5	0.41	15	PASS
Standard5	ICAL	1	B	3.75	0.34	15	PASS
Standard6	ICAL	1	B	5	0.46	15	PASS
Standard7	ICAL	1	B	10	0.28	15	PASS
ICV	ICV	1	B	5.083	0.41	15	PASS
ICB	ICB	1	B	0.02	12.16	15	PASS
LLCCV1	CCV1	1	B	0.1	0.43	20	PASS
LLCCV1	CCV1	1	B	0.096	1.77	20	PASS
ICSA1	ICSA	1	B	0.038	1.97	15	PASS
ICSAB1	ICSAB	1	B	0.97	0.089	15	PASS
MB-52910	MBLK	1	B	-0.0019	26.93	15	<PQL
LCS1-52910	LCS	1	B	5.043	0.46	15	PASS
N017399-001A	SAMP	1	B	0.54	0.85	15	PASS
N017399-001A	SAMP	5	B	0.12	0.33	15	PASS
N017399-001A-PS	PS	1	B	3.027	0.42	15	PASS
N017399-001A-MS1	MS	1	B	3.043	0.28	15	PASS
N017399-001A-MSD1	MSD	1	B	3.041	0.31	15	PASS
N017399-002B	SAMP	1	B	1.034	0.19	15	PASS
N017400-001B	SAMP	1	B	1.069	0.31	15	PASS
N017400-002B	SAMP	1	B	0.98	0.17	15	PASS
CCV1	CCV	1	B	5.018	0.6	15	PASS
CCB1	CCB	1	B	0.033	10.39	15	PASS
N017415-001B	SAMP	1	B	0.95	0.017	15	PASS
N017415-002B	SAMP	1	B	1.14	0.092	15	PASS
N017415-003B	SAMP	1	B	1.093	0.22	15	PASS
N017415-004B	SAMP	1	B	1.13	0.33	15	PASS
N017415-005B	SAMP	1	B	1.15	0.2	15	PASS
N017415-006B	SAMP	1	B	1.13	0.4	15	PASS
N017415-006B-MS1	MS	1	B	3.44	0.31	15	PASS
N017415-007B	SAMP	1	B	0.93	0.29	15	PASS
N017427-001B	SAMP	1	B	0.93	0.47	15	PASS
N017427-002B	SAMP	1	B	1.0004	0.66	15	PASS
CCV2	CCV	1	B	5.11	0.3	15	PASS
CCB2	CCB	1	B	0.047	4.78	15	PASS
LLCCV2	CCV2	1	B	0.13	1.21	20	PASS
LLCCV2	CCV2	1	B	0.12	1.17	20	PASS
ICSA2	ICSA	1	B	0.063	2.22	15	PASS
ICSAB2	ICSAB	1	B	1	0.085	15	PASS
CalBlk	IBLK	1	Ca	0	14.52	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Ca	0.2	6.94	15	PASS
Standard2	ICAL	1	Ca	1	1.28	15	PASS
Standard3	ICAL	1	Ca	2	1.37	15	PASS
Standard4	ICAL	1	Ca	5	0.34	15	PASS
Standard5	ICAL	1	Ca	7.5	0.71	15	PASS
Standard6	ICAL	1	Ca	10	0.25	15	PASS
Standard7	ICAL	1	Ca	20	0.85	15	PASS
ICV	ICV	1	Ca	10.13	0.46	15	PASS
ICB	ICB	1	Ca	-0.0045	540.23	15	<PQL
LLCCV1	CCV1	1	Ca	0.23	5.19	20	PASS
LLCCV1	CCV1	1	Ca	0.21	3.37	20	PASS
ICSA1	ICSA	1	Ca	518.03	0.038	15	PASS
ICSAB1	ICSAB	1	Ca	505.49	0.27	15	PASS
MB-52910	MBLK	1	Ca	0.029	69.92	15	<PQL
LCS1-52910	LCS	1	Ca	9.63	0.13	15	PASS
N017399-001A	SAMP	1	Ca	110.52	0.43	15	PASS
N017399-001A	SAMP	5	Ca	23.42	0.35	15	PASS
N017399-001A-PS	PS	1	Ca	121.53	0.15	15	PASS
N017399-001A-MS1	MS	1	Ca	120.16	0.35	15	PASS
N017399-001A-MSD1	MSD	1	Ca	120.34	0.072	15	PASS
N017399-002B	SAMP	1	Ca	232.24	0.24	15	PASS
N017400-001B	SAMP	1	Ca	163.38	0.25	15	PASS
N017400-002B	SAMP	1	Ca	144.24	0.19	15	PASS
CCV1	CCV	1	Ca	9.64	0.21	15	PASS
CCB1	CCB	1	Ca	0.025	189.16	15	<PQL
N017415-001B	SAMP	1	Ca	93.73	0.38	15	PASS
N017415-002B	SAMP	1	Ca	150.27	0.23	15	PASS
N017415-003B	SAMP	1	Ca	92.77	0.083	15	PASS
N017415-004B	SAMP	1	Ca	213	0.24	15	PASS
N017415-005B	SAMP	1	Ca	214.56	0.26	15	PASS
N017415-006B	SAMP	1	Ca	146.35	0.31	15	PASS
N017415-006B-MS1	MS	1	Ca	148.85	0.21	15	PASS
N017415-007B	SAMP	1	Ca	208.92	0.66	15	PASS
N017427-001B	SAMP	1	Ca	158.09	0.17	15	PASS
N017427-002B	SAMP	1	Ca	182.53	0.7	15	PASS
CCV2	CCV	1	Ca	9.76	0.92	15	PASS
CCB2	CCB	1	Ca	0.011	532.77	15	<PQL
LLCCV2	CCV2	1	Ca	0.2	6.42	20	PASS
LLCCV2	CCV2	1	Ca	0.16	12.97	20	PASS
ICSA2	ICSA	1	Ca	490.66	0.17	15	PASS
ICSAB2	ICSAB	1	Ca	478.67	0.15	15	PASS
CalBlk	IBLK	1	Fe	0	426.32	15	<PQL

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Fe	0.02	1.98	15	PASS
Standard2	ICAL	1	Fe	0.05	0.94	15	PASS
Standard3	ICAL	1	Fe	2	0.16	15	PASS
Standard4	ICAL	1	Fe	5	0.13	15	PASS
Standard5	ICAL	1	Fe	7.5	0.088	15	PASS
Standard6	ICAL	1	Fe	10	0.14	15	PASS
Standard7	ICAL	1	Fe	20	0.073	15	PASS
ICV	ICV	1	Fe	10.12	0.3	15	PASS
ICB	ICB	1	Fe	-0.0019	34.48	15	<PQL
LLCCV1	CCV1	1	Fe	0.018	2.26	20	PASS
LLCCV1	CCV1	1	Fe	0.017	0.51	20	PASS
ICSA1	ICSA	1	Fe	185.4	0.4	15	PASS
ICSAB1	ICSAB	1	Fe	183.71	0.29	15	PASS
MB-52910	MBLK	1	Fe	0.0046	37.4	15	<PQL
LCS1-52910	LCS	1	Fe	0.11	0.26	15	PASS
N017399-001A	SAMP	1	Fe	0.00019	236.98	15	<PQL
N017399-001A	SAMP	5	Fe	-0.0028	9.6	15	PASS
N017399-001A-PS	PS	1	Fe	0.05	0.97	15	PASS
N017399-001A-MS1	MS	1	Fe	0.052	1.31	15	PASS
N017399-001A-MSD1	MSD	1	Fe	0.05	0.6	15	PASS
N017399-002B	SAMP	1	Fe	-0.00014	88.36	15	<PQL
N017400-001B	SAMP	1	Fe	0.0041	10.55	15	PASS
N017400-002B	SAMP	1	Fe	0.0077	5.49	15	PASS
CCV1	CCV	1	Fe	9.97	0.21	15	PASS
CCB1	CCB	1	Fe	-0.0025	11.4	15	PASS
N017415-001B	SAMP	1	Fe	0.0045	11.46	15	PASS
N017415-002B	SAMP	1	Fe	0.013	2.28	15	PASS
N017415-003B	SAMP	1	Fe	0.0016	10.057	15	PASS
N017415-004B	SAMP	1	Fe	0.0046	12.77	15	PASS
N017415-005B	SAMP	1	Fe	0.0052	2.5	15	PASS
N017415-006B	SAMP	1	Fe	0.0027	8.6	15	PASS
N017415-006B-MS1	MS	1	Fe	0.058	0.71	15	PASS
N017415-007B	SAMP	1	Fe	0.0061	1.63	15	PASS
N017427-001B	SAMP	1	Fe	0.0013	8.8	15	PASS
N017427-002B	SAMP	1	Fe	0.0018	15.95	15	<PQL
CCV2	CCV	1	Fe	10.26	0.064	15	PASS
CCB2	CCB	1	Fe	-0.0024	32.44	15	<PQL
LLCCV2	CCV2	1	Fe	0.018	2.047	20	PASS
LLCCV2	CCV2	1	Fe	0.018	1.63	20	PASS
ICSA2	ICSA	1	Fe	188.31	0.35	15	PASS
ICSAB2	ICSAB	1	Fe	187.01	0.58	15	PASS
CalBlk	IBLK	1	Mg	0	14.94	15	PASS

RSD SUMMARY: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard1	ICAL	1	Mg	0.1	0.38	15	PASS
Standard2	ICAL	1	Mg	1	0.47	15	PASS
Standard3	ICAL	1	Mg	2	0.23	15	PASS
Standard4	ICAL	1	Mg	5	0.3	15	PASS
Standard5	ICAL	1	Mg	7.5	0.26	15	PASS
Standard6	ICAL	1	Mg	10	0.23	15	PASS
Standard7	ICAL	1	Mg	20	0.18	15	PASS
ICV	ICV	1	Mg	9.88	0.32	15	PASS
ICB	ICB	1	Mg	-0.0024	13.97	15	PASS
LLCCV1	CCV1	1	Mg	0.1	0.45	20	PASS
LLCCV1	CCV1	1	Mg	0.1	0.51	20	PASS
ICSA1	ICSA	1	Mg	475.95	0.53	15	PASS
ICSAB1	ICSAB	1	Mg	468.27	0.15	15	PASS
MB-52910	MBLK	1	Mg	0.0014	71.4	15	<PQL
LCS1-52910	LCS	1	Mg	9.43	0.32	15	PASS
N017399-001A	SAMP	1	Mg	20.26	0.79	15	PASS
N017399-001A	SAMP	5	Mg	4.59	0.53	15	PASS
N017399-001A-PS	PS	1	Mg	25.31	0.028	15	PASS
N017399-001A-MS1	MS	1	Mg	25.029	0.36	15	PASS
N017399-001A-MSD1	MSD	1	Mg	25	0.12	15	PASS
N017399-002B	SAMP	1	Mg	24.61	0.14	15	PASS
N017400-001B	SAMP	1	Mg	14.28	0.34	15	PASS
N017400-002B	SAMP	1	Mg	19.7	0.3	15	PASS
CCV1	CCV	1	Mg	9.19	0.41	15	PASS
CCB1	CCB	1	Mg	-0.0037	14.48	15	PASS
N017415-001B	SAMP	1	Mg	3.87	0.34	15	PASS
N017415-002B	SAMP	1	Mg	8.52	0.2	15	PASS
N017415-003B	SAMP	1	Mg	4.98	0.32	15	PASS
N017415-004B	SAMP	1	Mg	12.45	0.06	15	PASS
N017415-005B	SAMP	1	Mg	12.56	0.18	15	PASS
N017415-006B	SAMP	1	Mg	7.91	0.15	15	PASS
N017415-006B-MS1	MS	1	Mg	11.78	0.13	15	PASS
N017415-007B	SAMP	1	Mg	13.29	0.23	15	PASS
N017427-001B	SAMP	1	Mg	13.22	0.36	15	PASS
N017427-002B	SAMP	1	Mg	12.78	0.35	15	PASS
CCV2	CCV	1	Mg	10.31	0.3	15	PASS
CCB2	CCB	1	Mg	-0.0025	20.008	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	1.33	20	PASS
LLCCV2	CCV2	1	Mg	0.099	0.9	20	PASS
ICSA2	ICSA	1	Mg	497.31	0.41	15	PASS
ICSAB2	ICSAB	1	Mg	492.91	0.58	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-151007B,0.025<50mL
Standard2	MWST-151007B,0.25<50mL
Standard3	MWST-151007B,1.25<50mL
Standard4	MWST-151007B,2.5<50mL
Standard5	MWST-151007B,5<50mL
Standard6	MWST-151007B,10<50mL
ICV	MWST-151007CB,2.5<50mL
CCV	MWST-151007B,2.5<50mL
ICSA/ICSAB	MWST-151028A/151007D
Int. Std. (Sc):	MSST-150923A
PS Spike	MSST-140120B/MSST-111006A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/04/2015	07:34:35 AM
2	Standard1	ICAL	1	11/04/2015	07:37:52 AM
3	Standard2	ICAL	1	11/04/2015	07:41:09 AM
4	Standard3	ICAL	1	11/04/2015	07:44:57 AM
5	Standard4	ICAL	1	11/04/2015	07:48:49 AM
6	Standard5	ICAL	1	11/04/2015	07:52:42 AM
7	Standard6	ICAL	1	11/04/2015	07:56:37 AM
8	ICV	ICV	1	11/04/2015	07:59:24 AM
1	ICB	ICB	1	11/04/2015	08:03:16 AM
3	ICSA1	ICSA	1	11/04/2015	08:06:32 AM
4	ICSAB1	ICSAB	1	11/04/2015	08:09:51 AM
38	MB-52866	MBLK	1	11/04/2015	08:13:44 AM
39	LCS2-52866	LCS	1	11/04/2015	08:19:36 AM
40	N017404-001A	SAMP	5	11/04/2015	08:23:28 AM
41	N017404-002A	SAMP	5	11/04/2015	08:26:48 AM
42	N017404-002A	SAMP	25	11/04/2015	08:31:27 AM
43	N017404-002A-PS	PS	5	11/04/2015	08:35:15 AM
44	N017404-002A-MS2	MS	5	11/04/2015	08:39:04 AM
45	N017404-002A-MSD2	MSD	5	11/04/2015	08:42:54 AM
46	MB-52910	MBLK	1	11/04/2015	08:46:45 AM
47	LCS2-52910	LCS	1	11/04/2015	08:50:04 AM
5	CCV1	CCV	1	11/04/2015	08:53:24 AM
1	CCB1	CCB	1	11/04/2015	08:57:18 AM
48	N017399-001A	SAMP	5	11/04/2015	09:00:36 AM
49	N017399-002B	SAMP	5	11/04/2015	09:05:28 AM
50	N017400-001B	SAMP	5	11/04/2015	09:10:21 AM
51	N017400-002B	SAMP	5	11/04/2015	09:15:11 AM
52	N017415-001B	SAMP	5	11/04/2015	09:20:03 AM
53	N017415-002B	SAMP	5	11/04/2015	09:24:53 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N017415-003B	SAMP	5	11/04/2015	09:29:45 AM
55	N017415-004B	SAMP	5	11/04/2015	09:34:36 AM
56	N017415-005B	SAMP	5	11/04/2015	09:39:27 AM
57	N017415-006B	SAMP	5	11/04/2015	09:44:19 AM
5	CCV2	CCV	1	11/04/2015	09:49:10 AM
1	CCB2	CCB	1	11/04/2015	09:53:04 AM
58	N017415-007B	SAMP	5	11/04/2015	09:56:21 AM
59	N017427-001B	SAMP	5	11/04/2015	10:01:15 AM
60	N017427-002B	SAMP	5	11/04/2015	10:06:07 AM
61	MB-52882	MBLK	1	11/04/2015	10:11:00 AM
62	LCS2-52882	LCS	1	11/04/2015	10:14:20 AM
63	N017390-001B	SAMP	5	11/04/2015	10:19:10 AM
64	N017400-003B	SAMP	5	11/04/2015	10:24:04 AM
65	N017400-004B	SAMP	5	11/04/2015	10:28:56 AM
66	N017400-005B	SAMP	5	11/04/2015	10:33:47 AM
67	N017400-006B	SAMP	5	11/04/2015	10:38:37 AM
5	CCV3	CCV	1	11/04/2015	10:43:28 AM
1	CCB3	CCB	1	11/04/2015	10:47:22 AM
68	N017400-007B	SAMP	5	11/04/2015	10:50:39 AM
69	N017400-008B	SAMP	5	11/04/2015	10:55:31 AM
70	N017415-008B	SAMP	5	11/04/2015	10:59:51 AM
71	N017399-001A	SAMP	25	11/04/2015	11:04:45 AM
72	N017399-002B	SAMP	25	11/04/2015	11:08:06 AM
73	N017399-002B-PS	PS	5	11/04/2015	11:11:26 AM
74	N017399-002B-MS2	MS	5	11/04/2015	11:16:19 AM
75	N017399-002B-MSD2	MSD	5	11/04/2015	11:21:11 AM
76	N017399-002B	SAMP	50	11/04/2015	11:26:03 AM
77	N017399-002B	SAMP	250	11/04/2015	11:29:23 AM
5	CCV4	CCV	1	11/04/2015	11:41:12 AM
1	CCB4	CCB	1	11/04/2015	11:45:07 AM
78	N017399-002B-PS	PS	50	11/04/2015	11:48:27 AM
79	N017399-002B-MS2	MS	50	11/04/2015	11:51:47 AM
80	N017399-002B-MSD2	MSD	50	11/04/2015	11:55:07 AM
81	N017400-001B	SAMP	50	11/04/2015	11:58:27 AM
82	N017400-002B	SAMP	50	11/04/2015	12:01:46 PM
83	N017415-001B	SAMP	50	11/04/2015	12:05:06 PM
84	N017415-002B	SAMP	50	11/04/2015	12:08:25 PM
85	N017415-003B	SAMP	50	11/04/2015	12:11:44 PM
86	N017415-004B	SAMP	100	11/04/2015	12:15:04 PM
87	N017415-005B	SAMP	100	11/04/2015	12:18:23 PM
5	CCV5	CCV	1	11/04/2015	12:21:43 PM
1	CCB5	CCB	1	11/04/2015	12:25:36 PM
3	ICSA2	ICSA	1	11/04/2015	12:28:53 PM
4	ICSAB2	ICSAB	1	11/04/2015	12:32:10 PM
88	N017415-006B	SAMP	100	11/04/2015	12:35:35 PM
89	N017415-007B	SAMP	50	11/04/2015	12:38:55 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
105	N017415-007B-MS2	MS	5	11/04/2015	12:42:15 PM
104	N017415-007B-MS2	MS	50	11/04/2015	12:47:10 PM
90	N017427-001B	SAMP	50	11/04/2015	12:50:30 PM
91	N017427-002B	SAMP	50	11/04/2015	12:53:51 PM
62	LCS2-52882	LCS	1	11/04/2015	12:57:12 PM
92	N017390-001B	SAMP	25	11/04/2015	01:01:03 PM
93	N017400-003B	SAMP	100	11/04/2015	01:04:54 PM
94	N017400-004B	SAMP	100	11/04/2015	01:08:13 PM
5	CCV6	CCV	1	11/04/2015	01:11:32 PM
1	CCB6	CCB	1	11/04/2015	01:15:25 PM
95	N017400-004B	SAMP	500	11/04/2015	01:19:02 PM
96	N017400-004B-PS	PS	100	11/04/2015	01:22:21 PM
97	N017400-004B-MS2	MS	100	11/04/2015	01:25:40 PM
98	N017400-004B-MSD2	MSD	100	11/04/2015	01:28:59 PM
99	N017400-005B	SAMP	25	11/04/2015	01:32:19 PM
100	N017400-006B	SAMP	25	11/04/2015	01:35:39 PM
101	N017400-007B	SAMP	100	11/04/2015	01:38:59 PM
102	N017400-008B	SAMP	100	11/04/2015	01:42:18 PM
103	N017415-008B	SAMP	25	11/04/2015	01:45:39 PM
5	CCV7	CCV	1	11/04/2015	01:49:31 PM
1	CCB7	CCB	1	11/04/2015	01:53:26 PM
3	ICSA3	ICSA	1	11/04/2015	01:56:43 PM
4	ICSAB3	ICSAB	1	11/04/2015	02:00:01 PM

INJECTION LOG: 151110A1

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/10/2015	09:36:29 AM
2	Standard1	ICAL	1	11/10/2015	09:40:52 AM
3	Standard2	ICAL	1	11/10/2015	09:45:40 AM
4	Standard3	ICAL	1	11/10/2015	09:50:31 AM
5	Standard4	ICAL	1	11/10/2015	09:54:55 AM
6	Standard5	ICAL	1	11/10/2015	10:00:23 AM
7	Standard6	ICAL	1	11/10/2015	10:05:48 AM
8	Standard7	ICAL	1	11/10/2015	10:11:13 AM
9	ICV	ICV	1	11/10/2015	10:28:11 AM
1	ICB	ICB	1	11/10/2015	10:33:36 AM
2	LLCCV1	CCV1	1	11/10/2015	10:37:56 AM
2	LLCCV1	CCV1	1	11/10/2015	10:43:35 AM
4	ICSA1	ICSA	1	11/10/2015	10:48:24 AM
5	ICSAB1	ICSAB	1	11/10/2015	10:53:58 AM
98	MB-52910	MBLK	1	11/10/2015	10:59:26 AM
99	LCS1-52910	LCS	1	11/10/2015	11:03:47 AM
100	N017399-001A	SAMP	1	11/10/2015	11:09:12 AM
101	N017399-001A	SAMP	5	11/10/2015	11:14:38 AM
102	N017399-001A-PS	PS	1	11/10/2015	11:19:30 AM
103	N017399-001A-MS1	MS	1	11/10/2015	11:24:56 AM
104	N017399-001A-MSD1	MSD	1	11/10/2015	11:30:23 AM
105	N017399-002B	SAMP	1	11/10/2015	11:35:49 AM
106	N017400-001B	SAMP	1	11/10/2015	11:41:15 AM
107	N017400-002B	SAMP	1	11/10/2015	11:46:41 AM
7	CCV1	CCV	1	11/10/2015	11:52:05 AM
1	CCB1	CCB	1	11/10/2015	11:57:30 AM
108	N017415-001B	SAMP	1	11/10/2015	12:01:49 PM
109	N017415-002B	SAMP	1	11/10/2015	12:06:13 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
110	N017415-003B	SAMP	1	11/10/2015	12:11:37 PM
111	N017415-004B	SAMP	1	11/10/2015	12:17:00 PM
112	N017415-005B	SAMP	1	11/10/2015	12:22:24 PM
113	N017415-006B	SAMP	1	11/10/2015	12:27:48 PM
114	N017415-006B-MS1	MS	1	11/10/2015	01:11:01 PM
115	N017415-007B	SAMP	1	11/10/2015	01:16:28 PM
116	N017427-001B	SAMP	1	11/10/2015	01:21:52 PM
117	N017427-002B	SAMP	1	11/10/2015	01:27:17 PM
7	CCV2	CCV	1	11/10/2015	01:32:41 PM
1	CCB2	CCB	1	11/10/2015	01:38:06 PM
2	LLCCV2	CCV2	1	11/10/2015	01:42:55 PM
2	LLCCV2	CCV2	1	11/10/2015	01:53:03 PM
4	ICSA2	ICSA	1	11/10/2015	01:57:52 PM
5	ICSAB2	ICSAB	1	11/10/2015	02:03:27 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:07:48**
Prep End Date: **11/2/2015 3:30:00**
Initials/ Date: 11/16/2015

Prep Batch **52910** Prep Code: **200.7_PR** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-52910	Aqueous		25	☐	0	0	25	1.000		
LCS2-52910	Aqueous		25	☐	0	0	25	1.000		
MB-52910	Aqueous		25	☐	0	0	25	1.000		
N017399-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-001A-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:07:48**
Prep End Date: **11/2/2015 3:30:00**

Initials/ Date: 11/16/2015

Prep Batch **52910** Prep Code: **200.7_PR** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MSST-140120B	Sodium, 10000ppm (Secondary)	LCS/MS/MSD	0.025
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	11/04/2015	07:34:35 AM	Na	589.594	442	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	Na	589.594	420	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	Na	589.594	5039	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	Na	589.594	24874	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	Na	589.594	49512	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	Na	589.594	99141	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	Na	589.594	197629	40.000	mg/L	1.0000
Potassium								
CalBlk	11/04/2015	07:34:35 AM	K	766.451	-307	0.00	mg/L	
Standard1	11/04/2015	07:37:52 AM	K	766.451	593	0.1000	mg/L	
Standard2	11/04/2015	07:41:09 AM	K	766.451	5115	1.000	mg/L	
Standard3	11/04/2015	07:44:57 AM	K	766.451	25371	5.000	mg/L	
Standard4	11/04/2015	07:48:49 AM	K	766.451	50604	10.000	mg/L	
Standard5	11/04/2015	07:52:42 AM	K	766.451	101999	20.000	mg/L	
Standard6	11/04/2015	07:56:37 AM	K	766.451	205216	40.000	mg/L	1.0000

INITIAL CALIBRATION SUMMARY: 151110A1

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Boron								
CalBlk	11/10/2015	09:36:29 AM	B	249.677	11365	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	B	249.677	6740	0.1000	mg/L	
Standard3	11/10/2015	09:50:31 AM	B	249.677	82202	1.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	B	249.677	189884	2.500	mg/L	
Standard5	11/10/2015	10:00:23 AM	B	249.677	284386	3.750	mg/L	
Standard6	11/10/2015	10:05:48 AM	B	249.677	375446	5.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	B	249.677	731126	10.000	mg/L	0.9998
Magnesium								
CalBlk	11/10/2015	09:36:29 AM	Mg	279.079	182	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Mg	279.079	2219	0.1000	mg/L	
Standard2	11/10/2015	09:45:40 AM	Mg	279.079	18072	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Mg	279.079	44603	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Mg	279.079	101202	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Mg	279.079	151360	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Mg	279.079	197743	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Mg	279.079	385619	20.000	mg/L	0.9998
Aluminum								
CalBlk	11/10/2015	09:36:29 AM	Al	237.313	15	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Al	237.313	549	0.0500	mg/L	
Standard2	11/10/2015	09:45:40 AM	Al	237.313	9186	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Al	237.313	23708	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Al	237.313	51160	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Al	237.313	76838	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Al	237.313	100485	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Al	237.313	195893	20.000	mg/L	0.9997
Calcium								
CalBlk	11/10/2015	09:36:29 AM	Ca	227.546	64	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Ca	227.546	113	0.2000	mg/L	
Standard2	11/10/2015	09:45:40 AM	Ca	227.546	502	1.000	mg/L	
Standard3	11/10/2015	09:50:31 AM	Ca	227.546	1250	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Ca	227.546	2879	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Ca	227.546	4327	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Ca	227.546	5663	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Ca	227.546	10997	20.000	mg/L	0.9998
Iron								
CalBlk	11/10/2015	09:36:29 AM	Fe	273.953	77	0.00	mg/L	
Standard1	11/10/2015	09:40:52 AM	Fe	273.953	884	0.0200	mg/L	
Standard2	11/10/2015	09:45:40 AM	Fe	273.953	2562	0.050	mg/L	
Standard3	11/10/2015	09:50:31 AM	Fe	273.953	115010	2.000	mg/L	
Standard4	11/10/2015	09:54:55 AM	Fe	273.953	261908	5.000	mg/L	
Standard5	11/10/2015	10:00:23 AM	Fe	273.953	394094	7.500	mg/L	
Standard6	11/10/2015	10:05:48 AM	Fe	273.953	517059	10.000	mg/L	
Standard7	11/10/2015	10:11:13 AM	Fe	273.953	1009915	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10019.040	500	10000	0	100	90	110				
Sodium	10078.967	500	10000	0	101	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9907.437	500	10000	0	99.1	90	110				
Sodium	9808.247	500	10000	0	98.1	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125810**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9823.547	500	10000	0	98.2	90	110				
Sodium	9680.031	500	10000	0	96.8	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9999.030	500	10000	0	100	90	110				
Sodium	9758.992	500	10000	0	97.6	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **CCV** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125834**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9747.808	500	10000	0	97.5	90	110				
Sodium	9477.942	500	10000	0	94.8	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9929.652	500	10000	0	99.3	90	110				
Sodium	9530.829	500	10000	0	95.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10092.984	500	10000	0	101	90	110				
Sodium	9593.983	500	10000	0	95.9	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **103953**
Client ID: **CCV**	Batch ID: **R103953**	TestNo: **EPA 200.7**		Analysis Date: **11/4/2015**	SeqNo: **2125871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10111.986	500	10000	0	101	90	110				
Sodium	9556.105	500	10000	0	95.6	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICV** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10122.277	50	10000	0	101	90	110				
Boron	5083.433	100	5000	0	102	90	110				
Calcium	10126.074	500	10000	0	101	90	110				
Iron	10119.756	20	10000	0	101	90	110				
Magnesium	9883.584	100	10000	0	98.8	90	110				

Sample ID **LLCCV1** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	52.043	50	50.00	0	104	80	120				
Boron	96.348	100	100.0	0	96.3	80	120				
Calcium	210.631	500	200.0	0	105	80	120				
Iron	17.369	20	20.00	0	86.8	80	120				
Magnesium	103.671	100	100.0	0	104	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **CCV** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9874.750	50	10000	0	98.7	90	110				
Boron	5017.523	100	5000	0	100	90	110				
Calcium	9642.957	500	10000	0	96.4	90	110				
Iron	9966.094	20	10000	0	99.7	90	110				
Magnesium	9185.448	100	10000	0	91.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCV**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9935.153	50	10000	0	99.4	90	110				
Boron	5105.957	100	5000	0	102	90	110				
Calcium	9756.907	500	10000	0	97.6	90	110				
Iron	10257.501	20	10000	0	103	90	110				
Magnesium	10306.497	100	10000	0	103	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ZZZZZZ**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	51.140	50	50.00	0	102	70	130				
Boron	120.275	100	100.0	0	120	70	130				
Calcium	162.187	500	200.0	0	81.1	70	130				
Iron	17.499	20	20.00	0	87.5	70	130				
Magnesium	98.678	100	100.0	0	98.7	70	130				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	46.364	500									
Sodium	-4.100499	500									

Sample ID	**CCB1**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49.391	500									
Sodium	-18.943199	500									

Sample ID	**CCB2**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	85.105	500									
Sodium	145.637	500									

Sample ID	**CCB3**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	63.177	500									
Sodium	70.296	500									

Sample ID	**CCB4**	SampType:	**CCB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**CCB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125835**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	CCB4	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125835

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	65.503	500									
Sodium	68.198	500									

Sample ID	CCB5	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125847

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	72.291	500									
Sodium	23.500	500									

Sample ID	CCB6	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	76.815	500									
Sodium	18.539	500									

Sample ID	CCB7	SampType:	CCB	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:		RunNo:	103953
Client ID:	CCB	Batch ID:	R103953	TestNo:	EPA 200.7			Analysis Date:	11/4/2015	SeqNo:	2125872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	72.452	500									
Sodium	5.756	500									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **ICB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-2.242391	50									
Boron	20.464	100									
Calcium	-4.459163	500									
Iron	-1.874465	20									
Magnesium	-2.419701	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-4.439899	50									
Boron	32.624	100									
Calcium	25.076	500									
Iron	-2.462547	20									
Magnesium	-3.713109	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **104064**
Client ID: **CCB**	Batch ID: **R104064**	TestNo: **EPA 200.7**		Analysis Date: **11/10/2015**	SeqNo: **2132982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	-4.435265	50									
Boron	47.322	100									
Calcium	10.724	500									
Iron	-2.432628	20									
Magnesium	-2.455502	100									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSA** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	23.496	500									
Sodium	-6.13799	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSAB** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9946.594	500	10000	0	99.5	80	120				
Sodium	9999.827	500	10000	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSA** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.497	500									
Sodium	16.921	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSAB** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	10013.782	500	10000	0	100	80	120				
Sodium	9624.486	500	10000	0	96.2	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ICSA** Batch ID: **R103953** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125873**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	**ICSA3**	SampType:	**ICSA**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSA**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	67.815	500									
Sodium	0.551	500									

Sample ID	**ICSAB3**	SampType:	**ICSAB**	TestCode:	**200.7_WDPG**	Units:	**µg/L**	Prep Date:		RunNo:	**103953**
Client ID:	**ICSAB**	Batch ID:	**R103953**	TestNo:	**EPA 200.7**			Analysis Date:	**11/4/2015**	SeqNo:	**2125874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	9980.581	500	10000	0	99.8	80	120				
Sodium	9440.724	500	10000	0	94.4	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSA** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510333.526	50	500000	0	102	80	120				
Boron	38.420	100									
Calcium	518034.854	500	500000	0	104	80	120				
Iron	185399.041	20	200000	0	92.7	80	120				
Magnesium	475951.115	100	500000	0	95.2	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSAB** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505300.009	50	500000	0	101	80	120				
Boron	972.086	100	1000	0	97.2	80	120				
Calcium	505488.249	500	500000	0	101	80	120				
Iron	183705.639	20	200000	0	91.9	80	120				
Magnesium	468269.785	100	500000	0	93.7	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSA** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	495255.705	50	500000	0	99.1	80	120				
Boron	63.074	100									
Calcium	490662.525	500	500000	0	98.1	80	120				
Iron	188308.034	20	200000	0	94.2	80	120				
Magnesium	497310.102	100	500000	0	99.5	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ICSAB** Batch ID: **R104064** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	491409.393	50	500000	0	98.3	80	120				
Boron	995.904	100	1000	0	99.6	80	120				
Calcium	478671.922	500	500000	0	95.7	80	120				
Iron	187005.737	20	200000	0	93.5	80	120				
Magnesium	492909.806	100	500000	0	98.6	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.24	124.42	65-125	PASS
Standard2	ICAL	1	1.0091	100.91	65-125	PASS
Standard3	ICAL	1	1	100	65-125	PASS
Standard4	ICAL	1	1.0052	100.52	65-125	PASS
Standard5	ICAL	1	0.99	98.89	65-125	PASS
Standard6	ICAL	1	1	99.59	65-125	PASS
ICV	ICV	1	1.0013	100.13	65-125	PASS
ICB	ICB	1	0.99	99.25	65-125	PASS
ICSA1	ICSA	1	0.99	98.97	65-125	PASS
ICSAB1	ICSAB	1	1.0026	100.26	65-125	PASS
MB-52910	MBLK	1	0.99	99.22	65-125	PASS
LCS2-52910	LCS	1	1.084	108.41	65-125	PASS
CCV1	CCV	1	1.016	101.59	65-125	PASS
CCB1	CCB	1	1.0054	100.54	65-125	PASS
N017399-001A	SAMP	5	1.013	101.34	65-125	PASS
N017399-002B	SAMP	5	0.99	99.033	65-125	PASS
N017400-001B	SAMP	5	1.0032	100.32	65-125	PASS
N017400-002B	SAMP	5	1.0008	100.08	65-125	PASS
N017415-001B	SAMP	5	0.98	97.79	65-125	PASS
N017415-002B	SAMP	5	0.95	94.93	65-125	PASS
N017415-003B	SAMP	5	0.93	92.88	65-125	PASS
N017415-004B	SAMP	5	0.94	93.59	65-125	PASS
N017415-005B	SAMP	5	0.91	90.84	65-125	PASS
N017415-006B	SAMP	5	0.87	86.72	65-125	PASS
CCV2	CCV	1	0.85	85.077	65-125	PASS
CCB2	CCB	1	0.85	85.39	65-125	PASS
N017415-007B	SAMP	5	0.82	82.48	65-125	PASS
N017427-001B	SAMP	5	0.83	82.6	65-125	PASS
N017427-002B	SAMP	5	0.93	93.45	65-125	PASS
CCV3	CCV	1	0.97	96.5	65-125	PASS
CCB3	CCB	1	0.95	94.9	65-125	PASS
N017399-001A	SAMP	25	0.97	96.81	65-125	PASS
N017399-002B	SAMP	25	0.98	98.16	65-125	PASS
N017399-002B-PS	PS	5	0.96	96.033	65-125	PASS
N017399-002B-MS2	MS	5	0.93	92.96	65-125	PASS
N017399-002B-MSD2	MSD	5	0.88	87.93	65-125	PASS
N017399-002B	SAMP	50	0.91	90.55	65-125	PASS
N017399-002B	SAMP	250	0.91	91.36	65-125	PASS
CCV4	CCV	1	0.97	96.92	65-125	PASS
CCB4	CCB	1	0.93	93.31	65-125	PASS

INTERNAL STANDARD: 151104A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017399-002B-PS	PS	50	0.92	91.67	65-125	PASS
N017399-002B-MS2	MS	50	0.92	92.11	65-125	PASS
N017399-002B-MSD2	MSD	50	0.92	92.23	65-125	PASS
N017400-001B	SAMP	50	0.92	91.87	65-125	PASS
N017400-002B	SAMP	50	0.92	92.025	65-125	PASS
N017415-001B	SAMP	50	0.92	92.086	65-125	PASS
N017415-002B	SAMP	50	0.92	91.73	65-125	PASS
N017415-003B	SAMP	50	0.92	91.75	65-125	PASS
N017415-004B	SAMP	100	0.91	91.12	65-125	PASS
N017415-005B	SAMP	100	0.91	91.052	65-125	PASS
CCV5	CCV	1	0.93	93.2	65-125	PASS
CCB5	CCB	1	0.98	98.49	65-125	PASS
ICSA2	ICSA	1	0.98	98.1	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.19	65-125	PASS
N017415-006B	SAMP	100	0.98	97.54	65-125	PASS
N017415-007B	SAMP	50	0.96	95.87	65-125	PASS
N017415-007B-MS2	MS	5	0.93	93.48	65-125	PASS
N017415-007B-MS2	MS	50	0.94	93.56	65-125	PASS
N017427-001B	SAMP	50	0.94	94.2	65-125	PASS
N017427-002B	SAMP	50	0.95	94.76	65-125	PASS
CCV6	CCV	1	0.96	95.52	65-125	PASS
CCB6	CCB	1	0.95	94.87	65-125	PASS
CCV7	CCV	1	0.95	94.76	65-125	PASS
CCB7	CCB	1	0.94	94.3	65-125	PASS
ICSA3	ICSA	1	0.95	95.13	65-125	PASS
ICSAB3	ICSAB	1	0.96	96.16	65-125	PASS

INTERNAL STANDARD: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0069	100.69	65-125	PASS
Standard2	ICAL	1	1.15	115.41	65-125	PASS
Standard3	ICAL	1	1.13	113.37	65-125	PASS
Standard4	ICAL	1	1.018	101.82	65-125	PASS
Standard5	ICAL	1	1.099	109.92	65-125	PASS
Standard6	ICAL	1	1.032	103.18	65-125	PASS
Standard7	ICAL	1	1.052	105.19	65-125	PASS
ICV	ICV	1	1.051	105.1	65-125	PASS
ICB	ICB	1	1.014	101.36	65-125	PASS
LLCCV1	CCV1	1	1.014	101.43	65-125	PASS
LLCCV1	CCV1	1	1.018	101.8	65-125	PASS
ICSA1	ICSA	1	0.94	94.083	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.035	65-125	PASS
MB-52910	MBLK	1	1.026	102.58	65-125	PASS
LCS1-52910	LCS	1	0.96	96.009	65-125	PASS
N017399-001A	SAMP	1	1.028	102.76	65-125	PASS
N017399-001A	SAMP	5	1.013	101.26	65-125	PASS
N017399-001A-PS	PS	1	1.024	102.44	65-125	PASS
N017399-001A-MS1	MS	1	1.024	102.36	65-125	PASS
N017399-001A-MSD1	MSD	1	1.027	102.66	65-125	PASS
N017399-002B	SAMP	1	0.98	98.26	65-125	PASS
N017400-001B	SAMP	1	0.98	98.096	65-125	PASS
N017400-002B	SAMP	1	1	99.92	65-125	PASS
CCV1	CCV	1	1.027	102.69	65-125	PASS
CCB1	CCB	1	1	99.63	65-125	PASS
N017415-001B	SAMP	1	0.93	93.31	65-125	PASS
N017415-002B	SAMP	1	0.96	95.95	65-125	PASS
N017415-003B	SAMP	1	0.86	86.14	65-125	PASS
N017415-004B	SAMP	1	1.0058	100.58	65-125	PASS
N017415-005B	SAMP	1	1.0086	100.86	65-125	PASS
N017415-006B	SAMP	1	1.035	103.54	65-125	PASS
N017415-006B-MS1	MS	1	1.014	101.42	65-125	PASS
N017415-007B	SAMP	1	1	99.54	65-125	PASS
N017427-001B	SAMP	1	0.94	94.05	65-125	PASS
N017427-002B	SAMP	1	1	99.53	65-125	PASS
CCV2	CCV	1	1.017	101.72	65-125	PASS
CCB2	CCB	1	0.99	99.14	65-125	PASS
LLCCV2	CCV2	1	0.99	99.44	65-125	PASS
LLCCV2	CCV2	1	1	99.5	65-125	PASS
ICSA2	ICSA	1	0.93	93.067	65-125	PASS

INTERNAL STANDARD: 151110A1

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
ICSAB2	ICSAB	1	0.96	95.53	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017427
Test Method: EPA 200.7
Analysis Date: 11/04/15

Matrix: Groundwater
Batch No.: 52910

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

~~Dilution test is not applicable to K. The calculated concentration is <25XRL.~~

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017399-002B -DT 25X	Potassium	ug/L	17441.02	NA	16095.72	8.36%	10
N017399-002B -DT 250X	Sodium	ug/L	1487857	PASS	1458068	2.04%	10

Note: NA - Not Applicable

11/16/201
for

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017427
Test Method: EPA 200.7
Analysis Date: 11/10/15

Matrix: Groundwater
Batch No.: 52910

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to Al , B & Fe. The calculated concentration is <25XRL.
Dilution test of Mg failed. However LCS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017399-001A -DT 5X	Aluminum	ug/L	0	NA	0		10
N017399-001A -DT 5X	Boron	ug/L	575.5936	NA	536.1142	7.36%	10
N017399-001A -DT 5X	Calcium	ug/L	117090.2	PASS	110515.2	5.95%	10
N017399-001A -DT 5X	Iron	ug/L	0	NA	0		10
N017399-001A -DT 5X	Magnesium	ug/L	22953.83	FAIL	20258.61	13.30%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N017399-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125829**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	38850.638	2500	20000	16100	114	80	120				

Sample ID **N017399-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **103953**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/4/2015** SeqNo: **2125836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1498971.792	25000	20000	1458000	205	80	120				S

Sample ID **N017399-001A-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **104064**
Client ID: **ZZZZZZ** Batch ID: **52910** TestNo: **EPA 200.7** Analysis Date: **11/10/2015** SeqNo: **2132963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5251.795	50	10000	0	52.5	80	120				S
Boron	3026.964	100	5000	536.1	49.8	80	120				S
Calcium	121527.732	500	10000	110500	110	80	120				
Iron	49.650	20	100.0	0	49.6	80	120				S
Magnesium	25311.227	100	10000	20260	50.5	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017427

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/4/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Cr, As, Ba, Cd, Co, Pb, Mn, V & Zn only.
%Rec of Bi [IS] in N017427-01B & 02B/MS failed, low bias. Pb for reanalysis.
Also in ICSA3/ICSAB3. However, samples are closed by ICSA2/ICSAB2.
%RSD of Ba & As in N017400-01B DT (df=5) > 15%. However, %difference of Ba passed criteria and dilution test of As is not applicable.
%Rec of Co in N017400-01B PS/MS/MSD & N017427-02B MS failed, low bias. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: —

2nd Level Reviewer 11/16/2015 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017427

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 11/9/2015

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Sb, Be, Cu, Mo, Ni, Se & Tl only. Also for Pb rerun of N017427-01B,02B/MS.
%RSD of Se in ICAL Std 0.5 pbb > 15%. Also %RSD in LLCCV1 > 15%. However, %Rec of Se in LLICV passed criteria.
%RSD of Se N017400-001B DT (df=5) > 15% with result > PQL. However, %difference passed criteria.
%RSD of Se in LLCCV1 > 20%. However, %Rec passed criteria.
%Rec of Mo & Se in N017400-01B PS/MS/MSD & N017427-02B MS failed, low bias. However, LCS passed criteria.
Dilution was necessary for Be in N017427-01B due to failing %Rec of Li [IS]. Sample was reported at dilution which passed the %Rec criteria of IS.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/201 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52909
ASSET #: N017427
Instrument ID: ICPMS-02
Analyst: CEI
Method:
Date Analyzed: 11/10/2015

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Ag rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: —

2nd Level Reviewer 11/16/201 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L , in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N017427-002B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 1.128268952 * 1 * (25/25)

Arsenic , ug/L = 1.128269

Reporting results in two significant figures,

Arsenic , ug/L = 1.1



% RSD SUMMARY

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	111 Cd [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.82	15	PASS	0.14	0.98	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	2.26	15	PASS	0.56	3.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	0.39	15	PASS	5.24	0.4	15	PASS
Std4-10/100 ppb	ICAL	1	10.41	1.41	15	PASS	10.36	1.0027	15	PASS
Std5-20/200 ppb	ICAL	1	20.98	0.79	15	PASS	20.84	0.82	15	PASS
Std6-40/400 ppb	ICAL	1	41.18	0.97	15	PASS	40.84	0.44	15	PASS
Std7-100/1000 ppb	ICAL	1	101.85	0.2	15	PASS	100.87	0.38	15	PASS
Std8-200/2000 ppb	ICAL	1	198.71	3.79	15	PASS	199.29	3.18	15	PASS
ICV	ICV	1	10.62	1.87	15	PASS	104.17	0.29	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.53	2.55	20	PASS	1.096	3.14	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.78	0.68	15	PASS	17.89	0.85	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.94	0.93	15	PASS	108.83	0.57	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	27.44	0.71	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	5.34	34.98	15	NR!
N017400-001B-PS	PS	1	8.65	2.3	15	PASS	118.28	0.4	15	PASS
N017400-001B-MS	MS	1	8.3	0.86	15	PASS	114.94	0.38	15	PASS
N017400-001B-MSD	MSD	1	8.45	0.74	15	PASS	115.62	0.35	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	61.92	0.29	15	PASS
CCV1	CCV	1	20.64	0.97	15	PASS	21.66	1.22	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	12.63	0.53	15	PASS
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	64.16	0.99	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	14.64	0.37	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	42.13	0.37	15	PASS
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	42.9	1.011	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	17.99	0.47	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	95.82	0.85	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	19.18	1.54	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	80.77	0.66	15	PASS
N017427-002B-MS	MS	1	8.61	0.44	15	PASS	171.8	1.1	15	PASS
CCV2	CCV	1	20.83	1.24	15	PASS	21.67	0.27	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.00069	281.8	15	<PQL
LLCCV1	CCV2	1	0.53	10.54	20	PASS	1.12	2.042	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.79	0.73	15	PASS	18.67	0.71	15	PASS
CCV3	CCV	1	20.78	0.24	15	PASS	21.19	0.41	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	111 Cd [3]				137 Ba [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.7	0.41	15	PASS	21.19	0.89	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.64	1.23	15	PASS	20.88	1.46	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0014	83.77	15	<PQL
CCV6	CCV	1	20.56	0.25	15	PASS	21.12	1.24	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.55	3.72	20	PASS	1.11	1.21	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.53	0.76	15	PASS	18.12	0.81	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				51 V [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	1.053	15	PASS	0.09	22.98	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	2.19	15	PASS	0.53	6.94	15	PASS
Std3-5/50 ppb	ICAL	1	5.3	0.9	15	PASS	5.29	0.94	15	PASS
Std4-10/100 ppb	ICAL	1	10.42	0.77	15	PASS	10.28	0.19	15	PASS
Std5-20/200 ppb	ICAL	1	20.72	0.39	15	PASS	20.6	1.096	15	PASS
Std6-40/400 ppb	ICAL	1	41.13	0.3	15	PASS	40.52	0.99	15	PASS
Std7-100/1000 ppb	ICAL	1	101.39	0.43	15	PASS	100.56	1.1	15	PASS
Std8-200/2000 ppb	ICAL	1	198.98	0.9	15	PASS	199.53	1.32	15	PASS
ICV	ICV	1	10.43	0.76	15	PASS	10.098	1.22	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.093	0.65	20	PASS	1.042	5.55	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.011	101.16	15	<PQL
ICSAB1	ICSAB	1	21.55	0.58	15	PASS	21.54	0.099	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	0.025	14.45	15	PASS
LCS-52909	LCS	1	10.77	0.26	15	PASS	10.67	1.29	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	2.63	0.33	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.64	7.3	15	PASS
N017400-001B-PS	PS	1	8.98	0.36	15	PASS	11.17	1.67	15	PASS
N017400-001B-MS	MS	1	8.72	0.54	15	PASS	10.94	0.32	15	PASS
N017400-001B-MSD	MSD	1	8.76	0.62	15	PASS	10.81	1.13	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	2.81	2.5	15	PASS
CCV1	CCV	1	20.66	0.86	15	PASS	20.36	0.49	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.016	34.29	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	3.82	0.66	15	PASS
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	3.29	2.78	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	2.38	1.68	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	2.33	1.85	15	PASS
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	2.38	0.72	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	2.96	1.95	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	3.11	2.22	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	2.056	1.58	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	2.32	2.28	15	PASS
N017427-002B-MS	MS	1	8.95	1.1	15	PASS	10.68	1.17	15	PASS
CCV2	CCV	1	20.9	0.24	15	PASS	20.1	0.75	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0063	73.9	15	<PQL
LLCCV1	CCV2	1	1.086	1.72	20	PASS	1.08	3.86	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0063	148.72	15	<PQL
ICSAB2	ICSAB	1	21.62	0.62	15	PASS	20.88	1.58	15	PASS
CCV3	CCV	1	20.68	0.77	15	PASS	20.51	1.49	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.025	29.38	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				51 V [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.56	0.34	15	PASS	20.43	1.16	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.023	13.61	15	PASS
CCV5	CCV	1	20.62	0.3	15	PASS	20.71	2.68	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.01	111.72	15	<PQL
CCV6	CCV	1	20.76	0.27	15	PASS	20.84	0.91	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.074	0.84	20	PASS	1.07	3.6	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.46	0.63	15	PASS	21.069	0.38	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	12.29	15	PASS	0.13	17.22	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	2.047	15	PASS	0.55	3.59	15	PASS
Std3-5/50 ppb	ICAL	1	5.26	0.56	15	PASS	5.22	1.32	15	PASS
Std4-10/100 ppb	ICAL	1	10.27	0.38	15	PASS	10.43	0.52	15	PASS
Std5-20/200 ppb	ICAL	1	20.62	1.82	15	PASS	20.78	1.44	15	PASS
Std6-40/400 ppb	ICAL	1	40.67	1.91	15	PASS	40.54	2.35	15	PASS
Std7-100/1000 ppb	ICAL	1	100.51	1.68	15	PASS	100.92	1.44	15	PASS
Std8-200/2000 ppb	ICAL	1	199.53	1.16	15	PASS	199.32	0.91	15	PASS
ICV	ICV	1	10.26	1.21	15	PASS	101.043	0.77	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.089	2.2	20	PASS	0.55	7.27	20	PASS
ICSA1	ICSA	1	0.19	16.55	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.32	1.19	15	PASS	19	1.14	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.53	1.46	15	PASS	105.46	0.4	15	PASS
N017400-001B	SAMP	1	0.51	4.011	15	PASS	0.3	3.2	15	PASS
N017400-001B	SAMP	5	0.12	5.46	15	PASS	0.074	2.17	15	PASS
N017400-001B-PS	PS	1	8.52	2.15	15	PASS	80.62	1.23	15	PASS
N017400-001B-MS	MS	1	8.35	0.64	15	PASS	78.98	0.67	15	PASS
N017400-001B-MSD	MSD	1	8.3	0.98	15	PASS	78.81	0.65	15	PASS
N017400-002B	SAMP	1	0.98	3.0073	15	PASS	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.11	1.046	15	PASS	20.61	0.61	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	0.43	0.32	15	PASS	1.036	1.14	15	PASS
N017415-002B	SAMP	1	1.69	3.18	15	PASS	0.73	1.068	15	PASS
N017415-003B	SAMP	1	0.36	6.84	15	PASS	1.034	1.38	15	PASS
N017415-004B	SAMP	1	4.85	1.071	15	PASS	0.76	2.51	15	PASS
N017415-005B	SAMP	1	4.99	0.9	15	PASS	0.56	1.15	15	PASS
N017415-006B	SAMP	1	0.57	7.011	15	PASS	0.78	0.17	15	PASS
N017415-007B	SAMP	1	2.81	2.095	15	PASS	0.42	4.37	15	PASS
N017427-001B	SAMP	1	0.45	9.04	15	PASS	0.46	2.27	15	PASS
N017427-002B	SAMP	1	0.78	1.81	15	PASS	0.54	3.11	15	PASS
N017427-002B-MS	MS	1	8.6	0.62	15	PASS	79.37	0.78	15	PASS
CCV2	CCV	1	19.91	0.57	15	PASS	20.68	0.42	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.062	4.31	20	PASS	0.58	11.25	20	PASS
ICSA2	ICSA	1	0.16	5.58	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.41	1.29	15	PASS	18.18	1.57	15	PASS
CCV3	CCV	1	20.4	1.48	15	PASS	20.61	0.9	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.34	0.47	15	PASS	20.56	0.29	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.4	1.76	15	PASS	20.79	2.32	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.68	2	15	PASS	21.055	3.041	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.0049	152.072	15	<PQL
LLCCV2	CCV2	1	1.098	6.93	20	PASS	0.58	5.36	20	PASS
ICSA3	ICSA	1	0.14	3.89	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.18	1.27	15	PASS	18.017	1.19	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	59 Co [2]				66 Zn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	11.44	15	PASS	<0.000	N/A	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	2.6	15	PASS	<0.000	N/A	15	<PQL
Std3-5/50 ppb	ICAL	1	5.25	0.34	15	PASS	4.24	7.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.4	0.85	15	PASS	9.25	1.62	15	PASS
Std5-20/200 ppb	ICAL	1	20.6	0.089	15	PASS	19.8	1.61	15	PASS
Std6-40/400 ppb	ICAL	1	40.64	1.0077	15	PASS	41.34	0.5	15	PASS
Std7-100/1000 ppb	ICAL	1	100.26	1.61	15	PASS	100.89	0.37	15	PASS
Std8-200/2000 ppb	ICAL	1	199.66	0.53	15	PASS	199.37	0.62	15	PASS
ICV	ICV	1	9.67	0.88	15	PASS	104.46	0.16	15	PASS
ICB	ICB	1	0.00055	103.22	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.54	3.08	20	PASS	9.77	0.96	20	PASS
ICSA1	ICSA	1	0.013	34.59	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.18	1.42	15	PASS	18.52	1.57	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.062	0.51	15	PASS	107.16	0.37	15	PASS
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	0.31	16.67	15	<PQL
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	7.27	1.65	15	PASS	83.27	1.39	15	PASS
N017400-001B-MS	MS	1	7.089	0.44	15	PASS	80.63	1.39	15	PASS
N017400-001B-MSD	MSD	1	7.07	0.56	15	PASS	79.84	0.21	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	2.9	7.78	15	PASS
CCV1	CCV	1	19.81	0.63	15	PASS	19.25	0.8	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	1.24	21.026	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	1.49	7.78	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	2.17	6.38	15	PASS
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	0.65	22.35	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	0.84	1.74	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	2.61	1.81	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	0.73	7.46	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	0.9	9.67	15	PASS
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	5.39	2.4	15	PASS
N017427-002B-MS	MS	1	6.97	0.88	15	PASS	81.85	1.19	15	PASS
CCV2	CCV	1	19.62	0.86	15	PASS	19.027	0.68	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.51	3.018	20	PASS	9.43	3.86	20	PASS
ICSA2	ICSA	1	0.014	18.53	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.15	1.4	15	PASS	18.088	1.69	15	PASS
CCV3	CCV	1	20.29	1.18	15	PASS	18.84	1.94	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	59 Co [2]				66 Zn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.1	1.25	15	PASS	19.15	1.47	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.7	2.59	15	PASS	19.34	2.2	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.03	1.52	15	PASS	19.0096	0.98	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.52	2.83	20	PASS	9.72	3.38	20	PASS
ICSA3	ICSA	1	0.0083	60.08	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.43	0.15	15	PASS	17.99	1.42	15	PASS

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	7.26	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	6.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.027	1.94	15	PASS
Std4-10/100 ppb	ICAL	1	10.27	1.29	15	PASS
Std5-20/200 ppb	ICAL	1	20.57	1.45	15	PASS
Std6-40/400 ppb	ICAL	1	40.75	0.68	15	PASS
Std7-100/1000 ppb	ICAL	1	100.46	0.72	15	PASS
Std8-200/2000 ppb	ICAL	1	199.55	0.53	15	PASS
ICV	ICV	1	10.47	2.74	15	PASS
ICB	ICB	1	0.0018	414.68	15	<PQL
LLICV	CCV1	1	0.12	3.83	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.66	1.78	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.72	3.077	15	PASS
N017400-001B	SAMP	1	1.065	3.64	15	PASS
N017400-001B	SAMP	5	0.23	17.73	15	NR!
N017400-001B-PS	PS	1	9.99	0.43	15	PASS
N017400-001B-MS	MS	1	9.69	2.58	15	PASS
N017400-001B-MSD	MSD	1	9.78	1.27	15	PASS
N017400-002B	SAMP	1	1.63	5.52	15	PASS
CCV1	CCV	1	20.78	1.2	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	2.79	3.23	15	PASS
N017415-002B	SAMP	1	1.71	6.95	15	PASS
N017415-003B	SAMP	1	1.33	7.84	15	PASS
N017415-004B	SAMP	1	1.0064	4.16	15	PASS
N017415-005B	SAMP	1	0.98	6.79	15	PASS
N017415-006B	SAMP	1	2.7	3.39	15	PASS
N017415-007B	SAMP	1	1.93	2.59	15	PASS
N017427-001B	SAMP	1	1.052	3.87	15	PASS
N017427-002B	SAMP	1	1.13	6.16	15	PASS
N017427-002B-MS	MS	1	9.97	2.96	15	PASS
CCV2	CCV	1	20.61	2.32	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.095	5.51	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.58	2.45	15	PASS
CCV3	CCV	1	20.51	1.58	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.6	1.48	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL
CCV5	CCV	1	20.65	0.66	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.76	3.3	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.096	3.63	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.99	1.39	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				205 Tl [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	4.19	15	PASS	0.1	2.21	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	0.9	15	PASS	0.54	1.88	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	0.89	15	PASS	5.33	0.73	15	PASS
Std4-10/100 ppb	ICAL	1	10.33	0.48	15	PASS	10.45	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	20.51	0.22	15	PASS	20.67	0.7	15	PASS
Std6-40/400 ppb	ICAL	1	40.79	0.43	15	PASS	41.024	1.019	15	PASS
Std7-100/1000 ppb	ICAL	1	100.69	0.24	15	PASS	101.062	1.094	15	PASS
Std8-200/2000 ppb	ICAL	1	199.43	0.8	15	PASS	199.17	0.47	15	PASS
ICV	ICV	1	10.42	0.46	15	PASS	9.33	2.51	15	PASS
ICB	ICB	1	0.15	2.21	15	PASS	0.13	4.32	15	PASS
LLICV	CCV1	1	0.53	1.074	20	PASS	0.45	0.84	20	PASS
ICSA1	ICSA	1	0.057	4.48	15	PASS	0.043	5.41	15	PASS
ICSAB1	ICSAB	1	21.33	0.37	15	PASS	22.58	1.039	15	PASS
MB-52909	MBLK	1	0.083	1.95	15	PASS	0.017	7.87	15	PASS
LCS-52909	LCS	1	10.42	0.57	15	PASS	9.76	1.43	15	PASS
N017400-001B	SAMP	5	0.025	7.72	15	PASS	0.12	3.17	15	PASS
N017400-001B	SAMP	1	0.011	22.49	15	<PQL	0.057	2.88	15	PASS
N017400-002B	SAMP	5	0.014	15.4	15	<PQL	0.034	3.51	15	PASS
N017400-002B	SAMP	1	0.024	15.5	15	<PQL	0.038	7.72	15	PASS
N017415-001B	SAMP	5	0.012	16.11	15	<PQL	0.02	4.18	15	PASS
N017415-001B	SAMP	1	0.013	10.21	15	PASS	0.037	1.38	15	PASS
N017415-002B	SAMP	5	0.0081	17.19	15	<PQL	0.014	6.25	15	PASS
N017415-002B	SAMP	1	0.014	11.11	15	PASS	0.032	10.98	15	PASS
CCV1	CCV	1	20.083	0.57	15	PASS	20.53	0.87	15	PASS
CCB1	CCB	1	0.071	8.75	15	PASS	0.01	4.42	15	PASS
N017415-003B	SAMP	5	0.028	3.66	15	PASS	0.012	12.82	15	PASS
N017415-003B	SAMP	1	0.017	15.12	15	<PQL	0.023	3.7	15	PASS
N017415-004B	SAMP	5	0.0098	21.27	15	<PQL	0.011	1.9	15	PASS
N017415-004B	SAMP	1	0.01	7.93	15	PASS	0.032	8.62	15	PASS
N017415-005B	SAMP	5	0.015	7.84	15	PASS	0.0086	9.63	15	PASS
N017415-005B	SAMP	1	0.011	22.86	15	<PQL	0.03	3.78	15	PASS
N017415-006B	SAMP	5	0.012	20.48	15	<PQL	0.0061	13.74	15	PASS
N017415-006B	SAMP	1	0.0083	17.83	15	<PQL	0.018	2.1	15	PASS
N017415-007B	SAMP	5	0.0011	248.23	15	<PQL	0.0032	8.74	15	PASS
N017415-007B	SAMP	1	0.0043	22.72	15	<PQL	0.0091	7.18	15	PASS
CCV2	CCV	1	20.57	0.57	15	PASS	20.76	0.77	15	PASS
CCB2	CCB	1	0.07	4.7	15	PASS	0.0049	39.64	15	<PQL
N017427-001B	SAMP	5	0.029	8.24	15	PASS	0.0051	21.51	15	<PQL
N017427-001B	SAMP	1	0.014	25.74	15	<PQL	0.0098	32.21	15	<PQL
N017427-002B	SAMP	5	0.0076	29.067	15	<PQL	0.0027	36.078	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	121 Sb [3]				205 Tl [3]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	0.0059	25.97	15	<PQL	0.0048	20.64	15	<PQL
N017400-001B	SAMP	25	0.027	8.46	15	PASS	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	5	2.26	1.33	15	PASS	1.92	1.47	15	PASS
N017400-001B-PS	PS	1	10.54	0.15	15	PASS	10.029	0.54	15	PASS
N017400-001B-MS	MS	5	2.3	1.29	15	PASS	2	0.6	15	PASS
N017400-001B-MS	MS	1	10.47	0.37	15	PASS	10.16	1.94	15	PASS
N017400-001B-MSD	MSD	5	2.27	0.67	15	PASS	1.99	1.47	15	PASS
CCV3	CCV	1	20.48	0.41	15	PASS	20.71	0.36	15	PASS
CCB3	CCB	1	0.072	8.14	15	PASS	0.023	12.75	15	PASS
N017400-001B-MSD	MSD	1	10.54	0.47	15	PASS	10.12	1.028	15	PASS
N017427-002B-MS	MS	5	2.27	0.13	15	PASS	1.89	0.71	15	PASS
N017427-002B-MS	MS	1	10.6	0.33	15	PASS	10.17	0.86	15	PASS
CCV4	CCV	1	20.53	0.15	15	PASS	20.87	1.47	15	PASS
CCB4	CCB	1	0.043	15.22	15	<PQL	0.025	11.77	15	PASS
LLCCV1	CCV2	1	0.57	1.84	20	PASS	0.46	1.39	20	PASS
ICSA2	ICSA	1	0.018	1.85	15	PASS	0.028	2.37	15	PASS
ICSAB2	ICSAB	1	21.25	0.87	15	PASS	22.76	1.56	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				60 Ni [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	2.58	15	PASS	0.12	4.26	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.55	0.9	15	PASS	0.53	4.55	15	PASS
Std3-5/50 ppb	ICAL	1	5.31	0.45	15	PASS	5.22	1.67	15	PASS
Std4-10/100 ppb	ICAL	1	10.43	0.49	15	PASS	10.26	1.46	15	PASS
Std5-20/200 ppb	ICAL	1	20.67	0.52	15	PASS	20.35	1.53	15	PASS
Std6-40/400 ppb	ICAL	1	41.023	0.55	15	PASS	40.94	0.67	15	PASS
Std7-100/1000 ppb	ICAL	1	101.52	0.69	15	PASS	101.52	0.56	15	PASS
Std8-200/2000 ppb	ICAL	1	198.94	0.81	15	PASS	199	0.8	15	PASS
ICV	ICV	1	9.92	0.59	15	PASS	10.069	0.72	15	PASS
ICB	ICB	1	0.014	12.58	15	PASS	0.0098	99.82	15	<PQL
LLICV	CCV1	1	1.08	2.059	20	PASS	1.14	6.57	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.32	4.21	15	PASS
ICSAB1	ICSAB	1	22.14	0.47	15	PASS	20.1	1.2	15	PASS
MB-52909	MBLK	1	0.0084	4.45	15	PASS	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.35	0.63	15	PASS	10.5	1.29	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.031	32.35	15	<PQL
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	0.068	42.93	15	<PQL
N017400-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV1	CCV	1	20.55	0.98	15	PASS	21.32	1.26	15	PASS
CCB1	CCB	1	0.0051	50.94	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL	0.016	115.18	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	0.013	236.084	15	<PQL
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.68	0.83	15	PASS	19.57	1.25	15	PASS
CCB2	CCB	1	0.0037	16.6	15	<PQL	0.01	66.055	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	208 Pb [3]				60 Ni [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N017400-001B	SAMP	25	<0.000	N/A	15	<PQL	0.016	58.56	15	<PQL
N017400-001B-PS	PS	5	2.006	0.36	15	PASS	2.24	2.99	15	PASS
N017400-001B-PS	PS	1	10.25	0.54	15	PASS	10.17	1.71	15	PASS
N017400-001B-MS	MS	5	2.027	0.86	15	PASS	2.22	4.4	15	PASS
N017400-001B-MS	MS	1	10.19	0.58	15	PASS	10.0077	1.015	15	PASS
N017400-001B-MSD	MSD	5	2.021	0.58	15	PASS	2.24	0.19	15	PASS
CCV3	CCV	1	20.58	0.69	15	PASS	19.9	0.77	15	PASS
CCB3	CCB	1	0.0042	26.75	15	<PQL	0.025	22.27	15	<PQL
N017400-001B-MSD	MSD	1	10.23	1.17	15	PASS	10.12	0.76	15	PASS
N017427-002B-MS	MS	5	1.97	0.62	15	PASS	2.16	1.76	15	PASS
N017427-002B-MS	MS	1	10.25	0.41	15	PASS	10.14	1.33	15	PASS
CCV4	CCV	1	20.73	1.56	15	PASS	19.89	1.1	15	PASS
CCB4	CCB	1	0.04	8.24	15	PASS	0.13	7.51	15	PASS
LLCCV1	CCV2	1	1.067	0.68	20	PASS	1.15	5.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.34	14.54	15	PASS
ICSAB2	ICSAB	1	22.13	0.63	15	PASS	19.77	0.33	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	63 Cu [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.18	2.3	15	PASS	0.083	42.82	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.66	4.64	15	PASS	0.55	16.021	15	NR!
Std3-5/50 ppb	ICAL	1	5.39	1.17	15	PASS	5.21	9.63	15	PASS
Std4-10/100 ppb	ICAL	1	10.43	0.16	15	PASS	10.69	3.51	15	PASS
Std5-20/200 ppb	ICAL	1	20.46	1.58	15	PASS	20.46	1.75	15	PASS
Std6-40/400 ppb	ICAL	1	40.92	0.36	15	PASS	40.82	1.45	15	PASS
Std7-100/1000 ppb	ICAL	1	102.35	0.48	15	PASS	100.93	0.84	15	PASS
Std8-200/2000 ppb	ICAL	1	198.56	1.11	15	PASS	199.28	1.55	15	PASS
ICV	ICV	1	9.97	0.5	15	PASS	10.1	4	15	PASS
ICB	ICB	1	0.028	37.51	15	<PQL	0.027	85.27	15	<PQL
LLICV	CCV1	1	1.17	2.27	20	PASS	0.48	21.61	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.023	79.62	15	<PQL
ICSAB1	ICSAB	1	18.49	0.53	15	PASS	20.65	3.27	15	PASS
MB-52909	MBLK	1	0.025	36.62	15	<PQL	0.017	123.67	15	<PQL
LCS-52909	LCS	1	10.48	0.69	15	PASS	9.76	5.73	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL	0.66	16.11	15	NR!
N017400-001B	SAMP	1	<0.000	N/A	15	<PQL	3.28	11.63	15	PASS
N017400-002B	SAMP	5	<0.000	N/A	15	<PQL	0.74	11.96	15	PASS
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL	2.72	8.43	15	PASS
N017415-001B	SAMP	5	<0.000	N/A	15	<PQL	0.7	2.41	15	PASS
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL	2.97	8.67	15	PASS
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL	0.56	28.91	15	NR!
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL	2.55	2.95	15	PASS
CCV1	CCV	1	21.51	0.86	15	PASS	19.51	2.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.065	44.52	15	<PQL
N017415-003B	SAMP	5	<0.000	N/A	15	<PQL	0.63	24.89	15	NR!
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL	2.95	5.011	15	PASS
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL	0.36	23.65	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL	1.55	3.98	15	PASS
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL	0.35	26.44	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL	1.63	6.55	15	PASS
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL	0.64	12.56	15	PASS
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL	2.89	9.7	15	PASS
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL	0.53	7.27	15	PASS
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL	2.45	9.071	15	PASS
CCV2	CCV	1	19.5	1.072	15	PASS	19.052	3.55	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.018	72.3	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL	0.7	10.2	15	PASS
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL	2.82	6.073	15	PASS
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL	0.61	7.59	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	63 Cu [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL	3.0074	6.56	15	PASS
N017400-001B	SAMP	25	<0.000	N/A	15	<PQL	0.14	10.62	15	PASS
N017400-001B-PS	PS	5	1.99	1.4	15	PASS	2.04	2.06	15	PASS
N017400-001B-PS	PS	1	9.26	1.14	15	PASS	9.44	6.53	15	PASS
N017400-001B-MS	MS	5	1.89	2.95	15	PASS	1.92	7.7	15	PASS
N017400-001B-MS	MS	1	8.64	0.25	15	PASS	9.54	6.41	15	PASS
N017400-001B-MSD	MSD	5	2.0019	0.8	15	PASS	1.89	9.61	15	PASS
CCV3	CCV	1	20.012	1.09	15	PASS	19.64	0.7	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0025	224.71	15	<PQL
N017400-001B-MSD	MSD	1	9.24	1.096	15	PASS	9.78	2.49	15	PASS
N017427-002B-MS	MS	5	1.93	1.47	15	PASS	1.98	5.088	15	PASS
N017427-002B-MS	MS	1	9.048	0.69	15	PASS	9.51	3.92	15	PASS
CCV4	CCV	1	19.97	1.17	15	PASS	19.3	2.55	15	PASS
CCB4	CCB	1	0.33	2.64	15	PASS	0.14	10.49	15	PASS
LLCCV1	CCV2	1	0.98	0.79	20	PASS	0.5	36.5	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.26	1.0034	15	PASS	19.48	1.32	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	9 Be [3]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	8.34	15	PASS	0.1	11.83	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.54	0.93	15	PASS	0.51	4.47	15	PASS
Std3-5/50 ppb	ICAL	1	5.18	0.65	15	PASS	5.12	0.43	15	PASS
Std4-10/100 ppb	ICAL	1	10.25	0.94	15	PASS	10.12	0.87	15	PASS
Std5-20/200 ppb	ICAL	1	20.43	0.78	15	PASS	20.37	0.92	15	PASS
Std6-40/400 ppb	ICAL	1	40.74	0.57	15	PASS	39.97	0.84	15	PASS
Std7-100/1000 ppb	ICAL	1	101.071	0.85	15	PASS	100.53	0.84	15	PASS
Std8-200/2000 ppb	ICAL	1	199.26	0.33	15	PASS	199.69	0.93	15	PASS
ICV	ICV	1	9.91	1.067	15	PASS	10.74	1.054	15	PASS
ICB	ICB	1	0.015	21.68	15	<PQL	0.37	3.54	15	PASS
LLICV	CCV1	1	0.51	4.68	20	PASS	0.47	6.2	20	PASS
ICSA1	ICSA	1	0.0077	25.54	15	<PQL	0.13	10.84	15	PASS
ICSAB1	ICSAB	1	22.35	1.083	15	PASS	22.94	1.028	15	PASS
MB-52909	MBLK	1	0.0035	26.69	15	<PQL	0.16	4.32	15	PASS
LCS-52909	LCS	1	10.28	0.9	15	PASS	9.97	0.73	15	PASS
N017400-001B	SAMP	5	0.0031	31.52	15	<PQL	2.87	1.51	15	PASS
N017400-001B	SAMP	1	0.0043	102.81	15	<PQL	11.58	2.007	15	PASS
N017400-002B	SAMP	5	0.0031	64.42	15	<PQL	2.73	0.64	15	PASS
N017400-002B	SAMP	1	0.012	21.65	15	<PQL	11.35	1.36	15	PASS
N017415-001B	SAMP	5	0.0023	75.34	15	<PQL	2.86	2.96	15	PASS
N017415-001B	SAMP	1	0.0051	16.98	15	<PQL	11.91	1.96	15	PASS
N017415-002B	SAMP	5	0.0011	135.71	15	<PQL	3.36	1.84	15	PASS
N017415-002B	SAMP	1	0.0051	17.42	15	<PQL	14.47	1.32	15	PASS
CCV1	CCV	1	19.65	1.1	15	PASS	19.39	0.94	15	PASS
CCB1	CCB	1	0.0024	46.19	15	<PQL	0.29	11.29	15	PASS
N017415-003B	SAMP	5	0.0024	34.18	15	<PQL	3.12	2.41	15	PASS
N017415-003B	SAMP	1	0.0076	28.63	15	<PQL	13.47	2.66	15	PASS
N017415-004B	SAMP	5	0.004	97.24	15	<PQL	5.11	2.39	15	PASS
N017415-004B	SAMP	1	0.0087	16.098	15	<PQL	20.83	1.89	15	PASS
N017415-005B	SAMP	5	0.0022	35.77	15	<PQL	4.98	2.25	15	PASS
N017415-005B	SAMP	1	0.007	60.44	15	<PQL	21.052	1.84	15	PASS
N017415-006B	SAMP	5	0.0014	124.13	15	<PQL	4.11	1.0059	15	PASS
N017415-006B	SAMP	1	0.01	8.96	15	PASS	17.11	2.2	15	PASS
N017415-007B	SAMP	5	0.0017	56.64	15	<PQL	2.13	3.15	15	PASS
N017415-007B	SAMP	1	0.005	74.75	15	<PQL	8.73	0.8	15	PASS
CCV2	CCV	1	20.73	1.052	15	PASS	20.27	1.91	15	PASS
CCB2	CCB	1	0.0034	56.43	15	<PQL	0.25	10.97	15	PASS
N017427-001B	SAMP	5	0.0011	178.85	15	<PQL	3.76	2.85	15	PASS
N017427-001B	SAMP	1	0.006	30.55	15	<PQL	16.76	0.6	15	PASS
N017427-002B	SAMP	5	0.0025	99.61	15	<PQL	3.36	1.44	15	PASS

PERCENT RSD SUMMARY: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	9 Be [3]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	0.0067	48.94	15	<PQL	14.55	0.31	15	PASS
N017400-001B	SAMP	25	0.0008	365.91	15	<PQL	0.78	1.78	15	PASS
N017400-001B-PS	PS	5	2.22	1.34	15	PASS	2.98	2.24	15	PASS
N017400-001B-PS	PS	1	10.7	1.23	15	PASS	14.16	2.26	15	PASS
N017400-001B-MS	MS	5	2.27	1.31	15	PASS	3.052	1.99	15	PASS
N017400-001B-MS	MS	1	10.65	0.55	15	PASS	14.24	2.93	15	PASS
N017400-001B-MSD	MSD	5	2.21	0.41	15	PASS	3.12	1.47	15	PASS
CCV3	CCV	1	20.26	0.95	15	PASS	19.95	0.36	15	PASS
CCB3	CCB	1	0.0038	105.34	15	<PQL	0.25	14.021	15	PASS
N017400-001B-MSD	MSD	1	10.57	1.51	15	PASS	14.35	0.8	15	PASS
N017427-002B-MS	MS	5	2.18	1.63	15	PASS	2.8	1.49	15	PASS
N017427-002B-MS	MS	1	10.72	2.65	15	PASS	13.43	0.47	15	PASS
CCV4	CCV	1	19.78	0.88	15	PASS	19.95	1.39	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.24	20.69	15	<PQL
LLCCV1	CCV2	1	0.52	3.66	20	PASS	0.6	7.03	20	PASS
ICSA2	ICSA	1	0.0026	80.69	15	<PQL	0.063	13.019	15	PASS
ICSAB2	ICSAB	1	22.16	0.12	15	PASS	22.23	1.37	15	PASS

PERCENT RSD SUMMARY: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.046	4.7	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.38	5.97	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	1.37	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	0.34	15	PASS
Std5-20/200 ppb	ICAL	1	20.062	1.039	15	PASS
Std6-40/400 ppb	ICAL	1	40.086	0.78	15	PASS
Std7-100/1000 ppb	ICAL	1	99.93	0.18	15	PASS
Std8-200/2000 ppb	ICAL	1	196.69	0.42	15	PASS
ICV	ICV	1	9.25	0.015	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.52	3.23	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.29	0.68	15	PASS
MB-52909	MBLK	1	<0.000	N/A	15	<PQL
LCS-52909	LCS	1	10.89	1.19	15	PASS
N017400-001B	SAMP	5	<0.000	N/A	15	<PQL
N017400-001B	SAMP	1	0.014	70.47	15	<PQL
N017400-002B	SAMP	5	0.013	29.7	15	<PQL
N017400-002B	SAMP	1	<0.000	N/A	15	<PQL
N017415-001B	SAMP	5	0.023	13.33	15	PASS
N017415-001B	SAMP	1	<0.000	N/A	15	<PQL
N017415-002B	SAMP	5	<0.000	N/A	15	<PQL
N017415-002B	SAMP	1	<0.000	N/A	15	<PQL
CCV1	CCV	1	19.88	0.39	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N017415-003B	SAMP	5	0.055	14.62	15	PASS
N017415-003B	SAMP	1	<0.000	N/A	15	<PQL
N017415-004B	SAMP	5	<0.000	N/A	15	<PQL
N017415-004B	SAMP	1	<0.000	N/A	15	<PQL
N017415-005B	SAMP	5	<0.000	N/A	15	<PQL
N017415-005B	SAMP	1	<0.000	N/A	15	<PQL
N017415-006B	SAMP	5	<0.000	N/A	15	<PQL
N017415-006B	SAMP	1	<0.000	N/A	15	<PQL
N017415-007B	SAMP	5	<0.000	N/A	15	<PQL
N017415-007B	SAMP	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.056	0.49	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
N017427-001B	SAMP	5	<0.000	N/A	15	<PQL
N017427-001B	SAMP	1	<0.000	N/A	15	<PQL
N017427-002B	SAMP	5	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	107 Ag [3]			
			Conc. [ppb]	RSD	Criteria	Comment
N017427-002B	SAMP	1	<0.000	N/A	15	<PQL
N017400-001B-PS	PS	1	9.93	1.063	15	PASS
N017400-001B-MS	MS	1	10.28	0.88	15	PASS
N017400-001B-MSD	MSD	1	10.24	0.66	15	PASS
N017427-002B-MS	MS	1	10.25	0.21	15	PASS
CCV3	CCV	1	20.18	0.47	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.49	1.85	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.72	0.44	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104001.D	RINSE	RINSE	1	11/04/15 8:48 AM
A1104002.D	Cal Blank	IBLK	1	11/04/15 8:53 AM
A1104003.D	Std1-0.1/1 ppb	ICAL	1	11/04/15 8:59 AM
A1104004.D	Std2-0.5/5 ppb	ICAL	1	11/04/15 9:04 AM
A1104005.D	Std3-5/50 ppb	ICAL	1	11/04/15 9:10 AM
A1104006.D	Std4-10/100 ppb	ICAL	1	11/04/15 9:16 AM
A1104007.D	Std5-20/200 ppb	ICAL	1	11/04/15 9:21 AM
A1104008.D	Std6-40/400 ppb	ICAL	1	11/04/15 9:27 AM
A1104009.D	Std7-100/1000 ppb	ICAL	1	11/04/15 9:33 AM
A1104010.D	Std8-200/2000 ppb	ICAL	1	11/04/15 9:39 AM
A1104011.D	ICV	ICV	1	11/04/15 9:44 AM
A1104012.D	ICB	ICB	1	11/04/15 9:50 AM
A1104013.D	LLICV	CCV1	1	11/04/15 9:55 AM
A1104014.D	ICSA1	ICSA	1	11/04/15 10:01 AM
A1104015.D	ICSAB1	ICSAB	1	11/04/15 10:06 AM
A1104016.D	MB-52909	MBLK	1	11/04/15 10:12 AM
A1104017.D	LCS-52909	LCS	1	11/04/15 10:17 AM
A1104018.D	N017399-001A	SAMP	1	11/04/15 10:23 AM
A1104019.D	N017399-002B	SAMP	1	11/04/15 10:28 AM
A1104020.D	N017400-001B	SAMP	1	11/04/15 10:31 AM
A1104021.D	N017400-001B	SAMP	5	11/04/15 10:37 AM
A1104022.D	N017400-001B-PS	PS	1	11/04/15 10:42 AM
A1104023.D	N017400-001B-MS	MS	1	11/04/15 10:48 AM
A1104024.D	N017400-001B-MSD	MSD	1	11/04/15 10:53 AM
A1104025.D	N017400-002B	SAMP	1	11/04/15 10:59 AM
A1104026.D	CCV1	CCV	1	11/04/15 11:04 AM
A1104027.D	CCB1	CCB	1	11/04/15 11:10 AM
A1104028.D	N017415-001B	SAMP	1	11/04/15 11:15 AM
A1104029.D	N017415-002B	SAMP	1	11/04/15 11:21 AM
A1104030.D	N017415-003B	SAMP	1	11/04/15 11:26 AM
A1104031.D	N017415-004B	SAMP	1	11/04/15 11:32 AM
A1104032.D	N017415-005B	SAMP	1	11/04/15 11:37 AM
A1104033.D	N017415-006B	SAMP	1	11/04/15 11:43 AM
A1104034.D	N017415-007B	SAMP	1	11/04/15 11:48 AM
A1104035.D	N017427-001B	SAMP	1	11/04/15 11:54 AM
A1104036.D	N017427-002B	SAMP	1	11/04/15 11:59 AM
A1104037.D	N017427-002B-MS	MS	1	11/04/15 12:05 PM
A1104038.D	CCV2	CCV	1	11/04/15 12:10 PM
A1104039.D	CCB2	CCB	1	11/04/15 12:16 PM
A1104040.D	LLCCV1	CCV2	1	11/04/15 12:21 PM
A1104041.D	ICSA2	ICSA	1	11/04/15 12:27 PM
A1104042.D	ICSAB2	ICSAB	1	11/04/15 12:32 PM

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104043.D	N017349-001B	SAMP	1	11/04/15 12:36 PM
A1104044.D	N017349-001A	SAMP	1	11/04/15 12:40 PM
A1104045.D	N017353-009B	SAMP	1	11/04/15 12:44 PM
A1104046.D	N017353-009A	SAMP	1	11/04/15 12:56 PM
A1104047.D	N017396-002B	SAMP	1	11/04/15 1:03 PM
A1104048.D	N017396-002A	SAMP	1	11/04/15 1:08 PM
A1104049.D	N017396-004B	SAMP	1	11/04/15 1:14 PM
A1104050.D	N017396-004A	SAMP	1	11/04/15 1:19 PM
A1104051.D	N017396-005B	SAMP	1	11/04/15 1:25 PM
A1104052.D	N017396-005A	SAMP	1	11/04/15 1:30 PM
A1104053.D	CCV3	CCV	1	11/04/15 1:36 PM
A1104054.D	CCB3	CCB	1	11/04/15 1:41 PM
A1104055.D	N017396-006B	SAMP	1	11/04/15 1:47 PM
A1104056.D	N017396-006A	SAMP	1	11/04/15 1:52 PM
A1104057.D	N017396-007B	SAMP	1	11/04/15 1:58 PM
A1104058.D	N017396-007A	SAMP	1	11/04/15 2:03 PM
A1104059.D	N017396-008B	SAMP	1	11/04/15 2:09 PM
A1104060.D	N017396-008A	SAMP	1	11/04/15 2:13 PM
A1104061.D	N017396-009B	SAMP	1	11/04/15 2:19 PM
A1104062.D	N017396-009A	SAMP	1	11/04/15 2:24 PM
A1104063.D	MB-52931	MBLK	1	11/04/15 2:30 PM
A1104064.D	LCS-52931	LCS	1	11/04/15 2:35 PM
A1104065.D	CCV4	CCV	1	11/04/15 2:41 PM
A1104066.D	CCB4	CCB	1	11/04/15 2:47 PM
A1104067.D	N017466-001B	SAMP	1	11/04/15 2:52 PM
A1104068.D	N017466-001B	SAMP	5	11/04/15 2:58 PM
A1104069.D	N017466-001B-PS	PS	1	11/04/15 3:03 PM
A1104070.D	N017466-001B-MS	MS	1	11/04/15 3:09 PM
A1104071.D	N017466-001B-MSD	MSD	1	11/04/15 3:15 PM
A1104072.D	N017381-001B	SAMP	5	11/04/15 3:20 PM
A1104073.D	N017399-002B	SAMP	5	11/04/15 3:26 PM
A1104074.D	MB-52922	MBLK	1	11/04/15 3:31 PM
A1104075.D	LCS-52922	LCS	1	11/04/15 3:37 PM
A1104076.D	N017437-005A	SAMP	1	11/04/15 3:43 PM
A1104077.D	CCV5	CCV	1	11/04/15 3:48 PM
A1104078.D	CCB5	CCB	1	11/04/15 3:54 PM
A1104079.D	N017437-005A	SAMP	5	11/04/15 3:59 PM
A1104080.D	N017437-005A-PS	PS	1	11/04/15 4:05 PM
A1104081.D	N017437-005A-MS	MS	1	11/04/15 4:10 PM
A1104082.D	N017437-005A-MSD	MSD	1	11/04/15 4:16 PM
A1104083.D	CCV6	CCV	1	11/04/15 4:21 PM
A1104084.D	CCB6	CCB	1	11/04/15 4:27 PM

INJECTION LOG: 151104A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1104085.D	LLCCV2	CCV2	1	11/04/15 4:33 PM
A1104086.D	ICSA3	ICSA	1	11/04/15 4:38 PM
A1104087.D	ICSAB3	ICSAB	1	11/04/15 4:44 PM
A1104088.D	RINSE	RINSE	1	11/04/15 4:49 PM
A1104089.D	RINSE	RINSE	1	11/04/15 4:55 PM

INJECTION LOG: 151109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1109001.D	RINSE	RINSE	1	11/09/15 10:24 PM
A1109002.D	Cal Blank	IBLK	1	11/09/15 10:33 PM
A1109003.D	Std1-0.1/1 ppb	ICAL	1	11/09/15 10:39 PM
A1109004.D	Std2-0.5/5 ppb	ICAL	1	11/09/15 10:44 PM
A1109005.D	Std3-5/50 ppb	ICAL	1	11/09/15 10:50 PM
A1109006.D	Std4-10/100 ppb	ICAL	1	11/09/15 10:55 PM
A1109007.D	Std5-20/200 ppb	ICAL	1	11/09/15 11:01 PM
A1109008.D	Std6-40/400 ppb	ICAL	1	11/09/15 11:06 PM
A1109009.D	Std7-100/1000 ppb	ICAL	1	11/09/15 11:12 PM
A1109010.D	Std8-200/2000 ppb	ICAL	1	11/09/15 11:17 PM
A1109011.D	ICV	ICV	1	11/09/15 11:23 PM
A1109012.D	ICB	ICB	1	11/09/15 11:28 PM
A1109013.D	LLICV	CCV1	1	11/09/15 11:32 PM
A1109014.D	ICSA1	ICSA	1	11/09/15 11:39 PM
A1109015.D	ICSAB1	ICSAB	1	11/09/15 11:45 PM
A1109016.D	MB-52909	MBLK	1	11/09/15 11:50 PM
A1109017.D	LCS-52909	LCS	1	11/09/15 11:56 PM
A1109018.D	N017400-001B	SAMP	5	11/10/15 12:01 AM
A1109019.D	N017400-001B	SAMP	1	11/10/15 12:07 AM
A1109020.D	N017400-002B	SAMP	5	11/10/15 12:12 AM
A1109021.D	N017400-002B	SAMP	1	11/10/15 12:18 AM
A1109022.D	N017415-001B	SAMP	5	11/10/15 12:23 AM
A1109023.D	N017415-001B	SAMP	1	11/10/15 12:29 AM
A1109024.D	N017415-002B	SAMP	5	11/10/15 12:34 AM
A1109025.D	N017415-002B	SAMP	1	11/10/15 12:40 AM
A1109026.D	CCV1	CCV	1	11/10/15 12:44 AM
A1109027.D	CCB1	CCB	1	11/10/15 12:51 AM
A1109028.D	N017415-003B	SAMP	5	11/10/15 12:56 AM
A1109029.D	N017415-003B	SAMP	1	11/10/15 1:02 AM
A1109030.D	N017415-004B	SAMP	5	11/10/15 1:07 AM
A1109031.D	N017415-004B	SAMP	1	11/10/15 1:13 AM
A1109032.D	N017415-005B	SAMP	5	11/10/15 1:18 AM
A1109033.D	N017415-005B	SAMP	1	11/10/15 1:24 AM
A1109034.D	N017415-006B	SAMP	5	11/10/15 1:29 AM
A1109035.D	N017415-006B	SAMP	1	11/10/15 1:35 AM
A1109036.D	N017415-007B	SAMP	5	11/10/15 1:40 AM
A1109037.D	N017415-007B	SAMP	1	11/10/15 1:46 AM
A1109038.D	CCV2	CCV	1	11/10/15 1:51 AM
A1109039.D	CCB2	CCB	1	11/10/15 1:57 AM
A1109040.D	N017427-001B	SAMP	5	11/10/15 2:02 AM
A1109041.D	N017427-001B	SAMP	1	11/10/15 2:08 AM
A1109042.D	N017427-002B	SAMP	5	11/10/15 2:13 AM

INJECTION LOG: 151109A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1109043.D	N017427-002B	SAMP	1	11/10/15 2:19 AM
A1109044.D	N017400-001B	SAMP	25	11/10/15 2:24 AM
A1109045.D	N017400-001B-PS	PS	5	11/10/15 2:30 AM
A1109046.D	N017400-001B-PS	PS	1	11/10/15 2:35 AM
A1109047.D	N017400-001B-MS	MS	5	11/10/15 2:41 AM
A1109048.D	N017400-001B-MS	MS	1	11/10/15 2:46 AM
A1109049.D	N017400-001B-MSD	MSD	5	11/10/15 2:52 AM
A1109050.D	CCV3	CCV	1	11/10/15 2:57 AM
A1109051.D	CCB3	CCB	1	11/10/15 3:03 AM
A1109052.D	N017400-001B-MSD	MSD	1	11/10/15 3:08 AM
A1109053.D	N017427-002B-MS	MS	5	11/10/15 3:14 AM
A1109054.D	N017427-002B-MS	MS	1	11/10/15 3:19 AM
A1109055.D	CCV4	CCV	1	11/10/15 3:25 AM
A1109056.D	CCB4	CCB	1	11/10/15 3:29 AM
A1109057.D	LLCCV1	CCV2	1	11/10/15 3:36 AM
A1109058.D	ICSA2	ICSA	1	11/10/15 3:42 AM
A1109059.D	ICSAB2	ICSAB	1	11/10/15 3:47 AM

INJECTION LOG: 151110A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1110001.D	RINSE	RINSE	1	11/10/15 11:53 AM
A1110002.D	Cal Blank	IBLK	1	11/10/15 11:59 AM
A1110003.D	Std1-0.1/1 ppb	ICAL	1	11/10/15 12:04 PM
A1110004.D	Std2-0.5/5 ppb	ICAL	1	11/10/15 12:10 PM
A1110005.D	Std3-5/50 ppb	ICAL	1	11/10/15 12:15 PM
A1110006.D	Std4-10/100 ppb	ICAL	1	11/10/15 12:21 PM
A1110007.D	Std5-20/200 ppb	ICAL	1	11/10/15 12:26 PM
A1110008.D	Std6-40/400 ppb	ICAL	1	11/10/15 12:32 PM
A1110009.D	Std7-100/1000 ppb	ICAL	1	11/10/15 12:37 PM
A1110010.D	Std8-200/2000 ppb	ICAL	1	11/10/15 12:43 PM
A1110011.D	ICV	ICV	1	11/10/15 12:47 PM
A1110012.D	ICB	ICB	1	11/10/15 12:51 PM
A1110013.D	LLICV	CCV1	1	11/10/15 12:56 PM
A1110014.D	ICSA1	ICSA	1	11/10/15 1:05 PM
A1110015.D	ICSAB1	ICSAB	1	11/10/15 1:10 PM
A1110016.D	MB-52909	MBLK	1	11/10/15 1:13 PM
A1110017.D	LCS-52909	LCS	1	11/10/15 1:21 PM
A1110018.D	N017400-001B	SAMP	5	11/10/15 1:24 PM
A1110019.D	N017400-001B	SAMP	1	11/10/15 1:32 PM
A1110020.D	N017400-002B	SAMP	5	11/10/15 1:38 PM
A1110021.D	N017400-002B	SAMP	1	11/10/15 1:43 PM
A1110022.D	N017415-001B	SAMP	5	11/10/15 1:49 PM
A1110023.D	N017415-001B	SAMP	1	11/10/15 1:54 PM
A1110024.D	N017415-002B	SAMP	5	11/10/15 2:00 PM
A1110025.D	N017415-002B	SAMP	1	11/10/15 2:05 PM
A1110026.D	CCV1	CCV	1	11/10/15 2:11 PM
A1110027.D	CCB1	CCB	1	11/10/15 2:14 PM
A1110028.D	N017415-003B	SAMP	5	11/10/15 2:22 PM
A1110029.D	N017415-003B	SAMP	1	11/10/15 2:27 PM
A1110030.D	N017415-004B	SAMP	5	11/10/15 2:33 PM
A1110031.D	N017415-004B	SAMP	1	11/10/15 2:38 PM
A1110032.D	N017415-005B	SAMP	5	11/10/15 2:44 PM
A1110033.D	N017415-005B	SAMP	1	11/10/15 2:49 PM
A1110034.D	N017415-006B	SAMP	5	11/10/15 2:55 PM
A1110035.D	N017415-006B	SAMP	1	11/10/15 3:00 PM
A1110036.D	N017415-007B	SAMP	5	11/10/15 3:06 PM
A1110037.D	N017415-007B	SAMP	1	11/10/15 3:11 PM
A1110038.D	CCV2	CCV	1	11/10/15 3:17 PM
A1110039.D	CCB2	CCB	1	11/10/15 3:21 PM
A1110040.D	N017427-001B	SAMP	5	11/10/15 3:28 PM
A1110041.D	N017427-001B	SAMP	1	11/10/15 3:33 PM
A1110042.D	N017427-002B	SAMP	5	11/10/15 3:39 PM

INJECTION LOG: 151110A1

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A1110043.D	N017427-002B	SAMP	1	11/10/15 3:44 PM
A1110044.D	N017400-001B-PS	PS	1	11/10/15 3:50 PM
A1110045.D	N017400-001B-MS	MS	1	11/10/15 3:55 PM
A1110046.D	N017400-001B-MSD	MSD	1	11/10/15 3:59 PM
A1110047.D	N017427-002B-MS	MS	1	11/10/15 4:05 PM
A1110048.D	CCV3	CCV	1	11/10/15 4:10 PM
A1110049.D	CCB3	CCB	1	11/10/15 4:13 PM
A1110050.D	LLCCV1	CCV2	1	11/10/15 4:21 PM
A1110051.D	ICSA2	ICSA	1	11/10/15 4:27 PM
A1110052.D	ICSAB2	ICSAB	1	11/10/15 4:32 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:13**
Prep End Date: **11/2/2015 3:30:00**

Initials/ Date: 11/16/2015

Prep Batch **52909** Prep Code: **200.8_DISS_P** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52909	Aqueous		25	☐	0	0	25	1.000		
MB-52909	Aqueous		25	☐	0	0	25	1.000		
N017399-001A	Groundwater	<2	25	☐	0	0	25	1.000		
N017399-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:13**
Prep End Date: **11/2/2015 3:30:00**
Initials/ Date: 11/16/2015

Prep Batch **52909** Prep Code: **200.8_DISS_P** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017415-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7461	HYDROCHLORIC ACID
7858	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-150601	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-150907	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 Nov 2015 08:33:20 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	61608.20	0.00	
24 Mg	235494.00	0.00	
25 Mg	31429.50	0.00	
26 Mg	37246.30	0.00	
59 Co	549927.00	0.00	
115 In	1050520.00	0.00	
206 Pb	259650.00	0.00	
207 Pb	225306.00	0.00	
208 Pb	551269.00	0.00	

RSD (%)

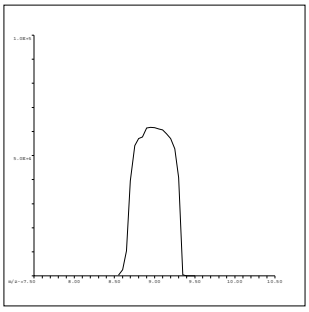
Element	Actual	Required	Flag
9 Be	0.74	5.00	
24 Mg	0.48	5.00	
25 Mg	2.36	5.00	
26 Mg	1.31	5.00	
59 Co	0.83	5.00	
115 In	0.35	5.00	
206 Pb	0.63	5.00	
207 Pb	0.69	5.00	
208 Pb	0.37	5.00	

Ion Ratio

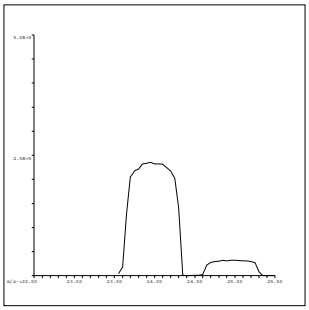
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

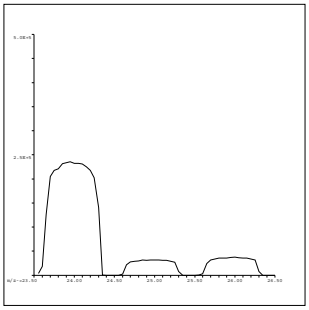
Element	Actual	Required	Flag



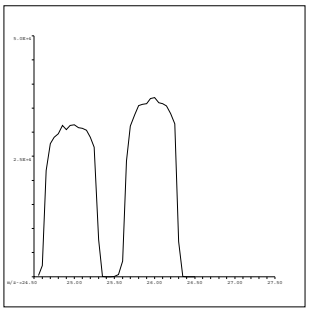
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



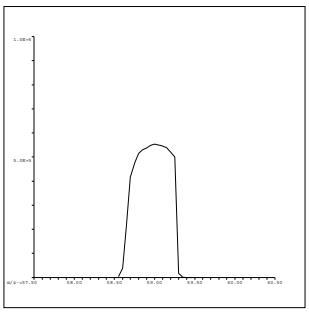
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



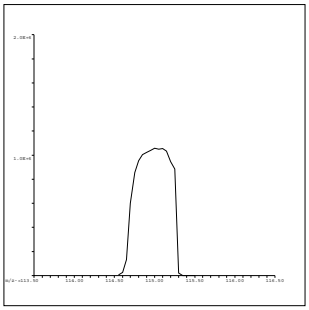
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



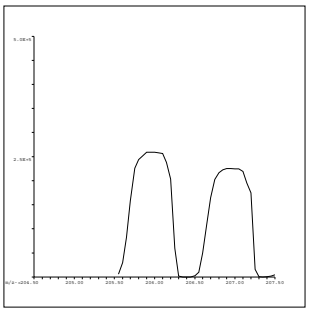
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



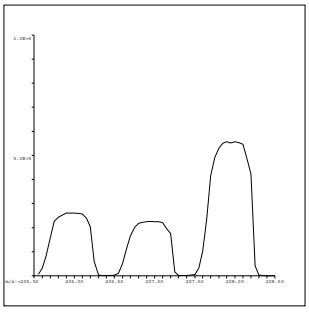
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



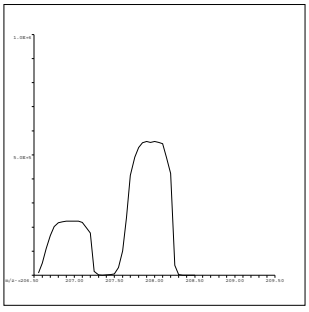
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 Nov 2015 07:54:10 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	54889.00	0.00	
24 Mg	177716.00	0.00	
25 Mg	23525.60	0.00	
26 Mg	28430.10	0.00	
59 Co	338768.00	0.00	
115 In	616528.00	0.00	
206 Pb	144988.00	0.00	
207 Pb	125433.00	0.00	
208 Pb	309753.00	0.00	

RSD (%)

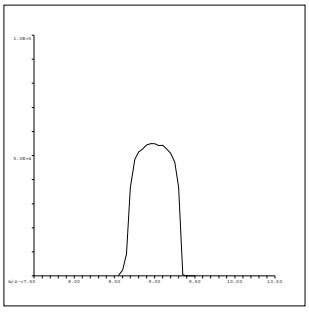
Element	Actual	Required	Flag
9 Be	0.95	5.00	
24 Mg	1.20	5.00	
25 Mg	1.95	5.00	
26 Mg	1.89	5.00	
59 Co	0.81	5.00	
115 In	0.56	5.00	
206 Pb	0.99	5.00	
207 Pb	1.07	5.00	
208 Pb	0.87	5.00	

Ion Ratio

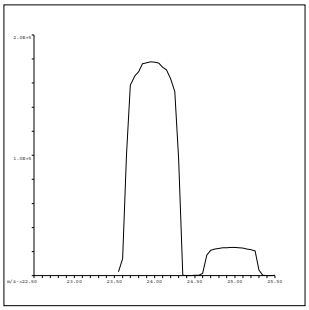
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

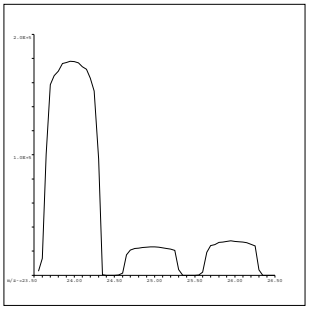
Element	Actual	Required	Flag



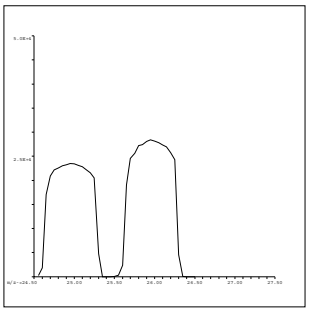
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



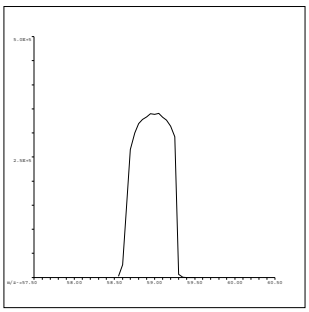
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



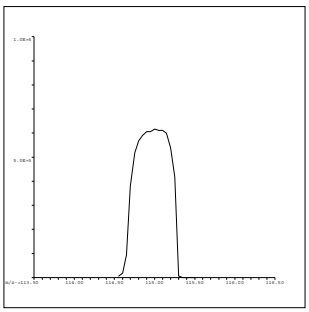
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



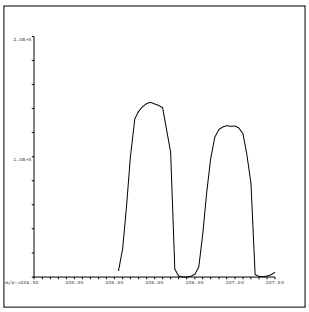
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



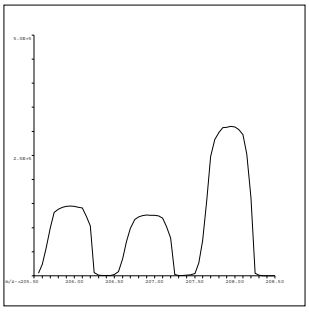
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



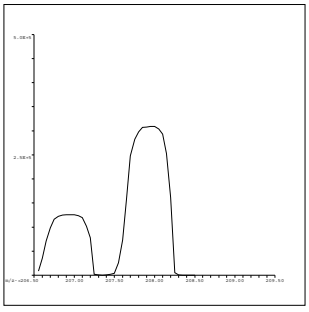
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 10 Nov 2015 09:21:09 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	277925.00	0.00	
24 Mg	819628.00	0.00	
25 Mg	108617.00	0.00	
26 Mg	127052.00	0.00	
59 Co	1413430.00	0.00	
115 In	2057570.00	0.00	
206 Pb	445442.00	0.00	
207 Pb	385361.00	0.00	
208 Pb	945531.00	0.00	

RSD (%)

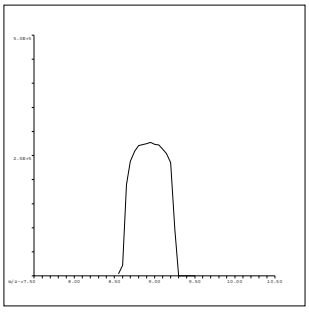
Element	Actual	Required	Flag
9 Be	0.20	5.00	
24 Mg	0.79	5.00	
25 Mg	2.47	5.00	
26 Mg	0.73	5.00	
59 Co	0.98	5.00	
115 In	1.36	5.00	
206 Pb	0.48	5.00	
207 Pb	0.87	5.00	
208 Pb	0.44	5.00	

Ion Ratio

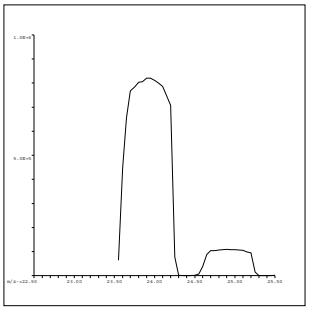
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

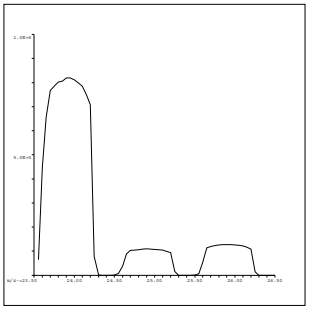
Element	Actual	Required	Flag



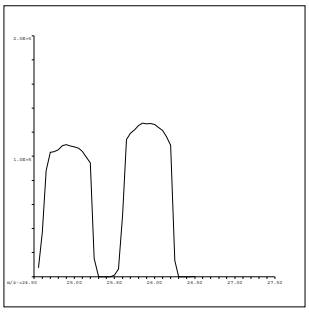
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



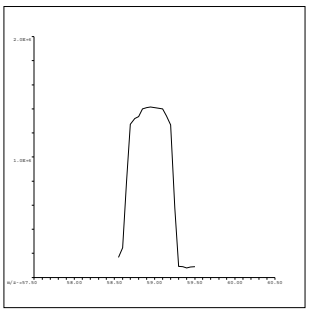
24 Mg
Mass Calib.
Actual: 23.90
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



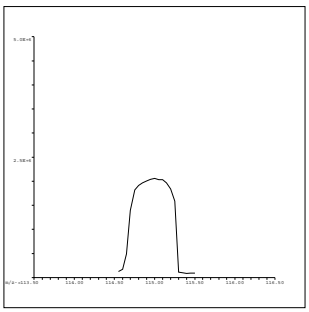
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



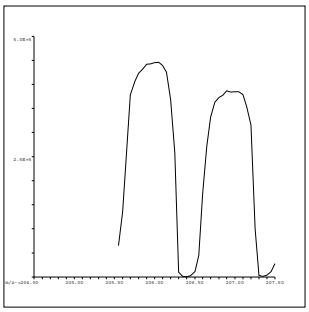
26 Mg
Mass Calib.
Actual: 25.90
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



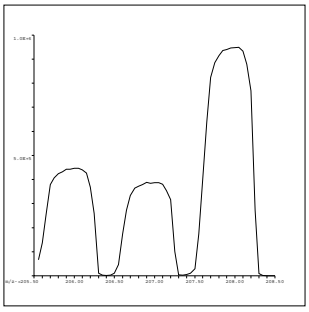
59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



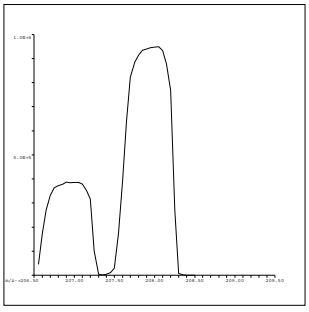
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151104A

Instrument ID: ICPMS-02

Analyte	Data File	A1104002.D	A1104003.D	A1104004.D	A1104005.D	A1104006.D	A1104007.D	A1104008.D	A1104009.D	A1104010.D	
	Acq. Date-Time	11/04/2015 08:53 AM	11/04/2015 08:59 AM	11/04/2015 09:04 AM	11/04/2015 09:10 AM	11/04/2015 09:16 AM	11/04/2015 09:21 AM	11/04/2015 09:27 AM	11/04/2015 09:33 AM	11/04/2015 09:39 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	74381.4		73437	72604.8	73583.1	73394.6	74930.3	75030.9	75834.2	
59 Co [2]	CPS	61		5702.2	56270.4	112946	223152.9	449215.9	1109641.3	2233760.9	1.0000
55 Mn [2]	CPS	137.3		1730.3	15056.4	30323.8	60112.5	119633.1	298017	594788.2	1.0000
52 Cr [2]	CPS	333.3		3201.5	29767.3	58605.4	116951.3	235165.9	581508.2	1166624.6	1.0000
51 V [2]	CPS	188.9		2537	23422.9	45975.9	91731.4	184051	457095.6	916535.6	1.0000
72 Ge (ISTD) [2]	CPS	61364	62199.2	61451.2	61844.7	61274	61250.2	62152.5	61941.7	62571	
75 As [2]	CPS	34.7	152	503.6	4690.5	9459.3	18897.8	37958.8	93210	186988.1	1.0000
66 Zn [2]	CPS	1805.9		985.8	7354.8	13772.9	27418.7	56077.6	133783.5	265251.9	0.9999
115 In (ISTD) [3]	CPS	4120344.3		4048100.7	4044176.8	3997649	4000927.6	4024085.7	3989625.4	3996609.8	
111 Cd [3]	CPS	56.1		3896.6	37143.9	72798.1	146769.2	289723.9	710432.5	1388874.3	0.9999
159 Tb (ISTD) [3]	CPS	5948159.1		5885553.8	5917339.4	5879781.1	5838893	5893339.1	5842619.5	5903055.8	
137 Ba [3]	CPS	452.8		6206.2	54992.3	107543.6	214523	423810.4	1037057.8	2069991.8	1.0000
209 Bi (ISTD) [3]	CPS	3661582.8		3629819.8	3644920.1	3658334.6	3666602.1	3684831.8	3675623.4	3685377.2	
208 Pb [3]	CPS	2348.9		46703.6	439362.2	864439.5	1721027.7	3431240.6	8432632.5	16590208.7	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151109A

Instrument ID: ICPMS-02

Analyte	Data File	A1109002.D	A1109004.D	A1109005.D	A1109006.D	A1109007.D	A1109008.D	A1109009.D	A1109010.D	
	Acq. Date-Time	11/09/2015 10:33 PM	11/09/2015 10:44 PM	11/09/2015 10:50 PM	11/09/2015 10:55 PM	11/09/2015 11:01 PM	11/09/2015 11:06 PM	11/09/2015 11:12 PM	11/09/2015 11:17 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
6 Li (ISTD) [3]	CPS	1419177.5	1526928.5	1527572	1527812.8	1547085.4	1622856.1	1639925.9	1664305.5	
9 Be [3]	CPS	68.9	6624.9	63422.9	125349.2	252829.1	528977.9	1325866.1	2652721.8	1.0000
72 Ge (ISTD) [1]	CPS	124583.4	129809	128649.1	128306.2	129159.5	134939.2	135452.3	137491.8	
78 Se [1]	CPS	7.8	255.6	2344.7	4784.3	9215.3	19205.5	47646.7	95473.6	1.0000
72 Ge (ISTD) [2]	CPS	93890.7	99290.1	99192.6	100440.5	101433.1	105079.6	105660.8	107776	
63 Cu [2]	CPS	1994.3	11142.2	75719.8	146242.6	287779.7	593962.7	1490565.3	2947384	0.9999
60 Ni [2]	CPS	115.3	2696.7	25260.1	50150.7	100299.2	208979.7	520855.8	1041313.8	1.0000
103 Rh (ISTD) [2]	CPS	2222556	2410396.3	2404745.9	2433146.8	2446941.5	2583046.8	2591061.9	2615738.5	
95 Mo [2]	CPS	200	3247.1	30457.6	60655.6	122650.2	253795.3	639881.1	1282997.8	1.0000
103 Rh (ISTD) [3]	CPS	4471264	4846966.5	4845001.3	4896251.7	4997024.5	5211537.1	5304365.8	5399566.6	
107 Ag [3]	CPS	3863.8	19164.1	205738.3	428290.8	864557.7	1806027.3	4467625.3	9056473.2	0.9999
115 In (ISTD) [3]	CPS	4388228.9	4758950.9	4775737.7	4863832.7	4935042.4	5173079	5228314.3	5344142.6	
121 Sb [3]	CPS	561.1	19431.7	184897.1	369616.7	744040.2	1550544.9	3867612.6	7829470.2	1.0000
209 Bi (ISTD) [3]	CPS	3510049	3807805.7	3827910.6	3911084.3	3981637.8	4166584.8	4219867.3	4319905.3	
208 Pb [3]	CPS	744.2	48814.8	469445.2	940890.5	1898522	3941254.2	9877107.1	19812769.9	0.9999
205 Tl [3]	CPS	596.7	34971.2	343546.9	688035.8	1385299.6	2875838.3	7174334.7	14473293.1	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151110A1

Instrument ID: ICPMS-02

Analyte	Data File	A1110002.D	A1110004.D	A1110005.D	A1110006.D	A1110007.D	A1110008.D	A1110009.D	A1110010.D	
	Acq. Date-Time	11/10/2015 11:59 AM	11/10/2015 12:10 PM	11/10/2015 12:15 PM	11/10/2015 12:21 PM	11/10/2015 12:26 PM	11/10/2015 12:32 PM	11/10/2015 12:37 PM	11/10/2015 12:43 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
103 Rh (ISTD) [3]	CPS	3561197	4079095.9	4026530.7	4059910	3360140.6	4087403.7	4082419.9	4108948	
107 Ag [3]	CPS	2839.5	16292.2	172876.1	355994	574557.3	1393338.2	3464368.6	6859851.8	1.0000

Standard Code
ICAL: 2MSST-140630A
ICAL: 2MSST-141025A
ICAL: 2MWST-150907G
IS Mix: 2MWST-150907C

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.466	0.10	10.00	0	105	90	110				
Barium	104.174	1.0	100.0	0	104	90	110				
Cadmium	10.623	0.50	10.00	0	106	90	110				
Chromium	10.263	1.0	10.00	0	103	90	110				
Cobalt	9.668	0.50	10.00	0	96.7	90	110				
Lead	10.431	1.0	10.00	0	104	90	110				
Manganese	101.043	0.50	100.0	0	101	90	110				
Vanadium	10.098	1.0	10.00	0	101	90	110				
Zinc	104.464	10	100.0	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.119	0.10	0.1000	0	119	80	120				
Barium	1.096	1.0	1.000	0	110	80	120				
Cadmium	0.534	0.50	0.5000	0	107	80	120				
Chromium	1.089	1.0	1.000	0	109	80	120				
Cobalt	0.539	0.50	0.5000	0	108	80	120				
Lead	1.093	1.0	1.000	0	109	80	120				
Manganese	0.548	0.50	0.5000	0	110	80	120				
Vanadium	1.042	1.0	1.000	0	104	80	120				
Zinc	9.766	10	10.00	0	97.7	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126140**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.781	0.10	20.00	0	104	90	110				
Barium	21.656	1.0	20.00	0	108	90	110				
Cadmium	20.636	0.50	20.00	0	103	90	110				
Chromium	20.114	1.0	20.00	0	101	90	110				
Cobalt	19.809	0.50	20.00	0	99.0	90	110				
Lead	20.663	1.0	20.00	0	103	90	110				
Manganese	20.615	0.50	20.00	0	103	90	110				
Vanadium	20.360	1.0	20.00	0	102	90	110				
Zinc	19.253	10	20.00	0	96.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.607	0.10	20.00	0	103	90	110				
Barium	21.666	1.0	20.00	0	108	90	110				
Cadmium	20.832	0.50	20.00	0	104	90	110				
Chromium	19.907	1.0	20.00	0	99.5	90	110				
Cobalt	19.625	0.50	20.00	0	98.1	90	110				
Lead	20.905	1.0	20.00	0	105	90	110				
Manganese	20.678	0.50	20.00	0	103	90	110				
Vanadium	20.104	1.0	20.00	0	101	90	110				
Zinc	19.027	10	20.00	0	95.1	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	94.9	70	130				
Barium	1.116	1.0	1.000	0	112	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.535	0.50	0.5000	0	107	70	130				
Chromium	1.062	1.0	1.000	0	106	70	130				
Cobalt	0.512	0.50	0.5000	0	102	70	130				
Lead	1.086	1.0	1.000	0	109	70	130				
Manganese	0.578	0.50	0.5000	0	116	70	130				
Vanadium	1.080	1.0	1.000	0	108	70	130				
Zinc	9.434	10	10.00	0	94.3	70	130				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.508	0.10	20.00	0	103	90	110				
Barium	21.187	1.0	20.00	0	106	90	110				
Cadmium	20.783	0.50	20.00	0	104	90	110				
Chromium	20.398	1.0	20.00	0	102	90	110				
Cobalt	20.288	0.50	20.00	0	101	90	110				
Lead	20.678	1.0	20.00	0	103	90	110				
Manganese	20.608	0.50	20.00	0	103	90	110				
Vanadium	20.513	1.0	20.00	0	103	90	110				
Zinc	18.836	10	20.00	0	94.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.596	0.10	20.00	0	103	90	110				
Barium	21.190	1.0	20.00	0	106	90	110				
Cadmium	20.698	0.50	20.00	0	103	90	110				
Chromium	20.336	1.0	20.00	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	20.103	0.50	20.00	0	101	90	110				
Lead	20.561	1.0	20.00	0	103	90	110				
Manganese	20.556	0.50	20.00	0	103	90	110				
Vanadium	20.428	1.0	20.00	0	102	90	110				
Zinc	19.155	10	20.00	0	95.8	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.649	0.10	20.00	0	103	90	110				
Barium	20.877	1.0	20.00	0	104	90	110				
Cadmium	20.636	0.50	20.00	0	103	90	110				
Chromium	20.403	1.0	20.00	0	102	90	110				
Cobalt	20.703	0.50	20.00	0	104	90	110				
Lead	20.623	1.0	20.00	0	103	90	110				
Manganese	20.795	0.50	20.00	0	104	90	110				
Vanadium	20.711	1.0	20.00	0	104	90	110				
Zinc	19.345	10	20.00	0	96.7	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.757	0.10	20.00	0	104	90	110				
Barium	21.120	1.0	20.00	0	106	90	110				
Cadmium	20.560	0.50	20.00	0	103	90	110				
Chromium	20.685	1.0	20.00	0	103	90	110				
Cobalt	21.030	0.50	20.00	0	105	90	110				
Lead	20.757	1.0	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV6** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCV** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.055	0.50	20.00	0	105	90	110				
Vanadium	20.845	1.0	20.00	0	104	90	110				
Zinc	19.010	10	20.00	0	95.0	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.096	0.10	0.1000	0	95.6	70	130				
Barium	1.109	1.0	1.000	0	111	70	130				
Cadmium	0.549	0.50	0.5000	0	110	70	130				
Chromium	1.098	1.0	1.000	0	110	70	130				
Cobalt	0.520	0.50	0.5000	0	104	70	130				
Lead	1.074	1.0	1.000	0	107	70	130				
Manganese	0.584	0.50	0.5000	0	117	70	130				
Vanadium	1.070	1.0	1.000	0	107	70	130				
Zinc	9.716	10	10.00	0	97.2	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.423	0.50	10.00	0	104	90	110				
Beryllium	9.909	0.50	10.00	0	99.1	90	110				
Copper	9.968	1.0	10.00	0	99.7	90	110				
Lead	9.918	1.0	10.00	0	99.2	90	110				
Molybdenum	10.738	0.50	10.00	0	107	90	110				
Nickel	10.069	1.0	10.00	0	101	90	110				
Selenium	10.100	0.50	10.00	0	101	90	110				
Thallium	9.332	0.50	10.00	0	93.3	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.531	0.50	0.5000	0	106	80	120				
Beryllium	0.512	0.50	0.5000	0	102	80	120				
Copper	1.175	1.0	1.000	0	117	80	120				
Lead	1.080	1.0	1.000	0	108	80	120				
Molybdenum	0.471	0.50	0.5000	0	94.2	80	120				
Nickel	1.136	1.0	1.000	0	114	80	120				
Selenium	0.477	0.50	0.5000	0	95.5	80	120				
Thallium	0.449	0.50	0.5000	0	89.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.083	0.50	20.00	0	100	90	110				
Beryllium	19.651	0.50	20.00	0	98.3	90	110				
Copper	21.505	1.0	20.00	0	108	90	110				
Lead	20.554	1.0	20.00	0	103	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.395	0.50	20.00	0	97.0	90	110				
Nickel	21.317	1.0	20.00	0	107	90	110				
Selenium	19.513	0.50	20.00	0	97.6	90	110				
Thallium	20.532	0.50	20.00	0	103	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.568	0.50	20.00	0	103	90	110				
Beryllium	20.731	0.50	20.00	0	104	90	110				
Copper	19.498	1.0	20.00	0	97.5	90	110				
Lead	20.681	1.0	20.00	0	103	90	110				
Molybdenum	20.269	0.50	20.00	0	101	90	110				
Nickel	19.571	1.0	20.00	0	97.9	90	110				
Selenium	19.052	0.50	20.00	0	95.3	90	110				
Thallium	20.757	0.50	20.00	0	104	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.484	0.50	20.00	0	102	90	110				
Beryllium	20.260	0.50	20.00	0	101	90	110				
Copper	20.012	1.0	20.00	0	100	90	110				
Lead	20.577	1.0	20.00	0	103	90	110				
Molybdenum	19.948	0.50	20.00	0	99.7	90	110				
Nickel	19.897	1.0	20.00	0	99.5	90	110				
Selenium	19.637	0.50	20.00	0	98.2	90	110				
Thallium	20.710	0.50	20.00	0	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCV** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	20.535	0.50	20.00	0	103	90	110				
Beryllium	19.785	0.50	20.00	0	98.9	90	110				
Copper	19.971	1.0	20.00	0	99.9	90	110				
Lead	20.726	1.0	20.00	0	104	90	110				
Molybdenum	19.949	0.50	20.00	0	99.7	90	110				
Nickel	19.886	1.0	20.00	0	99.4	90	110				
Selenium	19.303	0.50	20.00	0	96.5	90	110				
Thallium	20.871	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.575	0.50	0.5000	0	115	70	130				
Beryllium	0.521	0.50	0.5000	0	104	70	130				
Copper	0.984	1.0	1.000	0	98.4	70	130				
Lead	1.067	1.0	1.000	0	107	70	130				
Molybdenum	0.596	0.50	0.5000	0	119	70	130				
Nickel	1.147	1.0	1.000	0	115	70	130				
Selenium	0.502	0.50	0.5000	0	100	70	130				
Thallium	0.455	0.50	0.5000	0	91.1	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.251	0.50	10.00	0	92.5	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ZZZZZZ**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.519	0.50	0.5000	0	104	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	19.877	0.50	20.00	0	99.4	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.056	0.50	20.00	0	100	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCV**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.176	0.50	20.00	0	101	90	110				

Qualifiers:

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

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **R104074** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.491	0.50	0.5000	0	98.1	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.263	1.0	10.00	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.089	1.0	1.000	0	109	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.114	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCV**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.907	1.0	20.00	0	99.5	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ZZZZZZ**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.062	1.0	1.000	0	106	70	130				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	CCV3	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126090

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.398	1.0	20.00	0	102	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.336	1.0	20.00	0	102	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.403	1.0	20.00	0	102	90	110				

Sample ID	CCV6	SampType:	CCV	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	CCV	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126120

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.685	1.0	20.00	0	103	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ZZZZZZ	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126122

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.098	1.0	1.000	0	110	70	130				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126153**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	0.025	1.0									
Zinc	ND	10									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126180**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	ND	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **103960**
Client ID: **CCB**	Batch ID: **R103960**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126198**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB6** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **CCB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.151	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.375	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	0.126	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.071	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.293	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.070	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.245	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.072	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.252	0.50									
Nickel	ND	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **CCB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.043	0.50									
Beryllium	ND	0.50									
Copper	0.327	1.0									
Lead	ND	1.0									
Molybdenum	0.242	0.50									
Nickel	0.127	1.0									
Selenium	0.137	0.50									
Thallium	ND	0.50									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **ICB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **104074**
Client ID: **CCB**	Batch ID: **R104074**	TestNo: **EPA 200.8**		Analysis Date: **11/10/2015**	SeqNo: **2133258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126049**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126064**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126076**

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

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126091**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126103**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126115**

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

Sample ID **CCB6**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **CCB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126121**

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

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	0.190	1.0									
Cobalt	0.013	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSAB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.662	0.10	20.00	0	108	80	120				
Barium	17.889	1.0	20.00	0	89.4	80	120				
Cadmium	19.781	0.50	20.00	0	98.9	80	120				
Chromium	21.317	1.0	20.00	0	107	80	120				
Cobalt	20.182	0.50	20.00	0	101	80	120				
Lead	21.553	1.0	20.00	0	108	80	120				
Manganese	18.995	0.50	20.00	0	95.0	80	120				
Vanadium	21.542	1.0	20.00	0	108	80	120				
Zinc	18.516	10	20.00	0	92.6	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126155**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Cadmium	ND	0.50									
Chromium	0.162	1.0									
Cobalt	0.014	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSAB** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.581	0.10	20.00	0	108	80	120				
Barium	18.672	1.0	20.00	0	93.4	80	120				
Cadmium	19.794	0.50	20.00	0	99.0	80	120				
Chromium	20.415	1.0	20.00	0	102	80	120				
Cobalt	19.149	0.50	20.00	0	95.7	80	120				
Lead	21.621	1.0	20.00	0	108	80	120				
Manganese	18.177	0.50	20.00	0	90.9	80	120				
Vanadium	20.876	1.0	20.00	0	104	80	120				
Zinc	18.088	10	20.00	0	90.4	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ICSA** Batch ID: **R103960** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126200**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	103960
Client ID:	ICSA	Batch ID:	R103960	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	ND	0.50									
Chromium	0.140	1.0									
Cobalt	ND	0.50									
Lead	ND	1.0									
Manganese	ND	0.50									
Vanadium	ND	1.0									
Zinc	ND	10									

Sample ID	ICSAB3	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	103960
Client ID:	ICSAB	Batch ID:	R103960	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.985	0.10	20.00	0	110	80	120				
Barium	18.124	1.0	20.00	0	90.6	80	120				
Cadmium	19.529	0.50	20.00	0	97.6	80	120				
Chromium	20.180	1.0	20.00	0	101	80	120				
Cobalt	19.429	0.50	20.00	0	97.1	80	120				
Lead	21.459	1.0	20.00	0	107	80	120				
Manganese	18.017	0.50	20.00	0	90.1	80	120				
Vanadium	21.069	1.0	20.00	0	105	80	120				
Zinc	17.991	10	20.00	0	90.0	80	120				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.057	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Molybdenum	0.133	0.50									
Nickel	0.315	1.0									
Selenium	ND	0.50									
Thallium	0.043	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSAB** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/9/2015** SeqNo: **2132995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.333	0.50	20.00	0	107	80	120				
Beryllium	22.347	0.50	20.00	0	112	80	120				
Copper	18.493	1.0	20.00	0	92.5	80	120				
Lead	22.141	1.0	20.00	0	111	80	120				
Molybdenum	22.945	0.50	20.00	0	115	80	120				
Nickel	20.101	1.0	20.00	0	101	80	120				
Selenium	20.654	0.50	20.00	0	103	80	120				
Thallium	22.575	0.50	20.00	0	113	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ICSA** Batch ID: **R104066** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Beryllium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	104066
Client ID:	ICSA	Batch ID:	R104066	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133038

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.063	0.50									
Nickel	0.338	1.0									
Selenium	ND	0.50									
Thallium	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	104066
Client ID:	ICSAB	Batch ID:	R104066	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133039

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.253	0.50	20.00	0	106	80	120				
Beryllium	22.157	0.50	20.00	0	111	80	120				
Copper	18.257	1.0	20.00	0	91.3	80	120				
Lead	22.127	1.0	20.00	0	111	80	120				
Molybdenum	22.228	0.50	20.00	0	111	80	120				
Nickel	19.773	1.0	20.00	0	98.9	80	120				
Selenium	19.478	0.50	20.00	0	97.4	80	120				
Thallium	22.756	0.50	20.00	0	114	80	120				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	104074
Client ID:	ICSA	Batch ID:	R104074	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	104074
Client ID:	ICSAB	Batch ID:	R104074	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	19.291	0.50	20.00	0	96.5	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	104074
Client ID:	ICSA	Batch ID:	R104074	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133260

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.50									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:		RunNo:	104074
Client ID:	ICSAB	Batch ID:	R104074	TestNo:	EPA 200.8			Analysis Date:	11/10/2015	SeqNo:	2133261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	20.724	0.50	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ICSA	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126051

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.190	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ICSAB	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126052

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.317	1.0	20.00	0	107	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ICSA	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126078

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.162	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ICSAB	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126079

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.415	1.0	20.00	0	102	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	103959
Client ID:	ICSA	Batch ID:	R103959	TestNo:	EPA 200.8			Analysis Date:	11/4/2015	SeqNo:	2126123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.140	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID: **ICSAB**	Batch ID: **R103959**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.180	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					159 Tb (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4120344.3	4120344.3	100	PASS	70-130	5948159.1	5948159.1	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4074409.1	4120344.3	98.89	PASS	70-130	5951037.3	5948159.1	100.05	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4048100.7	4120344.3	98.25	PASS	70-130	5885553.8	5948159.1	98.95	PASS	70-130
Std3-5/50 ppb	ICAL	1	4044176.8	4120344.3	98.15	PASS	70-130	5917339.4	5948159.1	99.48	PASS	70-130
Std4-10/100 ppb	ICAL	1	3997649	4120344.3	97.022	PASS	70-130	5879781.1	5948159.1	98.85	PASS	70-130
Std5-20/200 ppb	ICAL	1	4000927.6	4120344.3	97.1	PASS	70-130	5838893	5948159.1	98.16	PASS	70-130
Std6-40/400 ppb	ICAL	1	4024085.7	4120344.3	97.66	PASS	70-130	5893339.1	5948159.1	99.078	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3989625.4	4120344.3	96.83	PASS	70-130	5842619.5	5948159.1	98.23	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3996609.8	4120344.3	97	PASS	70-130	5903055.8	5948159.1	99.24	PASS	70-130
ICV	ICV	1	3831046.8	4120344.3	92.98	PASS	70-130	5620720.6	5948159.1	94.5	PASS	70-130
ICB	ICB	1	3875010.5	4120344.3	94.046	PASS	70-130	5703337	5948159.1	95.88	PASS	70-130
LLICV	CCV1	1	3872835.8	4120344.3	93.99	PASS	70-130	5628474.4	5948159.1	94.63	PASS	70-130
ICSA1	ICSA	1	3619708.7	4120344.3	87.85	PASS	70-130	5333459.2	5948159.1	89.67	PASS	70-130
ICSAB1	ICSAB	1	3661820.5	4120344.3	88.87	PASS	70-130	5330621.8	5948159.1	89.62	PASS	70-130
MB-52909	MBLK	1	3984445.1	4120344.3	96.7	PASS	70-130	5757836.6	5948159.1	96.8	PASS	70-130
LCS-52909	LCS	1	3831646.3	4120344.3	92.99	PASS	70-130	5564370.1	5948159.1	93.55	PASS	70-130
N017400-001B	SAMP	1	3719863.4	4120344.3	90.28	PASS	70-130	5244297.5	5948159.1	88.17	PASS	70-130
N017400-001B	SAMP	5	3639862.9	4120344.3	88.34	PASS	70-130	5132011.3	5948159.1	86.28	PASS	70-130
N017400-001B-PS	PS	1	3772815.1	4120344.3	91.57	PASS	70-130	5272690.3	5948159.1	88.64	PASS	70-130
N017400-001B-MS	MS	1	3833044.4	4120344.3	93.027	PASS	70-130	5289578.2	5948159.1	88.93	PASS	70-130
N017400-001B-MSD	MSD	1	3778608.7	4120344.3	91.71	PASS	70-130	5223782.4	5948159.1	87.82	PASS	70-130
N017400-002B	SAMP	1	3816636.8	4120344.3	92.63	PASS	70-130	5257652.5	5948159.1	88.39	PASS	70-130
CCV1	CCV	1	4096182.4	4120344.3	99.41	PASS	70-130	5608643.3	5948159.1	94.29	PASS	70-130
CCB1	CCB	1	3934335.7	4120344.3	95.49	PASS	70-130	5581087.8	5948159.1	93.83	PASS	70-130
N017415-001B	SAMP	1	3388784.5	4120344.3	82.25	PASS	70-130	4754115.9	5948159.1	79.93	PASS	70-130
N017415-002B	SAMP	1	3585868.2	4120344.3	87.028	PASS	70-130	4968241.4	5948159.1	83.53	PASS	70-130
N017415-003B	SAMP	1	3597498.8	4120344.3	87.31	PASS	70-130	4939598.1	5948159.1	83.044	PASS	70-130
N017415-004B	SAMP	1	3625809.6	4120344.3	88	PASS	70-130	4932231.5	5948159.1	82.92	PASS	70-130
N017415-005B	SAMP	1	3174767.3	4120344.3	77.051	PASS	70-130	4329879.5	5948159.1	72.79	PASS	70-130
N017415-006B	SAMP	1	3142647	4120344.3	76.27	PASS	70-130	4279904.8	5948159.1	71.95	PASS	70-130
N017415-007B	SAMP	1	3055529.1	4120344.3	74.16	PASS	70-130	4175387.8	5948159.1	70.2	PASS	70-130
N017427-001B	SAMP	1	3143274.8	4120344.3	76.29	PASS	70-130	4294177.3	5948159.1	72.19	PASS	70-130
N017427-002B	SAMP	1	3300502.1	4120344.3	80.1	PASS	70-130	4511428.1	5948159.1	75.85	PASS	70-130
N017427-002B-MS	MS	1	3440606.3	4120344.3	83.5	PASS	70-130	4651419.9	5948159.1	78.2	PASS	70-130
CCV2	CCV	1	4055519.6	4120344.3	98.43	PASS	70-130	5531215.8	5948159.1	92.99	PASS	70-130
CCB2	CCB	1	3923149.3	4120344.3	95.21	PASS	70-130	5532086.9	5948159.1	93.005	PASS	70-130
LLCCV1	CCV2	1	3870888.4	4120344.3	93.95	PASS	70-130	5505466.2	5948159.1	92.56	PASS	70-130
ICSA2	ICSA	1	3557176.3	4120344.3	86.33	PASS	70-130	5105597.6	5948159.1	85.83	PASS	70-130
ICSAB2	ICSAB	1	3606608.1	4120344.3	87.53	PASS	70-130	5119332.3	5948159.1	86.066	PASS	70-130
CCV3	CCV	1	3612091.8	4120344.3	87.66	PASS	70-130	5222914.4	5948159.1	87.81	PASS	70-130
CCB3	CCB	1	3640098.2	4120344.3	88.34	PASS	70-130	5304029.9	5948159.1	89.17	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					159 Tb (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	3507261.1	4120344.3	85.12	PASS	70-130	5021466.9	5948159.1	84.42	PASS	70-130
CCB4	CCB	1	3426063.6	4120344.3	83.15	PASS	70-130	4981731.8	5948159.1	83.75	PASS	70-130
CCV5	CCV	1	3373670.7	4120344.3	81.88	PASS	70-130	4950946.4	5948159.1	83.23	PASS	70-130
CCB5	CCB	1	3402970.4	4120344.3	82.59	PASS	70-130	5009961.6	5948159.1	84.23	PASS	70-130
CCV6	CCV	1	3428622.2	4120344.3	83.21	PASS	70-130	4915903.5	5948159.1	82.65	PASS	70-130
CCB6	CCB	1	3328476.1	4120344.3	80.78	PASS	70-130	4883927	5948159.1	82.11	PASS	70-130
LLCCV2	CCV2	1	3351374.7	4120344.3	81.34	PASS	70-130	4870517.1	5948159.1	81.88	PASS	70-130
ICSA3	ICSA	1	3092997.7	4120344.3	75.066	PASS	70-130	4515680.5	5948159.1	75.92	PASS	70-130
ICSAB3	ICSAB	1	3165273.6	4120344.3	76.82	PASS	70-130	4523909.7	5948159.1	76.056	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	209 Bi (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3661582.8	3661582.8	100	PASS	70-130	74381.4	74381.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	3631545.8	3661582.8	99.18	PASS	70-130	73197.2	74381.4	98.41	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	3629819.8	3661582.8	99.13	PASS	70-130	73437	74381.4	98.73	PASS	70-130
Std3-5/50 ppb	ICAL	1	3644920.1	3661582.8	99.54	PASS	70-130	72604.8	74381.4	97.61	PASS	70-130
Std4-10/100 ppb	ICAL	1	3658334.6	3661582.8	99.91	PASS	70-130	73583.1	74381.4	98.93	PASS	70-130
Std5-20/200 ppb	ICAL	1	3666602.1	3661582.8	100.14	PASS	70-130	73394.6	74381.4	98.67	PASS	70-130
Std6-40/400 ppb	ICAL	1	3684831.8	3661582.8	100.63	PASS	70-130	74930.3	74381.4	100.74	PASS	70-130
Std7-100/1000 ppb	ICAL	1	3675623.4	3661582.8	100.38	PASS	70-130	75030.9	74381.4	100.87	PASS	70-130
Std8-200/2000 ppb	ICAL	1	3685377.2	3661582.8	100.65	PASS	70-130	75834.2	74381.4	101.95	PASS	70-130
ICV	ICV	1	3490188.4	3661582.8	95.32	PASS	70-130	72458.4	74381.4	97.41	PASS	70-130
ICB	ICB	1	3498592.9	3661582.8	95.55	PASS	70-130	73982.7	74381.4	99.46	PASS	70-130
LLICV	CCV1	1	3494957.4	3661582.8	95.45	PASS	70-130	73327.5	74381.4	98.58	PASS	70-130
ICSA1	ICSA	1	2942733.8	3661582.8	80.37	PASS	70-130	74396.8	74381.4	100.02	PASS	70-130
ICSAB1	ICSAB	1	2924057	3661582.8	79.86	PASS	70-130	75787.2	74381.4	101.89	PASS	70-130
MB-52909	MBLK	1	3488493.5	3661582.8	95.27	PASS	70-130	78504.3	74381.4	105.54	PASS	70-130
LCS-52909	LCS	1	3435213.6	3661582.8	93.82	PASS	70-130	74271.2	74381.4	99.85	PASS	70-130
N017400-001B	SAMP	1	2666490.7	3661582.8	72.82	PASS	70-130	82759.7	74381.4	111.26	PASS	70-130
N017400-001B	SAMP	5	2928188.4	3661582.8	79.97	PASS	70-130	76920	74381.4	103.41	PASS	70-130
N017400-001B-PS	PS	1	2872110.6	3661582.8	78.44	PASS	70-130	83524.1	74381.4	112.29	PASS	70-130
N017400-001B-MS	MS	1	2871743	3661582.8	78.43	PASS	70-130	84490.2	74381.4	113.59	PASS	70-130
N017400-001B-MSD	MSD	1	2827691.9	3661582.8	77.23	PASS	70-130	87726.8	74381.4	117.94	PASS	70-130
N017400-002B	SAMP	1	2807784.2	3661582.8	76.68	PASS	70-130	88968.6	74381.4	119.61	PASS	70-130
CCV1	CCV	1	3382099	3661582.8	92.37	PASS	70-130	85139.8	74381.4	114.46	PASS	70-130
CCB1	CCB	1	3335025.9	3661582.8	91.082	PASS	70-130	78958.7	74381.4	106.15	PASS	70-130
N017415-001B	SAMP	1	2642686.9	3661582.8	72.17	PASS	70-130	74555.6	74381.4	100.23	PASS	70-130
N017415-002B	SAMP	1	2696107	3661582.8	73.63	PASS	70-130	82393.3	74381.4	110.77	PASS	70-130
N017415-003B	SAMP	1	2667232.3	3661582.8	72.84	PASS	70-130	85104.3	74381.4	114.42	PASS	70-130
N017415-004B	SAMP	1	2634235.6	3661582.8	71.94	PASS	70-130	86207.7	74381.4	115.9	PASS	70-130
N017415-005B	SAMP	1	2304720.3	3661582.8	62.94	NR!	70-130	75558.6	74381.4	101.58	PASS	70-130
N017415-006B	SAMP	1	2300963	3661582.8	62.84	NR!	70-130	74982.5	74381.4	100.81	PASS	70-130
N017415-007B	SAMP	1	2250018.1	3661582.8	61.45	NR!	70-130	72614.4	74381.4	97.62	PASS	70-130
N017427-001B	SAMP	1	2305989.9	3661582.8	62.98	NR!	70-130	73269.5	74381.4	98.51	PASS	70-130
N017427-002B	SAMP	1	2415587.3	3661582.8	65.97	NR!	70-130	77915	74381.4	104.75	PASS	70-130
N017427-002B-MS	MS	1	2520009.8	3661582.8	68.82	NR!	70-130	79013.2	74381.4	106.23	PASS	70-130
CCV2	CCV	1	3277286	3661582.8	89.5	PASS	70-130	87451.8	74381.4	117.57	PASS	70-130
CCB2	CCB	1	3269201.8	3661582.8	89.28	PASS	70-130	81436.2	74381.4	109.48	PASS	70-130
LLCCV1	CCV2	1	3295246.1	3661582.8	90	PASS	70-130	76999.9	74381.4	103.52	PASS	70-130
ICSA2	ICSA	1	2772044.3	3661582.8	75.71	PASS	70-130	75957.7	74381.4	102.12	PASS	70-130
ICSAB2	ICSAB	1	2772852.7	3661582.8	75.73	PASS	70-130	77742.9	74381.4	104.52	PASS	70-130
CCV3	CCV	1	3280081.7	3661582.8	89.58	PASS	70-130	70354	74381.4	94.59	PASS	70-130
CCB3	CCB	1	3287835.2	3661582.8	89.79	PASS	70-130	69498	74381.4	93.43	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	209 Bi (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	3142039.7	3661582.8	85.81	PASS	70-130	69047.4	74381.4	92.83	PASS	70-130
CCB4	CCB	1	3057061.1	3661582.8	83.49	PASS	70-130	65769.7	74381.4	88.42	PASS	70-130
CCV5	CCV	1	3112948.5	3661582.8	85.016	PASS	70-130	62878.4	74381.4	84.54	PASS	70-130
CCB5	CCB	1	3075562	3661582.8	84	PASS	70-130	62726.7	74381.4	84.33	PASS	70-130
CCV6	CCV	1	3087666.7	3661582.8	84.33	PASS	70-130	63544.2	74381.4	85.43	PASS	70-130
CCB6	CCB	1	2982878.2	3661582.8	81.46	PASS	70-130	62440.4	74381.4	83.95	PASS	70-130
LLCCV2	CCV2	1	3006479.4	3661582.8	82.11	PASS	70-130	62403.3	74381.4	83.9	PASS	70-130
ICSA3	ICSA	1	2519666.9	3661582.8	68.81	NR!	70-130	66396.3	74381.4	89.26	PASS	70-130
ICSAB3	ICSAB	1	2499267.2	3661582.8	68.26	NR!	70-130	67361.5	74381.4	90.56	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61364	61364	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	62199.2	61364	101.36	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	61451.2	61364	100.14	PASS	70-130
Std3-5/50 ppb	ICAL	1	61844.7	61364	100.78	PASS	70-130
Std4-10/100 ppb	ICAL	1	61274	61364	99.85	PASS	70-130
Std5-20/200 ppb	ICAL	1	61250.2	61364	99.81	PASS	70-130
Std6-40/400 ppb	ICAL	1	62152.5	61364	101.28	PASS	70-130
Std7-100/1000 ppb	ICAL	1	61941.7	61364	100.94	PASS	70-130
Std8-200/2000 ppb	ICAL	1	62571	61364	101.97	PASS	70-130
ICV	ICV	1	59976.6	61364	97.74	PASS	70-130
ICB	ICB	1	62417.1	61364	101.72	PASS	70-130
LLICV	CCV1	1	62527.2	61364	101.9	PASS	70-130
ICSA1	ICSA	1	59596.2	61364	97.12	PASS	70-130
ICSAB1	ICSAB	1	61643.8	61364	100.46	PASS	70-130
MB-52909	MBLK	1	66140.6	61364	107.78	PASS	70-130
LCS-52909	LCS	1	62284.3	61364	101.5	PASS	70-130
N017400-001B	SAMP	1	64675.8	61364	105.4	PASS	70-130
N017400-001B	SAMP	5	63246.8	61364	103.07	PASS	70-130
N017400-001B-PS	PS	1	65540.3	61364	106.81	PASS	70-130
N017400-001B-MS	MS	1	65900.9	61364	107.39	PASS	70-130
N017400-001B-MSD	MSD	1	68510.1	61364	111.65	PASS	70-130
N017400-002B	SAMP	1	67900.9	61364	110.65	PASS	70-130
CCV1	CCV	1	70018.6	61364	114.1	PASS	70-130
CCB1	CCB	1	65320.5	61364	106.45	PASS	70-130
N017415-001B	SAMP	1	60175.1	61364	98.063	PASS	70-130
N017415-002B	SAMP	1	64146.7	61364	104.53	PASS	70-130
N017415-003B	SAMP	1	65820.4	61364	107.26	PASS	70-130
N017415-004B	SAMP	1	66439.5	61364	108.27	PASS	70-130
N017415-005B	SAMP	1	59114.5	61364	96.33	PASS	70-130
N017415-006B	SAMP	1	57964.9	61364	94.46	PASS	70-130
N017415-007B	SAMP	1	55866.7	61364	91.041	PASS	70-130
N017427-001B	SAMP	1	56953.7	61364	92.81	PASS	70-130
N017427-002B	SAMP	1	58908.2	61364	96	PASS	70-130
N017427-002B-MS	MS	1	60863.5	61364	99.18	PASS	70-130
CCV2	CCV	1	71646.8	61364	116.76	PASS	70-130
CCB2	CCB	1	68261.5	61364	111.24	PASS	70-130
LLCCV1	CCV2	1	66460.5	61364	108.31	PASS	70-130
ICSA2	ICSA	1	60857.8	61364	99.18	PASS	70-130
ICSAB2	ICSAB	1	62475.9	61364	101.81	PASS	70-130
CCV3	CCV	1	60621.4	61364	98.79	PASS	70-130
CCB3	CCB	1	58713.1	61364	95.68	PASS	70-130

INTERNAL STANDARD: 151104A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	57986.1	61364	94.5	PASS	70-130
CCB4	CCB	1	55236.6	61364	90.015	PASS	70-130
CCV5	CCV	1	54690.4	61364	89.12	PASS	70-130
CCB5	CCB	1	54978	61364	89.59	PASS	70-130
CCV6	CCV	1	56353.8	61364	91.84	PASS	70-130
CCB6	CCB	1	55128.7	61364	89.84	PASS	70-130
LLCCV2	CCV2	1	54983.6	61364	89.6	PASS	70-130
ICSA3	ICSA	1	52968.2	61364	86.32	PASS	70-130
ICSAB3	ICSAB	1	55081.7	61364	89.76	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4388228.9	4388228.9	100	PASS	70-130	3510049	3510049	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4826660.1	4388228.9	109.99	PASS	70-130	3850607.5	3510049	109.7	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4758950.9	4388228.9	108.45	PASS	70-130	3807805.7	3510049	108.48	PASS	70-130
Std3-5/50 ppb	ICAL	1	4775737.7	4388228.9	108.83	PASS	70-130	3827910.6	3510049	109.06	PASS	70-130
Std4-10/100 ppb	ICAL	1	4863832.7	4388228.9	110.84	PASS	70-130	3911084.3	3510049	111.43	PASS	70-130
Std5-20/200 ppb	ICAL	1	4935042.4	4388228.9	112.46	PASS	70-130	3981637.8	3510049	113.44	PASS	70-130
Std6-40/400 ppb	ICAL	1	5173079	4388228.9	117.89	PASS	70-130	4166584.8	3510049	118.7	PASS	70-130
Std7-100/1000 ppb	ICAL	1	5228314.3	4388228.9	119.14	PASS	70-130	4219867.3	3510049	120.22	PASS	70-130
Std8-200/2000 ppb	ICAL	1	5344142.6	4388228.9	121.78	PASS	70-130	4319905.3	3510049	123.07	PASS	70-130
ICV	ICV	1	4671728.1	4388228.9	106.46	PASS	70-130	3752133.5	3510049	106.9	PASS	70-130
ICB	ICB	1	4494470.9	4388228.9	102.42	PASS	70-130	3619735.1	3510049	103.12	PASS	70-130
LLICV	CCV1	1	5121998.7	4388228.9	116.72	PASS	70-130	3932740	3510049	112.04	PASS	70-130
ICSA1	ICSA	1	4949144.1	4388228.9	112.78	PASS	70-130	3585705.2	3510049	102.16	PASS	70-130
ICSAB1	ICSAB	1	4980354	4388228.9	113.49	PASS	70-130	3547712.8	3510049	101.07	PASS	70-130
MB-52909	MBLK	1	4697512.9	4388228.9	107.05	PASS	70-130	3646902.1	3510049	103.9	PASS	70-130
LCS-52909	LCS	1	4747098.4	4388228.9	108.18	PASS	70-130	3772544.6	3510049	107.48	PASS	70-130
N017400-001B	SAMP	5	4931236.6	4388228.9	112.37	PASS	70-130	3652842.2	3510049	104.07	PASS	70-130
N017400-001B	SAMP	1	4568340.4	4388228.9	104.1	PASS	70-130	3039148.8	3510049	86.58	PASS	70-130
N017400-002B	SAMP	5	4351115.1	4388228.9	99.15	PASS	70-130	3227136.9	3510049	91.94	PASS	70-130
N017400-002B	SAMP	1	4050524.8	4388228.9	92.3	PASS	70-130	2879924.9	3510049	82.048	PASS	70-130
N017415-001B	SAMP	5	4377625.3	4388228.9	99.76	PASS	70-130	3236746.4	3510049	92.21	PASS	70-130
N017415-001B	SAMP	1	3893746	4388228.9	88.73	PASS	70-130	2791267.7	3510049	79.52	PASS	70-130
N017415-002B	SAMP	5	3922053.6	4388228.9	89.38	PASS	70-130	2895174.7	3510049	82.48	PASS	70-130
N017415-002B	SAMP	1	3479869.5	4388228.9	79.3	PASS	70-130	2476737.2	3510049	70.56	PASS	70-130
CCV1	CCV	1	4643021	4388228.9	105.81	PASS	70-130	3674034.1	3510049	104.67	PASS	70-130
CCB1	CCB	1	3457121.3	4388228.9	78.78	PASS	70-130	2680546.7	3510049	76.37	PASS	70-130
N017415-003B	SAMP	5	3444738.3	4388228.9	78.5	PASS	70-130	2586698	3510049	73.69	PASS	70-130
N017415-003B	SAMP	1	3849259.5	4388228.9	87.72	PASS	70-130	2740638.2	3510049	78.08	PASS	70-130
N017415-004B	SAMP	5	3749864.4	4388228.9	85.45	PASS	70-130	2762883.3	3510049	78.71	PASS	70-130
N017415-004B	SAMP	1	4595211.7	4388228.9	104.72	PASS	70-130	3241003.6	3510049	92.33	PASS	70-130
N017415-005B	SAMP	5	4314285.7	4388228.9	98.31	PASS	70-130	3171136.6	3510049	90.34	PASS	70-130
N017415-005B	SAMP	1	4374431.9	4388228.9	99.69	PASS	70-130	3113337.7	3510049	88.7	PASS	70-130
N017415-006B	SAMP	5	4660847.8	4388228.9	106.21	PASS	70-130	3452919.8	3510049	98.37	PASS	70-130
N017415-006B	SAMP	1	4297943.9	4388228.9	97.94	PASS	70-130	3030635.9	3510049	86.34	PASS	70-130
N017415-007B	SAMP	5	4069274.9	4388228.9	92.73	PASS	70-130	2994298.4	3510049	85.31	PASS	70-130
N017415-007B	SAMP	1	4003160.1	4388228.9	91.22	PASS	70-130	2849108.5	3510049	81.17	PASS	70-130
CCV2	CCV	1	4737094.6	4388228.9	107.95	PASS	70-130	3634603.2	3510049	103.55	PASS	70-130
CCB2	CCB	1	4095063.5	4388228.9	93.32	PASS	70-130	3199169.4	3510049	91.14	PASS	70-130
N017427-001B	SAMP	5	3843193.6	4388228.9	87.58	PASS	70-130	2889500.8	3510049	82.32	PASS	70-130
N017427-001B	SAMP	1	3846435.1	4388228.9	87.65	PASS	70-130	2730797.9	3510049	77.8	PASS	70-130
N017427-002B	SAMP	5	4179551	4388228.9	95.24	PASS	70-130	3065422.8	3510049	87.33	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	115 In (ISTD) [3]					209 Bi (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	4339696.3	4388228.9	98.89	PASS	70-130	3064634	3510049	87.31	PASS	70-130
N017400-001B	SAMP	25	4504482.7	4388228.9	102.65	PASS	70-130	3390614.5	3510049	96.6	PASS	70-130
N017400-001B-PS	PS	5	4508013.3	4388228.9	102.73	PASS	70-130	3482681	3510049	99.22	PASS	70-130
N017400-001B-PS	PS	1	4383607.3	4388228.9	99.89	PASS	70-130	3323184	3510049	94.68	PASS	70-130
N017400-001B-MS	MS	5	4417716.4	4388228.9	100.67	PASS	70-130	3400075	3510049	96.87	PASS	70-130
N017400-001B-MS	MS	1	4455377.8	4388228.9	101.53	PASS	70-130	3390133.7	3510049	96.58	PASS	70-130
N017400-001B-MSD	MSD	5	4372617.3	4388228.9	99.64	PASS	70-130	3389971.3	3510049	96.58	PASS	70-130
CCV3	CCV	1	4742207.7	4388228.9	108.07	PASS	70-130	3774001.9	3510049	107.52	PASS	70-130
CCB3	CCB	1	4095160.5	4388228.9	93.32	PASS	70-130	3268957.1	3510049	93.13	PASS	70-130
N017400-001B-MSD	MSD	1	4126342.3	4388228.9	94.032	PASS	70-130	3168438.5	3510049	90.27	PASS	70-130
N017427-002B-MS	MS	5	4381343.5	4388228.9	99.84	PASS	70-130	3447778.4	3510049	98.23	PASS	70-130
N017427-002B-MS	MS	1	4139939.8	4388228.9	94.34	PASS	70-130	3161127.1	3510049	90.059	PASS	70-130
CCV4	CCV	1	4964730.5	4388228.9	113.14	PASS	70-130	3951841.6	3510049	112.59	PASS	70-130
CCB4	CCB	1	4981608	4388228.9	113.52	PASS	70-130	3799380.2	3510049	108.24	PASS	70-130
LLCCV1	CCV2	1	4373380.7	4388228.9	99.66	PASS	70-130	3489954.3	3510049	99.43	PASS	70-130
ICSA2	ICSA	1	4716816.4	4388228.9	107.49	PASS	70-130	3441173.7	3510049	98.038	PASS	70-130
ICSAB2	ICSAB	1	4548214.7	4388228.9	103.65	PASS	70-130	3234723.3	3510049	92.16	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	93890.7	93890.7	100	PASS	70-130	124583.4	124583.4	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	101811.1	93890.7	108.44	PASS	70-130	132611.3	124583.4	106.44	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	99290.1	93890.7	105.75	PASS	70-130	129809	124583.4	104.19	PASS	70-130
Std3-5/50 ppb	ICAL	1	99192.6	93890.7	105.65	PASS	70-130	128649.1	124583.4	103.26	PASS	70-130
Std4-10/100 ppb	ICAL	1	100440.5	93890.7	106.98	PASS	70-130	128306.2	124583.4	102.99	PASS	70-130
Std5-20/200 ppb	ICAL	1	101433.1	93890.7	108.03	PASS	70-130	129159.5	124583.4	103.67	PASS	70-130
Std6-40/400 ppb	ICAL	1	105079.6	93890.7	111.92	PASS	70-130	134939.2	124583.4	108.31	PASS	70-130
Std7-100/1000 ppb	ICAL	1	105660.8	93890.7	112.54	PASS	70-130	135452.3	124583.4	108.72	PASS	70-130
Std8-200/2000 ppb	ICAL	1	107776	93890.7	114.79	PASS	70-130	137491.8	124583.4	110.36	PASS	70-130
ICV	ICV	1	96443.4	93890.7	102.72	PASS	70-130	122551.7	124583.4	98.37	PASS	70-130
ICB	ICB	1	94594	93890.7	100.75	PASS	70-130	121660.6	124583.4	97.65	PASS	70-130
LLICV	CCV1	1	93815.8	93890.7	99.92	PASS	70-130	116822.3	124583.4	93.77	PASS	70-130
ICSA1	ICSA	1	105415.7	93890.7	112.27	PASS	70-130	133424.3	124583.4	107.1	PASS	70-130
ICSAB1	ICSAB	1	108871.3	93890.7	115.96	PASS	70-130	142403.4	124583.4	114.3	PASS	70-130
MB-52909	MBLK	1	100692.9	93890.7	107.24	PASS	70-130	136869.5	124583.4	109.86	PASS	70-130
LCS-52909	LCS	1	96797.5	93890.7	103.1	PASS	70-130	132649.6	124583.4	106.47	PASS	70-130
N017400-001B	SAMP	5	104001.3	93890.7	110.77	PASS	70-130	135762.1	124583.4	108.97	PASS	70-130
N017400-001B	SAMP	1	107152.1	93890.7	114.12	PASS	70-130	153181.8	124583.4	122.96	PASS	70-130
N017400-002B	SAMP	5	102016.7	93890.7	108.65	PASS	70-130	137448.9	124583.4	110.33	PASS	70-130
N017400-002B	SAMP	1	97702.4	93890.7	104.06	PASS	70-130	135320.5	124583.4	108.62	PASS	70-130
N017415-001B	SAMP	5	95965.2	93890.7	102.21	PASS	70-130	132325	124583.4	106.21	PASS	70-130
N017415-001B	SAMP	1	98347.7	93890.7	104.75	PASS	70-130	130521.3	124583.4	104.77	PASS	70-130
N017415-002B	SAMP	5	84740.2	93890.7	90.25	PASS	70-130	110196.5	124583.4	88.45	PASS	70-130
N017415-002B	SAMP	1	95488.3	93890.7	101.7	PASS	70-130	122656.7	124583.4	98.45	PASS	70-130
CCV1	CCV	1	84353.3	93890.7	89.84	PASS	70-130	104161.3	124583.4	83.61	PASS	70-130
CCB1	CCB	1	73928.3	93890.7	78.74	PASS	70-130	100496.3	124583.4	80.67	PASS	70-130
N017415-003B	SAMP	5	81000	93890.7	86.27	PASS	70-130	105976.9	124583.4	85.065	PASS	70-130
N017415-003B	SAMP	1	89064.3	93890.7	94.86	PASS	70-130	117220.2	124583.4	94.09	PASS	70-130
N017415-004B	SAMP	5	90874.9	93890.7	96.79	PASS	70-130	116443.4	124583.4	93.47	PASS	70-130
N017415-004B	SAMP	1	107680.3	93890.7	114.69	PASS	70-130	137635.2	124583.4	110.48	PASS	70-130
N017415-005B	SAMP	5	95931.4	93890.7	102.17	PASS	70-130	128734.2	124583.4	103.33	PASS	70-130
N017415-005B	SAMP	1	102497.6	93890.7	109.17	PASS	70-130	138057.2	124583.4	110.82	PASS	70-130
N017415-006B	SAMP	5	102320.7	93890.7	108.98	PASS	70-130	135899.2	124583.4	109.08	PASS	70-130
N017415-006B	SAMP	1	100308.7	93890.7	106.84	PASS	70-130	134541.5	124583.4	107.99	PASS	70-130
N017415-007B	SAMP	5	93970.7	93890.7	100.09	PASS	70-130	129999.2	124583.4	104.35	PASS	70-130
N017415-007B	SAMP	1	97909.6	93890.7	104.28	PASS	70-130	136406	124583.4	109.49	PASS	70-130
CCV2	CCV	1	102316.8	93890.7	108.97	PASS	70-130	137173.3	124583.4	110.11	PASS	70-130
CCB2	CCB	1	87452.2	93890.7	93.14	PASS	70-130	117134.6	124583.4	94.021	PASS	70-130
N017427-001B	SAMP	5	83173.3	93890.7	88.59	PASS	70-130	116630	124583.4	93.62	PASS	70-130
N017427-001B	SAMP	1	85199.2	93890.7	90.74	PASS	70-130	115037.9	124583.4	92.34	PASS	70-130
N017427-002B	SAMP	5	94351.6	93890.7	100.49	PASS	70-130	124809.7	124583.4	100.18	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	100615.2	93890.7	107.16	PASS	70-130	135722.3	124583.4	108.94	PASS	70-130
N017400-001B	SAMP	25	96904.4	93890.7	103.21	PASS	70-130	129028.2	124583.4	103.57	PASS	70-130
N017400-001B-PS	PS	5	92022.4	93890.7	98.01	PASS	70-130	123049.7	124583.4	98.77	PASS	70-130
N017400-001B-PS	PS	1	90938.5	93890.7	96.86	PASS	70-130	123281.1	124583.4	98.95	PASS	70-130
N017400-001B-MS	MS	5	91328.6	93890.7	97.27	PASS	70-130	122867.1	124583.4	98.62	PASS	70-130
N017400-001B-MS	MS	1	91778.7	93890.7	97.75	PASS	70-130	124310.1	124583.4	99.78	PASS	70-130
N017400-001B-MSD	MSD	5	90135.2	93890.7	96	PASS	70-130	113993.2	124583.4	91.5	PASS	70-130
CCV3	CCV	1	95495.3	93890.7	101.71	PASS	70-130	127998.3	124583.4	102.74	PASS	70-130
CCB3	CCB	1	84026.5	93890.7	89.49	PASS	70-130	109931.9	124583.4	88.24	PASS	70-130
N017400-001B-MSD	MSD	1	84592.9	93890.7	90.097	PASS	70-130	112969.8	124583.4	90.68	PASS	70-130
N017427-002B-MS	MS	5	88868.5	93890.7	94.65	PASS	70-130	119881.7	124583.4	96.23	PASS	70-130
N017427-002B-MS	MS	1	84852.8	93890.7	90.37	PASS	70-130	112249.5	124583.4	90.1	PASS	70-130
CCV4	CCV	1	100627.8	93890.7	107.18	PASS	70-130	135624.8	124583.4	108.86	PASS	70-130
CCB4	CCB	1	95783	93890.7	102.02	PASS	70-130	133948.3	124583.4	107.52	PASS	70-130
LLCCV1	CCV2	1	89555.8	93890.7	95.38	PASS	70-130	121496.2	124583.4	97.52	PASS	70-130
ICSA2	ICSA	1	97661.6	93890.7	104.02	PASS	70-130	124908.1	124583.4	100.26	PASS	70-130
ICSAB2	ICSAB	1	95868.9	93890.7	102.11	PASS	70-130	128121.3	124583.4	102.84	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	6 Li (ISTD) [3]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1419177.5	1419177.5	100	PASS	70-130	2222556	2222556	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	1553340.2	1419177.5	109.45	PASS	70-130	2465400.2	2222556	110.93	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	1526928.5	1419177.5	107.59	PASS	70-130	2410396.3	2222556	108.45	PASS	70-130
Std3-5/50 ppb	ICAL	1	1527572	1419177.5	107.64	PASS	70-130	2404745.9	2222556	108.2	PASS	70-130
Std4-10/100 ppb	ICAL	1	1527812.8	1419177.5	107.65	PASS	70-130	2433146.8	2222556	109.48	PASS	70-130
Std5-20/200 ppb	ICAL	1	1547085.4	1419177.5	109.01	PASS	70-130	2446941.5	2222556	110.1	PASS	70-130
Std6-40/400 ppb	ICAL	1	1622856.1	1419177.5	114.35	PASS	70-130	2583046.8	2222556	116.22	PASS	70-130
Std7-100/1000 ppb	ICAL	1	1639925.9	1419177.5	115.55	PASS	70-130	2591061.9	2222556	116.58	PASS	70-130
Std8-200/2000 ppb	ICAL	1	1664305.5	1419177.5	117.27	PASS	70-130	2615738.5	2222556	117.69	PASS	70-130
ICV	ICV	1	1460009.9	1419177.5	102.88	PASS	70-130	2353754.9	2222556	105.9	PASS	70-130
ICB	ICB	1	1413300.2	1419177.5	99.59	PASS	70-130	2313981.7	2222556	104.11	PASS	70-130
LLICV	CCV1	1	1733739.9	1419177.5	122.17	PASS	70-130	2348266.7	2222556	105.66	PASS	70-130
ICSA1	ICSA	1	1554711.3	1419177.5	109.55	PASS	70-130	2367589.1	2222556	106.53	PASS	70-130
ICSAB1	ICSAB	1	1513319.1	1419177.5	106.63	PASS	70-130	2410653.2	2222556	108.46	PASS	70-130
MB-52909	MBLK	1	1477035.6	1419177.5	104.08	PASS	70-130	2387195.1	2222556	107.41	PASS	70-130
LCS-52909	LCS	1	1546179.7	1419177.5	108.95	PASS	70-130	2374839.5	2222556	106.85	PASS	70-130
N017400-001B	SAMP	5	1419150.5	1419177.5	100	PASS	70-130	2370278.1	2222556	106.65	PASS	70-130
N017400-001B	SAMP	1	1099908.8	1419177.5	77.5	PASS	70-130	2264964.6	2222556	101.91	PASS	70-130
N017400-002B	SAMP	5	1281737.7	1419177.5	90.32	PASS	70-130	2237305.7	2222556	100.66	PASS	70-130
N017400-002B	SAMP	1	982613.1	1419177.5	69.24	NR!	70-130	2080621.6	2222556	93.61	PASS	70-130
N017415-001B	SAMP	5	1271457.7	1419177.5	89.59	PASS	70-130	2102580.6	2222556	94.6	PASS	70-130
N017415-001B	SAMP	1	915725.4	1419177.5	64.53	NR!	70-130	2098609	2222556	94.42	PASS	70-130
N017415-002B	SAMP	5	1126175	1419177.5	79.35	PASS	70-130	1846717.3	2222556	83.09	PASS	70-130
N017415-002B	SAMP	1	822386.9	1419177.5	57.95	NR!	70-130	2033971.3	2222556	91.51	PASS	70-130
CCV1	CCV	1	1599185.1	1419177.5	112.68	PASS	70-130	2158791	2222556	97.13	PASS	70-130
CCB1	CCB	1	1100114.1	1419177.5	77.52	PASS	70-130	1727699.5	2222556	77.73	PASS	70-130
N017415-003B	SAMP	5	1004445.9	1419177.5	70.78	PASS	70-130	1808907.7	2222556	81.39	PASS	70-130
N017415-003B	SAMP	1	895623.9	1419177.5	63.11	NR!	70-130	1861453.7	2222556	83.75	PASS	70-130
N017415-004B	SAMP	5	1068666.3	1419177.5	75.3	PASS	70-130	1989869.4	2222556	89.53	PASS	70-130
N017415-004B	SAMP	1	1035850.5	1419177.5	72.99	PASS	70-130	2267040.4	2222556	102	PASS	70-130
N017415-005B	SAMP	5	1203160.1	1419177.5	84.78	PASS	70-130	2119569.1	2222556	95.37	PASS	70-130
N017415-005B	SAMP	1	990925.5	1419177.5	69.82	NR!	70-130	2197901.6	2222556	98.89	PASS	70-130
N017415-006B	SAMP	5	1299840.3	1419177.5	91.59	PASS	70-130	2249860	2222556	101.23	PASS	70-130
N017415-006B	SAMP	1	983417.4	1419177.5	69.29	NR!	70-130	2119931.5	2222556	95.38	PASS	70-130
N017415-007B	SAMP	5	1127435.4	1419177.5	79.44	PASS	70-130	2086568.5	2222556	93.88	PASS	70-130
N017415-007B	SAMP	1	927207.4	1419177.5	65.33	NR!	70-130	2100149.6	2222556	94.49	PASS	70-130
CCV2	CCV	1	1433082.8	1419177.5	100.98	PASS	70-130	2362687.1	2222556	106.3	PASS	70-130
CCB2	CCB	1	1244288.3	1419177.5	87.68	PASS	70-130	2051227	2222556	92.29	PASS	70-130
N017427-001B	SAMP	5	1081411.3	1419177.5	76.2	PASS	70-130	1857734.1	2222556	83.59	PASS	70-130
N017427-001B	SAMP	1	931416.1	1419177.5	65.63	NR!	70-130	1840146.9	2222556	82.79	PASS	70-130
N017427-002B	SAMP	5	1148582.5	1419177.5	80.93	PASS	70-130	2087875.1	2222556	93.94	PASS	70-130

INTERNAL STANDARD: 151109A

Instrument ID: ICPMS-02

Sample Name	Type	DF	6 Li (ISTD) [3]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	1017140.6	1419177.5	71.67	PASS	70-130	2145251.2	2222556	96.52	PASS	70-130
N017400-001B	SAMP	25	1299681.4	1419177.5	91.58	PASS	70-130	2175171.5	2222556	97.87	PASS	70-130
N017400-001B-PS	PS	5	1339082	1419177.5	94.36	PASS	70-130	2118457.3	2222556	95.32	PASS	70-130
N017400-001B-PS	PS	1	1336973.6	1419177.5	94.21	PASS	70-130	2072147	2222556	93.23	PASS	70-130
N017400-001B-MS	MS	5	1337648.3	1419177.5	94.26	PASS	70-130	2089296.7	2222556	94.004	PASS	70-130
N017400-001B-MS	MS	1	1360708.7	1419177.5	95.88	PASS	70-130	2073869.3	2222556	93.31	PASS	70-130
N017400-001B-MSD	MSD	5	1340669.4	1419177.5	94.47	PASS	70-130	2081272.7	2222556	93.64	PASS	70-130
CCV3	CCV	1	1450656.7	1419177.5	102.22	PASS	70-130	2266559.7	2222556	101.98	PASS	70-130
CCB3	CCB	1	1249411.5	1419177.5	88.038	PASS	70-130	1998011.6	2222556	89.9	PASS	70-130
N017400-001B-MSD	MSD	1	1271871.1	1419177.5	89.62	PASS	70-130	1932233.4	2222556	86.94	PASS	70-130
N017427-002B-MS	MS	5	1358152.3	1419177.5	95.7	PASS	70-130	2051821.8	2222556	92.32	PASS	70-130
N017427-002B-MS	MS	1	1267172.4	1419177.5	89.29	PASS	70-130	1906767.4	2222556	85.79	PASS	70-130
CCV4	CCV	1	1581537.1	1419177.5	111.44	PASS	70-130	2392956	2222556	107.67	PASS	70-130
CCB4	CCB	1	1545277.7	1419177.5	108.89	PASS	70-130	2343381	2222556	105.44	PASS	70-130
LLCCV1	CCV2	1	1380646.2	1419177.5	97.28	PASS	70-130	2132263.3	2222556	95.94	PASS	70-130
ICSA2	ICSA	1	1404320.3	1419177.5	98.95	PASS	70-130	2187043.1	2222556	98.4	PASS	70-130
ICSAB2	ICSAB	1	1298545.4	1419177.5	91.5	PASS	70-130	2119140.2	2222556	95.35	PASS	70-130

INTERNAL STANDARD: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	3561197	3561197	100	PASS	70-130
Std1-0.1/1 ppb	ICAL	1	4091756.9	3561197	114.9	PASS	70-130
Std2-0.5/5 ppb	ICAL	1	4079095.9	3561197	114.54	PASS	70-130
Std3-5/50 ppb	ICAL	1	4026530.7	3561197	113.07	PASS	70-130
Std4-10/100 ppb	ICAL	1	4059910	3561197	114	PASS	70-130
Std5-20/200 ppb	ICAL	1	3360140.6	3561197	94.35	PASS	70-130
Std6-40/400 ppb	ICAL	1	4087403.7	3561197	114.78	PASS	70-130
Std7-100/1000 ppb	ICAL	1	4082419.9	3561197	114.64	PASS	70-130
Std8-200/2000 ppb	ICAL	1	4108948	3561197	115.38	PASS	70-130
ICV	ICV	1	3958530.2	3561197	111.16	PASS	70-130
ICB	ICB	1	3703443.4	3561197	103.99	PASS	70-130
LLICV	CCV1	1	3684920	3561197	103.47	PASS	70-130
ICSA1	ICSA	1	3560511.2	3561197	99.98	PASS	70-130
ICSAB1	ICSAB	1	3273762.2	3561197	91.93	PASS	70-130
MB-52909	MBLK	1	3637967.7	3561197	102.16	PASS	70-130
LCS-52909	LCS	1	3226418.6	3561197	90.6	PASS	70-130
N017400-001B	SAMP	5	3920133.8	3561197	110.08	PASS	70-130
N017400-001B	SAMP	1	2911286.7	3561197	81.75	PASS	70-130
N017400-002B	SAMP	5	2966939.5	3561197	83.31	PASS	70-130
N017400-002B	SAMP	1	2996165.8	3561197	84.13	PASS	70-130
N017415-001B	SAMP	5	3428851.3	3561197	96.28	PASS	70-130
N017415-001B	SAMP	1	2657799.9	3561197	74.63	PASS	70-130
N017415-002B	SAMP	5	2968774	3561197	83.36	PASS	70-130
N017415-002B	SAMP	1	2818763.4	3561197	79.15	PASS	70-130
CCV1	CCV	1	3965322.5	3561197	111.35	PASS	70-130
CCB1	CCB	1	4057033.7	3561197	113.92	PASS	70-130
N017415-003B	SAMP	5	3217233.9	3561197	90.34	PASS	70-130
N017415-003B	SAMP	1	3186580.3	3561197	89.48	PASS	70-130
N017415-004B	SAMP	5	2971359.3	3561197	83.44	PASS	70-130
N017415-004B	SAMP	1	2859617.2	3561197	80.3	PASS	70-130
N017415-005B	SAMP	5	2689212	3561197	75.51	PASS	70-130
N017415-005B	SAMP	1	2696948.8	3561197	75.73	PASS	70-130
N017415-006B	SAMP	5	3413709.9	3561197	95.86	PASS	70-130
N017415-006B	SAMP	1	3243051.4	3561197	91.066	PASS	70-130
N017415-007B	SAMP	5	3037796.7	3561197	85.3	PASS	70-130
N017415-007B	SAMP	1	3488015.4	3561197	97.95	PASS	70-130
CCV2	CCV	1	3919445.7	3561197	110.06	PASS	70-130
CCB2	CCB	1	4121491.7	3561197	115.73	PASS	70-130
N017427-001B	SAMP	5	3512974.8	3561197	98.65	PASS	70-130
N017427-001B	SAMP	1	2822220.9	3561197	79.25	PASS	70-130
N017427-002B	SAMP	5	3566034.7	3561197	100.14	PASS	70-130

INTERNAL STANDARD: 151110A1

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [3]				
			CPS	REF	%REC	Comment	Criteria
N017427-002B	SAMP	1	3474421.9	3561197	97.56	PASS	70-130
N017400-001B-PS	PS	1	4137716.3	3561197	116.19	PASS	70-130
N017400-001B-MS	MS	1	4072836	3561197	114.37	PASS	70-130
N017400-001B-MSD	MSD	1	4213042.6	3561197	118.3	PASS	70-130
N017427-002B-MS	MS	1	4137710.1	3561197	116.19	PASS	70-130
CCV3	CCV	1	3514437.2	3561197	98.69	PASS	70-130
CCB3	CCB	1	4220070.3	3561197	118.5	PASS	70-130
LLCCV1	CCV2	1	3804526.9	3561197	106.83	PASS	70-130
ICSA2	ICSA	1	3958707.9	3561197	111.16	PASS	70-130
ICSAB2	ICSAB	1	4176040.8	3561197	117.27	PASS	70-130

SERIAL DILUTION / POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017427
Test Method: EPA 200.8
Analysis Date: 11/4/2015

Matrix: Groundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, As, Cd, Co, Pb, Mn, V & Zn. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001B DT 5X	Chromium	ug/L	0.583170	NA	0.506225	15.20%	10
N017400-001B DT 5X	Arsenic	ug/L	1.166552	NA	1.065165	9.52%	10
N017400-001B DT 5X	Barium	ug/L	26.681482	PASS	27.442941	2.77%	10
N017400-001B DT 5X	Cadmium	ug/L	0	NA	0		10
N017400-001B DT 5X	Cobalt	ug/L	0	NA	0		10
N017400-001B DT 5X	Lead	ug/L	0	NA	0		10
N017400-001B DT 5X	Manganese	ug/L	0.370024	NA	0.300620	23.09%	10
N017400-001B DT 5X	Vanadium	ug/L	3.198626	NA	2.626412	21.79%	10
N017400-001B DT 5X	Zinc	ug/L	0	NA	0.311025	100.00%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017427
Test Method: EPA 200.8
Analysis Date: 11/9/2015

Matrix: Groundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Sb,Be,Cu,Mo,Ni,Se & Tl. The calculated concentrations are <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001B DT 5X	Antimony	ug/L	0.000000	NA	0		10
N017400-001B DT 5X	Beryllium	ug/L	0.000000	NA	0		10
N017400-001B DT 5X	Copper	ug/L	0.000000	NA	0		10
N017400-001B DT 5X	Molybdenum	ug/L	14.332115	NA	11.579524	23.77%	10
N017400-001B DT 5X	Nickel	ug/L	0.000000	NA	0.067993	100.00%	10
N017400-001B DT 5X	Selenium	ug/L	3.279730	NA	3.278219	0.05%	10
N017400-001B DT 5X	Thallium	ug/L	0.593478	NA	0.056803	944.81%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N017427
Test Method: EPA 200.8
Analysis Date: 11/10/2015

Matrix: Groundwater
Batch No.: 52909

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Ag. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001B DT 5X	Silver	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N017400-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **103960**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/4/2015** SeqNo: **2126136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.985	0.10	10.00	1.065	89.2	80	120				
Barium	118.281	1.0	100.0	27.44	90.8	80	120				
Cadmium	8.654	0.50	10.00	0	86.5	80	120				
Chromium	8.516	1.0	10.00	0.5062	80.1	80	120				
Cobalt	7.266	0.50	10.00	0	72.7	80	120				S
Lead	8.976	1.0	10.00	0	89.8	80	120				
Manganese	80.622	0.50	100.0	0.3006	80.3	80	120				
Vanadium	11.171	1.0	10.00	2.626	85.4	80	120				
Zinc	83.268	10	100.0	0.3110	83.0	80	120				

Sample ID **N017400-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104066**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.537	0.50	10.00	0	105	80	120				
Beryllium	10.705	0.50	10.00	0	107	80	120				
Copper	9.258	1.0	10.00	0	92.6	80	120				
Molybdenum	14.162	0.50	10.00	11.58	25.8	80	120				S
Nickel	10.168	1.0	10.00	0.06799	101	80	120				
Selenium	9.440	0.50	10.00	3.278	61.6	80	120				S
Thallium	10.029	0.50	10.00	0.05680	99.7	80	120				

Sample ID **N017400-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **104074**
Client ID: **ZZZZZZ** Batch ID: **52909** TestNo: **EPA 200.8** Analysis Date: **11/10/2015** SeqNo: **2133253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.929	0.50	10.00	0	99.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**N017400-001B-PS**	SampType: **PS**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **103959**
Client ID:	**ZZZZZZ**	Batch ID: **52909**	TestNo: **EPA 200.8**		Analysis Date: **11/4/2015**	SeqNo: **2126059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.516	1.0	10.00	0.5062	80.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICPMS**
Method Number: EPA 6020/200.8
Preparation Method: EPA 3010/200.8_PR
Analysis Date(s): 3/13/2015; 3/14/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **ICPMS-02**

Acceptance Criteria: MDL < spike < 10XMDL

		Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
27	Al	Aluminum	1.428	1.454	1.368	1.790	1.039	1.487	1.501	1.0	0.22163	3.143	**0.6966**	10	OK,meets criteria
121	Sb	Antimony	0.114	0.097	0.093	0.091	0.109	0.103	0.102	0.10	0.0083	3.143	**0.0262**	0.50	OK,meets criteria
75	As	Arsenic	0.057	0.049	0.046	0.056	0.051	0.059	0.058	0.050	0.00502	3.143	**0.0158**	0.10	OK,meets criteria
137	Ba	Barium	0.116	0.107	0.137	0.115	0.117	0.175	0.126	0.10	0.02298	3.143	**0.0722**	1.0	OK,meets criteria
9	Be	Beryllium	0.102	0.082	0.086	0.081	0.091	0.100	0.094	0.10	0.00834	3.143	**0.0262**	0.50	OK,meets criteria
11	B	Boron	2.773	2.788	2.855	4.317	3.713	3.448	3.231	2.5	0.57291	3.143	**1.801**	50	OK,meets criteria
111	Cd	Cadmium	0.042	0.043	0.049	0.041	0.042	0.048	0.044	0.050	0.00313	3.143	**0.0098**	0.50	OK,meets criteria
52	Cr	Chromium	0.181	0.200	0.197	0.258	0.196	0.191	0.175	0.25	0.02725	3.143	**0.0856**	1.0	OK,meets criteria
59	Co	Cobalt	0.056	0.047	0.055	0.045	0.051	0.049	0.054	0.050	0.00420	3.143	**0.0132**	0.50	OK,meets criteria
63	Cu	Copper	0.437	0.463	0.447	0.423	0.445	0.424	0.659	0.50	0.08399	3.143	**0.2640**	1.0	OK,meets criteria
56	Fe	Iron	1.231	1.163	1.267	1.061	1.088	1.188	1.211	1.0	0.07499	3.143	**0.2357**	10	OK,meets criteria
208	Pb	Lead	0.227	0.237	0.232	0.278	0.246	0.234	0.243	0.25	0.01696	3.143	**0.0533**	1.0	OK,meets criteria
55	Mn	Manganese	0.077	0.082	0.067	0.065	0.081	0.066	0.075	0.10	0.00723	3.143	**0.0227**	0.50	OK,meets criteria
95	Mo	Molybdenum	0.092	0.084	0.090	0.077	0.106	0.094	0.097	0.10	0.00927	3.143	**0.0291**	0.50	OK,meets criteria
60	Ni	Nickel	0.107	0.073	0.074	0.082	0.095	0.091	0.085	0.10	0.01207	3.143	**0.0379**	1.0	OK,meets criteria
78	Se	Selenium	0.094	0.100	0.055	0.078	0.125	0.074	0.092	0.10	0.02217	3.143	**0.0697**	0.50	OK,meets criteria
107	Ag	Silver	0.099	0.084	0.086	0.083	0.095	0.098	0.099	0.10	0.00735	3.143	**0.0231**	0.50	OK,meets criteria
205	Tl	Thallium	0.106	0.077	0.080	0.074	0.089	0.084	0.090	0.10	0.01072	3.143	**0.0337**	0.50	OK,meets criteria
118	Sn	Tin	0.219	0.228	0.218	0.307	0.256	0.235	0.247	0.25	0.03098	3.143	**0.0974**	10	OK,meets criteria
47	Ti	Titanium	0.101	0.136	0.084	0.094	0.105	0.089	0.134	0.10	0.02092	3.143	**0.0658**	10	OK,meets criteria
238	U	Uranium	0.109	0.093	0.094	0.094	0.112	0.104	0.111	0.10	0.00858	3.143	**0.0270**	0.50	OK,meets criteria
51	V	Vanadium	0.136	0.128	0.116	0.135	0.127	0.121	0.136	0.10	0.00785	3.143	**0.0247**	1.0	OK,meets criteria
66	Zn	Zinc	0.075	0.056	0.082	0.078	0.093	0.092	0.082	0.10	0.01242	3.143	**0.0390**	10	OK,meets criteria

SM 2130B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103891 **Analyst:** LSR

ASSET #: N017427 **Date Analyzed:** 10/30/2015

Method: EPA 2130

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Divia Ramit Date: 11/3/2015

2nd Level Reviewer: Nancy 11/13/2015 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Turbidity Preparation and Runlog

Date Analyzed: 10/30/15
Time Analyzed: 1500
Analyzed By: LSR

Sample ID.	Matrix	Sample Vol (ml)	Std Code	Dilution (F/I)	Reading	Calculations	Comments
0.02 NTU			CAL-150528A		0.03 NTU		
20			B		19.64		
100			C		99.5		
800			D		796		
1) MB	H2O	10		1	0 NTU		
2) 1017427-001D					0.27		
3) -001D DUP					0.28		
4) -002D					1.57		
5)							
6)							
7) 5 NTU			CAL-150119A		5.12 NTU		
8) 20			-150520A		20.9		
9) 100			-150520B		100		
10)							
11)							
12)							
13)						Julia Ramit	
14)						11/3/2015	
15)							
16)							
17)							
18)							
19)							
20)							LSR 10/30/15

Advanced Technology laboratories - Las Vegas Book #2

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R104041
ASSET #: N017427

Instrument ID: IC-06
Analyst: REB
Date Analyzed: 11/4/2015

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/12/2015 Date: —

2nd Level Reviewer 11/13/2015 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6}, µg/L = A * DF

where:

A = µg/L, IC Cr^{+6} calculated concentration
DF = dilution factor

For **N017427-001A** concentration in µg/L is calculated as follows:

Cr^{+6}, µg/L = 0.3810 * 1

= 0.3810

Reporting result in two significant figures,

Cr^{+6}, µg/L = 0.38



ANALYSIS RUN LOG

INJECTION LOG: 151104A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/04/15 9:42 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	11/04/15 9:54 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/04/15 10:22 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/04/15 10:49 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:00 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:40 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/04/15 12:06 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	11/04/15 12:18 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/04/15 12:28 PM	Reported
13	MB-R104041	MBLK	1	Hexavalent Chromium	11/04/15 12:38 PM	Reported
14	LCS-R104041	LCS	1	Hexavalent Chromium	11/04/15 12:48 PM	Reported
15	N017427-001A	SAMP	1	Hexavalent Chromium	11/04/15 1:02 PM	Reported
16	N017427-001ADUP	DUP	1	Hexavalent Chromium	11/04/15 1:13 PM	Reported
17	N017427-001A-MS	MS	1	Hexavalent Chromium	11/04/15 1:23 PM	Reported
18	N017427-001A-MSD	MSD	1	Hexavalent Chromium	11/04/15 1:33 PM	Reported
19	N017427-002A	SAMP	1	Hexavalent Chromium	11/04/15 1:43 PM	Reported
20	N017427-002A-MS	MS	1	Hexavalent Chromium	11/04/15 1:53 PM	Reported
21	N017427-003A	SAMP	1	Hexavalent Chromium	11/04/15 2:03 PM	Reported
22	N017427-003A-MS	MS	1	Hexavalent Chromium	11/04/15 2:13 PM	Reported
23	CCV-1	CCV	1	Hexavalent Chromium	11/04/15 2:23 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/04/15 2:33 PM	Reported
25	N017457-001A	SAMP	1	Hexavalent Chromium	11/04/15 3:14 PM	Reported
26	N017457-002A	SAMP	10	Hexavalent Chromium	11/04/15 3:25 PM	Reported
27	N017457-003A	SAMP	1	Hexavalent Chromium	11/04/15 3:35 PM	Not Reported
28	N017457-004A	SAMP	1	Hexavalent Chromium	11/04/15 3:48 PM	Reported
29	N017457-005A	SAMP	20	Hexavalent Chromium	11/04/15 4:00 PM	Not Reported
30	N017457-006A	SAMP	1	Hexavalent Chromium	11/04/15 4:10 PM	Reported
31	N017457-007A	SAMP	5	Hexavalent Chromium	11/04/15 4:20 PM	Reported
32	N017457-008A	SAMP	1	Hexavalent Chromium	11/04/15 4:29 PM	Reported
33	N017457-009A	SAMP	1	Hexavalent Chromium	11/04/15 4:39 PM	Reported
34	N017457-010A	SAMP	1	Hexavalent Chromium	11/04/15 4:49 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	11/04/15 4:59 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	11/04/15 5:09 PM	Reported
37	N017457-011A	SAMP	1	Hexavalent Chromium	11/04/15 5:21 PM	Not Reported
38	N017457-012A	SAMP	1	Hexavalent Chromium	11/04/15 5:32 PM	Reported
39	N017457-013A	SAMP	1	Hexavalent Chromium	11/04/15 5:42 PM	Reported
40	N017457-014A	SAMP	50	Hexavalent Chromium	11/04/15 5:52 PM	Not Reported
41	N017457-015A	SAMP	1	Hexavalent Chromium	11/04/15 6:02 PM	Reported
42	N017457-016A	SAMP	1	Hexavalent Chromium	11/04/15 6:12 PM	Reported

INJECTION LOG: 151104A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N017457-017A	SAMP	1	Hexavalent Chromium	11/04/15 6:22 PM	Reported
44	N017457-003A	SAMP	1	Hexavalent Chromium	11/04/15 6:32 PM	Reported
45	N017457-005A	SAMP	1	Hexavalent Chromium	11/04/15 6:42 PM	Reported
46	N017457-014A	SAMP	5	Hexavalent Chromium	11/04/15 6:52 PM	Reported
47	CCV-3	CCV	1	Hexavalent Chromium	11/04/15 7:02 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	11/04/15 7:12 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_151104A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Nov/15 11:43:06**
No. of Injections:	**51**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/04/2015 09:42	Finished	BLANK
2	iBLANK	2	1000	Unknown		11/04/2015 09:54	Finished	iBLANK
3	iBLANK	3	1000	Unknown		11/04/2015 10:22	Finished	iBLANK
4	0.2 ppb	4	1000	Calibration Standard	02	11/04/2015 10:49	Finished	0.2ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	03	11/04/2015 11:00	Finished	1.0ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	04	11/04/2015 11:10	Finished	5.0ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	05	11/04/2015 11:20	Finished	10ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	06	11/04/2015 11:30	Finished	15ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	07	11/04/2015 11:40	Finished	20ppb, IWST151103A
10	ICV,ICV,1	10	1000	Unknown		11/04/2015 12:06	Finished	ICV @ 5ppb, IWST151103B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		11/04/2015 12:18	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		11/04/2015 12:28	Finished	ICB R151018C
13	MB-H2O,MBLK,1	13	1000	Unknown		11/04/2015 12:38	Finished	MB
14	LCS-H2O,LCS,1	14	1000	Unknown		11/04/2015 12:48	Finished	LCS(5ppb), IWST-151103B
15	N017427-001A,SAMP,1	15	1000	Unknown		11/04/2015 13:02	Finished	SAMP, 10mL
16	N017427-001ADUP,DUP,1	16	1000	Unknown		11/04/2015 13:13	Finished	DUP, 10mL
17	N017427-001A-MS,MS,1	17	1000	Unknown		11/04/2015 13:23	Finished	MS(1ppb), IWST-151103B
18	N017427-001A-MSD,MSD,1	18	1000	Unknown		11/04/2015 13:33	Finished	MSD(1ppb), IWST-151103B
19	N017427-002A,SAMP,1	19	1000	Unknown		11/04/2015 13:43	Finished	SAMP, 10mL
20	N017427-002A-MS,MS,1	20	1000	Unknown		11/04/2015 13:53	Finished	MS(1ppb), IWST-151103B
21	N017427-003A,SAMP,1	21	1000	Unknown		11/04/2015 14:03	Finished	SAMP, 10mL
22	N017427-003A-MS,MS,1	22	1000	Unknown		11/04/2015 14:13	Finished	MS(1ppb), IWST-151103B
23	CCV-1,CCV,1	23	1000	Unknown		11/04/2015 14:23	Finished	CCV @ 10ppb, IWST151103A
24	CCB-1,CCB,1	24	1000	Unknown		11/04/2015 14:33	Finished	CCB
25	N017457-001A,SAMP,1	25	1000	Unknown		11/04/2015 15:14	Finished	SAMP, 10mL
26	N017457-002A,SAMP,10	26	1000	Unknown		11/04/2015 15:25	Finished	SAMP, 1 to 10mL
27	N017457-003A,SAMP,1	27	1000	Unknown		11/04/2015 15:35	Finished	SAMP, 10mL
28	N017457-004A,SAMP,1	28	1000	Unknown		11/04/2015 15:48	Finished	SAMP, 10mL
29	N017457-005A,SAMP,20	29	1000	Unknown		11/04/2015 16:00	Finished	SAMP, 0.5 to 10mL
30	N017457-006A,SAMP,1	30	1000	Unknown		11/04/2015 16:10	Finished	SAMP, 10mL
31	N017457-007A,SAMP,5	31	1000	Unknown		11/04/2015 16:20	Finished	SAMP, 2 to 10mL
32	N017457-008A,SAMP,1	32	1000	Unknown		11/04/2015 16:29	Finished	SAMP, 10mL
33	N017457-009A,SAMP,1	33	1000	Unknown		11/04/2015 16:39	Finished	SAMP, 10mL
34	N017457-010A,SAMP,1	34	1000	Unknown		11/04/2015 16:49	Finished	SAMP, 10mL
35	CCV-2,CCV,1	35	1000	Unknown		11/04/2015 16:59	Finished	CCV @ 5ppb, IWST151103A
36	CCB-2,CCB,1	36	1000	Unknown		11/04/2015 17:09	Finished	CCB
37	N017457-011A,SAMP,1	1	1000	Unknown		11/04/2015 17:21	Finished	SAMP, 10mL
38	N017457-012A,SAMP,1	2	1000	Unknown		11/04/2015 17:32	Finished	SAMP, 10mL
39	N017457-013A,SAMP,1	3	1000	Unknown		11/04/2015 17:42	Finished	SAMP, 10mL
40	N017457-014A,SAMP,50	4	1000	Unknown		11/04/2015 17:52	Finished	SAMP, 0.2 to 10mL
41	N017457-015A,SAMP,1	5	1000	Unknown		11/04/2015 18:02	Finished	SAMP, 10mL
42	N017457-016A,SAMP,1	6	1000	Unknown		11/04/2015 18:12	Finished	SAMP, 10mL
43	N017457-017A,SAMP,1	7	1000	Unknown		11/04/2015 18:22	Finished	SAMP, 10mL
44	N017457-003A,SAMP,1	8	1000	Unknown		11/04/2015 18:32	Finished	SAMP, 10mL
45	N017457-005A,SAMP,1	9	1000	Unknown		11/04/2015 18:42	Finished	SAMP, 10mL
46	N017457-014A,SAMP,5	10	1000	Unknown		11/04/2015 18:52	Finished	SAMP, 2 to 10mL
47	CCV-3,CCV,1	11	1000	Unknown		11/04/2015 19:02	Finished	CCV @ 10ppb, IWST151103A
48	CCB-3,CCB,1	12	1000	Unknown		11/04/2015 19:12	Finished	CCB
49	SHUTDOWN	13	1000	Unknown		11/04/2015 19:22	Finished	
50	Eluent: R151103A	14	1000	Unknown		n.a.	Finished	Eluent
51	PCR: R151104B	15	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 10/29/15
Time Prepared: 01:00pm
Prepared By: MEM

slope: 96.6%
pH4 - 4.00
7 - 6.99
10 - 10.05
LCS - 7.03

Reagent ID:
Sulfuric Acid: CIW-150715G
Diphenylcarbazide: CIW-150414B
NH4OH + NH4SO4 eluent: R151103A
NH4OH + NH4SO4 buffer: R151018C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N017415-002A	9.53	-	-	-	-	R-151018C
2)	2A	9.54	-	-	-	-	
3)	3A	9.54	-	-	-	-	
4)	4A	9.53	-	-	-	-	
5)	5A	9.52	-	-	-	-	
6)	6A	9.55	-	-	-	-	
7)	7A	9.51	-	-	-	-	
8)	8A	9.58	-	-	-	-	
9)	9A	9.58	-	-	-	-	
10)							
11)							
12)							
13)							
14)							
15)							MEM 10/29/15

Sample Preparation

Date Prepared: 10/30/15
Time Prepared: 01:30pm
Prepared By: MEM

slope: 96.2%
pH4 - 4.01
7 - 6.99
10 - 10.04
LCS - 7.00

Reagent ID:
Sulfuric Acid: CIW-150715G
Diphenylcarbazide: CIW-150414B
NH4OH + NH4SO4 eluent: R151103A
NH4OH + NH4SO4 buffer: R151018C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N017427-001A	9.51	-	-	-	-	R-151018C
2)	2A	9.49	-	-	-	-	
3)	3A	9.59	-	-	-	-	
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							MEM 10/30/15
15)							

Logbook No. 9

REB 11/12/2015

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-06
Date Calibrated: 11/4/2015

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0471	0.2511	1.1944	2.3692	3.5729	4.7308	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST150306A	IWST151103A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **ICV**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.814	0.20	5.000	0	96.3	90	110				

Sample ID **STD-0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **ZZZZZZ**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.189	0.20	0.2000	0	94.3	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **CCV**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.089	0.20	10.00	0	101	95	105				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **CCV**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.038	0.20	5.000	0	101	95	105				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **CCV**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.041	0.20	10.00	0	100	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **ICB**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **CCB**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **CCB**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **104041**
Client ID: **CCB**	Batch ID: **R104041**	TestNo: **EPA 218.6**		Analysis Date: **11/4/2015**	SeqNo: **2131097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 11/4/2015

Sample Name	Retention Time	Evaluation
ICV	5.167	
CCV-1	5.167	
CCV-2	5.167	
CCV-3	5.167	
Average	5.167	
Actual RT Window	5.087 - 5.247	
Applied RT Window	4.967 - 5.367	
MB-R104041	N.A.	N.A.
LCS-R104041	5.167	PASS
N017427-001A	5.050	PASS
N017427-001ADUP	5.042	PASS
N017427-001A-MS	5.050	PASS
N017427-001A-MSD	5.050	PASS
N017427-002A	5.042	PASS
N017427-002A-MS	5.050	PASS
N017427-003A	N.A.	N.A.
N017427-003A-MS	5.167	PASS
N017457-001A	5.150	PASS
N017457-002A	5.167	PASS
N017457-003A	5.158	PASS
N017457-004A	5.158	PASS
N017457-005A	5.175	PASS
N017457-006A	5.192	PASS
N017457-007A	5.167	PASS
N017457-008A	5.158	PASS
N017457-009A	5.158	PASS
N017457-010A	5.175	PASS
N017457-011A	5.158	PASS
N017457-012A	5.158	PASS
N017457-013A	5.150	PASS
N017457-014A	5.158	PASS
N017457-015A	5.150	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-06

Analytical Sequence

Date Analyzed: 11/4/2015

Sample Name	Retention Time	Evaluation
ICV	5.167	
CCV-1	5.167	
CCV-2	5.167	
CCV-3	5.167	
Average	5.167	
Actual RT Window	5.087 - 5.247	
Applied RT Window	4.967 - 5.367	
N017457-016A	5.150	PASS
N017457-017A	5.158	PASS
N017457-003A	5.167	PASS
N017457-005A	5.158	PASS
N017457-014A	5.167	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography**
Method Number: EPA 218.6 / EPA 7199
Analysis Date(s): 2/26/2015
Analyst: Ryan Balilu

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-06**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0329	0.0375	0.0281	0.0325	0.0403	0.0276	0.0265	0.0301	0.030	0.0049	2.998	**0.015**	**0.20**	OK,meets criteria

Students't Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography**
Method Number: EPA 218.6 / EPA 7199
Analysis Date(s): 3/16/2015
Analyst: Ryan Balilu

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0617	0.0578	0.0592	0.0604	0.0606	0.0686	0.0567	0.050	0.0039	3.143	**0.012**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2015

Method Name: **Hexavalent Chromium by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6 / EPA 7199 Unit: ug/L
Analysis Date(s): 3/5/2015
Analyst: Ryan Balilu

Instrument Name: **IC-01** **Acceptance Criteria:** MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Hexavalent Chromium	0.0672	0.0679	0.0615	0.0664	0.0620	0.0637	0.0610	0.050	0.0029	3.143	**0.0090**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

RAW DATA

INJECTION LOG: 151104A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/04/15 9:42 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	11/04/15 9:54 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/04/15 10:22 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/04/15 10:49 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:00 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:40 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/04/15 12:06 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	11/04/15 12:18 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/04/15 12:28 PM	Reported
13	MB-R104041	MBLK	1	Hexavalent Chromium	11/04/15 12:38 PM	Reported
14	LCS-R104041	LCS	1	Hexavalent Chromium	11/04/15 12:48 PM	Reported
15	N017427-001A	SAMP	1	Hexavalent Chromium	11/04/15 1:02 PM	Reported
16	N017427-001ADUP	DUP	1	Hexavalent Chromium	11/04/15 1:13 PM	Reported
17	N017427-001A-MS	MS	1	Hexavalent Chromium	11/04/15 1:23 PM	Reported
18	N017427-001A-MSD	MSD	1	Hexavalent Chromium	11/04/15 1:33 PM	Reported
19	N017427-002A	SAMP	1	Hexavalent Chromium	11/04/15 1:43 PM	Reported
20	N017427-002A-MS	MS	1	Hexavalent Chromium	11/04/15 1:53 PM	Reported
21	N017427-003A	SAMP	1	Hexavalent Chromium	11/04/15 2:03 PM	Reported
22	N017427-003A-MS	MS	1	Hexavalent Chromium	11/04/15 2:13 PM	Reported
23	CCV-1	CCV	1	Hexavalent Chromium	11/04/15 2:23 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/04/15 2:33 PM	Reported
25	N017457-001A	SAMP	1	Hexavalent Chromium	11/04/15 3:14 PM	Reported
26	N017457-002A	SAMP	10	Hexavalent Chromium	11/04/15 3:25 PM	Reported
27	N017457-003A	SAMP	1	Hexavalent Chromium	11/04/15 3:35 PM	Not Reported
28	N017457-004A	SAMP	1	Hexavalent Chromium	11/04/15 3:48 PM	Reported
29	N017457-005A	SAMP	20	Hexavalent Chromium	11/04/15 4:00 PM	Not Reported
30	N017457-006A	SAMP	1	Hexavalent Chromium	11/04/15 4:10 PM	Reported
31	N017457-007A	SAMP	5	Hexavalent Chromium	11/04/15 4:20 PM	Reported
32	N017457-008A	SAMP	1	Hexavalent Chromium	11/04/15 4:29 PM	Reported
33	N017457-009A	SAMP	1	Hexavalent Chromium	11/04/15 4:39 PM	Reported
34	N017457-010A	SAMP	1	Hexavalent Chromium	11/04/15 4:49 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	11/04/15 4:59 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	11/04/15 5:09 PM	Reported
37	N017457-011A	SAMP	1	Hexavalent Chromium	11/04/15 5:21 PM	Not Reported
38	N017457-012A	SAMP	1	Hexavalent Chromium	11/04/15 5:32 PM	Reported
39	N017457-013A	SAMP	1	Hexavalent Chromium	11/04/15 5:42 PM	Reported
40	N017457-014A	SAMP	50	Hexavalent Chromium	11/04/15 5:52 PM	Not Reported
41	N017457-015A	SAMP	1	Hexavalent Chromium	11/04/15 6:02 PM	Reported
42	N017457-016A	SAMP	1	Hexavalent Chromium	11/04/15 6:12 PM	Reported

Nancy 11/13/2015

Injection Log Summary

Sequence Details

Name:	**IC-06_151104A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Nov/15 11:43:06**
No. of Injections:	**51**	*Updated By:*	**ics 5000**

Injection Details

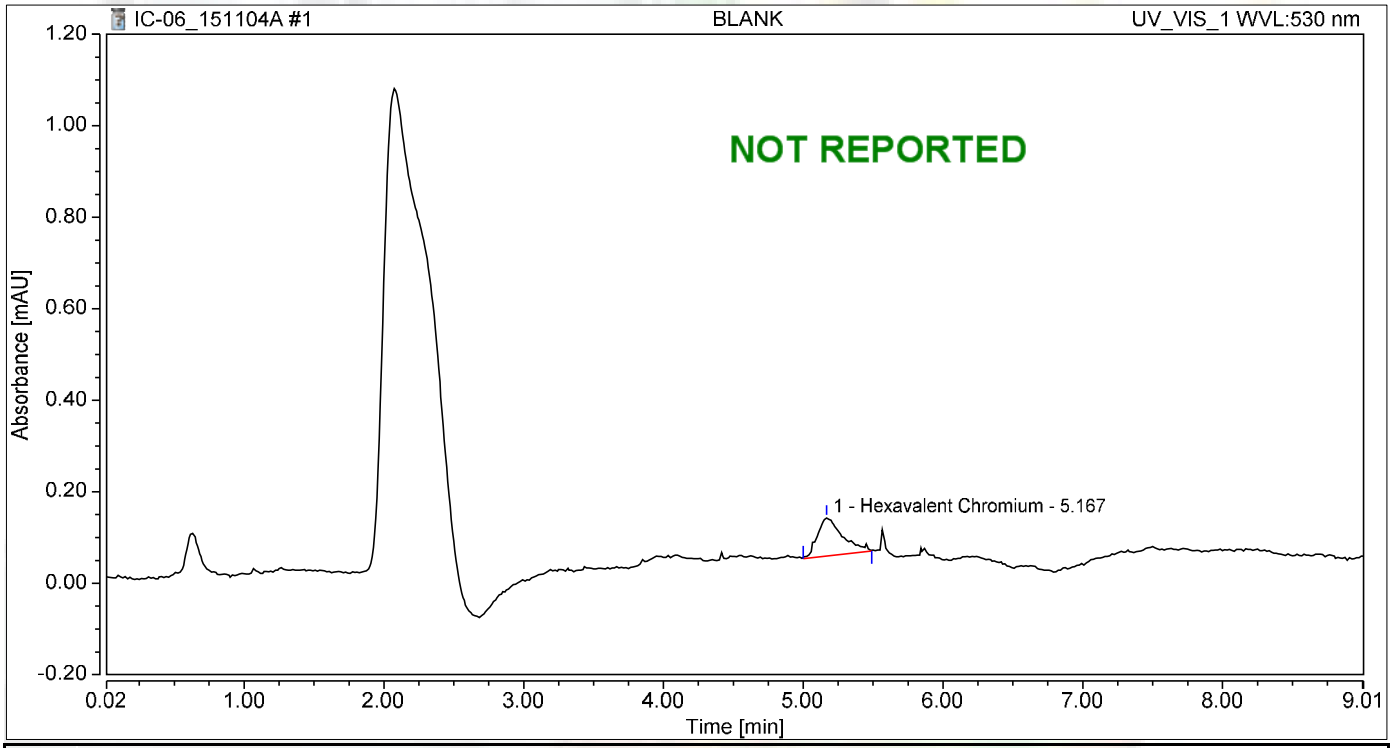
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/04/2015 09:42	Finished	BLANK
2	iBLANK	2	1000	Unknown		11/04/2015 09:54	Finished	iBLANK
3	iBLANK	3	1000	Unknown		11/04/2015 10:22	Finished	iBLANK
4	0.2 ppb	4	1000	Calibration Standard	02	11/04/2015 10:49	Finished	0.2ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	03	11/04/2015 11:00	Finished	1.0ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	04	11/04/2015 11:10	Finished	5.0ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	05	11/04/2015 11:20	Finished	10ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	06	11/04/2015 11:30	Finished	15ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	07	11/04/2015 11:40	Finished	20ppb, IWST151103A
10	ICV,ICV,1	10	1000	Unknown		11/04/2015 12:06	Finished	ICV @ 5ppb, IWST151103B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		11/04/2015 12:18	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		11/04/2015 12:28	Finished	ICB R151018C
13	MB-H2O,MBLK,1	13	1000	Unknown		11/04/2015 12:38	Finished	MB
14	LCS-H2O,LCS,1	14	1000	Unknown		11/04/2015 12:48	Finished	LCS(5ppb), IWST-151103B
15	N017427-001A,SAMP,1	15	1000	Unknown		11/04/2015 13:02	Finished	SAMP, 10mL
16	N017427-001ADUP,DUP,1	16	1000	Unknown		11/04/2015 13:13	Finished	DUP, 10mL
17	N017427-001A-MS,MS,1	17	1000	Unknown		11/04/2015 13:23	Finished	MS(1ppb), IWST-151103B
18	N017427-001A-MSD,MSD,1	18	1000	Unknown		11/04/2015 13:33	Finished	MSD(1ppb), IWST-151103B
19	N017427-002A,SAMP,1	19	1000	Unknown		11/04/2015 13:43	Finished	SAMP, 10mL
20	N017427-002A-MS,MS,1	20	1000	Unknown		11/04/2015 13:53	Finished	MS(1ppb), IWST-151103B
21	N017427-003A,SAMP,1	21	1000	Unknown		11/04/2015 14:03	Finished	SAMP, 10mL
22	N017427-003A-MS,MS,1	22	1000	Unknown		11/04/2015 14:13	Finished	MS(1ppb), IWST-151103B
23	CCV-1,CCV,1	23	1000	Unknown		11/04/2015 14:23	Finished	CCV @ 10ppb, IWST151103A
24	CCB-1,CCB,1	24	1000	Unknown		11/04/2015 14:33	Finished	CCB
25	N017457-001A,SAMP,1	25	1000	Unknown		11/04/2015 15:14	Finished	SAMP, 10mL
26	N017457-002A,SAMP,10	26	1000	Unknown		11/04/2015 15:25	Finished	SAMP, 1 to 10mL
27	N017457-003A,SAMP,1	27	1000	Unknown		11/04/2015 15:35	Finished	SAMP, 10mL
28	N017457-004A,SAMP,1	28	1000	Unknown		11/04/2015 15:48	Finished	SAMP, 10mL
29	N017457-005A,SAMP,20	29	1000	Unknown		11/04/2015 16:00	Finished	SAMP, 0.5 to 10mL
30	N017457-006A,SAMP,1	30	1000	Unknown		11/04/2015 16:10	Finished	SAMP, 10mL
31	N017457-007A,SAMP,5	31	1000	Unknown		11/04/2015 16:20	Finished	SAMP, 2 to 10mL
32	N017457-008A,SAMP,1	32	1000	Unknown		11/04/2015 16:29	Finished	SAMP, 10mL
33	N017457-009A,SAMP,1	33	1000	Unknown		11/04/2015 16:39	Finished	SAMP, 10mL
34	N017457-010A,SAMP,1	34	1000	Unknown		11/04/2015 16:49	Finished	SAMP, 10mL
35	CCV-2,CCV,1	35	1000	Unknown		11/04/2015 16:59	Finished	CCV @ 5ppb, IWST151103A
36	CCB-2,CCB,1	36	1000	Unknown		11/04/2015 17:09	Finished	CCB
37	N017457-011A,SAMP,1	1	1000	Unknown		11/04/2015 17:21	Finished	SAMP, 10mL
38	N017457-012A,SAMP,1	2	1000	Unknown		11/04/2015 17:32	Finished	SAMP, 10mL
39	N017457-013A,SAMP,1	3	1000	Unknown		11/04/2015 17:42	Finished	SAMP, 10mL
40	N017457-014A,SAMP,50	4	1000	Unknown		11/04/2015 17:52	Finished	SAMP, 0.2 to 10mL
41	N017457-015A,SAMP,1	5	1000	Unknown		11/04/2015 18:02	Finished	SAMP, 10mL
42	N017457-016A,SAMP,1	6	1000	Unknown		11/04/2015 18:12	Finished	SAMP, 10mL
43	N017457-017A,SAMP,1	7	1000	Unknown		11/04/2015 18:22	Finished	SAMP, 10mL
44	N017457-003A,SAMP,1	8	1000	Unknown		11/04/2015 18:32	Finished	SAMP, 10mL
45	N017457-005A,SAMP,1	9	1000	Unknown		11/04/2015 18:42	Finished	SAMP, 10mL
46	N017457-014A,SAMP,5	10	1000	Unknown		11/04/2015 18:52	Finished	SAMP, 2 to 10mL
47	CCV-3,CCV,1	11	1000	Unknown		11/04/2015 19:02	Finished	CCV @ 10ppb, IWST151103A
48	CCB-3,CCB,1	12	1000	Unknown		11/04/2015 19:12	Finished	CCB
49	SHUTDOWN	13	1000	Unknown		11/04/2015 19:22	Finished	
50	Eluent: R151103A	14	1000	Unknown		n.a.	Finished	Eluent
51	PCR: R151104B	15	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

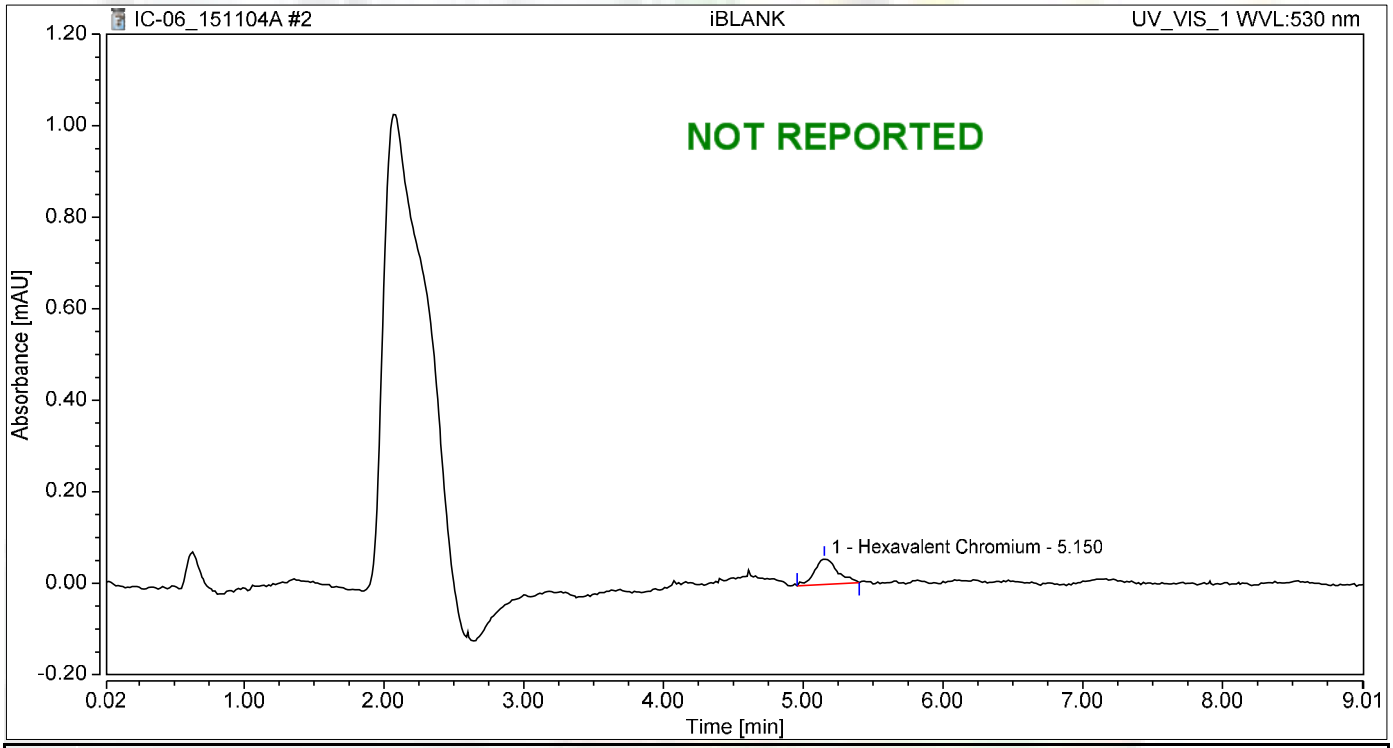
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.017	0.083	100.00	100.00	0.0363
Total:			**0.017**	**0.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

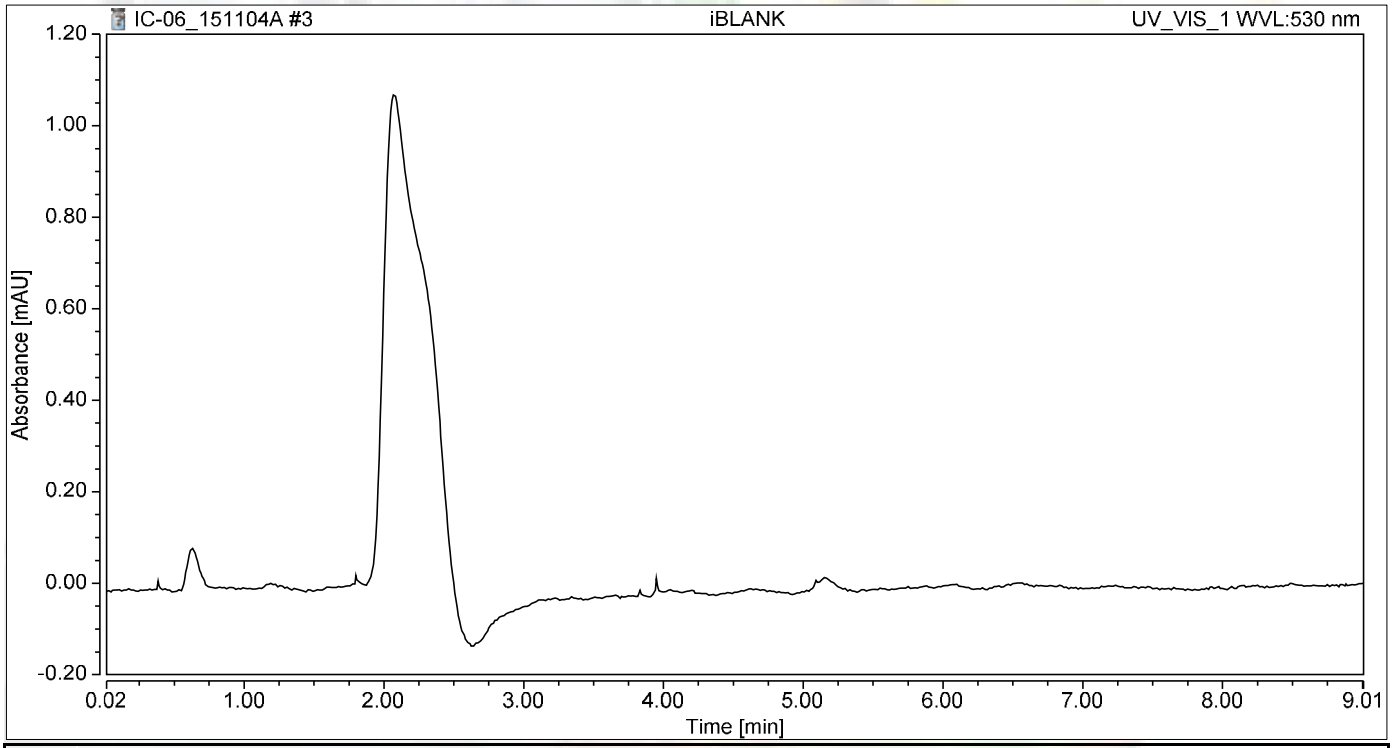
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.011	0.056	100.00	100.00	0.0087
Total:			**0.011**	**0.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

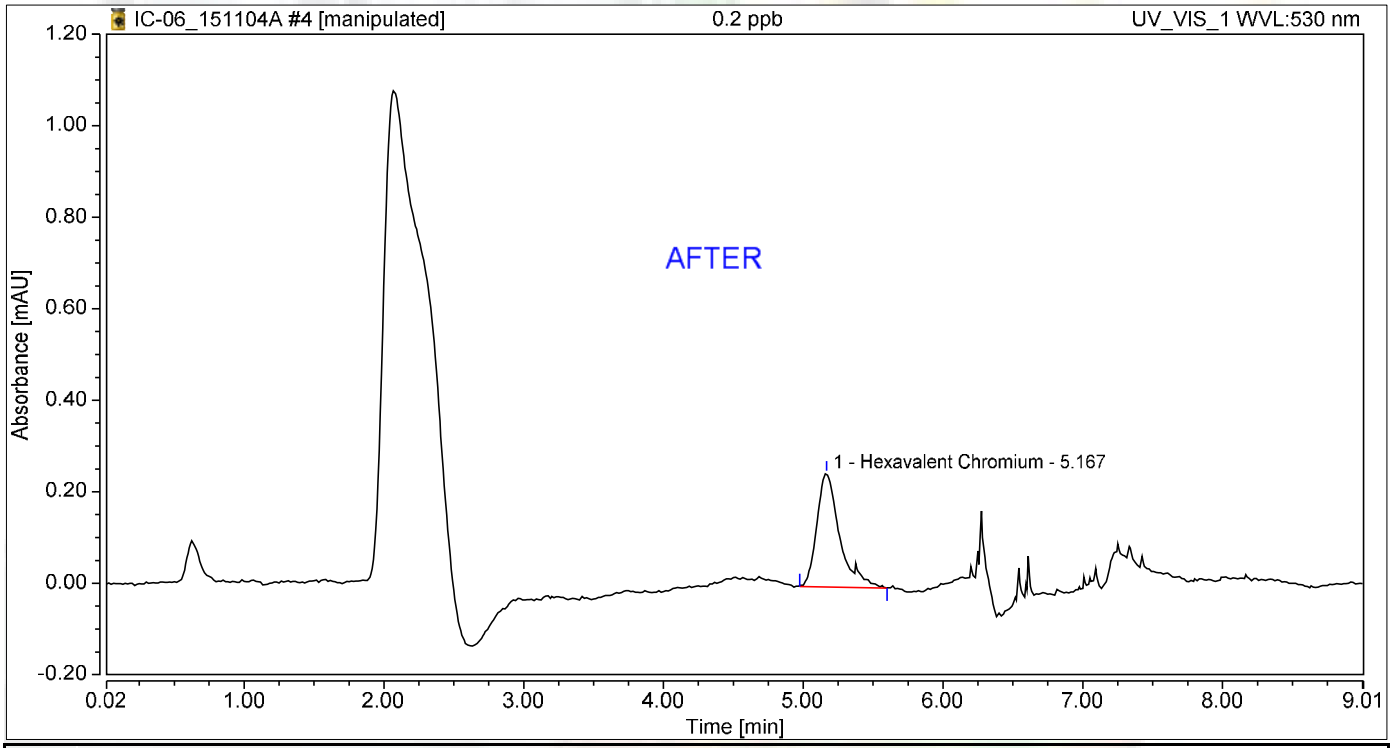
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.047	0.248	100.00	100.00	0.1624
Total:			**0.047**	**0.248**	**100.00**	**100.00**	

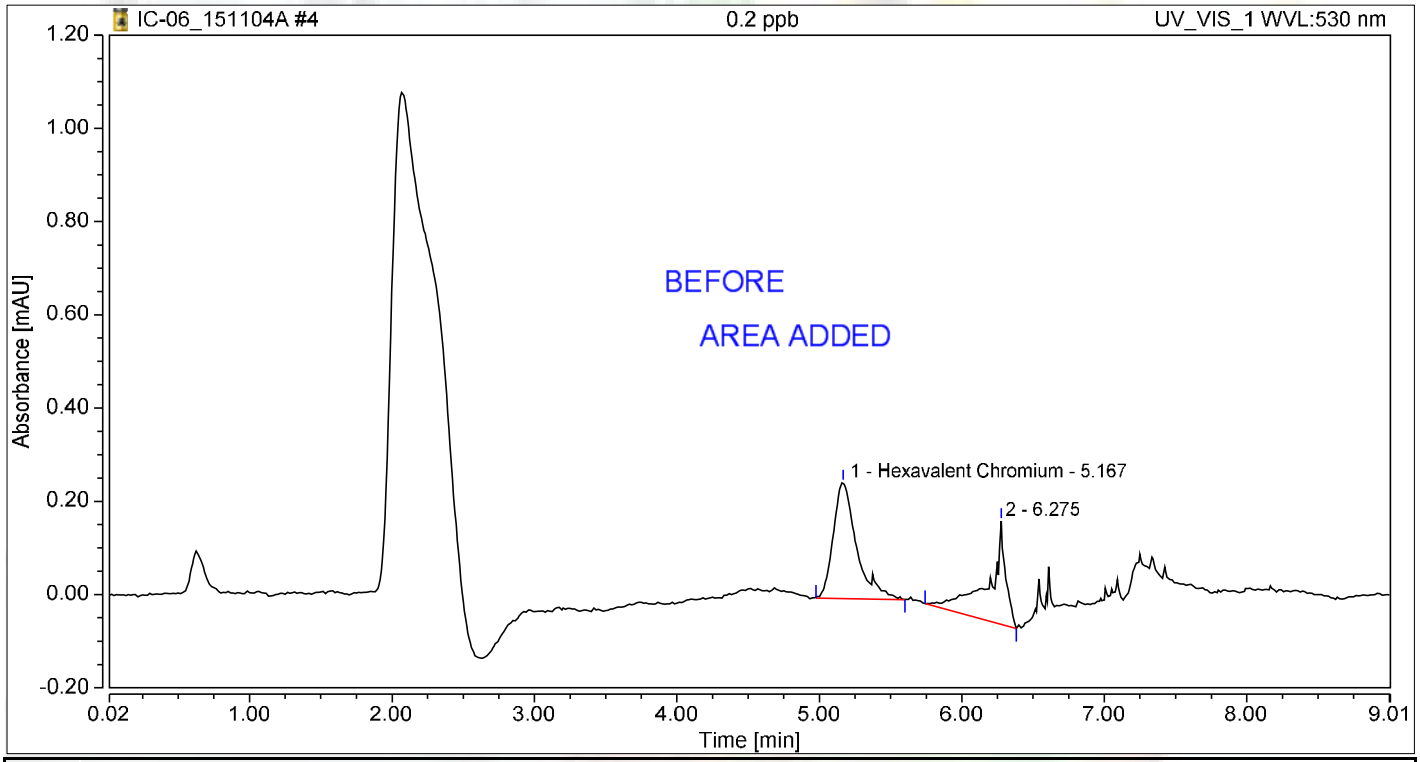
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**0.2 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

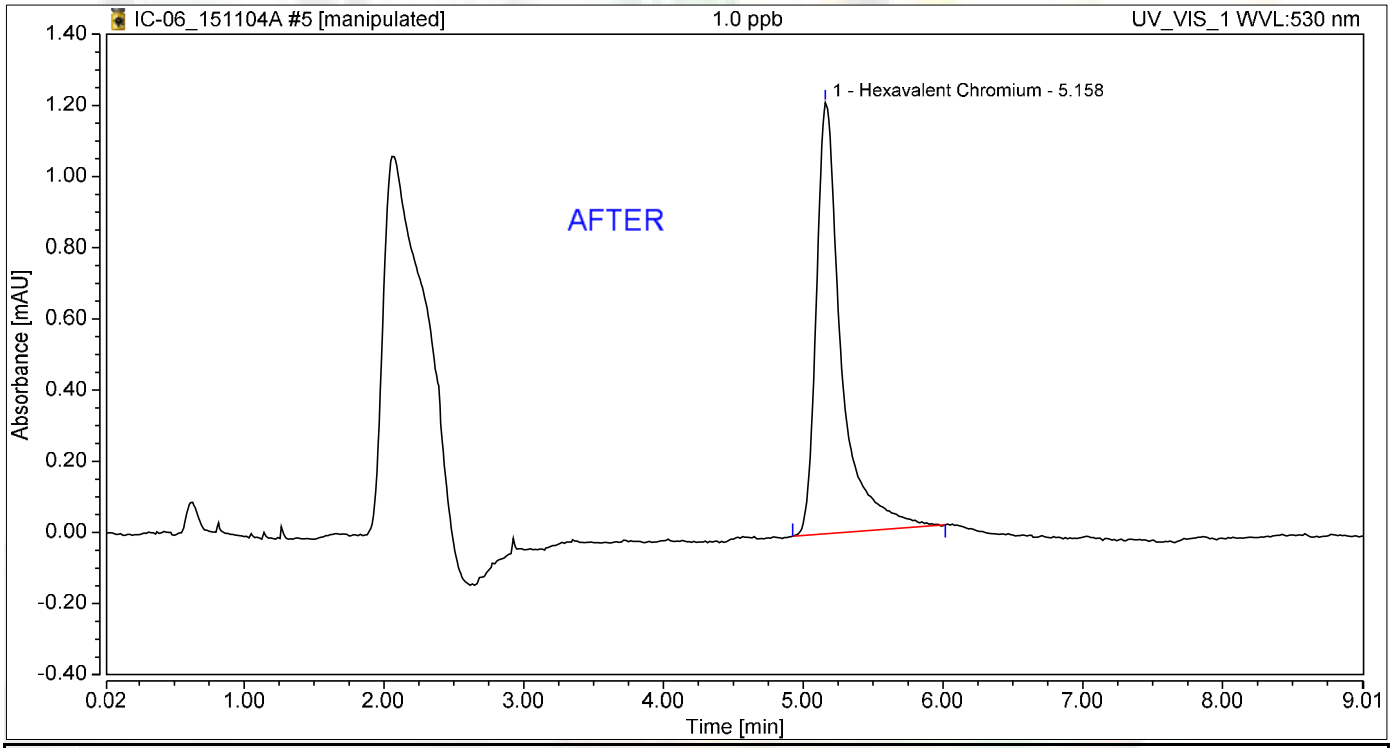
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.047	0.248	59.58	52.83	0.1624
2		6.275	0.032	0.221	40.42	47.17	n.a.
Total:			**0.079**	**0.470**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.251	1.212	100.00	100.00	1.0248
Total:			**0.251**	**1.212**	**100.00**	**100.00**	

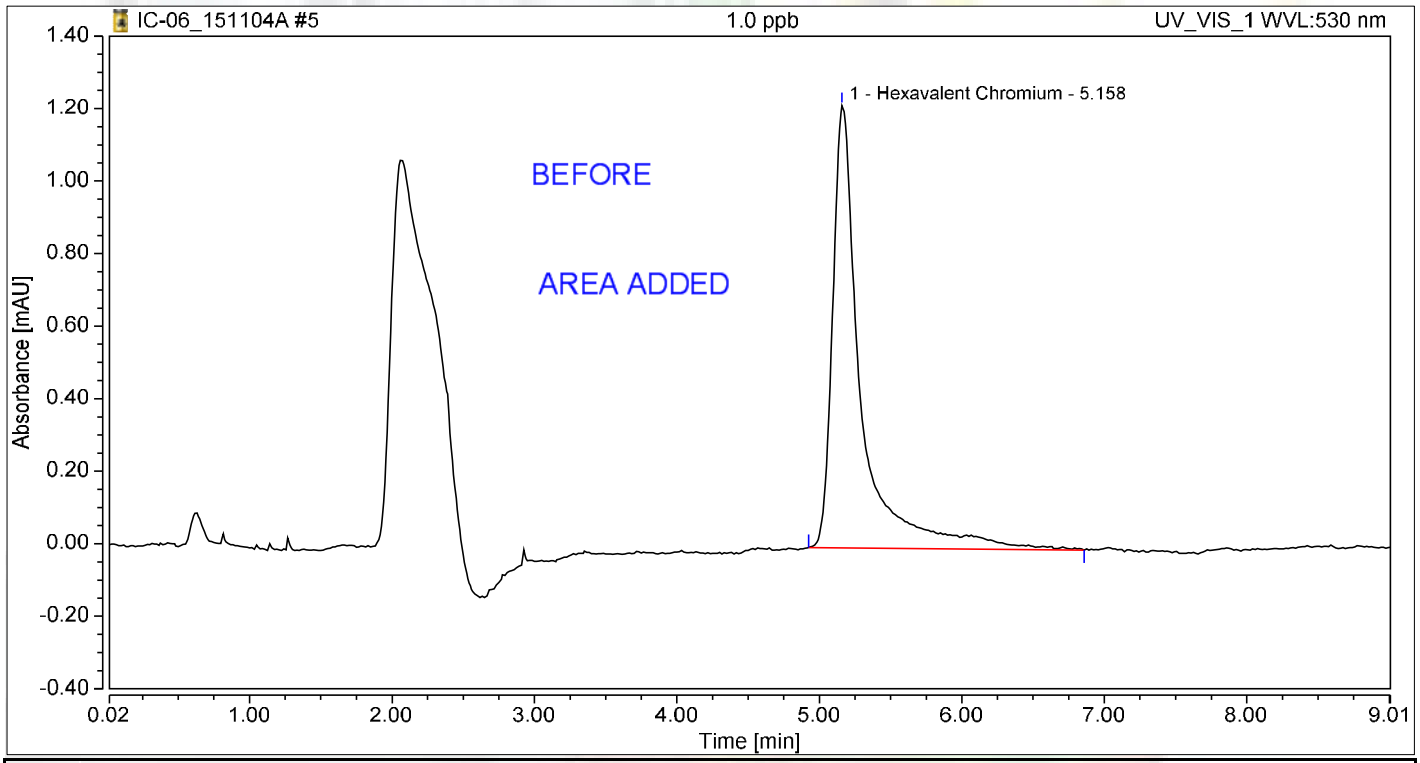
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**1.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

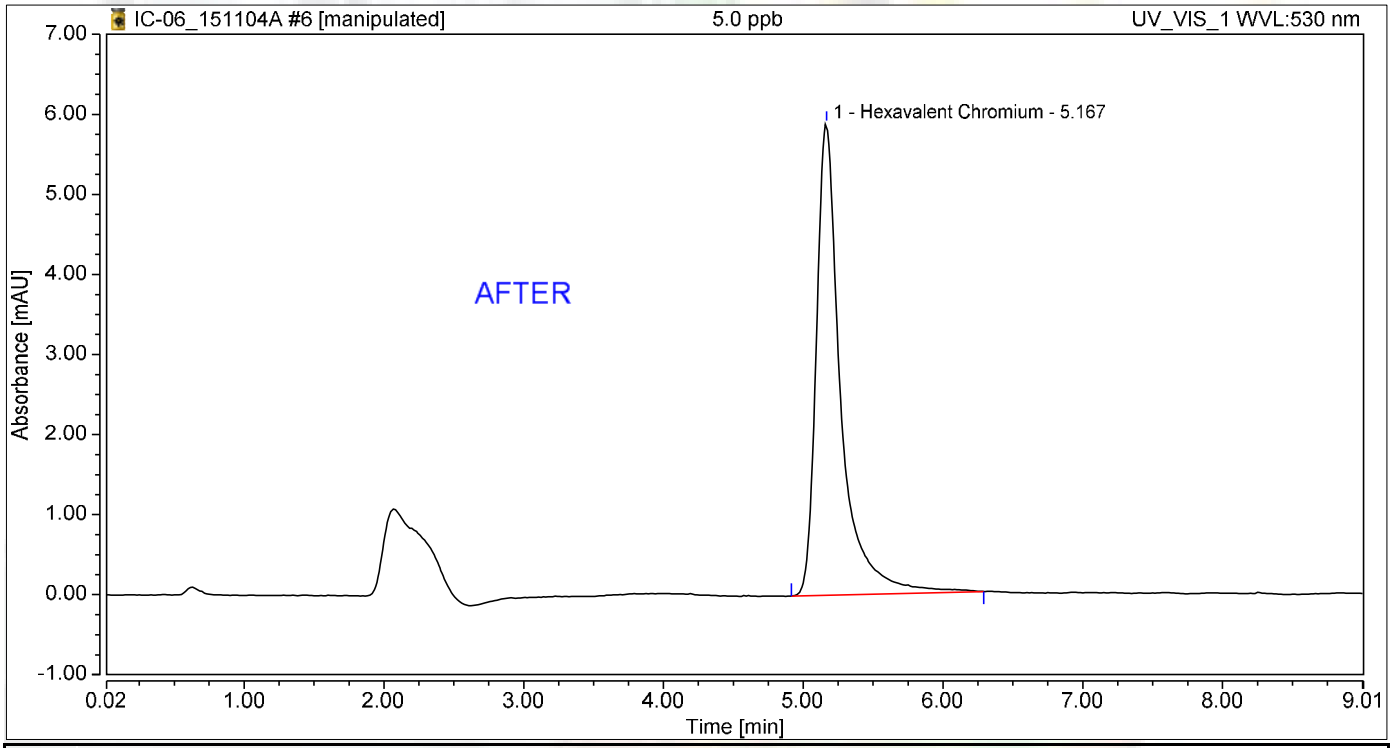
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.283	1.220	100.00	100.00	1.1143
Total:			**0.283**	**1.220**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.194	5.890	100.00	100.00	5.0118
Total:			**1.194**	**5.890**	**100.00**	**100.00**	

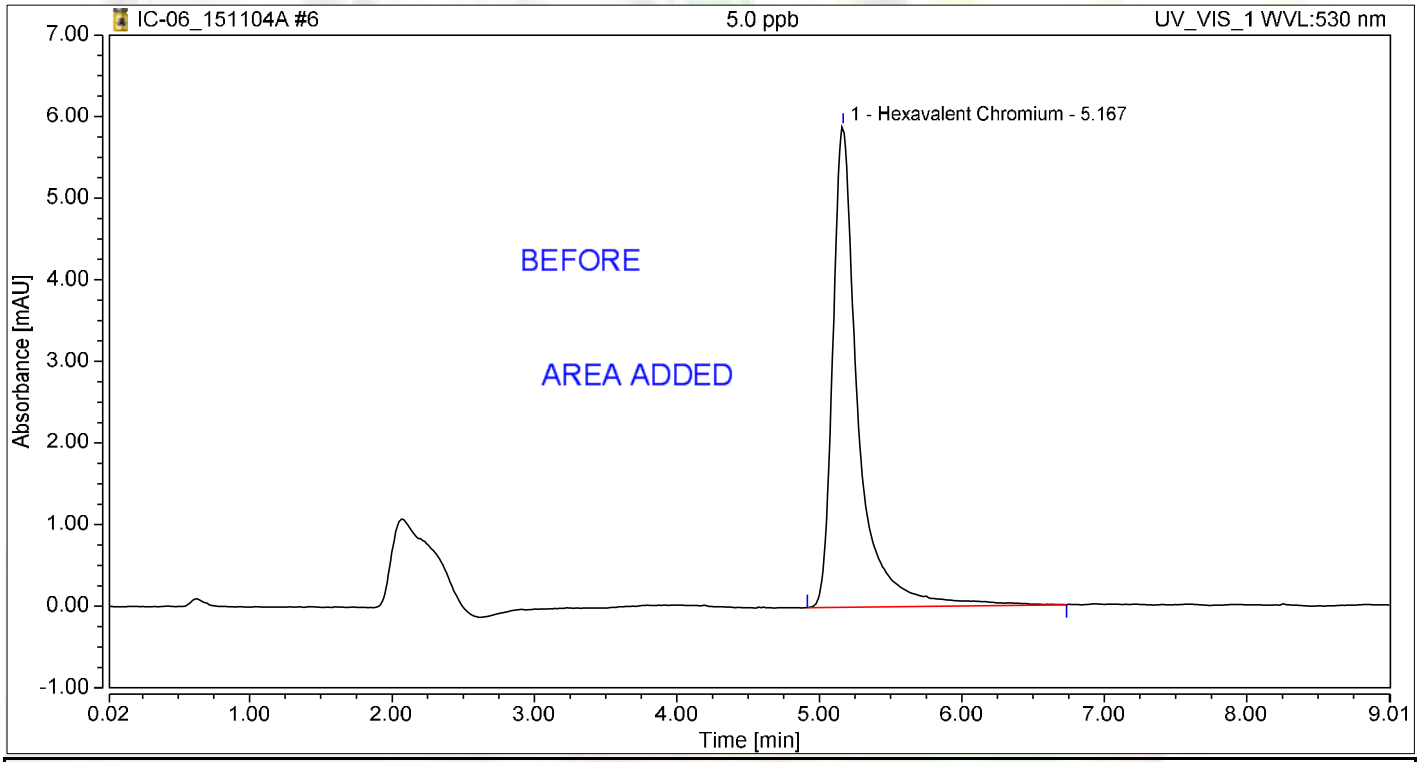
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**5.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

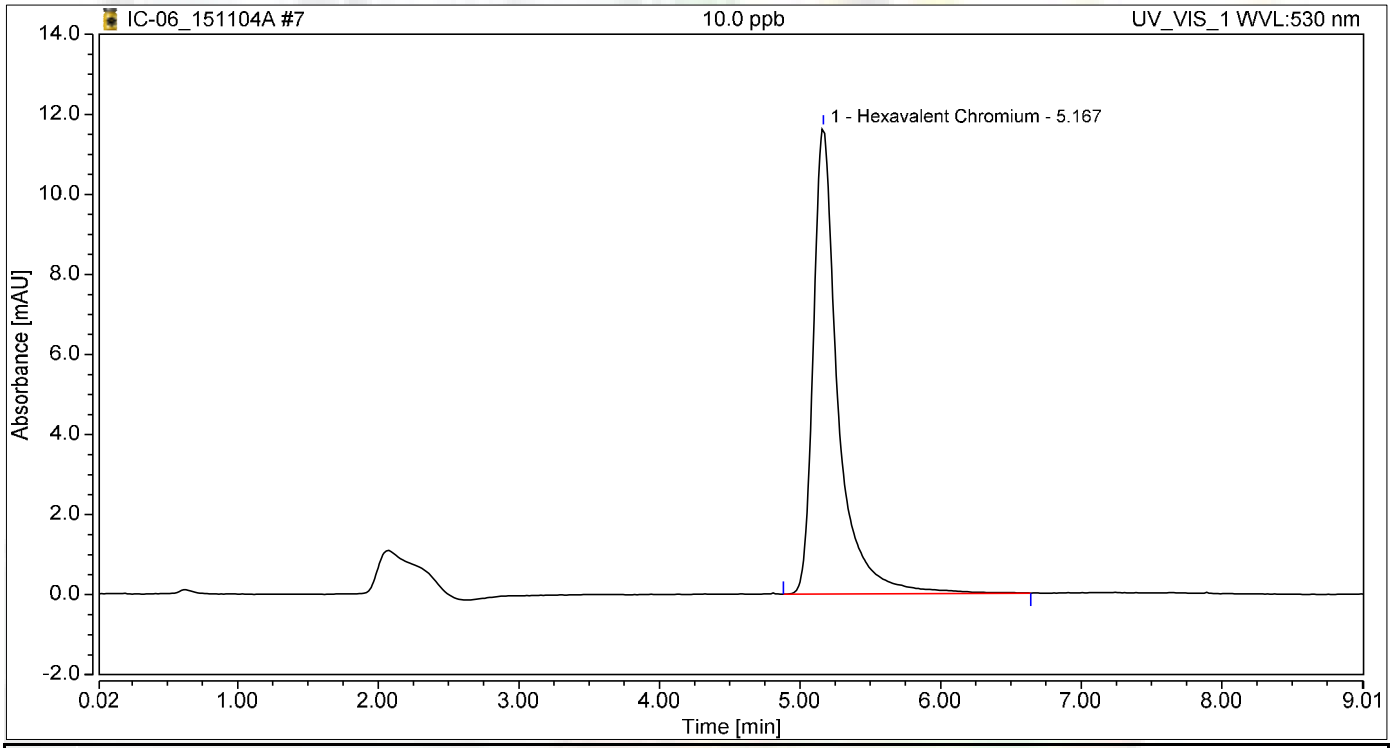
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.221	5.895	100.00	100.00	5.0998
Total:			**1.221**	**5.895**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**10.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

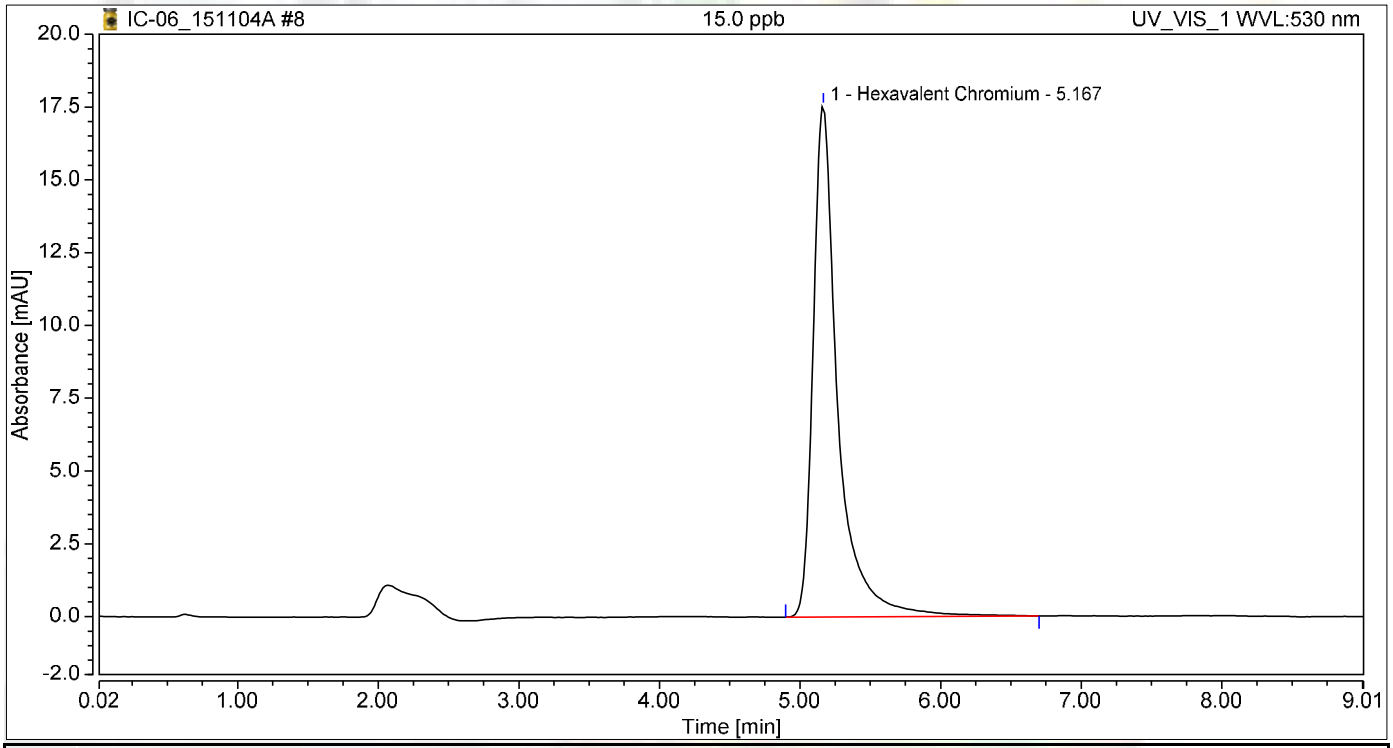
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	2.369	11.648	100.00	100.00	9.9773
Total:			**2.369**	**11.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**15.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

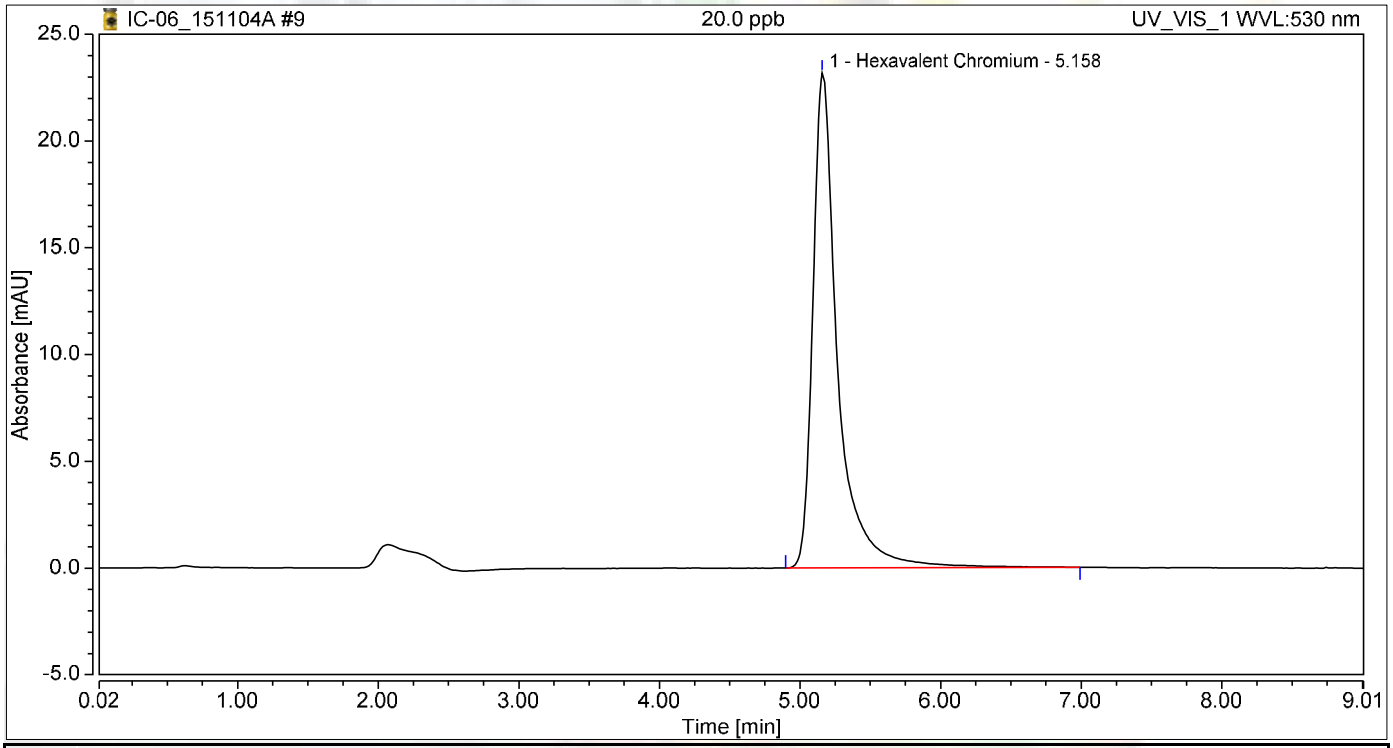
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	3.573	17.559	100.00	100.00	15.0649
Total:			**3.573**	**17.559**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**20.0 ppb**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**07**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



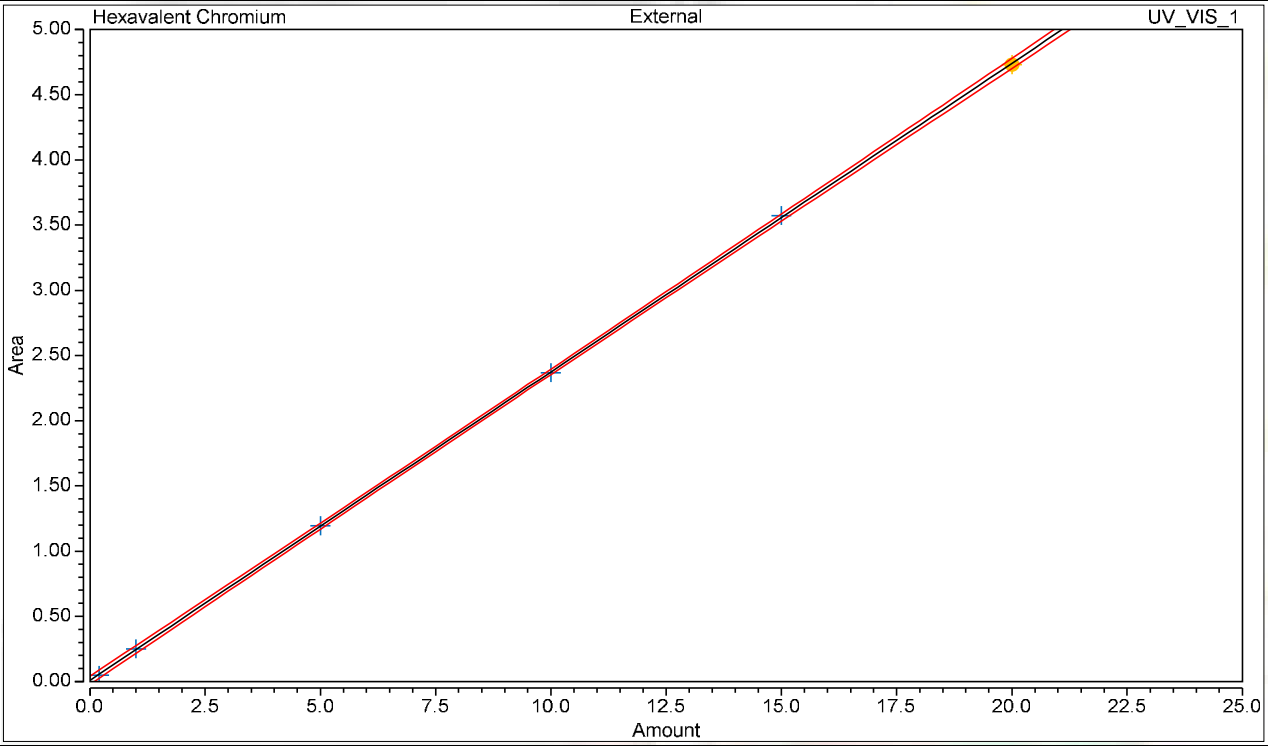
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	4.731	23.180	100.00	100.00	19.9589
Total:			**4.731**	**23.180**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin, WithOffset	*Offset (C0)*	0.0087
Evaluation Type	Area	*Slope (C1)*	0.2366
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99997

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

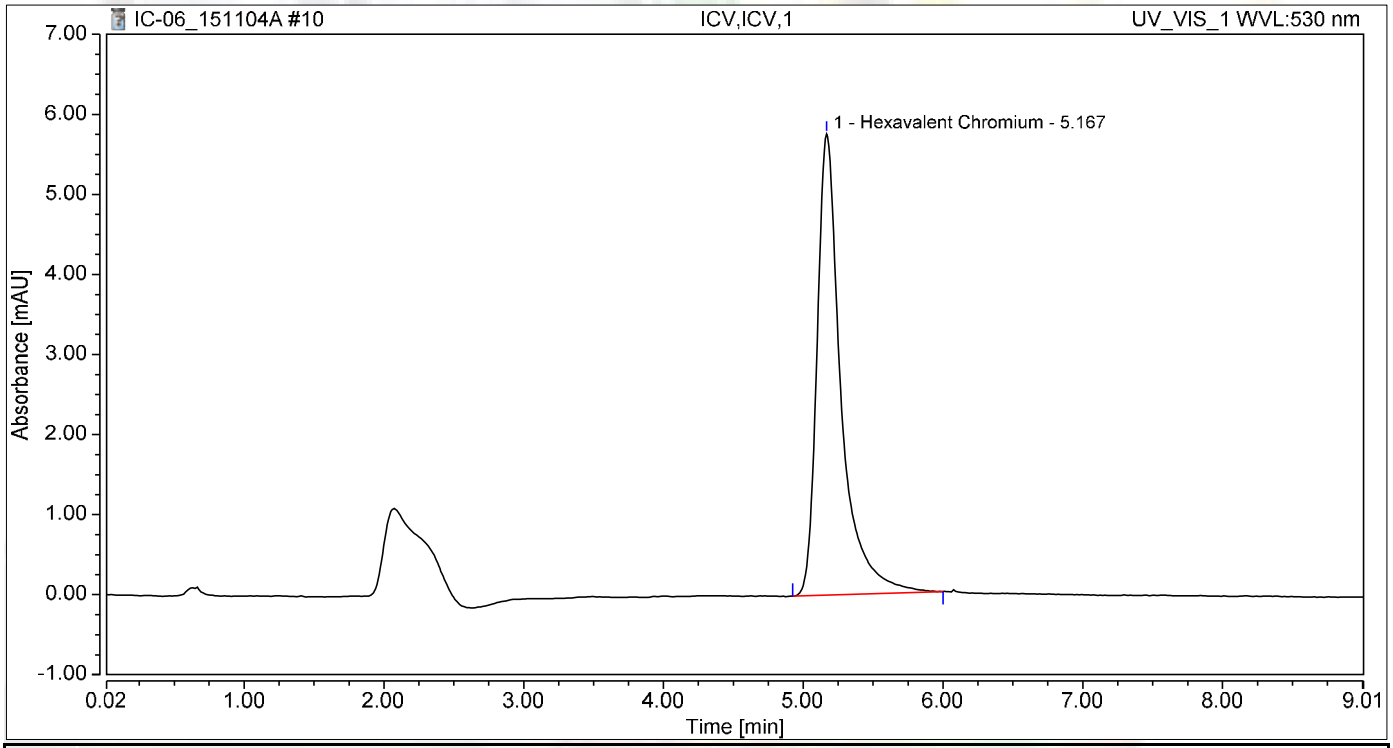
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	0.2 ppb	02	0.2000	0.0471	0.047	0.248
5	1.0 ppb	03	1.0000	0.2511	0.251	1.212
6	5.0 ppb	04	5.0000	1.1944	1.194	5.890
7	10.0 ppb	05	10.0000	2.3692	2.369	11.648
8	15.0 ppb	06	15.0000	3.5729	3.573	17.559
9	20.0 ppb	07	20.0000	4.7308	4.731	23.180

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

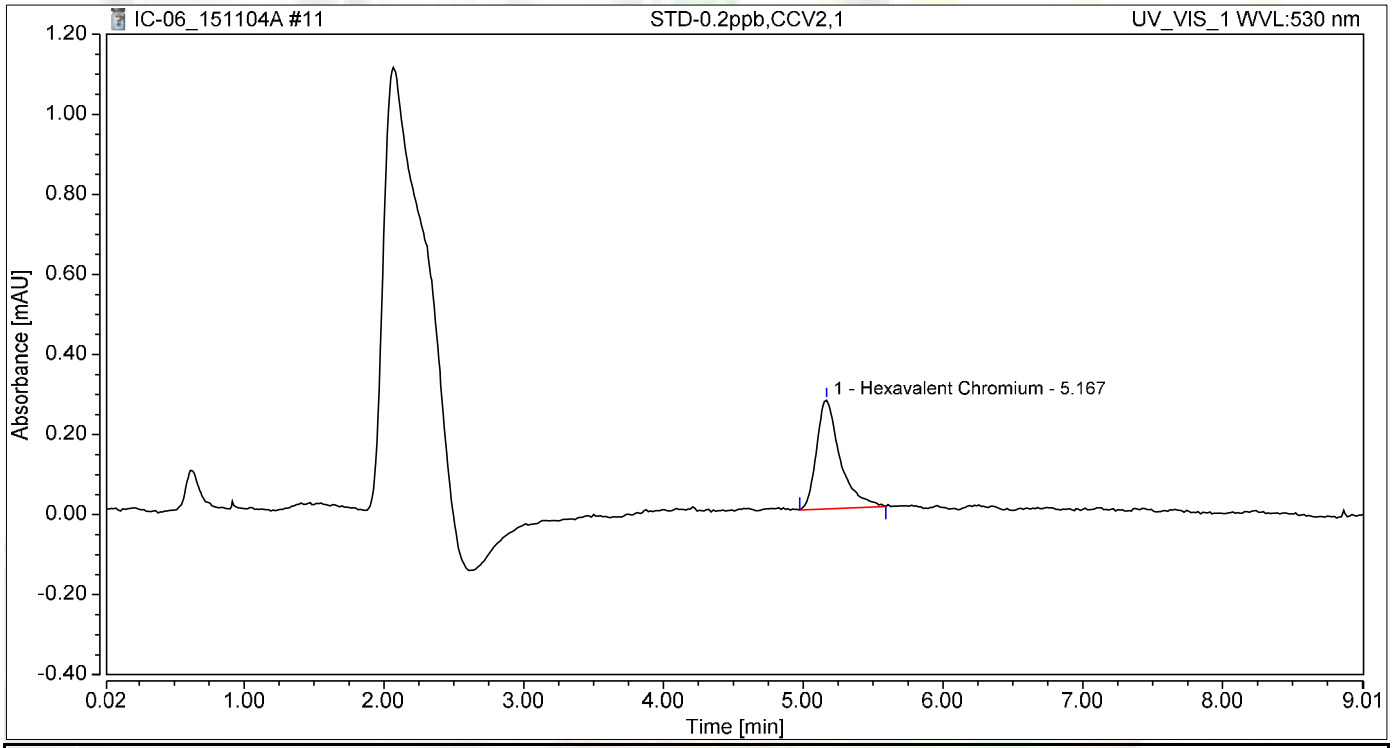
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.148	5.761	100.00	100.00	4.8138
Total:			**1.148**	**5.761**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

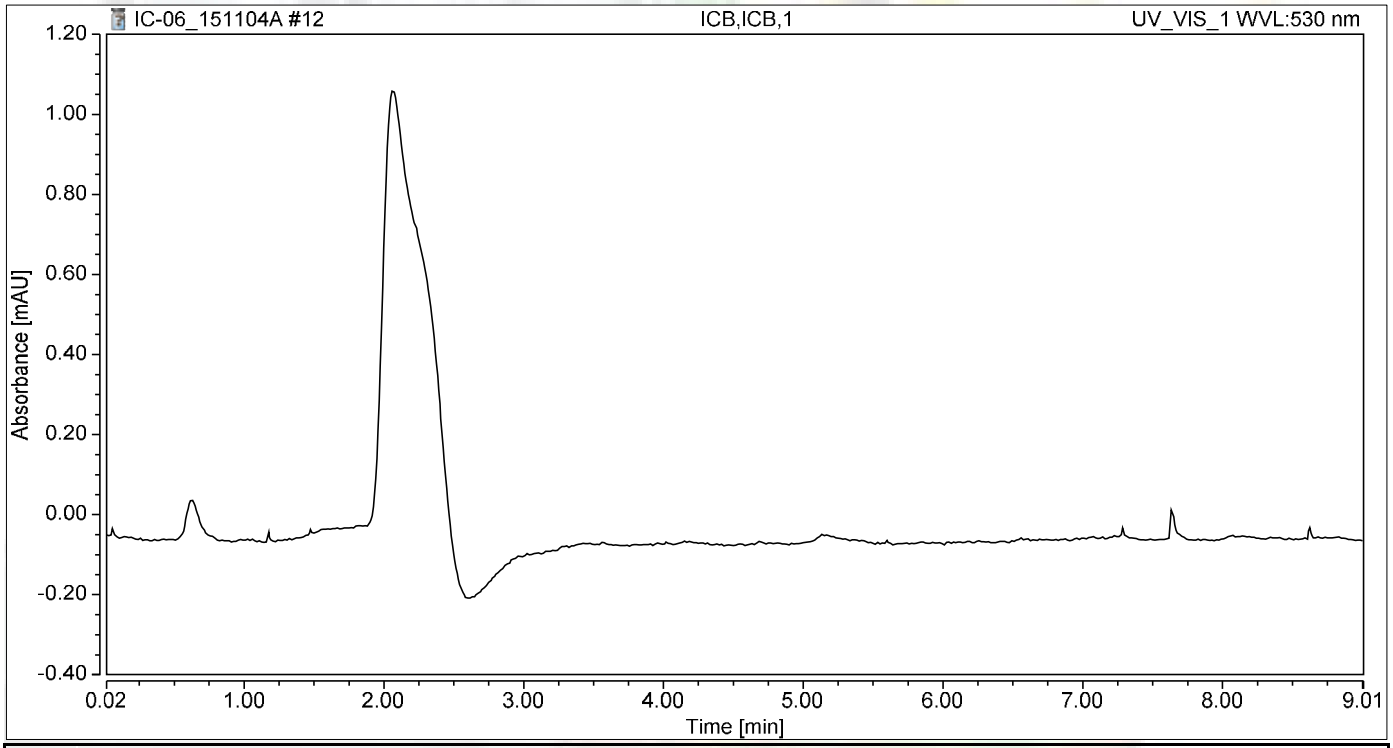
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.053	0.272	100.00	100.00	0.1886
Total:			**0.053**	**0.272**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

REB 11/12/2015

INJECTION LOG: 151104A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	11/04/15 9:42 AM	Not Reported
2	iBLANK	iBLANK	1	Hexavalent Chromium	11/04/15 9:54 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	11/04/15 10:22 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	11/04/15 10:49 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:00 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:10 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	11/04/15 11:40 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	11/04/15 12:06 PM	Reported
11	STD-0.2ppb	CCV2	1	Hexavalent Chromium	11/04/15 12:18 PM	Reported
12	ICB	ICB	1	Hexavalent Chromium	11/04/15 12:28 PM	Reported
13	MB-R104041	MBLK	1	Hexavalent Chromium	11/04/15 12:38 PM	Reported
14	LCS-R104041	LCS	1	Hexavalent Chromium	11/04/15 12:48 PM	Reported
15	N017427-001A	SAMP	1	Hexavalent Chromium	11/04/15 1:02 PM	Reported
16	N017427-001ADUP	DUP	1	Hexavalent Chromium	11/04/15 1:13 PM	Reported
17	N017427-001A-MS	MS	1	Hexavalent Chromium	11/04/15 1:23 PM	Reported
18	N017427-001A-MSD	MSD	1	Hexavalent Chromium	11/04/15 1:33 PM	Reported
19	N017427-002A	SAMP	1	Hexavalent Chromium	11/04/15 1:43 PM	Reported
20	N017427-002A-MS	MS	1	Hexavalent Chromium	11/04/15 1:53 PM	Reported
21	N017427-003A	SAMP	1	Hexavalent Chromium	11/04/15 2:03 PM	Reported
22	N017427-003A-MS	MS	1	Hexavalent Chromium	11/04/15 2:13 PM	Reported
23	CCV-1	CCV	1	Hexavalent Chromium	11/04/15 2:23 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	11/04/15 2:33 PM	Reported
25	N017457-001A	SAMP	1	Hexavalent Chromium	11/04/15 3:14 PM	Reported
26	N017457-002A	SAMP	10	Hexavalent Chromium	11/04/15 3:25 PM	Reported
27	N017457-003A	SAMP	1	Hexavalent Chromium	11/04/15 3:35 PM	Not Reported
28	N017457-004A	SAMP	1	Hexavalent Chromium	11/04/15 3:48 PM	Reported
29	N017457-005A	SAMP	20	Hexavalent Chromium	11/04/15 4:00 PM	Not Reported
30	N017457-006A	SAMP	1	Hexavalent Chromium	11/04/15 4:10 PM	Reported
31	N017457-007A	SAMP	5	Hexavalent Chromium	11/04/15 4:20 PM	Reported
32	N017457-008A	SAMP	1	Hexavalent Chromium	11/04/15 4:29 PM	Reported
33	N017457-009A	SAMP	1	Hexavalent Chromium	11/04/15 4:39 PM	Reported
34	N017457-010A	SAMP	1	Hexavalent Chromium	11/04/15 4:49 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	11/04/15 4:59 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	11/04/15 5:09 PM	Reported
37	N017457-011A	SAMP	1	Hexavalent Chromium	11/04/15 5:21 PM	Not Reported
38	N017457-012A	SAMP	1	Hexavalent Chromium	11/04/15 5:32 PM	Reported
39	N017457-013A	SAMP	1	Hexavalent Chromium	11/04/15 5:42 PM	Reported
40	N017457-014A	SAMP	50	Hexavalent Chromium	11/04/15 5:52 PM	Not Reported
41	N017457-015A	SAMP	1	Hexavalent Chromium	11/04/15 6:02 PM	Reported
42	N017457-016A	SAMP	1	Hexavalent Chromium	11/04/15 6:12 PM	Reported

INJECTION LOG: 151104A

Instrument ID: IC-06

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N017457-017A	SAMP	1	Hexavalent Chromium	11/04/15 6:22 PM	Reported
44	N017457-003A	SAMP	1	Hexavalent Chromium	11/04/15 6:32 PM	Reported
45	N017457-005A	SAMP	1	Hexavalent Chromium	11/04/15 6:42 PM	Reported
46	N017457-014A	SAMP	5	Hexavalent Chromium	11/04/15 6:52 PM	Reported
47	CCV-3	CCV	1	Hexavalent Chromium	11/04/15 7:02 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	11/04/15 7:12 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-06_151104A**	*Created On:*	**24/Jul/12 17:25:10**
Directory:	**Instrument Data\2015**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**09/Nov/15 11:43:06**
No. of Injections:	**51**	*Updated By:*	**ics 5000**

Injection Details

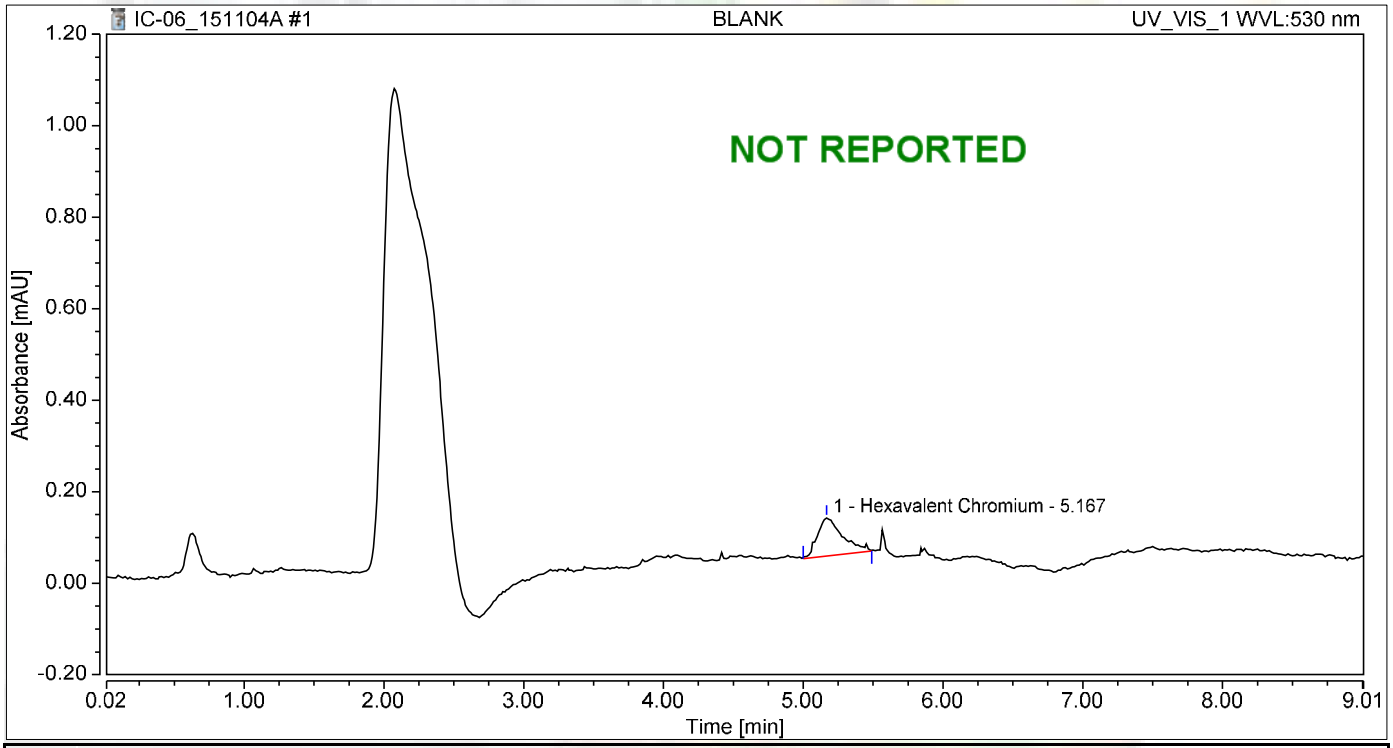
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		11/04/2015 09:42	Finished	BLANK
2	iBLANK	2	1000	Unknown		11/04/2015 09:54	Finished	iBLANK
3	iBLANK	3	1000	Unknown		11/04/2015 10:22	Finished	iBLANK
4	0.2 ppb	4	1000	Calibration Standard	02	11/04/2015 10:49	Finished	0.2ppb, IWST151103A
5	1.0 ppb	5	1000	Calibration Standard	03	11/04/2015 11:00	Finished	1.0ppb, IWST151103A
6	5.0 ppb	6	1000	Calibration Standard	04	11/04/2015 11:10	Finished	5.0ppb, IWST151103A
7	10.0 ppb	7	1000	Calibration Standard	05	11/04/2015 11:20	Finished	10ppb, IWST151103A
8	15.0 ppb	8	1000	Calibration Standard	06	11/04/2015 11:30	Finished	15ppb, IWST151103A
9	20.0 ppb	9	1000	Calibration Standard	07	11/04/2015 11:40	Finished	20ppb, IWST151103A
10	ICV,ICV,1	10	1000	Unknown		11/04/2015 12:06	Finished	ICV @ 5ppb, IWST151103B
11	STD-0.2ppb,CCV2,1	11	1000	Unknown		11/04/2015 12:18	Finished	PQL @ 0.2 ppb
12	ICB,ICB,1	12	1000	Unknown		11/04/2015 12:28	Finished	ICB R151018C
13	MB-H2O,MBLK,1	13	1000	Unknown		11/04/2015 12:38	Finished	MB
14	LCS-H2O,LCS,1	14	1000	Unknown		11/04/2015 12:48	Finished	LCS(5ppb), IWST-151103B
15	N017427-001A,SAMP,1	15	1000	Unknown		11/04/2015 13:02	Finished	SAMP, 10mL
16	N017427-001ADUP,DUP,1	16	1000	Unknown		11/04/2015 13:13	Finished	DUP, 10mL
17	N017427-001A-MS,MS,1	17	1000	Unknown		11/04/2015 13:23	Finished	MS(1ppb), IWST-151103B
18	N017427-001A-MSD,MSD,1	18	1000	Unknown		11/04/2015 13:33	Finished	MSD(1ppb), IWST-151103B
19	N017427-002A,SAMP,1	19	1000	Unknown		11/04/2015 13:43	Finished	SAMP, 10mL
20	N017427-002A-MS,MS,1	20	1000	Unknown		11/04/2015 13:53	Finished	MS(1ppb), IWST-151103B
21	N017427-003A,SAMP,1	21	1000	Unknown		11/04/2015 14:03	Finished	SAMP, 10mL
22	N017427-003A-MS,MS,1	22	1000	Unknown		11/04/2015 14:13	Finished	MS(1ppb), IWST-151103B
23	CCV-1,CCV,1	23	1000	Unknown		11/04/2015 14:23	Finished	CCV @ 10ppb, IWST151103A
24	CCB-1,CCB,1	24	1000	Unknown		11/04/2015 14:33	Finished	CCB
25	N017457-001A,SAMP,1	25	1000	Unknown		11/04/2015 15:14	Finished	SAMP, 10mL
26	N017457-002A,SAMP,10	26	1000	Unknown		11/04/2015 15:25	Finished	SAMP, 1 to 10mL
27	N017457-003A,SAMP,1	27	1000	Unknown		11/04/2015 15:35	Finished	SAMP, 10mL
28	N017457-004A,SAMP,1	28	1000	Unknown		11/04/2015 15:48	Finished	SAMP, 10mL
29	N017457-005A,SAMP,20	29	1000	Unknown		11/04/2015 16:00	Finished	SAMP, 0.5 to 10mL
30	N017457-006A,SAMP,1	30	1000	Unknown		11/04/2015 16:10	Finished	SAMP, 10mL
31	N017457-007A,SAMP,5	31	1000	Unknown		11/04/2015 16:20	Finished	SAMP, 2 to 10mL
32	N017457-008A,SAMP,1	32	1000	Unknown		11/04/2015 16:29	Finished	SAMP, 10mL
33	N017457-009A,SAMP,1	33	1000	Unknown		11/04/2015 16:39	Finished	SAMP, 10mL
34	N017457-010A,SAMP,1	34	1000	Unknown		11/04/2015 16:49	Finished	SAMP, 10mL
35	CCV-2,CCV,1	35	1000	Unknown		11/04/2015 16:59	Finished	CCV @ 5ppb, IWST151103A
36	CCB-2,CCB,1	36	1000	Unknown		11/04/2015 17:09	Finished	CCB
37	N017457-011A,SAMP,1	1	1000	Unknown		11/04/2015 17:21	Finished	SAMP, 10mL
38	N017457-012A,SAMP,1	2	1000	Unknown		11/04/2015 17:32	Finished	SAMP, 10mL
39	N017457-013A,SAMP,1	3	1000	Unknown		11/04/2015 17:42	Finished	SAMP, 10mL
40	N017457-014A,SAMP,50	4	1000	Unknown		11/04/2015 17:52	Finished	SAMP, 0.2 to 10mL
41	N017457-015A,SAMP,1	5	1000	Unknown		11/04/2015 18:02	Finished	SAMP, 10mL
42	N017457-016A,SAMP,1	6	1000	Unknown		11/04/2015 18:12	Finished	SAMP, 10mL
43	N017457-017A,SAMP,1	7	1000	Unknown		11/04/2015 18:22	Finished	SAMP, 10mL
44	N017457-003A,SAMP,1	8	1000	Unknown		11/04/2015 18:32	Finished	SAMP, 10mL
45	N017457-005A,SAMP,1	9	1000	Unknown		11/04/2015 18:42	Finished	SAMP, 10mL
46	N017457-014A,SAMP,5	10	1000	Unknown		11/04/2015 18:52	Finished	SAMP, 2 to 10mL
47	CCV-3,CCV,1	11	1000	Unknown		11/04/2015 19:02	Finished	CCV @ 10ppb, IWST151103A
48	CCB-3,CCB,1	12	1000	Unknown		11/04/2015 19:12	Finished	CCB
49	SHUTDOWN	13	1000	Unknown		11/04/2015 19:22	Finished	
50	Eluent: R151103A	14	1000	Unknown		n.a.	Finished	Eluent
51	PCR: R151104B	15	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

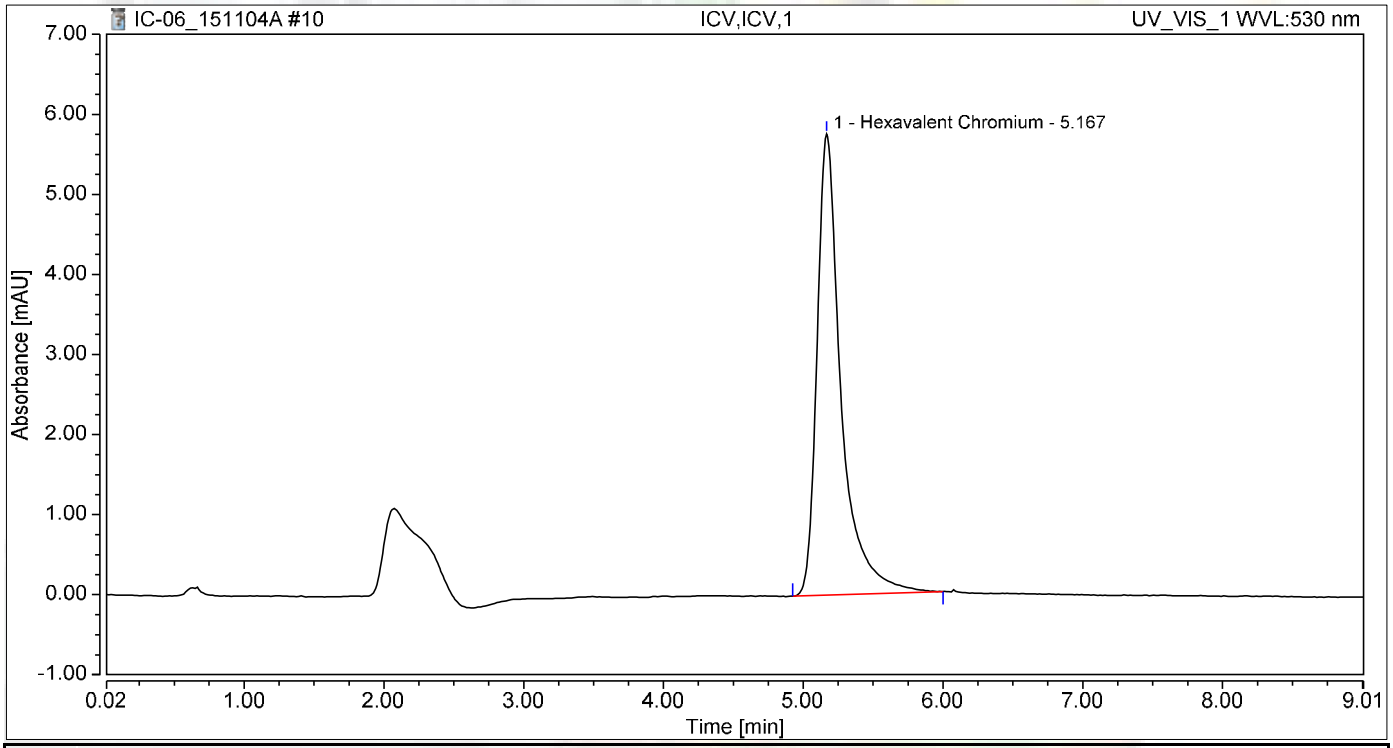
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.017	0.083	100.00	100.00	0.0363
Total:			**0.017**	**0.083**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

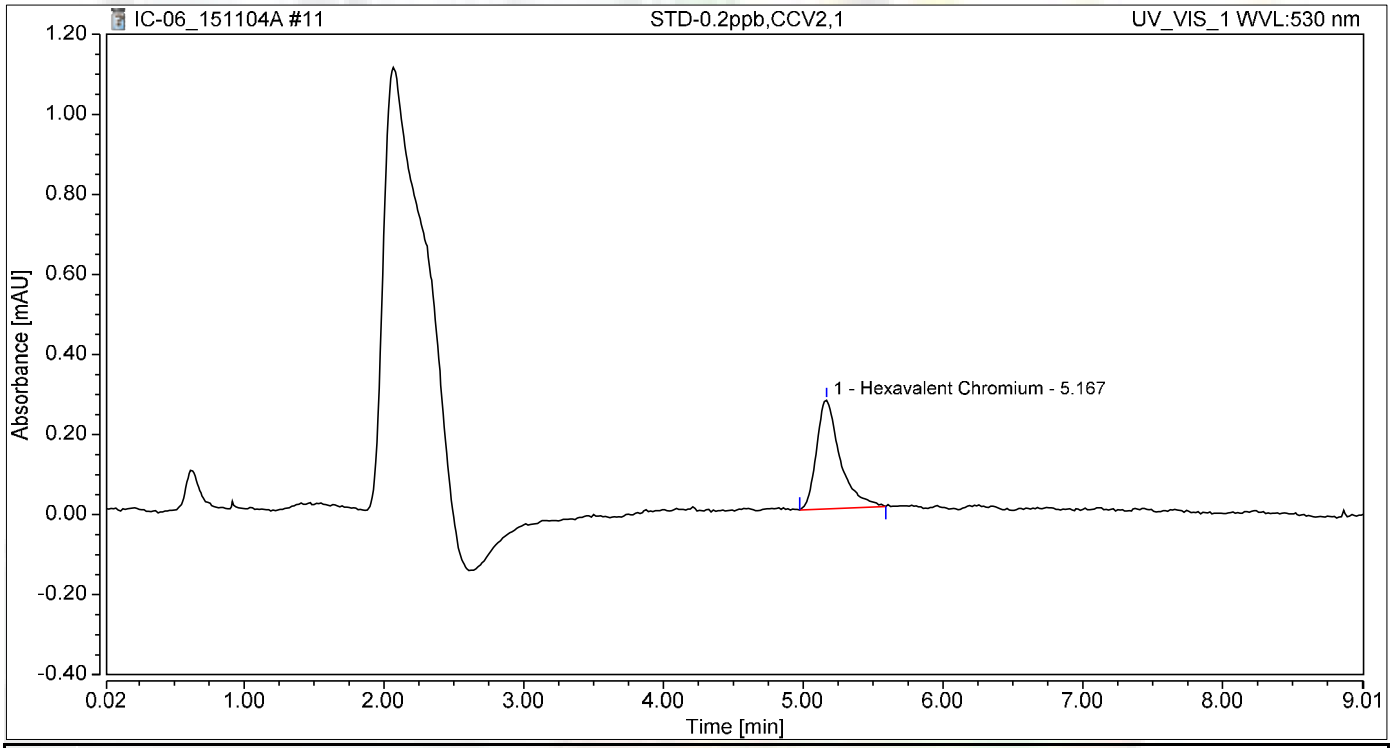
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.148	5.761	100.00	100.00	4.8138
Total:			**1.148**	**5.761**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD-0.2ppb,CCV2,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

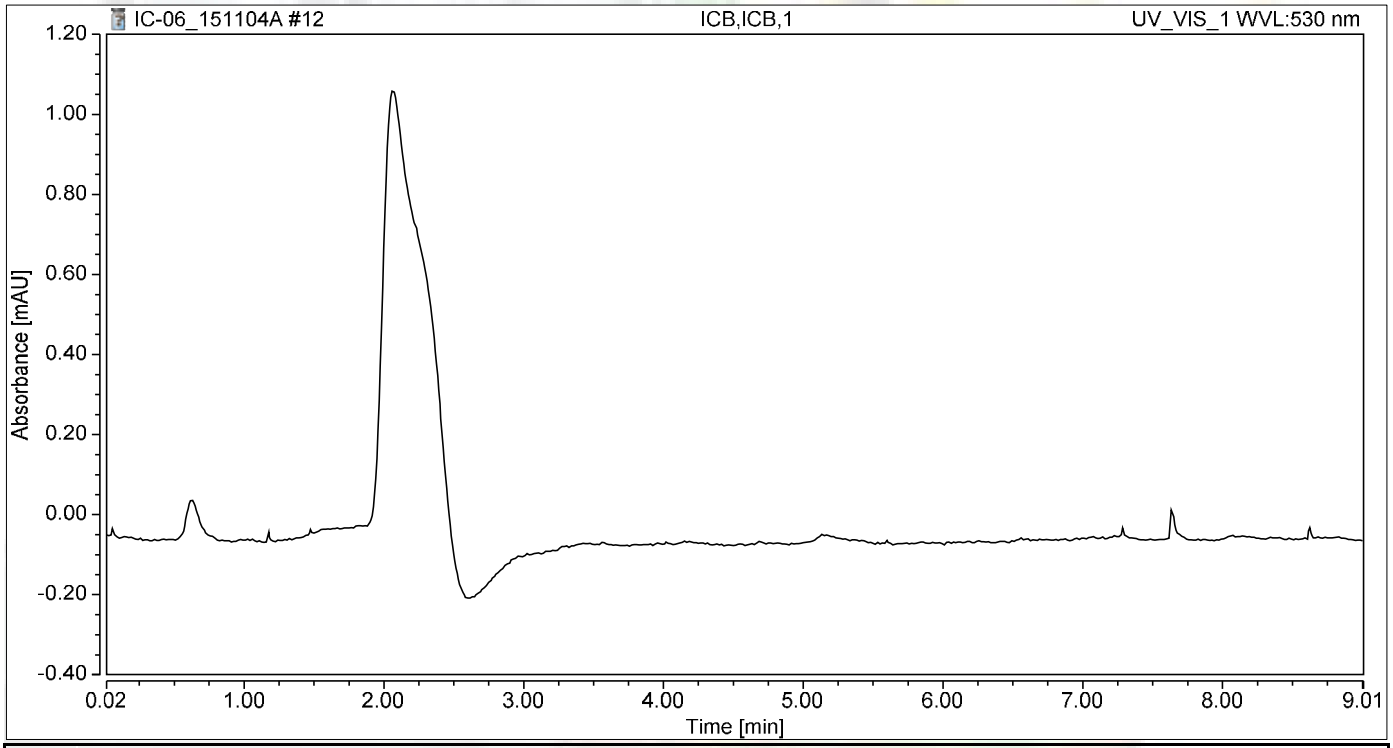
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.053	0.272	100.00	100.00	0.1886
Total:			**0.053**	**0.272**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

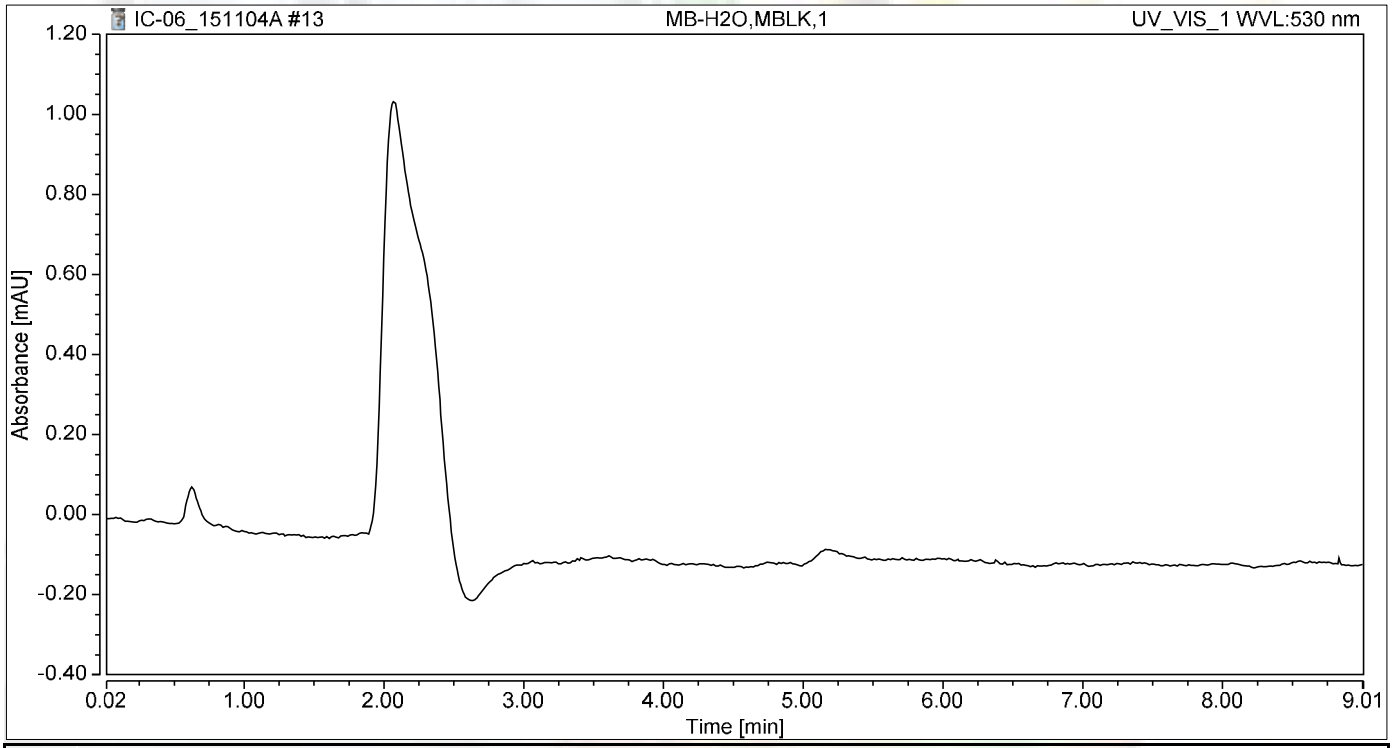
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.99**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

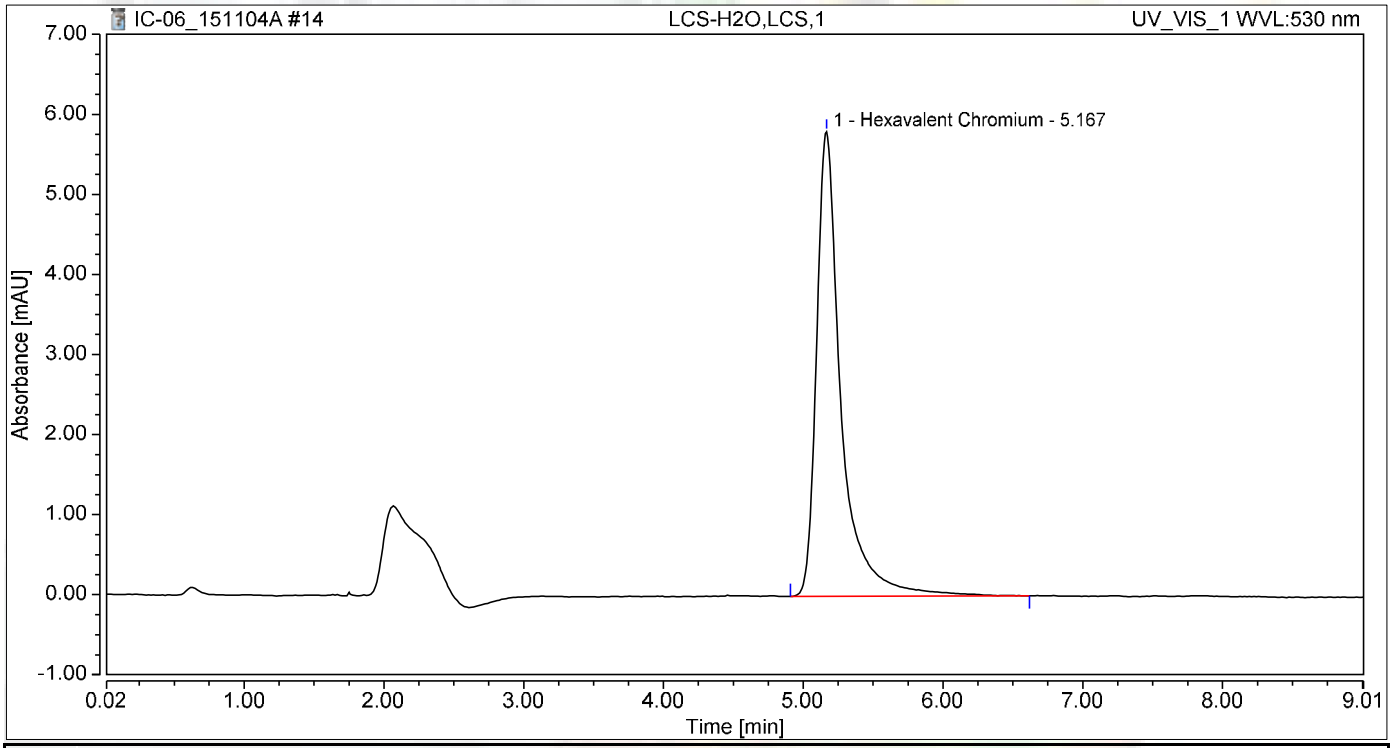
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.99**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 12:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

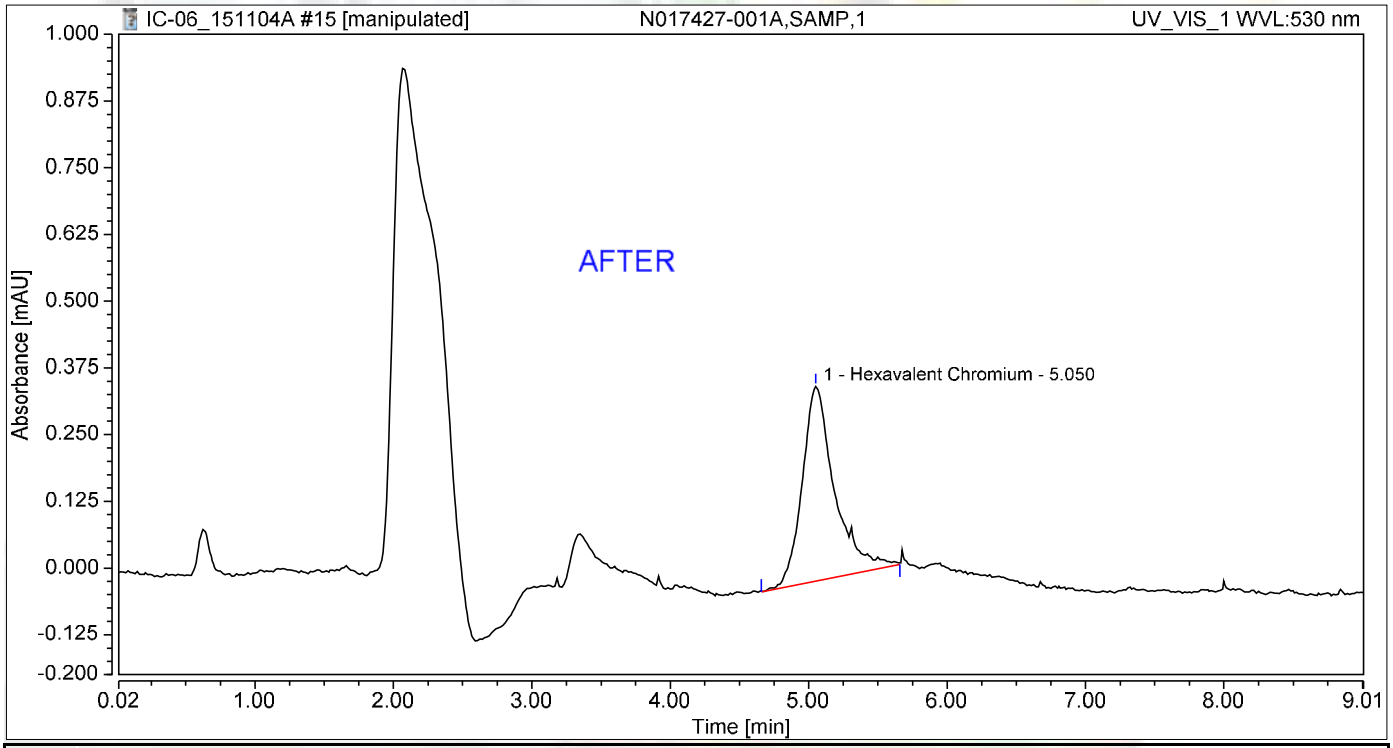
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.180	5.804	100.00	100.00	4.9523
Total:			**1.180**	**5.804**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.099	0.365	100.00	100.00	0.3810
Total:			**0.099**	**0.365**	**100.00**	**100.00**	

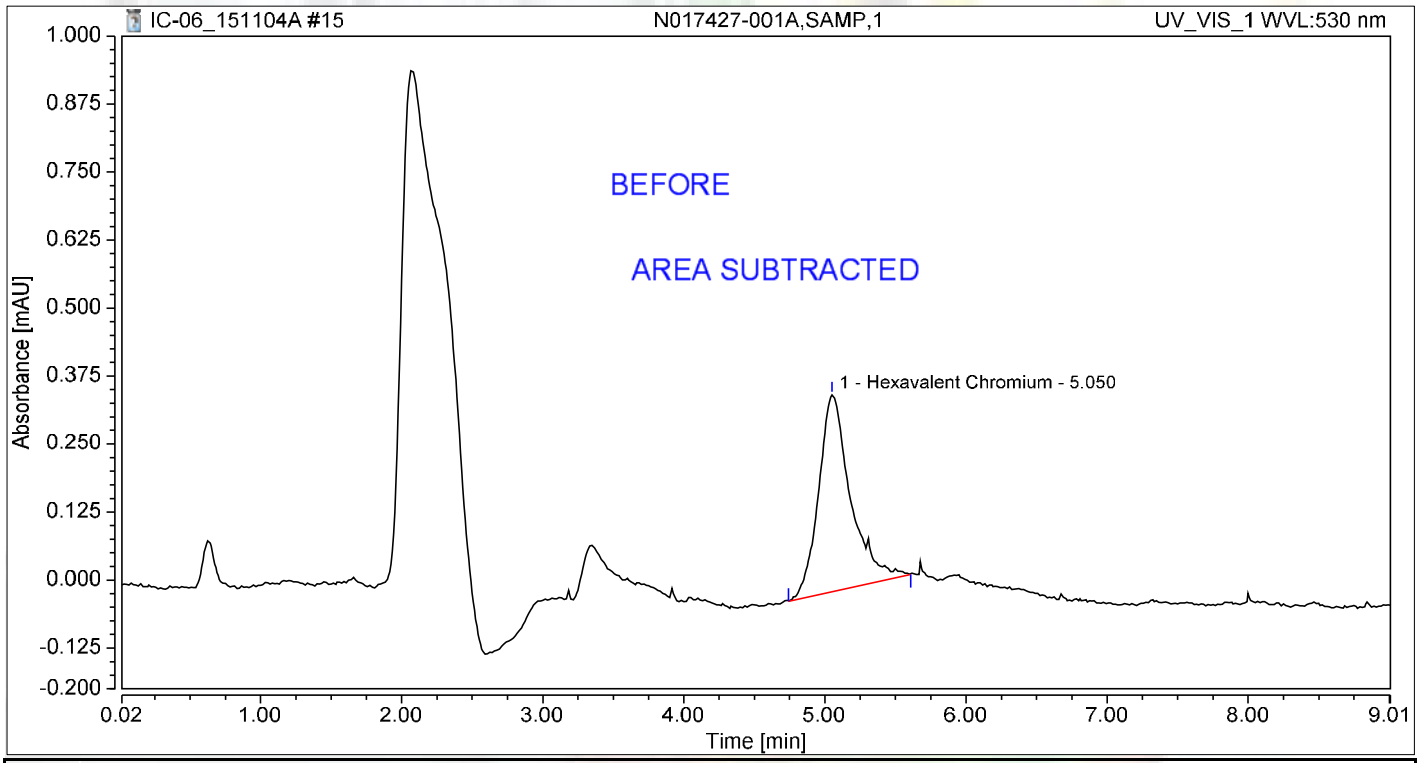
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

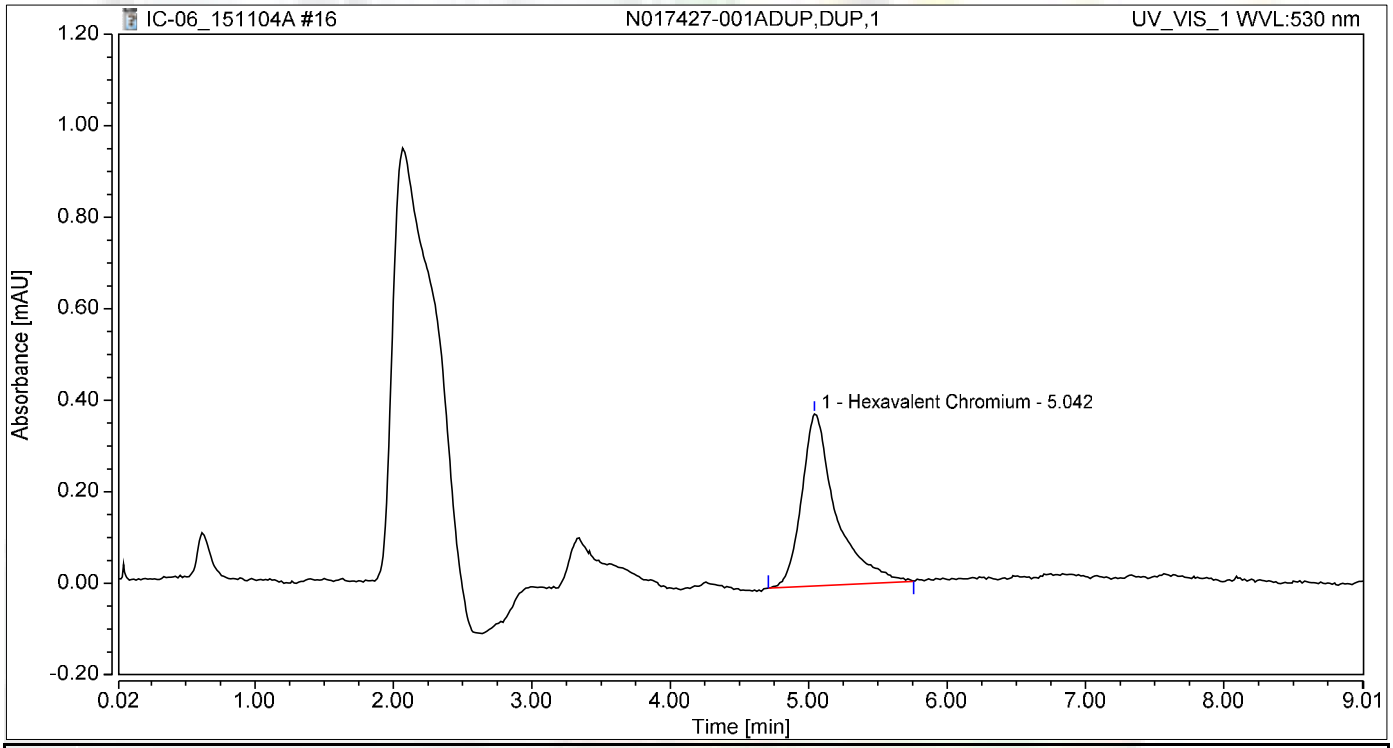
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.095	0.362	100.00	100.00	0.3650
Total:			**0.095**	**0.362**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001ADUP,DUP,1**	*Run Time (min):*	**8.99**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

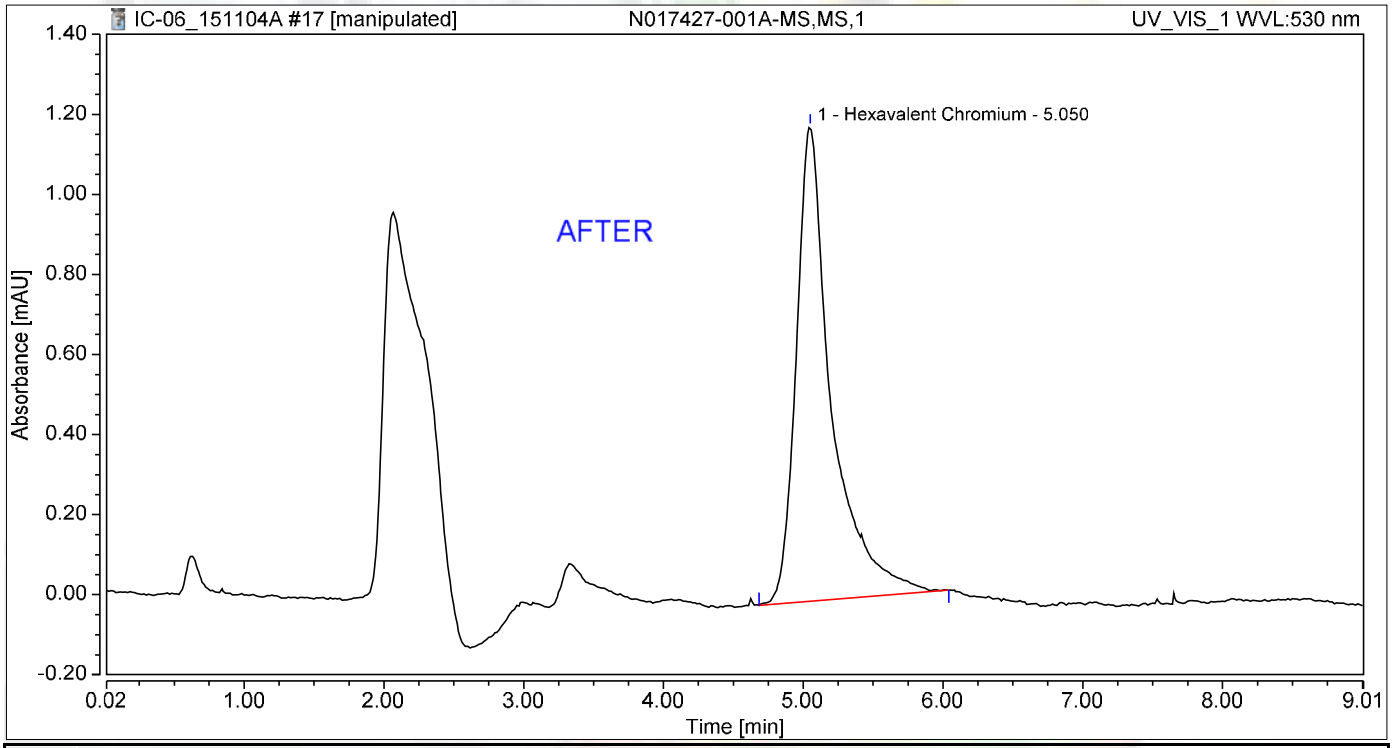
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.108	0.376	100.00	100.00	0.4193
Total:			**0.108**	**0.376**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001A-MS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.345	1.185	100.00	100.00	1.4195
Total:			**0.345**	**1.185**	**100.00**	**100.00**	

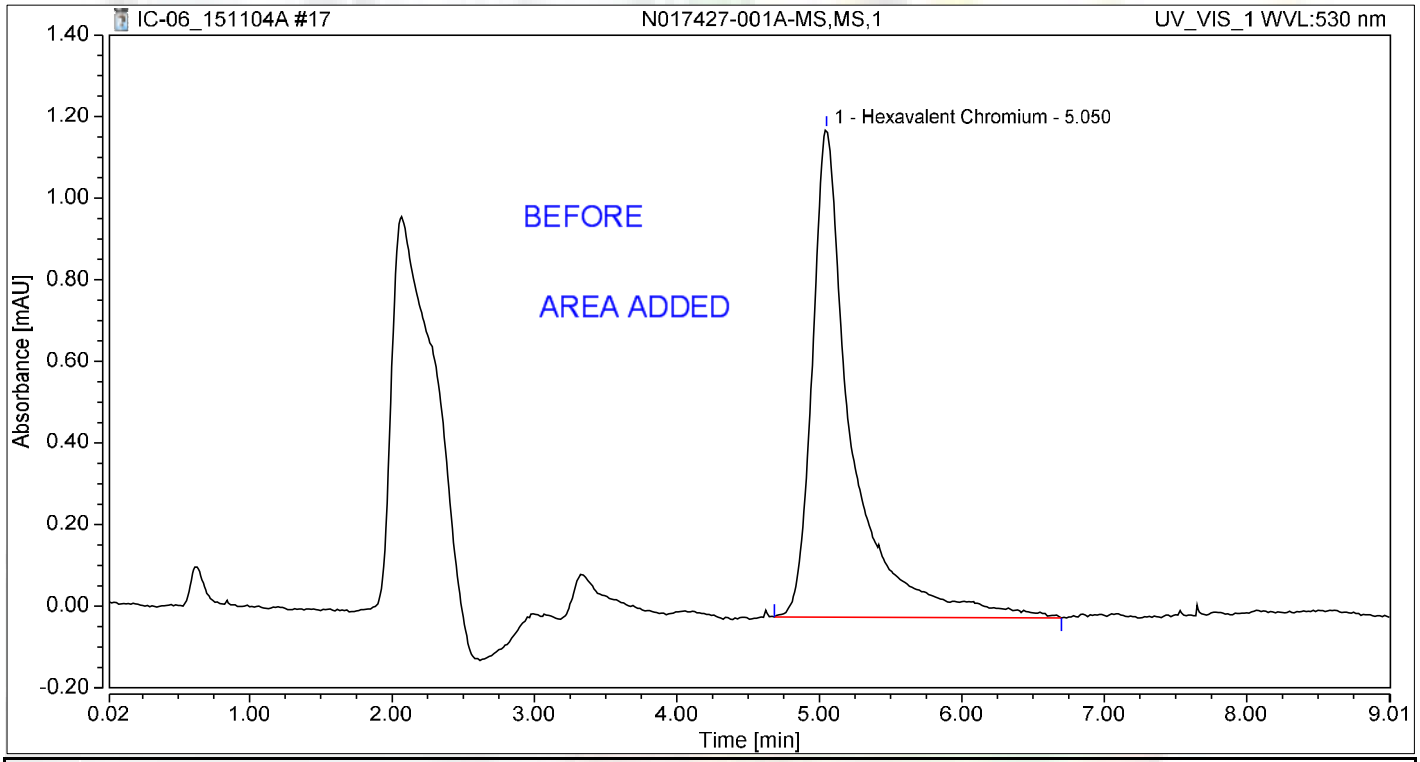
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001A-MS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

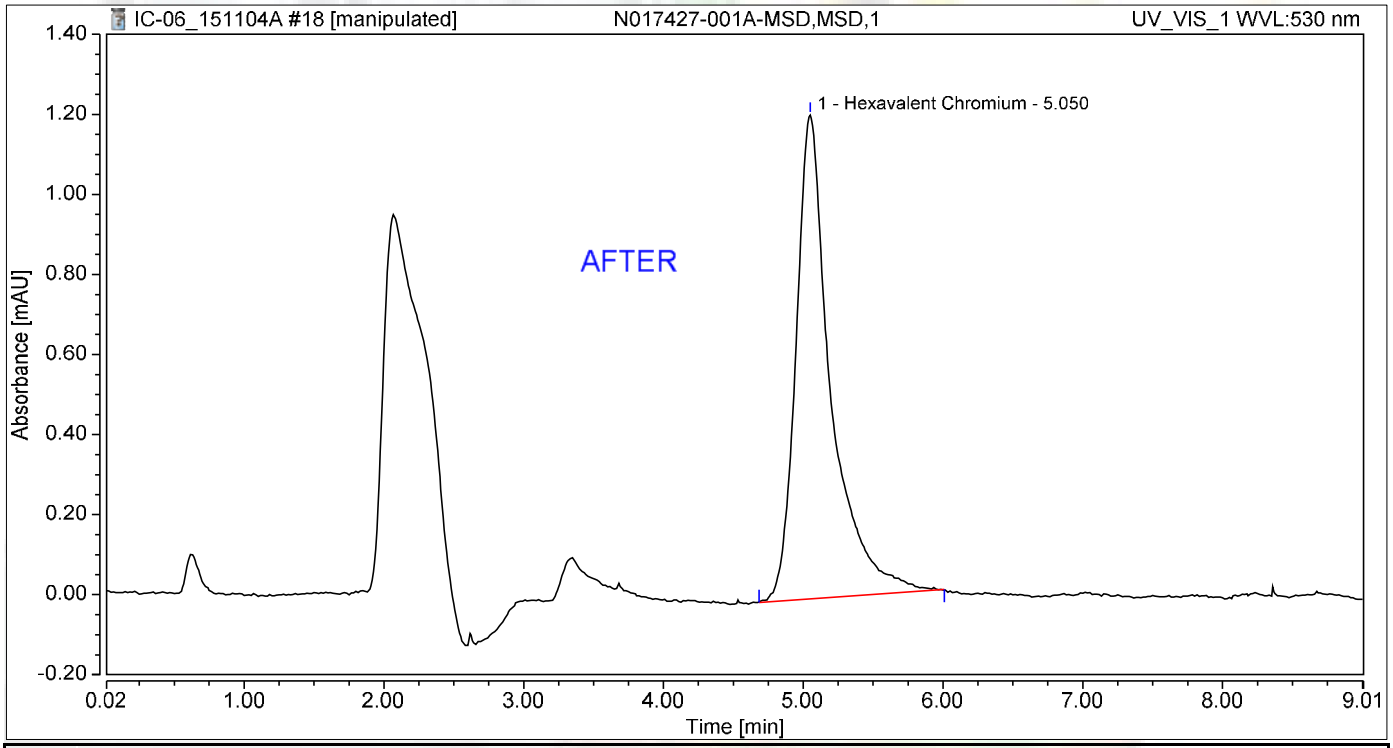
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.384	1.196	100.00	100.00	1.5863
Total:			**0.384**	**1.196**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001A-MSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.349	1.209	100.00	100.00	1.4393
Total:			**0.349**	**1.209**	**100.00**	**100.00**	

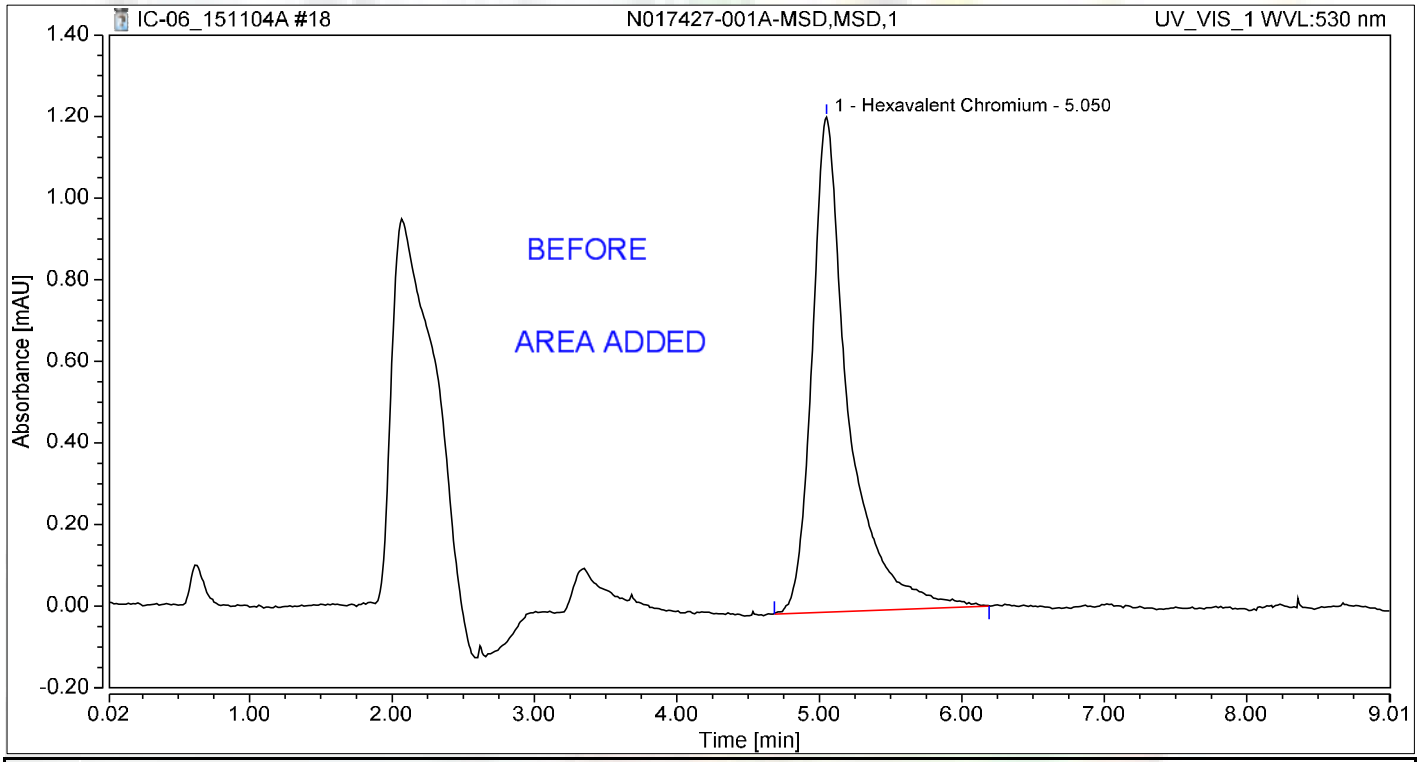
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017427-001A-MSD,MSD,1**	*Run Time (min):*	**8.99**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

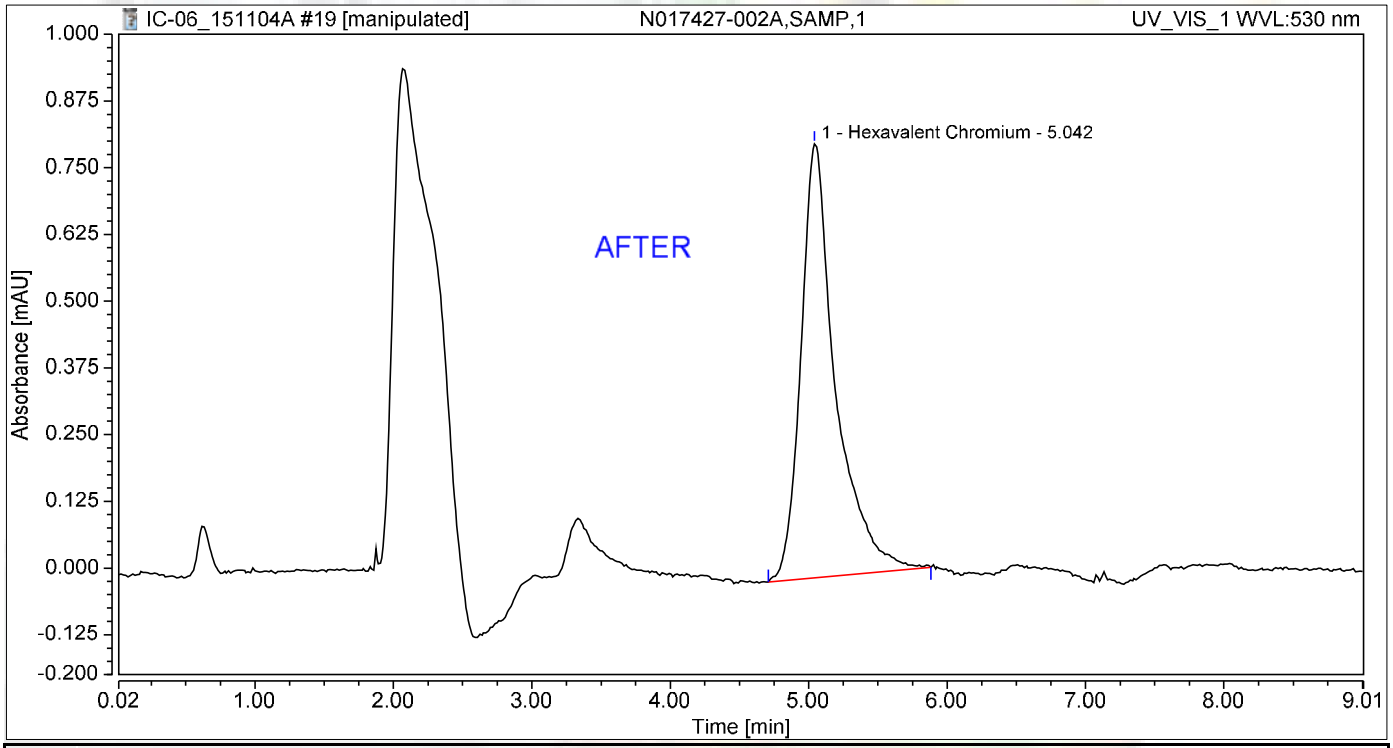
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.360	1.213	100.00	100.00	1.4859
Total:			**0.360**	**1.213**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.235	0.813	100.00	100.00	0.9565
Total:			**0.235**	**0.813**	**100.00**	**100.00**	

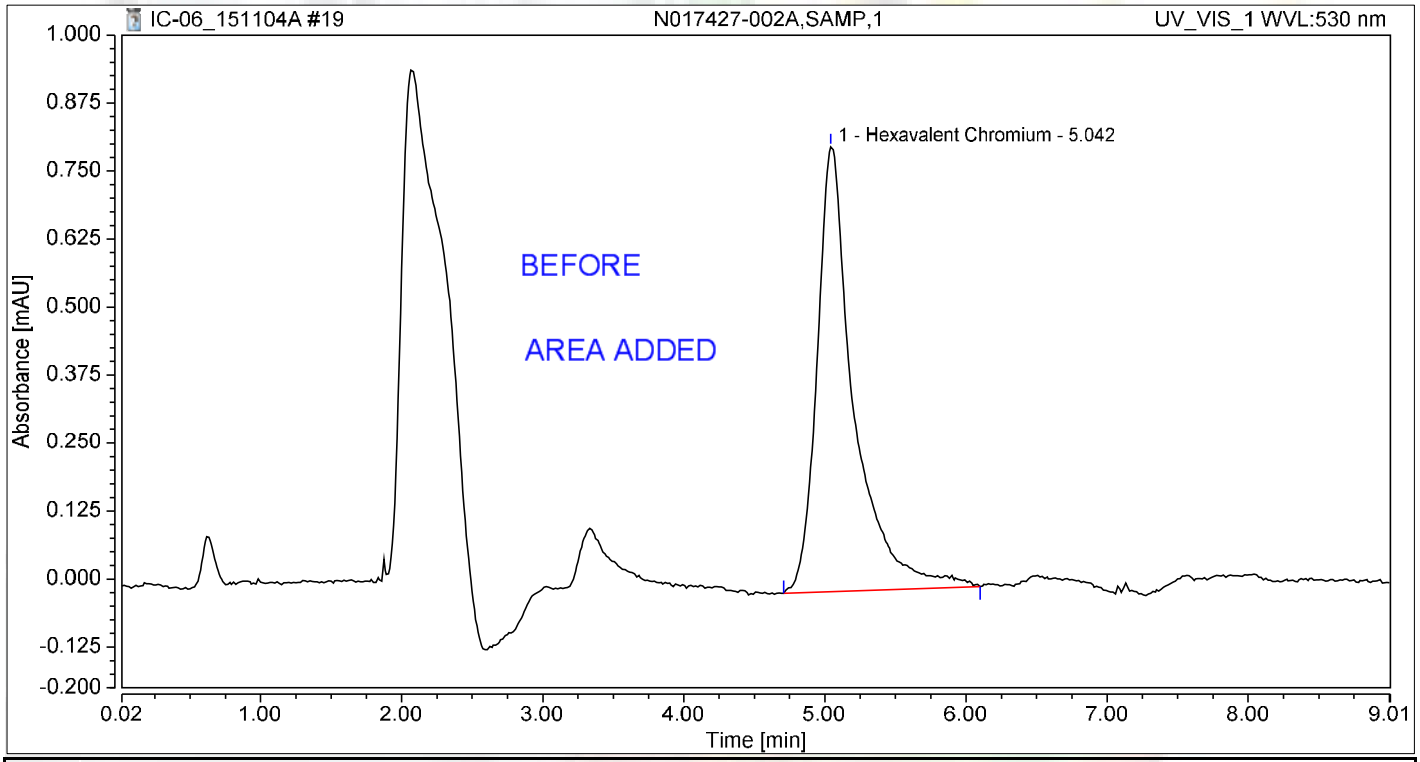
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017427-002A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

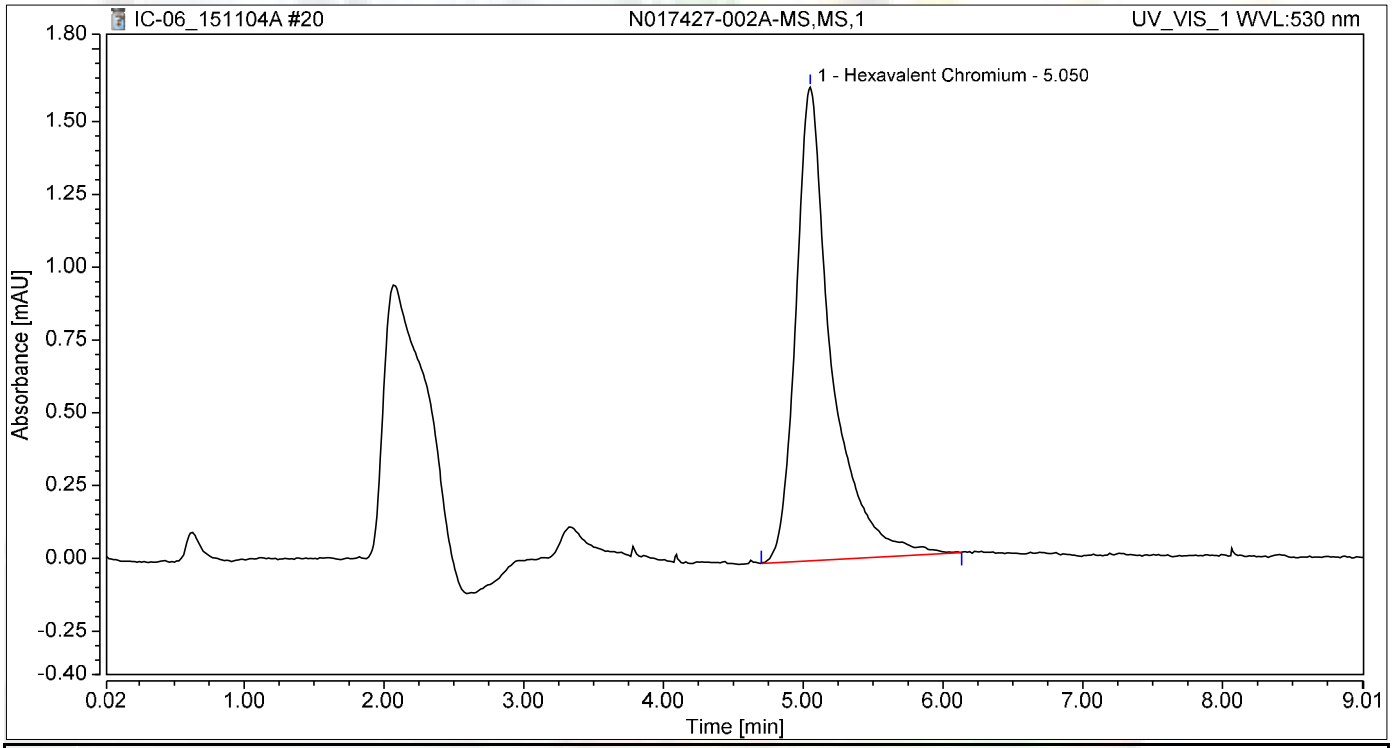
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.042	0.248	0.818	100.00	100.00	1.0102
Total:			**0.248**	**0.818**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-002A-MS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 13:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

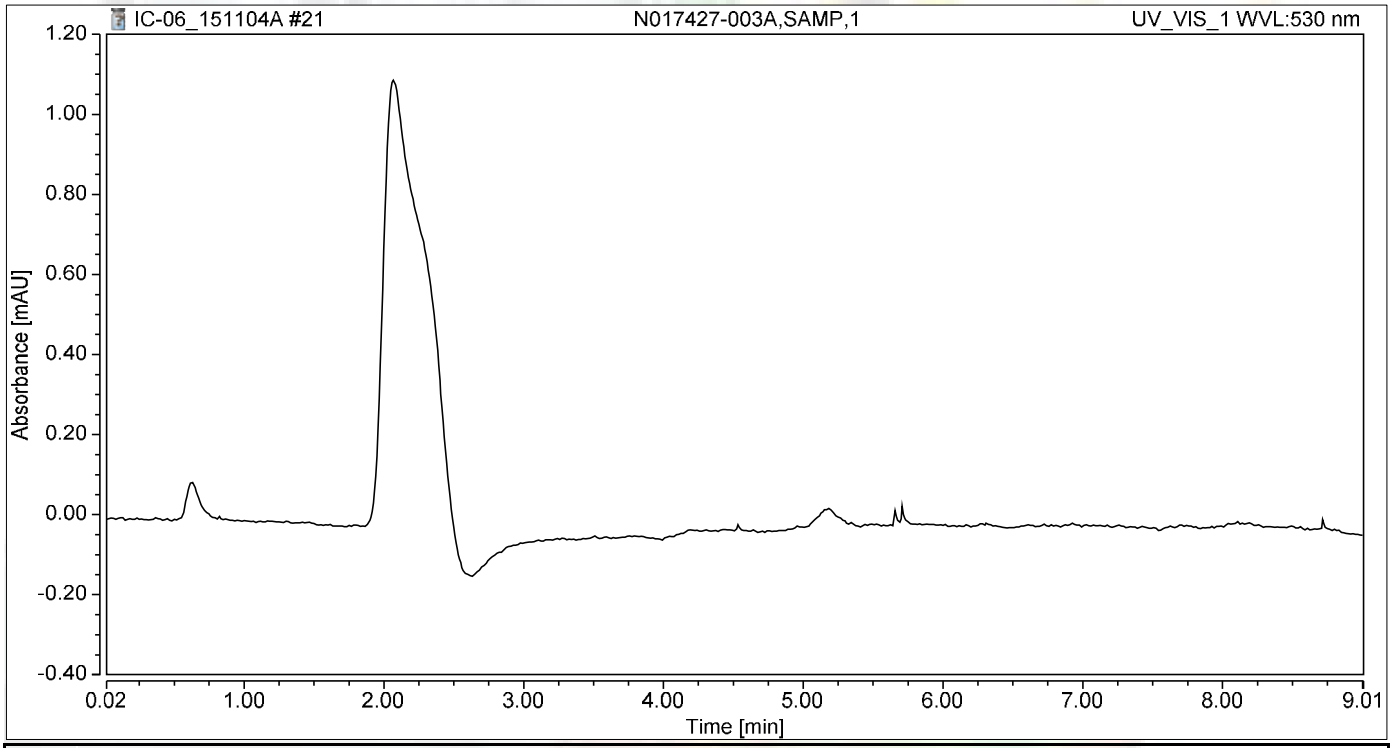
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.050	0.480	1.626	100.00	100.00	1.9903
Total:			**0.480**	**1.626**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

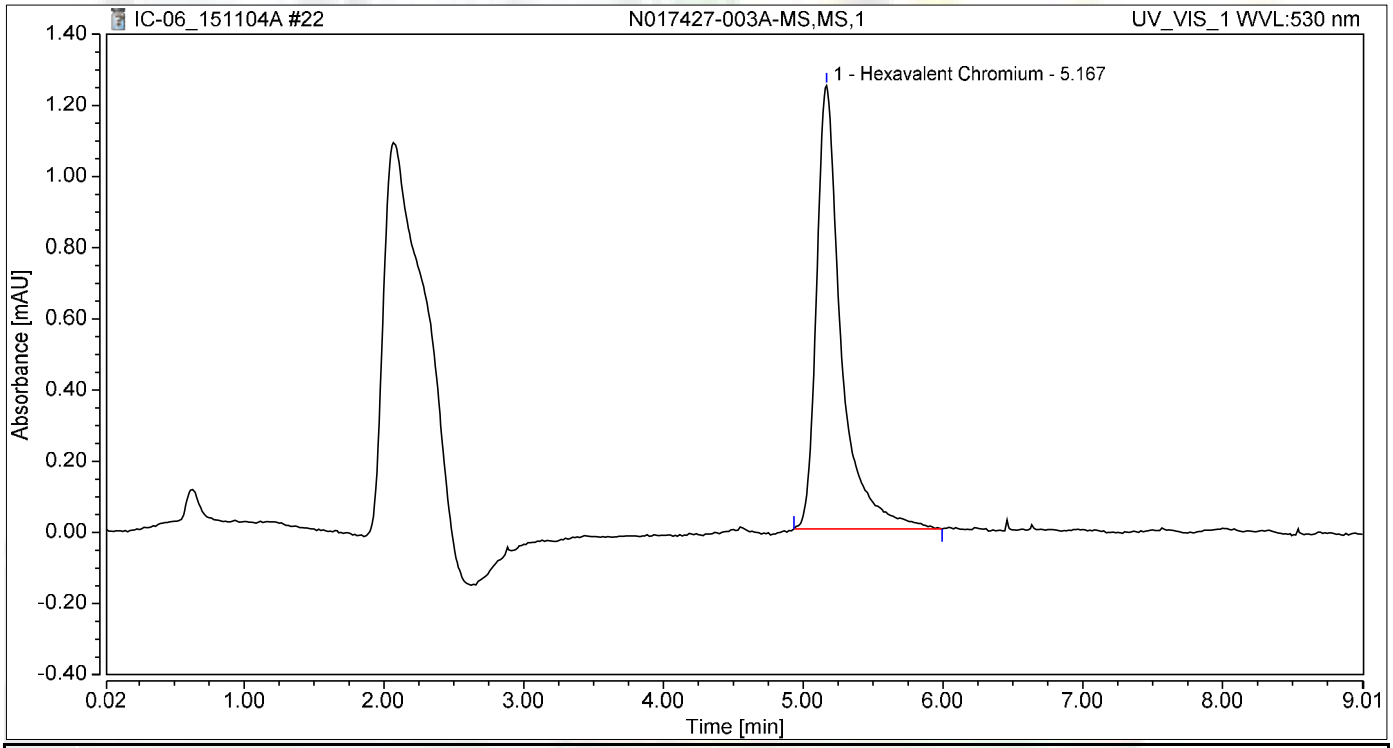
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017427-003A-MS,MS,1**	*Run Time (min):*	**8.99**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

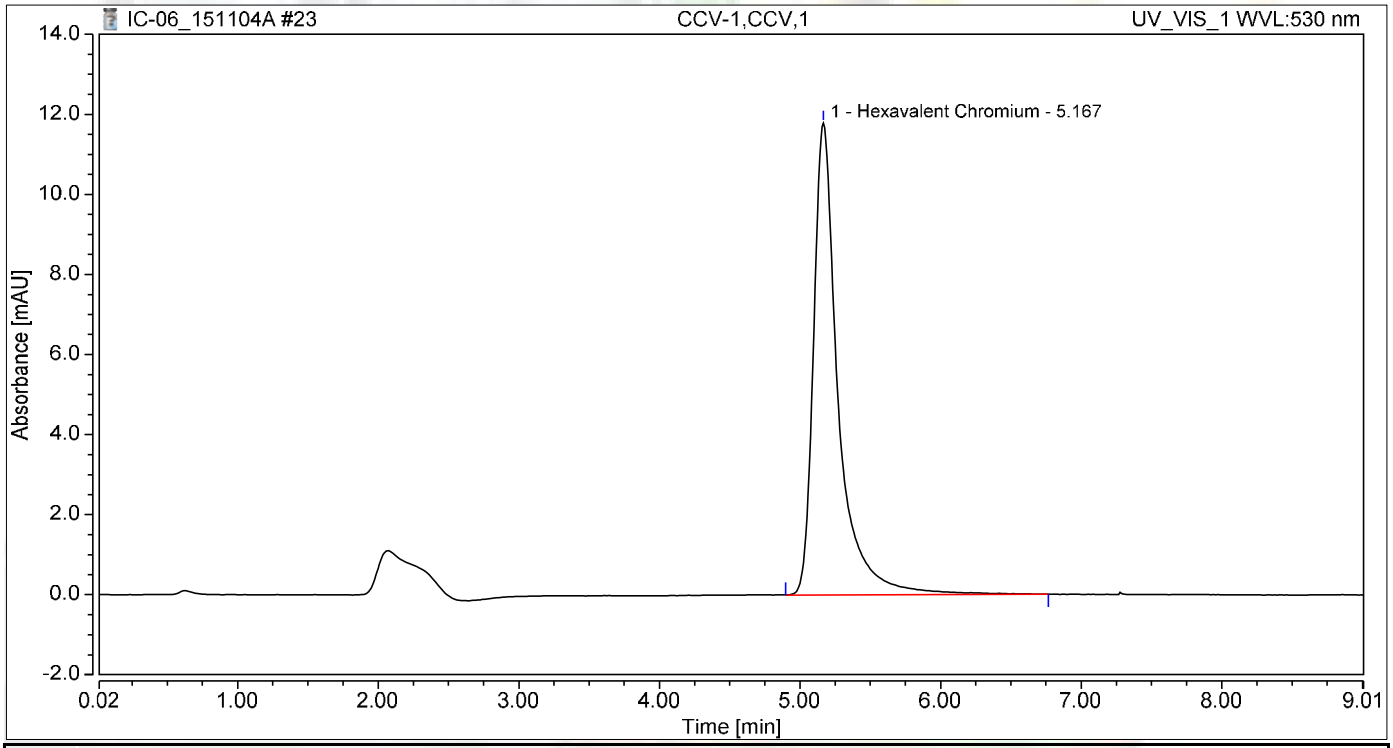
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.254	1.245	100.00	100.00	1.0380
Total:			**0.254**	**1.245**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

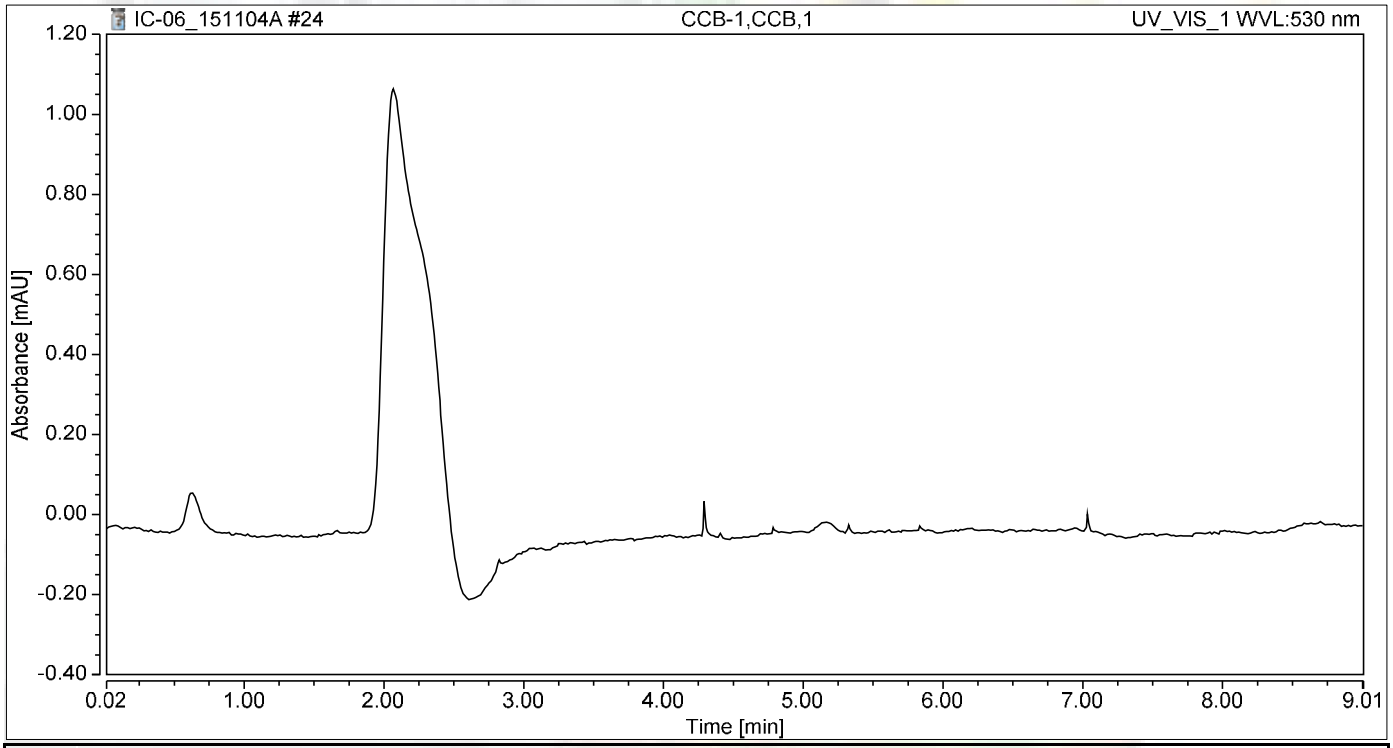
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	2.396	11.784	100.00	100.00	10.0888
Total:			**2.396**	**11.784**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

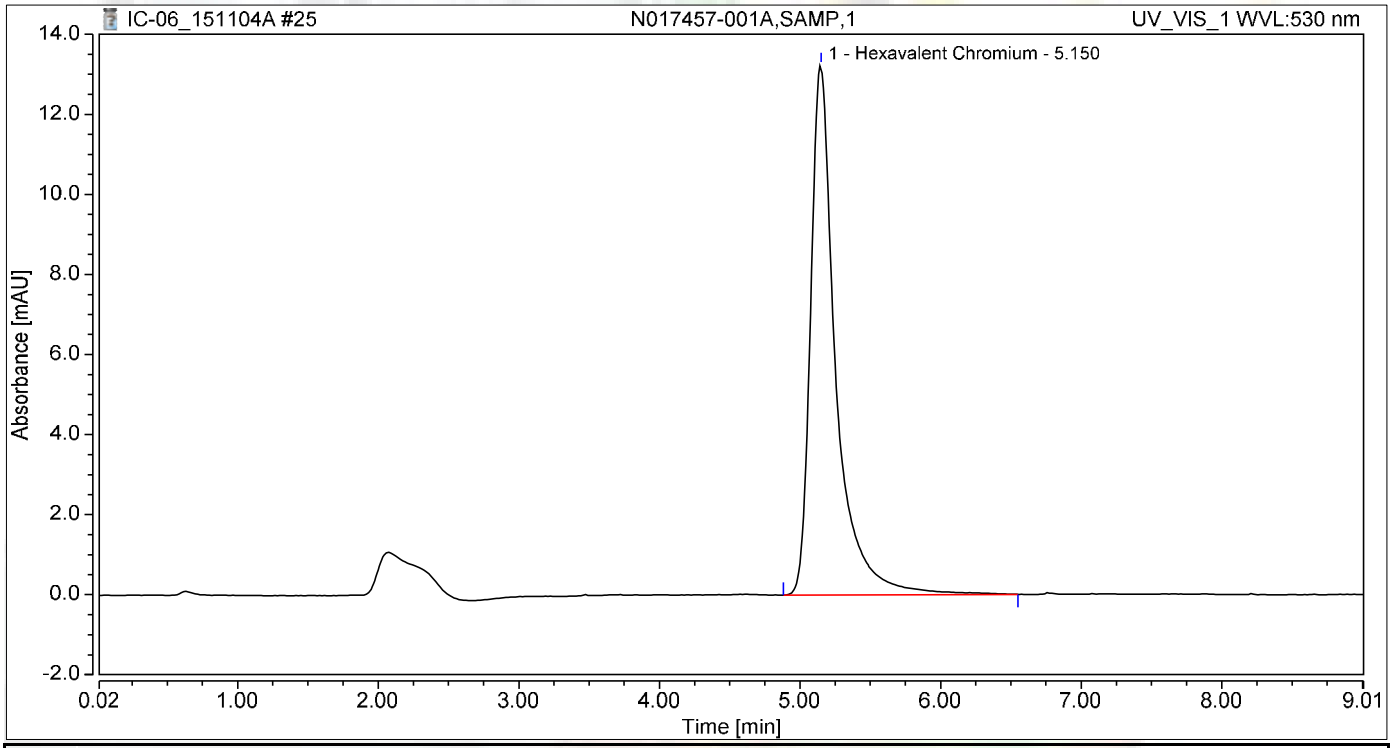
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-001A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

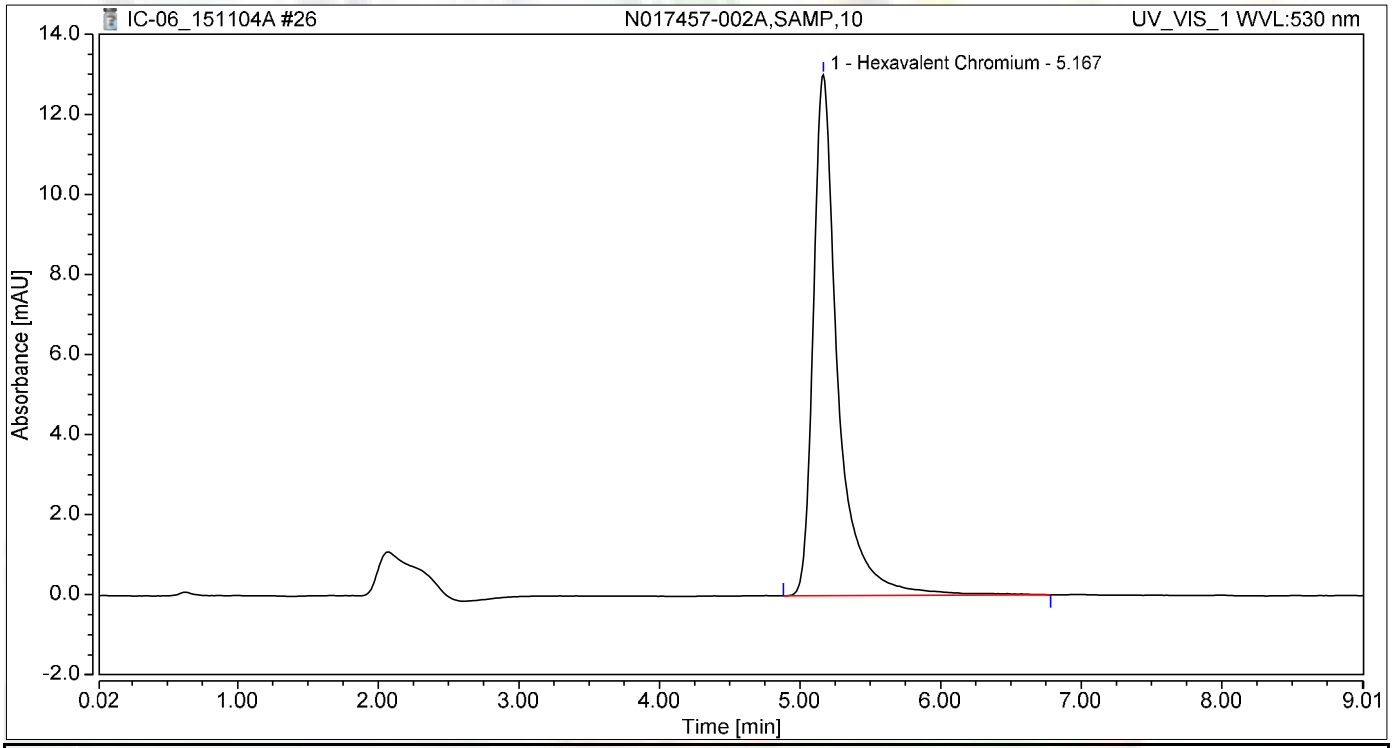
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	2.755	13.232	100.00	100.00	11.6081
Total:			**2.755**	**13.232**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-002A,SAMP,10**	*Run Time (min):*	**8.99**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

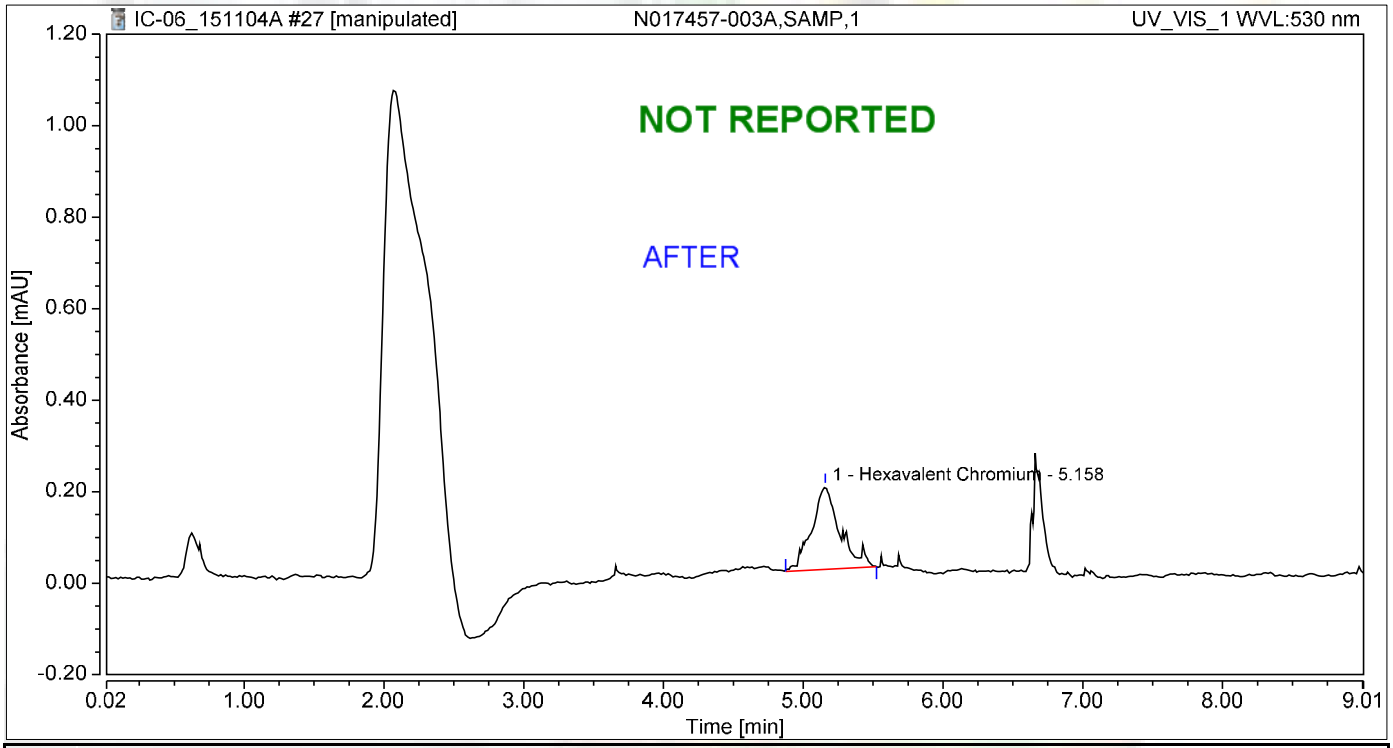
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	2.645	13.020	100.00	100.00	11.1440
Total:			**2.645**	**13.020**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

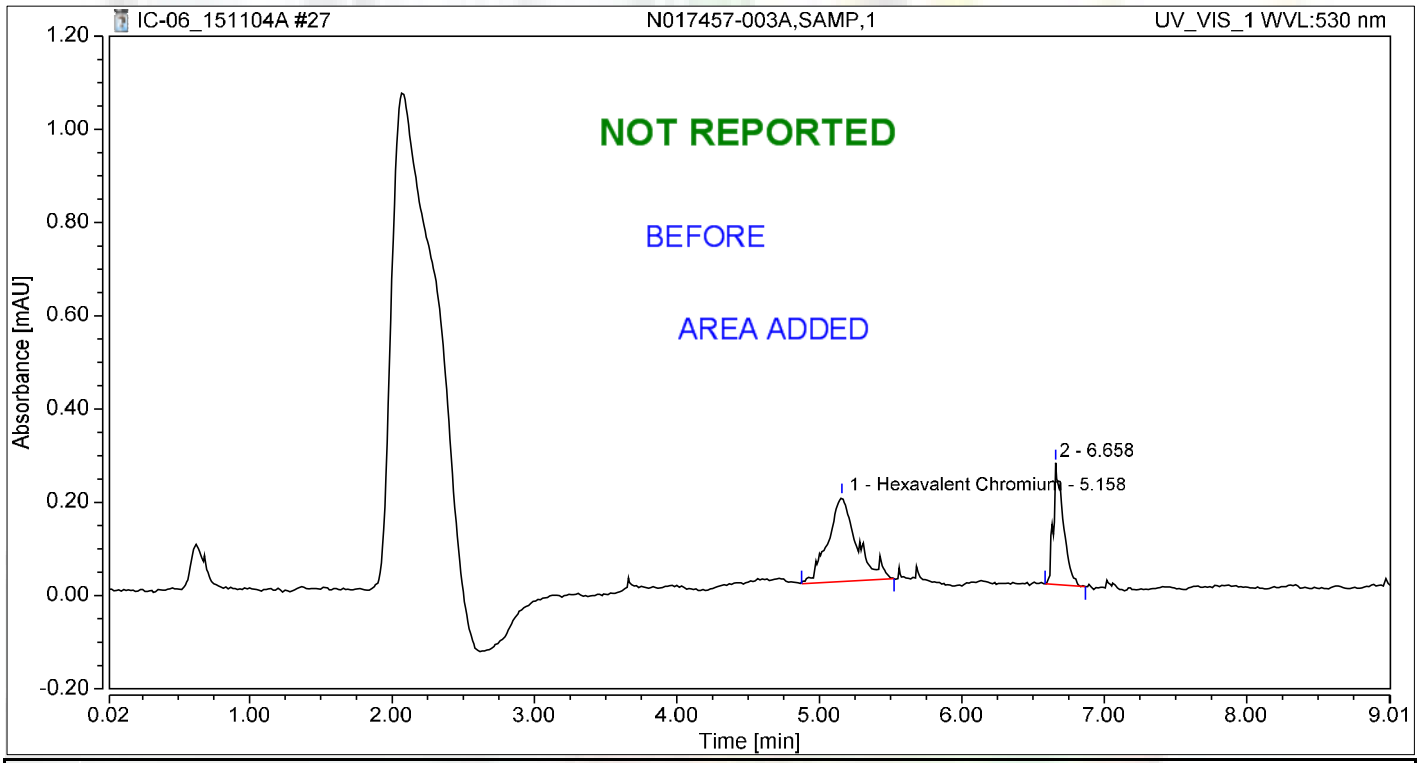
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.042	0.182	100.00	100.00	0.1413
Total:			**0.042**	**0.182**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

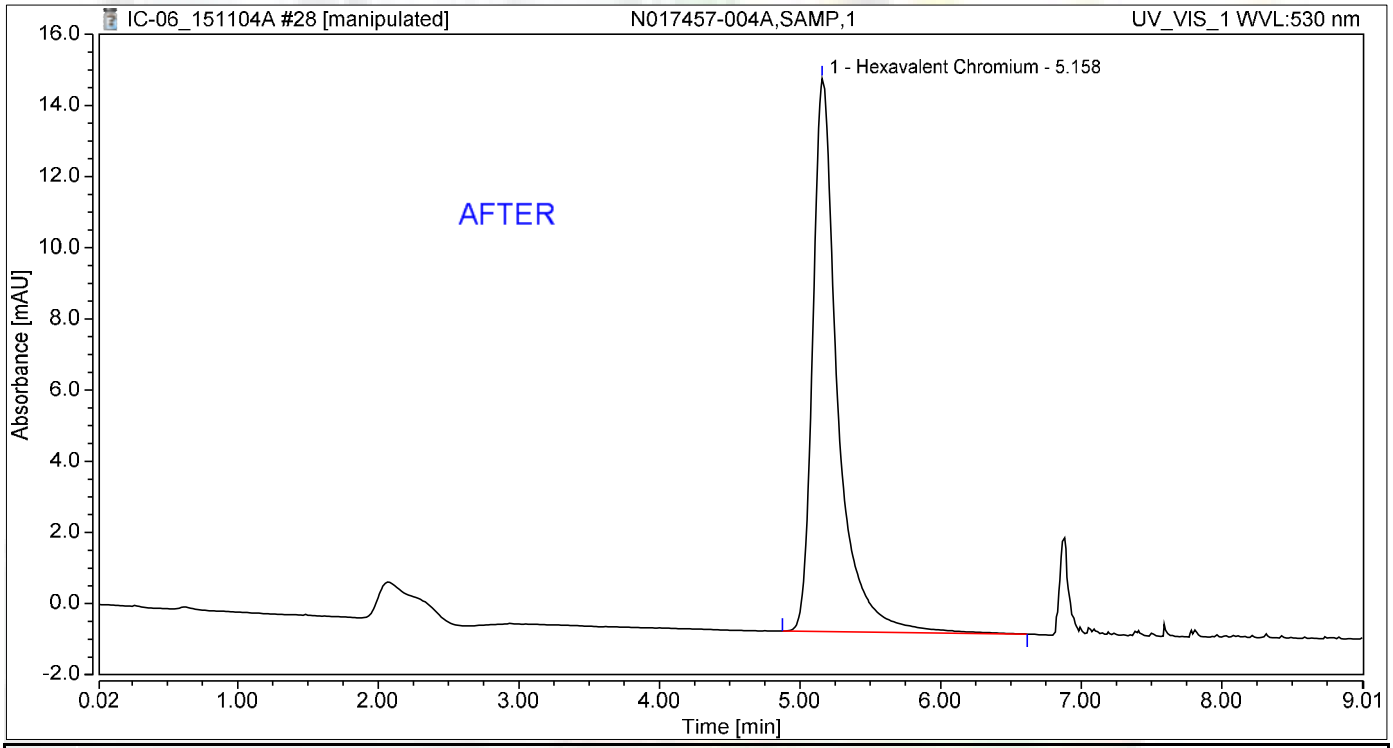
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.042	0.182	66.48	41.02	0.1413
2		6.658	0.021	0.261	33.52	58.98	n.a.
Total:			**0.063**	**0.443**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	3.182	15.535	100.00	100.00	13.4128
Total:			**3.182**	**15.535**	**100.00**	**100.00**	

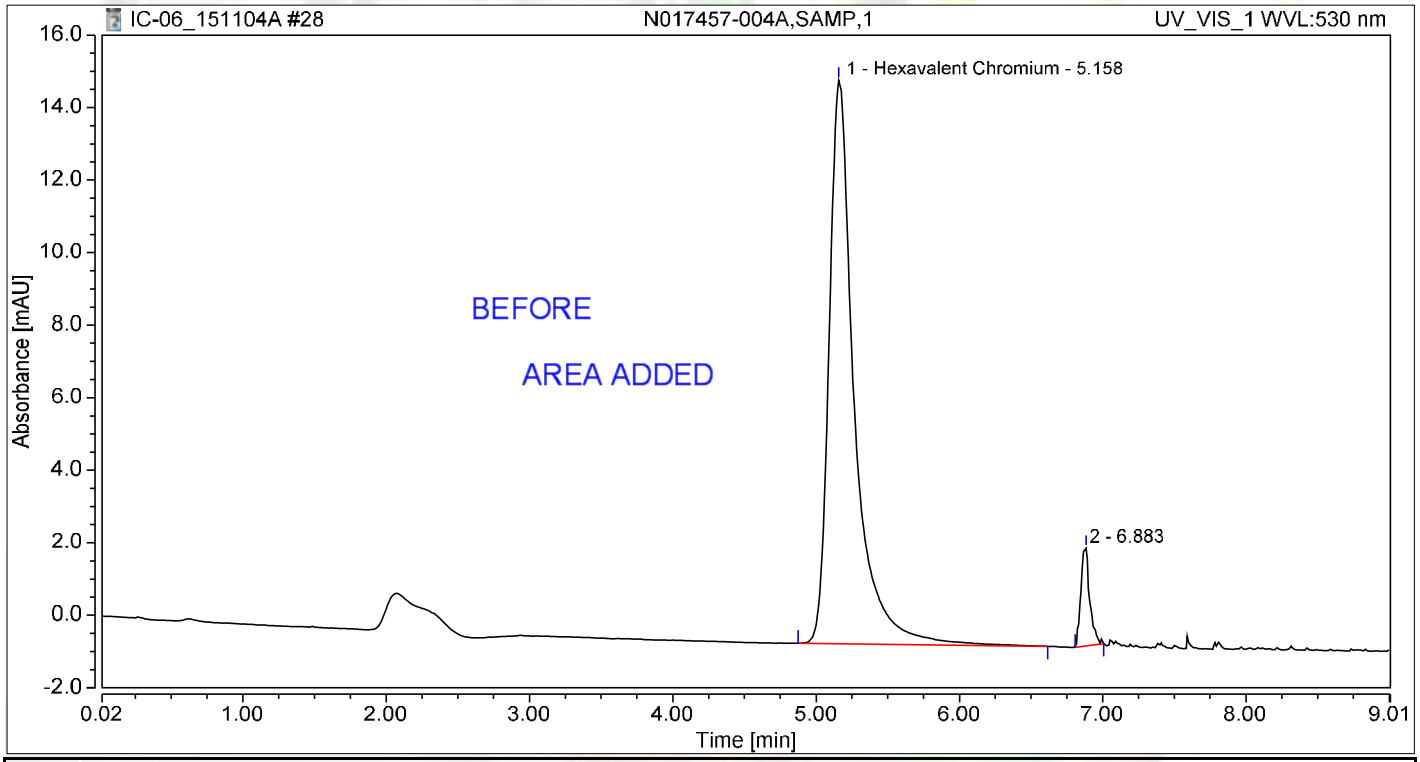
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017457-004A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

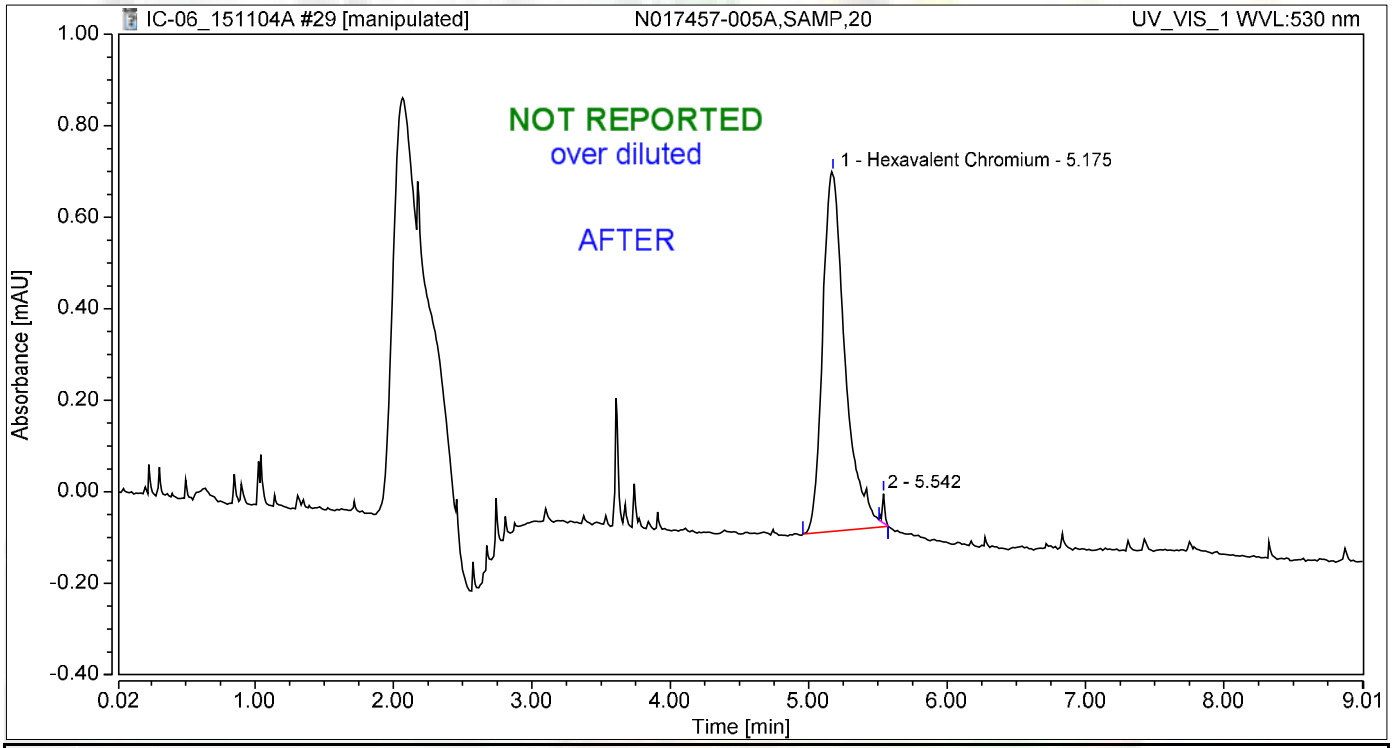
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	3.182	15.535	94.27	85.23	13.4128
2		6.883	0.193	2.692	5.73	14.77	n.a.
Total:			**3.376**	**18.227**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-005A,SAMP,20**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

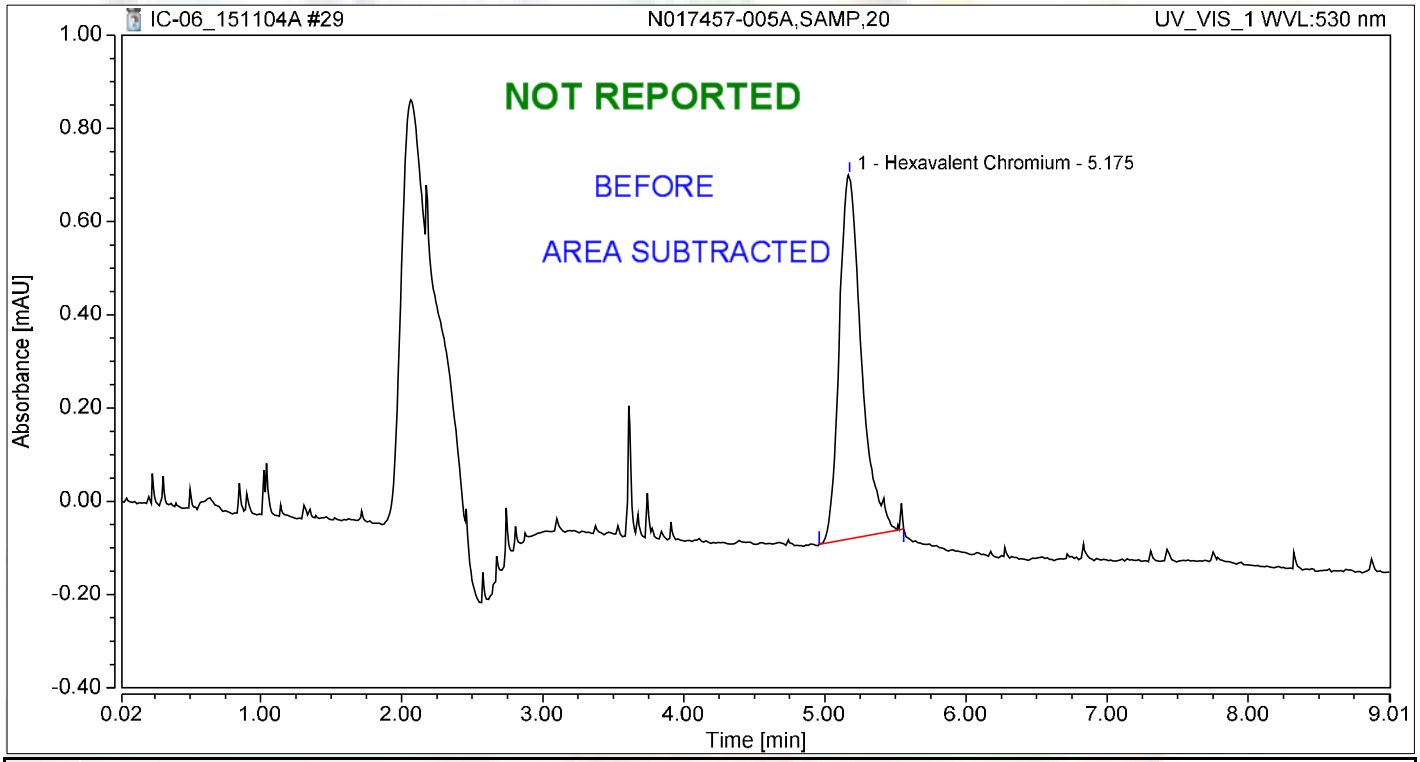
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.175	0.147	0.786	99.20	92.50	0.5843
2		5.542	0.001	0.064	0.80	7.50	n.a.
Total:			**0.148**	**0.850**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-005A,SAMP,20**	*Run Time (min):*	**8.99**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

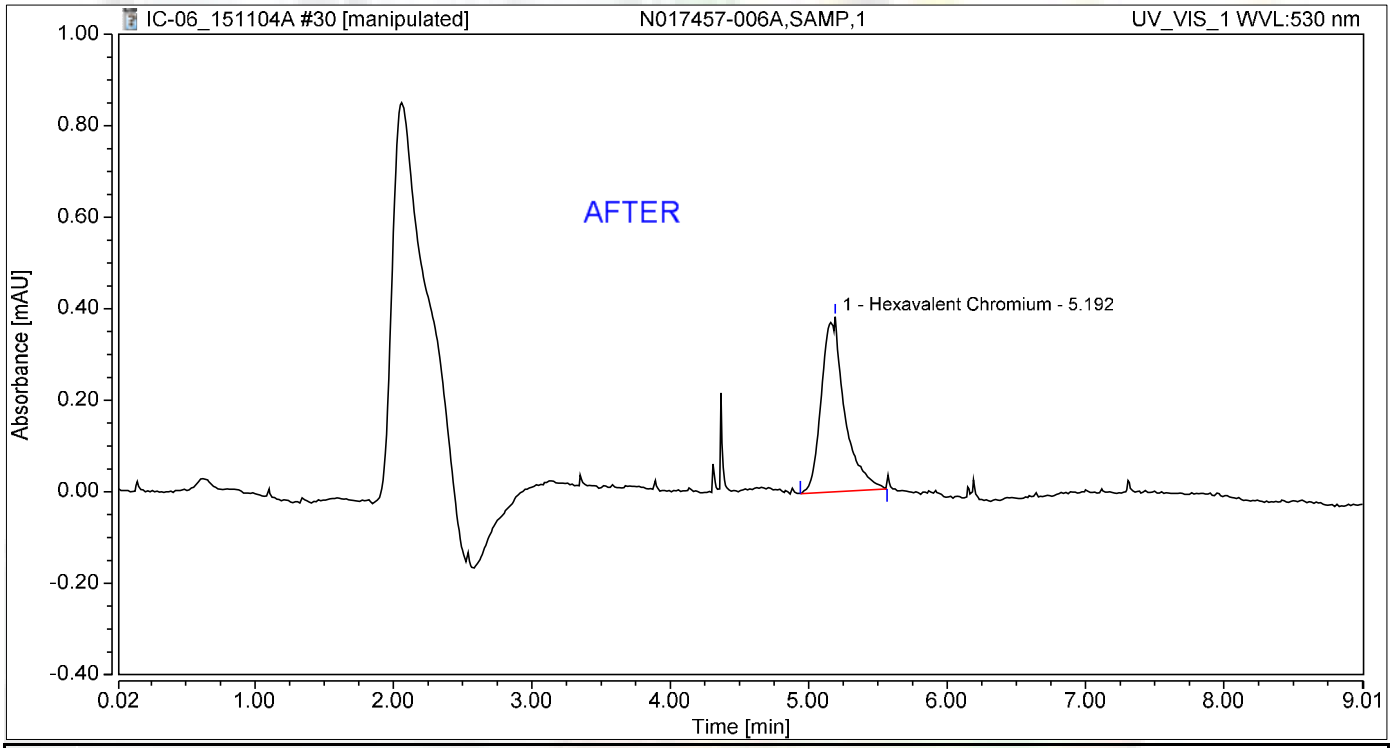
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.175	0.143	0.780	100.00	100.00	0.5681
Total:			**0.143**	**0.780**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.192	0.074	0.383	100.00	100.00	0.2765
Total:			**0.074**	**0.383**	**100.00**	**100.00**	

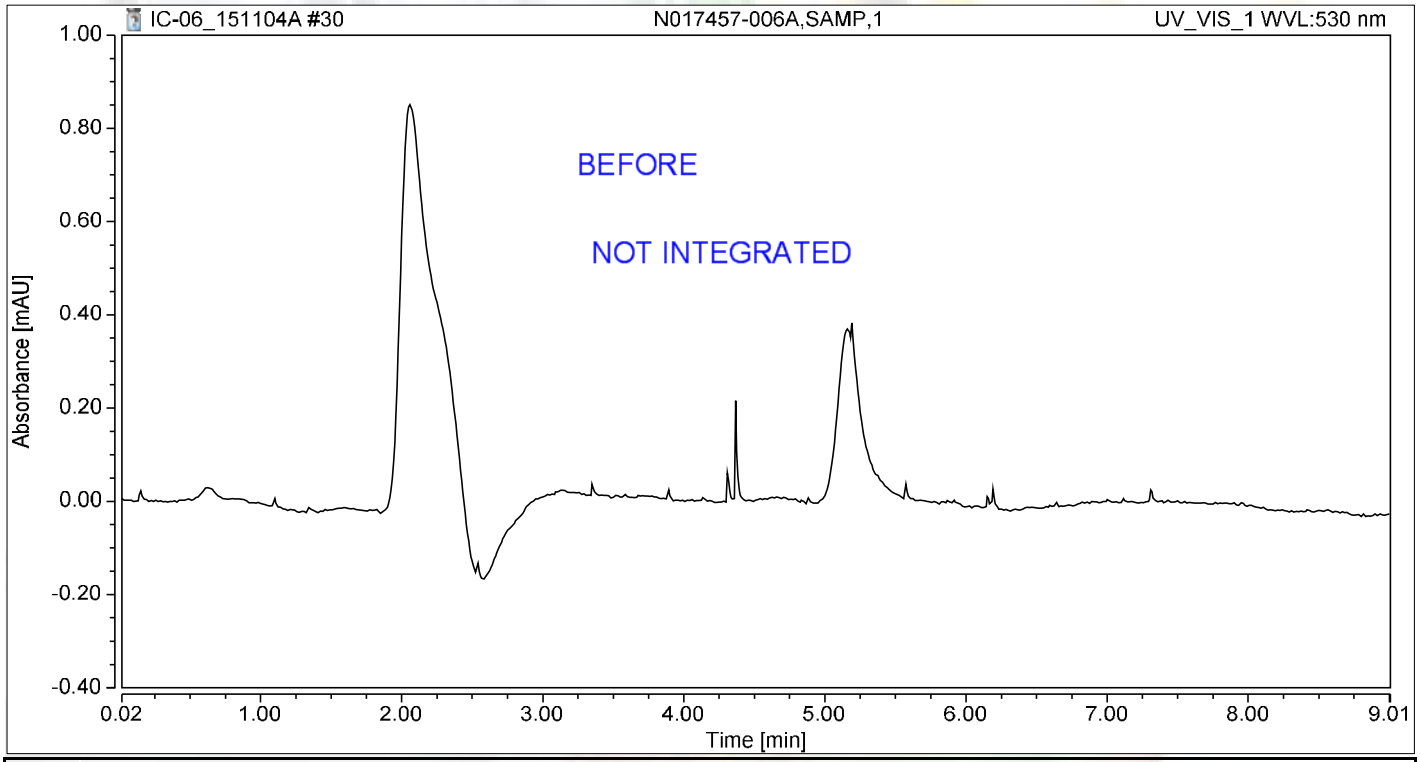
11/13/2015

Chromatogram and Results

Injection Details

Injection Name:	**N017457-006A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

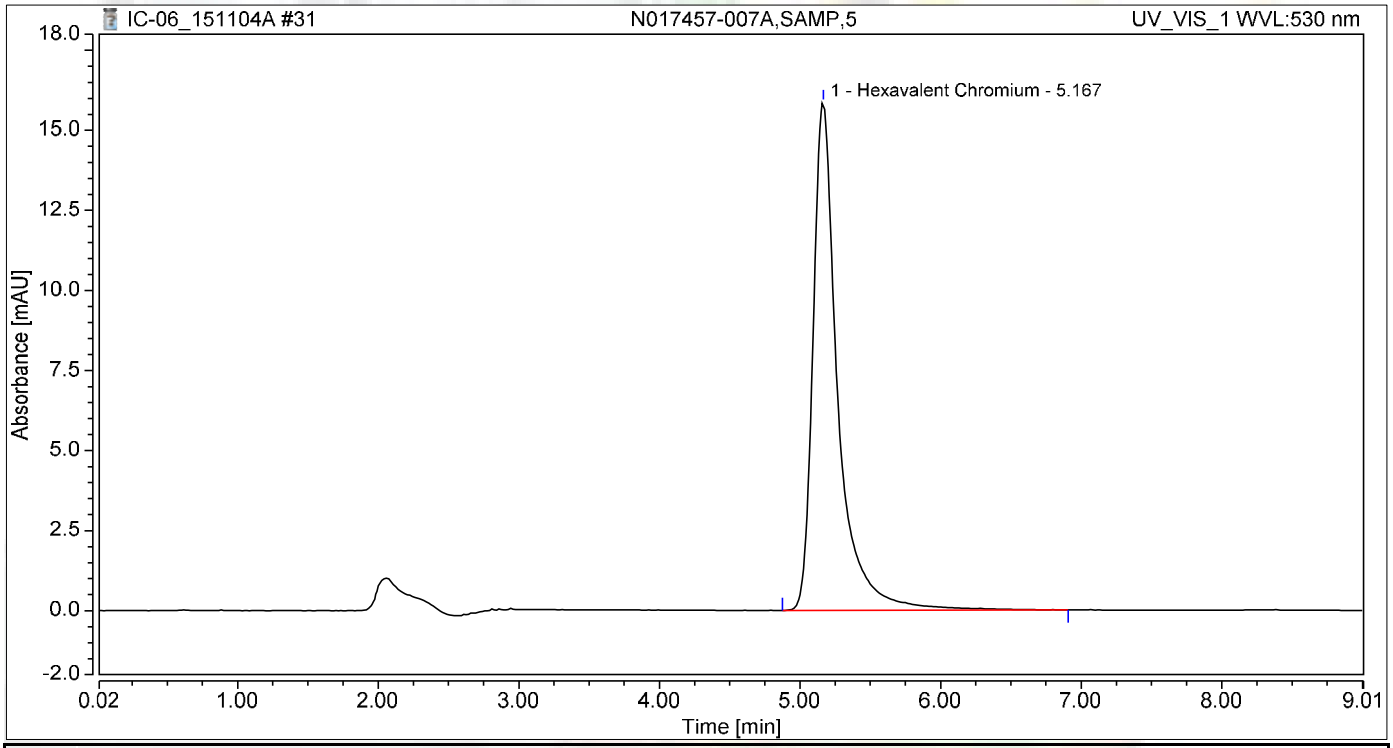
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-007A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

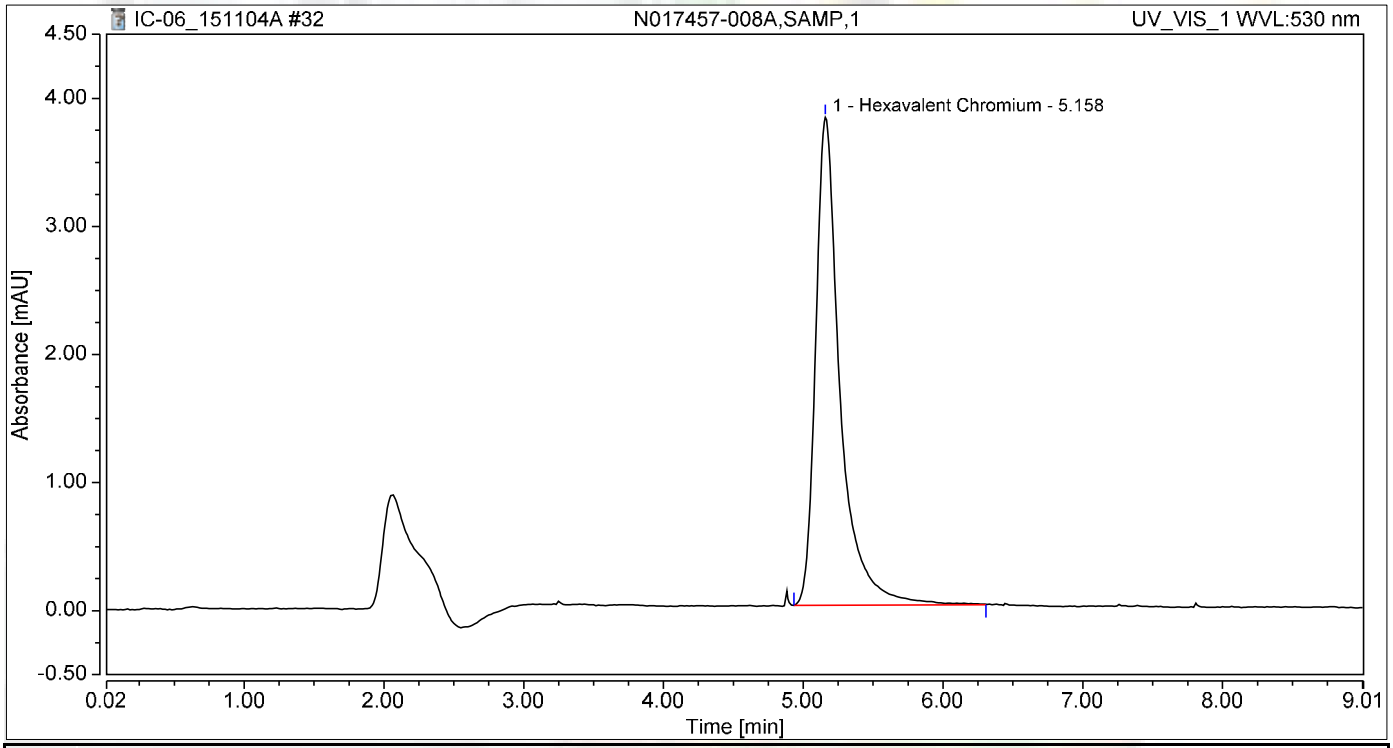
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	3.244	15.862	100.00	100.00	13.6764
Total:			**3.244**	**15.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-008A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

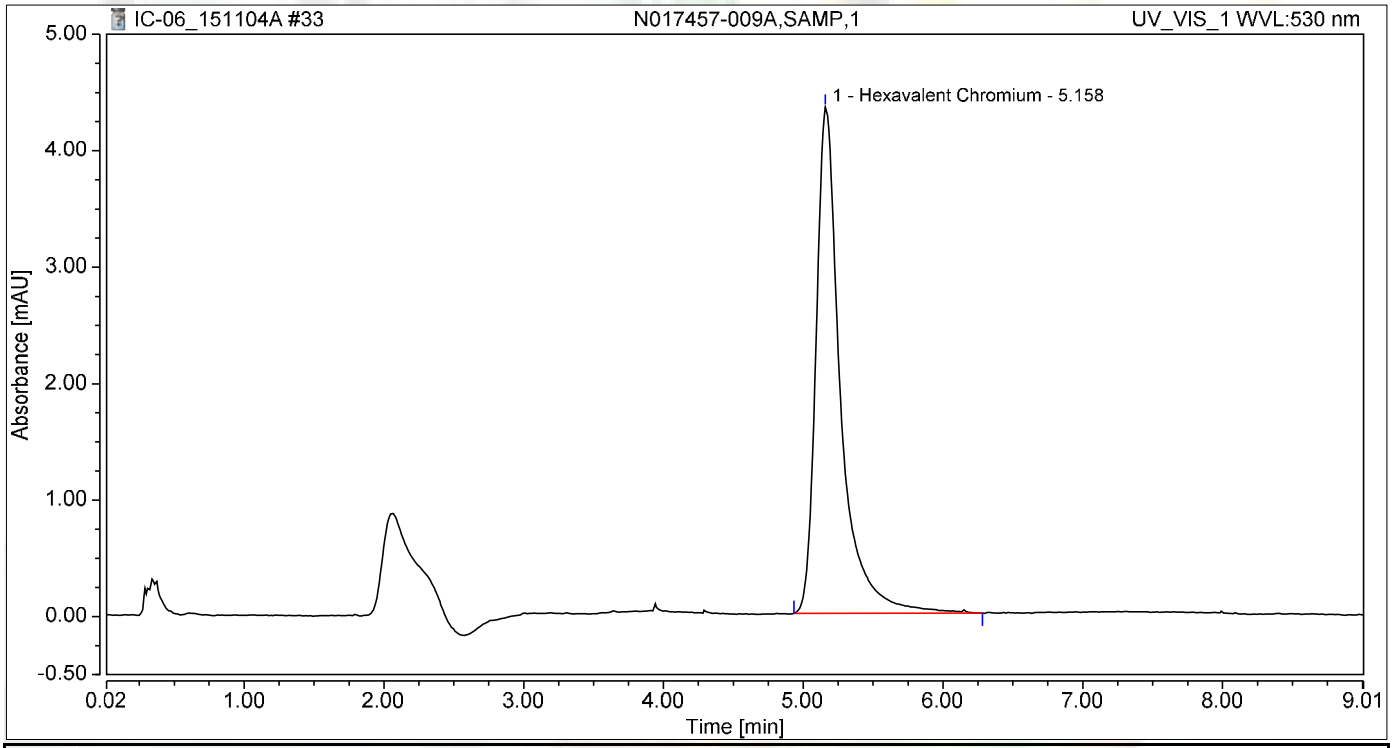
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.774	3.811	100.00	100.00	3.2328
Total:			**0.774**	**3.811**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-009A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

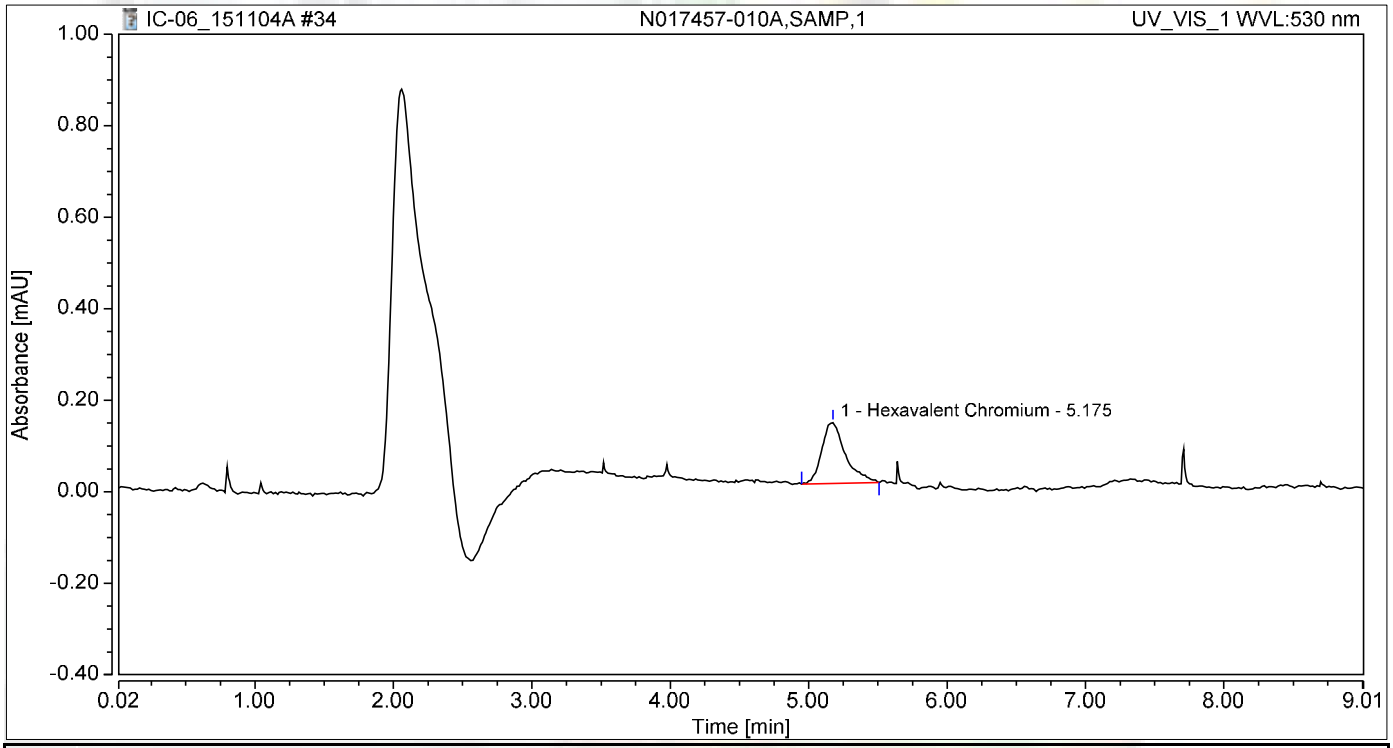
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.883	4.347	100.00	100.00	3.6944
Total:			**0.883**	**4.347**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-010A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

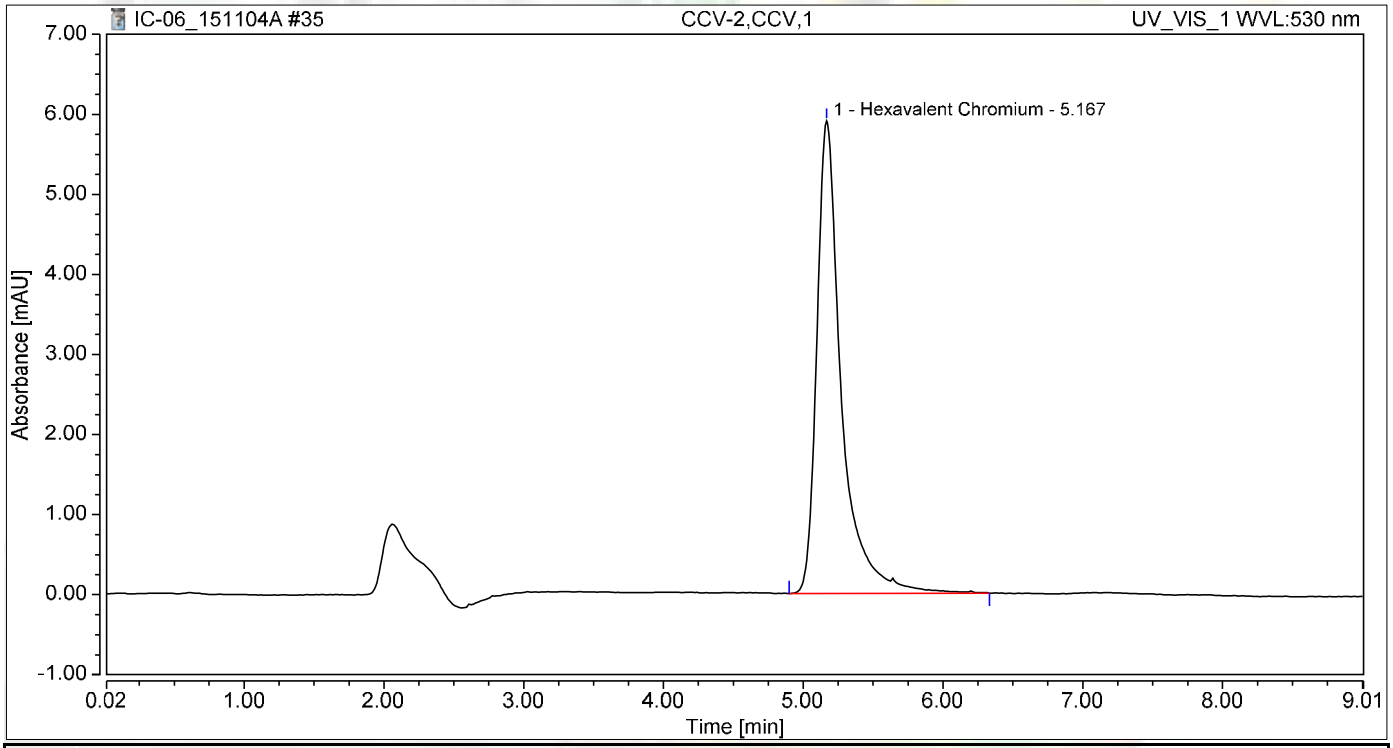
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.175	0.026	0.133	100.00	100.00	0.0751
Total:			**0.026**	**0.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

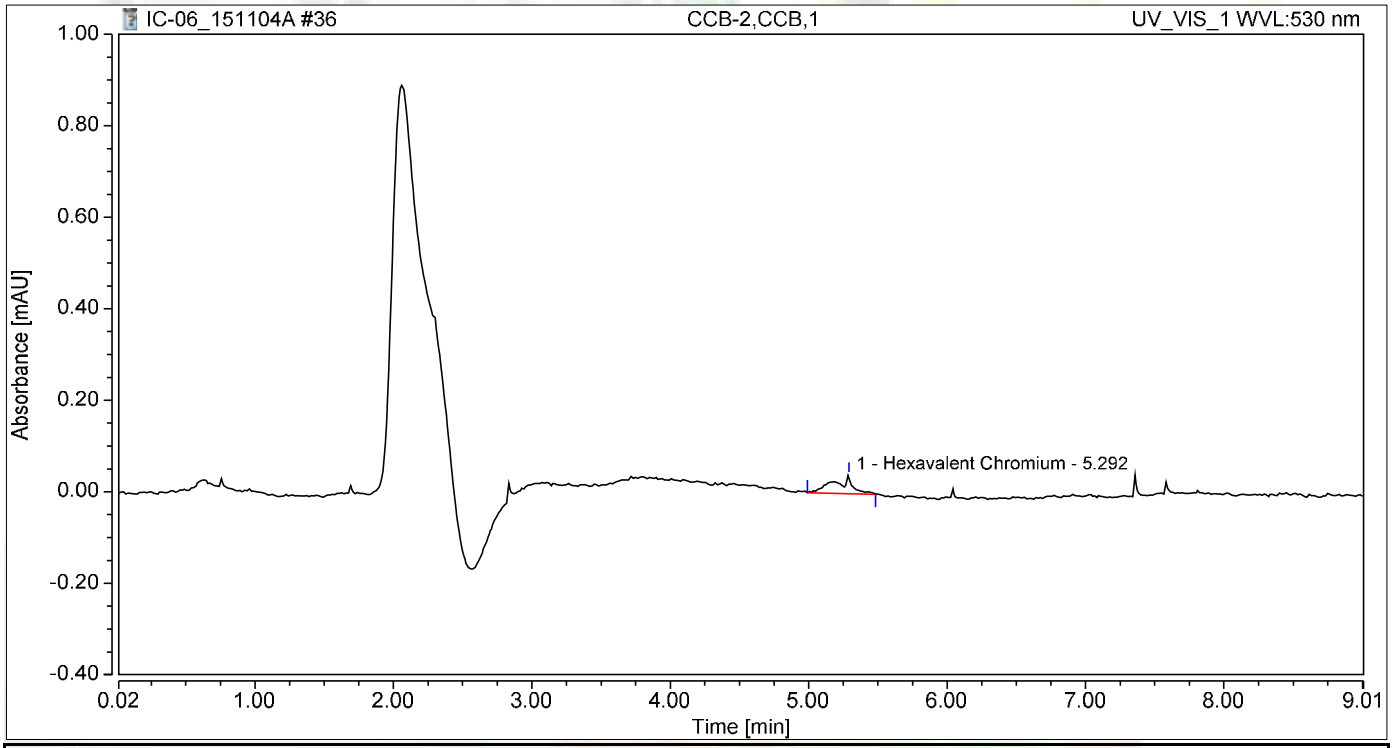
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.201	5.904	100.00	100.00	5.0382
Total:			**1.201**	**5.904**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

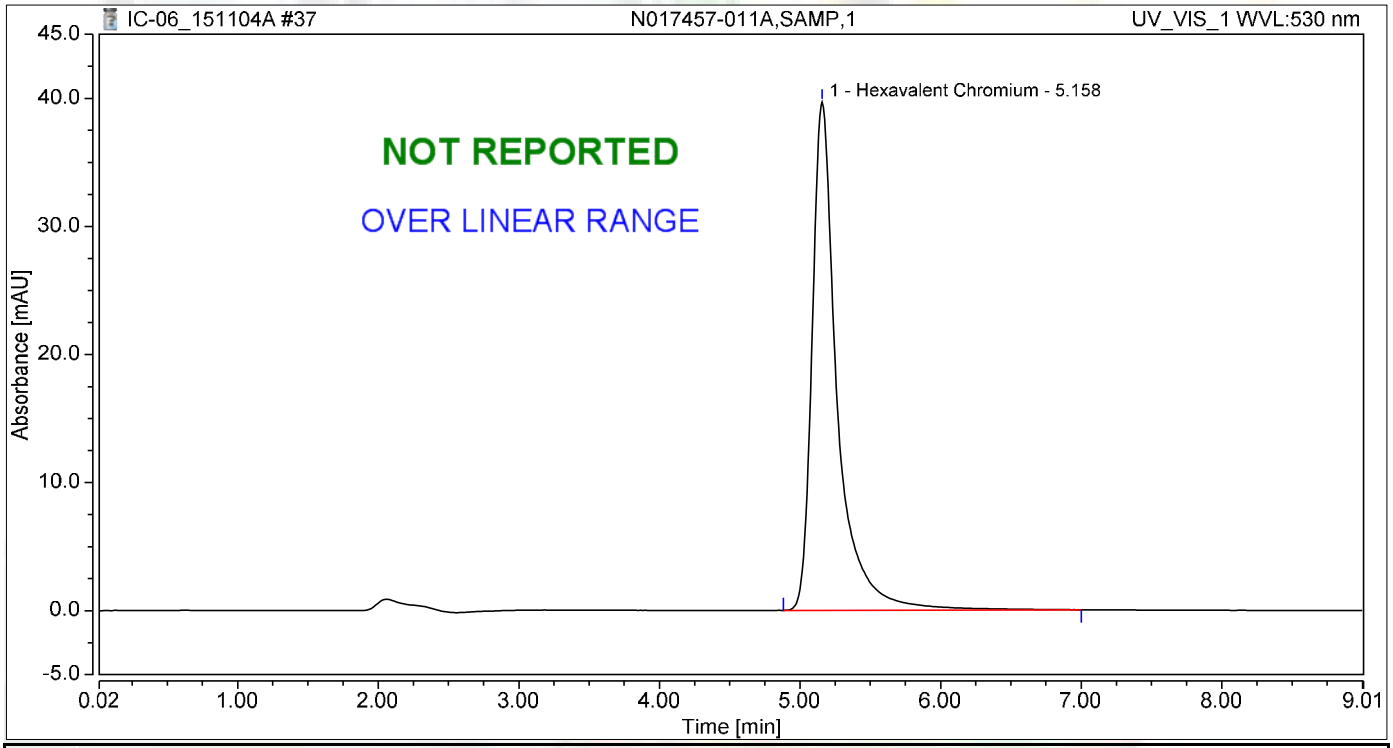
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.292	0.006	0.041	100.00	100.00	n.a.
Total:			**0.006**	**0.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-011A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

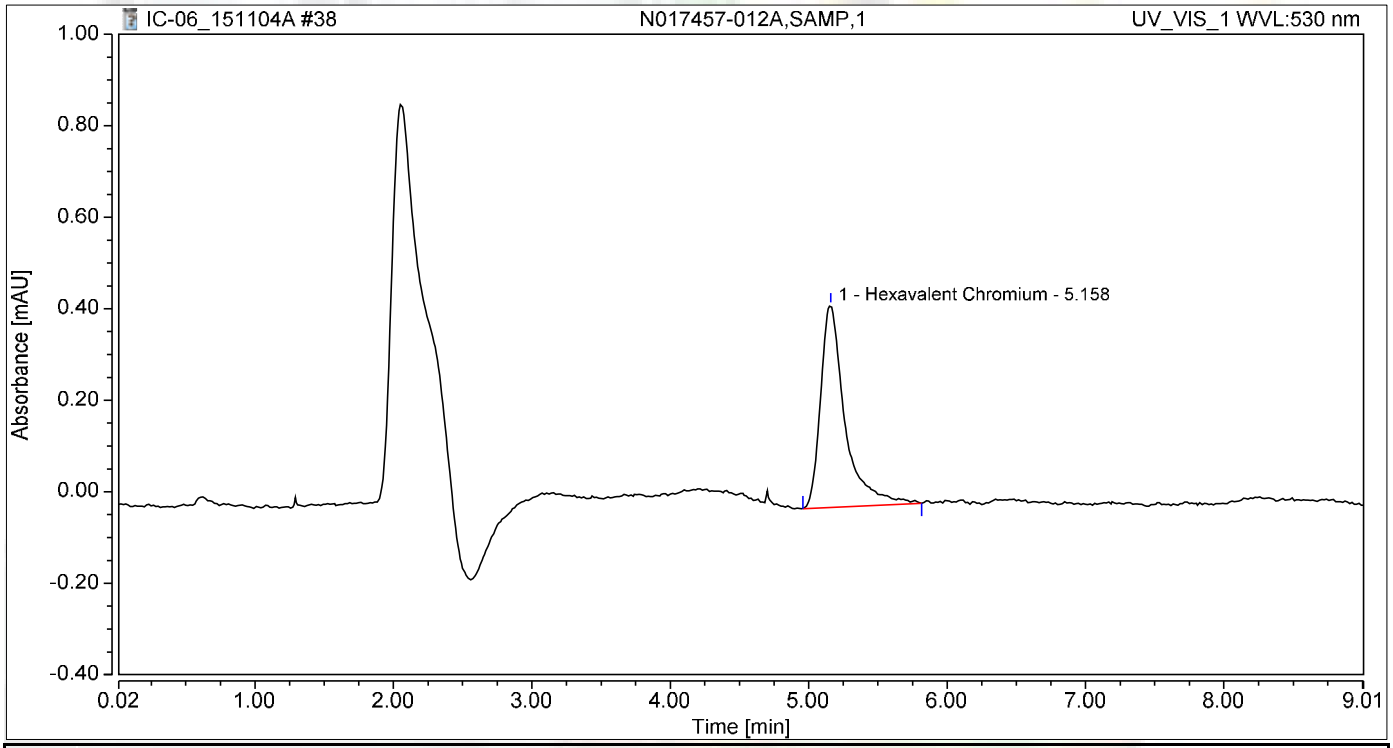
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	8.216	39.680	100.00	100.00	34.6901
Total:			**8.216**	**39.680**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-012A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

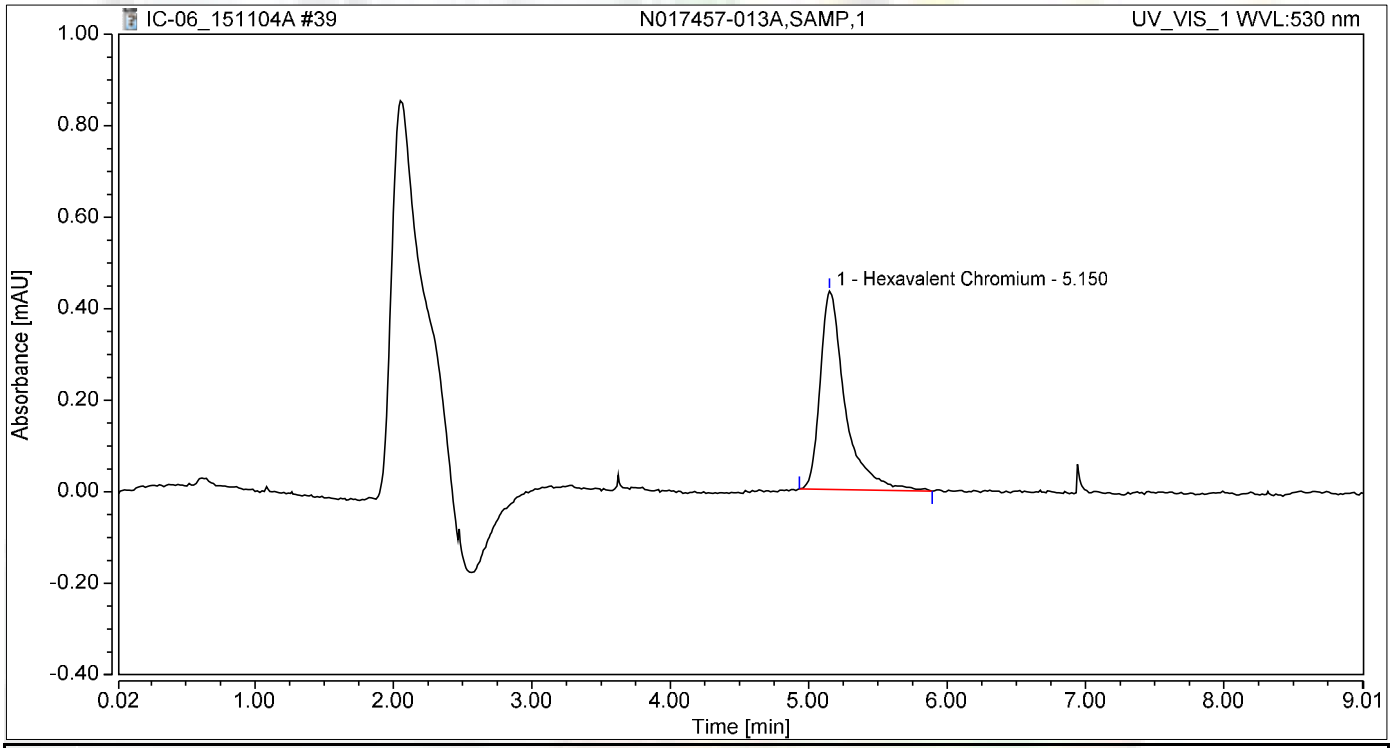
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.090	0.441	100.00	100.00	0.3445
Total:			**0.090**	**0.441**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-013A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

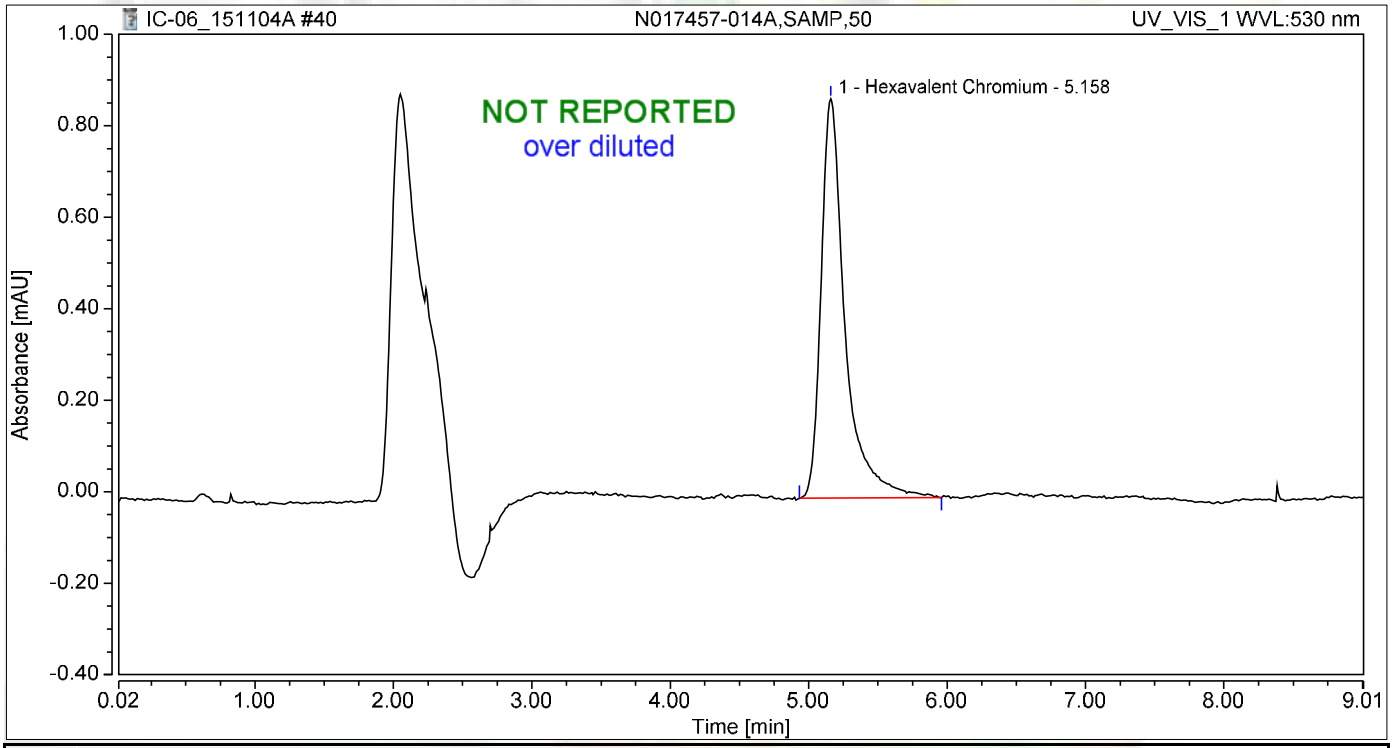
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.090	0.434	100.00	100.00	0.3447
Total:			**0.090**	**0.434**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-014A,SAMP,50**	*Run Time (min):*	**8.99**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 17:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

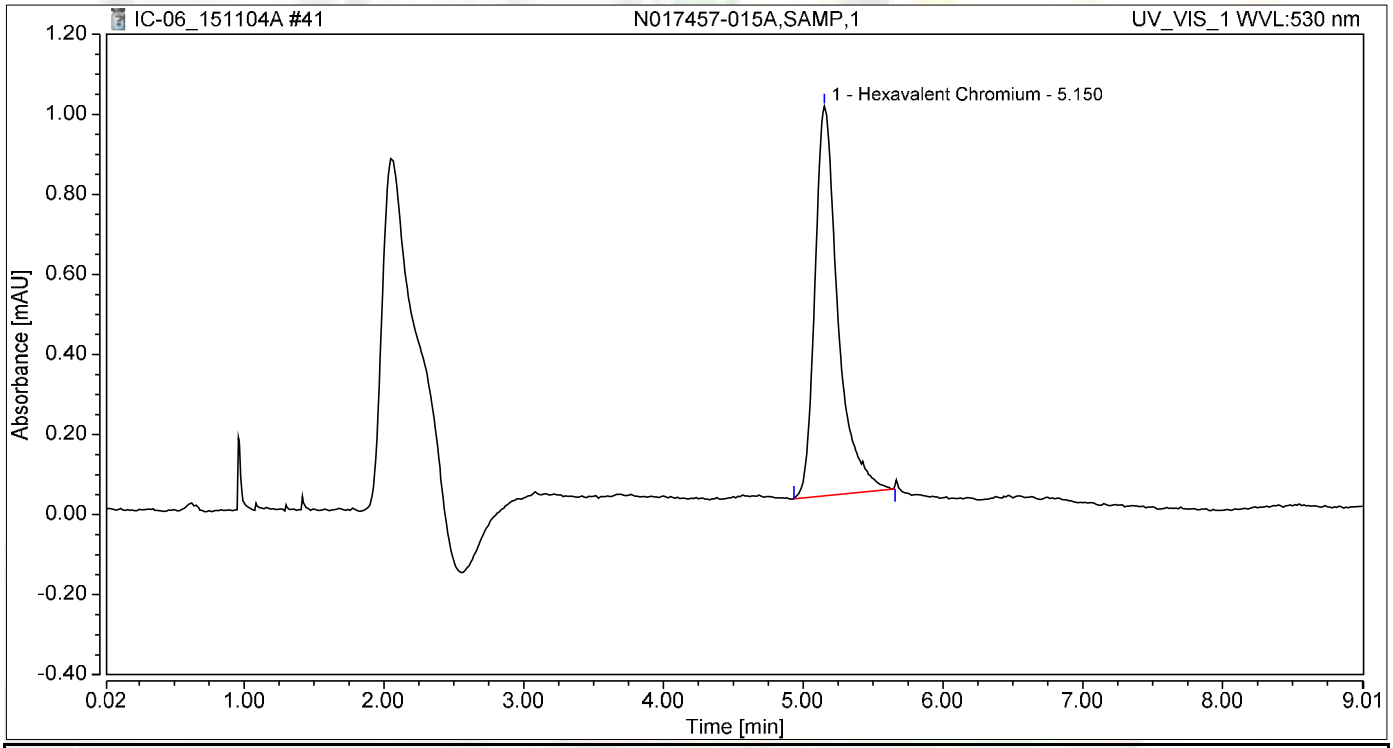
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.174	0.873	100.00	100.00	0.6998
Total:			**0.174**	**0.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-015A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

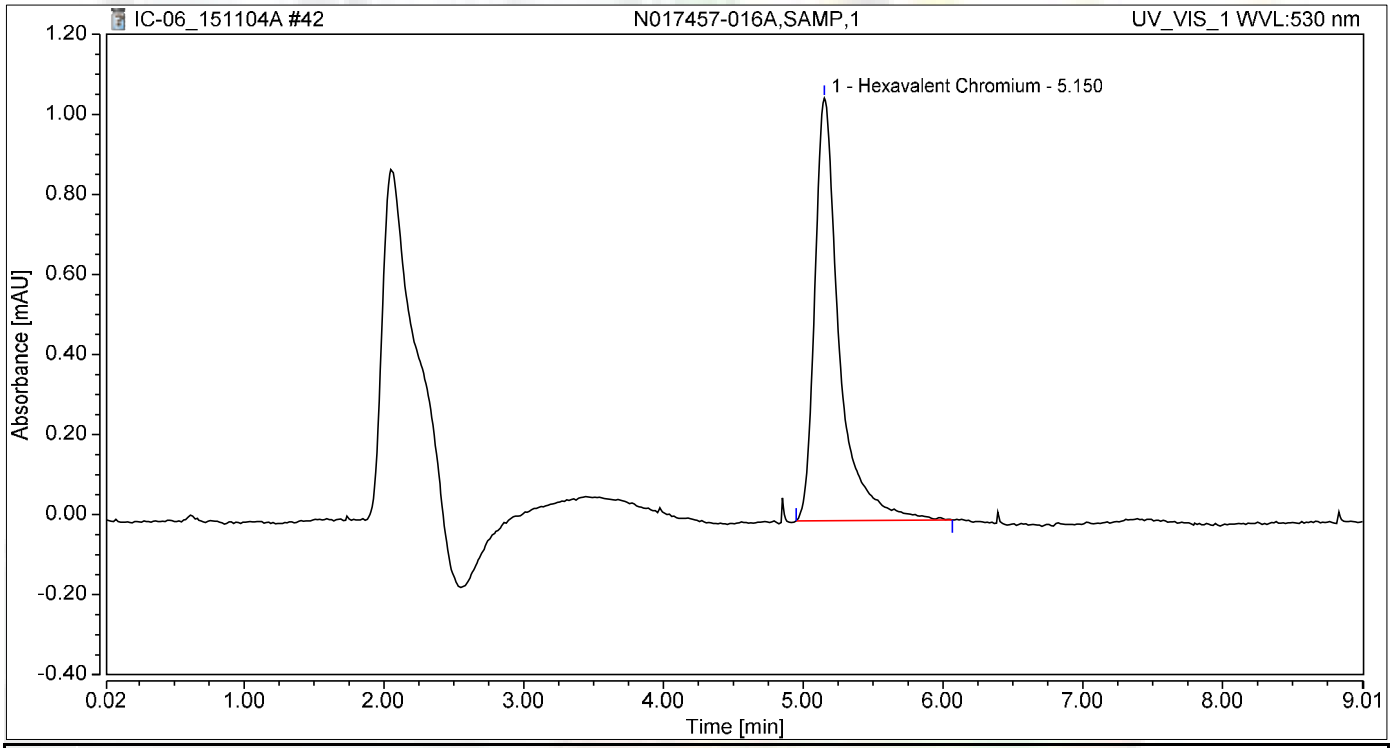
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.186	0.974	100.00	100.00	0.7484
Total:			**0.186**	**0.974**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-016A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

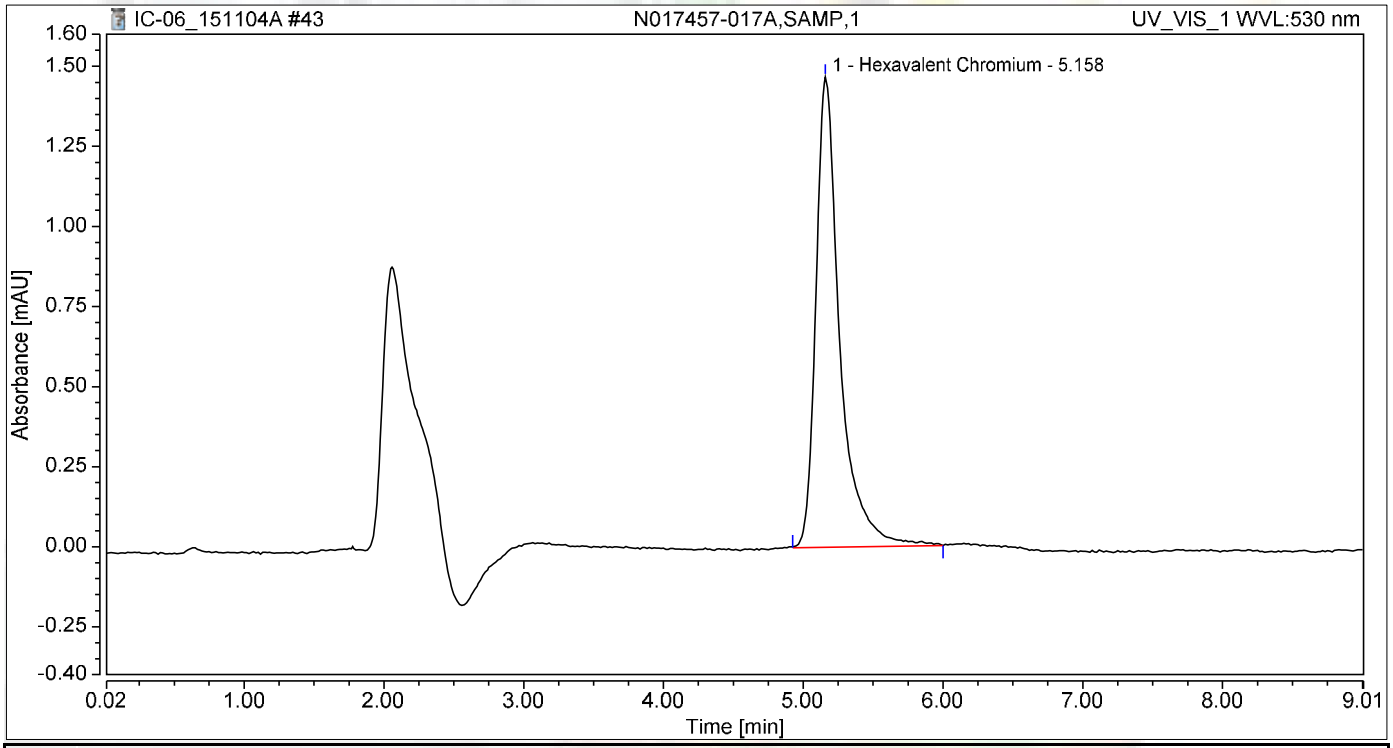
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.150	0.213	1.056	100.00	100.00	0.8655
Total:			**0.213**	**1.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-017A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

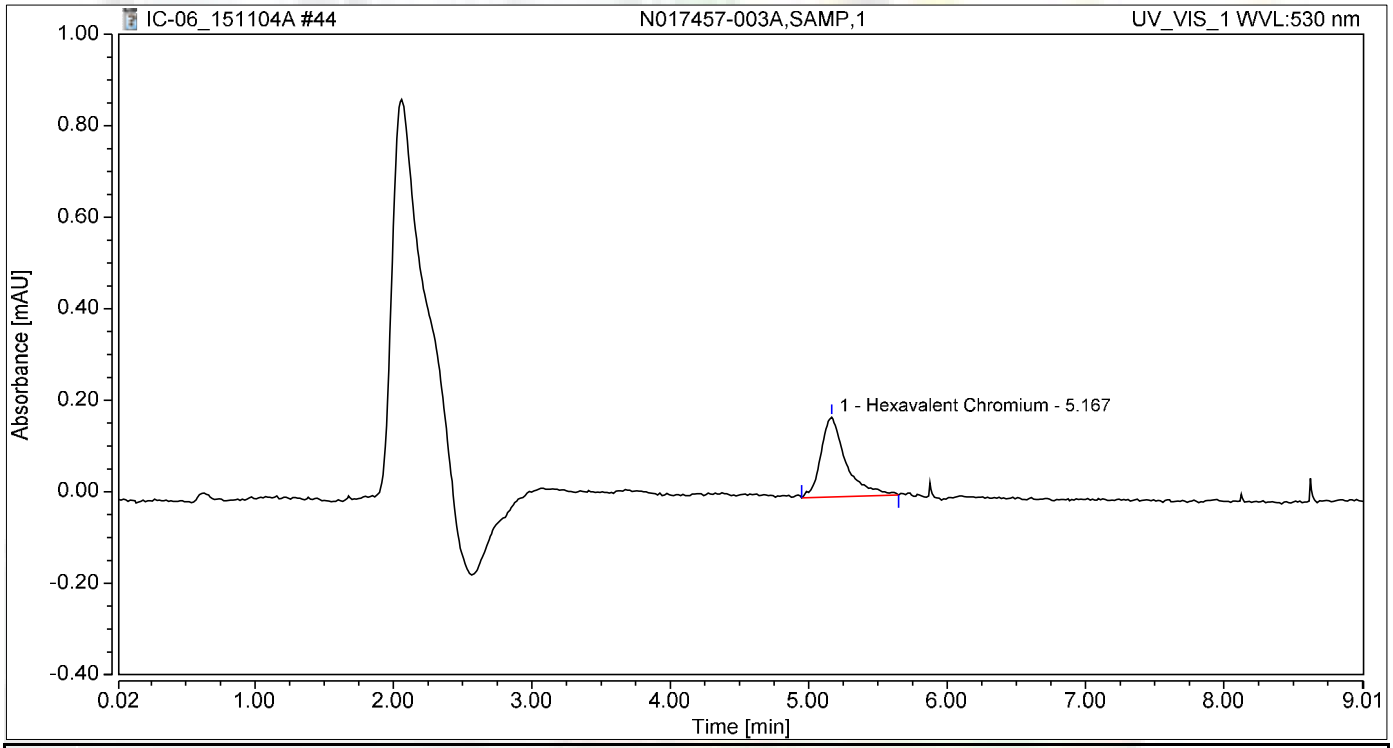
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	0.290	1.468	100.00	100.00	1.1885
Total:			**0.290**	**1.468**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-003A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

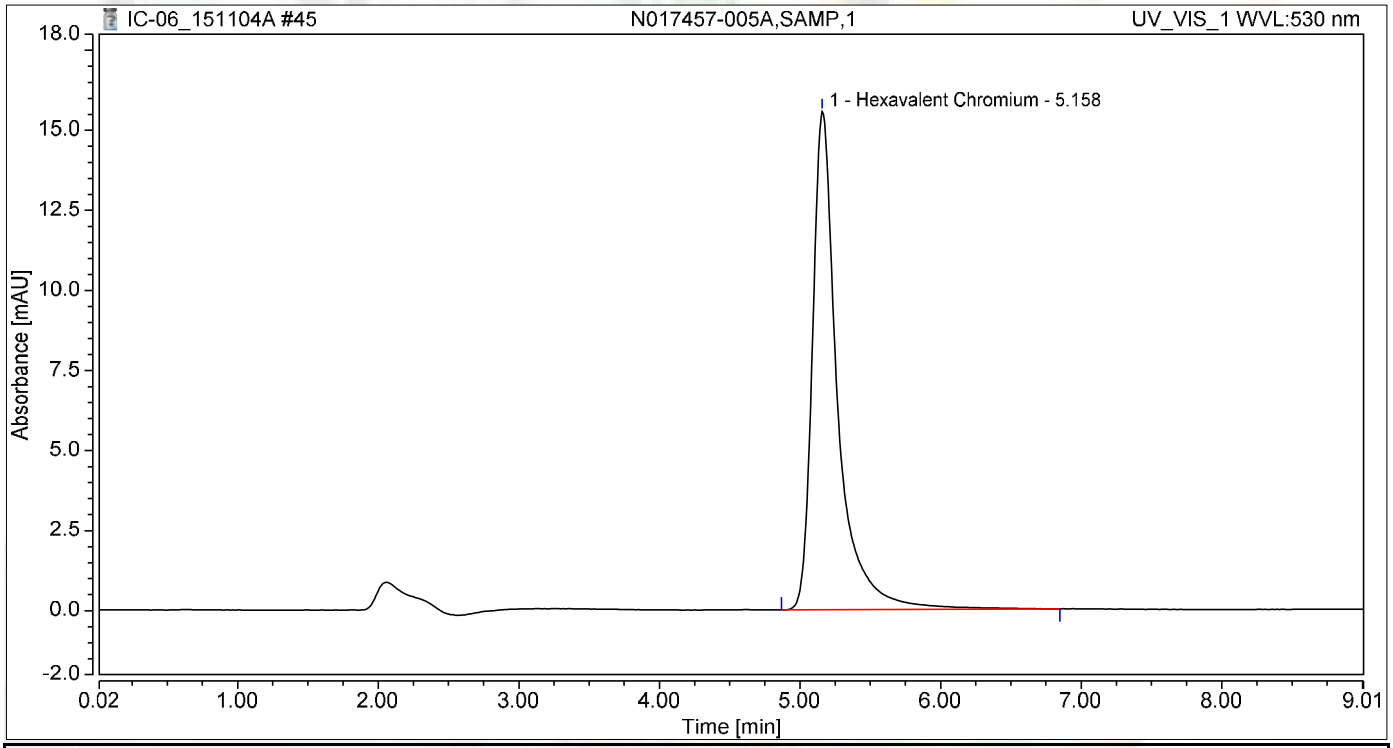
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	0.037	0.175	100.00	100.00	0.1184
Total:			**0.037**	**0.175**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-005A,SAMP,1**	*Run Time (min):*	**8.99**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

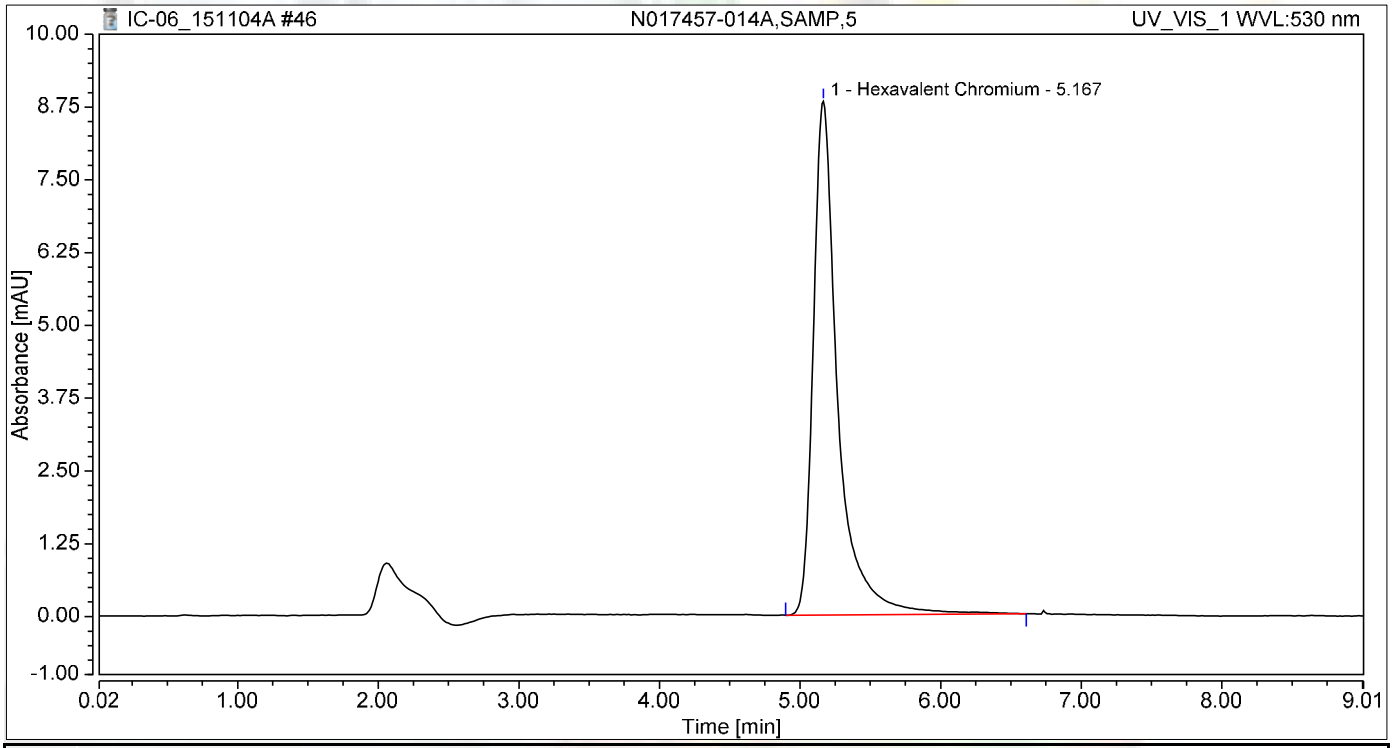
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.158	3.228	15.556	100.00	100.00	13.6089
Total:			**3.228**	**15.556**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N017457-014A,SAMP,5**	*Run Time (min):*	**8.99**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

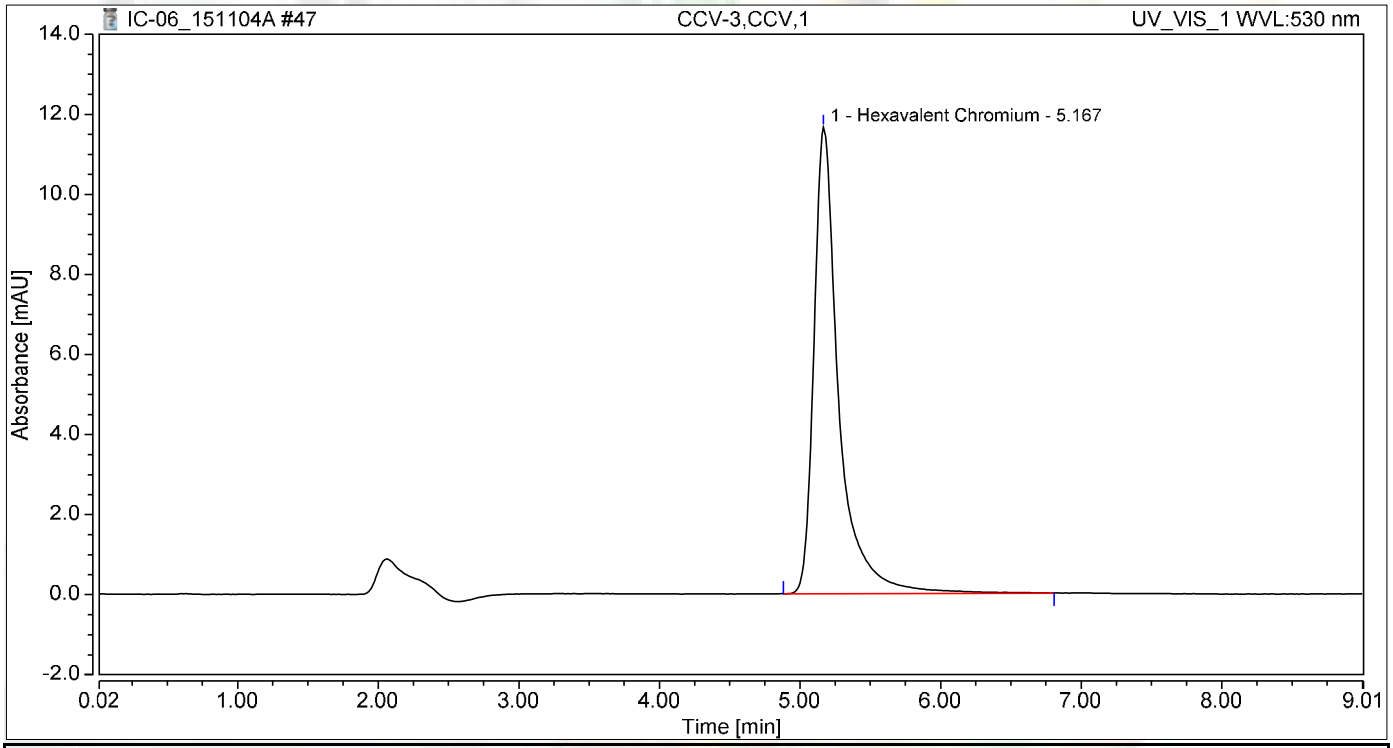
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	1.786	8.824	100.00	100.00	7.5122
Total:			**1.786**	**8.824**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1**	*Run Time (min):*	**8.99**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

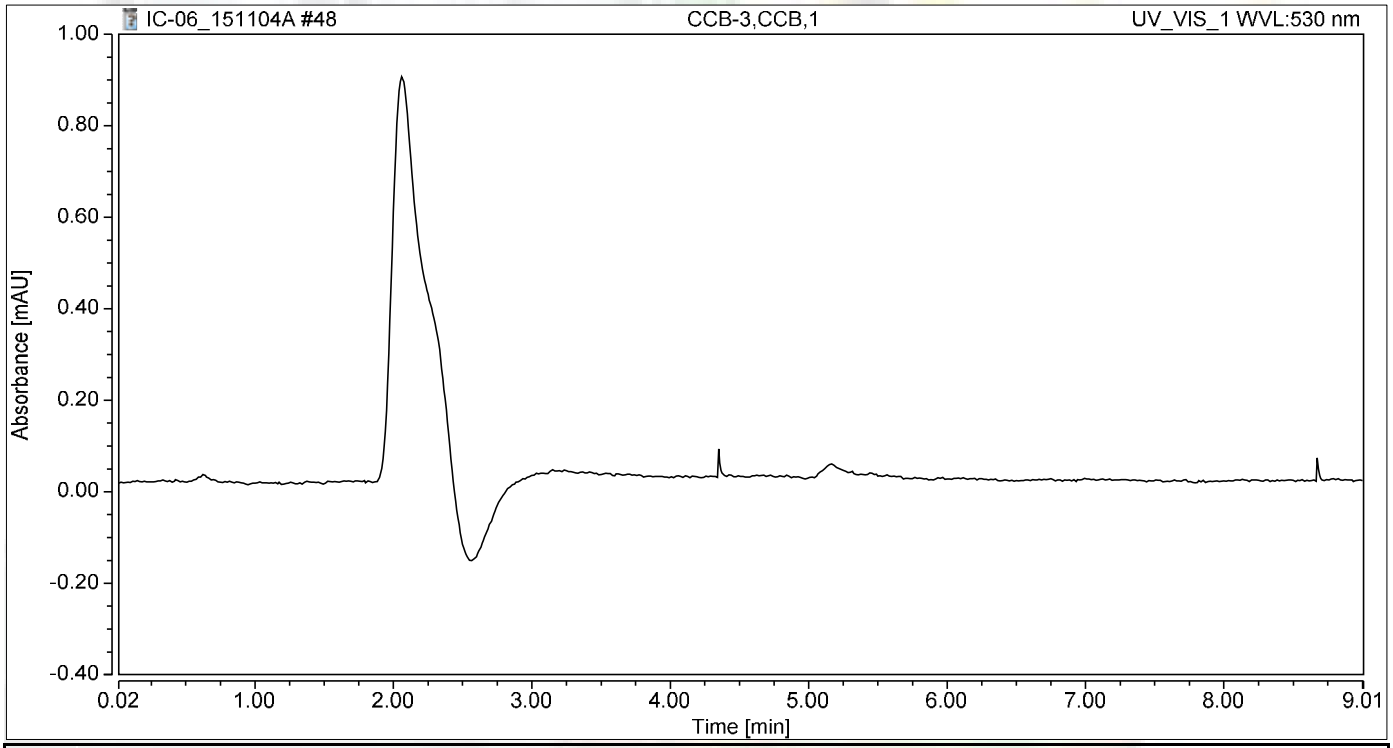
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
1	Hexavalent Chromium	5.167	2.384	11.648	100.00	100.00	10.0413
Total:			**2.384**	**11.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1**	*Run Time (min):*	**8.99**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**151104_IC-06_Cr6_218_6**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Nov/15 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R103911 **Analyst:** LSR

ASSET #: N017427 **Date Analyzed:** 10/30/2015

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 11/4/2015

2nd Level Reviewer: 11/13/2015 Date: ____

SAMPLE CALCULATION

Sample ID: **N017427-001D @ pH 7.69**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A)(B)/(53.00)(C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65g/L) (5mL) / (53.00) (12.0 mL)

= **0.020833 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (3.10) (0.020833 N) (1) * 1000

= 64.5823 **mg/L**

Reporting results in two significant figures,

= **65 mg/L** as CaCO3

Julia Ramit 11/4/2015

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.020833 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (3.10 mL) (0.020833) (1) * 1000

= 64.5823 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 64.5823 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 65 **mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.37	50	0.00	0.05	MBLK
LCS-1	8.43	50	0.05	4.70	LCS
N017427-001D	7.69	50	0.00	3.10	SAMP
N017427-002D	7.64	50	0.00	3.30	SAMP
N017434-008F	6.91	50	0.00	20.10	SAMP
N017434-009F	6.99	50	0.00	13.60	SAMP
N017435-010F	7.33	50	0.00	15.20	SAMP
N017427-001DUP	7.70	50	0.00	3.20	DUP
N017427-002MS	8.10	50	0.00	8.10	MS
N017427-002MSD	8.07	50	0.00	8.00	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**12**	ml
N H2SO4	**0.02083**	Normal
Date Analyzed:	**10/30/15**	
Time:	**15:30**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-150202G**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R151029C**	

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Date Analyzed:	10/30/15		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	3:30 PM			Sodium Carbonate:		CINV-150202G			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	12	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R151029C							**P > 1/2 T**
									N H2SO4	0.02083	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.37				0.02083	0.00	0.05	0.05	1	0.00	1.04	
LCS-1	50	8.43				0.02083	0.05	4.65	4.70	1	1.04	97.92	
N017427-001D	50	7.69				0.02083	0.00	3.10	3.10	1	0.00	64.58	
N017427-002D	50	7.64				0.02083	0.00	3.30	3.30	1	0.00	68.75	
N017434-008F	50	6.91				0.02083	0.00	20.10	20.10	1	0.00	418.75	
N017434-009F	50	6.99				0.02083	0.00	13.60	13.60	1	0.00	283.33	
N017435-010F	50	7.33				0.02083	0.00	15.20	15.20	1	0.00	316.67	
N017427-001DUP	50	7.7				0.02083	0.00	3.20	3.20	1	0.00	66.67	
N017427-002MS	50	8.1				0.02083	0.00	8.10	8.10	1	0.00	168.75	
N017427-002MSD	50	8.07				0.02083	0.00	8.00	8.00	1	0.00	166.67	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	10/30/15
Time:	3:30 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.04	1.04	1.04		P = 0
LCS-1	0.00	2.08	95.83	97.92	97.92		P < 1/2 T
N017427-001D	0.00	0.00	64.58	64.58	64.58		P = 0
N017427-002D	0.00	0.00	68.75	68.75	68.75		P = 0
N017434-008F	0.00	0.00	418.75	418.75	418.75		P = 0
N017434-009F	0.00	0.00	283.33	283.33	283.33		P = 0
N017435-010F	0.00	0.00	316.67	316.67	316.67		P = 0
N017427-001DUP	0.00	0.00	66.67	66.67	66.67		P = 0
N017427-002MS	0.00	0.00	168.75	168.75	168.75		P = 0
N017427-002MSD	0.00	0.00	166.67	166.67	166.67		P = 0

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Alkalinity Preparation and Runlog

Book #5

Matrix: H_2O

Date Extracted: 10/30/15
Time Extracted: 1530
Extracted By: LSR

Date Analyzed: 10/30/15
Time Analyzed: 1530
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: 450 CIN 1502026
Hydrochloric Acid: –
Sulfuric Acid: R1510296
$NaHCO_3$: CIN 1506016

pH meter CALIBRATION:
SLOPE: 96.2%
pH 4 – 4.01 – CIN 1501266
7 – 6.99 – 1508284
10 – 10.04 – 1507084

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.72	IWSTI510128A	5 mL	0.05N	–	–	12.0	50/50	$N_{H_2SO_4} = \frac{(2.6\,gr/L)(5\,mL)}{(53)(V\,titrant)}$	0.0208333
	#2	↓	10.70	↓	↓	↓	–	–	12.0	↓		
1)	MBLK	50 mL	5.37	–	–	–	0.02083	0	0.05	50/50		
2)	LCS		8.43	IWSTI510128B	1 mL	0.05N		0.05	4.70			
3)	NO17427-001D		7.69	–	–	–		0	3.10			
4)	↓ -002D		7.64	–	–	–		0	3.30			
5)	NO17434-008F		6.91	–	–	–		0	20.10			
6)	↓ -009F		6.99	–	–	–		0	13.60			
7)	NO17435-010F		7.33	–	–	–		0	15.20			
8)	NO17427-001D DUP		7.70	–	–	–		0	3.20			
9)	↓ -002D MS		8.10	IWSTI510128B	1 mL	0.05N		0	8.10			
10)	↓ -002D MSD	↓	8.07	↓	↓	↓	↓	0	8.00	↓		
11)												
12)												
13)												
14)												
15)												
16)				$P = \frac{(V_{pH\,8.3})(N_{H_2SO_4})(50{,}000)}{V_{SX}}$								
17)												
18)												
19)				$T = \frac{(V_{pH\,4.5})(N_{H_2SO_4})(50{,}000)}{V_{SX}}$								
20)												
	MS											
	MSD											
	LCS											

Julia Ramit 11/4/2015

EPA 245.1
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52920
ASSET #: N017427

Instrument ID: AA1
Analyst: CEI
Date Analyzed: 11/5/2015

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[X] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)			X			
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?			X			
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.			X			
7. Are ICSA and AB within ± 20% of expected value?			X			
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)			X			
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.			X			
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).			X			
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date: —

2nd Level Reviewer 11/16/2015 Date: —

SAMPLE CALCULATION

ASSET Laboratories

Sample Calculation

Work Order No.:	**N017427**
Test Method:	**EPA ~~7470~~ 245.1**
Matrix:	**Water**

FORMULA:

Calculate the Mercury concentration in ug/L in the original sample as follows:

Hg = [A][DF]

where:

A = ppt, instrument calculated concentration
DF = dilution factor

For: **N017427-001B**

The concentration in ug/L is calculated as follows:

Hg = [A][DF]

Hg = [0.05991][1]

Hg = 0.05991 ug/L

Since result is less than 0.2 ug/L reporting limit.

Hg = ND ug/L



ANALYSIS RUN LOG

INJECTION LOG: 151105WA

Instrument ID: AA-01

	Sample ID	Type	DF	Date	Time	Comments
	Calibration Zero	IBLK	1	11/5/2015	12:20:04	Reported
	Standard #1	ICAL	1	11/5/2015	12:22:46	Reported
	Standard #2	ICAL	1	11/5/2015	12:25:28	Reported
	Standard #3	ICAL	1	11/5/2015	12:28:11	Reported
	Standard #4	ICAL	1	11/5/2015	12:30:55	Reported
	Standard #5	ICAL	1	11/5/2015	12:33:39	Reported
	ICV	ICV	1	11/5/2015	12:36:24	Reported
	ICB	ICB	1	11/5/2015	12:39:05	Reported
	MB-52920	MBLK	1	11/5/2015	12:41:47	Reported
	LCS-52920	LCS	1	11/5/2015	12:44:30	Not Reported
	N017415-001B-MS	MS	1	11/5/2015	12:47:14	Reported
	N017415-001B-MSD	MSD	1	11/5/2015	12:49:57	Reported
	N017415-001B	SAMP	1	11/5/2015	12:52:38	Reported
	N017415-002B	SAMP	1	11/5/2015	12:55:21	Reported
	N017415-003B	SAMP	1	11/5/2015	12:58:03	Reported
	N017415-004B	SAMP	1	11/5/2015	13:00:47	Reported
	N017415-005B	SAMP	1	11/5/2015	13:03:31	Reported
	N017415-006B	SAMP	1	11/5/2015	13:06:15	Reported
	CCV1	CCV	1	11/5/2015	13:08:59	Reported
	CCB1	CCB	1	11/5/2015	13:11:41	Reported
	N017415-007B	SAMP	1	11/5/2015	13:14:23	Reported
	N017400-001B	SAMP	1	11/5/2015	13:17:05	Reported
	N017400-002B	SAMP	1	11/5/2015	13:19:48	Reported
	N017427-001B	SAMP	1	11/5/2015	13:22:32	Reported
	N017427-002B	SAMP	1	11/5/2015	13:25:16	Reported
	N017427-002B-MS	MS	1	11/5/2015	13:28:00	Reported
	N017424-001A	SAMP	1	11/5/2015	13:30:45	Reported
	N017425-001A	SAMP	1	11/5/2015	13:33:30	Reported
	N017425-002A	SAMP	1	11/5/2015	13:36:13	Reported
	N017425-003A	SAMP	1	11/5/2015	13:38:57	Reported
	CCV2	CCV	1	11/5/2015	13:41:39	Reported
	CCB2	CCB	1	11/5/2015	13:56:01	Reported
	LCS-52920	LCS	1	11/5/2015	13:58:44	Reported
	N017425-004A	SAMP	1	11/5/2015	14:01:28	Reported
	N017456-001B	SAMP	1	11/5/2015	14:04:13	Reported
NR	CCV3	CCV	1	11/5/2015	14:06:56	Reported
	CCV3	CCV	1	11/5/2015	14:12:23	Reported
	CCB3	CCB	1	11/5/2015	14:15:05	Reported

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/3/2015 7:53:18**
Prep End Date: **11/3/2015 11:00:00**

Initials/ Date: 11/16/2015

Prep Batch **52920** Prep Code: **7470_PR** Technician **Claire Ignacio**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52920	Aqueous		25	☐	0	0	50	2.000		
MB-52920	Aqueous		25	☐	0	0	50	2.000		
N017400-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017400-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-001B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-003B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-004B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-005B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-006B	Groundwater	<2	25	☐	0	0	50	2.000		
N017415-007B	Groundwater	<2	25	☐	0	0	50	2.000		
N017424-001A	Water	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
6712	POTASSIUM PERMANGANATE
6757	HYDROXYLAMINE HCl
6837	Potassium Persulfate
6972	SODIUM CHLORIDE
7028	sulfuric acid
7399	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151008	500ppb Hg PRIMARY	ICAL/CCV	0.25
2MWST-151008	500ppb Hg SECONDARY	ICV/LCS/MS/M	0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/3/2015 7:53:18**
Prep End Date: **11/3/2015 11:00:00**

Initials/ Date: 11/16/2015

Prep Batch **52920** Prep Code: **7470_PR** Technician **Claire Ignacio**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017425-001A	Water	<2	25	☐	0	0	50	2.000		
N017425-002A	Water	<2	25	☐	0	0	50	2.000		
N017425-003A	Water	<2	25	☐	0	0	50	2.000		
N017425-004A	Water	<2	25	☐	0	0	50	2.000		
N017427-001B	Groundwater	<2	25	☐	0	0	50	2.000		
N017427-002B	Groundwater	<2	25	☐	0	0	50	2.000		
N017427-002B-MS	Groundwater	<2	25	☐	0	0	50	2.000		
N017456-001B	Wastewater	<2	25	☐	0	0	50	2.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
6712	POTASSIUM PERMANGANATE
6757	HYDROXYLAMINE HCl
6837	Potassium Persulfate
6972	SODIUM CHLORIDE
7028	sulfuric acid
7399	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-151008	500ppb Hg PRIMARY	ICAL/CCV	0.25
2MWST-151008	500ppb Hg SECONDARY	ICV/LCS/MS/M	0.25

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151105WA

Instrument ID: AA-01

	Stock	Working
Standard Concentration:	1,000 PPM	500 PPB
ICAL Standard:	2MSST-150310A	2MWST-1501008A

Comments:

Calibration Acceptance Criteria: > 0.995 Correlation

Sample ID	Date	Time	Concentration	Units	Ave Absorbance	Comments	R
Calibration Zero	11/05/2015	12:20:04	0	PPB	26.62393	Reported	
Standard #1	11/05/2015	12:22:46	0.2	PPB	115.62846	Reported	
Standard #2	11/05/2015	12:25:28	1	PPB	706.13316	Reported	
Standard #3	11/05/2015	12:28:11	5	PPB	3808.99145	Reported	
Standard #4	11/05/2015	12:30:55	10	PPB	7952.69128	Reported	
Standard #5	11/05/2015	12:33:39	20	PPB	16010.4442	Reported	0.99993

* Please note that the instrument printout for the 'Average Absorbance' were represented in three significant figures. The exact values are represented in the ICAL Summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID: **ICV**	SampType: **ICV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **ICV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.169	0.20	10.00	0	102	95	105				

Sample ID: **CCV1**	SampType: **CCV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.686	0.20	10.00	0	96.9	90	110				

Sample ID: **CCV2**	SampType: **CCV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	9.984	0.20	10.00	0	99.8	90	110				

Sample ID: **CCV3**	SampType: **CCV**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCV**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	10.068	0.20	10.00	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_WD

Sample ID: **ICB**	SampType: **ICB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **ICB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.092	0.20									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.088	0.20									

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.103	0.20									

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **245.1_WD**	Units: **µg/L**	Prep Date:	RunNo: **103981**
Client ID: **CCB**	Batch ID: **R103981**	TestNo: **EPA 245.1**		Analysis Date: **11/5/2015**	SeqNo: **2133196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.119	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Mercury by Cold Vapor Technique**
Method Number: EPA 7470/245.1
Analysis Date(s): 3/23/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: ug/L

Instrument Name: **HG-01**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., ug/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Mercury	0.03523	0.05801	0.04800	0.05661	0.04472	0.04975	0.04420	0.050	0.0078	3.143	**0.025**	**0.20**	OK,meets criteria

Students' t Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

* Please note that the instrument printout for Conc were represented in two decimal places. The exact values are represented in the MDL summary for calculation purposes.

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 1.0
101515

QC Batch Number: R103951
ASSET #: N017390 / N017400 / N017427

Instrument ID: IC-02
Analyst: QBM
Date Analyzed: 10/31/2015

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM, GMP, ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 11/6/2015

2nd Level Reviewer _____ 11/13/2015 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300.0
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the original sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N017427-001D** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 9.07 * 50

= 453.5

Reporting result in two significant figures,

Sulfate, mg/L = 450



ANALYSIS RUN LOG

DIONEX SCHEDULE - C:\DX\SCHEDULE\151012.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15101201.D01	1	1	1
2	,BLANK,	..\151012.M	..\15101201.D02	1	1	1
3	AUTOCAL1R	..\151012.M	..\15101201.D03	1	1	1
4	AUTOCAL2R	..\151012.M	..\15101201.D04	1	1	1
5	AUTOCAL3R	..\151012.M	..\15101201.D05	1	1	1
6	AUTOCAL4R	..\151012.M	..\15101201.D06	1	1	1
7	AUTOCAL5R	..\151012.M	..\15101201.D07	1	1	1
8	AUTOCAL6R	..\151012.M	..\15101201.D08	1	1	1
9	,ICV,ICV,1,	..\151012.M	..\15101201.D09	1	1	1
10	,ICB,ICB,1,	..\151012.M	..\15101201.D10	1	1	1
11	,MB-H2O,MBLK,1,	..\151012.M	..\15101201.D11	1	1	1
12	,LCS-H2O,LCS,1,	..\151012.M	..\15101201.D12	1	1	1
13	,MDL-1,1,	..\151012.M	..\15101201.D13	1	1	1
14	,MDL-2,1,	..\151012.M	..\15101201.D14	1	1	1
15	,MDL-3,1,	..\151012.M	..\15101201.D15	1	1	1
16	,MDL-4,1,	..\151012.M	..\15101201.D16	1	1	1
17	,MDL-5,1,	..\151012.M	..\15101201.D17	1	1	1
18	,MDL-6,1,	..\151012.M	..\15101201.D18	1	1	1
19	,MDL-7,1,	..\151012.M	..\15101201.D19	1	1	1
20	,CCV-1,CCV,1,	..\151012.M	..\15101201.D20	1	1	1
21	,CCB-1,CCB,1,	..\151012.M	..\15101201.D21	1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

10/21/2015

DIONEX SCHEDULE - C:\DX\SCHEDULE\151031.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
1	,BLANK,	..\151012.M	..\15103101.D01	1	1	1
2	,CCV-1,CCV,1,	..\151012.M	..\15103101.D02	1	1	1
3	,CCB-1,CCB,1,	..\151012.M	..\15103101.D03	1	1	1
4	,MB-H2O,MBLK,1,	..\151012.M	..\15103101.D04	1	1	1
5	,LCS-H2O,LCS,1,	..\151012.M	..\15103101.D05	1	1	1
6	,N017442-001B,SAMP,	..\151012.M	..\15103101.D06	1	1	1
7	,N017442-004B,SAMP,	..\151012.M	..\15103101.D07	1	1	1
8	,N017442-005B,SAMP,	..\151012.M	..\15103101.D08	1	1	1
9	,N017442-006B,SAMP,	..\151012.M	..\15103101.D09	1	1	1
10	,N017443-003B,SAMP,	..\151012.M	..\15103101.D10	1	1	1
11	,N017443-004B,SAMP,	..\151012.M	..\15103101.D11	1	1	1
12	,N017443-006B,SAMP,	..\151012.M	..\15103101.D12	1	1	1
13	,N017443-007B,SAMP,	..\151012.M	..\15103101.D13	1	1	1
14	,CCV-2,CCV,1,	..\151012.M	..\15103101.D14	1	1	1
15	,CCB-2,CCB,1,	..\151012.M	..\15103101.D15	1	1	1
16	,N017441-004B,SAMP,	..\151012.M	..\15103101.D16	1	1	1
17	,N017441-005B,SAMP,	..\151012.M	..\15103101.D17	1	1	1
18	,N017442-001B,SAMP,	..\151012.M	..\15103101.D18	1	1	1
19	,N017443-003B,SAMP,	..\151012.M	..\15103101.D19	1	1	1
20	,N017443-007BDUP,DU	..\151012.M	..\15103101.D20	1	1	1
21	,N017443-007BMS,MS,	..\151012.M	..\15103101.D21	1	1	1
22	,N017443-007BMSD,MS	..\151012.M	..\15103101.D22	1	1	1
23	,N017442-004B,SAMP,	..\151012.M	..\15103101.D23	1	1	1
24	,N017442-005B,SAMP,	..\151012.M	..\15103101.D24	1	1	1
25	,N017442-006B,SAMP,	..\151012.M	..\15103101.D25	1	1	1
26	,CCV-3,CCV,1,	..\151012.M	..\15103101.D26	1	1	1
27	,CCB-3,CCB,1,	..\151012.M	..\15103101.D27	1	1	1
28	,N017443-003B,SAMP,	..\151012.M	..\15103101.D28	1	1	1
29	,N017443-004B,SAMP,	..\151012.M	..\15103101.D29	1	1	1
30	,N017443-004BMS,MS,	..\151012.M	..\15103101.D30	1	1	1
31	,N017443-006B,SAMP,	..\151012.M	..\15103101.D31	1	1	1
32	,N017443-007B,SAMP,	..\151012.M	..\15103101.D32	1	1	1
33	,N017400-002D,SAMP,	..\151012.M	..\15103101.D33	1	1	1
34	,N017400-002DDUP,DU	..\151012.M	..\15103101.D34	1	1	1
35	,N017400-003C,SAMP,	..\151012.M	..\15103101.D35	1	1	1
36	,N017400-003CMS,MS,	..\151012.M	..\15103101.D36	1	1	1
37	,N017400-003CMSD,MS	..\151012.M	..\15103101.D37	1	1	1
38	,CCV-4,CCV,1,	..\151012.M	..\15103101.D38	1	1	1
39	,CCB-4,CCB,1,	..\151012.M	..\15103101.D39	1	1	1
40	,N017400-004C,SAMP,	..\151012.M	..\15103101.D40	1	1	1
41	,N017400-006C,SAMP,	..\151012.M	..\15103101.D41	1	1	1
42	,N017400-007C,SAMP,	..\151012.M	..\15103101.D42	1	1	1
43	,N017400-008C,SAMP,	..\151012.M	..\15103101.D43	1	1	1
44	,N017427-001D,SAMP,	..\151012.M	..\15103101.D44	1	1	1
45	,N017427-002D,SAMP,	..\151012.M	..\15103101.D45	1	1	1
46	,N017400-002D,SAMP,	..\151012.M	..\15103101.D46	1	1	1
47	,N017400-002DDUP,DU	..\151012.M	..\15103101.D47	1	1	1
48	,N017400-003C,SAMP,	..\151012.M	..\15103101.D48	1	1	1
49	,N017400-003CMS,MS,	..\151012.M	..\15103101.D49	1	1	1
50	,CCV-5,CCV,1,	..\151012.M	..\15103101.D50	1	1	1
51	,CCB-5,CCB,1,	..\151012.M	..\15103101.D51	1	1	1
52	,N017400-003CMSD,MS	..\151012.M	..\15103101.D52	1	1	1
53	,N017400-004C,SAMP,	..\151012.M	..\15103101.D53	1	1	1
54	,N017400-006C,SAMP,	..\151012.M	..\15103101.D54	1	1	1
55	,N017400-007C,SAMP,	..\151012.M	..\15103101.D55	1	1	1
56	,N017400-008C,SAMP,	..\151012.M	..\15103101.D56	1	1	1
57	,N017427-001D,SAMP,	..\151012.M	..\15103101.D57	1	1	1
58	,N017427-002D,SAMP,	..\151012.M	..\15103101.D58	1	1	1
59	,N017390-001C,SAMP,	..\151012.M	..\15103101.D59	1	1	1
60	,N017390-001CMS,MS,	..\151012.M	..\15103101.D60	1	1	1
61	,N017390-001CMSD,MS	..\151012.M	..\15103101.D61	1	1	1
62	,CCV-6,CCV,1,	..\151012.M	..\15103101.D62	1	1	1
63	,CCB-6,CCB,1,	..\151012.M	..\15103101.D63	1	1	1
64	,N017400-001D,SAMP,	..\151012.M	..\15103101.D64	1	1	1
65	,N017400-002D,SAMP,	..\151012.M	..\15103101.D65	1	1	1
66	,N017400-003C,SAMP,	..\151012.M	..\15103101.D66	1	1	1
67	,N017400-004C,SAMP,	..\151012.M	..\15103101.D67	1	1	1
68	,N017400-005C,SAMP,	..\151012.M	..\15103101.D68	1	1	1
69	,N017400-005CDUP,DU	..\151012.M	..\15103101.D69	1	1	1
70	,N017400-006C,SAMP,	..\151012.M	..\15103101.D70	1	1	1
71	,N017400-007C,SAMP,	..\151012.M	..\15103101.D71	1	1	1
72	,N017400-008C,SAMP,	..\151012.M	..\15103101.D72	1	1	1
73	,N017427-001D,SAMP,	..\151012.M	..\15103101.D73	1	1	1
74	,CCV-7,CCV,1,	..\151012.M	..\15103101.D74	1	1	1

11/6/2015

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.Std.
75	,CCB-7,CCB,1,	..\151012.M	..\15103101.D75	1	1	1
76	,N017427-002D,SAMP,	..\151012.M	..\15103101.D76	1	1	1
77	,CCV-8,CCV,1,	..\151012.M	..\15103101.D77	1	1	1
78	,CCB-8,CCB,1,	..\151012.M	..\15103101.D78	1	1	1
79	SHUTDOWN	..\SHUTDOWN		1	1	1

Comment:
Standard for IC-02 (Anions) = ICAL/CCV : ISST-150730A, B, C, D, E, F, G; ICV/LCS/MS/MSD: ISST150206A, B, C, D, E, F and ISST-141104A

11/6/2015

INITIAL CALIBRATION DATA SUMMARY

DIONEX METHOD PARAMETERS - 151012.MET

Method Comment:
Column ID:
Analyst ID:

System Parameters

System Name: ANIONS

Number of Detectors	1
Run Time (minutes)	13.00
Sampling Rate (seconds)	0.20
Detector 1 Type	COND
Detector 1 real time plot scale maximum (mV)	100.000
minimum	-10.000
Detector 1 Output Equivalent to 1 Volt (in mV)	100.00
Detector 1 ACI Analog Input Connection	DET1
Save Data File	Yes

Data File Name: C:\DX\DATA\14120201.D02

-- DETECTOR 1 PARAMETERS --

Report Options

Create ASCII Report File	No
Print Report	Yes
Print All Components	Yes
Print Components Found	No
Print Missing Components	No
Print All Peaks	Yes
Print Unknown Peaks	Yes
Print Chromatogram	Yes
Autoscale Chromatogram Maximum	Yes
Autoscale Maximum Value Delay (minutes)	0.0
Autoscale Chromatogram Minimum	Yes
Autoscale Minimum Value Delay (minutes)	0.0
Fill Peaks with Color	No
Draw Grid Lines on Chromatogram	No
Show Component Fraction Numbers	No
Label with Peak Number	No
Label with Retention Times on Chromatogram	No
Label with Component Name	Yes

Format File Name: C:\DX\METHOD\DEFAULT.PRF

Integration Parameters

Starting Peak Width (seconds)	5.0
Peak Threshold	0.500
Peak Area Reject	2000
Area Reject for Reference Peaks	3000

Data Events

Time	Description
0.50	Start peak detection
0.51	Force baseline at start of this peak
0.51	Split peak
0.51	Force common baseline following this peak
0.52	End peaks on baseline penetration

10/21/2015

Calibration Parameters

Number Of Levels for Calibration	6
Force Calibration Curve Through Origin	No
Calibration Fit Type	Linear
Replace Or Average Calibrations	Replace
External or Internal Calibration	External
Calculate Unknowns by Area or Height	Area
Default Sample Volume	1.0
Default Dilution Factor	1.0
Default Response Factor for Unknown Peaks	0.0
Calibration Standard Volume	1.0
Internal Standard Amount in Samples	1.0
Amount Units	

10/21/2015

Component Table -- Last Modified: 16:44 on Mon, 12 Oct 2015

Component # 1 Fluoride Retention Time 2.71
Reference Comp. Fluoride Window Size 0.05 min.
Amount = K0 + K1*Area
K0 = 1.21838E-002
K1 = 2.39369E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	22404	2579
3	5.00000E-001	196348	23135
4	1.00000E+000	405665	47246
5	2.50000E+000	1040848	129618
6	5.00000E+000	2084965	275326

Component # 2 Chloride Retention Time 4.12
Reference Comp. Chloride Window Size 0.10 min.
Amount = K0 + K1*Area
K0 = 6.51893E-002
K1 = 3.31876E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	142077	16162
3	1.00000E+000	281846	33232
4	2.50000E+000	734644	85716
5	5.00000E+000	1427982	175887
6	1.00000E+001	3020632	387582

Component # 3 Nitrite Retention Time 5.05
Reference Comp. Nitrite Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 5.00308E-003
K1 = 1.85944E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	31734	2012
3	5.00000E-001	263959	18839
4	1.00000E+000	531236	38584
5	2.50000E+000	1331892	110811
6	5.00000E+000	2692079	240029

Component # 4 Bromide Retention Time 6.15
Reference Comp. Bromide Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = -5.14938E-002
K1 = 7.25458E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	2.00000E-001	30666	2325
3	5.00000E-001	75718	5314
4	1.00000E+000	156766	11014
5	2.50000E+000	355924	26859
6	5.00000E+000	691679	56045

10/21/2015

Component # 5 Nitrate Retention Time 6.96
Reference Comp. Nitrate Window Size 0.20 min.
Amount = K0 + K1*Area
K0 = 1.93433E-002
K1 = 1.32929E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-002	40317	2890
3	5.00000E-001	341615	25397
4	1.00000E+000	742823	51841
5	2.50000E+000	1831956	140466
6	5.00000E+000	3764108	298846

Component # 6 Phosphate Retention Time 9.11
Reference Comp. Phosphate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = -5.25613E-003
K1 = 4.04495E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	1.00000E-001	21773	1555
3	5.00000E-001	120032	6390
4	1.00000E+000	256903	13753
5	2.50000E+000	625939	35044
6	5.00000E+000	1232870	71866

Component # 7 Sulfate Retention Time 10.43
Reference Comp. Sulfate Window Size 0.50 min.
Amount = K0 + K1*Area
K0 = 1.09722E-001
K1 = 4.73420E-006

Level	Amount	Area	Height
1	0.00000E+000	0	0
2	5.00000E-001	105494	5187
3	2.00000E+000	376299	19426
4	5.00000E+000	1046779	50229
5	1.00000E+001	2021874	102155
6	2.00000E+001	4231586	220606

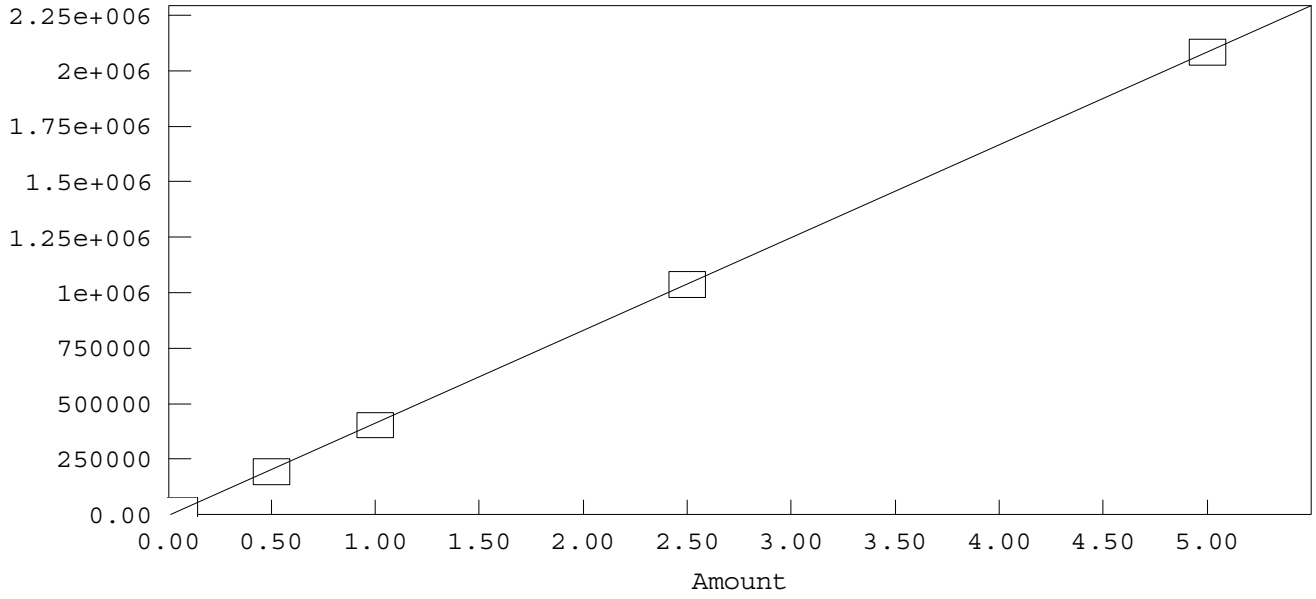
Timed Events File: C:\DX\METHOD\AS4ASC2.TE

Step	Time	Description
Init		ACI Autosmp OFF
Init		ACI Autooff OFF
Init		ACI Pmpstrt ON
Init		ACI Inject OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
Init		ACI OFF
1	0.0	ACI Autosmp ON
2	2.3	ACI Autosmp OFF
2	2.3	ACI Autooff ON
3	2.4	ACI Inject ON
3	2.4	Start Sampling

10/21/2015

Method: 151012.MET - Last Updated: 16:44 on Mon, 12 Oct 2015

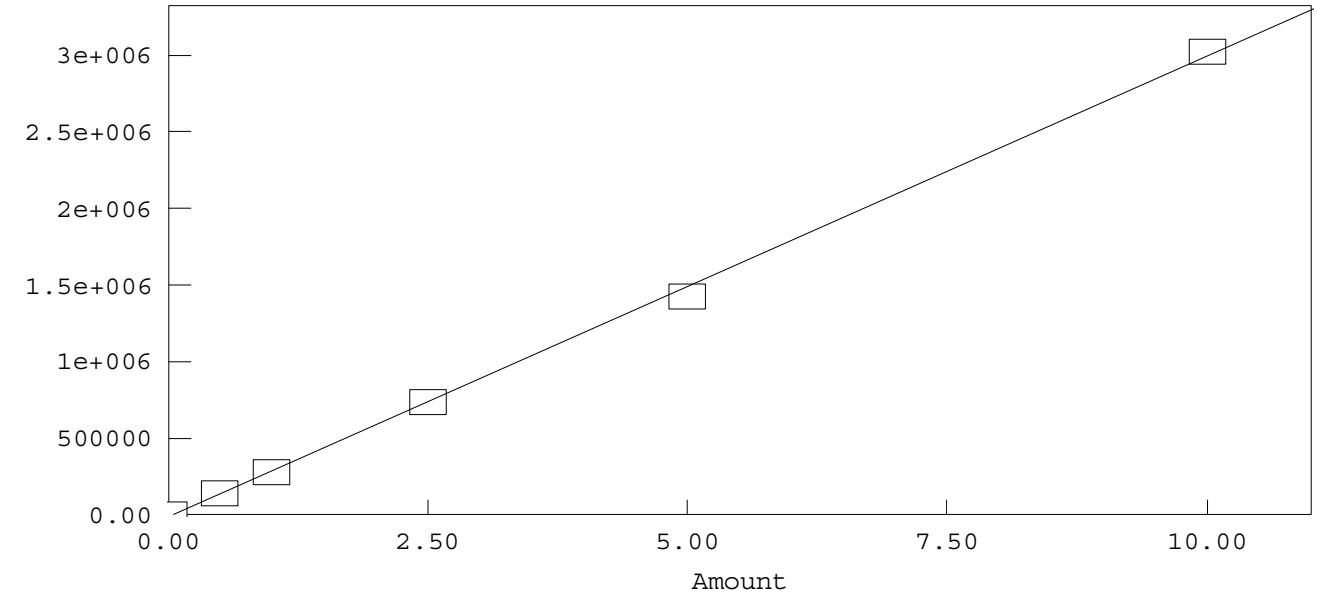
Component: Fluoride
Fit Type: Linear
r^2 = 0.999946
Amt = Resp * 2.394e-006 + 0.01218
Resp = Amt * 4.178e+005 + -5090
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

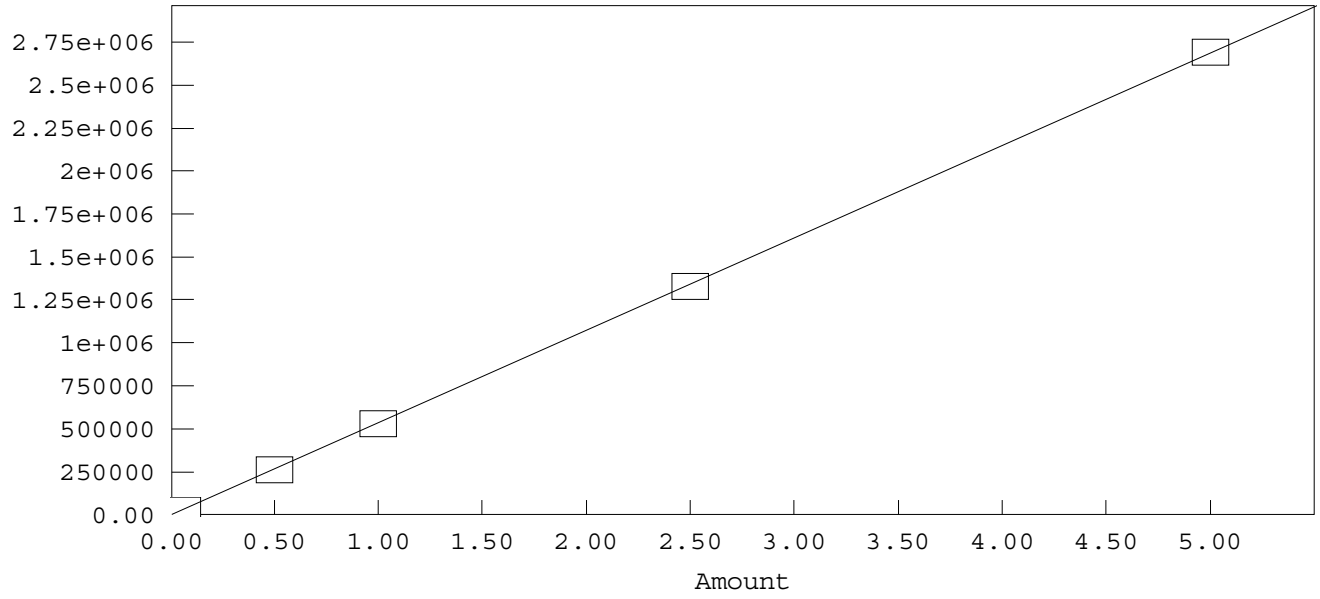
Component: Chloride
Fit Type: Linear
r^2 = 0.999281
Amt = Resp * 3.319e-006 + 0.06519
Resp = Amt * 3.013e+005 + -1.964e+004
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

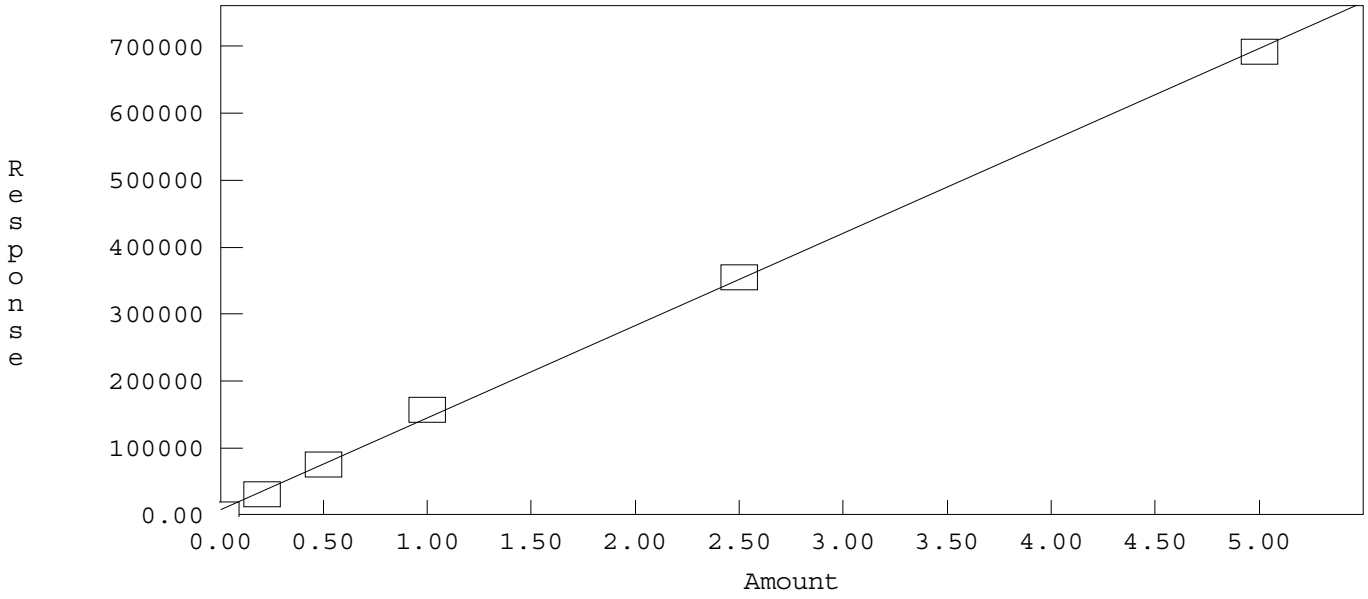
Component: Nitrite
Fit Type: Linear
r² = 0.999960
Amt = Resp * 1.859e-006 + 0.005003
Resp = Amt * 5.378e+005 + -2691
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

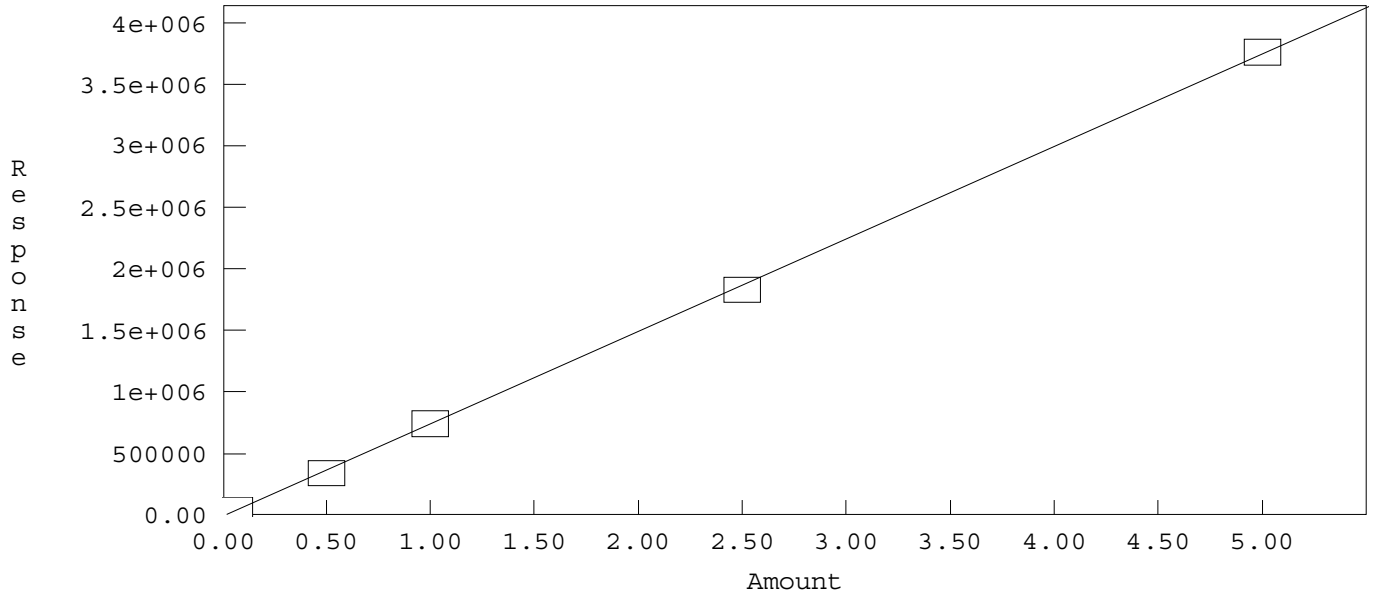
Component: Bromide
Fit Type: Linear
r² = 0.999299
Amt = Resp * 7.255e-006 + -0.05149
Resp = Amt * 1.378e+005 + 7098
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

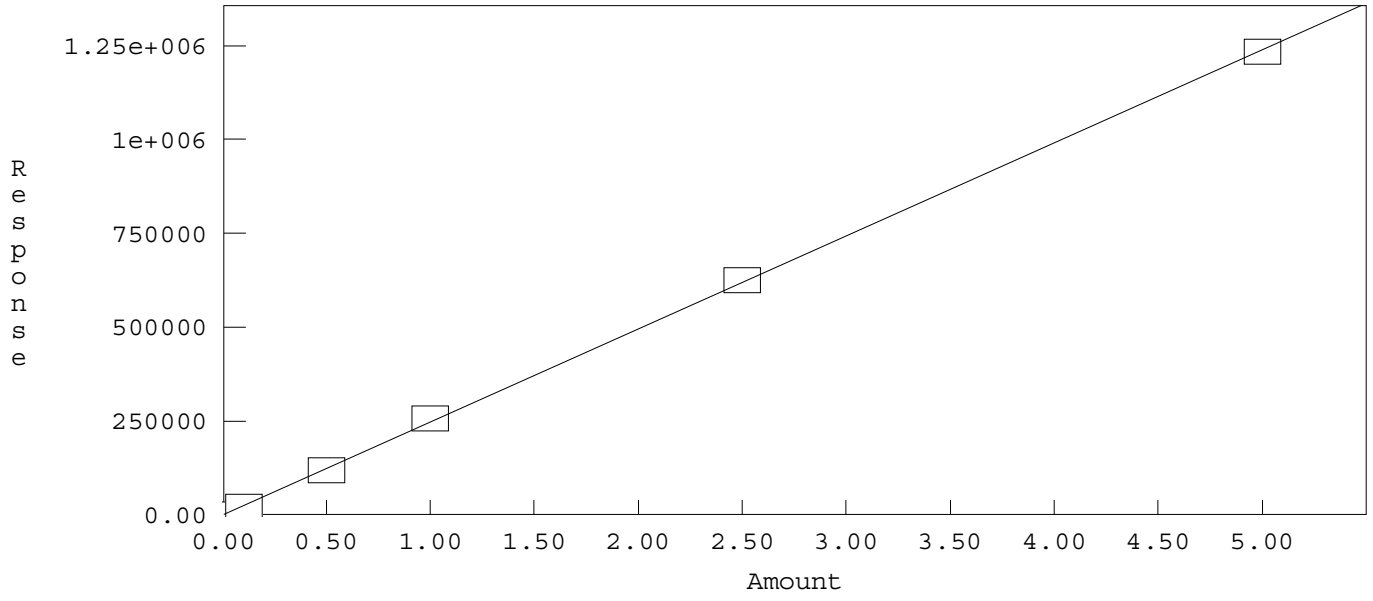
Component: Nitrate
Fit Type: Linear
r² = 0.999775
Amt = Resp * 1.329e-006 + 0.01934
Resp = Amt * 7.523e+005 + -1.455e+004
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\151012.MET

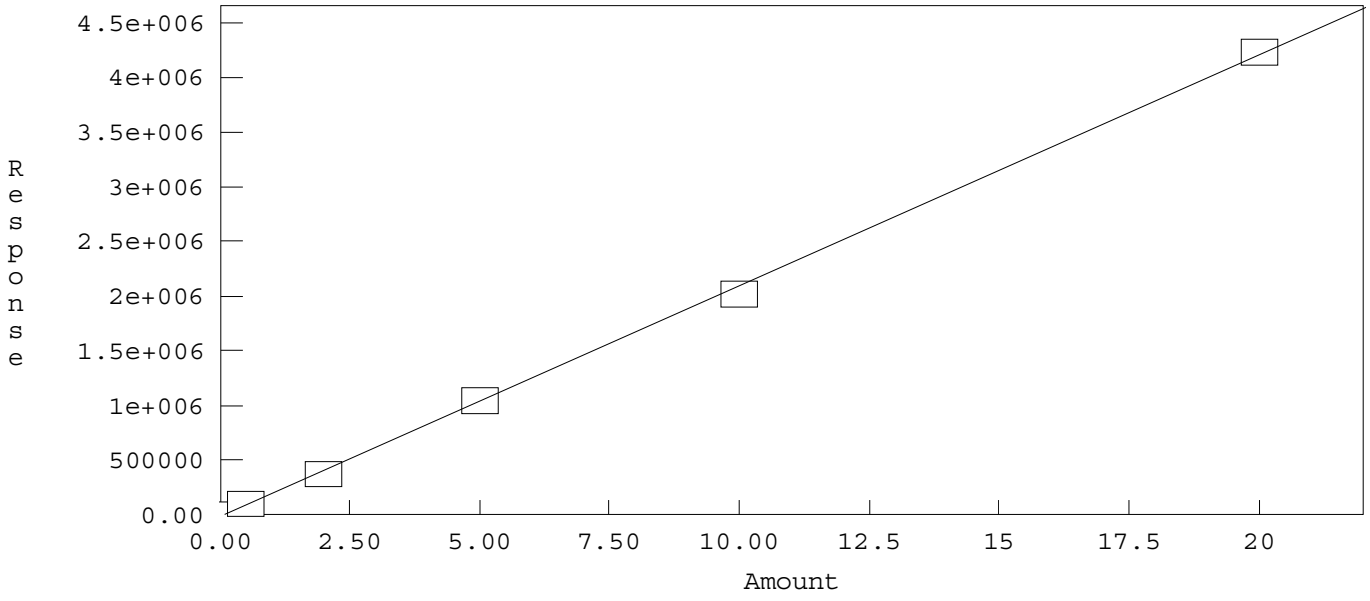
Component: Phosphate
Fit Type: Linear
r² = 0.999845
Amt = Resp * 4.045e-006 + -0.005256
Resp = Amt * 2.472e+005 + 1299
Standardization: External
Calibration: Area

10/21/2015



Method: C:\DX\METHOD\151012.MET

Component: Sulfate
Fit Type: Linear
r^2 = 0.999451
Amt = Resp * 4.734e-006 + 0.1097
Resp = Amt * 2.112e+005 + -2.318e+004
Standardization: External
Calibration: Area



10/21/2015

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.442	0.50	2.500	0	97.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.354	0.50	2.500	0	94.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.477	0.50	2.500	0	99.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.432	0.50	2.500	0	97.3	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.384	0.50	2.500	0	95.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.399	0.50	2.500	0	96.0	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.369	0.50	2.500	0	94.8	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.420	0.50	2.500	0	96.8	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.413	0.50	2.500	0	96.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.348	0.10	2.500	0	93.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.364	0.10	2.500	0	94.6	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.375	0.10	2.500	0	95.0	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.392	0.10	2.500	0	95.7	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.342	0.10	2.500	0	93.7	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.412	0.10	2.500	0	96.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.341	0.10	2.500	0	93.6	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.338	0.10	2.500	0	93.5	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.330	0.10	2.500	0	93.2	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.841	0.50	5.000	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.786	0.50	5.000	0	95.7	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.722	0.50	5.000	0	94.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.962	0.50	5.000	0	99.2	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.706	0.50	5.000	0	94.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.775	0.50	5.000	0	95.5	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.668	0.50	5.000	0	93.4	90	110				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.670	0.50	5.000	0	93.4	90	110				

Sample ID **CCV-8**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCV**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.839	0.50	5.000	0	96.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
ICB	**ICB**	**300_W_CLP**	**mg/L**		**103951**
Client ID: **ICB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-1	**CCB**	**300_W_CLP**	**mg/L**		**103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-2	**CCB**	**300_W_CLP**	**mg/L**		**103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-3	**CCB**	**300_W_CLP**	**mg/L**		**103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
CCB-4	**CCB**	**300_W_CLP**	**mg/L**		**103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_FPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_FPG**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **ICB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/12/2015**	SeqNo: **2125517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **10/31/2015**	SeqNo: **2125542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **103951**
Client ID: **CCB**	Batch ID: **R103951**	TestNo: **EPA 300.0**		Analysis Date: **11/1/2015**	SeqNo: **2125546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Fluoride	2.71	
CCV-2	Fluoride	2.75	
CCV-3	Fluoride	2.76	
CCV-4	Fluoride	2.71	
CCV-5	Fluoride	2.71	
CCV-6	Fluoride	2.69	
CCV-7	Fluoride	2.72	
CCV-8	Fluoride	2.71	
	Average	2.720	
	Lower Limit	2.520	
	Upper Limit	2.920	
MB-R103951_F	Fluoride	N.A.	N.A.
LCS-R103951_F	Fluoride	2.74	PASS
N017390-001CMS	Fluoride	2.72	PASS
N017390-001CMSD	Fluoride	2.73	PASS
N017400-005CDUP	Fluoride	2.71	PASS
N017427-001D	Fluoride	2.68	PASS
N017427-002D	Fluoride	2.67	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	4.05	
CCV-2	Chloride	4.11	
CCV-3	Chloride	4.14	
CCV-4	Chloride	4.06	
CCV-5	Chloride	4.05	
CCV-6	Chloride	4.04	
CCV-7	Chloride	4.05	
CCV-8	Chloride	4.05	
	Average	4.069	
	Lower Limit	3.869	
	Upper Limit	4.269	
MB-R103951_CL	Chloride	N.A.	N.A.
LCS-R103951	Chloride	4.11	PASS
N017400-002DDUP	Chloride	4.13	PASS
N017400-003CMS	Chloride	4.09	PASS
N017400-003CMSD	Chloride	4.11	PASS
N017427-001D	Chloride	4.10	PASS
N017427-002D	Chloride	4.07	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-02

Analytical Sequence

Date Analyzed: 10/31/2015

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	10.17	
CCV-2	Sulfate	10.16	
CCV-3	Sulfate	10.27	
CCV-4	Sulfate	10.12	
CCV-5	Sulfate	10.09	
CCV-6	Sulfate	10.13	
CCV-7	Sulfate	10.12	
CCV-8	Sulfate	10.11	
	Average	10.146	
	Lower Limit	9.946	
	Upper Limit	10.346	
MB-R103951_SO4	Sulfate	N.A.	PASS
LCS-R103951_SO4	Sulfate	10.29	PASS
N017400-002DDUP	Sulfate	10.19	PASS
N017400-003CMS	Sulfate	10.22	PASS
N017400-003CMSD	Sulfate	10.17	PASS
N017427-001D	Sulfate	10.13	PASS
N017427-002D	Sulfate	10.19	PASS

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 3/23/2015 & 10/12/2015
Analyst: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile: 15032301.D06 15032301.D07 15032301.D08 15032301.D09 15032301.D10 15032301.D11 15032301.D12

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Fluoride	0.039	0.047	0.046	0.038	0.039	0.046	0.045	0.020	0.0040	3.143	**0.0125**	**0.10**	OK,meets criteria
Chloride	0.159	0.149	0.158	0.169	0.149	0.142	0.141	0.10	0.0101	3.143	**0.0317**	**0.50**	OK,meets criteria
Nitrite	0.033	0.027	0.030	0.027	0.030	0.026	0.026	0.020	0.0026	3.143	**0.0083**	**0.050**	OK,meets criteria
Nitrate	0.034	0.027	0.036	0.033	0.028	0.027	0.030	0.020	0.0036	3.143	**0.0114**	**0.050**	OK,meets criteria
Phosphate	0.050	0.053	0.060	0.046	0.049	0.062	0.044	0.050	0.0068	3.143	**0.0214**	**0.10**	OK,meets criteria
Sulfate	0.267	0.246	0.243	0.238	0.250	0.245	0.235	0.10	0.0104	3.143	**0.0327**	**0.50**	OK,meets criteria

Datafile: 15101201.D13 15101201.D14 15101201.D15 15101201.D16 15101201.D17 15101201.D18 15101201.D19

Bromide	0.074	0.045	0.102	0.055	0.057	0.071	0.061	0.10	0.0185	3.143	**0.0581**	**0.50**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R104112 **Analyst:** REB

ASSET #: N017427 **Date Analyzed:** 11/10/2015

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 15% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 15% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer REB 11/12/2015 Date: —

2nd Level Reviewer 11/13/2015 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N017427-001E**, concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5313*5

= 2.6565 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 2.7 mg/L

REB 11/12/2015

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

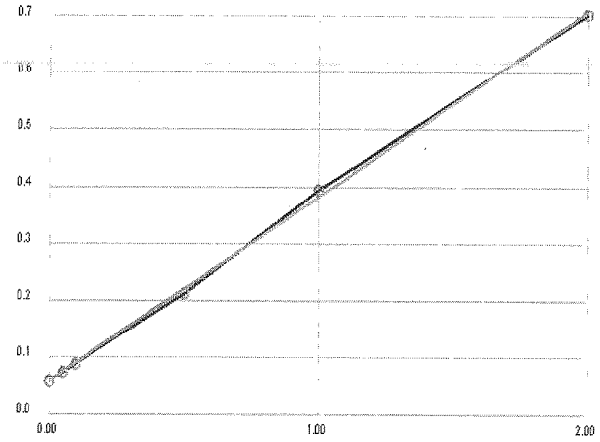
QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3255x + 0.0562
Correlation	.999647



Calibrant	Energy	Set	Conc
1	0.0579	0.0000	0.0053
2	0.0719	0.0500	0.0483
3	0.0864	0.1000	0.0929
4	0.2120	0.5000	0.4788
5	0.3940	1.0000	1.0380
6	0.7028	2.0000	1.9867

Notes:
R1 Buffer - R151019D
R2 COLORING Rgt - R151107A
2% CuSO4 - R151019C
STD 1 - 1SST-150202D
STD 2 - 150730E

REB 11/12/2015

402

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **ICV**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.485	0.050	0.5000	0	96.9	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **CCV**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.524	0.050	0.5000	0	105	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **CCV**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.8	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **CCV**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **ICB**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **CCB**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **CCB**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **104112**
Client ID: **CCB**	Batch ID: **R104112**	TestNo: **SM4500-NO3**		Analysis Date: **11/10/2015**	SeqNo: **2135683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 11/10/2015
Time Analyzed: 03:53 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R151019D
Color reagent: R151107A
2% Copper Sulfate: R151019C
Ammonium Hydroxide: CINV-150924A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N017427-001E		8.21						
2)	N017427-002E		7.98						
3)	N017469-002D		7.95						
4)	N017470-001D		7.31						
5)	N017470-002D		7.58						
6)	N017521-001C		7.52						
7)	N017521-002C		7.39						
8)	N017521-003C		7.22						
9)	N017521-004C		7.77						
10)	N017521-006C		7.66						
11)	N017521-007C		7.72						
12)	N017521-008C		7.04						
13)	N017521-009C		7.39						
14)	N017521-010C		7.60						
15)	N017521-011C		7.35						
16)	N017521-012C		7.44						
17)	N017521-013C		8.01						
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

REB 11/12/2015

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 11-10-2015 15:53
Time end: 11-10-2015 18:34

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:56:48	0.0096		0.0593
2	<BLANK>	17:57:49	-0.0005		0.0560
3	<CAL1>	17:58:43	0.0053	[0]	0.0579
4	<CAL2>	17:59:44	0.0483	[0.05]	0.0719
5	<CAL3>	18:00:39	0.0929	[0.1]	0.0864
6	<CAL4>	18:01:34	0.4788	[0.5]	0.2120
7	<CAL5>	18:02:34	1.0380	[1]	0.3940
8	<CAL6>	18:03:30	1.9867	[2]	0.7028
9	,BLANK,BLANK,1,	18:04:31	0.0247		0.0642
10	,ICV,ICV,1,	18:05:25	0.4846		0.2139
11	,ICB,ICB,1,	18:06:26	0.0075		0.0586
12	,MB-H2O,MBLK,1,	18:07:22	0.0062		0.0582
13	,LCS-H2O,LCS,1,	18:08:17	0.4988		0.2185
14	,N017427-001E,SAMP,5,	18:09:17	0.5313		0.2291
15	,N017427-001EDUP,DUP,5,	18:10:13	0.5175		0.2246
16	,N017427-001EMS,MS,5,	18:11:08	1.0373		0.3938
17	,N017427-001EMSD,MSD,5,	18:12:10	1.1295		0.4238
18	,N017427-002E,SAMP,5,	18:13:04	0.5617		0.2390
19	,N017469-002D,SAMP,5,	18:14:05	0.5513		0.2356
20	,N017470-001D,SAMP,1,	18:15:01	0.0351		0.0676
21	,BLANK,BLANK,1	18:16:01	0.0102		0.0595
22	,CCV-1,CCV,1,	18:16:56	0.5236		0.2266
23	,CCB-1,CCB,1,	18:17:52	0.0050		0.0578
24	,N017470-002D,SAMP,5,	18:18:40	0.6567		0.2699
NR 25	,N017521-001C,SAMP,5,	18:19:23	0.0993		0.0885
26	,N017521-002C,SAMP,1,	18:20:13	1.2997		0.4792

				EPA 353.2 NO3 as N		
				ppm	Flags	OD
	27	,N017521-003C,SAMP,1,	18:20:55	0.0459		0.0711
	28	,N017521-004C,SAMP,5,	18:21:38	0.9160		0.3543
	29	,N017521-006C,SAMP,10,	18:22:26	1.0773		0.4068
	30	,N017521-007C,SAMP,5,	18:23:09	0.5160		0.2241
	31	,N017521-008C,SAMP,5,	18:23:57	0.2308		0.1313
	32	,N017521-009C,SAMP,5,	18:24:40	0.6140		0.2560
	33	,BLANK,BLANK,1	18:25:24	0.0022		0.0569
	34	,CCV-2,CCV,1,	18:26:12	0.4791		0.2121
	35	,CCB-2,CCB,1,	18:26:55	0.0044		0.0576
NR	36	,N017521-010C,SAMP,5,	18:27:37	0.0665		0.0778
	37	,N017521-011C,SAMP,5,	18:28:26	0.6601		0.2710
NR	38	,N017521-012C,SAMP,5,	18:29:08	0.0152		0.0611
	39	,N017521-013C,SAMP,1,	18:29:52	0.3543		0.1715
	40	,BLANK,BLANK,1	18:30:41	0.0019		0.0568
	41	,CCV-3,CCV,1,	18:31:23	0.4994		0.2187
	42	,CCB-3,CCB,1,	18:32:06	0.0013		0.0566

REB 11/12/2015

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52897
ASSET #: N017427

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 11/3/2015

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N017427 only.
% Rec of Fe in N017400-001C MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/201 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 52897
ASSET #: N017427

Instrument ID: ICP-02
Analyst: CEI

Method:

Date Analyzed: 11/5/2015

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.			X			
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-130% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N017400-001 PS rerun only.
% Rec of Fe in N17400-001C PS failed. However LCS passed Criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 11/16/2015 Date:

2nd Level Reviewer 11/16/201 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N017427-002C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.10561 * 1 * (25/25) * 1000

Iron , ug/L = 105.61

Reporting results in two significant figures,

Iron , ug/L = 110



% RSD SUMMARY

RSD SUMMARY: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	16.15	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.23	15	PASS
Standard2	ICAL	1	Fe	0.05	0.0084	15	PASS
Standard3	ICAL	1	Fe	2	0.076	15	PASS
Standard4	ICAL	1	Fe	5	0.12	15	PASS
Standard5	ICAL	1	Fe	7.5	0.28	15	PASS
Standard6	ICAL	1	Fe	10	0.28	15	PASS
Standard7	ICAL	1	Fe	20	0.26	15	PASS
ICV	ICV	1	Fe	10.15	0.19	15	PASS
ICB	ICB	1	Fe	0.00017	531.0095	15	<PQL
LLCCV1	CCV1	1	Fe	0.02	1.63	20	PASS
ICSA1	ICSA	1	Fe	191.1	0.43	15	PASS
ICSAB1	ICSAB	1	Fe	189.08	0.55	15	PASS
LLCCV21	CCV1	1	Fe	0.02	2.44	20	PASS
ICSA1	ICSA	1	Fe	188.97	0.8	15	PASS
ICSAB1	ICSAB	1	Fe	187.79	0.68	15	PASS
CCV1	CCV	1	Fe	9.92	0.27	15	PASS
CCB1	CCB	1	Fe	-0.00012	433.88	15	<PQL
CCV2	CCV	1	Fe	9.83	0.32	15	PASS
CCB2	CCB	1	Fe	-0.00007	1006.53	15	<PQL
MB-52897	MBLK	1	Fe	-0.0028	7.091	15	PASS
LCS-52897	LCS	1	Fe	0.093	0.025	15	PASS
N017400-001C	SAMP	1	Fe	0.065	1.041	15	PASS
N017400-001C	SAMP	5	Fe	0.099	0.25	15	PASS
CCV3	CCV	1	Fe	11.35	0.99	15	PASS
CCV3	CCV	1	Fe	10.25	0.55	15	PASS
CCB3	CCB	1	Fe	-0.00005	1482.075	15	<PQL
LLCCV2	CCV1	1	Fe	0.019	2.71	20	PASS
ICSA2	ICSA	1	Fe	188.14	0.23	15	PASS
ICSAB2	ICSAB	1	Fe	186.36	0.21	15	PASS
LLCCV2	CCV1	1	Fe	0.031	13.012	20	PASS
ICSA2	ICSA	1	Fe	187.52	0.51	15	PASS
ICSAB2	ICSAB	1	Fe	186.41	0.3	15	PASS
N017400-001C-MS1	MS1	1	Fe	0.13	3.43	15	PASS
N017400-001C-MSD1	MSD1	1	Fe	0.13	0.11	15	PASS
N017400-002C	SAMP	1	Fe	0.037	1.48	15	PASS
N017415-001C	SAMP	1	Fe	0.046	0.29	15	PASS
N017415-002C	SAMP	1	Fe	0.031	0.12	15	PASS
N017415-003C	SAMP	1	Fe	0.033	0.72	15	PASS
N017415-004C	SAMP	1	Fe	0.071	0.61	15	PASS
N017415-005C	SAMP	1	Fe	0.086	0.11	15	PASS
N017415-006C	SAMP	1	Fe	0.063	0.59	15	PASS

RSD SUMMARY: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N017415-007C	SAMP	1	Fe	0.036	1.55	15	PASS
CCV4	CCV	1	Fe	9.74	0.34	15	PASS
CCB4	CCB	1	Fe	-0.00009	377.44	15	<PQL
N017427-001C	SAMP	1	Fe	0.027	0.27	15	PASS
N017427-002C	SAMP	1	Fe	0.11	0.74	15	PASS
N017427-002C-MS	MS	1	Fe	0.17	0.8	15	PASS
CCV5	CCV	1	Fe	9.38	0.041	15	PASS
CCV5	CCV	1	Fe	9.36	0.19	15	PASS
CCV5	CCV	1	Fe	9.32	0.19	15	PASS
CCB5	CCB	1	Fe	0.00049	180.76	15	<PQL
LLCCV3	CCV1	1	Fe	0.019	0.88	20	PASS
LLCCV3	CCV1	1	Fe	0.018	1.9	20	PASS
ICSA3	ICSA	1	Fe	175.95	0.26	15	PASS
ICSAB3	ICSAB	1	Fe	175.02	0.11	15	PASS

RSD SUMMARY: 151105D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	32.54	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.62	15	PASS
Standard2	ICAL	1	Fe	0.05	1.21	15	PASS
Standard3	ICAL	1	Fe	2	0.91	15	PASS
Standard4	ICAL	1	Fe	5	0.52	15	PASS
Standard5	ICAL	1	Fe	7.5	0.66	15	PASS
Standard6	ICAL	1	Fe	10	0.67	15	PASS
Standard7	ICAL	1	Fe	20	0.55	15	PASS
ICV	ICV	1	Fe	10.29	0.43	15	PASS
LLCCV1	CCV1	1	Fe	0.035	14.34	20	PASS
ICB	ICB	1	Fe	-0.0015	71.61	15	<PQL
LLCCV1	CCV1	1	Fe	0.021	18.66	20	PASS
ICSA1	ICSA	1	Fe	188.34	0.28	15	PASS
ICSAB1	ICSAB	1	Fe	185.12	1.14	15	PASS
N017400-001C-PS	PS	1	Fe	0.18	12.53	15	PASS
CCV1	CCV	1	Fe	10.12	0.88	15	PASS
CCB1	CCB	1	Fe	-0.00027	310.77	15	<PQL
LLCCV2	CCV1	1	Fe	0.021	8.51	20	PASS
ICSA2	ICSA	1	Fe	188.83	0.43	15	PASS
ICSAB2	ICSAB	1	Fe	340.72	78.93	15	NR!
ICSAB2	ICSAB	1	Fe	185.72	0.79	15	PASS
CalBlk	IBLK	1	Y	0	0.59	15	PASS
Standard1	ICAL	1	Y	1.023	0.83	15	PASS
Standard2	ICAL	1	Y	1.066	0.66	15	PASS
Standard3	ICAL	1	Y	1.045	0.93	15	PASS
Standard4	ICAL	1	Y	1.13	0.94	15	PASS
Standard5	ICAL	1	Y	1.21	0.62	15	PASS
Standard6	ICAL	1	Y	1.06	0.73	15	PASS
Standard7	ICAL	1	Y	1.029	0.56	15	PASS
ICV	ICV	1	Y	1.043	0.42	15	PASS
LLCCV1	CCV1	1	Y	1.04	1.22	20	PASS
ICB	ICB	1	Y	1.012	0.91	15	PASS
LLCCV1	CCV1	1	Y	1.0044	0.4	20	PASS
ICSA1	ICSA	1	Y	0.88	0.25	15	PASS
ICSAB1	ICSAB	1	Y	0.93	0.48	15	PASS
N017400-001C-PS	PS	1	Y	0.92	0.53	15	PASS
CCV1	CCV	1	Y	1.058	0.85	15	PASS
CCB1	CCB	1	Y	0.99	0.46	15	PASS
LLCCV2	CCV1	1	Y	1.039	1.71	20	PASS
ICSA2	ICSA	1	Y	0.87	0.19	15	PASS
ICSAB2	ICSAB	1	Y	0.7	55.17	15	NR!
ICSAB2	ICSAB	1	Y	0.88	0.37	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 151103C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/03/2015	03:16:19 PM
2	Standard1	ICAL	1	11/03/2015	03:20:39 PM
3	Standard2	ICAL	1	11/03/2015	03:25:28 PM
4	Standard3	ICAL	1	11/03/2015	03:30:19 PM
5	Standard4	ICAL	1	11/03/2015	03:35:11 PM
6	Standard5	ICAL	1	11/03/2015	03:40:38 PM
7	Standard6	ICAL	1	11/03/2015	03:46:01 PM
8	Standard7	ICAL	1	11/03/2015	03:51:24 PM
9	ICV	ICV	1	11/03/2015	03:56:27 PM
1	ICB	ICB	1	11/03/2015	04:01:53 PM
2	LLCCV1	CCV1	1	11/03/2015	04:06:41 PM
4	ICSA1	ICSA	1	11/03/2015	04:11:31 PM
5	ICSAB1	ICSAB	1	11/03/2015	04:17:06 PM
2	LLCCV21	CCV1	1	11/03/2015	04:40:42 PM
4	ICSA1	ICSA	1	11/03/2015	04:45:31 PM
5	ICSAB1	ICSAB	1	11/03/2015	04:51:06 PM
38	MB-52853	MBLK	1	11/03/2015	04:56:41 PM
39	LCS-52853	LCS	1	11/03/2015	05:12:53 PM
40	N017381-004B	SAMP	1	11/03/2015	05:18:45 PM
41	N017381-004B	SAMP	5	11/03/2015	05:22:32 PM
42	N017381-004B-PS	PS	1	11/03/2015	05:27:23 PM
43	N017381-004B-MS	MS	1	11/03/2015	05:32:48 PM
44	N017381-004B-MSD	MSD	1	11/03/2015	05:38:13 PM
45	N017381-008B	SAMP	1	11/03/2015	05:43:38 PM
46	N017381-009B	SAMP	1	11/03/2015	05:48:28 PM
47	N017381-010B	SAMP	1	11/03/2015	05:54:24 PM
7	CCV1	CCV	1	11/03/2015	05:58:45 PM
1	CCB1	CCB	1	11/03/2015	06:04:11 PM



11/6/2015

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N017381-011B	SAMP	1	11/03/2015	06:08:30 PM
49	N017381-012B	SAMP	1	11/03/2015	06:14:32 PM
50	N017381-013B	SAMP	1	11/03/2015	06:19:24 PM
51	N017382-001B	SAMP	1	11/03/2015	06:24:46 PM
52	N017382-002B	SAMP	1	11/03/2015	06:30:10 PM
53	N017382-003B	SAMP	1	11/03/2015	06:35:34 PM
54	N017382-004B	SAMP	1	11/03/2015	06:39:58 PM
55	N017382-004B-MS	MS	1	11/03/2015	06:44:20 PM
56	N017382-005B	SAMP	1	11/03/2015	06:49:45 PM
57	N017382-006B	SAMP	1	11/03/2015	06:55:09 PM
7	CCV2	CCV	1	11/03/2015	07:00:33 PM
1	CCB2	CCB	1	11/03/2015	07:05:59 PM
58	N017382-007B	SAMP	1	11/03/2015	07:10:18 PM
59	N017382-008B	SAMP	1	11/03/2015	07:15:40 PM
60	N017382-009B	SAMP	1	11/03/2015	07:20:05 PM
61	N017382-010B	SAMP	1	11/03/2015	07:24:31 PM
62	N017390-001B	SAMP	1	11/03/2015	07:29:23 PM
63	MB-52897	MBLK	1	11/03/2015	07:34:46 PM
64	LCS-52897	LCS	1	11/03/2015	07:39:07 PM
65	N017400-001C	SAMP	1	11/03/2015	07:44:59 PM
66	N017400-001C	SAMP	5	11/03/2015	07:50:23 PM
7	CCV3	CCV	1	11/03/2015	08:10:05 PM
7	CCV3	CCV	1	11/03/2015	08:14:43 PM
1	CCB3	CCB	1	11/03/2015	08:20:07 PM
2	LLCCV2	CCV1	1	11/03/2015	08:24:56 PM
4	ICSA2	ICSA	1	11/03/2015	08:29:45 PM
5	ICSAB2	ICSAB	1	11/03/2015	08:35:20 PM
2	LLCCV2	CCV1	1	11/03/2015	08:39:53 PM
4	ICSA2	ICSA	1	11/03/2015	08:44:42 PM
5	ICSAB2	ICSAB	1	11/03/2015	08:50:17 PM
68	N017400-001C-MS1	MS1	1	11/03/2015	08:55:52 PM
69	N017400-001C-MSD1	MSD1	1	11/03/2015	09:01:17 PM
70	N017400-002C	SAMP	1	11/03/2015	09:06:42 PM
71	N017415-001C	SAMP	1	11/03/2015	09:12:05 PM
72	N017415-002C	SAMP	1	11/03/2015	09:17:29 PM
73	N017415-003C	SAMP	1	11/03/2015	09:22:53 PM
74	N017415-004C	SAMP	1	11/03/2015	09:27:44 PM
75	N017415-005C	SAMP	1	11/03/2015	09:33:08 PM
76	N017415-006C	SAMP	1	11/03/2015	09:38:30 PM
77	N017415-007C	SAMP	1	11/03/2015	09:43:53 PM
7	CCV4	CCV	1	11/03/2015	09:49:15 PM
1	CCB4	CCB	1	11/03/2015	09:54:40 PM
78	N017427-001C	SAMP	1	11/03/2015	09:59:28 PM
79	N017427-002C	SAMP	1	11/03/2015	10:04:51 PM
80	N017427-002C-MS	MS	1	11/03/2015	10:10:15 PM
7	CCV5	CCV	1	11/03/2015	10:15:40 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	11/03/2015	10:19:47 PM
7	CCV5	CCV	1	11/03/2015	10:23:51 PM
1	CCB5	CCB	1	11/03/2015	10:29:15 PM
2	LLCCV3	CCV1	1	11/03/2015	10:34:04 PM
2	LLCCV3	CCV1	1	11/03/2015	10:38:49 PM
4	ICSA3	ICSA	1	11/03/2015	10:43:38 PM
5	ICSAB3	ICSAB	1	11/03/2015	10:49:42 PM

INJECTION LOG: 151105D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-150602C,0.5<50mL
Standard2	MWST-150915D
Standard3	MWST-150909E,5<50mL
Standard4	MWST-150909E,12.5<50mL
Standard5	MWST-150909E,15<40mL
Standard6	MWST-150909E,25<50mL
Standard7	MWST-150909E
ICV	MWST-150720B
CCV	MWST-150909E,25<50mL
ICSA/ICSAB	MWST-150914A/MWST-150916A
Int. Std. (Y)	MWST-150601N
PS Spike	MWST-150916C/D/MWST-150601G

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	11/05/2015	04:31:26 PM
2	Standard1	ICAL	1	11/05/2015	04:35:47 PM
3	Standard2	ICAL	1	11/05/2015	04:40:35 PM
4	Standard3	ICAL	1	11/05/2015	04:44:57 PM
5	Standard4	ICAL	1	11/05/2015	04:49:20 PM
6	Standard5	ICAL	1	11/05/2015	04:53:45 PM
7	Standard6	ICAL	1	11/05/2015	04:58:07 PM
8	Standard7	ICAL	1	11/05/2015	05:02:30 PM
9	ICV	ICV	1	11/05/2015	05:05:02 PM
2	LLCCV1	CCV1	1	11/05/2015	05:10:26 PM
1	ICB	ICB	1	11/05/2015	05:15:15 PM
2	LLCCV1	CCV1	1	11/05/2015	05:18:17 PM
4	ICSA1	ICSA	1	11/05/2015	05:23:32 PM
5	ICSAB1	ICSAB	1	11/05/2015	05:29:06 PM
35	N017381-009B	SAMP	1	11/05/2015	05:34:39 PM
36	N017400-001C-PS	PS	1	11/05/2015	05:40:35 PM
7	CCV1	CCV	1	11/05/2015	05:45:59 PM
1	CCB1	CCB	1	11/05/2015	05:54:03 PM
2	LLCCV2	CCV1	1	11/05/2015	06:00:24 PM
4	ICSA2	ICSA	1	11/05/2015	06:04:24 PM
5	ICSAB2	ICSAB	1	11/05/2015	06:09:56 PM
5	ICSAB2	ICSAB	1	11/05/2015	06:13:52 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:00**
Prep End Date: **11/2/2015 3:00:00 P**
Initials/ Date: 11/11/2015

Prep Batch **52897** Prep Code: **3010_W** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-52897	Aqueous		25	☐	0	0	25	1.000		
MB-52897	Aqueous		25	☐	0	0	25	1.000		
N017400-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N017400-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N017415-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-001C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **11/2/2015 11:00:00**
Prep End Date: **11/2/2015 3:00:00 P**

Initials/ Date: 11/11/2015

Prep Batch **52897** Prep Code: **3010_W** Technician: **Claire Ignacio**

Prep Factor Units:	Temp. (°C):	Location:
mL / mL	**94.5**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N017427-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N017427-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
7798	NITRIC ACID
7860	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-150601G	ICP Solution B	LCS/MS/MSD	0.5
MWST-150916D	ICP Solution A	LCS/MS/MSD	0.5
MWST-151002C	ICP Solution C	LCS/MS/MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 151103C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	11/03/2015	03:16:19 PM	Fe	273.953	-71	0.00	mg/L	
Standard1	11/03/2015	03:20:39 PM	Fe	273.953	1167	0.0200	mg/L	
Standard2	11/03/2015	03:25:28 PM	Fe	273.953	3071	0.050	mg/L	
Standard3	11/03/2015	03:30:19 PM	Fe	273.953	121532	2.000	mg/L	
Standard4	11/03/2015	03:35:11 PM	Fe	273.953	288755	5.000	mg/L	
Standard5	11/03/2015	03:40:38 PM	Fe	273.953	436888	7.500	mg/L	
Standard6	11/03/2015	03:46:01 PM	Fe	273.953	569736	10.000	mg/L	
Standard7	11/03/2015	03:51:24 PM	Fe	273.953	1119134	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 151105D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	11/05/2015	04:31:26 PM	Fe	273.953	154	0.00	mg/L	
Standard1	11/05/2015	04:35:47 PM	Fe	273.953	795	0.0200	mg/L	
Standard2	11/05/2015	04:40:35 PM	Fe	273.953	2084	0.050	mg/L	
Standard3	11/05/2015	04:44:57 PM	Fe	273.953	81475	2.000	mg/L	
Standard4	11/05/2015	04:49:20 PM	Fe	273.953	197796	5.000	mg/L	
Standard5	11/05/2015	04:53:45 PM	Fe	273.953	299968	7.500	mg/L	
Standard6	11/05/2015	04:58:07 PM	Fe	273.953	394945	10.000	mg/L	
Standard7	11/05/2015	05:02:30 PM	Fe	273.953	776695	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10149.703	20	10000	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ZZZZZZ**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.360	20	20.00	0	102	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9917.450	20	10000	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9831.217	20	10000	0	98.3	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCV**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10253.870	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**LLCCV2**	SampType:	**CCV2**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**103949**
Client ID:	**ZZZZZZ**	Batch ID:	**R103949**	TestNo:	**EPA 6010B**			Analysis Date:	**11/3/2015**	SeqNo:	**2125069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.478	20	20.00	0	97.4	70	130				

Sample ID	**CCV4**	SampType:	**CCV**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**103949**
Client ID:	**CCV**	Batch ID:	**R103949**	TestNo:	**EPA 6010B**			Analysis Date:	**11/3/2015**	SeqNo:	**2125233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9738.704	20	10000	0	97.4	90	110				

Sample ID	**CCV5**	SampType:	**CCV**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**103949**
Client ID:	**CCV**	Batch ID:	**R103949**	TestNo:	**EPA 6010B**			Analysis Date:	**11/3/2015**	SeqNo:	**2125240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9317.973	20	10000	0	93.2	90	110				

Sample ID	**LLCCV3**	SampType:	**CCV2**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**103949**
Client ID:	**ZZZZZZ**	Batch ID:	**R103949**	TestNo:	**EPA 6010B**			Analysis Date:	**11/3/2015**	SeqNo:	**2125243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.090	20	20.00	0	90.4	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICV**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10287.835	20	10000	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ZZZZZZ**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	21.175	20	20.00	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **CCV**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10121.501	20	10000	0	101	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ZZZZZZ**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.550	20	20.00	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **ICB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.171	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.116071	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.066817	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125068**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.05022	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.0912	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103949**
Client ID: **CCB**	Batch ID: **R103949**	TestNo: **EPA 6010B**		Analysis Date: **11/3/2015**	SeqNo: **2125241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.493	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.473729	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **CCB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.268411	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	522197.952	50	500000	0	104	80	120				
Calcium	533293.859	500	500000	0	107	80	120				
Iron	191098.192	20	200000	0	95.5	80	120				
Magnesium	508367.208	100	500000	0	102	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	520565.338	50	500000	0	104	80	120				
Calcium	523519.800	500	500000	0	105	80	120				
Iron	189075.169	20	200000	0	94.5	80	120				
Magnesium	500521.307	100	500000	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125070**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511820.697	50	500000	0	102	80	120				
Calcium	528613.860	500	500000	0	106	80	120				
Iron	188139.807	20	200000	0	94.1	80	120				
Magnesium	530506.249	100	500000	0	106	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509531.192	50	500000	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	517741.745	500	500000	0	104	80	120				
Iron	186360.276	20	200000	0	93.2	80	120				
Magnesium	524245.526	100	500000	0	105	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSA** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	485044.316	50	500000	0	97.0	80	120				
Calcium	491576.473	500	500000	0	98.3	80	120				
Iron	175953.287	20	200000	0	88.0	80	120				
Magnesium	487302.097	100	500000	0	97.5	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103949**
Client ID: **ICSAB** Batch ID: **R103949** TestNo: **EPA 6010B** Analysis Date: **11/3/2015** SeqNo: **2125245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	484010.434	50	500000	0	96.8	80	120				
Calcium	483361.945	500	500000	0	96.7	80	120				
Iron	175021.966	20	200000	0	87.5	80	120				
Magnesium	484715.603	100	500000	0	96.9	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSA** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	513899.116	50	500000	0	103	80	120				
Calcium	523091.708	500	500000	0	105	80	120				
Iron	188344.143	20	200000	0	94.2	80	120				
Magnesium	488163.189	100	500000	0	97.6	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSAB** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511279.096	50	500000	0	102	80	120				
Calcium	512160.537	500	500000	0	102	80	120				
Iron	185115.938	20	200000	0	92.6	80	120				
Magnesium	477579.616	100	500000	0	95.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSA** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	513872.997	50	500000	0	103	80	120				
Calcium	521978.836	500	500000	0	104	80	120				
Iron	188826.337	20	200000	0	94.4	80	120				
Magnesium	490683.444	100	500000	0	98.1	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **103994**
Client ID: **ICSAB** Batch ID: **R103994** TestNo: **EPA 6010B** Analysis Date: **11/5/2015** SeqNo: **2128181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	509450.811	50	500000	0	102	80	120				
Calcium	511985.784	500	500000	0	102	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **103994**
Client ID: **ICSAB**	Batch ID: **R103994**	TestNo: **EPA 6010B**		Analysis Date: **11/5/2015**	SeqNo: **2128181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	185724.915	20	200000	0	92.9	80	120				
Magnesium	477963.988	100	500000	0	95.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	97.46	65-125	PASS
Standard2	ICAL	1	1.1	109.97	65-125	PASS
Standard3	ICAL	1	1.058	105.75	65-125	PASS
Standard4	ICAL	1	0.96	96.38	65-125	PASS
Standard5	ICAL	1	1.016	101.61	65-125	PASS
Standard6	ICAL	1	0.97	97.25	65-125	PASS
Standard7	ICAL	1	0.96	96.45	65-125	PASS
ICV	ICV	1	0.97	97.11	65-125	PASS
ICB	ICB	1	0.98	97.88	65-125	PASS
LLCCV1	CCV1	1	0.96	96.38	65-125	PASS
ICSA1	ICSA	1	0.81	80.62	65-125	PASS
ICSAB1	ICSAB	1	0.85	84.68	65-125	PASS
LLCCV21	CCV1	1	1.0006	100.06	65-125	PASS
ICSA1	ICSA	1	0.81	81.48	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.025	65-125	PASS
CCV1	CCV	1	0.99	98.63	65-125	PASS
CCB1	CCB	1	0.99	99.37	65-125	PASS
CCV2	CCV	1	1.0002	100.02	65-125	PASS
CCB2	CCB	1	1.0081	100.81	65-125	PASS
MB-52897	MBLK	1	1.0024	100.24	65-125	PASS
LCS-52897	LCS	1	1.01	101	65-125	PASS
N017400-001C	SAMP	1	0.84	83.78	65-125	PASS
N017400-001C	SAMP	5	0.91	91.11	65-125	PASS
CCV3	CCV	1	0.9	89.54	65-125	PASS
CCV3	CCV	1	0.95	94.69	65-125	PASS
CCB3	CCB	1	0.98	98.39	65-125	PASS
LLCCV2	CCV1	1	0.98	98.25	65-125	PASS
ICSA2	ICSA	1	0.82	81.66	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.13	65-125	PASS
LLCCV2	CCV1	1	1	99.63	65-125	PASS
ICSA2	ICSA	1	0.82	82	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.19	65-125	PASS
N017400-001C-MS1	MS1	1	0.85	84.52	65-125	PASS
N017400-001C-MSD1	MSD1	1	0.83	82.67	65-125	PASS
N017400-002C	SAMP	1	0.84	83.84	65-125	PASS
N017415-001C	SAMP	1	0.84	83.53	65-125	PASS
N017415-002C	SAMP	1	0.83	82.68	65-125	PASS
N017415-003C	SAMP	1	0.84	83.61	65-125	PASS
N017415-004C	SAMP	1	0.8	80.38	65-125	PASS
N017415-005C	SAMP	1	0.82	82.5	65-125	PASS

INTERNAL STANDARD: 151103C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N017415-006C	SAMP	1	0.82	81.56	65-125	PASS
N017415-007C	SAMP	1	0.78	77.98	65-125	PASS
CCV4	CCV	1	1	99.54	65-125	PASS
CCB4	CCB	1	1.001	100.1	65-125	PASS
N017427-001C	SAMP	1	0.84	84.27	65-125	PASS
N017427-002C	SAMP	1	0.82	82.49	65-125	PASS
N017427-002C-MS	MS	1	0.8	80.021	65-125	PASS
CCV5	CCV	1	0.93	93.49	65-125	PASS
CCV5	CCV	1	0.94	94.043	65-125	PASS
CCV5	CCV	1	0.94	93.63	65-125	PASS
CCB5	CCB	1	0.94	93.91	65-125	PASS
LLCCV3	CCV1	1	0.95	94.5	65-125	PASS
LLCCV3	CCV1	1	0.94	94.12	65-125	PASS
ICSA3	ICSA	1	0.77	77.44	65-125	PASS
ICSAB3	ICSAB	1	0.81	80.55	65-125	PASS

INTERNAL STANDARD: 151105D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.023	102.26	65-125	PASS
Standard2	ICAL	1	1.066	106.64	65-125	PASS
Standard3	ICAL	1	1.045	104.48	65-125	PASS
Standard4	ICAL	1	1.13	112.86	65-125	PASS
Standard5	ICAL	1	1.21	121.01	65-125	PASS
Standard6	ICAL	1	1.06	106.01	65-125	PASS
Standard7	ICAL	1	1.029	102.9	65-125	PASS
ICV	ICV	1	1.043	104.3	65-125	PASS
LLCCV1	CCV1	1	1.04	103.98	65-125	PASS
ICB	ICB	1	1.012	101.2	65-125	PASS
LLCCV1	CCV1	1	1.0044	100.44	65-125	PASS
ICSA1	ICSA	1	0.88	87.52	65-125	PASS
ICSAB1	ICSAB	1	0.93	93.1	65-125	PASS
N017400-001C-PS	PS	1	0.92	91.94	65-125	PASS
CCV1	CCV	1	1.058	105.77	65-125	PASS
CCB1	CCB	1	0.99	99.41	65-125	PASS
LLCCV2	CCV1	1	1.039	103.89	65-125	PASS
ICSA2	ICSA	1	0.87	86.66	65-125	PASS
ICSAB2	ICSAB	1	0.7	70.29	65-125	PASS
ICSAB2	ICSAB	1	0.88	87.65	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N017427
Test Method: EPA 6010B
Analysis Date: 11/03/15

Matrix: Groundwater
Batch No.: 52897

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25XRL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPrefval	%DIFF	%DIFFlimit
N017400-001C -DT 5X	Iron	ug/L	495.5276	NA	65.31289	658.70%	10

Note: NA - Not Applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N017427
Project: PG&E Topock - CMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **N017400-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:			RunNo: **103994**		
Client ID: **ZZZZZZ**	Batch ID: **52897**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **11/5/2015**			SeqNo: **2128175**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	175.139	20	100.0	65.3 0	109.8 175	80	120				S

11/13/2015
for

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2015

Method Name: **Metals by ICP**
Method Number: EPA 6010/200.7
Preparation Method: EPA 3010/200.7_PR
Analysis Date(s): 3/19/2015, 3/30/2015; 4/9/2015; 4/11/2015
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

	Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	#8	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Al	Aluminum	237.313	0.05811	0.05621	0.05336	0.04884	0.04893	0.04862	0.04986		0.050	0.00392	3.143	**0.01233**	**0.050**	OK,meets criteria
Sb	Antimony	206.834	0.00930	0.00874	0.00843	0.00877	0.00858	0.00862	0.00798		0.010	0.00040	3.143	**0.00125**	**0.010**	OK,meets criteria
As	Arsenic	188.98	0.00940	0.00905	0.00993	0.00939	0.00957	0.00915	0.00986		0.010	0.00033	3.143	**0.00105**	**0.010**	OK,meets criteria
Ba	Barium	233.525	0.00142	0.00144	0.00144	0.00151	0.00176	0.00150	0.00148		0.00125	0.00012	3.143	**0.00037**	**0.0025**	OK,meets criteria
Be	Beryllium	313.106	0.00038	0.00036	0.00033	0.00031	0.00028	0.00029	0.00028		0.00020	0.00004	3.143	**0.00012**	**0.0010**	OK,meets criteria
B	Boron	249.678	0.06431	0.06607	0.06181	0.06077	0.05932	0.05772	0.05682		0.10	0.00338	3.143	**0.01061**	**0.10**	OK,meets criteria
Cd	Cadmium	214.437	0.00082	0.00080	0.00081	0.00082	0.00092	0.00071	0.00073		0.00125	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Ca	Calcium	227.546	0.20747	0.20024	0.19135	0.21329	0.19037	0.18920	0.20739		0.20	0.00976	3.143	**0.03067**	**0.20**	OK,meets criteria
Cr	Chromium	267.719	0.00021	0.00024	0.00010	0.00011	0.00011	0.00009	0.00009		0.000333	0.00006	3.143	**0.00020**	**0.0010**	OK,meets criteria
Co	Cobalt	228.614	0.00089	0.00084	0.00101	0.00103	0.00095	0.00095	0.00089		0.000833	0.00007	3.143	**0.00022**	**0.0025**	OK,meets criteria
Cu	Copper	324.755	0.00098	0.00109	0.00098	0.00128	0.00154	0.00095	0.00302		0.0025	0.00074	3.143	**0.00233**	**0.0050**	OK,meets criteria
Fe	Iron	273.953	0.02141	0.01924	0.01879	0.01009	0.00985	0.00952	0.00949		0.020	0.00545	3.143	**0.01713**	**0.020**	OK,meets criteria
Pb	Lead	220.354	0.00320	0.00326	0.00317	0.00375	0.00342	0.00287	0.00317		0.003	0.00027	3.143	**0.00085**	**0.010**	OK,meets criteria
Mg	Magnesium	279.077	0.09916	0.10579	0.10489	0.05309	0.05274	0.05277	0.05135		0.10	0.02723	3.143	**0.08560**	**0.10**	OK,meets criteria
Mn	Manganese	257.608	0.00492	0.00533	0.00493	0.00464	0.00467	0.00489	0.00488		0.0050	0.00023	3.143	**0.00071**	**0.010**	OK,meets criteria
Mo	Molybdenum	202.031	0.00187	0.00182	0.00175	0.00181	0.00184	0.00164	0.00163		0.0025	0.00010	3.143	**0.00030**	**0.0050**	OK,meets criteria
Ni	Nickel	231.604	0.00541	0.00535	0.00526	0.00491	0.00500	0.00489	0.00486		0.0050	0.00024	3.143	**0.00074**	**0.0050**	OK,meets criteria
Se	Selenium	196.025	0.00935	0.00882	0.00994	0.01066	0.00892	0.00985	0.00955		0.010	0.00064	3.143	**0.00200**	**0.010**	OK,meets criteria
Si	Silicon	251.61	0.01696	0.01667	0.01592	0.00853	0.00725	0.00712	0.00772		0.020	0.00477	3.143	**0.01499**	**0.020**	OK,meets criteria
Ag	Silver	328.069	0.00113	0.00109	0.00116	0.00122	0.00115	0.00109	0.00103		0.00125	0.00006	3.143	**0.00019**	**0.0025**	OK,meets criteria
Tl	Thallium	190.794	0.00436	0.00400	0.00452	0.00408	0.00475	0.00376	0.00440		0.0050	0.00034	3.143	**0.00106**	**0.015**	OK,meets criteria
Sn	Tin	189.927	0.00345	0.00354	0.00337	0.00373	0.00357	0.00309	0.00373		0.0033	0.00022	3.143	**0.00070**	**0.010**	OK,meets criteria
Ti	Titanium	334.943	0.00228	0.00216	0.00214	0.00215	0.00195	0.00214	0.00214		0.0020	0.00010	3.143	**0.00030**	**0.010**	OK,meets criteria
V	Vanadium	292.403	0.00135	0.00130	0.00127	0.00129	0.00120	0.00135	0.00129		0.00125	0.00005	3.143	**0.00016**	**0.0025**	OK,meets criteria
Zn	Zinc	206.2	0.01170	0.01021	0.01063	0.01140	0.00999	0.00994	0.00985		0.010	0.00075	3.143	**0.00235**	**0.010**	OK,meets criteria
K	Potassium	766.451	0.12487	0.15815	0.17378	0.18861	0.18551	0.17627	0.18947		0.10	0.02306	3.143	**0.07248**	**0.50**	OK,meets criteria
Na	Sodium	589.594	0.10288	0.10082	0.09626	0.09658	0.10642	0.09738	0.09935		0.10	0.00372	3.143	**0.01170**	**0.50**	OK,meets criteria
Sr	Strontium	407.75	0.00326	0.00332	0.00329	0.00354	0.0033	0.00345	0.00331		0.003125	0.00010	3.143	**0.00032**	**0.025**	OK,meets criteria
Bi	Bismuth	223.061	0.01500	0.01061	0.01427	0.01565	0.01195	0.01042	0.01127		0.010	0.00218	3.143	**0.00686**	**0.010**	OK,meets criteria
Li	Lithium	610.331	0.04054	0.03963	0.03969	0.03995	0.04045	0.03770	0.04121	0.04379	0.050	0.00172	2.998	**0.00516**	**0.10**	OK,meets criteria

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING
Established 1931
3337 MICHELSON DRIVE, SUITE CN 750
IRVINE, CA 92612
(714) 730-6239 • FAX (714) 730-6462
www.truesdail.com

REPORT

Advanced Technology Laboratories-NV

3151 W Post Rd
Las Vegas, NV 89118

Project Name: **ATL-NV**

Table of Contents

Truesdail Laboratories, Inc. Data Package

For Laboratory Number 15K0049

ITEM	Section
Case Narrative	1.0
Summary of Final Results	2.0
Final Reports	3.0
Chain of Custody and Sample Receipt Records	4.0
Sample Preparation and Analytical Raw Data	5.0

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.
EXCELLENCE IN INDEPENDENT TESTING
Established 1931
14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Client: **Advanced Technology Laboratories-NV**
3151 W Post Rd
Las Vegas, NV 89118
Attention: Marlon Cartin
Project Name: ATL-NV

Work Order No.: 15K0049
Printed: 11/09/2015

CASE NARRATIVE

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Ammonia result. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, wet chemistry raw data, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

The samples were received and delivered with the chain of custody on November 3, 2015, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter will be kept in warm storage for additional 2 months before disposal.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 201.

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
CW-01D-4Q15	15K0049-01	Wastewater	Grab	10/29/2015 08:32	11/03/2015 10:10
CW-01M-4Q15	15K0049-02	Wastewater	Grab	10/29/2015 09:21	11/03/2015 10:10

DEFINITIONS

Symbol	Definition
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,



Lyn Phaerakkakit
Project Manager

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

Section 2.0

Summary of Final Results

CW-01D-4Q15

15K0049-01 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 13:44	AL	SM 4500-NH3 D M	

CW-01M-4Q15

15K0049-02 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
Truesdail Laboratories, Inc									
Wet Chemistry									
Ammonia	ND	0.0500	mg/L	1	1511013	11/03/2015 13:46	AL	SM 4500-NH3 D M	

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

TRUESDAIL LABORATORIES, INC.
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3337 MICHELSON DRIVE, SUITE CN750
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www.truesdail.com

Client: Advanced Technology Laboratories - NV
3151 W Post Road
Las Vegas, NV 89118
Attention: Marlon Cartin
Sample: Two (2) Water Samples
Project Name: PG&E Topock Project
Project No.: N/A

Laboratory No.: 15K0049
Date: November 9, 2015
Collected: October 29, 2015
Received: November 3, 2015

ANALYST LIST

METHOD	PARAMETER	ANALYST
SM 4500-NH3 D	Ammonia	Alex Luna

Section 3.0

Final Reports

Method: SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **CW-01D-4Q15**
Lab Sample ID: **15K0049-01**
Project: **ATL-NV**

Date Sampled: 10/29/15 08:32 Matrix: Wastewater

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 13:44	SM 4500-NH3 D M

ANALYSIS DATA SHEET

Inorganics

Client: **Advanced Technology Laboratories-NV**
Client Sample ID: **CW-01M-4Q15**
Lab Sample ID: **15K0049-02**
Project: **ATL-NV**

Date Sampled: 10/29/15 09:21 Matrix: Wastewater

CAS NO.	Analyte	Concentration (mg/L)	MDL	RL	DF	Q	Analyst	Analyzed	Method
7664-41-7	Ammonia	ND	0.0318	0.0500	1		AL	11/03/15 13:46	SM 4500-NH3 D M

METHOD BLANK DATA SHEET

SM 4500-NH3 D M

Client: Advanced Technology Laboratories-NV

Project: ATL-NV
Laboratory ID: 1511013-BLK1

Prepared:	11/03/15 10:45	Preparation:	SM 4500-NH3 B	Matrix:	Water
Analyzed:	11/03/15 11:20	Instrument:	TL01	File ID:	5K02003-026
Batch:	1511013	Sequence:	5K02003		

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	RL	Q
7664-41-7	Ammonia	ND	0.0318	0.0500	

LCS / LCS DUPLICATE RECOVERY

SM 4500-NH3 D M

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**
Work Order: **15K0049**

Matrix:	Water	Prep Method:	SM 4500-NH3 B
Prep Batch:	1511013	Lab Sample ID:	1511013-BS1

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Ammonia	0.400	0.362	90	90 - 110

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**
Work Order: **15K0049**

Matrix: Water
Prep Batch: 1511013

Analysis Method: SM 4500-NH3 D M
Prep Method: SM 4500-NH3 B
Laboratory ID: 1511013-MS1
Source Sample ID: 15J0470-07

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Ammonia	0.400	ND	0.476	119	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
Ammonia	0.400	0.457	114	4	20	75 - 125

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 1508163-002

Sequence: 5H10002 Injection Date: 08/10/15

Lab Sample ID: 5H10002-CCV1 Injection Time: 18:51

	CONC. (mg/L)		RESPONSE FACTOR		CCV	
COMPOUND	STD	CCV	CCV	% Rec	Lower Limit	Upper Limit
Ammonia	0.500	0.494	99.47522	99	90	110

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 5K02003-016

Sequence: 5K02003 Injection Date: 11/03/15

Lab Sample ID: 5K02003-CCV1 Injection Time: 11:59

	CONC. (mg/L)		RESPONSE FACTOR		CCV Lower	Upper
COMPOUND	STD	CCV	CCV	% Rec	Limit	Limit
Ammonia	0.500	0.467	112.4342	**93**	90	110

* Values outside of QC limits

CONTINUING CALIBRATION VERIFICATION

SM 4500-NH3 D M

Client: Advanced Technology Laborato

Project: ATL-NV

Instrument ID: TL01

Lab File ID: 5K02003-002

Sequence: 5K02003 Injection Date: 11/03/15

Lab Sample ID: 5K02003-CCV2 Injection Time: 14:35

	CONC. (mg/L)		RESPONSE FACTOR		CCV Lower	Upper
COMPOUND	STD	CCV	CCV	% Rec	Limit	Limit
Ammonia	0.500	0.466	112.2024	**93**	90	110

* Values outside of QC limits

DUPLICATES

Duplicate

Client: **Advanced Technology Laboratories-NV**
Project: **ATL-NV**

Matrix:	Water	Laboratory ID:	1511013-DUP1
Prep Batch:	1511013	Initial/Final:	50 mL / 50 mL
Prep Method:	SM 4500-NH3 B	Analysis:	SM 4500-NH3 D M

ANALYTE	SAMPLE CONCENTRATION (mg/L)	DUPLICATE CONCENTRATION (mg/L)	RPD %	Q	CONTROL LIMIT
Ammonia	ND	0.0323			20

* Values outside of QC limits

Section 4.0

Chain of Custody and Sample Receipt Records

TRUESDAIL LABORATORIES, INC.

Internal Chain of Custody Logbook

Lab Number: 15K0049

Client Name: ATL

Storage Temperature: 3.2°C

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
CW-01D-4Q15				11/03/15	10:10		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	10	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature
CW-01M-4Q15				11/03/15	10:10		Nirali Patel	Nirali
	NH_3	11/3/15	10:30				Alex L	
				11/3/15	14:30	10	Alex L	

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

Bottle I.D.	Analysis	Date Out	Time Out	Date In	Time In	Amount Taken (g or mL)	Printed Name	Signature

Storage Date	Shelf No. For Storage	Printed Name	Initials

Discharge Date	Printed Name	Initials

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 *FAX: 7023072691*

CHAIN-OF-CUSTODY RECORD

ALERT !!
Level IV QC

15K0049

QC Level: Level IV

Subcontractor:

Truesdail
3337 Michelson Drive, Suite CN750
Irvine, CA 92612

TEL: (714) 730-6239
FAX: (714) 730-6462
Acct #:

Field Sampler: Nara Tep

02-Nov-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3C		
N017427-001F / CW-01D-4Q15	Groundwater	10/29/2015 8:32:00 AM	32OZP	1		
N017427-002F / CW-01M-4Q15	Groundwater	10/29/2015 9:21:00 AM	32OZP	1		

ALERT !!
Level IV QC

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#: N17427A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-DAY TAT.

Please analyze Ammonia by SM4500.

		Date/Time			Date/Time
Relinquished by:		11/2/15 1700	**Received by:**	GSO IRK # 529823159	
Relinquished by:			**Received by:**	11/03/15 10:10	3.2°C

ALERT !!
Level IV QC

Log-in check list
For level III data package

Client: ATL Lab Number: 15K0049

Received Date: 11/03/15

Sample receiving review	Yes	No	N/A	Comment
Was special login form received by login personnel?	✓			
Was COC received and signed by client and login personnel?	✓			
Were all sampls temperature measured and recorded on COC?	✓			
Did you measure and record the pH on all metals samples on COC?			✓	
Has sample integrity and analysis discrepancy form been filled out completely?	✓			
Were all interacompany yellow forms generated and stamped with " alert level III QC" note?	✓			
Have check -in and check out lists been filled out and attached to appropriate form?	✓			
Were sample containers labeled with TLI numbers, date, and time sampled?	✓			
Did you notify analyst or group leader about short holding time?	✓			
Was a copy of COC attached to all yellow intracompany form?	✓			
For special clients, have all their samples been logged into the internal COC book?	✓			
Were samples locked in fridge or special storage area?	✓			
Was temperature recorded in the log book?	✓			

Sample receiving Signature: [signature]

ALERT !!
Level IV QC

WORK ORDER **Printed: 11/3/15 10:23:58AM**

15K0049

Truesdail Laboratories, Inc

Client:	**Advanced Technology Laboratories-NV**	**Project Manager:**	**Lyn Phaerakkakit**
Project:	**ATL-NV**	**Project Number:**	**[none]**

Report To:
Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone: (702) 307-2659
Fax: (702) 307-2691

Invoice To:
Advanced Technology Laboratories-NV
Marlon Cartin
3151 W Post Rd
Las Vegas, NV 89118
Phone :(702) 307-2659
Fax: (702) 307-2691

Date Due:	11/12/2015 16:30 (7 day TAT)		
Received By:	Nirali Patel	Date Received:	11/03/2015 10:10
Logged In By:	Nirali Patel	Date Logged In:	11/03/2015 10:20

Samples Received at:	**3.2°C**		
Chain of Custody rece	Yes	Samples intact?	Yes
Letter (if sent) matche	No	Custody seals (if any)	No
Requested analyses ac	Yes	Analyses within hold t	Yes
Samples received in a	Yes		

Analysis	Due	TAT	Expires	Comments
15K0049-01 CW-01D-4Q15 [Water] Sampled 10/29/2015 08:32 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/12/2015 12:00	7	11/26/2015 08:32	
15K0049-02 CW-01M-4Q15 [Water] Sampled 10/29/2015 09:21 (GMT-08:00) Pacific Time (US &				
Ammonia E	11/12/2015 12:00	7	11/26/2015 09:21	

Michelle Reed
Reviewed By

11/4/15
Date

Section 5.0

Sample Preparation, and Analytical Raw Data

PREPARATION BATCH SUMMARY

SM 4500-NH3 D M

Laboratory: Truesdail Laboratories, Inc

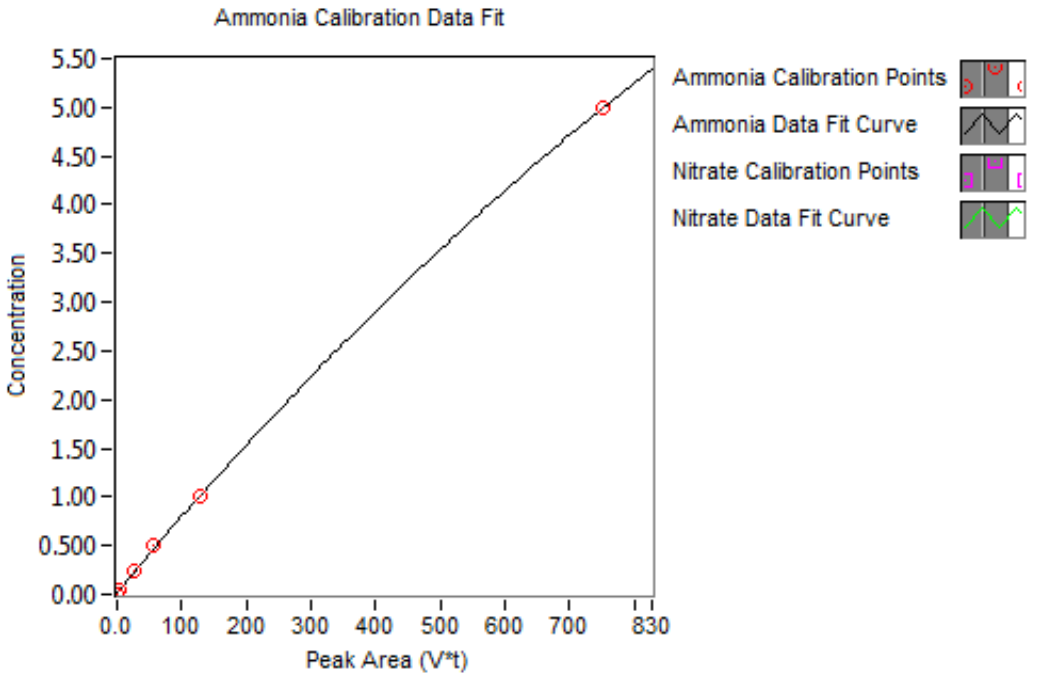
Client: Advanced Technology Laboratories-NV Project: ATL-NV

Batch: 1511013 Batch Matrix: Water Preparation: SM 4500-NH3 B

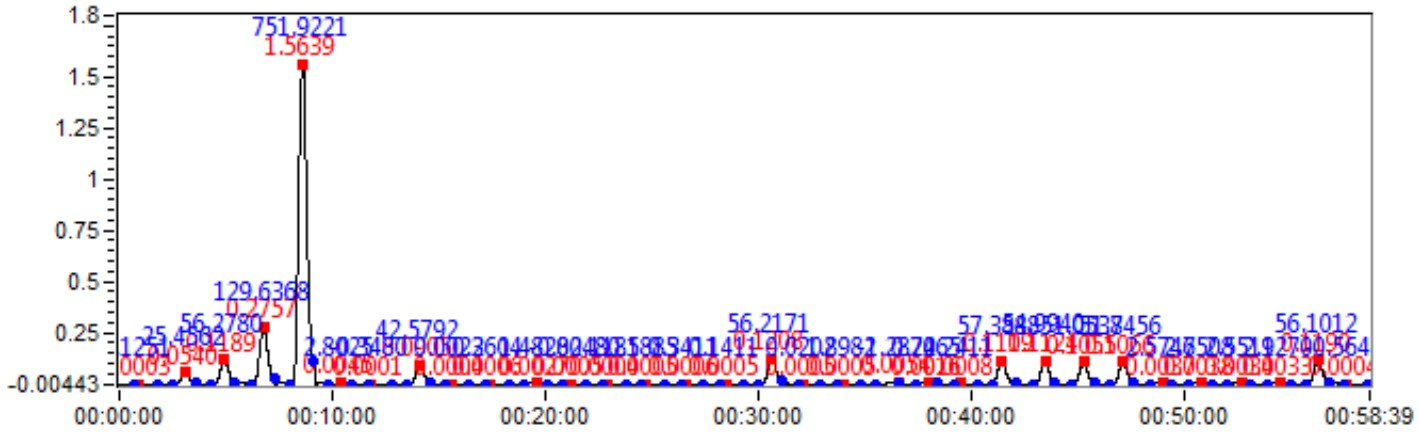
SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	1511013-BLK1	11/03/15 10:45	50.00	50.00
LCS	1511013-BS1	11/03/15 10:45	50.00	50.00
Duplicate	1511013-DUP1	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL1	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL2	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL3	11/03/15 10:45	50.00	50.00
MRL Check	1511013-MRL4	11/03/15 10:45	50.00	50.00
Matrix Spike	1511013-MS1	11/03/15 10:45	50.00	50.00
Matrix Spike Dup	1511013-MSD1	11/03/15 10:45	50.00	50.00
CW-01D-4Q15	15K0049-01	11/02/15 11:31	50.00	50.00
CW-01M-4Q15	15K0049-02	11/02/15 11:31	50.00	50.00

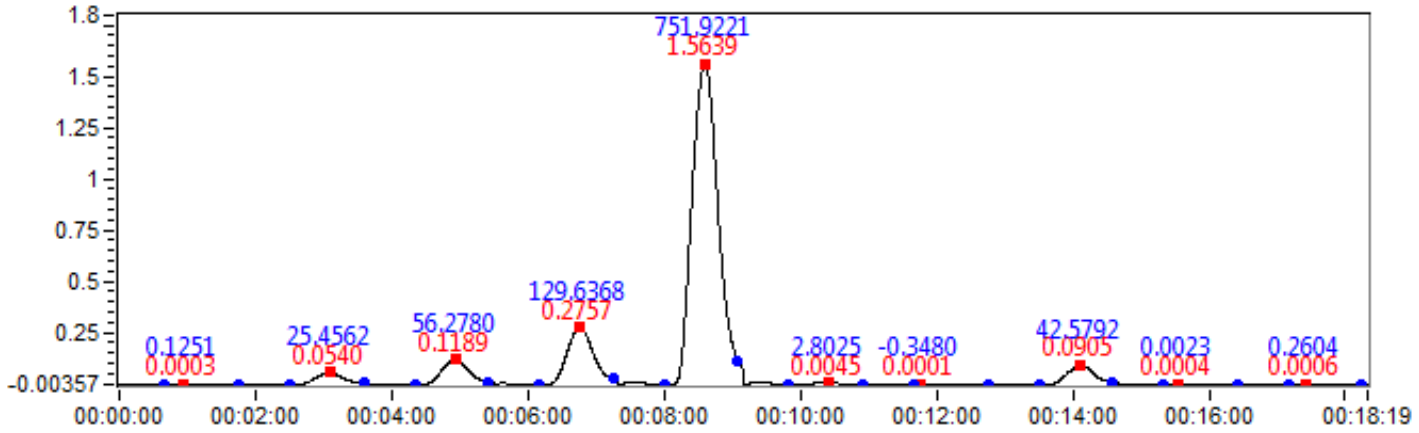
Timberline TL-2100 Summary Report **11/3/2015 2:53 PM**

Injection Time	Wash Time	Integration Start Time	Integration End Time
00:20	01:30	00:40	01:45

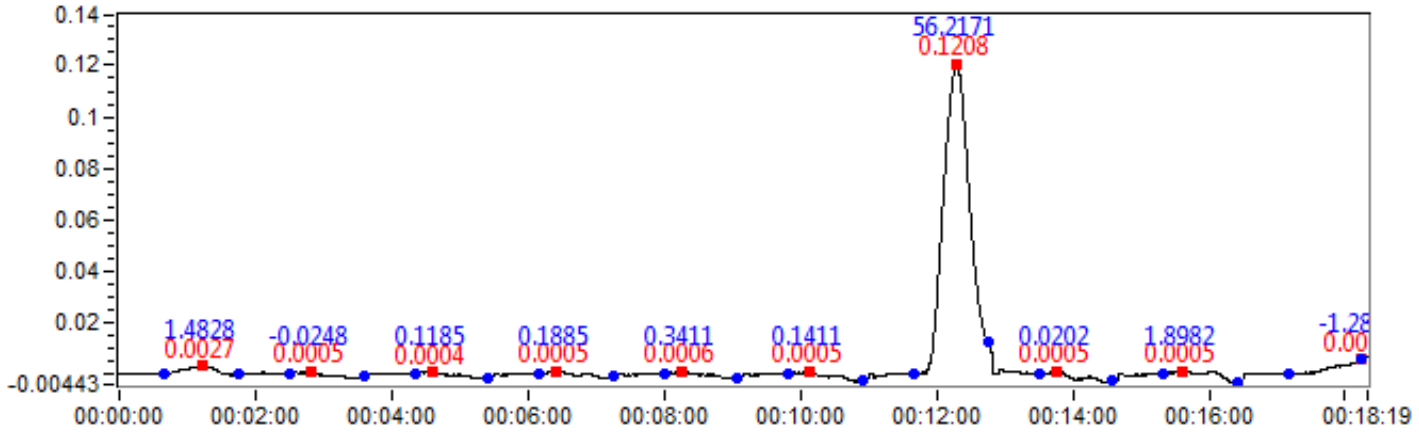


Ammonia Calibration Equation	R^2 Value	Nitrate Calibration Equation	Nitrate R^2 Value
y = +3.027E-2 + 7.855E-3*X - 1.657E-6*X^2	0.999843	y =	NaN

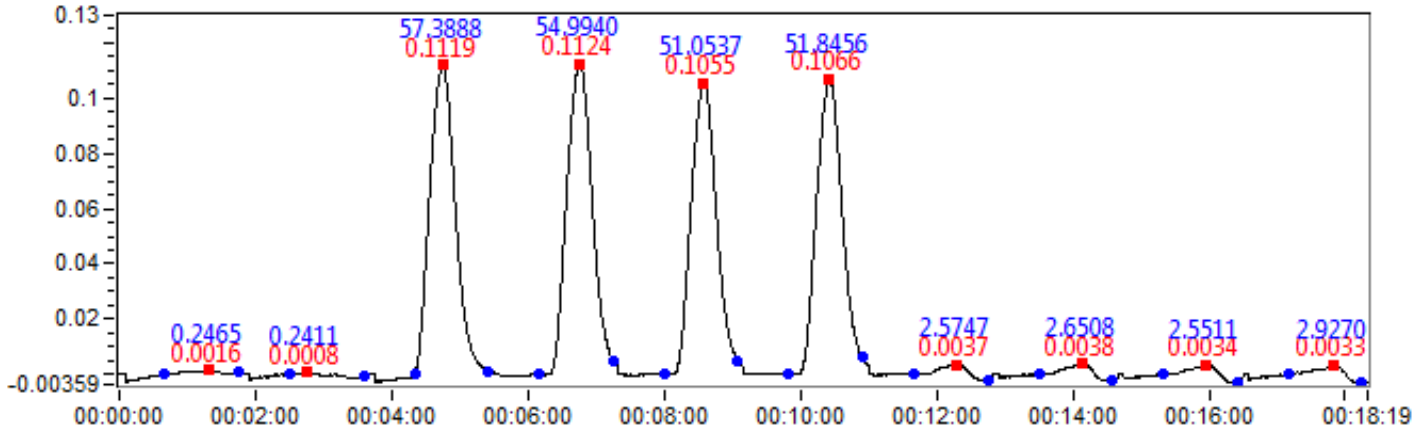




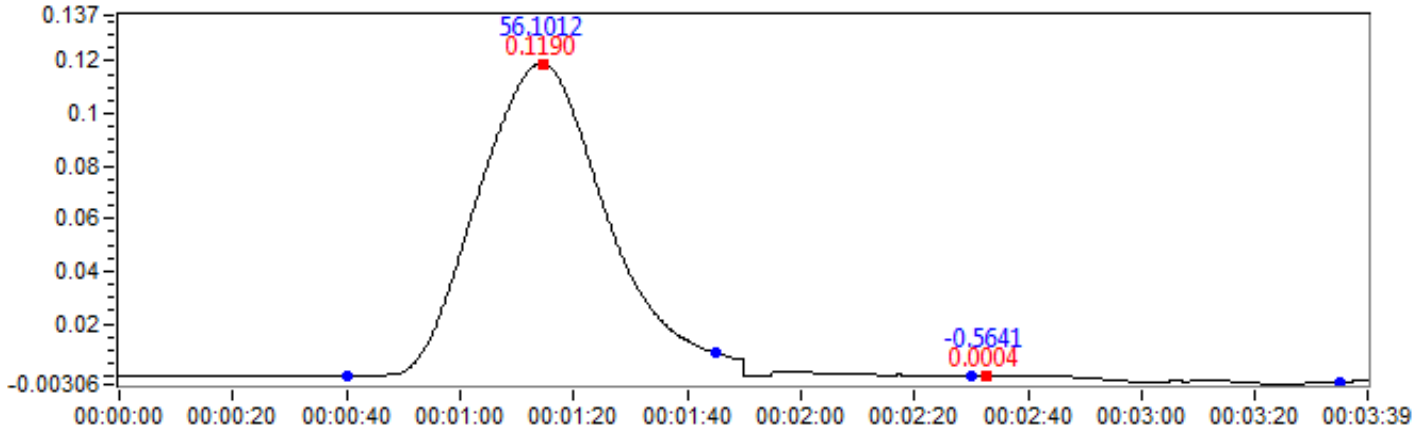
Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 11:38:58	NH3 Sample	1511013-DUP1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.260433	0.032318			
1	11-03-15 11:37:00	NH3 Sample	15J0459-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.002323	0.030291			
8	11-03-15 11:31:39	NH3 Sample	1511013-BS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564882 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	42.579220	0.361710			
7	11-03-15 11:20:18	NH3 Sample	1511013-BLK1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564542 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.347966	0.027539			
2	11-03-15 11:10:48	NH3 Sample	5K02003-CAL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 564257 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.802507	.05			
6	11-03-15 11:08:31	NH3 Sample	5K02003-CAL5	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	751.922078	5			
5	11-03-15 11:06:33	NH3 Sample	5K02003-CAL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	129.636768	1			
4	11-03-15 11:04:35	NH3 Sample	5K02003-CAL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.277978	.5			
3	11-03-15 11:02:37	NH3 Sample	5K02003-CAL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	25.456239	.25			
1	11-03-15 10:58:42	NH3 Sample	5K02003-ICB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 563893 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.125125	0.000000			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 13:42:57	NH3 Sample	15J0470-07	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-1.287234	0.020159			
1	11-03-15 13:40:59	NH3 Sample	15J0470-06	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.898241	0.045176			
10	11-03-15 12:01:17	NH3 Sample	5K02003-CCB1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565712 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.020197	0.030431			
9	11-03-15 11:59:19	NH3 Sample	5K02003-CCV1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565712 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.217077	0.466597			
8	11-03-15 11:50:48	NH3 Sample	15J0470-05	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.141093	0.031381			
7	11-03-15 11:48:50	NH3 Sample	15J0470-04	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.341111	0.032952			
6	11-03-15 11:46:52	NH3 Sample	15J0470-03	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.188513	0.031753			
5	11-03-15 11:44:55	NH3 Sample	15J0470-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.118455	0.031203			
4	11-03-15 11:42:55	NH3 Sample	15J0470-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.024815	0.030078			
3	11-03-15 11:40:56	NH3 Sample	15J0459-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 565042 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	1.482787	0.041915			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
10	11-03-15 14:14:17	NH3 Sample	1511013-MRL4	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.927023	0.053249			
9	11-03-15 14:12:19	NH3 Sample	1511013-MRL3	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.551142	0.050300			
8	11-03-15 14:10:20	NH3 Sample	1511013-MRL2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.650778	0.051082			
7	11-03-15 14:08:21	NH3 Sample	1511013-MRL1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566986 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	2.574724	0.050485			
6	11-03-15 14:01:00	NH3 Sample	1511013-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566706 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	51.845610	0.433043			
5	11-03-15 13:59:02	NH3 Sample	1511013-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566706 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	51.053724	0.426958			
6	11-03-15 13:53:51	NH3 Sample	1511013-MSD1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566487 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	54.993966	0.457215			
5	11-03-15 13:51:52	NH3 Sample	1511013-MS1	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566487 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	57.388789	0.475579			
4	11-03-15 13:46:53	NH3 Sample	15K0049-02	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.241081	0.032166			
3	11-03-15 13:44:55	NH3 Sample	15K0049-01	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 566165 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	0.246492	0.032208			



Tube #	Time Stamp	Tube Type	Tube Name	Comments	NH3 Area	NH3 Conc.	NO3 + NH3 Area	NO3 + NH3 Conc.	NO3 Conc.
2	11-03-15 14:37:17	NH3 Sample	5K02003-CCB2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 567796 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	-0.564100	0.025841			
1	11-03-15 14:35:19	NH3 Sample	5K02003-CCV2	INJECT TIME: 20 SENSITIVITY: 10 GAIN: 100 POST ATTENUATION: div 2 PUMP SPEED: 30 PUMP REVS: 567796 BUFFER CONC.: CAUSTIC CONC.: BUFFER RECYCLE: No CAUSTIC RECYCLE: No USER COMMENT: CELL S/N: MEMBRANE S/N: DILUTION:	56.101209	0.465708			

APPENDIX B

Field Data Collection Sheets (provided on CD-ROM only)

Topock CMP Manual Water Level Snapshot

Personnel: B. Collom / CH2M

WLI serial number: PGE 2014-01

Loc ID	Depth to Water (ft BTOC)	Date	Time	Comments
CW-1M	109.94'	2-10-15	1033	
CW-1D	109.99'		1035	
CW-2M	93.50'		1040	
CW-2D	93.02'		1043	
CW-3M	78.32'		1047	
CW-3D	77.66'		1049	
CW-4M	62.24'		1055	
CW-4D	62.04'		1057	
OW-1S	94.44'		1103	
OW-1M	94.17'		1106	
OW-1D	93.78'		1108	
OW-2S	93.07'		1111	
OW-2M	92.30'		1113	
OW-2D	92.38'		1116	
OW-5S	95.90'		1119	
OW-5M	94.66'		1121	
OW-5D	95.50'		1123	

IM-3 Staff confirm that 2-8-15, 2-9-15, and 2-10-15 were normal operation days with no backwashing or plant down time prior to snapshot collection.

Topock CMP Manual Water Level Snapshot

Personnel: B. Collom/CH2M

WLI serial number: PGE 2014-#1

Loc ID	Depth to Water (ft BTOC)	Date	Time	Comments
CW-1M	108.42	5-14-15	0928	
CW-1D	108.66		0931	
CW-2M	91.94		0935	
CW-2D	91.65		0937	
CW-3M	76.78		0941	
CW-3D	76.29		0943	
CW-4M	60.74		0951	
CW-4D	60.70		0953	
OW-1S	92.85		1001	PT moved @ 0959
OW-1M	92.64		1004	
OW-1D	92.47		1006	
OW-2S	91.46		1009	
OW-2M	90.80		1011	
OW-2D	91.06		1014	
OW-5S	94.35		1018	
OW-5M	93.25		1020	
OW-5D	94.32		1022	

IM-3 Staff confirm that 5-12-15, 5-13-15, and 5-14-15 were normal operation days with no backwashing or plant down time prior to snapshot collection.

Topock CMP Manual Water Level Snapshot

Personnel: B. Collom/CH2M :

WLI serial number: PGE2014-01

Loc ID	Depth to Water (ft BTOC)	Date	Time	Comments
CW-1M	108.67	7-14-15	0750	
CW-1D	108.83		0753	
CW-2M	92.22		0757	
CW-2D	91.82		0800	
CW-3M	77.04		0804	
CW-3D	76.48		0806	
CW-4M	60.96		0815	
CW-4D	60.86		0817	
OW-1S	93.13		0825	
OW-1M	92.92		0829	
OW-1D	92.70		0831	
OW-2S	91.78		0836	
OW-2M	91.09		0839	
OW-2D	91.28		0842	
OW-5S	94.62		0847	
OW-5M	93.55		0851	
OW-5D	94.49		0855	

IM-3 Staff confirm that 7-12-15, 7-13-15, and 7-14-15 were normal operation days with no backwashing or plant down time prior to snapshot collection.

ARCADIS Design & Consultancy for natural and built assets

GROUNDWATER ELEVATION DATA

PROJECT NAME: PG&E Topock CMP
PROJECT LOCATION: Needles, California
MEASUREMENT DATE: 10-27-2015
PERSONNEL ON SITE: Jason Mahn

PROJECT NO.: RC000753.0801
TASK: CMP Quarterly Snapshot
MEASURING DEVICE: Water level indicator
WEATHER CONDITIONS: Sunny, 70s

Monitoring Well Number	Date	Time	Depth to Groundwater (ft btoc)	COMMENTS
CW-4D	10/27/15	0755	61.29	2"
CW-4M	↓	0757	61.43	2"
CW-1M		0804	108.99	2"
CW-1D		0806	109.10	2"
CW-3D		0810	76.86	2"
CW-3M		~~80~~ 0812	77.44	2"
CW-2D		0818	92.17	2"
CW-2M		0815	92.59	2"
OW-1S		0822	93.43	2"
OW-1M		0824	92.99	2"
OW-1D		0826	92.66	2"
OW-2S		0829	92.09	2"
OW-2M		0831	90.92	2"
OW-2D		0833	91.02	2"
OW-5S		0840	94.92	2"
OW-5M		0838	94.31	2"
OW-5D	↓	0836	94.88	2"

Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-01D

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	109.04
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	300.20
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	191.16
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	31.21
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	93.63
Comments		Pump Intake Depth (ft bmp)	120	Purge Date	10/29/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
07:59	3	12	29.2	6.17	7872	155.6	5.71	3	109.10	4.34	5.11
08:07	3	36	29.0	6.95	7845	118.2	5.96	3	109.10	4.31	5.10
08:15	3	60	28.8	7.45	7882	86.1	6.09	3	109.10	4.34	5.12
08:20	3	84	28.8	7.50	7880	79.7	6.08	3	109.10	4.34	5.12
08:27	3	96	28.8	7.56	7891	74.9	6.09	2	109.10	4.34	5.12
08:31	3	108	28.8	7.58	7885	73.3	6.07	2	109.10	4.34	5.12

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	08:32	Double Filter Turbidity	
Sample ID	CW-01D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	2	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-01M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	108.13
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	190.31
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	82.18
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	13.42
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	40.26
Comments		Pump Intake Depth (ft bmp)	118	Purge Date	10/29/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:00	2	8	29.0	7.55	8143	66.9	6.46	14	109.20	4.47	5.29
09:04	2	16	29.1	7.53	8107	62.8	6.44	19	109.20	4.47	5.29
09:08	2	24	29.1	7.55	8144	59.5	6.59	9	109.20	4.49	5.28
09:12	2	40	29.2	7.56	8136	59.2	6.60	8	109.20	4.49	5.31
09:20	2	48	29.1	7.55	8141	57.7	6.60	6	109.20	4.49	5.30

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	09:21	Double Filter Turbidity	
Sample ID	CW-01M-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	5	EB Time	09:35
		EB Sample ID	MW-204-4Q15

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings


Spill Berm

Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-02D

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	92.04
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	355
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	262.96
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	42.93
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	128.79
Comments		Pump Intake Depth (ft bmp)	102	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:36	3	36	30.1	7.81	8191	-10.2	3.81	2	92.45	4.41	5.32
13:50	3	72	30.2	7.91	8333	14.1	7.14	3	92.45	4.59	5.41
13:58	3	96	30.3	7.93	8342	17.2	7.15	3	92.45	4.60	5.42
14:06	3	120	30.3	7.93	8342	20.2	7.12	2	92.45	4.60	5.42
14:10	3	132	30.3	7.93	8343	21.6	7.14	2	92.45	4.60	5.42

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	14:11	Double Filter Turbidity	
Sample ID	CW-02D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	2	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-02M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	92.43
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	201.08
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	108.65
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	17.74
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	53.22
Comments		Pump Intake Depth (ft bmp)	103	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
14:38	2	32	30.1	7.73	8217	30.2	7.09	3	92.45	4.53	5.34
14:40	2	16	30.0	7.73	8221	23.9	7.09	19	92.45	4.53	5.34
14:52	2	40	30.1	7.73	8222	31.9	7.06	3	92.45	4.53	5.34
14:56	2	48	30.1	7.73	8212	32.5	7.11	3	92.45	4.53	5.34
15:00	2	56	30.1	7.73	8223	33.6	7.09	3	92.45	4.53	5.34

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	15:01	Double Filter Turbidity	
Sample ID	CW-02M-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	3	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings


Spill Berm

Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-03D

Project_Number	RC000753.0801	Weather Conditions	Cloudy	Depth to Water (ft bmp)	76.84
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	340
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	263.16
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	42.96
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	128.88
Comments		Pump Intake Depth (ft bmp)	87	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
11:03	3	24	29.5	7.97	8223	23.4	5.73	2	78.0	4.57	5.37
11:11	3	48	30.2	7.96	8303	30.0	6.47	2	78.0	4.59	5.40
11:19	3	72	30.4	7.95	8307	34.1	6.82	2	78.0	4.58	5.42
11:27	3	96	30.6	7.95	8319	35.0	6.86	2	78.0	4.58	5.40
11:35	3	120	30.6	7.95	8322	32.6	6.86	2	78.0	4.58	5.40
11:39	3	132	30.6	7.95	8324	30.6	6.85	2	78.0	4.58	5.40

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	11:40	Double Filter Turbidity	
Sample ID	CW-03D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	2	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-03M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	77.42
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	220.97
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	143.55
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	23.44
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	70.32
Comments		Pump Intake Depth (ft bmp)	87	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
12:08	2	16	29.7	7.54	9500	16.5	4.34	37	77.45	5.24	6.16
12:16	2	32	30.1	7.60	9503	14.8	4.18	21	77.45	5.29	6.13
12:24	2	48	30.1	7.60	9377	23.6	4.52	8	77.45	5.21	6.09
12:28	2	56	30.2	7.60	9370	24.7	4.50	7	77.45	5.21	6.09
12:32	2	64	30.1	7.60	9366	25.1	4.53	4	77.45	5.21	6.08

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	12:37	Double Filter Turbidity	
Sample ID	CW-03M-4Q15	Color	Clear
Duplicate Sample ID	OW-070-4Q15	Odor	none
Dup Sample Time	12:47	MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	3	EB Time	
		EB Sample ID	

Sampler: Jason Mahn 

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-04D

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	61.27
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	303
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	241.73
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	39.46
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	118.38
Comments		Pump Intake Depth (ft bmp)	71.	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
08:43	3	24	29.5	7.45	8254	104.5	7.15	2	61.55	4.55	5.36
08:46	3	48	30.1	7.70	8292	75.9	7.01	2	61.60	4.57	5.38
08:57	3	96	30.3	7.74	8297	60.5	6.90	2	61.60	4.57	5.39
08:59	3	72	30.2	7.72	8298	67.1	6.92	2	61.60	4.57	5.39
09:11	3	108	30.3	7.74	8297	56.1	6.91	2	61.60	4.57	5.39
09:15	3	120	30.3	7.74	8296	53.6	6.90	2	61.60	4.57	5.39

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	09:16	Double Filter Turbidity	
Sample ID	CW-04D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	2	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

CW-04M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	61.41
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	170.95
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	109.54
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	17.88
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	53.64
Comments		Pump Intake Depth (ft bmp)	72	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:48	2	16	29.3	7.56	8064	39.8	8.04	5	61.70	4.44	5.24
09:57	2	32	29.5	7.55	8011	45.3	7.99	7	61.70	4.41	5.21
10:01	2	48	29.8	7.56	8010	48.6	7.95	6	61.70	4.40	5.20
10:09	2	56	29.8	7.56	8005	50.1	7.94	4	61.70	4.40	5.20

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	10:10	Double Filter Turbidity	
Sample ID	CW-04M-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	2	MS/MSD Sample ID	
Without Filter Turbidity	4	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-01D

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	92.63
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	278.96
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	186.33
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	30.42
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	91.26
Comments		Pump Intake Depth (ft bmp)	103	Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
09:20	2	16	27.7	6.88	7657	70.6	5.44	9	95.50	4.21	4.97
09:24	3	28	27.8	7.12	7684	50.5	5.83	8	95.65	4.23	4.99
09:32	3	52	27.6	7.34	7770	39.8	7.35	9	95.90	4.27	5.04
09:36	3	64	27.6	7.42	7770	35.9	7.33	8	95.90	4.28	5.04
09:40	3	76	27.6	7.44	7765	35.2	7.33	7	95.90	4.27	5.05
09:44	3	88	27.6	7.47	7758	35.9	7.35	6	95.90	4.28	5.04
09:48	3	100	27.6	7.49	7758	37.6	7.34	4	95.90	4.27	5.04

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	09:49	Double Filter Turbidity	
Sample ID	OW-01D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	3	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings

OW-1D



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-01M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	92.91
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	188.92
Purge Method	Centrifugal Pump	Sampler	Nara Tep	Water Column in Well	96.01
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	15.67
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	47.01
Comments		Pump Intake Depth (ft bmp)		Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
10:28	2	16	27.9	7.44	7673	37.9	7.53	3	93.30	4.21	4.98
10:36	2	32	27.9	7.41	7670	44.9	7.50	1	93.30	4.22	4.98
10:40	2	48	27.9	7.41	7673	47.3	7.47	1	93.30	4.22	4.98
10:48	2	56	27.9	7.41	7672	48.9	7.41	1	93.30	4.22	4.98

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	10:49	Double Filter Turbidity	
Sample ID	OW-01M-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	1	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?		X		
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings

OW-1M



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-01S

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	93.29
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	113.41
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	20.12
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	3.28
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	9.84
Comments		Pump Intake Depth (ft bmp)	103	Purge Date	10/26/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:19	0.5	2	29.3	6.69	5979	74.9	7.07	12	93.33	3.21	3.87
15:23	0.5	4	29.3	6.78	5924	69.1	7.10	9	93.33	3.20	3.86
15:27	0.5	6	29.3	6.84	5859	66.5	7.10	5	93.33	3.18	3.83
15:31	0.5	8	29.3	6.98	5841	61.6	7.10	4	93.33	3.15	3.80
15:35	0.5	10	29.3	7.01	5793	58.9	7.14	4	93.33	3.13	3.77
15:39	0.5	12	29.3	7.04	5757	56.3	7.15	3	93.33	3.10	3.74

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	15:40	Double Filter Turbidity	
Sample ID	OW-01S-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	3	EB Time	15:55
		EB Sample ID	MW-201-4Q15

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings

OW-01S		

Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-02D

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	90.97
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	340
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	249.03
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	40.66
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	121.98
Comments		Pump Intake Depth (ft bmp)	100	Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
11:30	3	24	29.2	7.64	7516	16.8	5.04	2	91.20	4.12	4.88
11:38	3	48	29.1	7.63	7519	23.9	5.15	2	91.2	4.13	4.87
11:47	3	72	28.8	7.59	7558	37.9	7.58	3	91.2	4.16	4.92
11:55	3	96	28.8	7.58	7594	44.9	7.59	2	91.2	4.17	4.94
11:59	3	108	28.7	7.58	7578	46.9	7.70	2	91.2	4.17	4.95
12:03	3	120	28.8	7.58	7616	48.5	7.63	2.	91.2	4.16	4.94
12:07	3	128	28.7	7.58	7630	50.5	7.71	2	91.2	4.16	4.95

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	12:08	Double Filter Turbidity	
Sample ID	OW-2D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	2	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-02M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	90.82
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	210.84
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	120.02
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	19.59
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	58.77
Comments		Pump Intake Depth (ft bmp)	100.	Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
13:12	2	16	28.2	7.64	7709	33.9	5.56	2	90.9	4.23	4.99
13:20	2	32	29.1	7.49	7646	51.4	7.54	2	90.9	4.19	4.95
13:28	2	48	29.1	7.47	7628	54.2	7.64	2	90.9	4.19	4.95
13:32	2	56	29.0	7.47	7636	56.1	7.60	2	90.9	4.19	4.95
13:36	2	62	29.1	7.46	7634	57.3	7.58	2	90.9	4.19	4.95

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	13:37	Double Filter Turbidity	
Sample ID	OW-02M-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	2	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-02S

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	91.97
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	102.94
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	10.97
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	1.79
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	5.37
Comments		Pump Intake Depth (ft bmp)	99	Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
12:31	0.5	2	28.4	7.81	2613	33.1	9.20	9	92.20	1.34	1.69
12:35	0.5	4	29.5	7.77	2553	38.1	8.83	4	92.20	1.31	1.64
12:39	0.5	6	29.6	7.78	2548	39.2	8.83	4	92.2	1.30	1.65
12:43	.5	8	29.6	7.78	2580	40.1	8.83	3	92.2	1.32	1.68

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	12:44	Double Filter Turbidity	
Sample ID	OW-02S-4Q15	Color	Clear
Duplicate Sample ID	OW-071-4Q15	Odor	none
Dup Sample Time	12:54	MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	3	EB Time	
		EB Sample ID	

Sampler: Jason Mahn 

Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?	X			
Concrete Pad Intact?		X		
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-05D

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	94.81
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	350
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	255.19
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	41.66
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	124.98
Comments		Pump Intake Depth (ft bmp)	115	Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
14:55	3	24	29.2	7.80	7437	8.3	4.75	2	95.50	4.07	4.84
15:03	3	48	29.3	7.79	7400	11.5	4.80	2	95.50	4.08	4.83
15:11	3	72	29.5	7.74	7537	20.9	6.24	1	95.50	4.14	4.91
15:19	3	96	29.6	7.72	7568	24.3	6.51	1	95.50	4.14	4.92
15:23	3	108.	29.5	7.71	7659	25.0	6.56	1	95.5	4.14	4.92
15:27	3	120	29.6	7.71	7587	25.8	6.54	1	95.5	4.14	4.92
15:31	2	132	29.6	7.71	7585	26.1	6.52	1	95.5	4.14	4.92

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	15:32	Double Filter Turbidity	
Sample ID	OW-05D-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	1	EB Time	
		EB Sample ID	

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



ARCADIS Design & Consultancy for natural and built assets

Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-05M

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	94.14
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	252.61
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	158.47
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	25.87
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	77.61
Comments		Pump Intake Depth (ft bmp)	104	Purge Date	10/27/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:53	3	24	29.3	7.66	7377	7.9	6.01	3	94.55	4.04	4.67
16:01	3	48	29.2	7.53	7495.	17.3	7.14	15	94.55	4.11	4.89
16:05	3	60	29.1	7.62	7508	21.6	7.23	24	94.55	4.12	4.88
16:09	3	72	29.1	7.62	7505	29.1	7.42	23	94.55	4.11	4.89
16:13	3	84	29.0	7.62	7502	25.8	7.38	23	94.55	4.11	4.89

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	16:14	Double Filter Turbidity	
Sample ID	OW-05M-4Q15	Color	grey
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	3	MS/MSD Sample ID	
Without Filter Turbidity	23	EB Time	16:30
		EB Sample ID	MW-202-4Q15

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

OW-05S

Project_Number	RC000753.0801	Weather Conditions	Sunny	Depth to Water (ft bmp)	94.61
Location	, , CA	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	112.73
Purge Method	Dedicated Tubing	Sampler	Nara Tep	Water Column in Well	18.12
Purge Volume Units	gal	Casing Material	PVC	Gallons in Well	2.96
Sampling Type	VP	Casing Diameter (in)	2	Total Volume to Remove	8.88
Comments		Pump Intake Depth (ft bmp)	105	Purge Date	10/28/2015
		Casing Volume to Remove	3		

Field Parameters

Time	Flow Rate (ml/min)	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Salinity (ppt)	TDS (g/L)
15:30	0.75	3	29.0	7.43	5429	23.1	5.94	6	94.85	2.91	3.52
15:34	0.75	6	29.3	7.37	5188	31.1	6.01	4	94.85	2.76	3.40
15:38	0.75	9	29.3	7.36	5030	33.7	6.04	4	94.85	2.69	3.27
15:42	0.75	12	29.3	7.37	4870	36.7	6.08	3	94.85	2.60	3.19
15:46	0.75	15	29.4	7.37	4798	39.0	6.13	3	94.85	2.57	3.13
15:50	0.75	18	29.4	7.37	4734	40.0	6.13	3	94.85	2.51	3.07

Sampling Summary

Did Well Dewater?	No	Post Sampling Turbidity	
Sample Time	15:51	Double Filter Turbidity	
Sample ID	OW-05S-4Q15	Color	Clear
Duplicate Sample ID		Odor	none
Dup Sample Time		MS/MSD Sample Time	
Single Filter Turbidity	1	MS/MSD Sample ID	
Without Filter Turbidity	3	EB Time	16:05
		EB Sample ID	MW-203-4Q15

Sampler: Jason Mahn



Well Integrity Checklist

Item	Yes	No	NA	Notes
Date				
Time				
Survey Mark Present?	X			
Standing or Ponded Water?		X		
Lock in Place?	X			
Evidence of well subsidence?		X		
Well Labeled on Casing or Pad?	X			
Traffic Poles Intact?		X		
Concrete Pad Intact?	X			
Erosion Around Wellhead?		X		
Steel Casing Intact?	X			
PVC Cap Present?	X			
Standing Water in Annulus?		X		
Well Casing Intact?	X			
Photo Taken?	X			
Required Actions				

Photos and Drawings



Groundwater Monitoring Field Data Form
Site: PGE Topock

Gauging Data

Date 10/26/2015
Site PG&E Topock

Well	Date/Time	Well Depth (ft)	Depth To Water (ft)	Depth to LNAPL (ft)	Remarks
CW-01D	10/29/2015 07:51	300.20	109.04		
CW-01M	10/29/2015 08:54	190.31	108.93		
CW-02D	10/28/2015 13:20	355	92.04		
CW-02M	10/28/2015 14:32	201.08	93.43		
CW-03D	10/28/2015 10:52	340	76.84		
CW-03M	10/28/2015 11:59	220.97	77.42		
CW-04D	10/28/2015 08:22	303	61.27		
CW-04M	10/28/2015 09:36	170.95	61.41		
OW-01D	10/27/2015 09:05	278.96	92.93		
OW-01M	10/27/2015 10:14	188.92	92.91		
OW-01S	10/26/2015 14:45	113.41	93.29		
OW-02D	10/27/2015 11:18	340.00	90.97		
OW-02M	10/27/2015 13:03	210.84	90.82		
OW-02S	10/27/2015 12:22	102.94	91.97		
OW-05D	10/27/2015 14:44	350	94.81		
OW-05M	10/27/2015 15:45	252.61	94.14		
OW-05S	10/28/2015 15:18	112.73	94.61		



Sampler: Jason Mahn

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